

REVIEW
OF
FOREST ADMINISTRATION
IN
BRITISH INDIA
FOR THE YEAR
1895-96.

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CHAPTER I.

EXTENSION AND ORGANIZATION OF THE FOREST AREA.

I.—ALTERATIONS IN AREA.

The alterations in the area of reserved forests are shown in the following table. There was a total increase of 2,211 square miles, as against 2,682 square miles during the preceding year. At the close of the year the area of reserved forests stood at 76,482 square miles, as compared with 74,271 square miles, the area on the 1st July 1895 :—

PROVINCE.	AREA OF RESERVED FORESTS, IN SQUARE MILES.				REMARKS.
	In 1894-95.	Added in 1895-96.	Excluded in 1895-96.	At the close of 1895-96.	
Bengal	5,839	43	5	5,877	
North-Western Provinces and Oudh	3,765	12	11	(a) 3,766	(a) Includes 85 square miles of leased forests.
Punjab	1,677	10	7	(b) 1,680	(b) Includes 344 square miles of leased forests, and excludes 123 square miles managed by the Military and Civil authorities.
Central Provinces	19,542	(c) 104	353	19,293	
Burma (Lower)	7,071	315	8	(d) 7,378	(c) Includes 4 square miles taungya areas. (d) Includes 573 square miles taungya areas.
„ (Upper)	4,408	1,034	3	(e) 5,439	(e) Includes 137 square miles of taungya areas.
Assam	3,716	11	42	3,685	
Coorg	238	...	...	238	
Ajmere	139	...	...	139	
Baluchistan	175	...	...	175	
Andamans	73	...	...	73	
TOTAL	46,643	1,529	429	47,743	
Berar	4,179	15	16	4,178	
Total Bengal Presidency	50,822	1,544	445	51,921	
„ Madras „	11,466	1,036	164	12,338	
„ Bombay „	11,933*	199	9	*12,173	* Includes leased forests in the Dangs, estimated at 679 square miles.
GRAND TOTAL	74,271	2,329	613	76,432	

It will thus be seen that nearly the whole of the increase took place in Burma and in Madras. In the former province good progress was made, particularly in Upper Burma, in finally notifying reserves. In addition, much work was also done in the collection and examination of forest tracts prior to reservation, and large increases to the areas of reserves in Upper Burma may be expected within the next few years. In Madras, too, settlement work has been pushed on with energy, with the result that 856 square miles of new reserves were formed during the year.

The following table gives the total areas of all forest lands under the control of the Forest Department at the close of the year :—

PROVINCE.		FOREST AREA, IN SQUARE MILES.				Proportion of forests to whole area of Province.	REMARKS.
NAME.	Area in square miles.	Reserved.	Protected.	Unclassed State.	TOTAL.		
Bengal	151,585	5,877	(a) 9,437	4,034	18,348	Per cent. 8.80	(a) Exclusive of the areas in the districts of Chota Nagpur (except Singhbhum and Hazaribagh) which are still unknown and cannot even be estimated.
North-Western Provinces and Oudh.	107,141	(b) 3,766	(c) 94	43	3,903	3.64	(b) Includes 85 square miles of leased forests.
Panjab	103,436	(d) 1,680	(e) 1,376	2,972	6,028	5.82	(c) Exclusive of 9,225 square miles of undemarcated lands managed by District Officers.
Central Provinces	86,613	19,293	...	364	19,657	22.69	(d) Includes 344 square miles of leased forests, and excludes 123 square miles managed by the Military and Civil authorities.
Burma (Lower)	87,831	(f) 7,378	...	(g)	7,378	8.40	(e) Exclusive of 921 square miles managed by the Civil authorities.
„ (Upper)	81,026	(h) 5,439	...	(i)	5,439	6.71	(f) Includes 573 square miles of <i>taungya</i> areas.
Assam	45,378	3,685	...	11,638	15,323	3.37	(g) Chapter IV of the Burma Forest Act and of the Upper Burma Forest Regulation extends protection to certain trees and produce in unoccupied lands generally. The area of these undemarcated lands to which protection is afforded is not known.
Coorg	1,582	238	654	...	892	56.38	(h) Includes 137 square miles of <i>taungya</i> areas.
Ajmere	2,711	139	...	(j) 10	149	5.50	(i) Village lands managed by the Forest Department, but not yet brought under the Ajmere Forest Regulation.
Baluchistan . . . . .	...	175	...	...	175	...	(j) Baluchistan left out of account.
Andamans	2,000	73	...	1,881	1,954	97.70	(k) Includes the area of the leased forests in the Dangs, estimated at 679 square miles.
TOTAL	669,283	47,743	5,561	20,992	74,296	(j) 11.07	
Berar	17,717	4,178	...	...	4,178	23.53	
Total Bengal Presidency	637,000	51,921	5,561	20,992	78,474	(j) 11.39	
Madras	141,125	12,868	...	6,690	19,558	13.82	
Bombay	122,667	(k) 12,178	2,786	...	14,964	12.27	
GRAND TOTAL	950,792	76,462	8,347	27,682	112,511	(j) 11.82	

At the commencement of the year the total area under the management of the Forest Department stood at 112,952 square miles, and there has thus been a decrease of 441 square miles, which is mainly due to a large deduction from the area of unclassified forests in Assam rendered necessary by a revision of areas. There was an increase in protected forests of 1,257 square miles, which was chiefly due to the completion of the Kulu forest settlement, under

which an area of 1,090 square miles became protected forests. The details of changes in area in the various provinces are as follows :—

Bengal.—The area of reserved forests was increased by 33 square miles, the increase being mainly due to rectification of areas in the Jalpaiguri District; the actual increase was only about $\frac{1}{4}$ a square mile. An increase of 435 square miles is shown under protected forests, and this is due to the area of the protected forests in the Sonthal Parganas having been estimated and brought on the forms. No real increase, however, took place. The area of unclassified forests remained unchanged at 4,034 square miles.

North-Western Provinces and Oudh.—The areas administered by the Forest Department remained practically unchanged; there was an increase of 1 square mile to the area of reserved and a decrease of 1 square mile in that of unclassified forests, leaving the area the same as last year, *viz.*, 3,903 square miles.

Punjab.—The principal changes which occurred during the year were—

In Kulu an area of 1,090 square miles were made protected forests from the unclassified forests which had, however, for long been under the management of the Forest Department. The Dharmasala municipal forests, area 55,250 acres, were made over to the control of the Forest Department; 15,411 acres of unclassified forest in the Lahore Division were made over to the Civil Department and sold for cultivation. In Chenab, 5,598 acres of unclassified forest were made over for colonization. Other changes, due to action of rivers and rectification of areas, were of small importance, and at the close of the year the areas of the various classes of forests, as compared with the previous year were—

	Reserved.	Protected.	Unclassified.	Total.
1894-95	1,677	285	3,995	5,957
1895-96	1,680	1,376	2,972	6,028

Central Provinces.—The area of forest managed by the Department was reduced by 275 square miles, the area of all classes of forests standing at the close of the year at 19,657 square miles. On the other hand, an increase, to Class A. forests, or permanent reserves, of 1,223 square miles was effected. In the Northern Circle two important areas were disforested, the Charwa tract in Hoshangabad of 216 square miles and 80 square miles in the Bir and Samardeo tracts of Nimar. Other small areas, amounting to 13 square miles, were disforested, bringing the total area thus dealt with to 318 square miles. Very considerable progress was made in the examination of Class B.I. and B.II. forests, and the work of classifying these areas into land to be set aside for cultivation and land to be made into reserved forests is nearing completion. The area of the various classes of forests at the commencement and at the close of the year is shown in the following table :—

CLASS.	AREA IN SQUARE MILES.					
	SOUTHERN CIRCLE.		NORTHERN CIRCLE.		TOTAL.	
	June 1895.	June 1896.	June 1895.	June 1896.	June 1895.	June 1896.
A.	5,417	6,252	3,887	4,274	9,304	10,526
B.I.	762	1,047	2,067	1,864	2,829	2,911
B.II.	3,310	2,323	4,099	3,523	7,409	5,856
Unclassified	369	348	21	16	390	364
	9,858	9,975	10,074	9,682	19,932	19,657

Burma.—A net increase of 1,338 square miles took place in the area of reserved forests, of which 118 square miles were transferred from *taungya* areas. In Lower Burma 199 square miles were added in the Tenasserim Circle, and 116 square miles in the Pegu Circle, bringing, with certain smaller changes due to revision of area and to disforestation, the area of reserved forests to 7,374 square miles, as against 7,071 square miles at the commencement of the year. In the reserves is included an area of 573 square miles, which is burdened with *taungya* rights.

In Upper Burma important additions, amounting to 1,031 square miles, were made to reserved forests. Of these, 292 square miles were in the Eastern Circle, and 722 square miles,

chiefly in the Upper and Lower Chindwin Divisions, in the Western Circle, the remaining 17 square miles being due to rectification of areas. The area burdened with the rights of *taungya*-cutters was reduced from 219 to 100 square miles by buying out the rights, this being the first instance of such procedure in India or Burma. At the close of the year, proposals for the settlement of some 2,000 square miles were under preparation or awaiting disposal.

The following statement shows the areas of the reserves in each Circle at the close of the year :—

CIRCLE.	AREA IN SQUARE MILES.			
	Reserved forests.	<i>Taungya</i> areas.	Total.	Proportion of reserved forest to area of Province.
Pegu	2,675	371	3,046	...
Tenasserim	4,130	202	4,332	...
Total Lower Burma (87,831 sq. miles)	6,805	573	7,378	8.40
Eastern	2,605	101	2,706	...
Western	2,697	36	2,733	...
Total Upper Burma (81,026 sq. miles)	5,302	137	5,439	6.71

Assam.—An area of 11 square miles was added to reserved forests, and 42 square miles were disforested in the interests of cultivation, chiefly in the Cachar District, the area of reserves thus falling from 3,716 to 3,685 square miles. The revision of the area of unclassed forests resulted in a decrease of 2,224 square miles; the area of unclassed forests now stands at 11,688 square miles, this figure representing the unsettled area after deducting the area of roads and embankments, land always covered with water and land unculturable for any other reason.

