

REVIEW
OF
FOREST ADMINISTRATION
IN
BRITISH INDIA
THE YEAR
1903-1904

WITH A QUINQUENNIAL SUMMARY

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REVIEW
OF
FOREST ADMINISTRATION IN BRITISH INDIA
FOR THE YEAR
1903-04.

INTRODUCTION.

SUMMARY OF PROGRESS DURING THE FIVE YEARS 1899-1900 to 1903-1904.

In conformity with the usual practice the following summary of the progress made in Forest Administration during the last quinquennium is prefixed to the Annual Review for the year 1903-04.

2. The Department of Revenue and Agriculture to the Government of India continued to administer the Forest Branch of the General Administration, and during the period under review the Honourable Members of Council in office were Sir Charles Rivaz, K.C.S.I., from 9th April 1898 to 4th March 1902 (except for a period of leave from 4th December 1899 to 5th April 1900, when Sir Denzil Ibbetson, K.C.S.I., officiated as Honourable Member); from the 5th March 1902 to the close of the quinquennium the Honourable Sir Denzil Ibbetson, K.C.S.I., held office. Administrative control.

The Secretaries to the Government of India in the Department of Revenue and Agriculture were Mr. T. W. Holderness, C.S.I., from 3rd July 1898 to 5th May 1899; Mr. M. Finucane, C.S.I., from 6th May 1899 to 7th August 1899; Mr. Holderness from 8th August 1899 to 31st March 1901; Mr. J. B. Fuller, C.I.E., from 1st April 1901 to 11th April 1902; Mr. R. G. Hardy, C.I.E., from 12th April 1902 to 23rd August 1902; Mr. J. O. Miller, C.S.I., from 24th August 1902 to 14th December 1903; and Mr. J. Wilson, C.S.I., from 15th December 1903 to the close of the period under review.

Mr. B. Ribbentrop, C.I.E., continued to perform the duties of Inspector General of Forests to the Government of India till his retirement on 31st October 1900, when Mr. H. C. Hill was appointed. Mr. R. C. Wroughton officiated as Inspector General from 20th April 1902 and was on Mr. Hill's death confirmed in the appointment on 8th November 1902. He was absent on furlough from 4th February 1903, when Mr. S. Eardley-Wilmot was appointed to officiate as Inspector General and continued to hold the appointment at the close of the period under review. Mr. E. B. Bryant occupied the post of Assistant Inspector General of Forests until 21st February 1900, and Mr. J. H. Lace up to 16th February 1902. Mr. L. Mercer was then appointed and on the 25th February 1904 he was relieved by Mr. M. Hill. Mr. G. S. Hart officiated for three months from 14th September 1897 to 13th December 1897.

3. The administration of the State forests during the period under consideration has been in accordance with the general principles enunciated in the General principles.

Resolution issued by the Government of India in October 1894, where it was laid down that "the sole object with which State forests are administered is the public benefit."

Forest
Legislation.

4. During the period the progress of Forest legislation has been as follows:— The Indian Forest Act was amended in 1901 so as to give Local Governments power to deal with cases of incendiarism in protected forests, by suspending rights to pasture and forest produce in such forests. The Burma Forest Law of 1902 was introduced in place of the two separate Acts previously in force for Upper and Lower Burma. An Act was passed by the Punjab Government in 1899 to deal with the damage caused to agriculture by the erosion and sand drift of the torrent beds of the Siwaliks, which empowered the Government to extinguish on payment of compensation certain rights to pasture and forest produce, the existence and exercise of which were incompatible with the measures necessary to afforest the hills. Rules under Forest Acts were issued in many provinces.

Kheddahs.

5. In view of the reduced requirements of the military authorities for elephants and of the need for maintaining a large supply of these animals for forest work in Burma, the Kheddah Department was transferred from the Military Department to the control of the Burma Government in 1902.

Organization.

6. The following changes in the organization of the Forest Department took place:—In consequence of the demand for officers for foreign service the number of extra special posts allotted for the purpose in the Imperial Service was raised from three to five in 1901 and to nine in 1904.

Progress was made in the transfer of appointments from the Imperial to the Provincial Service; the Subordinate Service has been reorganized in Burma, and a complete revision of the office establishments throughout India was sanctioned in 1901.

Changes in area.

7. There has been a considerable increase in the areas of all classes of forest lands under the control of the Department. At the close of the year 1898-99 the areas were as follows:—

	Square miles.
Reserved and leased forests	84,148
Protected " "	8,483
Unclassed State " "	29,565

or a total of 1,22,196 square miles, the proportion of forests to the whole area of all the provinces being 12.88 per cent. At the close of the quinquennium under review the areas were:—

	Square miles.
Reserved and leased forests	91,567
Protected " "	9,865
Unclassed State " "	131,269

or a total of 232,701 square miles, the proportion of forests to the total area of all the provinces being 24 per cent.

The marked increase in the area of unclassified forests is almost entirely due to additions in Burma.

Forest
Settlements.

8. Good progress was made in Forest Settlements, the areas finally settled at the end of 1898-99 being 81,869 square miles, and at the close of 1903-04 96,466 square miles. The most marked increase occurred in Burma, where following on the annexation of Upper Burma large areas have been selected to form permanent reserves.

9. The areas for which working-plans had been compiled and sanctioned **Working-Plans.** at the end of 1898-99 were in Bengal 20,318 square miles, in Madras 139 square miles, and in Bombay 1,319 square miles, or a total of 21,806 square miles. At the close of 1903-04 the areas amounted in Bengal to 24,407 square miles, in Madras 5,103 square miles, and in Bombay 4,170 square miles, or a total of 33,680 square miles. This increase of 11,874 square miles or approximately 54 per cent. is very satisfactory.

10. In 1899 the Forest Survey Branch was amalgamated with the Survey Forest Surveys of India, and in 1904 all forest surveys throughout India were placed under the Superintendent of Forest Surveys and the general direction of the branch transferred to the Surveyor General.

During the last five years forest surveys have made satisfactory progress, 22,309 square miles of forests having been surveyed on the 4 inch and larger scales: of the total area, 6,353 square miles were in Madras, 3,581 in Bombay, and 12,375 in the Bengal Presidency.

In the Punjab forest surveys in Chamba and Kangra have been completed, and the forests of the Jubal and Taroch States have also been surveyed. In the North-West Frontier Province the forests of the Khagan and Siran ranges in Hazara have been surveyed.

In the United Provinces surveys have, with a few unimportant exceptions, been completed, and the same is the case in the Singhbhum, Darjeeling, Kurseong, and Tista forests of Bengal. Surveys in the Northern and Southern Circles of the Central Provinces have been completed. In Assam the survey of 513 square miles of forests is in progress. In Burma the large continuous block of forests along the Pegu Yoma range has been completely surveyed, and surveys have been commenced in the Upper Chindwin and Irrawaddy valleys. In Madras and Bombay steady progress has also been made.

Forest surveys are now in most localities in advance of working-plans, and it is hoped that by 1908 most of the immediate requirements of the Forest Department, except perhaps in Madras, will have been met.

11. The important work of demarcation of forest boundaries has not been **Demarcation.** overlooked. The total length of artificially marked boundaries at the close of the year 1898-99 amounted to 100,264 miles; at the end of 1903-04 the length of boundaries demarcated amounted to 121,501 miles.

12. The average *annual* expenditure on roads, buildings, and other works **Roads and Buildings.** during the quinquennial period 1894-95 to 1898-99 amounted to Rs. 1,17,000, whilst during the five years under review it amounted to nearly 5½ lakhs. The increased expenditure was principally in the Bengal Presidency and has been justified by the increased revenue and value of the forest. To the knowledge of this fact is perhaps due the increased outlay in 1903-04, when nearly Rs. 5,00,000 were expended in this Presidency alone under these heads.

13. There was a considerable increase in the number of forest offences. **Forest crime.** The average *annual* number of offences during the period 1894-95 to 1898-99 was 40,520, whilst for the period 1899-1900 to 1903-1904 it rose to 55,320. Offences of injury to forests by fire increased 32 per cent., the increase being most marked in the Bombay Presidency. Cases of unauthorized fellings increased 42 per cent., most of the increase being in Madras. Cases of grazing without permission increased 37 per cent.; of this Madras accounted for 27 per cent.

The large increase in the areas of reserved and protected forests cannot be taken as entirely explanatory of these figures, nor yet the increase of the

forest staff or the increased area under systematic working; the chief cause is probably to be found in the fact that part of the five years' period was in some provinces one of hardship to the peasantry, and that trespass and petty thefts were in consequence unusually frequent. There is nothing to show that in times of normal prosperity forest crime is on the increase.

Fire-Protection.

14. The average area under systematic fire-protection during the preceding quinquennial period amounted to 31,285 square miles, the average of failures being 7 per cent.; the area was increased during the period under review to an average of 35,236 square miles, the failures amounting to 8 per cent. The increases in areas brought under protection occurred principally in Burma, the Central Provinces, and the United Provinces.

Yield and Outturn.

15. The following statement shows the average annual outturn of the forests for the two periods:—

		Timber and Fuel. Cubic feet.	Bamboos. No.	Minor produce. R
1894-95 to 1898-99	Bengal .	158,165,000	157,609,000	25,75,000
	Madras .	15,376,000	29,953,000	9,78,000
	Bombay .	53,351,000	7,916,000	11,20,000
	TOTAL .	226,892,000	195,478,000	46,83,000
1899-1900 to 1903-04	Bengal .	173,687,000	175,712,000	23,54,000
	Madras .	19,234,000	33,960,000	11,98,000
	Bombay .	43,095,000	4,833,000	7,04,000
	TOTAL .	236,016,000	214,505,000	47,56,000

The average outturn of timber and fuel increased 9 per cent. in the Bengal Presidency, and 25 per cent. in the Madras Presidency; it decreased 19 per cent. in the Bombay Presidency.

The extraction of bamboos showed an increase of 11 per cent. and 13 per cent. from Bengal and Madras, respectively, and a decrease of 38 per cent. in Bombay. The revenue from minor forest produce increased 11 per cent. in Bengal and 22 per cent. in Madras, and decreased 38 per cent. in Bombay.

Financial Results.

16. The average annual financial results for the two periods are shown below:—

		Revenue. R	Expenditure. R	Surplus. R
1894-95 to 1898-99	Bengal .	1,25,59,000	63,08,000	62,51,000
	Madras .	21,11,000	15,07,000	6,04,000
	Bombay .	30,46,000	19,81,000	10,65,000
	TOTAL .	1,77,16,000	97,96,000	79,20,000
1899-1900 to 1903-04	Bengal .	1,46,00,000	75,94,000	70,06,000
	Madras .	24,91,000	17,33,000	7,58,000
	Bombay .	25,67,000	19,42,000	6,25,000
	TOTAL .	1,96,58,000	1,12,69,000	83,89,000

The average revenue in Bengal and Madras increased 16 per cent. and 13 per cent., respectively; it decreased 16 per cent. in Bombay.

The average surplus increased 12 per cent. and 25 per cent. in Bengal and Madras, respectively, and decreased 41 per cent. in Bombay.

The revenues for the period 1899-1900 to 1903-04 were to some extent adversely affected by the famine from which many provinces suffered, and from the effects of which they are now recovering, but the figures given above seem to point to the fact that in two Presidencies increased expenditure has been followed by a larger yield and better financial results.

17. The following information regarding the Imperial Forest School will be of interest. The institution was opened in 1879 and the statistics given include the period up to the end of 1903-04 :— Forest Education.

- (i) The capital expenditure on purchase, extension, and up-keep of buildings amounted to R1,48,336. Recurring expenditure in salaries, allowances, instruments, apparatus, books, etc., to R11,27,565, while Local Governments, Colonies, and Native States expended R6,26,236 in salaries, stipends, and travelling allowances for their students.
- (ii) The number of students who passed out of the School was 673, of whom 418 are now in Government service, 135 in that of Native States, etc., while the whereabouts of 120 cannot be ascertained. It may be taken that 91 of these entered Government service and that 29 went to Native States.
- (iii) The average cost of education per head of passed students amounted therefore to R2,606 without taking into consideration the cost of buildings and sites which were acquired at a very cheap rate and probably represent a higher value than the cost incurred.
- (iv) The following statements show the sums charged to Provincial and States' budgets, and from them can be judged the local demand for trained foresters.

Expenditure charged to Provincial Budgets and Native States since the establishment of the Forest School to the end of 1903-04.

I.—BRITISH INDIA.

Province or Circle.	Total expenditure to 30th June 1904.
	R
Bengal	38,921
Assam	27,218
The United Provinces	65,127
The Punjab	54,451
The Central Provinces	98,115
Berar	12,285
Coorg	3,366
Burma	46,893
Madras	1,55,182
Bombay	2,605
Ajmer	664
TOTAL	5,04,827

		Total expenditure to 30th June 1904. R
Province or Circle.	I.—British India—Brought forward	5,04,827
II.—COLONIES AND NATIVE STATES.		
	Ceylon	20,251
	Federated Malay States	182
	Siam	20,230
	Mysore	17,497
	Baroda	3,984
	Jaipur	6,811
	Patiala	4,677
	Rewah	3,107
	Alwar	925
	Partabgarh	1,599
	Sirmur	776
	Jubal	729
	Bahawalpur	800
	Kohlapur	1,664
	Hyderabad	10,889
	Travancore	4,746
	Jodhpur	3,807
	Kashmir	8,712
	Tehri	878
	Cochin	5,087
	Kotah	717
	Malkopur	1,172
	Mourbhanj	903
	Barwani	416
	Bharatpur	423
	Mandi	427
	TOTAL	1,21,409
	GRAND TOTAL	6,26,236

The average cost per student to Provincial Governments amounted to R291 and to Colonies and Native States to R740, while the Government of India paid R1,675 per head in free education.

A consideration of these figures may lead to the conclusion that a system of education whereby the whole-time services of a highly-trained and expensive staff is devoted to the education of forest subordinates may, as a commencement, have been necessary, but that its continuance at this period of forest administration in India is unnecessarily expensive, and that the cost of forest education to the Government of India might be very considerably reduced by utilizing the services of the principal professors in research for the benefit of the Department, while entrusting the routine work of instruction to officers of special attainments in the Provincial Service, of whom many are now available.

18. Up to the year 1902 the training of candidates for the Provincial and Subordinate Forest Services of the Bombay Presidency had been carried out at the College of Science, Poona. In that year, however, after a careful consideration of the question it was decided that the Imperial Forest School, Dehra Dun, should in future be utilized for the training of candidates for the Upper Subordinate Service of the Bombay Forest Department, and thus, with the exception of Burma, this institution now provides a higher forest education for the whole of the Indian Empire.

Bombay
Forest
students at
Dehra.

19. Although the Imperial Forest School at Dehra Dun is open to students from all parts of India, serious drawbacks attended the deputation of Burma and Karen subordinates, and as it was highly desirable that the subordinate executive staff in Burma should receive some regular and scientific training, it was decided with the sanction of the Secretary of State that a Forest School should be established in that Province. Accordingly in 1899 a school was opened at Tharrawaddy to provide for the training annually of eight subordinates, the course was fixed at 18 months and one Instructor was provided. Experience soon showed that considerable modifications were desirable. In 1901 it was decided to enlarge the scope of the school; an Assistant Instructor was added; the course of training was lengthened to 24 months and provision was made for an increase in the number of students from 8 to 12. In 1903 the number of annual admissions was again increased to 20 to provide for the more rapid training of Forest subordinates; and in order to attract a better class of students it was arranged that specially selected students should be eligible for promotion from the Subordinate to the Provincial Forest Service. Up to the close of the year 15 students had passed out of the school, 11 with Higher and 4 with Lower Standard Certificates. The expenditure on school buildings, quarters for Instructors and students, and Museum has amounted to Rs41,000.

20. Up to the year 1901 little had been done in regard to the investigation of the damage caused to the State forests by injurious insects. The appointment of Mr. E. P. Stebbing, F.L.S., F.Z.S., F.E.S., an officer of the Imperial Forest Service, as Forest Entomologist in January of that year, inaugurated a much needed reform in this direction, and valuable information has since been obtained as the outcome of his work in this important branch of Forest science. The life histories of a number of destructive insect pests have been carefully studied, and with the knowledge so obtained the Forest Officer is placed in a more favourable position to combat their attacks. Among the more important pests that have been studied during the period under review may be mentioned:—

Phycita abietella and *Euzophera cedrella* insects infesting deodar. The cricket *Brachytrupes achætinus* which attacks rubber trees, etc. *Cyrtotrachelus longipes*, a pest attacking bamboos. *Hyblæa puera* and *Pyrausta machæralis*, two teak defoliators. A considerable amount of research work was done in connection with bark-boring pests infesting the deodar, blue pine, silver fir, spruce, Chilgoza pine, and *Pinus longifolia*. It was found that two species of *Scolytus* attacked the stems of Deodar trees, another girdled the branches of saplings and older trees, whilst species of the genera *Tomicus* and *Polygraphus* infested the blue pine and spruce. Other species of beetles were found to attack the other conifers mentioned above. The investigations into the life histories of these bark-borers are of the first importance; a severe visitation of these pests in our valuable coniferous forests would cause an incalculable amount of damage. Observations were also made upon some pests infesting the oaks, *Quercus semecarpifolia*, *dilatata* and *incana*, a number of defoliating caterpillars, some leaf-rolling weevils (*Apodorus*) and some cone-eating hymenopterous insects being studied. The life-history of a large *Sirex* infesting the wood of the spruce was also worked out, as also that of *Monophlebus Stebbingii*, the scale insects of sal. Some investigations were made regarding the insects which attack sandalwood and mahogany. A very large number of other pests were investigated and several important papers and notes

have been published including two numbers of "Departmental notes on Insects that affect Forestry"; a note on the sandalwood boring pests of Madras: Economic Entomology; a note on the preservation of bamboos from the attacks of the bamboo beetle or shot-borer; and a variety of other papers on injurious insects.

Board of
Scientific
Advice.

21. In order to provide as far as possible for the co-ordination of scientific enquiry, which the development of the machinery of the various scientific departments had rendered essential, the Government of India in 1902 constituted a Board of Scientific Advice comprising the heads of the Meteorological, Geological, Botanical, Forest, Survey, Agricultural and Veterinary Departments, together with such other scientific authorities as might from time to time be invited by the Government of India to serve upon it.

Sub-Committees were formed to deal with the investigation of special subjects in the various departments, and Sub-Committee D, of which the Inspector General of Forests is Chairman, undertakes enquiry into questions relating to forest products. Since the constitution of the Board the following products have received special attention by Sub-Committee D:—Cassava, Resin, Turpentine, Plantain fibre and Rubber, much research having been devoted to the collection and analysis of the latices of various plants. Enquiry also was made regarding the utilization in the form of wood pulp for paper making, etc., of bamboos and soft wooded trees for which at present there is little demand, and the services of an expert have been requisitioned to carry out practical experiments in Burma and elsewhere. Numerous botanical specimens, and specimens of timbers have been collected for the use of various institutions in India and abroad, whilst investigation into the profitable manufacture of tannin extracts have steadily proceeded.

CHAPTER I.

CONSTITUTION OF STATE FORESTS.

1.—ALTERATION IN AREA.

[Vide Appendices I and II.]