Coorg.—The area of reserves remained unchanged at 238 square miles. Four hundred and fifty acres were sold and made over to the Revenue Department from the protected forests, bringing the area of these to 654 square miles.

In *Ajmere* and *Baluchistan* no change in area took place, the reserves remaining as before at 159 and 175 square miles respectively. In the *Andamans* the area of forest cleared by the settlement authorities amounted to 699 acres, and the area of unclassed forests was correspondingly reduced by this amount.

Berar.—In Berar the area of State forests now stands at 4,178 square miles, being one square mile less than last year. Several transfers of area were made between State forests A, B., and C. which, however, do not affect the total.

Madras.—There was an increase in the area of reserved forests of 858 square miles formed by transfer from reserved lands. The following statement shows the changes in the area which occurred during the year :—

CLASS.	AREA, IN SQUARE MILES.				
	On 1st July 1895.	Added during 1895-96.	Excluded during 1895-96.	Increase or decrease.	On 1st July 1896.
Reserved forests	11,466	1,086	164	+ 922	12,368
Reserved lands	7,324	549	1,183	—634	6,690
TOTAL	18,790	1,635	1,347	+ 288	19,078

There was thus a net increase of 288 square miles in the total area reserved under the Forest Act. The area of reserved forests was, however, increased by 922 square miles, of which 858 square miles are new reserves, the remainder being due to rectification of areas. The unclassed forests or reserved lands show a decrease of 624 square miles due to disforesta-

tion and to the formation of reserves therefrom. Reserved lands were newly constituted over an area of 515 square miles.

Bombay.—There was a net increase in the area of reserved forests of 190 square miles; this was partly due to the rectification of areas to which an increase of 22 square miles is due. New reserves were constituted as follows—Northern Circle, 2 square miles; in the Central Circle, 23 square miles; in the Southern Circle, 89 square miles, chiefly in Kanara, where 81 square miles of protected forests were formed into reserves; and in Sind 63 square miles. The total area of the forests of the different classes in the Presidency stood at the close of the year as follows:—

Reserved.	Protected.	TOTAL.
12,173	2,786	14,959

II.—FOREST SETTLEMENTS.

Important settlement work was carried out during the year, more especially in the Punjab, in Upper and Lower Burma and in Madras, resulting in a net increase to the area of Reserves of 2,211 square miles and to the area of Protected forests of 1,257 square miles. In most provinces the work of selecting and settling the permanent Government forest estates is nearing completion. Only in Bengal, Assam, the Punjab, Upper Burma, and Madras do extensive areas remain still to be dealt with. In Upper Burma alone proposals for reserving areas, amounting to some 3,500 square miles, were under preparation or awaiting disposal at the close of the year, and a large increase in the area of Reserved forests may be shortly expected here. In Assam settlement work has made but little progress. Notifications formerly issued dealing with some 900 square miles were cancelled, and no fresh areas have been finally selected, although certain proposals for forming Reserves were under consideration at the close of the year.

An examination of Form No. 47, as submitted in the various provinces, shows that the figures entered in column 11, "areas undergoing settlement at the commencement of the year" do not correspond with the figures entered in Form No. 47 of the previous year. Taking Upper Burma as an example, Form No. 47 of 1894-95 shows 1,253 square miles undergoing settlement at the commencement of the year, 1,276 square miles were taken in hand during the year, and 610 square miles finally settled during the year. The area undergoing settlement at the close of the year was therefore $1,253 + 1,276 - 610 = 1,919$ square miles, less areas which may have been abandoned during the course of the settlement. But Form No. 47 for 1895-96 gives 1,609 square miles as "undergoing settlement at the commencement of the year;" and as no details are given in the Form as to areas which, during the course of settlement operations, have been abandoned and thrown out of Reserves, it is impossible to accurately follow the progress of settlement operations from year to year.

In other instances the Form appears incorrect, as for instance in the North-Western Provinces, where, in 1894-95, an area of 1,322 square miles is shown as undergoing settlement at the commencement of the year, 59 square miles were taken in hand, and nothing was finally settled. Yet in column 11 of the Form for 1895-96, only 193 square miles are entered, and this is not understood.

In future, therefore, it would be an advantage if the remarks column showed the areas which have been abandoned during settlement, so that the figures of the year may be reconciled with those given in the Form of the previous year, and that where they do not agree the reason may be understood.

The changes which took place in the area under the control of the Department are shown in the following table :—

PROVINCE.	ALTERATION IN AREA, IN SQUARE MILES, DURING 1895-96.								REMARKS.
	RESERVED FORESTS.		PROTECTED FORESTS.		UNCLASSIFIED STATE FORESTS.		TOTAL.		
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.	
Bengal	(a)43	(b)5	435	89	...	...	478	94	(a) Forty-two square miles obtained by rectification of previous area figures.
North-Western Provinces and Oudh.	12	11	...	...	...	1	12	12	(b) Four and-a-half square miles due to rectification of previous area figures.
Punjab	(c)10	(d)7	(e)1,091	...	(f)104	(g)1,127	1,205	1,134	(c) Obtained by rectification of previous area figures. (d) Four square miles due to rectification of previous area figures.
Central Provinces	(A)104	353	...	...	...	26	104	379	(e) Two square miles obtained by rectification of previous area figures.
Burma (Lower)	(i)315	(j)8	...	...	...	...	315	8	(f) Seventeen square miles obtained by rectification of previous area figures. (g) Two and-a-half square miles due to rectification of previous area figures.
Burma (Upper)	(k)1,034	(l)8	...	...	...	...	1,034	8	(h) Eighty-four square miles obtained by rectification of previous area figures.
Assam	11	42	...	...	1,288	3,512	1,299	3,554	(i) Forty-nine square miles obtained by rectification of previous area figures.
Coorg . . . . .	...	...	...	1	...	...	...	1	(j) Due to rectification of previous area figures.
Ajmere . . . . .	...	...	...	...	...	...	...	...	(k) Nineteen square miles obtained by rectification of previous area figures.
Baluchistan . . . . .	...	...	...	...	...	...	...	...	(l) Two square miles due to rectification of previous area figures.
Andamans . . . . .	...	...	...	...	...	1	...	1	(m) Fifteen acres obtained by rectification of previous area figures.
Net Total Increase or Decrease.	1,100	...	1,436	...	...	3,275	...	739	(n) Four acres due to rectification of previous area figures.
Berar	(m)15	(n)16	...	...	...	...	15	16	(o) Two hundred and twenty-seven square miles obtained by rectification of previous area figures.
Net Total Increase or Decrease, Bengal Presidency	1,099	...	1,436	...	...	3,275	...	740	(p) One hundred and fifty-six square miles due to rectification of previous area figures.
Madras	(o)1,086	(p)164	...	...	(q)549	(r)1,183	1,635	1,947	(q) Thirty-four square miles obtained by rectification of previous area figures. (r) Forty-eight square miles due to rectification of previous area figures.
Bombay	(s)199	(t)9	...	(u)179	...	...	11	...	(s) Twenty-two square miles obtained by rectification of previous area figures. (t) Six square miles due to rectification of previous area figures.
GRAND NET TOTAL INCREASE OR DECREASE	2,211	...	1,257	...	...	3,908	...	441	(u) Fifty-eight square miles due to rectification of previous area figures.

The following shows the details of work done in the different provinces:—

Bengal.—During the year the area finally settled amounted to 379 acres only. An area, amounting to 1,089 square miles, was undergoing settlement at the close of the year, of which 5 square miles were taken in hand during the year, the remaining being pending from previous years. The areas under settlement are in the—

Darjeeling Division	44 square miles.	} 1,089 square miles.
Tista	"	52 "	
Kurseong	"	96 "	
Chittagong	"	847 "	

With the exception of the 847 square miles in Chittagong, for which notifications under section 4 of the Forest Act have been issued, and 1 square mile in Kurseong, the above areas have been constituted Reserves under section 34 of the Act, and a further enquiry was ordered in the year 1890. The enquiry into rights in the areas concerned in the Darjeeling and Tista Divisions has been completed, but final orders have not issued. Owing to difficulties which are being experienced, it is probable that the settlement in Chittagong will not be completed for some time to come.

North-Western Provinces and Oudh.—Of the areas under settlement pending from the previous year, work was completed only in the small deodar forest of Chattarpal, area 815 acres, in the Central Circle, and over some 1,000 acres in the Dehra Dun Division of the School Circle. The abstract of admitted claims and sanctioned privileges resulting from an enquiry under section 35 of the Act in the reserved forests of the Kumaun Civil Division was published. In the Oudh Circle the records of concessions were completed for Kheri and Babraich, and were sanctioned by Government. Similar records for the Gonda forests were under consideration at the close of the year.

The only important work remaining is in the Central Circle, where 1,50 square miles were undergoing settlement at the close of the year. There are also other areas in the Kumaun Civil Division which will probably shortly come under settlement.

Punjab.—The most important work of the year was the completion of the long-pending settlement of the Kulu forests, area 1,090 square miles. The only important settlements still pending are those of the Kangra and Shabpur-Kandi forests. It is hoped that this work will shortly be taken in hand, now that the Kulu settlement has been disposed of.

Central Provinces.—Substantial progress has been made in the classification of the forests, and an area of 1,223 square miles has been added to the Class A. or permanent reserves as the result of the examination of the B. Class areas. The selection of areas more suitable for cultivation than for inclusion in the permanent forest reserves was proceeded with, and the proposals were completed for Chandi, Seoni and Chindwara. Various small areas, amounting in all to nearly 28 square miles, were finally settled during the year; an area of 240 square miles was undergoing settlement at the close of the year; 318 square miles were disforested of which the important Charwa tract in Hoshangabad—area 216 square miles—formed a part.