The alterations in forest areas during 1903-04 were as regards reserved and leased forests not so important as in the preceding year though considerable progress was made in reservation. At the commencement of the year there were 90,051 square miles of reserved and 699 square miles of leased forests in charge of the Department; and at its close these figures had risen to 90,658 square miles and 909 square miles, respectively, the net increase of 817 square miles being brought about by the addition of 2,781 square miles and the exclusion of 1,964 square miles. As usual these alterations were due not only to afforestation and deforestation but also to the adoption of more accurate figures in calculation and in some cases to reclassification of forest areas.

2. The alterations during the year of the several provincial forest areas were approximately as follows:—

(i) Reserved Forests.

In *Bengal* there was a total increase of 53 square miles, additions amounting to 74 square miles and exclusions to 21 square miles.

The *United Provinces* show a decrease of 23 square miles although 33 square miles were added to reserves. A portion of this loss of area is however merely nominal being due to an exchange uncompleted during the year.

The *Punjab* forest area increased by 162 square miles. Some 215 square miles were added to reserves as a result of improved compilation and classification. Considerable areas were deforested for the purpose of colonization.

In *Burma* reservation did not proceed with accustomed vigour. The nominal increase to reserves amounted only to 445 square miles, but of this a considerable portion was referable to recomputation, and exclusions due to the same cause reduced the results of the year's working to a net increase of 331 square miles.

The *Central Provinces* show an increase of 1,513 square miles and a decrease of 1,681 square miles. The classification of forest areas in the Provinces is undergoing constant changes but the result will for some time continue to be a reduction in the area of reserves until these are permanently constituted.

Assam, Coorg and Baluchistan show increases of 20, 168 and 5 square miles, respectively, while the area of forests in the *Andamans* remained unchanged.

Madras and Bombay record an increase of 266 and 23 square miles, respectively.

(ii) Protected forests.

During the year the area of protected forests increased from 9,519 square miles to 9,865 square miles or by 346 square miles.

In *Bengal* 71 square miles were added as a result of the adoption of Land Settlement figures in the *Puri Division*.

In the *Punjab* the area was decreased by 13 square miles made over to the *Irrigation Department*.

In *Bombay* additions and exclusions accounted for a net increase of 287 square miles.

(iii) Unclassed State Forests and Public Forest Lands.

There was an increase of 14,714 square miles under these classes of forests, of which 15,189 were due to changes in *Burma* where, however, it appears

probable that there was no real increase to the responsibilities of the Department, more correct computations having been introduced. In other Provinces minor alterations led to a reduction of 475 square miles.

3. The total areas compared by classes are as follows :—

	1902-03.	1903-04	Difference.
Reserved Forests	90,051	90,658	607
Leased „	699	909	210
Protected „	9,519	9,865	346
Unclassed Forests and Public Forest Lands.	116,555	131,269	14,714
	216,824	232,701	15,877

showing that the area over which the Department was placed in a position to exercise technical control and supervision increased by 1,163 square miles.

2.—FOREST SETTLEMENTS.

[Vide Appendix III.]

4. During the year areas amounting to 962 square miles were finally settled and 1,519 square miles (of which 1,185 square miles were in Burma) were taken in hand, as compared with 1,711 square miles and 1,103 square miles, respectively, in the preceding year. Of the areas finally settled 309 square miles were in Burma, 254 square miles in Madras, 169 square miles in Coorg, and 116 square miles in Bombay; areas in other provinces made up the balance of 114 square miles. At the close of the year a total area of 3,179 square miles was undergoing settlement as compared with 2,363 square miles in the preceding year.

5. The total area of reserved and protected forests that have been finally settled now amounts to 96,466 square miles. It is impossible to state the actual cost of settlement work from data available in the Provincial Reports. Apparently some R72,000 were spent during the year, inclusive of payments as compensation for land and rights; in Burma over R17,000 were paid on this account. In some provinces no special expenditure was incurred, the work being carried out by the revenue officials on the district staff.

3.—DEMARCATION.

[Vide Appendix IV.]

6. The consideration of the demarcation of the forests of India is of importance only as regards reserved, leased and protected forests over which the Department exercises professional supervision, for in by far the larger proportion of unclassified forests and public forest land under the management of the Department there can at this time be no question of effective demarcation. It has been shown (in paragraph 3) that the increase in area of reserved, leased and protected forests amounted during the year to 1,163 square miles and during the same period the total length of boundaries increased by 8,890 miles to 161,846 miles. Of this total some 10 per cent consisted of natural boundaries and of the remainder 24,222 miles remained undemarcated at the close of the year. In the Bengal Presidency the Punjab is most in arrears with 3,852 miles of boundary undemarcated; Burma has still 706 miles to complete;

the other Provinces have their demarcation work approaching completion or actually complete. In Madras 1,722 miles are still awaiting demarcation, and in Bombay 17,521 miles are recorded as being in the same condition. Attention was invited in the Review of last year to this important work, but during the year under review as compared with the preceding year less expenditure was incurred on new work and less work was done, though at a higher average cost. The cost of repairs and upkeep increased during the year by some ₹15,000, although about the same length of boundary as in the previous year was operated on, and these statistics would seem to show that greater energy in extension of demarcation work and greater care in supervision of expenditure thereon would be followed by more favourable results.

4.—FOREST SURVEYS.

[Vide Appendices V and VI.]

7. An important change in regard to the control of Forest Surveys was made during the year by the arrangement that the Forest Surveys in Madras and Bombay should come under the supervision and professional control of the Superintendent of Forest Surveys. On the 1st April 1904 all Forest Surveys were amalgamated and formed into a branch of the Survey of India under uniform rules and conditions.

8. Four Survey parties were employed during the year on Forest Surveys—one in Bombay, one in Madras, and two detachments in Burma. Three thousand two hundred and two square miles of forest were surveyed on the 4-inch scale and 158 square miles on the 8-inch scale, or a total of 3,360 square miles distributed as follows:—

Seven hundred and thirty-four square miles in Bombay, 801 square miles in Madras, and 1,825 square miles in the Bengal Presidency.

9. The total cost of surveys was ₹4,95,401 as against ₹4,92,977 in the preceding year, for an outturn of 3,816 square miles.

The cost rates of the surveys varied considerably in different provinces, the lowest rate per square mile for the four-inch detail survey being ₹25 in the Punjab and the highest ₹118 in Burma. The 8-inch survey in Bombay cost ₹139 per square mile. Easily accessible forests have mostly been surveyed and work is now extending into more remote tracts where labour and transport difficulties increase; in consequence the tendency in future will be for the cost rate to increase whilst the outturn will probably be less. Up to the end of the year under review about 63,000 square miles of forests have been surveyed leaving some 40,000 square miles for which large scale maps are not available. Much of this balance however consists of forests the value and nature of the working of which will probably not justify for many years the expenditure on special surveys.

10. Good progress was made during the year in the preparation and publication of maps; 404 sheets were published including 4 working-plan and 10 other special small scale maps, and a map on the scale of 1-inch=43 miles showing the distribution of Government forest lands and progress of surveys and working plans, which together with a series of stock maps showing the distribution of the more valuable timber trees and the rainfall formed part of the forest exhibit at the St. Louis Exhibition.

11. Details of the surveys carried out in the various Provinces will be found in the following paragraphs:—

Bengal.—A strong detachment was employed in the Tista Division and completed the 4-inch surveys of forests in the Darjeeling district. The survey of the protected forests in Singhbhum was also completed during the year. Three hundred and ten square miles were surveyed on the 4-inch scale in these divisions. In addition to these surveys four surveyors were placed at the disposal of the Divisional Forest Officer for the purpose of demarcating the boundaries of mica mine leases in Koderma, and preliminary triangulation was carried out in Angul in preparation for the 4-inch detail survey which is proposed for 1904-05. Fifteen maps were published during the year. The expenditure on forest surveys for the year amounted to ₹26,010, of which ₹18,571 are debitable to the Forest Department.

Assam.—The survey of the Garo Hills, Kamrup and Nowgong forest reserves was continued. The progress, though still slow owing to the nature of the country, its unhealthiness, and labour difficulties, was better than for the previous year and the cost rates were generally less. In addition to traversing and triangulation an area of 160 square miles was surveyed on the 4-inch scale. The expenditure on survey work was ₹30,955 of which ₹21,668 are debitable to the Forest Department.

United Provinces.—The only surveys carried out during the year were a 4-inch detail survey of 36 square miles in the Naini Tal and Ganges Divisions and the traverse survey of 2 miles in Kheri in connection with the Nepal-Kheri boundary. The expenditure on surveys was ₹2,129, of which ₹1,737 are debitable to the Forest Department. The republication of the Kumaun-Garhwal series of forest maps is in progress.

Punjab.—Two hundred and nine square miles were surveyed in the Lahore and Jhelum Divisions. The expenditure was ₹7,517 which includes the mapping and publishing charges for 33 sheets published during the year. Of this amount ₹5,045 are debitable to the Forest Department.

North-West Frontier Province.—The only survey work done during the year was the preliminary triangulation for the 4-inch detail survey of the Khanpur and Dungagalli Ranges which is proposed for 1904-1905. The expenditure on this work was ₹2,745, of which ₹1,921 are debitable to the Forest Department.

Burma.—In addition to triangulation and traversing, 1,108 square miles were topographically surveyed on the 4-inch scale in the Mandalay, Ruby Mines and Yaw Divisions in the Southern Circle, in Kathá, Myittha and the Upper and Lower Chindwin Divisions in the Northern Circle, and in Thayetmyo in the Pegu Circle. The expenditure on these surveys was ₹2,05,177, of which ₹1,43,625 are debitable to the Forest Department. The cost rates as usual varied considerably according to the local conditions. Fifty-six maps were published during the year.

Central Provinces.—With the exception of the Berar Circle surveys are completed in all Divisions. Seventy-seven maps were published during the year, but nearly 100 still remain. The expenditure on surveys was ₹6,614, of which ₹4,629 are debitable to the Forest Department, chiefly on account of mapping and publishing charges, but also including the cost of a survey of 2½ miles in the Hoshangabad Division.

In Coorg, Ajmer-Merwara, Baluchistan and the Andamans no surveys are reported.

Madras.—An area of 801 square miles was topographically surveyed on the 4-inch scale in Godavari, Kurnool and Kistna in the Northern Circle and in South Canara, and North Coimbatore in the Southern Circle. The total expenditure on forest surveys was ₹1,07,701. The cost rates owing to the increased difficulties of the area under survey and to a very unhealthy season were high. Eighty-three maps were published during the year.

Bombay.—Seven hundred and thirty-four square miles were topographically surveyed, of which 576 were on the 4-inch scale in Khandesh and Satara, and 158 on the 8-inch scale in Thana and Nasik. The total expenditure on forest surveys was ₹71,193 of which ₹49,835 are debitable to the Forest Department. The cost rates remain practically the same as for last year. One hundred and thirteen maps were published during the year.

CHAPTER II.

MANAGEMENT OF STATE FORESTS.

1.—REGULATION OF MANAGEMENT.

Working Plans.[*Vide* Appendices VII, VIII, and IX.]

12. In the Bengal Presidency working-plans for areas amounting to 1,131 square miles were sanctioned during the year. The most important additions to forests under regulated working were in Burma where 743 square miles were brought under working-plans. In the Central Provinces, in consequence of changes in classification of areas, and also of want of demand, working-plans for areas aggregating 2,193 square miles were abandoned. Working-plans for some 8,820 square miles in the Bengal Presidency were in course of compilation at the close of the year.

In the Madras Presidency working-plans for 1,072 square miles were sanctioned, plans for 3,789 square miles remaining in course of preparation at the close of the year.

In the Bombay Presidency plans for 698 square miles were sanctioned, whilst plans for 2,378 square miles remained in course of compilation.

13. The total area under Working-plans are now as follows :—

	At commencement of year.	Added during year,	TOTAL.
Bengal	23,276	1,131	24,407
Madras	4,031	1,072	5,103
Bombay	3,472	698	4,170
TOTAL	30,779	2,901	33,680

Although a total area of 147,898 square miles is shewn as that for which working-plans have still to be taken in hand it is unlikely that for many years to come it will be desirable to compile plans for the greater portion of this area which includes large tracts of unclassed State forests whose produce is as yet not sufficiently in demand to justify the detailed regulation of the yield. The necessity for the abandonment of working-plans for large areas in the Central Provinces is mainly due to the preparation of these plans being undertaken before there existed a reasonable hope that their prescriptions could be carried out and it is unlikely that this mistake will be repeated.

14. The following paragraphs show the progress made during the year in the preparation of working-plans in the various provinces :—

Bengal.—The working-plan for the Puri reserved forests (110 square miles) was sanctioned during the year, while progress was made in the preparation of Working-plans for the forests of Singbhum (725 square miles), Kurseong (107 square miles) and Buxa (308 square miles). The revision of the existing Working plan for the Sundarbans Forest Division (3,839 square miles) was undertaken during the year. The Working-plans of the Darjeeling Jalpaiguri and Tista forests were also undergoing revision during the year. The preparation of the Working-plan for the Palamau reserved forests (183 square miles) which was undertaken during the year, has been deferred pending the completion of the Forest Survey.

United Provinces.—The existing Working-plan for the Dehra Dun forests (278 square miles) was revised during the year though not actually sanctioned till 1904-05; the revision

of the existing Plans for the Lansdowne Reserve (18 square miles), Naini Tal Municipal forests (2 square miles), Naini Tal Cantonment forests (about 1 square mile) and the Tehri-Garhwal leased deodar forests (73 square miles) was undertaken during the year.

Punjab.—No new working-plans were sanctioned during the year but the Working-plans for the Kōtkhai-Kōfguru forests (13 square miles) and the Shahdera-cum-Jugian Plantation (3 square miles) came under revision and were sanctioned during the year. Working-plans for the Jubal, Bilaspur, Theog and Mailog forests of the Simla Hill States were also sanctioned, but these Plans will not be controlled by the Forest Department. Progress was made in the revision of the existing Working-plan for the Bashahr leased forests and the compilation of Working-plans for the Kangra and Pabar Valley forests.

Burma.—Working-plans for the Pyukun and Pyuchaung (449 square miles), Sinthé (106 square miles), Taungnyo (106·5 square miles) and Pozaungdaung (81·5 square miles) Reserves were sanctioned during the year; progress was made in the compilation of Working-plans for the forests of the Rangoon Division (272 square miles), South Zamayi Reserve (244 square miles), Yoma Reserve (570 square miles), Thaungwin Reserve (240 square miles), Mehaw and Ziyaing Reserves (39 square miles) and Nahan Reserve (248 square miles) while the preparation of Working-plans for the Satpok, Sitkwin and Thindawyo Reserves (20 square miles), Kindat, Kampat, Tatkon, Yu (part), Matu Bon and Wayé Reserves (539 square miles) and Thaungdwingyi Reserves (397 square miles) and Nahan* forests (243 square miles) was undertaken during the year. The preparation of the Working-plan for the Ela Reserve has been postponed as being unnecessary at present.

Central Provinces.—No new working-plans were sanctioned during the year. The revision of the existing Working-plan for the East Pench Range (225 square miles) was undertaken while progress was made in the compilation of a Working-plan for the Sambalpur Range forests and the collection of data for Plans in Amraoti, Buldana and Ellichpur Divisions. The preparation of the Working-plans for the Saugor (734 square miles), Motinala (206 square miles) and Banjar Valley (219 square miles) forests was undertaken during the year.

Assam.—No new plans were sanctioned during the year. Progress was made in the revision of the Goalpara Working-plan (522 square miles), while the preparation of a Working-plan for the Nambor Reserve (387 square miles) was undertaken during the year.

Coorg.—No work was done during the year. The preparation of the Working-Plan for the Janikal forests was postponed owing to the shortness of establishment. The continuance of the Spike disease has led to the suspension of the Working-plan for the Sandalwood area.

North-West Frontier.—Progress was made in the preparation of the Working-plan for the Dungagalli forests while the compilation of Working-plans for the Siran Range (32 square miles) and Khanpur forests (50 square miles) was undertaken during the year.

Ajmer-Merwara.—Some progress was made in the revision of the existing Plan of the Province.

Madras.—Working-plans for 1,072 square miles were sanctioned during the year while the preparation of working-plans for 1,770 square miles was undertaken. An area of some 5,103 square miles is now controlled by sanctioned working-plans.

Bombay.—Working-plans were sanctioned for 698 square miles during the year, while the preparation of Working-plans for 759 square miles was undertaken. The total area for which Working-plans are now in force is 4,170 square miles.

2.—COMMUNICATIONS AND BUILDINGS.

[*Vide Appendix X*]

(a) Roads and Bridges.

15. Good progress was made during the year on the important work of constructing and maintaining communications. Rupees 1,70,619 were spent on new works and R1,13,594 on repairs during the year as compared with R1,03,990 and R91,601 in the preceding year.

16. In the Bengal Presidency Burma shows an outlay of over R56,000 of which R37,000 were expended on the construction of a railway siding and suspension bridge in the Rangoon Timber Depôt. In the Northern Circle of

*A revised Preliminary Report for Working-plans for these forests was received during the year.

that Province 226 miles of inspection path were made at a cost of about R11,000. Much work of this description remains to be done in Burma, but progress is limited by the amount of supervision available and in some cases by the want of suitable labour. It is true that contract lessees at times find it profitable to construct and maintain forest communications and it is noted as an example that in the Taungdwingyi forests in the Southern Circle the Bombay-Burma Trading Corporation opened out 9 miles of road and introduced steam traction at a cost of nearly $\frac{1}{2}$ a lakh of rupees. But such an outlay can only be profitable when long leases of rich forest areas are granted; for the opening up of the greater portion of the forest the Department must itself remain responsible. In the Andamans nearly R28,000 were spent on the construction of tramways.

17. Madras expended R17,800 on roads, principally in the Southern Circle, on the conversion of a bridle path into a cart track in North Coimbatore, and the construction of bridle paths and roads in Madura. The expenditure in Bombay amounted to R21,000, the most important work being the construction of a metalled road, 15 miles in length, leading to the Tawargatti Timber Depot and costing R11,000. The importance of the proper upkeep of permanent export and inspection roads received in most provinces due consideration. In the United Provinces and the Central Provinces the expenditure under this item was larger than that on new works. In the former good roads have been aligned, in the latter existing cart tracks often only require improvement to render them serviceable for export purposes. The Madras expenditure under repairs also exceeds the cost of original works and in Bombay amounts to two-thirds thereof.

(b) BUILDINGS.

18. With regard to buildings progress continued on the whole to be satisfactory, the total expenditure amounting to about R3 $\frac{1}{2}$ lakhs as compared with 3 $\frac{1}{4}$ lakhs in the preceding year. In the Bengal Presidency, Bengal and Burma show the greatest activity in new works with an expenditure in each case of over R40,000, the Central Provinces and the United Provinces coming next on the list. The Assam expenditure of R4,373 would appear to be insignificant compared with the requirements of the provincial forests. The expenditure on new works in Bombay amounted to R37,000. The repairs of forest buildings throughout India cost R1,18,739, an almost identical sum to that expended in the previous year. Much still remains to be done in many Provinces in regard to the provision of suitable accommodation for subordinates especially in Bengal where several divisions are said to be lacking in this respect.

(c) MISCELLANEOUS WORKS.

19. Under Miscellaneous Works, which include such works as construction and maintenance of wells, tanks and bunds and clearing of obstructions from streams, R52,071 were spent as compared with R48,851 in the previous year.

3. PROTECTION OF FORESTS.

(a) GENERAL PROTECTION.

[Vide Appendices XI and XII.]

20. Throughout India 10,928 cases were decided by the courts and 40,709 cases compounded during the year as compared with 11,022 and 36,890 cases, respectively, in the preceding year, or a total of 51,637 cases decided as against

47,912 in 1902-03. The proportion of convictions to the total number of cases decided by the Courts rose from 86.9 in 1902-03 to 88.4 in the year under review.

In 7,410 cases the offenders remained undetected as compared with 6,470 in the preceding year, and as usual the greater proportion of these cases were in connection with injury to forests by fire. Bombay again heads the list with 2,793 such cases, the remaining 1,287 occurring in other provinces. Speaking generally, there was a marked increase in the number of breaches of forest rules in Bombay, the total of all classes of offences being 19,462 cases as compared with 13,134 in the preceding year. This increase is attributed to a new system of registering offences, and to an increase in the numbers and activity of the staff. It occurred principally under cases of unauthorized grazing the number of these cases during the year under review being 8,114 as compared with 3,395 in 1902-03.

In Madras the number of cases diminished from 23,125 to 21,883 the decrease being mainly under grazing offences. There was however an unsatisfactory increase in the number of undetected offences under the heads of unauthorized removals of forest produce and injury by fire.

In Burma there was on the whole an increase in forest crime but the total number of fire cases decreased from 129 in 1902-03 to 65 in the year under review. The number of offences of this description was, considering the large area under protection, remarkably low.

21. It has been shown that the number of compounded cases increased during the year by nearly 4,000 and it appears possible that this method may have been in some Circles too largely employed. It is noticed that in Bengal orders were issued making it more generally obligatory to resort to the magisterial Courts, while in the Central Provinces it was considered desirable that the Courts should be more freely resorted to especially when persistent offenders have to be dealt with or where there is a notorious disregard of forest regulations. In 234 instances of injury by fire in the Bengal Presidency compensation was accepted and of these no less than 198 occurred in the Central Provinces and Berar, the highest number in any other provinces being 15 in the Punjab. The compounding of this kind of offences should, it is thought, be rarely permitted.

22. The following statement shows the forest offences of 1903-04 compared with the average number of offences of 3 preceding years for all India :—

	Average 1900-01—1902-03.	In 1903-04.
Injury by fire	3,993	4,977
Unauthorized felling or removal of forest produce	29,130	30,276
Grazing without permission	17,782	21,230
Other offences	3,420	4,006
TOTAL	<u>54,325</u>	<u>60,489</u>

(b) PROTECTION FROM FIRE.

[Vide Statement below and Appendix XIII.]

23. The total forest area under systematic fire protection was 38,002 square miles as compared with 36,651 square miles in the preceding year; notwithstanding the increased area attempted only 2,995 square miles were burnt over as compared with 3,907 square miles in 1902-03.

The following statement shows the results of protection during the year under review and during the preceding five years :—

PROVINCE.	AREA IN SQUARE MILES.		Proportion of forests under fire protection to total area of reserves.	PERCENTAGE OF FAILURE TO AREA ATTEMPTED TO BE PROTECTED.	
	Attempted.	Protected.		Average of past five years to 1903.	1903-04.
Bengal	2,189	2,060	36	3.9	5.0
United Provinces	3,211	3,196	79	2.6	.5
Punjab	862	854	35	2.3	.9
Burma	8,151	7,642	41	13.9	6.0
Central Provinces including Berar.	*7,104	6,872	31	3.3	3.7
Assam	†996	991	26	3.1	0.5
Coorg	208	205	51	6.7	1.4
North-West Frontier Province .	76	71	32	9.3	6.6
Ajmer	142	142	‡100	2.2	...
Total of Provinces outside Madras and Bombay.	22,919	22,033	38	6.4	3.8
Madras	5,642	5,104	31	4.8	9.5
Bombay	9,441	7,870	70	12.8	16.4
GRAND TOTAL, 1903-04	38,002	35,007	42	7.8	7.8
„ „ 1902-03	36,651	32,744	40	7.5	10.7

* Excludes 3,132 square miles of partially protected areas.

† Excludes 196 square miles of partially protected areas.

‡ An area of 132 acres was not protected out of 90,792 acres attempted.

24. The most marked success occurred in Burma where the percentage of failure fell from 23.2 in 1902-03 to 6.0 during the year under review. This satisfactory result though due in a great measure to a favourable season, may perhaps to some extent also be referable to improved systems of fire-protection recently introduced. In the United Provinces the results were also very satisfactory, only .5 of the area attempted being burnt as compared with 3.7 in 1902-03. In Bombay the efforts to protect the forests from fire were, save in the Northern Circle, not very successful, the percentage of failure was higher than in the preceding year and stands at over 16.4 per cent. against 3.8 per cent., the average for the forests of the Bengal Presidency.

25. The difficulty of effective supervision over large or scattered areas, the scarcity of labour, the indifference or antagonism of the neighbouring population, the carelessness or inefficiency of the forest staff, are all conditions of common occurrence with which the forest officer has to contend, and when these are accompanied by unseasonable climatic influences his task becomes almost hopeless. The continued success of the measures taken to ensure protection from fire in many provinces is proof of the good work that has been accomplished in combatting local difficulties, and when the season is favourable, as was the case in the year under review, the results obtained are as a whole eminently satisfactory.

26. The origin of the forest fires is detailed in Appendix XIII. It is satisfactory to see that the number of fires attributed to intention or malice decreased from 742 in 1902-03 to 553 in the year under review.

(c) PROTECTION FROM CATTLE.

[*Vide* Appendices XIV and XV.]

27. Out of a total area of 232,701 square miles of Reserved, Protected and Unclassed forests only 37,671 square miles or 16 per cent. were totally closed to grazing, thus no less than 195,030 square miles were available for grazing though to 23,859 square miles of this area browsers were not admitted. Upwards of thirteen millions of animals including buffaloes, bullocks, cows, sheep, goats and camels grazed in the State forests during the year. Of this number over 2½ millions were allowed to graze free and upwards of 2 millions at privileged rates.

The number of cattle impounded for illicit grazing showed a satisfactory decrease over the average for the three previous years, notably in Madras where only 292,196 cattle were impounded as compared with the previous three years' average of 428,410. The great danger to which the forests are exposed by browsers in this Province has necessitated considerable limitations of the number of animals admitted to the State forests, but yet the number of goats and sheep browsing during the year amounted to 1½ million head as compared with 2½ millions for the whole of the Bengal Presidency. In Bengal the number of cattle impounded suddenly decreased from the previous three years' average of 3,656 to 1,027, but there seems to be no certainty that this was due to a decrease in illicit grazing; it might be equally referable to the slackness of the executive forest staff.

(d) PROTECTION AGAINST INJURIES FROM NATURAL CAUSES.

28. Among the more important injuries from natural causes to which the forests are liable may be mentioned climbers, insects, parasites, frost, drought, etc.

In the Tarai forests of *Bengal* and *Assam*, climbers often hinder reproduction and are also destructive to the young growth; repeated cutting back at regular intervals appears to be the only method by which it is possible to keep their too luxuriant growth under control. During the year under review such operations extended over about 50,000 acres of high forest in Bengal, and 9,527 acres in Assam were freed from these pests. In both these provinces wild elephants cause some damage to the growing stock.

In the *United Provinces*, climbers were cut over 123,000. Less damage was reported than in previous years from insect attacks.

In *Burma* considerable progress was made in climber cutting and in the removal of trees attacked by *epiphytes*. Some damage was done by defoliators and by the "bee-hole borer" both in natural forests and in plantations.

In the *Central Provinces*, frost is one of the chief causes of injury to the young stock and the effect of the great drought which culminated in 1900 is still felt. Following on abnormal conditions there was a plague of rats in *Ellichpur* which caused some damage to bamboos, while pigs, squirrels and antelope injured the babul forests in many places. Swarms of locusts also invaded the greater portion of the forests of the Berar Circle, but fortunately confined their depredations chiefly to grass and the less valuable timber trees, teak being but little affected.

In *Coorg*, the spike disease still continues to cause mortality amongst sandal trees. The spread of the epidemic is, however, apparently in some measure restricted by the preventive measures adopted of uprooting and destroying diseased trees. Considering the great value of these forests, it would seem desirable that measures for the special investigation of this disease should be arranged.

In *Madras*, climbers were cut in some of the felling areas and elsewhere by forest subordinates, but it appears doubtful whether such employment save in dry forests, the desultory

efforts of forest guards can have much effect in controlling the growth of climbers. Several insect and fungus pests caused damage principally to casuarina teak and mahogany.

In *Bombay*, swarms of locusts attacked and defoliated trees in all circles but Sindh and many teak seedlings were destroyed by the larvæ of a beetle in the Northern Circle. Systematic climber cutting does not appear to have received much attention in this Province.

29. Although the post of Forest Entomologist was not filled during the year, investigations and research in this important science were continued. The more special studies were in connection with the attacks by various insects on the casuarina trees of Madras, of which the most harmful is the caterpillar of the moth *Arbela tetraonis*. Other insects which cause damage to this species include the date-palm beetles, and larvæ of longicorn beetles.

Investigations with the object of preventing the attacks on bamboos of the 'shot-borer' beetle were successfully completed. It was proved that soaking first in water and then in Rangoon oil would preserve bamboos from the attacks of this borer for at least a year and probably for longer. Preliminary investigations were also made regarding the serious insect attack on the chilgoza tree (*Pinus Gerardiana*) in Zhob.

30. The Forest Entomologist, who was during a part of the year, employed as Superintendent of the Natural History Section of the Indian Museum, conducted these researches and was also responsible for the identification of various insects which caused damage to forest vegetation in various parts of India and for the issue of many useful monographs, among which may be mentioned Notes on the sandalwood boring pests of Madras, on the Life History of *Arbela tetraonis*, on the preservation of bamboos from the bamboo beetle or shot-borer, on the *Monophlebus* scale insect of the Kheri sâl forests and also on various insects which attack agricultural crops.

4.—SYLVICULTURE.

(a) NATURAL REPRODUCTION.

31. The majority of the Circle Reports of the year contain interesting information under this important heading. The subject of protection of areas under regeneration from men, cattle and fires has been treated under other sections and the success attained has been therein recorded, but though it is comparatively easy to afford such protection to limited areas which are under coppice treatment, or where the reproduction of a coniferous forest is attained by regular regeneration fellings, it is otherwise with the vast tracts of deciduous forests where the system of selection is necessarily and wisely in operation. In these tracts the forester may not rest content with the removal of mature stems of the more valuable species; he has to aid natural reproduction by the felling of inferior stems, by the cutting of climbers, by careful opening of the canopy, and in these operations he finds himself often hampered or prevented by the insufficiency of a supervising staff or the scarcity or unwillingness of local labour.

32. In the damp climates of eastern India the luxuriant vegetation, encouraged by protection from fire, places special difficulties in the way of the natural regeneration of sâl and teak and these difficulties have become, of late years, more and more apparent, proving that the success which in the drier localities accompanied the careful protection of the forest is not necessarily repeated under different conditions. Such protection in Northern and Central India has, in many places, resulted in an almost impenetrable growth of the

desired species, so that judicious thinning of the crop is all that is subsequently required, but in damper climates its effects are often to encourage the spread of an ever green forest or the too luxuriant growth of bamboo and climbers under whose shade the natural reproduction of teak and sal would be impossible without artificial aid skilfully and frequently applied. Interesting experiments in combating the disabilities locally resulting from continued protection from fire were continued in Burma and will, it is hoped, be instituted in Bengal. Meanwhile it is not evident from the Circle reports what sums have been expended in operations to aid natural regeneration though it is apparent that here and there such operations have been carried out. It may be that in some forests natural regeneration was rendered easier by operations directly intended to benefit the growing stock and it would be interesting to keep the statistics, separate for the future. For instance, from certain valuable teak forests, it is reported that reproduction is unsatisfactory by reason of excessive grazing and frequent firing and in parts on account of an excessive growth of bamboos while the insufficiency of the staff is proved by the fact that the selection of trees for felling has often been left to Forest Guards. Here are conditions totally inimical to satisfactory regeneration which require the immediate intervention of the skilled forester with a suitably strong staff at his disposal, for the longer these conditions are permitted to continue the more rapid will be the deterioration of the forest and the greater the difficulty and expense incurred in its reclamation.

(b) ARTIFICIAL REPRODUCTION.

[Vide Appendix XVI.]

33. The most important addition to the areas under regular plantations occurred in Bombay where 3,290 acres of plantation, mostly babul, were added during the year. In Burma 1,555 acres of teak and catch were planted up. The additions in other Provinces were nominal. The area of taungya plantations, of teak, catch, pyingado and padauk was increased in Burma by 3,527 acres.

34. In the Andamans 100 acres were sown with mangrove seed. An interesting experimental "taungya" plantation of padauk was made during the year under review and 100 acres were sown with padauk seed which having germinated well the plantation so far promises to be a success. The question of reproduction of this valuable species is of importance, as its natural reproduction is in the South Island remarkably scarce, the present condition of the forest not being favourable, while the steps taken hitherto to replace it by cultural operations have not met with much success. The continued removal of the too luxuriant undergrowth opening out of the canopy, and hoeing up the soil where necessary, might possibly conduce to successful results, but the expense of these operations and the difficulty of the labour supply justify the attempt that is now being made to create padauk plantations on the system which has at times proved so effective in Burma.

35. Excluding the Mergui rubber plantation, which is still considered to be in the experimental stage, the area of plantations throughout India at the close of the year under review was as follows:—

	Acres.
Regular plantations	62,537
'Taungyas'	69,562

The expenditure incurred on plantation during the year was R1,28,974, of which R69,055 were spent in Burma, R32,359 in Madras and R11,194 in Bombay.

36. Cultural operations, chiefly comprising the filling up of blanks in natural forests by transplants and dibbling in of seed, were carried out in most provinces. In Bengal upwards of a lakh of transplants were put out. Some 8,000 young walnuts were very successfully transplanted on the hill forests of the Darjeeling Division. Natural reproduction in the United Provinces is generally so abundant, that it is seldom necessary to resort to cultural operations. In the School Circle however some 75,000 deodar and a smaller number of silver fir and spruce were planted out while sâl, kail and oak seeds were dibbled in various forests. In the Punjab the operations consisted principally of sowing and planting deodar in blanks, but sâl and sissoo seed was also sown. In Burma sowings of teak, pine and catch were made with varying success.

Teak, babul, as well as the seed of other species, were sown in the Central Provinces, where also the bamboo sowings of 1901, which were believed to have been completely destroyed by rats, are now found to be yielding good results.

In Madras the seed of mangrove, teak, sissoo, babul and other species was sown and mixed sowings of *Anogeissus latifolia* and sâl were also made. In Bombay teak, blackwood and other species were planted out in the forests. In the Central Circle nearly 7 lakhs of seedlings of 6 species were raised in the Central nursery, but the utility of maintaining a central nursery to supply plants to distant divisions is considered doubtful. The attempts to replace natural regeneration of teak in the Kanara forests by dibbling in seeds and planting out young seedlings have been hitherto unsuccessful, apparently owing to ineffective supervision and want of system. Small teak nurseries are now being formed and with better supervision better results are hoped for.

The following table shows the amounts spent in the different provinces.

	R
Bengal	8,015
United Provinces	2,711
Punjab	6,551
Burma	8,499
Central Provinces	2,224
Assam . . . . .	...
Coorg	83
North-West Frontier Province	449
Ajmer	22
Baluchistan	12
Andamans . . . . .	...
Madras	7,596
Bombay	12,546
TOTAL	43,708

(c) OPERATIONS FOR THE IMPROVEMENT OF THE GROWING STOCK.

37. These important operations comprise weedings, thinnings, cleanings, girdlings and improvement fellings, carried out with the object of improving the growing stock in natural forests, and whilst not immediately remunerative—the produce being often unsaleable—their importance as affecting the

future yield can hardly be over-estimated. It is therefore satisfactory to learn from the Circle reports that much good work in this direction was done during the year.

In *Bengal* most of the felling areas were attended to, though the amount of weeding and cleaning is still considered insufficient. In the *United Provinces* the girdling of inferior species and those suppressing the growth of the more valuable species was continued in accordance with the prescriptions of working plans.

Similar operations were undertaken in the *Punjab*, the improvement of some forests in consequence of systematic climber cutting and fire protection being reported as very marked.

In *Burma* improvement fellings, and weedings of plantations were the most important of the works under this head, the paucity of supervising officers, however, prevented all prescriptions of working plans being complied with.

In the *Central Provinces* thinnings of babul, cutting back of unpromising growth and girdling of inferior species were undertaken for the benefit of the growing stock.

In *Assam*, with the exception of the removal of badly grown sal trees in certain areas, no special operations for the removal of unsaleable materials in thinnings, weedings, girdlings and improvement fellings were apparently made.

In *Madras*, thinnings of plantations and improvement fellings were continued, but not apparently on very extensive areas.

In some of the *Bombay* Forest Circles little seems to have been effected. It appears from the reports that no operations for the improvement of the growing stock were attempted in the Northern Circle; that in the Central Circle some weeding was done in babul felling areas; while in Sindh operations were restricted to the thinning of a few acres of plantation. In the Southern Circle, however, crooked and damaged teak saplings were cut back over an area of 12,449 acres. Similar operations in previous years combined with the girdling of inferior species are reported to have produced markedly good results. The Conservator writes: "There is great need of silvicultural operations for the improvement of the growing stock especially in Kanara, but under present conditions it is almost impossible to do anything on a large enough scale in consequence of press of other work, the difficulty of finding labour, and the want of properly trained men."

38. It is hoped that these difficulties, which are seemingly entirely due to the insufficiency of the staff, may, by degrees, be removed, not only in *Bombay*, but in other Provinces where they are equally or even more marked, for the expenditure in cultural operations is probably of the most remunerative character wherever forests of valuable species are under protection.

(d) EXPERIMENTS.

39. The results of experiments with *Hevea braziliensis* show that this species is unsuited to the climate of *Bengal*. Little success has hitherto attended the attempts to find new markets for minor forest products in this Province.

In the *United Provinces*, measurements to ascertain the rate of growth of some indigenous species were continued and sowings of exotics were made in various localities, some of which promise well.

In the *Punjab*, the unsuitability of the *Robinia* for afforestations of poor soils has been proved. The Spanish chestnut continues to thrive in Bashahr and Kulu and *Pinus Pinaster* and *Pinus Laricio* in Chamba.

In *Burma*, the most important experiments are those made with rubber yielding species in Mergui. The plantation now extends over an area of 1,749 acres. The species under observation are *Hevea braziliensis*, *Castilloa elastica*, *Funtumia elastica* and *Mimusops balata* (both from *Trinidad*) *Dichopsis Gutta*, *Willoughbeia firma* and *Ficus elastica*. The expenditure on this

plantation since its formation has been R1,06,622. Among other exotics in the Mergui experimental plantations are Liberian coffee, Cardamoms, Vanilla, and with these fair success is reported. In Upper Burma more satisfactory results are being obtained in growing *Ficus elastica*, but attempts to raise sandal wood, camphor, sissoo and eucalyptus from seed only met with partial success.

In the *Central Provinces* the tassar silk worm rearing experiments were continued in Betul, Bhandara and other forests. Experiments made in the propagation of the lac insect were generally successful. In the Berar Circle some interesting experimental thinnings were carried out, and the taungya method of plantation was attempted.

In *Madras* a considerable variety of exotics and other plants were experimented with, including 8 species of rubber, bamboos, dates, eucalyptus, mahogany, etc., etc.