Burma.—Important settlements were carried out, resulting in an increase to the area of reserved forests of 1,031 square miles in Upper Burma and of 307 square miles in Lower Burma. The areas of which the settlement was actually brought to a conclusion during the year were 368 square miles in Upper Burma and 315 square miles in Lower Burma. In the former, an expenditure of Rs 551, and in the latter of Rs 599, was incurred during the year on areas finally settled. The most important areas settled were the Môn and Pada reserves—area 150 square miles—in the Tenasserim Circle, the Kakayan and Mainnahla reserves—area 106 square miles—in the Pegu Circle, where further areas of some 270 square miles were settled but not notified during the year. The Thaw reserve in the Eastern Circle, area 172 square miles, was finally notified, and in the Western Circle, the Uyu Reserve of 170 square miles, the Nanka-Taungwun reserve of 255 square miles and the Sidoktaya reserve of 130 square miles were under settlement at the close of the year.

At the close of the year the large area of 2,128 square miles in Upper Burma, and of 1,343 square miles in Lower Burma, were undergoing settlement, and proposals dealing with further valuable areas were under preparation or awaiting disposal, so that a large addition to the area of Reserved forests, particularly in Upper Burma, may shortly be expected.

Assam.—Eleven square miles were finally settled during the year, consisting chiefly of the Darranga reserve in the Kamrup Division. The notifications issued for 940 square miles, shown in the preceding year as undergoing settlement, were cancelled, the areas being found unsuitable. Further proposals for the reservation of new forests in North Cachar, and

in the place of the areas abandoned elsewhere, have been drawn up and are under consideration by the Local Government. A revision of the areas and the exclusion of unculturable lands resulted in a decrease in the area of unclassified forests of 2,224 square miles.

Coorg.—No settlement work was undertaken in Coorg.

Ajmere.—In Ajmere the work of revision of rights and concessions was undertaken by a special Forest Officer, but was not completed during the year.

Baluchistan.—In Baluchistan grazing rights were regulated, and a revised list of the cattle entitled to free grazing was prepared.

Andamans.—No areas were notified reserves, but the examination of the Dhani Khari forest, area 2 square miles, was completed and its reservation notified shortly after the close of the year.

Berar.—No forest settlements were in progress during the year.

Madras.—The outturn of settlement work was not so large as in former years, but nevertheless substantial progress has been made; 808 square miles of forest were finally settled, and there was an addition to the area of reserved forests of 922 square miles. The area of new reserves actually notified, 922 square miles during the year, was more than in the preceding year, although the real amount of settlement work done was less, this being due to the absence of three or four of the special Settlement Officers on leave or transfer. It is estimated that there is still an area of 4,747 square miles still requiring settlement. The progress made is shown by Circles in the following table:—

CIRCLES.	AREA, IN SQUARE MILES, OF RESERVED LAND.					AREA, IN SQUARE MILES, BROUGHT UNDER CHAPTER II OF THE MADRAS FOREST ACT.				
	On 1st July 1895.	Added during 1895-96.	Total.	Excluded during the year, mainly by reason of constitution as Reserved forests.	Balance at the end of the year.	Area, notified under section 4, not constituted Reserved forests on 1st July 1895.	Added during 1895-96.	Total.	Constituted Reserved forest during 1895-96, or otherwise disposed of.	Balance notified under section 4, but not constituted Reserved forests.
Northern	2,596	297	2,893	476	2,424	1,931	{ (a) 39 +10 }	1,980	{ (b) 311 (c) 35 (a) 33 }	1,601
Central	2,184	220	2,404	628	1,776	1,759	{ (a) 274 +7 }	2,040	{ (b) 20 (c) 48 (a) 21 }	1,430
Southern	2,544	33	2,577	87	2,490	1,623	129	1,752	{ (a) 26 (b) 8 (a) 16 }	1,702
TOTAL	7,324	550	7,874	1,184	6,690	5,313	459	5,772	1,039	4,733

(a) Rectification of area.

(b) Initial notification cancelled.

(c) Excluded at settlement.

Bombay.—A total increase of 190 square miles took place in the area of reserved forests, whilst protected forests decreased by 179 square miles, of which 58 square miles were caused by rectification of area figures. In the Northern Circle settlement work made considerable progress, and is approaching completion. Only 4 square miles were actually finally settled, but at the close of the year 612 square miles were undergoing settlement, which it is expected will shortly be completed. Form No. 47 has been incorrectly prepared, the entries in columns 10 and 11 being repeated in 12 and 13 which refer only to new work of the year. Nearly Rs 18,000 were spent on settlement work during the year. In the Central Circle 23 square miles were finally settled, and 13 square miles were undergoing settlement at the close of the year. No important settlement work remains in the Circle. In the Southern Circle 302 square miles were finally settled. There remains some 1,000 square miles requiring settlement. The work is well in hand, and will shortly be finished. In Sindh, 63 square miles were settled during the year, some 25 square miles requiring settlement now alone remain. Form No. 47 has not been submitted for this Circle.

III.—DEMARCATIION.

The Form given below shows the state of the boundaries of forests in the different provinces at the close of the year 1895-96.

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 year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	EXPENDITURE ON DEMARCATIION DURING THE YEAR.	
									On new work.	On repairs.
		Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Rs.	Rs.
Bengal	.....	71	2,917	186	2,274	24	1,702	4,000	1,340	8,876
North-Western Provinces and Oudh	Central Circle	2	312	2,075	2,389	...	614	3,003	247	780
	Oudh "	18	176	982	1,176	...	276	1,452	5,071	25
	School "	50	255	272	577	106	310	993	1,392	1,002
	Total	70	743	3,329	4,142	106	1,200	5,448	6,710	1,807
Punjab	.....	28	2,389	6,756	9,168	4,497	1,184	14,849	1,910	2,480
Central Provinces	Northern Circle	33	8,869	1,779	10,681	...	1,182	11,863	468	2,109
	Southern "	369	11,067	29	11,465	173	1,121	12,759	1,583	4,797
	Total	402	19,936	1,808	22,146	173	2,303	24,622	2,051	6,906
Lower Burma	Pegu Circle	89	439	1,717	2,245	91	693	3,029	1,079	2,742
	Tenasserim Circle	46	436	1,008	1,490	...	557	2,047	197	1,342
	Total	135	875	2,725	3,735	91	1,250	5,076	1,276	4,084
Upper Burma	Eastern Circle	351	213	885	1,489	224	213	1,926	4,343	1,140
	Western "	225	45	569	839	266	1,019	2,124	2,005	134
	Total	616	258	1,454	2,328	490	1,232	4,050	6,348	1,274
Assam	.....	20	1,103	4	1,127	34	1,367	2,528	845	2,595
Coorg	.....	...	280	24	254	...	11	265	...	601
Ajmere	.....	...	5½	195½	201	...	158	359	...	31
Andamans	.....	...	...	33	33	...	51	84	...	...
Baluchistan	.....	...	...	290	290	...	49	339	23	28
Barar	.....	70	772	388	1,230	43	182	1,455	1,230	1,101
Total Bengal Presidency	.....	1,407	23,328½	17,192½	46,928	5,458	10,689	63,075	21,733	29,733
Madras Presidency	Northern Circle	1,519	597	3,218	5,334	1,666	580	7,580	9,959	2,626
	Central "	1,630	3,912	7,710	13,282	1,552	135	14,969	14,045	2,916
	Southern "	489	193	6,272	6,954	549	579	8,082	3,982	2,036
	Total	3,668	4,702	17,200	23,570	3,767	1,294	30,631	27,986	7,578
Bombay	Northern Circle	130½	143	1,840	2,113½	1,979½	476	4,569	1,878	658
	Central "	669	693	10,566	11,868	9,513	857	22,238	6,420	1,347
	Southern "	124	110	3,942	4,176	1,527	3	5,706	862	117
	Sindh "	276	1,518	6½	1,800½	116½	518½	2,435½	2,176	...
	Total	1,199½	2,464	16,354½	19,958	13,136	1,854½	34,948½	11,336	2,122
GRAND TOTAL	.....	6,274½	35,434½	50,747	92,456	22,361	13,837½	123,654½	61,055	89,483

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

The principal new demarcation work of the year has been in Madras and Bombay, where the settlement of forest areas constantly necessitates the demarcation of the newly-constituted reserves. In Madras no less than 3,668 miles and in Bombay 1,199 miles of new work were completed. Burma has a good record of new work completed, 135 miles in Lower Burma and 616 miles in Upper Burma having been demarcated during the year. In the Central Provinces 402 miles of new boundaries were demarcated, and for the future new work here will be mostly confined to the demarcation of areas which may be excised for cultivation. In the provinces of the Bengal Presidency, the demarcation of forest areas already settled may be said to be practically complete, with the exception of the Punjab where 4,497 miles of boundary remain undemarcated. This is nearly all in the Kangra Division. The settlement of the forests has only recently been completed, and the necessary steps to properly demarcate them will no doubt be taken.

The total length of new boundaries demarcated was 6,274 miles, and the amount remaining to be demarcated at the close of the year was 22,361 miles, of which 5,458 only are in the Bengal Presidency. The total length of boundaries of forests in the Bengal Presidency at the close of the year stood at 63,075 miles, as against 60,821 miles at the close of the previous year. Form No. 48 has been in most instances correctly prepared.

The details of work done by provinces are as follows:—

Bengal.—The total length of boundaries at the close of the year stood at 4,000 miles, as against 3,961 in the previous year, the increase being chiefly due to errors in previous calculations. Eight miles of new boundary lines were cleared. A disputed boundary in the Puri Division was settled and properly demarcated. A total expenditure of ₹10,216 was incurred, mostly on repairs.

North-Western Provinces and Oudh.—In the Central Circle the length of boundaries increased by 2 miles, owing to the formation of the new reserved forests of Chatarpal; the boundaries are now in good order, with the exception of some village lands or "chaks" included in reserved forests, which need more clearly-defined boundaries. In the Oudh Circle the re-demarcation by monoliths is in progress, and 176 miles were completed during the year. This work has altogether cost ₹24,000, and it is estimated that ₹15,000 more will be required. Rupees 5,096 were spent during the year. In the School Circle 50 miles of new boundaries were demarcated chiefly in the Jaunsar Division. The only important demarcation work remaining in the North-Western Provinces and Oudh, in forests of which the settlement has been completed, is in the Jaunsar Division of the School Circle, where 104 miles of boundary still require demarcation.

Punjab.—But little new work was undertaken, only 23 miles of new demarcation being completed. Needful repairs were carried out in all divisions at a cost of ₹2,480. A number of new pillars to replace old damaged ones were built in Kangra at an expenditure of ₹1,139. In this Province there still remain 4,497 miles undemarcated, 3,800 of which are in the Kangra Division.

Central Provinces.—Demarcation work is now nearly complete. Out of a total length of 24,622 miles, only 173 miles in the Southern Circle remain to be demarcated. For the future the only new work required will be where areas are excised for cultivation; 402 miles of new boundaries were demarcated at a cost of ₹2,051 or ₹5 a mile, whilst ₹6,906 were spent on the repair of 19,936 miles of existing boundary, *i.e.*, at the rate of 5½ annas per mile.

Burma.—A large amount of new work was done, 616 miles having been demarcated in Upper Burma and 135 miles in Lower Burma at a total cost of ₹7,624. Only 581 miles of boundaries remained undemarcated, which, considering that new reserves are being constantly formed, is very satisfactory. On repairs to existing boundaries ₹4,084 were spent in Lower and ₹1,274 in Upper Burma.

Assam.—Twenty miles of new boundary were demarcated, of which 12 were in the Kamrup Division and 6 in the Lakhimpur Division, in which there still remain 84 miles requiring demarcation. Existing boundaries were kept in order at a cost of ₹2,595.

Coorg.—There was no new work. Existing boundaries were kept in repairs at a cost of R801.

Ajmere.—No new work was undertaken; repairs cost R31. It has been found that the boundaries of the forests on the ground do not correspond with the declarations reserving the forests, and that the outer boundary in many instances is not clearly marked. Steps are being taken to rectify this unsatisfactory state of things.

Andamans.—Nothing was done.

Baluchistan.—Rupees 28 were spent on the repair of boundaries.

Berar.—Seventy miles of new boundary lines were demarcated at a cost of R1,230. Except in the Basim and Wun A. and B. class reserves, all forests are now demarcated with permanent boundary marks. The demarcation by permanent marks in Basim and Wun will probably not be completed for two years, but in the meantime the boundaries are sufficiently indicated by field boundary marks; R1,101 were spent on repairs.

Madras.—Demarcation work was pushed on with energy, no less than 2,189 miles of permanent demarcation having been completed during the year at a cost of R19,510 or R3-14-7 per mile, which is less than last year when similar work cost R9-0-10 per mile. One thousand four hundred and seventy-nine miles of preliminary demarcation was also done at a cost of R4,203. Of the permanent demarcation, 855 miles were done in the Northern Circle, and 1,117 miles in the Central Circle. The average cost per mile was lowest in the Northern Circle (R7-8-8) and highest in the Southern Circle (R13-15-8). The total expenditure incurred during the year on all kinds of demarcation, including the re-clearing of old lines, amounted to R35,564 as compared with R37,874, the amount spent in the previous year.

Bombay.—In the Northern Circle 130 miles of new boundary were demarcated at a cost of R1,878; R658 were spent on repairs. In all divisions much work remains to be done, and there are 1,979 miles of boundary requiring demarcation in the Circle. In the Central Circle 669 miles were demarcated at a cost of R6,420. A large amount of work remains, and Form No. 48 shows 9,513 miles not demarcated at the close of the year. In the Southern Circle 124 miles were demarcated. From Form No. 48 it would appear that there remain 1,525 miles undemarcated in the Kolaba Division, and there is still a good deal of work remaining to be done in the Northern and Southern Divisions, Kanara, of which, however, Form No. 48 does not give details. It is stated that the forests have all been demarcated by the substantial marks of the Revenue Survey, and that the forest demarcation by special marks is merely a convenience and not a necessity. In Sindh 276 miles of boundary were demarcated at a cost of R929, whilst 484 miles of existing boundaries were cleared and repaired with the assistance of cattle-breeders free of charge. One hundred and sixteen miles remained undemarcated at the close of the year.

IV.—SURVEYS.

The total outturn for the Survey year amounts to 5,677 square miles of topographical work on various scales. Of this area 3,217 square miles were surveyed by field parties of the Survey of India Department, that is 590 square miles in excess of the area surveyed in the previous year by the same agency.

* Includes 127 square miles on the 16" scale to complete the boundary records in the Central Provinces.

The Forest Survey Branch completed an area of 2,460* square miles, of which 621 square miles in the Chamba State were done for incorporation in the standard 1" topographical maps of India. The outturn of the Forest Survey Branch is 577 square miles in excess of that surveyed in the previous year. The total area reported as surveyed during the previous year was 4,510 square miles, and for 1893-94 it was 4,275; hence the outturn for the year under review compares most favourably with the outturn of previous years, and it is satisfactory to note that it is the largest area yet reported for any previous year. The localities in which operations were in progress, as well as the outturn of the several branches of the work and the cost-rates, are given in the following tabulated statement:—

PRESIDENCY PROVINCE.	AREAS SURVEYED AND COST-RATE PER SQUARE MILE.																								TOTAL TOPOGRAPHICAL SURVEYS.		TOTAL EXPENDITURE 1895-96.						
	TRIANGULATION.				TRAVERSING.				DETAIL SURVEY AND PREPARATION OF MAPS OF SCALES OF																								
	1895-96.		1894-95.		1895-96.		1894-95.		1"=1 mile.				2"=4 miles.				4"=1 mile.				6"=1 mile.				16"=1 mile.				1895-96.	1894-95.	Forest Survey Branch.	Survey of India Department.	
	1895-96.		1894-95.		1895-96.		1894-95.		1895-96.		1894-95.		1895-96.		1894-95.		1895-96.		1894-95.		1895-96.		1894-95.										
	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.	Sq. m.	R.					
North-Western Provinces and Oudh	892	13	247	9	51	9	507	7	...	...	...	...	...	...	431	20	473	28	...	...	...	...	...	...	...	421	473	(a)	15,049	...
Punjab	1,165	3	761	6	...	...	...	...	621	12	282	24	...	...	...	92	37	14	60	...	...	...	...	...	...	713	298	(b)	16,889	...
	(e)	116	20	220	14	...	...	...	...	...	...	...	...	...	413	62	220	68	...	...	...	...	...	...	...	(f)	200	228	...	35,968
Central Provinces	804	11	433	9	(g)	7	143	12	1,025	42	712	49	127	(d)	42	146	49	1,163	658	(c)	84,077	...
	1,165	7	2,163	9	(f)	14	1,253	12	...	...	...	...	...	...	651	51	569	67	...	...	...	...	...	...	...	651	569	...	(i)	90,675
Burma	560	7	...	...	(h)	19	51	26	...	...	...	...	...	...	174	92	271	89	...	...	...	...	...	...	...	174	271	29,793	...	...	
	838	21	440	30	(f)	59	500	94	...	...	...	...	111	85	86	179	339	163	339	153	...	...	...	...	...	450	375	...	1,16,297	...
Madras	1,915	12	1,918	10	(f)	12	850	10	...	...	...	...	...	...	904	54	971	56	...	...	...	...	...	...	...	964	971	...	75,900	...
Bombay	50	5	1,080	11	644	12	275	11	...	...	...	...	...	...	629	66	159	61	108	123	285	140	15	130	24	117	952	468	...	368
TOTAL	7,160	...	7,771	...	4,296	...	3,578	...	621	...	282	...	111	...	36	...	4,908	...	3,787	...	108	...	285	...	142	...	170	...	5,077	4,510	1,24,777	4,02,199	2,36,663