In *Bombay* investigations comprised the collection of data as to the growth of seedlings of *Bombax malabaricum* under different conditions, the sowing of a few exotic species, and the stocking of blanks by means of an adaptation of combined forestry and field crops.

5.—EXPLOITATION.

(a) SYSTEM OF MANAGEMENT.

40. The varying conditions of the growth of forests and of the demand for their produce regulate throughout India the adoption of varying sylvicultural systems. Where the yield consists of timber of one or two of the many available species, the system of management is designed to control the exploitation of such trees as teak, sál and deodar by the prescription of selection fellings and such fellings must as a rule be accompanied by other operations with the object of aiding the principal species to maintain a preponderance in the forest. In other localities the demand for poles and fuel may absorb the whole of the forest outturn and here the system of coppice with standards is usually prescribed. Improvement fellings with the object of preparing the more backward forests for the introduction of a regular system of management are still largely required in many provinces. Speaking generally the prescriptions for exploitation under the different working plans in force were carried out in every province though absence of demand for the full yield led to reduced fellings in some cases.

(b) AGENCY OF EXPLOITATION.

(i) *Departmental Agency and (ii) Purchasers.*

[*Vide Appendix XVIII.*]

41. Whilst it is still necessary on some forests to resort to departmental agency for the removal of forest produce, the aim of the staff is rightly enough to encourage the sale of standing timber, whereby the supervision necessary to control fellings and extraction is obviously much reduced. This policy has already attained some success as, of an outturn of 57 million cubic feet of timber, only 10 million were removed by Government agency during the year under review, while purchasers removed 100 million cubic feet of fuel and 163 million bamboos, against 17 million cubic feet fuel and 1½ million bamboos extracted by departmental agency.

(iii) *Rights and Privileges.*

[Vide Appendix XVIII.]

42. As usual the demand of right holders for forest produce was large, the amounts being 4 million cubic feet timber, 53½ million cubic feet fuel, 13½ million bamboos and ₹11¼ lakhs minor produce including grass and grazing.

(iv) *Free grants.*

43. In all Provinces free grants of forest produce principally for works of public utility, such as bridges, monasteries, chapels, schools, village rest-houses, etc., and for re-building villages destroyed by fire or floods were made during the year. The value of these grants is not in all cases stated in the Circle reports: apparently the most important were made in Burma.

(c) *OUTTURN AND SOURCES OF FOREST PRODUCE.*

[Vide Appendix XVII.]

44. The following statement shows the total outturn of timber, fuel, bamboos and minor produce from all forests, reserved, protected and unclassed, under the control of the Forest Department:—

Presidency.		Timber and Fuel.	Bamboos.	Minor produce.
		Cubic feet.	No.	₹
Bengal	{ 1903-04	174,200,117	155,340,002	26,80,099
	{ 1902-03	181,345,643	232,851,296	27,27,405
Madras	{ 1903-04	20,404,621	37,025,554	12,66,664
	{ 1902-03	21,958,556	35,844,728	11,44,255
Bombay	{ 1903-04	38,311,607	5,646,517	5,32,353
	{ 1902-03	42,596,413	4,479,201	7,39,691
GRAND TOTAL	{ 1903-04	232,916,345	193,512,073	44,79,111
	{ 1902-03	245,900,612	323,175,225	46,11,351

On the whole there was a decrease in the outturn of timber and fuel of about 13,000,000 cubic feet.

The largest decrease was 10½ million cubic feet in the *Punjab*. This was due to less fuel being extracted owing to contracted departmental operations and to reduced estimates under fuel of right-holders.

There was a net decrease in *Bombay* of about 4½ million cubic feet principally due to less fuel being removed by right-holders.

In the province of *Bengal* the outturn decreased by nearly 3½ million cubic feet. This result was mainly owing to the removal of less sundri wood from the Sundarbans under more carefully regulated working.

Madras yielded a decreased outturn of 1½ million cubic feet in consequence of less timber and fuel being removed by purchasers.

The outturn from *Burma* increased by some 7 million cubic feet mostly in the Pegu Circle. The Southern Circle showed an increase in the outturn of timber of 1½ million cubic feet but extractions of fuel decreased by 2 million cubic feet.

In the *United Provinces* 2 million cubic feet in excess of that of last year were disposed of chiefly in the Oudh Circle, the exceptional quality of the coppice coupes and greater activity in exploiting the coupes under improvement fellings contributing to this result.

45. The decrease in yield of 125 millions of bamboos requires some explanation. In the Pegu Circle, Burma, the yield fell off by 135 millions

and this is reported as being chiefly due to the area available for cutting being reduced by the flowering in recent years of the bamboos most commonly used, and also to the fact that in the preceding year, in consequence of agricultural difficulties, the villagers were driven to make a living by cutting bamboos. The outturn of bamboos from this Circle fluctuates greatly as is proved by the fact that in 1902-03 there was an excess of 126 million bamboos, while in the year under review there is the large deficit which is here recorded. There was an increased outturn of bamboos from the Central Provinces, United Provinces, Bombay and Madras. In the other Provinces the variations were of comparatively small importance.

CHAPTER III.

FINANCIAL RESULTS.

[Vide Appendices XIX to XXIII.]

46. The Gross Revenue, Expenditure, Surplus and the proportion of Expenditure to Gross Revenue of the last 31 financial years are shown in the table below :—

Quinquennial periods.	Gross Revenue.	Expenditure.	Surplus.	Proportion of Expenditure to Gross Revenue.
	R	R	R	Per cent.
1873-74 to 1877-78	67,23,191	44,76,303	22,46,888	66
1878-79 to 1882-83	79,15,956	52,09,538	27,06,418	66
1883-84 to 1887-88	1,10,59,434	71,42,382	39,17,052	64
1888-89 to 1892-93	1,51,86,115	82,61,176	69,24,939	55
1893-94 to 1897-98	1,74,50,655	96,57,496	77,93,159	55
1898-99 to 1902-03	1,90,22,776	1,08,42,872	81,79,904	57
1903-1904	2,22,16,747	1,21,66,993	1,00,49,754	55

These figures are of more than usual interest as showing the steady increase in forest revenue; while in the year under review the surplus realized exceeds a crore of rupees for the first time since the formation of the Department. These satisfactory results are due to the constant progress made in the organization of the forests and in the utilization of their products, and as the efforts of the Department towards the extension, protection and development of the forests are now only commencing to show some return in an increased yield, it may confidently be predicted that the financial results of the future will much surpass those of the past. That there is still room for the expansion of outturn and revenue under careful and scientific management is proved by the statistics of forestry in Prussia where each square mile now gives a gross income of R7,540 and a net profit of half that amount against R95 and R43 per square mile in India.

47. The gross revenue of the year under review was R27,45,207 more than in the preceding year and R31,93,971 above the average of the preceding quinquennial period. The surplus of the year amounted to R1,00,49,754 which is R18,27,545 in excess of that obtained in 1902-03. These favourable results are chiefly due to a larger outturn from Burma, Bombay, the Central Provinces, the United Provinces and the Punjab.

In *Burma*, in consequence of a favourable floating season, of good markets, and of energetic work, the gross revenue improved from 67 to nearly 83 lakhs. The expenditure increased by 4½ lakhs.

In *Bombay* the total receipts of 27½ lakhs exceeded those of the preceding year by nearly 4½ lakhs. There was an increased expenditure of 1 lakh. The increase of revenue appears to be principally due to higher prices being obtained for teak and to the larger outturn of sleepers. The Central Circle continued to be worked at a loss.

The *Central Provinces* yielded a gross revenue of nearly 20 lakhs as compared with about 17 lakhs in the preceding year, while the expenditure only increased by ½ lakh. Extraction of timber and fuel is mostly carried out by purchasers; exploitation by departmental agency

being chiefly confined to the supply of railway sleepers and timber for the Ordnance Department. This timely expansion in the forest revenue probably results from the improved agricultural conditions existing in the Central Provinces and, with attention to communications and careful fostering of markets, there can be no doubt that in the future the forests of the Central Provinces will yield a steadily increasing revenue to the State.

In the *United Provinces* the gross revenue rose from 20½ lakhs to nearly 23 lakhs, owing to a larger outturn of timber, fuel and minor forest produce. The removal of forest produce is now almost entirely carried out by private agency, the export of deodar sleepers from Jaunsear being the most important departmental operation.

The gross revenue of the *Punjab* increased from R15,86,000 in 1902-03 to R17,18,000 in 1903-04. The rise was chiefly due to enhanced prices, increased demand for timber and the substitution in the Upper Ravi forests of exploitation by purchasers for departmental operations.

The increases in revenue over that obtained in the preceding year, in the remaining Provinces, were of less importance. That in *Assam* of nearly a lakh was due to larger sale of sleepers; the expenditure however increased by an almost equal amount.

In *Madras* revenue increased by R44,000 and expenditure decreased by R85,000. *Coorg* showed a rise in revenue of R33,000. Thus with the exception of *Bengal* and *Baluchistan* every Province yielded enhanced revenue. The falling off of nearly 2 lakhs in *Bengal*, was due to restricted export of timber from the Sunderbans and at the same time the expenditure rose by R65,000. There was a normal decrease of R1,000 in *Baluchistan*.

In *Ajmer* the revenue increased by R4,000, and in the *North-West Frontier Province* it remained stationary.

In the *Andamans*, the revenue increased by R1,06,000 whereas the expenditure decreased by R16,000. The increase in revenue was due almost entirely to the increased export of padouk timber.

48. The estimated value of produce such as timber, fuel, bamboos, minor produce, grass and grazing given during the forest year, free or at reduced rates to villagers living in the vicinity of the State forests was R30,69,000 as compared with R33,22,000 in the preceding year. The revenue realized from grass and grazing during the same period throughout India was R17,31,000, this amount being as usual nearly equal to the estimated value of grass and grazing for which no royalty was claimed.

49. The statement below shows the financial results of the working of the forests, after deducting capital expenditure not yielding an immediate return:—

	R .
Gross Revenue	2,22,16,747
Value of produce granted free or at reduced rates	80,69,191
	<hr/>
Total value of yield	2,52,85,938
	R
Gross Expenditure	1,21,66,993
Deduct expenditure not yielding an immediate return:—	
	R
(a) Roads and Buildings	5,65,375
(b) Cultural operations	3,95,676
(c) Working-plans	83,573
(d) Settlements	1,37,213
(e) Surveys	4,36,857
(f) Demarcation	1,63,821
Total	17,82,515
	<hr/>
Balance of direct revenue producing Expenditure	1,03,84,478
	<hr/>
Surplus of Revenue over Expenditure directly chargeable to Revenue	1,49,01,460

CHAPTER IV.

GENERAL.

I.—ADMINISTRATION.

50. With the exception of the transfer of one post of Assistant Conservator from the cadre of the Punjab-Central Provinces to that of Madras no changes in the sanctioned permanent establishment of the Department took place.

Mr. Wroughton, Inspector-General of Forests, on leave, retired during the year. Six officers of the Imperial Service and four of the Provincial Service also retired. One Imperial and one Provincial Officer accepted permanent employment in British Colonies. The services of one officer of the Imperial Provincial Service were dispensed with. Three officers of the Imperial and one of the Service died. Twelve Conservators were on leave during a part or the whole of the year.

OFFICERS ON FOREIGN SERVICE.

51. The following statement shows the number of officers on Foreign Service in India, and British Colonies, and serving under other Governments.

*In India.**Imperial Service.*

1. Mr. McDonell (Central Provinces),
Kashmir.
2. Mr. A. W. Blunt (Central Provinces),
Kashmir, (*vice* Mr. McDonell who
retired).

Provincial Service.

1. Mr. A. H. Mee (Bengal), Orissa.
2. Mr. Keshavanaud (United Provinces),
Tehri State.
3. Lala Daulat Ram (Punjab), Kashmir.
4. Lala Sundar Das (Punjab), Kotah State.
5. Lala Jai Kishen (Punjab), Jubal State.
6. Mr. A. Hunt (Central Provinces),
Bastar State.
7. Rai Bahadur M. Muttannah (Madras),
Mysore.
8. Mr. B. C. Eber-Hardie (Madras),
Jeypore.
9. Mr. V. Alwar Chetti (Madras), Cochin.
10. Bhagavandas Har Kissan Das Dalal
(Bombay), Rajpipli.
11. Mehdi Hussain (United Provinces),
Kashmir.

*In the Colonies.**Imperial Service.*

1. Mr. Burn-Murdoch (Burma), Straits
Settlements.
2. Mr. H. N. Thompson (Burma), South-
ern Nigeria.
3. Mr. J. L. Pigot (Assam), Ceylon.
4. Mr. F. Gleadow (Bombay), Mauritius.

Provincial Service.

1. Mr. C. S. Rogers (Burma), Trinidad.
2. Mr. W. H. Craddock (Burma),
Federated Malay States.

Under other Governments.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Mr. Tottenham (Burma), Siam. 2. Mr. D. O. Witt (Central Provinces),
Siam. | <ol style="list-style-type: none"> 1. Mr. B. C. Thompson (Central Pro-
vinces), Siam. |
|---|--|

There were therefore 8 Imperial, and 14 Provincial Forest Officers, besides 6 Rangers engaged in bringing the forests of Native States, British Colonies and foreign countries under regular and systematic management,

52. The increasing demand for the assistance of professionally trained forest officers shows how quickly the Governments of Native States are realising the benefits that are likely to accrue from the introduction of sound methods of control and management.

2.—EXPORTS OF FOREST PRODUCE.

[Vide Appendix XXIV.]

53. The total value of exports at ports of shipment amounted to nearly 445 lakhs of rupees as compared with 320 lakhs on 1902-03, and 232 lakhs in 1901-02.

Lac continues to be the most important article of export and its value rose from 185 lakhs in 1902-03 to 272 lakhs in the year under review. Teak exports also increased during the year from 69 to 91½ lakhs while the value of myrabolams was 42 lakhs or 4½ lakhs more than in the preceding year. There was also a marked rise in the value of catch and gambier from 13½ to nearly 20 lakhs while exports of Sandal, Ebony and other ornamental woods rose from 10 lakhs to 12 lakhs.

The value of caoutchouc exported increased from 1½ lakhs of rupees in 1902-03 to 3½ lakhs in the year under review, but the quantity exported is still comparatively low being only ⅓rd of the average of the five preceding years.

The only product in which there was a falling off in the value of the amount exported was Cardamoms, the value being R3,37,000 compared with R4,16,000 in 1902-03.

3.—RECRUITMENT AND TECHNICAL EDUCATION.

54. Nine students who had completed the forestry course at Cooper's Hill College were appointed to be Assistant Conservators of Forests and arrived in India at the end of November 1903. They were posted two each to Bengal, the United Provinces and Burma, and one each to Bombay, the Punjab and the Central Provinces.

55. At the entrance examination held in 1904, 11 candidates were selected by the Civil Service Commissioners as probationers to be trained for the Indian Forest Service, and these will be the last to be trained at Cooper's Hill, as consequent on the abolition of the Royal Indian Engineering College it has since been decided to carry out the course of instruction in Forestry at Oxford.

56. The Directorship of the Imperial Forest School at Dehra Dun was held by Mr. A. G. Hobart-Hampden with Mr. H. Jackson as Deputy Director throughout the year. Owing to the absence on furlough of the Forest Entomologist, instruction in Natural Science and in Zoology was given by Lala Ruchi Ram, M.A., Assistant Professor, Government College, Lahore, and Mr. H. W. Peal, Assistant, Indian Museum, Calcutta. Captain Symonds, Superintendent, Forest Surveys, Dr. E. J. Butler, Cryptogamic Botanist to the Government of India, and Dr. J. W. Leather, Agricultural Chemist to the Government of India, conducted the examinations in Surveying, Botany and Physical Science, respectively.

At the entrance examination held in October 1903, 109 candidates presented themselves. Of these 61 qualified for admission, though only 30 subsequently joined the school. Two students who had passed in previous years and 3 men specially exempted were also admitted, making a total of 35

students and of these 5 were Government students, 15 were private students receiving Government stipends, 11 were private students without stipends and 4 were students deputed by Native States. At the final examinations held in March 1904, 29 students obtained the Higher and 9 the Lower Standard certificates.

An official residence for the Deputy Director to be built in the School Park at a cost of R21,000 was sanctioned during the year. A large number of additions including botanical specimens, models, photographs and books were made to the School Museum and Library.

57. The Directorship of the Burma Forest School, Tharrawaddy, was held by Mr. R. S. Troup, Deputy Conservator of Forests, throughout the year in addition to his Divisional charge. 20 students were admitted into the school in 1903, and at the close of the year there were 11 senior and 19 junior students under training.

His Honour the Lieutenant-Governor in the Resolution on the Forest Administration Report of Burma for the year 1903-04, remarked—"The administration of the Tharrawaddy Forest School has been satisfactory. The increase to 40 in the number of pupils, which was sanctioned recently, will permit of the more extensive training of forest subordinates, and a revision of the Forest Department Code, which has been approved by the Government of India, so as to make specially selected students of the school eligible for promotion from the Subordinate to the Provincial Forest Service, will tend to make the school more popular and to attract a better class of students."

4.—FOREST ADMINISTRATION IN NATIVE STATES.

58. *Jammu and Kashmir*.—The State forests were administered for the greater part of the year by Mr. J. C. McDonell. He was relieved on retirement in March 1904 by Mr. A. W. Blunt.

The total area increased from 2,479 square miles in 1902-03 to 2,637 square miles during the year under review and the completely demarcated area from 1,727 square miles to 1,959 square miles. Fair progress was made in demarcation and in surveys and it is hoped that all valuable forests which are to be permanently maintained as such will be topographically surveyed on a suitable scale so that arrangements may be made for their continuous treatment under a regular system.

The revenue of the year was much in excess of the previous year owing to a good floating season and to more favourable rates for timber being obtained. A surplus of R7,78,790 was obtained against R5,37,903 in 1902-03.

There seems no reason why the income from the State forests in Kashmir should not continue to increase with proper management, but a critical period appears now to have been reached when organization is of importance as on it will largely depend the future of the forests and their permanent value. No working-plans have as yet been sanctioned, but no doubt after the necessary collection of data good progress will be shown in future.

Though several fires occurred during the year the areas burnt over were insignificant and, owing to the advances made in recent years in preventing fires, damage from this source is practically non-existent. The regulation of grazing in the forests, however, apparently still leaves much to be desired. The control of grazing is not vested in the Forest Department and there is

not the power to close any area to grazing however necessary such closure may be in the interests of reproduction, but in the working-plans now being prepared proposals will doubtless be made for the closure of areas in rotation for a limited period of years.

The importance of the issue of working-plans under the sanction of the Durbar applies therefore not only to the systematic exploitation of the yield of the forests but also to their regeneration, which is now apparently often hampered by injudicious grazing. The Forest Department in Kashmir appears to be considerably undermanned in comparison with others in India, and in the future interests of the forests it would appear advisable that there should be a considerable increase in the staff. Such an increase together with liberal expenditure on demarcation, survey, working-plans, roads and buildings should very soon result in an increased net income.

It is interesting to learn that the wants of villagers in regard to forest produce are very liberally provided for. During the year the value of timber, fuel, minor produce, grass and grazing removed under rights or granted free was estimated to be $6\frac{1}{2}$ lakhs as against the $7\frac{3}{4}$ lakhs surplus revenue received from the forests by the State.