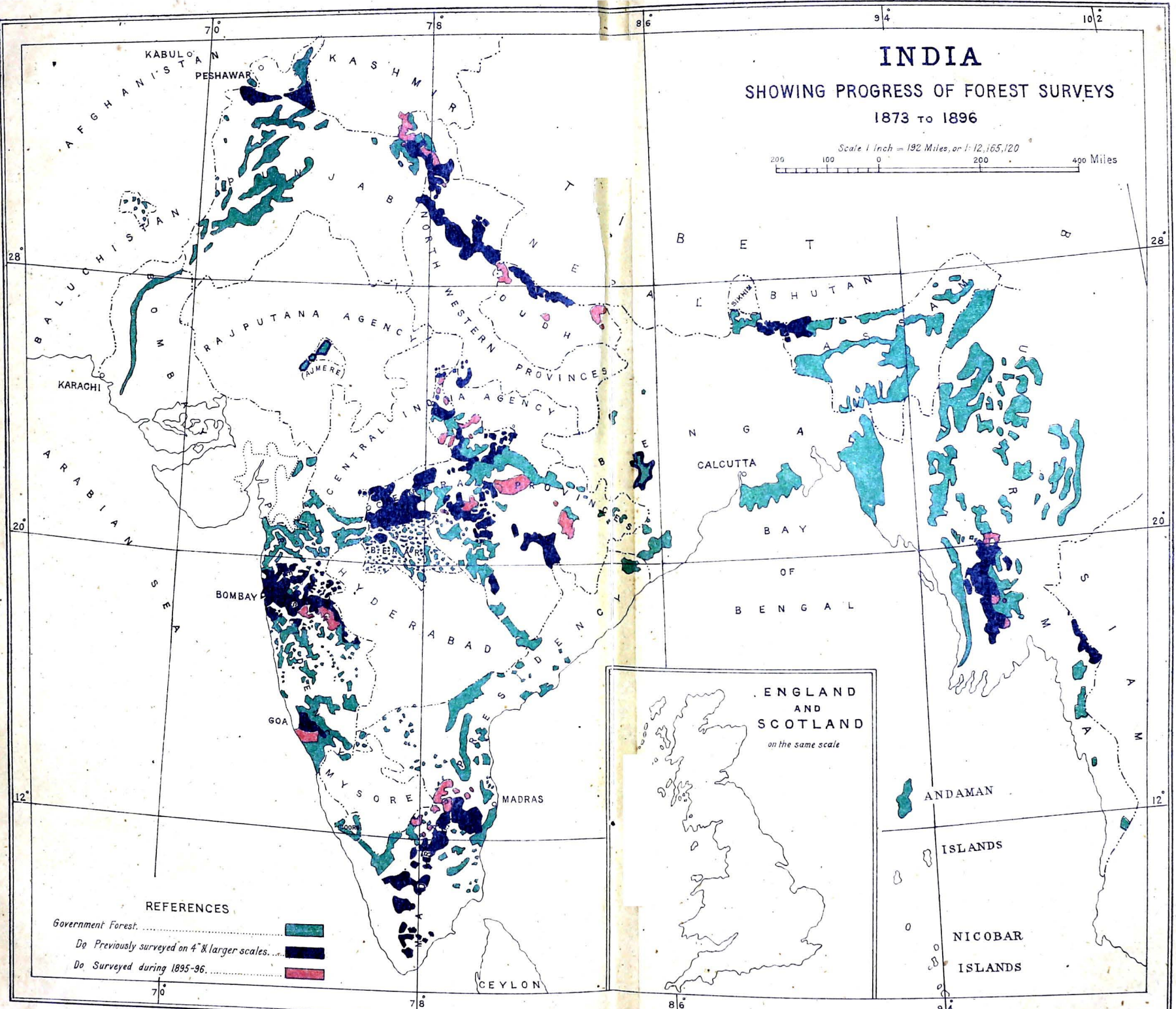

* Surveys executed by the Forest Survey Branch, the topographical cost-rates of which include expenditure in classification of forests and soils; the other surveys are by the Survey of India Department.
(a) Includes Rs 1,210 on account of publishing Tehri-Garhwal and Kheri maps.
(b) Includes Rs 1,549 on account of drawing and publishing maps of Bahair on 4" and 1" scales.
(c) Includes Rs 4,451 on account of drawing and publishing maps of the Narsinghpur and Bhandara Divisions.
(d) Average cost of both 4" and 16" surveys.
(e) Excludes an area of 594 square miles triangulated but not yet computed.
(f) Linear miles.
(g) Includes 312 linear miles of levelling and 47 linear miles of traversing at an average cost of Rs 6 and Rs 9, respectively.
(h) Includes 65 linear miles of traversing at a cost of Rs 1.
(i) Includes Rs 750 on instruction of soldier surveyors.
(j) Includes 71 square miles of forest in the Patiala and Simlaur States.

INDIA




SHOWING PROGRESS OF FOREST SURVEYS

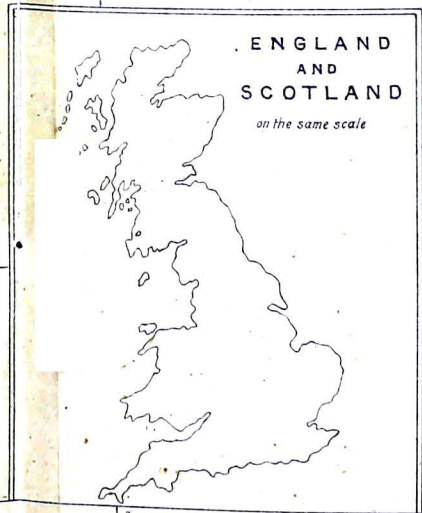
1873 TO 1896

Scale 1 inch = 192 Miles, or 1:12,165,120



REFERENCES

- Government Forest. 
- Do Previously surveyed on 4" & larger scales. 
- Do Surveyed during 1895-96. 



ENGLAND
AND
SCOTLAND
on the same scale

The foregoing statement shows that the sum of R1,24,787 was expended by the Forest Survey Branch for surveys executed in the several provinces in the Bengal Presidency, and that the Survey of India Department incurred an expenditure of R4,02,196, making a total aggregate expenditure under this head of R5,26,983 against an expenditure of R4,88,588 in the previous year.

In addition to the surveys done by professional agency, a considerable amount of work was done by the local staff of the Forest Department, notably in Upper Burma, where an area of 3,116 square miles of chain compass and other surveys are reported in Form No. 49 to have been done during the year, chiefly for purposes of furnishing maps to accompany Government Notifications of lands taken up as reserved forests as well as for other departmental purposes. These surveys, although they answer admirably for the purpose for which they are intended, are not considered strictly accurate, and cannot be utilized for incorporation in the general survey of the country.

The following statement shows the areas operated on by professional agency since 1873 and up to the close of the year under review, and the map of India attached illustrates the progress of the work:—

YEAR.	BENGAL.		NORTH-WESTERN PROVINCES AND OUDH.				PUNJAB.		CENTRAL PROVINCES.		BURMA.		ASSAM.	BHRAR.		MAD. PR.	BOMBAY.			By Forest Survey Branch.	By Survey of India Department.	TOTAL.	
	Scale.		Scale.				Scale.		Scale.		Scale.		Scale.	Scale.		Scale.	Scale.						
	4"	2"	12"	8"	4"	2"	4"	1"	16"	4"	4"	2"	4"	4"	2"	4"	16"	8"	4"				
74 to 14-95.	118	...	3	...	3,990	205	1,380	2,319	666	3,646	749	7	613	836	1,321	...	...	...	...	15,879(a)	...	33,420
	537	216	...	215	494	...	907	...	...	3,483	2,612	1,046	...	...	...	4,154	192	2,095	1,691	...	17,541	
96	421	...	92	631	127	1,025	174	2,480	...	6,977
	...	...	...	...	...	...	413	...	...	661	339	111	...	...	...	964	15	106	829	...	3,217	
TOTAL	653	216	3	215	4,905	205	2,692	2,940	823	8,604	3,874	1,164	613	939	1,321	5,118	207	2,205	2,520	18,339	20,758	39,097	
	867		5,328				5,632		9,627		5,038		613	2,157		5,118	4,930			39,097			

* Surveys executed by the Forest Survey Branch; the other surveys are by the Survey of India Department, and the areas have been taken from a statement furnished by Surveyor General.

(a) Includes an area of 2,940 square miles on the 1" scale surveyed for topographical purposes.

Excluding 2,940 square miles in the Punjab to complete the 1" topographical maps of the Chamba and Bashahr States, a total aggregate area of 36,157 square miles, on various scales, has been topographically surveyed for forest purposes.

Work done in the various provinces during the year was as follows:—

Bengal.—There is little to record under this head; the only surveys undertaken were those done departmentally, comprising boundary and coupe surveys and surveys of road-traces, which were done at a total cost of R125. There still remains to be brought under survey an area of 1,129 square miles of Reserved and 967 square miles of Protected forests, and the Government of India call attention to the desirability of preparing a statement of the comparative degree of urgency with which each survey is required in connection with working-plans, as this statement will materially facilitate the preparation of their programme for forest surveys.

North-Western Provinces and Oudh.—The chief operations were those conducted by the Forest Survey Branch in Lalitpur in the Central Circle, and in the Gouda, Bahraich, and Gorakhpur Divisions in Oudh. In Lalitpur an area of 23 square miles of demarcated forest was topographically surveyed, which brought the forest survey in this Division to a close. The final cost-rates for the entire area operated on are R11.5 per square mile for triangulation and R53.7 for 4" topographical survey. In Oudh 393 square miles of Reserved forests were topographically surveyed at a cost of R18 per square mile. Forest survey work in these provinces has now been practically completed. In addition to the above, some minor surveys

were carried out by local agency, the most important of which are 8 square miles in the Ganges Division said to have been operated over by ordinary district surveys, and in the Jaunsar Division, 82 chak boundaries, enclosing an area of 3.4 square miles, as well as an aggregate length of 150 linear miles of main boundary lines surveyed and mapped by a local surveyor.

Punjab.—In Kangra, Kulu, Patiala, and Sirmur No. 18 Party of the Survey of India Department surveyed 73 forest blocks on the 4" scale, with an aggregate area of 200 square miles and at an approximate cost of ₹100 per square mile. In the Chamba State the Forest Survey Branch topographically surveyed a total outturn of 713 square miles, of which 92 square miles were Government leased forests and were surveyed on the 4" scale at a cost of ₹37 per square mile and, for the purpose of completing the topographical survey of the country, 621 square miles were surveyed on the 1" scale at a cost of ₹12 per square mile. The total aggregate area of demarcated forests surveyed by the double agency was therefore 221 square miles. These figures are for the Survey year, and consequently do not agree with the figures in Form No. 49, which are evidently for the Forest year. Some minor surveys in the Chamba and Multan Divisions were done by local officials.

Central Provinces.—In continuation of the previous season's operations the Forest Survey Branch as well as No. 14 Party of the Survey of India Department were employed on the survey of the Reserved forests. The field operations of the Forest Survey Branch were located in the Districts of Nagpur, Seoni, Chindwara, Saugor, Raipur, and Balaghat, and a small area in the Jubbulpur District, due to revision of forest boundary, was also done. The field operations of No. 14 Party were confined to the Districts of Damoh and Betul, and some preliminary work was done in Bilaspur. The outturn of topographical work by the Forest Survey Branch on the 4" scale was 1,152 square miles at a cost-rate of ₹42 per square mile, and No. 14 Party turned out an area of 651 square miles, on a similar scale, at ₹31 per square mile; the total outturn, therefore, by the double agency, was 1,803 square miles against 1,427 square miles in the previous year. The Chief Commissioner remarks that, in view of the depressed condition of forest finances, it has been decided, after the current year, to abandon any further surveys by the more expensive Imperial Survey, the unsurveyed areas being gradually taken up by the cheaper agency of the Forest Survey Branch, and by this means it is estimated that a saving will result of about 3 lakhs of rupees on the balance of the work. There still remains to be brought under survey 7,823 square miles of reserved forests, and at the pace the Forest Survey Branch is at present getting over the ground, this area should be completed in about 7 years.