59. *Mysore*.—During the year a net addition of 145 square miles was made to the reserved areas of State forests, the total area of reserved forests at the close of the year being 2,094 square miles. There are besides about 1,400 square miles of Ghat forests and Kans of the Shimoga district, which are in practice managed as reserved forests. Including 720 square miles of reserved lands the total area of forest lands in the Mysore State is 4,214 square miles or about 14.2 per cent. of the total area of the State.

Progress was made in forest settlements, 414 square miles being treated during the year. The survey of the State forests which has hitherto been carried out by surveyors under the control of the District Forest Officers does not appear to have been altogether satisfactory; and the scheme for the organization of a regular topographical survey by a retired officer of the Survey of India, which has recently been sanctioned, should lead to better results.

The area under sanctioned working-plans remained the same, namely, 135 square miles, but progress is reported in collecting data for the preparation of working-plans for the teak forests in the Mysore district.

There was a satisfactory decrease in the number of forest offences from 839 in 1902-03 to 623 during the year under review, but of the cases taken into court 46 per cent were unsuccessful, pointing to ill-considered or ill-conducted prosecutions.

The total area under fire protection was 1,823 square miles but operations were less satisfactory than in the preceding year, the forests of the Mysore district suffering most heavily, 105 square miles being burnt over out of a total area of 502 square miles attempted.

The spike disease showed no signs of abatement; the measures adopted to prevent the spread of the disease are reported as maintained with vigour. The number of spiked trees uprooted during the year was 23,360 in the Mysore district and 973 in the Hassan district, but so far the origin of the disease and mode in which it spreads remains a mystery, nor apparently has any attempt been made to engage the services of a specialist to elucidate it.

The quantity of timber extracted from the forests was 458,000 cubic feet as against 303,000 cubic feet in the preceding year, 4,296 tons of sandalwood were extracted during the year. Sales of sandalwood realised 10½ lakhs, the average rate per ton was R449 against R471 in the preceding year. Including a proportionate share of the divisional expenditure the cost of extraction and preparation of sandalwood amounted to R2,66,000.

The financial results of the year's working, exclusive of revenue and expenditure on account of sandalwood, were—revenue 5½ lakhs, expenditure 2½ lakhs and surplus 3 lakhs.

60. *Jodhpur (Marwar State)*.—No alteration in the area of 347 square miles under forest conservancy was made during the year. Progress was made in surveys, 34 square miles on the 4" scale being mapped, making a total of 71 square miles surveyed up to date. The question of bringing the forests under regular working-plans is receiving consideration, the necessary data for compilation of plans for some areas being now nearly complete.

There was a marked decrease in forest offences, the number of cases compounded being 249 as against 496 cases last year. It was a good year and the tendency to pilfer the forests was proportionately diminished.

Fire protection was less satisfactory than in previous years, 23 fires occurring, the area burnt over being 8,623 acres as compared with 9 fires burning less than 1 square mile in 1902-03. The fires which spread from the adjoining forests of the Meywar State caused most damage and it is only by mutual arrangement that such disasters can in future be prevented.

The outturn of timber and fuel was considerably greater than in 1902-03, 31,573 cubic feet of timber and 5,04,283 cubic feet of fuel being extracted as compared with 20,576 cubic feet and 307,127 cubic feet, respectively. The value of minor forest produce removed also increased from R7,968 to R9,571.

The financial results of the year's working were satisfactory, the gross receipts amounting to R23,676 as against R19,912 in the preceding year. The surplus increased from R4,770 to R6,544.

Bhopawar.—The total forest area managed by the Forest Department in the Bhopawar Agency amounted to 1,640 square miles at the close of the year, but of this only 600 square miles in the Barwani State appear to be reserved forest. There are no regular working-plans but simple plans of operation are in force for most States.

Forest offences are few; the forests are all protected from fire and the measures adopted, which range from warnings to the population to regular systematic protection, appear to be successful.

The financial results of the year's working show that the gross revenue was R79,313 and surplus R24,632 as compared with R73,710 gross revenue and R21,825 surplus in the preceding year.

Free grants and concessions of the estimated value of R15,502 were made during the year.

61. *Bewa Kantha Agency*.—

(a) *Rajpipla State*.—About ¾ths of the entire area of the State consists of tracts covered more or less with forests and of these the more valuable areas have been reserved to the extent of 409 square miles. Babul plantations of 2½ square miles have also been created. The preparation of working-plans has been taken in hand and, when these are ready, the reserved forests

will be managed strictly in accordance with their prescriptions. Teak is the most valuable timber found in the forests but extensive fellings for sleepers and large concessions during famine times have led to parts of the State forests being heavily overworked and in some cases ruined. The forests are said to be gradually improving and when systematic working is introduced the progress will no doubt be rapid.

The gross revenue for the year amounted to R68,696 with a surplus of R30,901, as compared with revenue R41,765 and surplus R19,852 in 1902-03.

- (b) *Lunawada State*.—The administration report does not give much information in regard to 'Forests.' It appears there are 134 so called reserved forests, the areas of which are not stated. No details of systematic working or protective measures are afforded though it seems recognized that the felling of immature trees is prejudicial both to the forests and to the Treasury, forest revenue being an important asset of the State. Twenty-one fires occurred during the year some of which are ascribed to the inveterate superstition of the Koolis (Bhils) who burn the hills to fulfil vows made in time of sickness or misery.

The revenue derived from the forests was R7,047 as against R2,287 in the previous year.

- (c) *Sunth State*.—This State possesses very valuable, though scattered forests but on account of their remoteness from the railway, and want of suitable communications, they do not yield much revenue. During the year the gross revenue obtained was R7,985 and surplus R7,331 as against a deficit of R1,523 in 1902-03.

- (d) *Chhota Udepur State*.—The forests yield a considerable revenue to the State but apparently they are not worked with much attempt at systematic management. The different areas are classified as "Reserved" and "Protected" forests. The "reserved" blocks number 19 and cover 159 square miles, and there are 14 "protected" blocks covering 66 square miles. The revenue for the year was R10,792, and duties levied in connection with the extraction of minor produce yielded R22,765.

62. *Travancore*.—The total area of reserved forests under the control of the Forest and Cardamom Departments at the close of the year was 2,154 square miles. There were also 239 square miles of reserved lands and 33 square miles of fuel reserves.

Some progress was made in demarcation and survey of boundaries, and preliminary working-plans to be revised two years hence are in force.

Systematic fire protection over 1,903 square miles was successful, no fires of a serious kind occurring during the year.

The construction of roads and buildings was not overlooked and plantations of teak, rubber and casuarina were maintained over an area of 2,416 acres while experimental cultivation of camphor, manilla and other exotics proceeded.

The gross revenue of the year amounted to 6½ lakhs with 2 lakhs surplus, as against 6½ lakhs and 1½ lakhs surplus in the preceding year.

The State possesses valuable forests; the revenue from timber alone being 6 lakhs. The staff includes a Conservator with Deputy and Assistant Conservators and with continued systematic management the revenue will doubtless largely expand.

63. *Southern Waziristan*.—It is interesting to learn that good progress in arboricultural operations was made in Southern Waziristan, some 37,000 shade trees—willows, silver poplar and shisham—were planted of which the majority are thriving. These good results are chiefly due to the keen interest the Waziris are now beginning to take in tree planting.

64. *Baroda*.—The area of reserved forests at the close of the year amounted to about 700 square miles. The area of unreserved forests is unknown. The reserved forests had complete rest for 13 years prior to last year when their working was resumed. Plans have been prepared for the next 20 years. In these plans are prescribed the sequence of fellings, the areas to be regenerated, the areas set aside for grazing and the measures to be adopted to protect the forests from fire. The unreserved forests are partly under the control of the Forest Department and partly under that of the Revenue Department. During the year the forest revenue amounted to R89,574 and the expenditure to R54,607, as compared with a revenue of R54,183 and expenditure of R51,999 in the preceding year.

APPENDIX I.

[*Vide* paragraph 1.]

Area of reserved and leased forests.

PROVINCE	AREA, IN SQUARE MILES.				REMARKS.
	At commence- ment of year.	Added in 1903-4.	Excluded in 1903-4.	At close of 1903-4.	
Bengal	5,961	74	21	6,014	(a) Includes 153 square miles of leased forests.
United Provinces	4,071	83	56	(a) 4,048	(b) and (c) 204 square miles of reserved and leased forests shown under unclassified forests in the Report for 1902-3 are now included in these figures.
Punjab	(b) 2,294	(c) 215	53	(d) 2,456	
Burma	19,708	445	114	(e) 20,039	(d) Includes 539 square miles of leased forests.
Central Provinces including Berar.	(f) 22,840	1,513	(g) 1,681	22,672	
Assam	3,778	...	...	3,778	(e) Wrongly shown as 20,038 square miles in the Report for 1903-4.
Coorg	242	168	...	410	(f) and (g) Increased by 1 square mile to make the figures tally with those of 1902-3.
North-West Frontier	234	...	...	234	
Ajmer	142	...	...	142	(h) Includes 692 square miles of leased forests.
Baluchistan	203	5	...	208	
Andamans	156	...	...	156	(i) Includes 10 square miles due to revision of areas in Northern and Sindh Circles.
Total Bengal	59,629	2,453	1,925	(h) 60,157	(j) Includes 217 square miles of leased forests.
„ Madras	17,657	272	6	17,923	
„ Bombay	13,464	(i) 56	33	(j) 13,487	(k) Includes 909 square miles of leased forests.
GRAND TOTAL 1903-4	90,750	2,781	1,964	(k) 91,567	(l) Includes 699 square miles of leased forests.
„ „ 1902-3	89,424	2,181	805	(l) 90,750	

APPENDIX II.

[Vide paragraphs 2 and 3.]

Area of all forest lands.

PROVINCE.		FOREST AREA, IN SQUARE MILES.				Proportion of Forests to whole area of Province.	REMARKS.
Name.	Area in square miles.	Reserved.	Protected.	Unclassified State.	Total.		
Bengal	152,453	6,014	3,567	4,033	13,614	8.9	(a) and (b) Include 153 square miles of leased forests, but exclude 9,363 square miles of protected forests in Naini Tal District.
United Provinces	105,165	(a)4,048	30	77	(b)4,155	3.9	(c) and (d) Include 539 square miles of leased forests.
Punjab	97,223	(c)3,456	4,909	1,914	(d)9,279	9.5	
Burma	162,530	(e)20,039	...	103,174	(f)123,213	75.8	(e) and (f) Wrongly shown as 20,038 and 123,212, respectively, in the Report for 1903-4.
Central Provinces including Berar.	104,170	22,672	...	4	22,676	21.8	
Assam	48,961	3,773	...	18,509	22,287	45.5	
Coorg	1,582	410	39	(g)121	570	36.0	(g) Reserved lands.
North-West Frontier	13,276	234	...	...	234	1.8	
Ajmer	2,646	142	...	6	148	5.6	
Baluchistan	(h)9,403	208	...	...	208	2.2	(h) British Baluchistan only.
Andamans	3,143	156	...	1,795	1,951	62.1	South Island only.
Total Bengal	700,552	60,157	8,545	129,633	198,335	28.3	
Madras	144,389	17,923	...	(i)1,636	19,559	13.5	(i) Reserved lands.
Bombay	(j)122,883	(k)13,487	(l)1,320	...	14,807	12.0	(j) Includes Sindh. (k) Includes 217 square miles of leased forests.
GRAND TOTAL 1903-4	967,824	(m)91,567	(n)9,865	131,269	232,701	24.0	(l) and (m) Include 439 square miles of leased forests. (n) Includes 909 square miles of leased forests.
" " 1902-3	866,073	(o)90,750	9,519	116,555	216,824	22.4	(o) Includes 699 square miles of leased forests.

APPENDIX III.

[Vide paragraphs 4 and 5.]

Progress in Forest Settlements.

PROVINCE.	AREAS ALREADY SETTLED AT THE COMMENCEMENT OF THE YEAR.			AREAS FINALLY SETTLED DURING THE YEAR.									AREA UNDERGOING SETTLEMENT.								
				AREA.			EXPENDITURE INCURRED.			AT COMMENCEMENT OF THE YEAR.			TAKEN IN HAND DURING THE YEAR.			EXPENDITURE INCURRED DURING THE YEAR.					
	Reserved forests.	Protected forests.	Total.	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.	Reserved.	Protected.	Total.			
	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Rs.	Rs.	Rs.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Rs.	Rs.	Rs.			
Bengal	5,942	...	5,942	72	...	72	...	...	456	...	456	18	...	18	...	...	...	
United Provinces	2,918	30	2,948	15	...	15	...	...	14	...	14	7	...	7	...	...	...	
Punjab	2,073	4,821	6,894	...	12	12	...	...	1	205	206	15	...	15	...	...	...	
Barma	19,719	...	19,719	309	...	309	16,554	...	18,554	861	...	861	1,185	...	1,185	10,672	...	10,672			
Central Provinces including Berar.	22,641	...	22,641	10	...	10	...	...	9	...	9	48	...	48	...	...	...	
Assam	3,778	...	3,778	...	...	...	...	...	57	...	57	6	...	6	...	...	...	
Coorg	242	...	242	169	...	169	821	...	821	121	...	121	...	...	...	...	...
North-West Frontier	234	...	234	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajasthan	203	...	203	6	...	6	...	...	...	...	...	...	...	...	...	...	...
Andamans	156	...	156	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Bengal	58,906	4,851	63,657	580	12	592	17,375	...	17,375	1,519	205	1,724	1,279	...	1,279	10,672	...	10,672			
.. Madras	17,694	...	17,694	254	...	254	(a) 628	...	(a) 629	859	...	859	235	...	235	(b) 2,802	...	(b) 2,802			
.. Bombay	13,378	575	13,953	25	81	116	39	...	39	5	...	5	(c) 10,342	...	(c) 10,342			
GRAND TOTAL, 1903-4	89,978	5,526	95,504	859	103	962	18,003	...	18,003	2,417	205	2,622	1,519	...	1,519	23,816	...	23,816			
.. 1902-3	88,749	5,493	94,242	1,711	...	1,711	6,934	...	6,934	2,766	205	2,971	1,103	...	1,103	34,414	...	34,414			

N.B.—The total expenditure on Forest Settlements, compensation of lands, etc., as shown in Form No. 61 of Provincial Forest Reports for 1903-04 amounted to Rs. 286 and according to Form No. 47 from which the above table has been compiled, Rs. 1,819. Berar and Northern Circle, Bombay, are principally responsible for the difference of Rs. 1,533.

(a) Excludes Rs. 6,183 debited to other than Forest Accounts.

(b) 20,752

(c) 10,676

APPENDIX IV.

[Vide paragraph 6.]

Demarcation and Maintenance of Boundaries.

PROVINCE.	Circle.	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 not 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 OF DEMARCATION DURING THE YEAR	
									On new work.	On repairs.
		Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	R	R
Bengal	.....	102	3,320	100	3,422	1	1,887	5,310	3,473	11,390
United Provinces	Central Circle	...	208	2,356	2,564	...	698	3,262	19	1,378
	Oudh "	...	424	711	1,135	17	273	1,425	42	1,168
	School "	41	342	442	825	125	291	1,241	956	1,147
	Total	41	974	3,509	4,524	142	1,262	5,928	1,017	3,693
Punjab	.....	339	2,876	7,197	10,412	3,852	1,198	15,462	1,950	3,798
Burma	Pegu Circle	53	546	2,087	2,686	225	1,037	3,948	1,084	1,855
	Tenasserim Circle	39	791	2,358	3,188	10	593	3,790	1,000	6,479
	Northern "	148	1,432	1,558	3,138	40	540	3,718	1,187	2,976
	Southern "	273	482	2,641	3,396	431	463	4,290	3,866	1,946
	Total	513	3,251	8,644	12,408	706	2,632	15,746	7,137	13,256
Central Provinces	Northern Circle	39	7,215	3,812	11,066	...	1,428	12,494	171	5,313
	Southern "	18	11,190	1,288	12,498	59	949	13,504	416	3,570
	Berar "	40	1,068	5,068	6,176	13	339	6,529	1,862	867
	Total	97	19,473	10,168	29,739	72	2,716	32,527	2,449	9,750
Assam	.....	11	1,090	66	1,167	4	1,608	2,779	124	2,376
Coorg	.....	18	...	289	307	173	54	534	669	129
North-West Frontier	.....	...	100	649	749	...	163	912	...	1,046
Ajmer	.....	...	...	244	244	...	158	402	207	20
Baluchistan	.....	11	31	272	314	...	77	391	...	...
Andamans	.....	...	...	42	42	29	116	187	...	...
Total Bengal	.....	1,132	31,015	31,180	63,328	4,979	11,871	80,178	17,026	45,458
Madras	Northern Circle	375	1,839	6,750	8,964	551	518	10,033	5,004	825
	Central "	360	7,509	6,840	14,709	490	200	15,399	4,303	1,335
	Southern "	270	549	7,860	8,679	681	957	10,317	6,655	2,108
	Total	1,005	9,897	21,450	32,352	1,722	1,675	35,749	15,962	4,268
Bombay	Northern Circle	187	1,546	2,417	4,150	442	426	5,018	5,348	1,432
	Central "	203	3,784	13,597	17,584	5,018	861	23,463	1,922	1,115
	Southern "	345	282	1,480	2,107	12,061	699	14,867	9,814	1,049
	Sindh "	14	1,479	487	1,980	...	591	2,571	...	...
	Total	749	7,091	17,981	25,821	17,521	2,577	45,919	17,084	3,596
GRAND TOTAL 1903-04	.....	2,886	48,003	70,611	121,501	24,222	16,123	161,846	50,072	53,322
" 1902-03	.....	3,539	47,953	62,551	114,043	23,732	15,181	152,956	52,121	38,539

N.B.— Boundaries include, beside the outer perimeter, the limits of enclosures of private and other lands within the forests, but not the limits of sub-division such as blocks, compartments and coupes.

APPENDIX V.

[Vide paragraphs 7 to 11.]

Forest Areas Surveyed and under Survey.

PROVINCE.	4"=1 MILE.		6"=1 MILE.		16"=1 MILE.		TOTAL OF DEGREE SURVEY ON 4" SCALE AND OVER.		EXPENDITURE ON SURVEYS INCLUDING MAPPING AND PUBLISHING CHARGES.
	Outturn.	Cost rate.	Outturn.	Cost rate.	Outturn.	Cost rate.	1903-4.	Total up to date.	
1	2	3	4	5	6	7	8	9	10
	Sq. miles.	R	Sq. miles.	R	Sq. miles.	R	Sq. miles.	Sq. miles.	R
Bengal	310	64	...	...	...	...	310	(a) 1,991	26,010
United Provinces	36	30	...	...	...	...	36	(b) 3,977	2,129
Punjab	209	25	...	...	...	...	209	(c) 3,409	7,791
North-West Frontier . . . . .	...	...	...	...	...	...	...	(d) 185	2,745
Burma	1,108	118	...	...	...	...	1,108	(e) 10,045	2,05,177
Central Provinces including Berar	2	58	...	...	...	...	2	(f) 18,597	6,614
Assam	160	85	...	...	...	...	160	818	30,955
Ajmer . . . . .	...	...	...	...	...	...	...	(g) 144	679
Total for Bengal	1,825	...	...	...	...	...	1,825	39,166	2,82,100
Madras	801	102	...	...	...	...	801	(h) 12,318	1,07,701
Bombay	576	68	158	139	...	...	734	(i) 10,371	71,193
Totals for Madras and Bombay	1,377	...	158	139	...	...	1,535	22,689	1,78,894
GRAND TOTAL IN 1903-04	3,202	...	158	139	...	...	3,360	61,855	4,60,994 (j)
" " " 1902-03	3,816	65	240	180	6	137	4,062	59,363	4,58,324 (j)

- (a) 20 square miles survey overlap omitted not being accounted for.
(b) 2 " " shown less in previous year return.
(c) 192 " " in excess in previous return, corrected from later figures.
(d) Areas revised throughout.
(e) 439 square miles in excess in previous return.
(f) Not shown in last return through oversight.
(g) Area altered owing to exclusion of non-forest areas.
(h) 95 square miles shown in excess in previous return.
(i) Excludes headquarters charges, viz., ₹34,407.
(j) " " " " ₹34,653.