Burma.—Forest surveys were carried on in the Toungoo, Pegu and Amherst Districts of Lower Burma and in the Pysinmana District of Upper Burma. In the Toungoo and Pegu Districts No. 20 Party of the Survey of India Department completed the topography of 339 square miles of Reserved forests on the 4" scale at a cost of ₹158 per square mile, and 111 square miles of Unclassed forests were surveyed on the 2" scale; it also completed 623 square miles of triangulation and covered an area of 746 linear miles with traversing. An area of 174 square miles of Reserved forests on the 4" scale at a cost of ₹92 per square mile was completed by the Forest Survey Branch in the Pysinmana District, as well as 65 miles of traverse survey; and this Branch also extended its triangulation over an area of 560 square miles and covered an area of 399 square miles with traversing in the Attaran and Haungtharaw valleys of the Amherst District. Local officers in the Eastern Circle did traverse surveys to the extent of 673 square miles, and also 625 miles of linear and boundary surveys; and sketch maps have been prepared of all forests under settlement; and in the Western Circle 1,650 square miles of traverse survey were mapped with interior details, and 792 miles of linear surveys were also executed.

Assam.—No surveys were carried out by professional agency, but the survey of 5 miles of compartment boundaries in the rubber plantation of the Darrang Division was undertaken departmentally, as well as 243 miles of outer boundaries in the Nowgong Division and 6 miles in the Lakhimpur Division on account of Railway concessions.

The Forest Survey Branch supplied a 4" map, for local use, of the Bhutan boundary from pillar No. 50 to No. 79 touching on the Goalpara boundary.

There still remains an area of 2,339 square miles of Reserved forests to be brought under survey.

Coorg.—In this Division, as well as for the *Andamans* and *Baluchistan*, there is nothing to record under this head.

Ajmere.—Nothing in the way of surveys was done, but a proper survey of these forests is doubtless required. The present forest maps show only the outer boundary lines without any

topographical details whatever, and are said to be of little or no use. In order to carry out the prescriptions of forest working-plans good topographical maps are undoubtedly necessary.

Berar.—No surveys have been undertaken, but the compilation, locally, of 19 taluk maps on the 1" scale has been completed. Some of these maps have already been passed through the press at Dehra Dun, and as they contain various information they will be of considerable use not only to Forest Officers but also to District Officers of other Departments.

Madras.—Survey operations were conducted by No. 19 Survey of India Party in continuation of the previous season's work in Salem, North Arcot, and Kurnool; the operations in the latter district were preliminary work of triangulation and traversing only. The total area topographically surveyed on the 4" scale was 96½ square miles, against an area of 971 square miles in the previous year, and the cost-rate is given at Rs5½ per square mile; these results compare favourably with those of previous years. Up to the close of the year a total aggregate area of 5,118 square miles have been topographically surveyed, and now that a second Survey Party has been deputed to work in the Madras Presidency, an annual outturn of nearly 2,000 square miles may be expected, and this should bring the completion of forest surveys to within a measurable distance.

Bombay.—In continuation of the previous season's operations No. 17 Party of the Survey of India Department was employed in all three Circles surveying forest reserves in the Districts of Thana, Poona and North Kanara; some triangulation was also done in Ahmednagar. The total area topographically surveyed was 952 square miles, as compared with 468 square miles in the previous year; the excess outturn of work in square miles is attributed to a large increase of native surveyors to the establishment, and it is also due to the greater part of the area having been surveyed on the smaller scale of 4"=1 mile.

The following table shows the outturn of topographical work on the several scales and cost-rates in each of the forest Circles:—

Forest Circle.	4-INCH SCALE.		8-INCH SCALE.		16-INCH SCALE.	
	Area.	Cost-rate.	Area.	Cost-rate.	Area.	Cost-rate.
	Sq. Miles.	Rs.	Sq. Miles.	Rs.	Sq. Miles.	Rs.
Northern . . . . .	...	...	42	168	...	...
Central	219	62	66	94	15	180
Southern	610	69	...	...	...	...
TOTAL	829	...	108	...	15	...

952

The area surveyed on the 4" scale is much larger than that reported in the previous year, and the cost-rate is less; these satisfactory results are apparently ascribable to the more extensive employment of native agency. The areas surveyed on the larger scale of 8 and 16 inches to the mile are less than the previous year, and the cost-rate of the 16" work (Rs130 per square mile) is much in excess of similar work done last year: this is said to be attributed to the surveyors employed on the 16" work being less skilled than before, while the blocks surveyed were more scattered. It is remarked by the Survey Commissioner that the Superintendent in charge of the Survey Party does not appear to have extended his tour to the Central Circle, and it would seem desirable that the work of surveying babul reserves, done entirely under native supervision, should at least have been inspected by him.

In Sindh a small staff of local surveyors were employed in defining the limits on the ground of the areas set apart for exploitation in 1895-96 and 1896-97. Some of the riverain forests, owing to the action of the river, have so altered their shape as to render the maps prepared departmentally between 1883 and 1891 useless, and such areas, it is said, will have to be re-surveyed by the working-plans staff. The topographical sheets of the Indus Riverain Survey include most of the riparian forest tracts on both banks of the river, and with the aid of these sheets the preparation of the new maps should be comparatively easy.

V.—WORKING-PLANS.

The following three statements show, for the provinces in the Bengal Presidency, (A) the area brought under the control of sanctioned working-plans up to the close of the year, (B) the progress made in the preparation of working-plans during the year, and (C) a comparison of the work done with that still remaining.

(A).

Areas brought under the control of sanctioned Working-Plans, up to 30th June 1896, in the provinces of the Bengal Presidency.

PROVINCES.	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.	Unclassed State.	Total.		
(1)	(2)	(3)	(4)	(5)	(6) Sq. Miles.	(7) Per cent.
Bengal	5,877	3,437	4,084	13,398	a) 4,309	32
North-Western Provinces and Oudh	3,766	94	43	3,903	(b) 2,290	59
Punjab	1,680	1,378	2,972	6,028	(c) 552	9
Central Provinces	19,293	...	364	19,657	794	4
Burma (Lower)	7,378	...	...	7,378	(d) 1,355	18
Burma (Upper)	5,439	...	...	5,439	...	...
Assam	3,685	...	11,688	15,373	533	3
Coorg	288	654	...	892	116	13
Ajmere	139	...	10	149	(e)	...
Baluchistan	175	...	...	175	...	...
Andamans	73	...	1,881	1,954	...	...
Berar	4,178	...	...	4,178	721	17
Total	51,921	5,561	20,992	78,474	10,670	14

N.B.—For explanation of the figures in columns 2 to 5, please see the remarks column of the area statement on page 2.
(a) In 1894-95, this was shown as 4,378 square miles; it has now been reduced to 4,309, as 69 square miles were transferred to the Civil Department for cultivation during 1895-96.
(b) Includes 2 square miles added during 1895-96 owing to rectification; and excludes 39 square miles for the Kanjarla plan (sanctioned during the year) which forms a part of the general working plan for the Kheri Trans-Sarda forests, the area of which has already been accounted for.
(c) Excludes 7 square miles (Dallousie plan) of old working-plans now revised.
(d) Includes 4 square miles owing to the inclusion of the Myo's reserve, area 4 square miles, in the Taungnyo working-plan.
(e) The Ajmere plan, comprising 139 square miles, was shown here in 1894-95 as sanctioned. It was subsequently cancelled and a revised one was prepared and sanctioned during 1896-97, in which year it will be accounted for.

(B).

Progress made in Working-Plans in the provinces of the Bengal Presidency during 1895-96.

PROVINCES.	PRELIMINARY PROPOSALS SUBMITTED TO THE INSPECTOR GENERAL OF FORESTS FOR WORKING-PLANS.		COMPLETED PLANS SUBMITTED FOR OPINION AND REMARKS OF INSPECTOR GENERAL OF FORESTS.		PLANS FINALLY SANCTIONED BY LOCAL GOVERNMENTS ON RECOMMENDATIONS OF INSPECTOR GENERAL OF FORESTS.	
	No.	Area for which prepared.	No.	Area for which prepared.	No.	Area for which prepared.
		Square miles.		Square miles.		Square miles.
North-Western Provinces and Oudh	1	80 (b)	2	466 (a)	4	78 (a)
Punjab	2	580 (c)	...	...	2	20 (d)
Central Provinces (Southern Circle)	13	2,031 (e)	9	1,204 (f)	6	363
Burma (Upper)	1	36	...	...	...	...
Burma (Lower)	4	42	...	...	2	332 (g)
Berar . . . . .	...	...	...	...	1	702
TOTAL	21	2,769	11	1,670	15	1,495

(a) Includes 39 square miles (Kanjarla plan) already dealt with in the Kheri Trans-Sarda working-plan.
(b) Includes 60 square miles of old working-plan areas now being revised.
(c) The total area to be dealt with in Kulu working-plan was not stated in the preliminary report. The area (530 square miles) has been taken from the Kulu settlement report and is approximate. Form B for 1895-96 shows that 519 square miles have been taken in hand in the Kulu Division.
(d) Includes 7 square miles of old areas now revised.
(e) Includes 136 square miles of the Gangayaula plan included in last year's table, but for which revised preliminary proposals were submitted in 1906-05.
(f) Excludes 183 square miles of the Arvi working-plan already shown last year, but for which a revised working-plan was received during 1895-96.
(g) Excludes 4 square miles of the Myo's reserve which was included in the Taungnyo working-plan during the year.

(C).

Comparative statement of progress made in Working-Plans during 1895-96.

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 areas 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. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.		
Pengal	(a)4,309	...	408	...	8,631	13,348	(a) The former area was 4,378 square miles; but 69 square miles have been transferred to the Civil Department for cultivation during the year.	
North-Western Provinces and Oudh.	Central Circle	901	3	(b)574	(d)14	347	1,839	(b) Garhwal plan, 427 square miles, plus 17 square miles on account of new areas in Ganges Plan. The areas of the old Ganges plans (Palani-Kohiri, 113 square miles and 141 square miles, Ganges Working-Circles) are already shown in column 2.
	Oudh "	921	(c)36	150	(e)	136	1,243	
	School "	(f)429	...	296	...	96	821	
Punjab	539	(g)13	1,445	398	3,635	6,028	(c) Excludes 30 square miles on account of the Kanjarla Working-Plan sanctioned during the year, as this area forms part of the general plan for Khori Trans-Sarda forests included in column 2.	
Central Provinces	Northern Circle	...	...	1,004	5,304	3,374	9,682	(d) Excluding 64 square miles of old working-plans now being revised and already included in column 2.
	Southern "	431	863	4,518	898	(h)3,765	9,975	(e) A new working-plan is being prepared for the Hirasur working-circle which forms part of the general Bhira range plan, area 73 square miles already included in column 2.
Burma (Lower)	Pegu Circle	(i)1,023	...	...	...	2,023	3,046	(f) In 1894-95 this was shown as 427. It has now been increased by 3 square miles (wing to rectification of area.
	Tenasserim Circle	...	332	53	118	3,829	4,332	(g) Excluding 7 square miles (Dalhousie plan), of old areas now revised, but already accounted for in column 2.
Burma (Upper)	Eastern Circle	...	...	35	...	*2,671	*2,706	(h) It is reported that out of this area working-plans are not required for 2,109 square miles.
	Western "	...	...	...	...	*2,733	*2,733	(i) These are reserved areas only and exclude 9,200 and 13,689 square miles, respectively, of forests which have been afforded protection under the regulations as a preliminary to being reserved.
A-sam	533	...	...	...	(j)14,840	15,373	(j) Includes 11,688 square miles of unclassified forests for which working-plans are not required at present.	
Berar	19	702	4	...	3,453	4,178	(k) The Ajmere plan was sanctioned in 1894-95 and accounted for in the working-plan statement for that year. The plan was subsequently cancelled and a revised one prepared and sanctioned during 1896-97, in which year it will be accounted for.	
Coorg	116	...	28	44	704	892	(l) The Conservator states that these figures represent areas of forests as scaled and therefore will not compare with figures in Form No. 46.	
Baluchistan	...	...	...	...	175	175	(m) The area shown in 1894-95 was 509 square miles. The difference is owing to 14 square miles of pasture reserve having been excluded.	
Andamans	...	...	...	...	1,954	1,954	(n) Excludes 28 square miles of pasture reserve not to be organized.	
Ajmere	(j)	...	(j)139	...	10	149	(o) Includes 4 square miles of the Myolá reserve being included in the Taungyo Working-Plan.	
Total Bengal Presidency	9,221	1,449	8,654	6,774	52,376	78,474		
Madras Presidency	Northern Circle	91	21	91	628	5,788	6,559	
	Central "	10	68	4	54	6,746	6,882	
	Southern "	46	7	13	18	5,553	5,637	
TOTAL	87	96	108	700	18,087	19,078		
Bombay Presidency	Northern Circle	391	174	63	...	621	(k)1,249	
	Southern "	(l)495	187	32	59	(m)1,697	(m)2,470	
	Central "	776	112	78	1,474	3,910	6,350	
	Sindh "	...	...	...	...	1,065	1,065	

† N.B.—For Madras and Bombay the 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.

From the above it will be seen that of the total area under the control of the Forest Department, which at the close of the year stood at 78,474 square miles, working-plans were actually in force over an area of 10,670 square miles, or 14 per cent. of the whole. Moreover, for a further area of more than 15,000 square miles, working-plans were under preparation, so that it is evident that the next few years will largely increase the area of forests worked under carefully considered plans of working. During the year under review 15 working-plans, dealing with an area of 1,495 square miles, were sanctioned by Local Governments, raising the total number of plans in force from 50 to 64, whilst 11 plans, dealing with 1,670 square miles, were submitted to the Inspector-General of Forests for his professional opinion.

The North-Western Provinces and Oudh continue to hold the foremost place in this branch of administration, showing an area of 59 per cent. of the total brought under sanctioned working, whilst important plans for some 1,000 square miles were either completed or nearing completion at the close of the year. Excellent progress has also been made in the Southern Circle of the Central Provinces. In Madras and Bombay the control of working-plans does not lie with the Government of India, and it is not known how far the plans referred to in the reports and forms have been sanctioned by the Government. But it would appear that in Madras better progress was made than in the previous year, and that in Bombay a good deal of work was done in all three Circles. The high cost of completed plans in the Kanara Division of the Southern Circle—R545 to R649 per square mile—is remarkable. In Sindh it has been realized that the forests have in many instances been overworked, and the long delayed formation of a working-plan division is a most satisfactory step.

No important deviation from the provisions of existing plans calls for notice during the year. Such as occurred were owing almost entirely to causes beyond control such as, for instance, in the case of the Goalpara plan in Assam, where an insignificant demand prevents the disposal of the annual yield.

In last year's review attention was called to Form No. 50 showing the progress made in working-plans and the incorrect manner in which it had been drawn up. It was pointed out that columns 2 and 3 were intended to show only such plans as had been completed and formally sanctioned by the Local Government in accordance with the provisions of the Forest Code, and that such plans as, although completed, had not so been formally sanctioned should find a place in columns 4 and 5. The Forms for the year 1895-96 have, however, in most instances been again prepared in a misleading manner, and steps are now being taken to ensure the correct preparation of this Form in future.

The work done in the different provinces is summarized below.

Bengal.—During the year a plan for the Tista valley (12 square miles) and another for the forests of the Tista Forest Division (218 square miles) were completed but not finally sanctioned. They should consequently have been shown in column 4 and 5 of Form 50, and not in columns 2 and 3. No other plans were completed, but the Plan for Jalpaiguri forest was nearly finished at the close of the year. The area of reserved forests for which working-plans have still to be taken in hand stood at 3,339 square miles, of which, however, 1,518 square miles in Chittagong are not in immediate need of organised plans of working.

North-Western Provinces and Oudh.—In the Central Circle working-plans were completed for the Garhwal and Ganges Divisions, area 837 square miles, and were sanctioned by the Local Government after the close of the year. The revision of the Naini Tal plan was taken in hand. In the Oudh Circle two new plans were sanctioned, that for the Kanjaria Range of the Kheri Division and that for the Chakia-Charda Range of the Bahraich Division,

together covering an area of 75 square miles. In the School Circle a working-plan for the Saharanpur Division, area 295 square miles, was completed, and a revised plan for the *aisau* forests in Dehra Dun was sanctioned.

The Government of India, in their review on forest administration in these provinces remarked—

"Of the total forest area in the North-Western Provinces and Oudh—3,903 square miles—working-plans are now in force over 3,198 square miles, those for 1,208 square miles having been completed during the year. There still remain 688 square miles without regular working-plans. Of this area 308 square miles are in the Bundelkhand Division of the Central Circle, 136 square miles in the Gonda Division of the Oudh Circle, and 90 square miles in the Jaunpur Division of the School Circle. The Government of India view with special satisfaction the progress which has been made in the North-Western Provinces and Oudh in this important branch of administration, and hope that working-plans will shortly be in force for all the forests of the Province."

Punjab.—A working-plan dealing with 13 square miles of the Kotkhai-Kotguru forest in the Simla Hill tracts was completed and sanctioned. Working-plans were, at the close of the year, under preparation for an area of 1,841 square miles. For the Kaghan plan enumeration work was finished, and it remained only to check countings and descriptions of compartments. In the Dungagali Range enumeration work was commenced. The Kalachitta and Upper Ravi working-plans were completed but not sanctioned during the year. A revised plan for the Dathousie Range was sanctioned. The work of enumeration and collection of data for the Kulu working-plan was nearly completed. A plan for the Simla catchment area was completed, and the plan for the Changa Mauga plantation was revised, and a working-plan for the Simla Municipal forests was commenced.

Central Provinces.—In the Southern Circle very substantial progress was made, and six plans dealing with an area of 363 square miles were completed and sanctioned during the year. Further plans, to cover an area of 5,416 square miles, were under preparation at the close of the year; 3,765 square miles remain for which plans have still to be taken in hand.

In the Northern Circle Form No. 50 has again been prepared in a misleading manner, inasmuch as it shows an area of 5,508 square miles for which plans have been completed. As a matter of fact, no plans had at the close of the year 1895-96 been approved by the Inspector-General of Forests and sanctioned by the Local Government in accordance with the order laid down in section 83 of the Code. At the same time a larger amount of work has been done, and although the original plans have been judged to be unsuitable, they will greatly facilitate the preparation of the revised plans which are now being drawn up.

Burma.—In Lower Burma plans covering 832 square miles were sanctioned, and plans dealing with a further area of 171 square miles in the Toungoo Division were either completed or under preparation. The inclusion of the Myole reserve (area 4 square miles) in the Taungnyo working-plan was sanctioned during the year. In Upper Burma no plans were sanctioned. A working-plan for the Mohnyin reserve was under compilation. A considerable amount of preliminary work was done. The Government of India in their review on the forest administration of Burma for 1895-96, remarked—

"The progress made in the preparation of working-plans and in the collection of data for future plans has been steady and satisfactory. The valuation surveys made in Upper Burma during the year extended to 9,200 acres. The approaching termination of the leases in Upper Burma renders the preparation of working-plans of great importance, and the Government of India are glad to observe that arrangements have been made to commence work in the Pyinmna forests. In the opinion of the Governor General in Council the early preparation of working-plans is of very much greater importance in the upper parts of the province than in Lower Burma, and he would suggest that all the available resources of the province in this direction should be concentrated on the leased forest areas."