APPENDIX VI.

[Vide paragraphs 7 to 11.]

Details of Forest Survey Operations.

PROVINCE.	Forest Surveyed.	NATURE OF SURVEY OPERATIONS.						EXPENDITURE INCLUDING MAPPING AND PUBLISHING CHARGES.			REMARKS.		
		4" DETAIL SURVEY.		TRIANGULATION.		TRAVERSING.		Forests.	Survey of India.	Total.			
		Area.	Cost rate.	Area.	Cost rate.	Area.	Cost rate.						
		Sq. m.	R	Sq. m.	R	L. M.	R	R	R	R			
BENGAL	Kalimpong	208	75	20	26	13	11	11,988	5,138	17,126	Includes map and publishing charges. (a) 108 linear mile boundary survey.		
	Darjeeling	11		819		350	1,168
	Kurseong	...	...	...	...	...	...	172	74	246
	Singhbhum	91	37	201	4	...	...	3,747	1,606	5,353	
	Ranchi	...	...	...	...	13	21	112	48	160
	Koderma	...	...	...	...	...	...	1,213	...	1,213(a)
	Angul	...	...	286	8	...	...	521	223	744
	Total	310	64	457	5	25	16	18,571	7,439	26,010			
ASSAM	Kamrup	92	85	285	6	184	40	9,388	4,023	13,411			
	Garo Hills	68		604		93		10,373	4,446	14,819			
	Nowgong	...		65		9		1,907	818	2,725			
	Total	160	85	954	6	256	40	21,668	9,287	30,955			
UNITED PROVINCES.	Central Circle	Kumaun	807	346	1,153	Includes drawing. 2nd edition. Kumaun Garhwal maps. (b) 67 linear mile boundary survey.		
		Naini Tal	33	...	...	...	...	193	...	193
		Ganges	3	...	...	...	...	577	46	623
		Garhwal	...	...	...	...	...	25	...	25(b)
		Pilibhit	...	...	...	...	...	72	...	72
Oudh	Kheri	2	32	63	...	63			
	Total	36	30	2	32	1,737	392	2,129			
PUNJAB	Labore	26	25	912	391	1,303	(c) Also 1,756 1/2 miles of boundary survey in Lab and Jhelum. Includes computation, mapping and publishing charges.		
	Jhelum	183		...		80		4	2,947	1,263		4,210(c)	
	Chenab	375		161	536
	Rawalpindi	154		66	220
	Guzrat	3		1	4
	Chamba	535		534	1,069
	Shahpur	122		53	175
	Total	209	25	80	4	5,048	2,469	7,517			
NORTH-WEST FRONTIER	Hazara	1,400	600	2,000	Includes computation, mapping and publishing charges.		
	Dungagalli and Khanpur.	...	...	274	2	...	...	521	224	745
	Total	274	2	1,921	824	2,745			
CENTRAL PROVINCES.	Northern Circle.	Mandla	2,009	861	2,870	Includes computation, mapping and publishing charges.		
		Betul	...	...	...	...	...	88	38	126
		Hoshangabad	2	58	...	...	...	257	110	367
	Southern Circle.	Chanda	...	...	...	...	...	2,205	945	3,150
		Chindwara	...	...	...	...	...	84	15	49
		Bilaspur	...	...	...	...	...	36	16	52
	Total	2	58	4,629	1,985	6,614			
MADRAS	Southern Circle.	Puinmana	84	12	46	Includes computation, mapping and publishing charges. (d) Examination survey.		
		Mandalay	819	...	...	...	...	19,475	8,346	27,821
		Ruby Mines	77	...	...	...	...	7,817	3,186	10,453
		Yaw	18	...	60	...	75	2,346	963	3,299			
		Minbu	...	...	...	...	...	42	18	60
	Northern Circle.	Katha	42	...	430	...	781	...	12,889	5,524		18,413	
		Bharno	760	326		1,086	
		Mu	370	...	379	...	4,543	1,947		6,490	
		Myittha	376	52	...	35,837	15,145		50,432	
		Upper Chindwin	61	...	550	...	629	...	14,004	6,001		20,005	
	Tenasserim Circle.	Lower " "	98	33,015	14,149		47,164	
		Ataran	1,025	439		1,464	
		West Salween	45	20		65(d)	
Pegu Circle	Tbaungyin	...	...	...	...	...	...	936	401	1,337
	Pegu	...	...	...	...	...	...	69	29	98
	Tbayetmyo	117	...	...	...	192	...	11,815	5,064	16,879
	Prome	...	...	...	...	...	...	73	33	105
	TOTAL	1,108	118	1,410	8	2,108	27	1,43,625	61,552	2,05,177			

APPENDIX VI—continued.

Details of Forest Survey Operations—continued.

PROVINCE.	Forest surveyed.	NATURE OF SURVEY OPERATIONS.						EXPENDITURE INCLUDING MAPPING AND PUBLISHING CHARGES.*			REMARKS.	
		4" DETAIL SURVEY.		TRIANGULATION.		TRAVERSING.		Forest.	Survey of India.	TOTAL.		
		Area.	Cost rate.	Area.	Cost rate.	Area.	Cost rate.					
JUBAL TAROCH	Jubal Taroch	Sq. m.	R	Sq. m.	R	L. m.	R	R	R	R	Mapping and publishing charges.	
		...	...	...	...	...	...	192	82	274	
AJMER-MERWARA	Ajmer-Merwara	...	...	...	...	...	...	679	...	679	Ditto
MADRAS	Northern Circle.	Ganjam	...	...	...	91	...	75,391	32,310	1,07,701	
		Godavari	192	...	1,000	...	109					...
		Kurnool and Kistna.	832	...	289	...	26					...
		Trichinopoly	150
		Chingleput	70
MADRAS	Central Circle.	South Canara	177	...	428	...	9	...	75,391	32,310	1,07,701	
		North Coimbatore.	100	...	...	...	12	...			
		TOTAL	801	102	1,987	9	247	20					75,391	32,310	1,07,701
BOMBAY	Northern Circle.	South Thana	76†	139	...	...	...	49,835	21,858	71,193	† On 8-inch scale.
		Khandesh and Satara.	576	68	677	15
			Nasik	82*	139
		TOTAL	734	...	677	15	...					...	49,835	21,858	71,193
	Forest Survey Head-quarters.	...	...	...	...	...	...	...	...	84,407	
	GRAND TOTAL, 1903-04.	3,360	...	5,709	...	2,748	...	...	...	4,95,401	† Includes Rs4,653 on account of head-quarters charges.
	GRAND TOTAL, 1902-03.	3,816	...	5,554	...	2,962	...	...	...	4,92,977	

* From 1st July 1903 to 30th June 1904.

APPENDIX VII.

[Vide paragraphs 12 to 14.]

Areas brought under the control of sanctioned Working-plans up to 30th June 1904 in the provinces outside the Madras and Bombay Presidencies.

PROVINCE.	FOREST AREA, IN SQUARE MILES.				Area for which Working-Plans prepared and sanctioned up to 30th June.	Proportion of Forest area under sanctioned Working-plans.
	Reserved.	Protected.	Unclassified State.	TOTAL.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
					Sq. miles.	Per cent.
Bengal	6,014	8,567	4,033	13,614	4,394	33
United Provinces	4,048	30	77	4,155	3,728	90
Punjab	2,456	4,909	1,914	9,279	2,606	23
Burma	20,039	...	103,174	123,213	3,266	3
Central Provinces including Berar	22,672	...	4	22,676	9,486	42
Assam	8,778	...	18,509	22,287	533	2
Coorg	410	39	121	570	178	31
North-West Frontier	234	...	...	234	76	32
Ajmer	142	...	6	148	140	95
Baluchistan	208	...	...	208	...	...
Andamans	156	...	1,795	1,951	...	...
GRAND TOTAL IN 1903-04	60,157	8,545	129,633	198,335	* 24,407	13
" " " 1902-03	59,629	8,486	114,757	182,872	25,851	14

* At the beginning of the year this figure stood at 25,851 square miles which was reduced by 2,575 square miles owing to transfers, abandonment of areas, etc., leaving a balance of 23,276 square miles, which added to 1,131 square miles of newly sanctioned Working-plan gives a total of 24,407 square miles. See Appendix IX.

APPENDIX VIII.

[*Vide* paragraphs 12 to 14.]Progress in Working-plans in the provinces outside the Madras and Bombay
Presidencies during the year 1903-04.

PROVINCE.	PRELIMINARY PROPOSALS SUBMITTED TO THE INS- PECTOR-GENERAL OF FORESTS FOR WORKING- PLANS.		COMPLETED PLANS SUB- MITTED FOR OPINION AND REMARKS OF INS- PECTOR-GENERAL OF FORESTS.		PLANS FINALLY SAN- CTIONED BY LOCAL GOV- ERNMENTS ON RECOM- MENDATION OF THE INSPECTOR-GENERAL OF FORESTS.	
	No.	Area for which prepared.	No.	Area for which prepared.	No.	Area for which prepared.
1	2	3	4	5	6	7
		Sq. miles.		Sq. miles.		Sq. miles.
Bengal	2	4,147 (a)	1	3,839 (b)	1	110
United Provinces	3	21 (c)	...	...	...	...
{ Central Circle . . . . .	...	...	...	...	...	...
{ Oudh " " . . . . .	...	...	...	...	...	...
{ Sohoel " "	1	73 (d)	...	...	...	278 (i)
Punjab . . . . .	...	...	...	...	...	...
{ Pegu Circle	1	20	...	...	...	...
Kurma . . . . .	...	...	1	449	1	449
{ Tenasserim Circle . . . . .	...	...	...	...	...	...
{ Northern " "	1	539	...	...	...	...
{ Southern " "	2	645 (e)	...	...	3	294
Central Provinces	3	1,159	...	...	...	...
{ Northern " "	1	225 (f)	...	...	...	...
{ Southern " " . . . . .	...	...	...	...	...	...
{ Berar " " . . . . .	...	...	...	...	...	...
Assam	2	909 (g)	...	...	...	...
Coorg . . . . .	...	...	...	...	...	...
North-West Frontier	2	82	...	...	...	...
Ajmer . . . . .	...	...	...	...	...	...
Baluchistan . . . . .	...	...	...	...	...	...
Andamans . . . . .	...	...	...	...	...	...
TOTAL	18	7,820	2	4,288	5	1,131 (A)

(a) Aggregate area of Buxa Forest Division (308 square miles) and old Sandarbans Working-plan (3,839 square miles) under revision.

(b) Area of old Sandarbans Working-plan under revision.

(c) Aggregate area of the Lansdowne (18 square miles), Naini Tal Municipal (3 square miles) and Naini Tal Cantonment (1 square mile) forests, under revision.

(d) Area of old Tehri-Garhwal leased deodar Working-plan under revision.

(i) Area of revised Dehra Dun Working-plan actually sanctioned in 1904-05.

(e) Aggregate area of the Taungthgyi (397 square miles) and Nahan' (248 square miles) forests. The latter area was included in column 3 of Appendix VIII for 1902-03, but has been included again this year as a revised Preliminary Working-plan Report was received during the year.

(f) Area of East Paneh Working-plan under revision.

(g) Aggregate area of the Nambor Reserve (887 square miles) and the old Goalpara Working-plan (522 square miles) under revision.

(A) Excludes area of old Kotkhal-Kotguru (19 square miles) and Shahdera cum Jugian (8 square miles) Working-plan revised during the year and 101 square miles of Jubal Working-plan not under the control of the Forest Department.

N. B.—The information recorded in columns 2 and 3 of the statement has been taken from the registers maintained in this office. The figures do not agree with those supplied in column 6 of Form 40 of the Annual Reports, the latter of which do not agree with the details furnished in the body of the Reports.

APPENDIX IX.

[Vide paragraphs 12 to 14.]

Comparative statement of progress made in Working-plans.

PROVINCE.	AREAS FOR WHICH WORKING-PLANS HAVE BEEN COMPLETED AND SANCTIONED.		AREAS FOR WHICH WORKING-PLANS ARE BEING COMPILED.		Areas for which Working-plans have still to be taken in hand.	Total forest area, as in Form No. 46.	REMARKS.	
	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.	
	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.		
Bengal	(a) 4,284	110	1,140	188	7,892	13,614	(a) At the end of 1902-03 the area stood at 4,285 square miles. The decrease of 11 square miles is due to exclusions from the Sundarbans Forest Division.	
United Provinces	{ Central Circle	(b) 1,567	18	363	1,918	(b) The decrease compared with the figures of 1902-03 is due to 4 square miles added during the year to the Working-plans for Garhwal and Ganges Forest Divisions, while 18 square miles (Lansdowne Working-plans) under revision have been transferred from column 2 to column 5.
	{ Oudh	(c) 1,292	...	...	...	...	1,926
	{ School	(d) 591	(e) 278	...	78	12	881	
Punjab	(f) 2,606	...	1,480	185	5,007	9,279		
Burma	{ Pegu Circle	1,019	...	340	196	14,319	26,558	(c) The difference of 23 square miles compared with the figures of 1902-03 is due to 28 square miles of the Kheri Working-plans excluded during the year while 5 square miles were added during the year to the Working-plans of the Bahrach Division.
	{ Tenasserim Circle	738	449	374	436	29,670	31,668	
	{ Northern "	36	...	...	...	(g) 27,596	27,632
Central Provinces	{ Southern "	(h) 730	294	287	374	(i) 35,670	37,355	(d) Decrease compared with last year's figures due to transfer of 278 square miles from column 2 to column 3.
	{ Northern Circle (j) 3,784	...	2,354	206	1,426	9,249		
	{ Southern " (k) 4,977	...	41	141	600	9,456		
Assam	725	...	828	...	2,388	- 3,942	(e) Area of revised Dehra Dun Working-plans actually sanctioned in 1904-05.	
Coorg	533	...	...	1	3,244	22,287	(f) Last year's area has been decreased by 37 square miles owing to transfer from column 2 to column 6 of 28 square miles (Baramur W. C.) erroneously shown in 1901-02 as existing under Working-plans 2 square miles added during the year, while 4 square miles of the Bahahr Working-plans were excluded during the year and 7 square miles, being the area of the Simla Municipal Catchment area forests, transferred from column 3 to column 6, 13 square miles (Kothkhai-Kotgura Working-plans) and 3 square miles (Shahdara-cum-Juglan Working-plans) revised during the year have already been included in column 3.
North-West Frontier	178	...	...	...	392	570	
Baluchistan	76	...	82	76	...	234		
Andamans	...	...	...	...	208	208	
Ajmer	(l) 140	...	...	...	8	148	
TOTAL BENGAL	23,276	1,131	6,926	1,894	1,30,747	1,98,335	(g) Includes 539 square miles of the Kindsat, Kampat, Tatkon, Yu (part), Matu Hon and Waye reserves for which a preliminary Working-plan report was received during the year.	
Madras	{ Northern Circle	617	708	362	864	4,263	6,819	(h) Last year's area has been decreased by 1 square mile owing to revision of area.
	{ Central "	1,328	307	1,657	906	3,067	7,265	
	{ Southern "	2,086	57	...	...	3,332	5,475
TOTAL	4,031	1,072	2,019	1,770	10,667	19,559	(i) Includes 397 square miles of the Tnundwingyi forests for which a revised Preliminary Working-plans Report was received during the year.	
Bombay	{ Northern Circle	1,285	...	65	79	239	2,319	(j) Last year's area has been decreased by 11 square miles owing to disafforestation of land from the Hoshangabad Forest Division.
	{ Central "	889	496	590	678	2,582	6,358	
	{ Southern "	889	...	543	2	3,629	5,063	
	{ Sindh "	409	202	421	...	(m) 35	1,067	
TOTAL	3,472	698	1,619	759	6,484	14,807	(k) Decrease of 2,198 square miles compared with last year's figures is due to abandonment of Working-plans.	
							(l) The decrease compared with last year's figures is due to transfer of 2 square miles from column 2 to column 6.	
							(m) This figure has been reduced by 6 square miles so as to arrive at the total of 1,067 square miles which is apparently correct.	

N. B.—The Madras and Bombay figures in columns 2 and 3 have been taken from the statements given in the annual reports, but it is not known what areas have been actually sanctioned.

APPENDIX X.

[Vide paragraphs 15 to 19.]

Expenditure on Communications and Buildings.

PROVINCE.	NEW WORK.		REPAIRS.		Other Works.	TOTAL.
	Buildings.	Roads.	Buildings.	Roads.		
	R	R	R	R	R	R
Bengal	43,801	18,058	12,094	9,220	3,838	87,011
United Provinces	29,560	17,935	20,125	30,618	10,696	1,08,934
Punjab	10,508	4,480	4,800	3,811	4,724	28,323
Burma	41,321	56,561	21,675	10,592	8,503	1,41,653
Central Provinces including Berar	32,419	4,840	14,729	15,860	5,686	73,034
Assam	4,373	649	8,828	4,018	1,083	18,951
Coorg	768	650	850	981	203	3,452
North-West Frontier	1,140	351	480	318	36	2,325
Ajmer	392	316	82	63	584	1,437
Baluchistan	63	...	196	...	...	259
Andamans	1,065	27,665	451	162	...	29,343
Total, Bengal	1,65,410	1,31,505	87,310	75,143	35,353	4,94,721
" Madras	22,167	17,793	23,603	24,472	11,032	99,067
" Bombay	37,433	21,321	7,826	13,979	5,686	86,245
GRAND TOTAL, 1903-04	2,25,010	1,70,619	1,18,739	1,13,594	52,071	6,80,633
" " 1902-03	2,07,796	1,03,990	1,18,320	91,601	48,851	5,70,558

APPENDIX XI.

[*Vide* paragraph 20.]

Breaches of Forest Rules.

PROVINCE.	Number of cases decided by the courts.	Number of cases compounded.	TOTAL.	Proportion of convictions to total number of cases decided by the courts.	
				Per cent.	
Bengal	270	2,570	2,840	86.3	
United Provinces	137	719	856	81.0	
Punjab	902	3,276	4,178	85.6	
Burma	722	1,834	2,556	81.6	
Central Provinces including Berar	339	5,569	5,908	81.1	
Assam	84	221	305	75.0	
Coorg	6	37	43	83.3	
North-West Frontier	39	496	535	94.9	
Ajmer	143	234	377	95.8	
Baluchistan	65	115	180	86.2	
Andamans	21	...	21	90.5	
Total Bengal	2,728	15,071	17,799	84.2	
Madras	6,705	12,704	19,409	91.0	
Bombay	1,495	12,934	14,429	84.3	
	1903-04	10,928	40,709	51,637	88.4
* GRAND TOTAL	1902-03	11,022	36,890	47,912	86.9
	1901-02	11,601	34,497	46,098	86.9

* Includes cases which were pending at the close of the previous year.

APPENDIX XII.

[*Vide* paragraph 20.]

Breaches of Forest Rules.

PROVINCE.	CASES TAKEN INTO COURT.				COMPOUNDED CASES.				CASES IN WHICH THE OFFENCES REMAINED UNDETRACTED.				TOTALS OF EACH CLASS OF OFFENCE.				GRADED TOTAL OF CASES.
	Injury to fire-protected forests by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission in tracts in which grazing is prohibited.	Other offences.	Injury to fire-protected forests by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission in tracts in which grazing is prohibited.	Other offences.	Injury to fire-protected forests by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission in tracts in which grazing is prohibited.	Other offences.	Injury to fire-protected forests by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission in tracts in which grazing is prohibited.	Other offences.	
Bengal	35	170	25	98	4	1,635	777	108	84	3	...	6	103	1,808	802	210	2,823
United Provinces	9	49	59	21	11	423	263	32	20	32	2	1	40	504	324	54	822
Punjab	45	567	267	152	15	1,469	1,732	27	132	46	1	1	192	2,112	2,000	180	4,484
Burma	25	500	25	171	3	1,069	87	682	37	34	...	3	65	1,603	113	866	3,947
Central Provinces including Berar.	62	137	72	74	188	3,538	1,671	187	434	184	6	...	744	3,869	1,748	261	6,622
Azam	2	59	3	21	1	142	7	71	8	1	...	...	12	202	10	92	316
Coorg	1	2	1	1	...	7	17	14	...	...	...	...	1	2	18	15	43
North-West Frontier	5	22	4	2	1	249	246	...	23	12	5	...	29	183	255	3	570
Ajmer	3	125	12	4	1	180	50	3	8	20	...	...	12	325	62	7	406
Baluchistan	2	95	15	4	...	3	112	...	6	1	1	...	9	49	128	4	190
Andamans . . . . .	...	21	...	...	...	...	...	...	...	...	...	...	...	21	...	...	21
Total Bengal	181	1,707	484	547	234	8,795	4,962	1,134	792	333	14	11	1,207	10,785	5,460	1,692	19,144
Madras	49	3,435	2,596	397	17	8,462	4,750	601	495	729	310	42	561	12,626	7,656	1,040	21,833
Bombay	196	674	509	172	220	4,468	7,515	1,024	2,793	1,723	90	78	3,209	6,865	3,111	1,274	19,482
GRAND TOTAL, 1903-4	428	5,818	3,589	1,116	471	21,675	17,227	2,759	4,080	2,785	414	131	4,877	20,276	21,230	4,006	60,489
" " 1902-3	456	5,772	3,518	1,186	343	20,924	14,993	2,282	3,328	2,574	428	140	4,127	29,270	18,939	3,608	55,944
" " 19 1-2	459	6,748	3,630	1,003	473	19,964	13,340	2,307	3,609	2,662	383	114	4,541	29,372	17,353	3,424	54,690
" " 19 0-1	355	6,877	3,647	1,101	294	18,049	12,789	2,011	2,661	2,823	678	117	3,310	28,749	17,052	3,229	52,341

* Includes only the new cases of the year; not those which were left pending at the close of the previous year.

APPENDIX XIII.

[Vide paragraph 26.]

Causes of Forest fires.

PROVINCE.	I.—FIRES DUE TO PREVENTIBLE CAUSES.				II.—OTHER FIRES.				TOTAL.		
	Fires originating in Departmental Fire-Conservancy operations.		External fires crossing the Fire traces.		Fires due to carelessness of outsiders.		Fires originating from intention or malice.				
	No.	Sq. m.	No.	Sq. m.	No.	Sq. m.	No.	Sq. m.	No.	Sq. m.	
Bengal	12	4	21	88	21	10	14	7	68	109	
United Provinces	Central Circle	1	...	3	...	9	3	...	...	13	3
	Oudh	9	2	1	...	9	9	3	...	22	11
	Schöhl	2	...	3	...	5	1	1	...	11	1
	12	2	7	...	23	13	4	...	46	15	
Punjab	2	...	24	1	114	1	87	9	227	11(a)	
Burma	Pegu Circle	9	2	35	137	33	33	16	137	93	309
	Tanasserim Circle	9	1	9	48	28	23	10	2	56	74
	Northern	5	...	2	...	19	46	2	...	28	46
	Southern	18	32	13	26	42	22	1	...	69	80
	36	35	59	211	122	124	29	139	246	509	
Central Provinces	Northern Circle	21	69	35	109	90	185	7	2	153	365
	Southern	13	4	39	93	109	121	23	46	184	264
	Berar	13	2	9	2	43	24	8	4	73	32
	47	75	83	204	242	330	38	52	410	661(b)	
Assam	...	...	8	5	2	...	2	...	12	5	
Coorg	2	...	...	...	5	1	1	2	8	3	
North-West Frontier	...	...	...	...	...	...	29	5	29	5	
Ajmer	3	...	...	...	9	...	...	...	12	...	
	114	116	202	509	538	479	204	214	1,058	1,518	
Madras	Northern Circle	16	5	18	16	363	274	52	43	449	338(c)
	Central	6	...	44	52	201	218	136	52	367	322(d)
	Southern	7	1	20	9	240	78	90	42	367	130(e)
	29	6	92	77	804	570	278	137	1,203	790(f)	
Bombay	Northern Circle	21	1	84	21	419	99	15	3	539	124(g)
	Central	49	21	96	65	1,368	1,174	24	27	1,537	1,287
	Southern	24	1	92	12	923	217	34	5	1,073	235(h)
	Sindh	...	...	2	...	33	1	3	1	38	2
	94	23	274	98	2,743	1,491	76	36	3,187	1,648(i)	
GRAND TOTAL	1903-04	237	145	568	684	4,085	2,540	558	387	5,448	3,756
	1902-03	307	401	526	922	3,268	2,514	742	795	4,543	4,632

(a) Includes 3 square miles of other than systematically protected areas.

(b) Includes 429 square miles of partially protected areas.

(c) to (f) Includes 150, 20, 82, and 252 square miles of other than systematically protected areas.

(g) Less by 3 square miles than shown in Form No. 53 of Bombay Report for 1903-04.

(h) and (i) Includes 79 and 76 square miles of forests not systematically protected.

APPENDIX XIV.

[Vide paragraph 27.]

Protection from Cattle.

PROVINCE.	RESERVED FORESTS.			PROTECTED FORESTS.			UNCLASSIFIED FORESTS.			ALL CLASSES OF FORESTS.		
	Total area.	Area closed to all animals.	Area closed to browsers only.	Total area.	Area closed to all animals.	Area closed to browsers only.	Total area.	Area closed to all animals.	Area closed to browsers only.	Total area.	Area closed to all animals.	Area closed to browsers only.
	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.
Bengal	6,014	5,417	62	8,587	1,759	526	4,033	...	...	13,614	7,175	538
United Provinces	4,048	2,006	815	30	...	30	77	1	30	4,155	2,007	875
Punjab	2,456	617	491	4,909	58	81	1,914	57	173	9,279	732	745
Burma	20,089	16,584	(a) 3,455	...	...	...	103,174	...	...	123,213	16,584	3,455
Central Provinces including Berar.	22,672	3,941	7,551	...	...	...	4	...	...	22,676	3,941	7,551
Assam	3,778	2,695	999	...	...	...	18,509	...	...	22,287	2,695	999
Coorg	410	158	...	39	...	...	121	...	...	570	158	...
North-West Frontier	234	64	89	...	...	...	...	...	...	234	64	89
Ajmer	142	19	(b) 123	...	...	...	6	...	...	148	19	123
Baluchistan	208	158	...	...	...	...	...	...	...	208	158	...
Andamans	156	83	...	...	...	...	1,795	...	...	1,951	83	...
Total Bengal	60,157	31,692	13,585	8,545	1,816	637	129,633	58	203	193,335	33,566	14,425
Madras	17,923	1,609	473	...	...	...	1,636	87	...	19,559	1,696	473
Bombay	13,437	2,409	3,737	1,320	...	224	...	...	...	14,307	2,409	3,961
GRAND TOTAL { 1903-04	91,567	35,710	22,795	9,865	1,816	861	181,269	145	203	232,701	37,671	23,359
{ 1902-03	90,750	35,543	34,813	19,519	1,810	663	118,555	94	886	216,324	37,452	36,362

(a) Excludes 1,860 square miles shown with 16,584 square miles in column 3.

(b) " 19 " " " " 142 " " " "

APPENDIX XV.

[Vide paragraph 27.]

Protection from Cattle.

PROVINCE.	Circle.	GRAZED ON PAYMENT, NUMBER OF ANIMALS.										GRAZED FREE, NUMBER OF ANIMALS.									
		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.	Camels.	Other animals.	Buffaloes.	Cows and Bullocks.	Goats and Sheep.	Camels.	Other animals.	Buffaloes.	Cows and Bullocks.	Goats and Sheep.	Camels.	Other animals.	Buffaloes.	Cows and Bullocks.	Goats and Sheep.	Camels.	
Bengal	...	4,731	11,477	5,083	...	23	9,620	193,309	17,144	...	533	23,788	76,671	23,887	...	...	11	341	130	...
United Provinces.	Central	26,431	76,286	5,207	4	1,101	8,775	38,626	102,661	...	2,187	12,700	95,469	5,942	...	928	530	3,477	921	...	
	Oudh	24,688	81,858	6,974	...	181	22,998	108,565	9,385	...	...	2,184	10,247	...	...	...	1,228	3,873	524	...
	School	18,195	40,487	15,871	2,856	6,909	1,136	8,598	110	...	62	578	14,448	35,906	...	20	...	1,349	...	...
Total	...	57,324	201,651	28,052	2,860	8,191	33,009	155,789	112,156	...	2,249	15,462	120,158	41,848	...	948	1,756	8,699	1,445	...	
Punjab	...	17,843	50,885	456,475	12,248	672	1,186	14,352	223,539	264	173	145,134	622,649	567,366	282	10,129	43	768	651	1,553	
Barnag	Pegu	1,218	1,034	...	...	...	...	...	...	...	...	25,216	31,965	...	...	14	...	...	...
	Tenasserim	...	...	...	...	...	...	...	...	...	...	4,081	1,128	...	17	1	...	...	...
	Northern	...	...	...	...	...	22	...	...	...	...	9,412	202	...	...	...	1,628	257	...	
	Southern	21	196	6	...	93	...	...	...	...	...	40,937	...	...	...	...	...	507	...	
Total	...	1,239	1,230	6	...	93	22	...	...	...	38,709	74,232	...	17	15	1,628	764	...	...
Central Provinces.	Northern	184,205	328,325	60,284	87	3,995	...	...	...	...	...	...	...	...	...	...	143	13,862	65	...
	Southern	100,391	846,389	227,131	...	889	26,035	177,899	2,835	...	449	...	...	...	...	...	5	1,086	...	...
	Benar	118,118	607,158	488,047	149	2,298	2,204	18,911	35	...	2	349	118,678	113	...	21	8	320	...	...
Total	...	402,714	2,282,372	775,462	246	7,122	28,239	196,810	2,870	...	451	349	118,678	113	...	21	156	15,268	65	...	
Assam	...	28,939	6,751	18	...	542	...	...	...	...	...	...	...	...	...	...	46,721	247,283	11,983	...
Coorg	...	251	2,223	...	...	...	...	...	...	...	...	1,750	...	...	...	...	...	...	...
North-West Frontier.	...	2,081	1,361	1,941	...	3	...	...	...	...	...	370	740	...	...	...	1,140	6,439	...	...
Ajmer	...	102	870	...	...	...	543	3,987	...	...	...	...	...	...	...	...	75	1,374	...	...
Baluchistan	...	296	2,427	...	...	3	...	...	...	...	...	751	16,652	1	224	...	...	...	...
Total Bengal	1903-04	525,520	2,561,257	1,277,037	15,314	16,649	73,489	584,247	365,709	284	3,409	223,810	1,015,627	649,866	300	11,337	51,530	280,936	14,274	1,553	
	1902-03	463,694	2,262,316	1,158,745	9,444	17,674	63,294	501,392	361,869	82	2,602	203,117	1,111,027	649,830	297	10,373	53,903	318,549	17,168	3,625	
Madras	Northern	80,205	444,033	708,617	...	52	3,449	27,201	...	...	...	...	2,685	5,505	...	...	1,351	2,229	1,761	...
	Central	35,373	758,325	745,177	...	7	222	817	749	...	...	...	1,900	...	...	...	1,944	16,560	227	...
	Southern	29,534	351,018	123,615	...	436	...	1,665	...	...	...	2,217	...	...	...	...	...	...	...	...
Total	1903-04	155,112	1,553,376	1,577,409	...	495	3,671	29,683	749	...	...	2,217	4,585	5,505	...	...	3,295	18,789	1,988	...
	1902-03	145,254	1,464,380	1,704,850	...	88	3,190	26,027	8,687	...	...	2,333	4,585	5,505	...	...	2,868	9,480	984	...
Bombay	Northern	831	2,588	...	...	31	2,953	8,600	...	...	...	2,614	12,991	...	...	1,364	...	...	...
	Central	7,613	35,340	203,822	1	2,902	30,808	300,910	149,014	5	21,147	1,130	4,567	...	...	...	5,628	49,149	25	...
	Southern	2,075	1,001	8,262	...	7	148,032	297,569	64,846	4	225	304	2,279	...	...	...	...	632	...	...
	Sindh	52,070	54,332	377,212	9,595	1,438	3,530	6,935	10,446	406	126	536	620	91	11	576	1,284	3,248	4,174	2,850	
Total	1903-04	62,589	93,261	589,296	9,606	4,378	185,323	614,011	224,306	415	121,498	4,584	20,457	91	11	1,940	6,912	53,029	4,189	2,850	
	1902-03	54,614	80,125	406,732	9,061	1,977	129,752	625,540	99,406	741	5,029	26,636	160,043	91	13	1,710	61,810	96,230	3,301	2,470	
LAND TOTAL.	1903-04	743,221	4,207,864	3,443,742	24,910	21,522	262,483	1,207,941	530,764	679	124,907	230,611	1,040,669	655,462	311	13,277	61,737	352,754	20,461	4,403	
	1902-03	663,502	3,806,821	3,270,327	18,505	20,739	196,236	1,052,959	469,942	823	7,631	242,086	1,275,655	655,426	310	12,083	108,581	424,259	21,451	6,095	

APPENDIX XVI.

[Vide paragraph 35.]

Area of Plantations and the cost of the year's work.

PROVINCE.	AREA IN ACRES.												Cost of operations during the year.
	AT COMMENCEMENT OF THE YEAR.			ADDED DURING THE YEAR.			EXCLUDED DURING THE YEAR.			BALANCE AT CLOSE OF THE YEAR.			
	Regular Plantations.	Tann-SYMS.	Total.	Regular Plantations.	Tann-SYMS.	Total.	Regular Plantations.	Tann-SYMS.	Total.	Regular Plantations.	Tann-SYMS.	Total.	
Bengal	2,954	...	2,954	2	...	2	1,370	...	1,370	1,586	...	1,586	463
United Provinces	3,355	...	3,355	17	...	17	...	...	...	3,372	...	3,372	1,513
Punjab	975	...	975	2	...	2	...	...	...	977	...	977	104
Burma	3,582	63,145*	66,727*	1,555	3,527	5,082	...	...	...	5,137	66,672	71,809	69,055†
Central Provinces including Berar.	25†	1,258†	1,278†	150	92‡	1,074	...	236	236	175	1,941	2,116	798
Assam	3,252	7	3,259	10	...	10	40	...	40	3,222	7	3,229	6,809
Coorg	2,062	682	2,744	...	260	260	...	...	...	2,062	942	3,004	3,313
North-West Frontier . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmer	94*	...	94*	...	...	...	...	...	...	94	...	94	648
Baluchistan	33	...	33	...	...	...	...	...	...	33	...	33	73
Andamans	465	...	465	225	...	225	...	...	...	690	...	690	2,646
Total Bengal	16,797	65,087	81,884	1,961	4,711	6,672	1,410	236	1,646	17,343	69,562	86,910	35,421
Madras	42,599*	...	42,599*	258	...	258	7,718	...	7,718	35,139†	...	35,139†	33,359
Bombay	6,823*	...	6,823*	3,290	...	3,290	63	...	63	10,050	...	10,050	11,194
GRAND TOTAL { 1903-04	66,219	65,087	131,306	5,509	4,711	10,220	9,191	236	9,427	62,537	69,562	132,099	122,974
{ 1902-03	62,956	60,627	123,583	6,121‡	3,137	9,258‡	4,624	1	4,625	64,453‡	63,833	128,286‡	115,738

N. B.—The area under experimental plantation in Burma has been excluded.

* Corrected figures.

† Not shown in the Berar Report for 1902-03.

‡ Includes 2,012 acres of topes.

§ Excludes the charges for experimental plantations in South Tenasserim Division, Tenasserim Circle.

APPENDIX XVII.

[Vide paragraph 44.]

Outturn of Forest Produce.

I

PROVINCE.	RESERVED FORESTS.			PROTECTED FORESTS.			UNCLASSIFIED FORESTS.			AVERAGE OUTTURN PER SQUARE MILE.								
	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.	RESERVED FORESTS.			PROTECTED FORESTS.			UNCLASSIFIED FORESTS.		
										C. ft.	No.	R.	C. ft.	No.	R.	C. ft.	No.	R.
Bengal	19,657,645	13,136,522	1,77,562	16,724,329	4,502,320	1,26,838	421,012	7,718,171	5,420	3,269	2,184	29	4,689	1,262	36	104	1,914	
United Provinces	16,392,523	16,999,237	2,91,644	432,414	57,362	3,705	198,658	42,650	2,067	4,049	4,199	72	14,414	1,912	124	2,580	559	
Punjab	9,287,890	901,123	2,23,516	19,807,044	26,819	2,62,367	2,661,906	51,687	71,088	3,761	367	91	4,033	5	54	1,391	27	
Burma	9,854,659	13,203,006	1,04,970	...	...	...	38,692,722	44,799,000	1,62,635	492	659	6	...	...	...	375	434
Central Provinces including Berar.	22,836,628	23,172,333	7,33,939	...	...	...	...	...	1,007	1,022	32	...	...	...	...	...	...
Assam	1,492,743	1,231,070	35,741	...	...	...	11,150,084	29,277,804	3,81,934	395	320	9	...	...	...	692	1,582
Coorg	168,135	92,740	3,335	12,850	6,650	15,306	140,660	25,600	435	410	226	8	329	170	392	1,162	211	
North-West Frontier	1,449,656	...	18,969	...	...	...	...	...	6,195	...	81	...	...	...	...	...	...
Ajmer	401,594	...	17,884	45	...	163	...	...	2,828	...	126	...	...	...	...	...	...
Baluchistan	16,806	...	11,552	...	...	...	324,195	...	-28	81	...	55	...	...	...	...	...
Andamans	344,926	125,150	437	...	...	...	1,780,893	470,764	8,474	2,211	802	3	...	...	...	992	262
TOTAL BENGAL IN 1903-04	81,853,205	68,861,175	16,39,599	36,976,682	4,593,151	4,08,409	55,370,230	82,385,676	6,32,081	1,366	1,145	27	4,327	54	47	427	636	
TOTAL BENGAL IN 1902-03	80,817,462	65,755,002	17,37,991	40,126,603	4,666,466	4,04,998	60,401,578	212,429,828	5,84,416	1,355	1,103	29	4,493	550	48	525	1,852	

II

Presidency.	Total area under control of Forest Department.	Timber and Fuel.	Bamboos.	Minor produce.	AVERAGE OUTTURN PER SQUARE MILE.			
					Timber and Fuel.	Bamboos.	Minor produce.	
					Sq. m.	C. ft.	No.	R.
Bengal (b)	198,355	174,200,117	155,840,002	26,80,089	878	786	14	
Madras (c)	19,559	20,404,621	37,025,554	12,66,664	1,043	1,893	65	
Bombay	14,807	38,911,607	5,646,517	5,32,858	2,587	381	36	
GRAND TOTAL	1903-04	232,701	232,916,345	198,512,073	44,79,111	1,001	853	19
	1902-03	216,824	245,900,612	323,175,225	46,11,851	1,134	1,490	21

(a) Includes 59,891 cubic feet of timber, 220,230 cubic feet of fuel, 168,434 bamboos and Rs5 worth of minor produce removed for local use in the Settlement.

(b) Includes 289,121 cubic feet of timber and fuel, 168,434 bamboos and Rs5 worth of bamboos removed by Settlement officers in the Andamans.

(c) Includes 39,890 cubic feet of timber, 49,753 cubic feet of fuel, 59,395 bamboos and Rs1,572 worth of minor produce obtained by confiscation.

APPENDIX XVIII.

Forest Produce removed by different Agencies.

APPENDIX

[Vide

Forest Produce removed

PROVINCE.	TIMBER.				FUEL.			
	Removed by Government.	Removed by Purchasers.	Removed by Free-grantees.	Removed by Right-holders.	Removed by Government.	Removed by Purchasers.	Removed by Free-grantees.	Removed by Right-holders.
	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.
Bengal	172,535	3,929,056	15,510	176,624	176,642	18,008,395	25,762	14,298,462
United Provinces	825,119	4,996,446	146,600	489,001	713,448	6,638,070	204,279	3,510,632
Punjab	1,095,580	2,289,674	20,820	1,018,228	2,221,988	1,874,747	156,428	23,534,375
Burma	5,268,119	22,723,216	302,821	534,147	52,607	17,471,743	...	2,194,723
Central Provinces including Berar	906,037	2,913,187	64,595	68,786	1,961,006	14,644,301	1,245,136	1,033,530
Assam	155,256	3,563,425	845,026	550	22,856	2,747,423	5,308,291	...
Cocerg	94,855	135,620	1,900	...	17,270	72,000	...	...
North-West Frontier	315,706	580,386	49,624	...	32,400	417,424	19,136	34,980
Ajmer	214	5,644	...	8,148	335	384,824	2,340	134
Baluchistan	162	5,675	2,525	...	17,855	313,245	1,539	...
Andamans (a)	452,622	18,648	27,510	...	1,104,206	2,100	240,712	...
Total Bengal { 1903-04	8,786,205	41,160,977	1,476,931	2,290,484	6,320,613	62,074,272	7,203,623	44,606,391
{ 1902-03	6,599,540	36,396,329	1,710,333	2,567,960	8,117,709	62,651,402	9,156,730	53,867,945
Madras	320,194	(b) 2,476,856	67,679	77,321	6,180,433	(b) 10,925,619	8,801	258,131
Bombay	1,037,144	3,505,664	149,634	43,819	4,465,733	27,557,075	8,495	1,648,978
GRAND TOTAL { 1903-04	10,143,543	47,143,497	1,694,304	2,411,624	16,966,789	100,556,966	7,215,919	46,414,000
{ 1902-03	7,956,504	42,225,599	1,863,352	2,669,748	19,342,335	99,227,096	9,167,766	63,170,597

(a) Excludes 59,801 cubic feet of timber, 220,230 cubic feet of fuel.

(b) Excludes 39,830 " " " " 49,752 " " " "

XVIII.

paragraphs 41-43.]

by different Agencies.

BAMBOOS.				MINOR PRODUCTS INCLUDING GRASS AND GRAZING.				PROVINCE.
Removed by Government.	Removed by Purchasers.	Removed by Free-grantees.	Removed by Right-holders.	Removed by Government.	Removed by Purchasers.	Removed by Free-grantees.	Removed by Right-holders.	
No.	No.	No.	No.	R	R	R	R	
434,962	19,535,558	293	5,386,200	2,004	1,85,347	1,095	1,21,874	Bengal.
74,627	16,818,914	453	205,255	40,324	2,00,348	5,032	21,218	United Provinces.
98,234	851,895	...	...	39,196	1,72,569	3,126	3,42,010	Punjab.
16,000	54,361,000	35,000	3,540,000	2,611	1,78,617	10,336	96,041	Burma.
251,146	21,931,081	331,106	609,000	21,658	6,87,664	12,764	11,653	Central Provinces including Barar.
8,937	23,308,197	2,196,740	...	27,258	89,153	3,01,264	...	Assam.
...	118,240	6,650	...	163	12,287	...	656	Coorg.
...	...	...	...	220	11,374	6,594	631	North-West Frontier.
...	...	...	...	2,963	2,002	1,425	11,652	Ajmer.
...	...	...	...	71	1,235	383	9,891	Baluchistan.
24,680	36,000	366,800	...	8,214	209	483	...	Andamans. (a)
903,586	142,040,485	2,987,042	19,740,455	1,44,787	15,47,375	3,42,502	6,45,870	1903-04
1,873,701	266,627,555 (b)	4,627,868	19,980,393	1,19,718	15,54,631 (b)	404,588	648,426	1902-03
513,189	36,189,699	235,760	29,312	59,292	11,56,409	5,886	43,505	Madras.
16,745	5,214,404	62,719	852,650	-517	-4,42,882	-9,924	-79,085	Bombay. (b)
1,433,520	183,444,587	3,283,120	10,123,017	2,04,596	31,46,666	3,58,312	7,67,910	1903-04
1,722,546	806,013,225	4,670,604	10,532,071	1,95,003	29,91,887	4,30,309	9,94,605	1902-03

18,434 bamboos and Rs55 worth of minor produce removed for local use in the Settlement.
 59,395 " " " " " " obtained by confiscation.

APPENDIX XIX.

[Vide paragraphs 46-47.]

Comparative Statement of Revenue and Expenditure for the financial year 1903-04.

PROVINCE.	REVENUE.		SURPLUS.		DEFICIT.		Proportion of surplus to Gross Revenue.	Net Revenue per square mile of land under control of Forest Department.	
	1903-04.	Average for preceding 5 years.	1903-04.	Average for preceding 5 years.	1903-04.	Average for preceding 5 years.			
	R	R	R	R	R	R	Per cent.	R	
Imperial	7,455	6,647	...	...	81,890	79,382	...	...
Bengal	10,65,523	11,78,609	3,62,015	5,99,112	...	...	33.9	27
United Provinces	22,80,446	16,97,815	11,99,008	7,17,714	...	...	53.6	259
Punjab	17,17,797	14,31,293	5,61,383	4,88,005	...	...	32.7	60
Burma	82,68,535	73,66,085	49,16,131	47,53,062	...	...	59.5	40
Central Provinces and Berar	19,98,032	14,52,318	7,17,066	2,50,462	...	...	35.9	33
Assam	6,75,733	5,21,793	2,50,248	1,88,376	...	...	37.0	11
Coorg	2,24,031	1,63,210	1,31,840	83,811	...	...	58.8	231
North-West Frontier	1,01,833	43,523	41,230	2,294	...	...	40.5	176
Ajmer	13,884	10,387	...	...	2,796	5,760	...	...
Baluchistan	18,363	16,597	...	...	3,334	10,806	...	...
Andamans	4,32,381	2,72,177	1,66,260	91,008	...	...	38.4	85
Forest School	3,038	3,213	...	...	56,301	66,944	...	...
Forest Surveys	431	909	...	...	33,504	33,023	...	...
Total Bengal	1,68,07,481	1,41,64,576	81,67,355	69,77,930	...	...	48.6	41
Madras	26,57,727	23,82,046	9,06,797	6,80,298	...	...	34.1	46
Bombay	27,51,539	24,76,153	9,75,602	5,21,676	...	...	35.5	66
GRAND TOTAL	1903-04	2,22,16,747	1,90,22,775	1,00,49,754	81,79,904	45.2	43
	1902-03	1,94,71,540	*1,86,87,565	82,22,209	*80,55,414	42.2	38

* Corrected figures.

APPENDIX XX.

[Vide paragraph 48.]

Estimated value of Forest Produce given away free or at reduced rates during the forest year 1903-04.

PROVINCE.	Timber.	Fuel.	Bamboos.	Minor produce.	Grass and grazing.	TOTAL.
	₹	₹	₹	₹	₹	₹
Bengal	12,067	70,679	8,902	46,144	80,601	2,18,393
United Provinces	52,925	53,391	899	4,527	74,915	1,86,657
Punjab	42,009	2,60,106	...	47,574	2,97,562	6,47,251
Burma	84,912	16,407	9,011	8,495	96,256	2,15,081
Central Provinces including Berar.	13,735	41,798	11,315	17,318	44,929	1,29,090
Assam	61,031	82,769	6,195	81,935	2,19,279	4,51,309
Coorg	214	...	33	...	656	903
North-West Frontier	3,344	1,083	...	70	7,205	11,702
Ajmer	1,057	23	...	55	13,022	14,157
Baluchistan	540	18	...	333	9,891	10,832
Andamans	26,220	18,557	268	538	...	45,583
Total Bengal	2,98,104	5,44,826	36,623	2,07,089	8,44,316	19,30,958
Madras	38,945	5,233	1,102	42,240	7,151	94,671
Bombay	18,811	33,075	823	18,814	9,22,039	10,43,562
GRAND TOTAL { 1903-04	3,55,860	6,33,134	38,543	2,68,143	17,73,506	30,69,191
{ 1902-03	3,59,885	8,28,655	59,093	4,11,870	16,62,454	33,21,957

The revenue realized from Grass and Grazing throughout India was ₹17,31,066.

APPENDIX XXI.

[Vide paragraph 49.]

Details of Revenue and Expenditure for the financial year 1903-04.

		Amount.		
		R.		
Gross Receipts	(a) Wood	1,76,19,219		
	(b) Minor forest produce	14,88,726		
	(c) Forest stamps and commutation fees for forest produce	7,01,657		
	(d) Grazing	12,75,874		
	(e) Revenue from forests not managed by Government	4,76,871		
	(f) Miscellaneous	6,54,400		
TOTAL REVENUE		2,22,16,747		
			Proportion of Expendi- ture to Gross Revenue.	
		Amount.	Per cent.	
		R		
Expenditure	A Recurring	(i) Superior Staff	25,16,782	11.3
		(ii) Exchange Compensation Allowances	91,234	.4
		(iii) Subordinate Staff (including Rangers, Foresters and Guards).	21,23,578	9.6
		(iv) Office Establishments (including Contingencies).	9,56,879	4.3
		(1) Extraction	34,76,894	15.7
		(2) Roads and Buildings	5,65,375	2.5
		(3) Fire-protection	5,16,783	2.3
		(4) Cultural operations	3,95,676	1.8
	(b) Working	(5) Live-stock, stores and plant.	3,63,874	1.6
		(6) Working-Plans	83,573	.4
		(7) Rent for leased forests	1,46,937	.6
		(8) Miscellaneous	99,034	.4
	(c) Expenditure on realization of revenue from forests not managed by Government.	33,145	.2	
	(d) Forest Science and Education (including all "A" and "B" charges of Forest School).	59,338	.3	
Total		1,14,99,102	51.4	
B Extraordinary	(e) Forest Settlement	1,37,213	.6	
	(f) Forest Surveys	4,36,857	2.0	
	(g) Forest Demarcation	1,63,821	.8	
Total		7,37,891	3.4	
GRAND TOTAL EXPENDITURE		1,21,66,993	54.8	
Net Revenue		1,00,49,754	45.2	

APPENDIX XXII.

**Summary of Revenue and Expenditure of the Forest Department in
India for the financial year 1903-04.**

Forest Department in India for the financial year 1903-04.

A. no.	Baluchistan.	Andaman.	Forest School.	Forest Surveys (Imperial.)	Total Bengal Presidency.	Madras.	Bombay.	GRAND TOTAL.	BUDGET HEADS.
R	R	R	R	R	R	R	R	R	REVENUE.
1,320	7,130	4,30,166	...	...	71,92,694	6,17,926	11,60,970	89,71,590	I.—Timber and other produce removed from the forests by Government agency.
11,293	1,508	1,477	...	...	84,68,207	18,90,730	15,06,996	1,18,65,933	II.—Timber and other produce removed from the forests by consumers or purchasers.
15	50	...	...	...	3,17,670	14,479	4,589	3,36,738	III.—Drift and waif wood and confiscated forest produce.
...	9,271	...	...	...	4,73,971	...	8,955	4,82,926	IV.—Revenue from forests not managed by Government.
1,256	814	738	3,033	431	3,54,939	1,34,592	70,029	5,59,560	V.—Miscellaneous.
13,384	18,363	4,32,381	3,038	431	1,68,07,481	26,57,727	27,51,539	2,22,16,747	TOTAL REVENUE.
EXPENDITURE.									
A.—CONSERVANCY AND WORKS.									
542	4,441	1,90,815	...	...	24,09,905	3,07,554	3,80,018	30,97,477	I.—Timber and other produce removed from the forests by Government agency.
91	...	...	...	...	2,36,644	1,09,869	49,104	3,95,617	II.—Timber and other produce removed from the forests by consumers or purchasers.
...	...	...	...	...	1,06,334	1,107	304	1,07,745	III.—Drift and waif wood and confiscated forest produce.
...	343	...	...	...	33,229	...	...	33,229	IV.—Revenue from forests not managed by Government.
...	...	...	...	...	4,54,484	20,221	23,799	4,98,504	V.—Rent of leased forests and payments to shareholders in forests managed by Government.
194	32	26,070	1,256	571	2,25,227	76,594	8,459	3,10,280	VI.—Live-stock, stores, tools and plant.
1,330	252	23,729	1,690	...	4,87,246	99,549	74,778	6,61,573	VII.—Communications and buildings.
2,433	117	2,744	...	5,316	10,33,648	2,79,558	2,44,485	15,62,691	VIII.—Demarcation, improvement, and extension of forests.
128	247	406	2,495	29	47,892	9,679	30,398	87,469	IX.—Miscellaneous.
4,718	5,432	2,38,764	5,441	5,916	50,39,109	9,04,131	8,11,345	67,54,565	Total A.—Conservancy and Works.
B.—ESTABLISHMENTS.									
10,176	13,265	23,745	46,226	20,756	29,61,408	6,50,066	3,05,149	44,16,622	I.—Salaries.
1,031	2,500	2,719	3,799	1,047	4,34,783	1,39,786	1,08,634	6,83,203	II.—Travelling allowances.
755	500	893	3,973	6,216	2,04,826	56,947	50,810	3,12,533	III.—Contingencies.
11,962	16,265	27,357	53,898	28,019	36,01,017	8,46,799	9,64,592	54,12,408	Total B.—Establishments
16,660	21,697	2,66,121	69,339	33,935	86,40,126	17,50,930	17,75,937	1,21,66,993	GRAND TOTAL OF EXPENDITURE.
...	...	1,66,200	...	...	81,67,355	9,06,797	9,75,602	1,00,49,754	SURPLUS.
2,796	3,334	...	56,301	83,504	...	...	...	...	DEFICIT.

Revenue, Expenditure and Surplus of the Forest Department throughout India du

(I) R

Table (I) R: Revenue, Expenditure and Surplus of the Forest Department throughout India du. Columns: Province, 1870-80, 1880-81, 1881-82, 1882-83, 1883-84, 1884-85, 1885-86, 1886-87, 1887-88, 1888-89, 1889-90, 1890-91, 1891-92. Rows: Imperial, Bengal, United Provinces, Punjab, Burma (Lower), Burma (Upper), Central Provinces, Assam, Coorg, North-West Frontier, Ajmer, Forest Surveys (Imperial), Forest School, Andamans, Madras, Bombay, Total (British India), Berar, Forest Surveys (Berar), Baluchistan, GRAND TOTAL.

The figures in this statement have been * Includes certain home receipts and † Amalgamated with the Central Provinces

(II) EXP

Table (II) EXP: Expenditure of the Forest Department throughout India du. Columns: Province, 1870-80, 1880-81, 1881-82, 1882-83, 1883-84, 1884-85, 1885-86, 1886-87, 1887-88, 1888-89, 1889-90, 1890-91, 1891-92. Rows: Imperial, Bengal, United Provinces, Punjab, Burma (Lower), Burma (Upper), Central Provinces, Assam, Coorg, North-West Frontier, Ajmer, Forest Surveys (Imperial), Forest School, Andamans, Madras, Bombay, Total (British India), Berar, Forest Surveys (Berar), Baluchistan, GRAND TOTAL.

* Includes pay of Inspector-General of Forests, certain † Amalgamated with the Central Provinces

(III) SU

Table (III) SU: Surplus of the Forest Department throughout India du. Columns: Province, 1870-80, 1880-81, 1881-82, 1882-83, 1883-84, 1884-85, 1885-86, 1886-87, 1887-88, 1888-89, 1889-90, 1890-91, 1891-92. Rows: Imperial, Bengal, United Provinces, Punjab, Burma (Lower), Burma (Upper), Central Provinces, Assam, Coorg, North-West Frontier, Ajmer, Forest Surveys (Imperial), Forest School, Andamans, Madras, Bombay, Total (British India), Berar, Forest Surveys (Berar), Baluchistan, GRAND TOTAL.

* Includes pay of Inspector-General of Forests, certain † Amalgamated with the Central Provinces

XXIII.

[47, and 49.]

25 (financial) years from 1879-80 to 1903-04.

U.E.

Table with 13 columns representing years from 1893 to 1903-04 and a final column for Provinces. Rows include various financial data points for different regions like Imperial, Bengal, United Provinces, Punjab, etc.

by the Comptroller and Auditor General. Available and petty local items.

PURE.

Table with 13 columns representing years from 1893 to 1903-04 and a final column for Provinces. Rows include financial data for 'PURE' categories across various provinces.

on home charges, and undistributable and petty local items.

U.S.

Table with 13 columns representing years from 1893 to 1903-04 and a final column for Provinces. Rows include financial data for 'U.S.' categories across various provinces.

and undistributable and petty local items.

APPENDIX XXIV.

[Vide paragraph 53.]

EXPORTS OF FOREST PRODUCE.

ARTICLES OF FOREST PRODUCE.	QUANTITY IN TONS OF 20 CWT. IN THE CASE OF TEAK, CUBIC TONS.		VALUATION AT PORT OF SHIPMENT IN 1903-04.	
	Average of 5 years, 1898-99 to 1902-03.	In 1903-04.	Total.	Per ton.
Cacoutchouc	273	90	R 3,47,196	R 3,858
{ Button	1,696	2,525	49,35,903	1,955
Lac { Shell	8,540	8,925	2,18,30,905	2,446
{ Stick and other kinds	202	331	4,72,162	1,426
Lac-dye	2 cwt.	...	...	...
Sandal, ebony and other ornamental woods . . . . .	...	Information not available.	12,10,498	...
Cutch and gambier	4,281	5,652	19,73,711	349
Myrabolams	51,127	61,480	42,10,238	68
Teak	69,547	73,913	91,45,605	124
Cardamoms	84	128	3,37,613	2,638
TOTAL IN 1903-04 . . . . .	...	...	4,44,63,881	...
" " 1902-03 . . . . .	...	...	3,20,38,363	...