Assam.—Of the 3,685 square miles of reserved forests, only 533 square miles are under a systematized plan of working, and under existing conditions it has not been found possible to work up to the prescriptions of the plan. Out of 19,511 trees of which the Goalpara working-plan permitted the felling during the past three years, it has been found possible to dispose of only 3,504. No new work was carried out.

Coorg.—No new plans were sanctioned during the year, but proposals for an area of 72 square miles were under consideration, and satisfactory progress was made in the collection of data for the new plans. No progress was made in the preparation of a plan for the sandalwood areas.

Ajmere.—The working-plan which was sanctioned in 1894-95 was found to be unsuitable. The work of revising it was taken up but not completed during the year.

Baluchistan and Andamans.—There was no work under this head in these two provinces

Berar.—During the year a plan for the Bairagarh and Gugumal forests, covering an area of 702 square miles, completed during the previous year, was sanctioned, and a plan for

the babui areas of the Akola Division, 4 square miles, was under preparation. A great deal of good work was done in the preparation of simple provisional plans-of-operations for the remaining forests.

Madras.—During the year plans dealing with an area of 96 square miles were completed, whilst plans for a further area of 808 square miles were under compilation. The fact that settlement operations are still in progress seriously impedes the preparation of working-plans, but the work done was much more satisfactory than in the previous year.

Bombay.—In the Northern Circle working-plans were completed for an area of 174 square miles, and a further area of 63 square miles was being dealt with at the close of the year. Good progress was made in the marking out of the annual coupes on the ground, but much remains to be done in the Murbad, Shahapur, Dáhánu, and Umbargaon Ranges, where settlement work is incomplete.

In the Central Circle Form No. 50 shows that plans for 112 square miles were completed, and that plans for 1,552 square miles were under preparation at the close of the year. There remains an area of 3,899 square miles of reserved forests for which plans have still to be taken in hand. Considerable progress was made in marking out the working-plan coupes on the ground, and provisional working-plans for several forests in the East Khandesh, the Nasik, and Ahmednagar Divisions were prepared.

In the Southern Circle two working-plans parties were at work in the Central Division of Kánara. It appears from Form No. 50 that plans were already in force for 495 square miles and that plans for 187 square miles were completed during the year, *i.e.*, that for 682 square miles plans had been completed at the close of the year. This does not agree with the report which shows that working-plans have been submitted for 395,119 acres = 617 square miles. Complete data for working-plans were collected for an area of 37,849 acres, at a total cost of ₹38,330, an average of a little more than Re. 1 per acre.

In Sindh no working-plans were framed, but the first steps have been taken in this direction by the formation of a Working-Plans Division and by a commencement being made towards the collection of data. The fact that the forests have been overworked in the past in many instances renders the preparation of systematic schemes of working in Sindh of special importance.

VI.—COMMUNICATIONS AND BUILDINGS.

On the construction and up-keep of communications a total expenditure of ₹1,43,800 was incurred, of which ₹51,100 were spent on new roads. Only in Bengal, the North-Western Provinces and Oudh, and in Madras were important new road-works undertaken, expenditure in the remaining provinces being but small. Rupees 92,700 were spent on repairs to existing roads, the heaviest expenditure being, as usual, in the North-Western Provinces and Oudh (₹43,000), where extensive annual repairs to the roads are required, without which produce cannot be brought out of the forests. The construction of tramways for the carriage of produce from the forests to the markets has not been developed to any great extent, there being at present only some 32 miles of such lines, of which only 28 miles have been laid. Moreover, where such works have been constructed, they have not always proved commercially successful as compared with the ordinary means of transport obtainable locally. Thus, in Madras, the Anamalai tramway in the South Coimbatore District, which has been kept up since 1889-90, is calculated to have resulted in a net loss to Government of ₹22,000. The cost of carriage by the tramway is ₹1-6-1 per ton mile, whilst by carts it is estimated to be ₹1-0-8 per ton mile. The capital on which depreciation and interest is yearly deducted would, however, seem to include 7 miles of tramway, of which 4-miles only are at present laid, and it is probable that when the lead is longer or the outturn larger the tramway will show a profit. Similarly, in the case of the Cuddapah tramway, the working of which still shows a slight loss, out of 3 miles of line purchased only 1½ miles seem to have been laid.

The Casuarina Plantation Range tramway in Nellore has, on the other hand, proved a complete success during the 11 years in which it has been

working, and the net profit to Government during this period is estimated to have been Rs23,600. In Changa Manga, where a tramway 4 miles in length has been working for some 17 years, the cost of carriage of fuel by tramway has been much the same as it would have been had country carts, paid at prevailing rates, been employed. But the number of local carts is quite insufficient for the work, others would have to be imported from elsewhere and the rates would certainly rise.

The following statement gives particulars of the forest tramways at present working in India, and in it an endeavour has been made to contrast the cost of carriage per 100 maunds by the various tramways, with that by other means of transport obtainable in the same locality :—

1	2	3	4	5	6	7
Total length of tramway.	Gauge.	Description, and weight of rails.	Motive-power.	Capital outlay per mile.	Working expenses per 100 maunds per mile	Cost of carriage of 100 maunds per mile by other means in similar localities.
4 miles	16"	<i>Changa Manga.</i> Surface level; no preparation required for laying tram, the direction of which is changed as required.	Bullocks	Rs 6,955	Rs 14-3 (includes interest at 4 per cent. on capital outlay, estimated value of wear and tear and working expenses).	Rs 10-11.
6½ miles	2 feet	<i>Andamans.</i> Steel, 18 lbs. per yard.	Manual labour and draft animals.	9,322	Rs 1-0-1 (includes depreciation on cost of rail material at 10 per cent.).	(Cart transport pays only where small quantities of timber are to be brought from scattered fellings.
5½ miles	2 feet	<i>Sriharikota.</i> Steel, 14 lbs. per yard, with steel corrugated sleepers and wrought steel chairs riveted on full width of sleepers.	Manual labour	4,295	Rs 1-0-10 (includes interest on capital at 4 per cent. and 6 per cent. for wear and tear).	Rs 1-0-3.
4 miles	2 feet	<i>Kattapattam Casuarina Plantation.</i> Steel, 14 lbs. per yard, with steel corrugated sleepers and wrought steel chairs riveted on full width of sleepers.	Manual labour	5,261	Rs 1-4-10 (includes interest on capital at 4 per cent. and 6 per cent. for wear and tear).	Rs 3-1-5.
7 miles (4 miles and 5 furlongs only laid).	2 feet	<i>Anamalai.</i> Steel, 14 lbs. per yard, with steel corrugated sleepers and wrought steel chairs riveted on full width of sleepers.	Bullocks	10,489	(a) Rs 1-10-0 (includes interest on capital at 4 per cent. and 6 per cent. for wear and tear).	Rs 1-2-6.
3½ miles (only 1½ miles permanently laid, the remainder is used for lines required temporarily).	2 feet	<i>Cuddapah.</i> Steel, 10 lbs. per yard.	Manual labour	...	(b) Rs 4-8-8 (includes interest on capital outlay at 4 per cent.).	Rs 3-4-0 by double bullock cart.

The above tramway material was obtained either through the India Office, Messrs. King, King & Co., Bombay, or from Messrs. John Fowler & Co., Leeds, whose agents in Calcutta have an office at No. 89, Clive Street.

(a) Comparatively high rate due to greater expense of working tramway in hilly country.

(b) Information not available as to the comparatively high cost of working. Doubt is expressed if there will be sufficient material or sufficient steady demand to make the line pay.

A total expenditure of R2,52,800 was incurred on buildings, as compared with R2,15,300 during the previous year. The question of providing suitable accommodation for the Subordinate Establishment received considerable attention, and much good work was done in this direction in most of the provinces.

The total expenditure on communications and buildings was R3,96,747, as against R3,81,920 during the previous year. Details of expenditure on new work and on repairs in the different provinces are exhibited in the following table:—

PROVINCES.	NEW WORK.		REPAIRS.		TOTAL.
	Buildings.	Roads.	Buildings.	Roads.	
	R	R	R	R	
Bengal	18,507	14,133	8,929	9,317	50,886
North-Western Provinces and Oudh	32,883	10,906	17,146	43,252	1,04,187
Punjab	6,423	1,408	3,364	2,260	13,455
Central Provinces	15,511	3,027	4,157	4,823	27,518
Burma (Lower)	31,324	29	4,836	2,083	38,272
Burma (Upper)	23,980	1,756	4,023	8	29,767
Assam	8,172	638	9,322	2,737	20,869
Coorg	1,992	1,469	1,192	1,125	5,778
Ajmere	99	149	88	384	720
Baluchistan	46	...	367	...	413
Andamans	482	968	68	910	2,428
Berar	3,811	816	2,382	6,809	13,818
TOTAL BENGAL PRESIDENCY	1,43,230	35,299	55,574	73,708	3,08,111
Madras Presidency	25,228	12,316	15,680	15,997	69,421
Bombay „	5,948	3,526	6,713	3,028	19,215
GRAND TOTAL	1,74,406	51,141	78,467	92,733	3,96,747

The more important work done in the different provinces during the year is shown below.

Bengal.—The following statement compares the expenditure of the year with that of the previous year:—

NATURE OF WORK.	BUILDINGS.		ROADS AND BRIDGES.		TOTAL.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
	R	R	R	R	R	R
New construction	6,623	18,507	10,227	14,133	16,850	32,640
Repairs	9,410	8,929	7,046	9,317	16,456	18,246
Unapportioned	314	571	93	1,011	407	1,582
TOTAL	16,347	28,007	17,366	24,461	33,713	52,468

Thus both on buildings and on communications there was a considerably increased expenditure. The principal new buildings were inspection bungalows at Rishop (R3,900), Mamrim (partly built, R1,018), Purnakot (R1,138), on the Feni river (R1,900), at Hazarikbil (R1,900). An office bungalow was constructed at Khurda (R1,449). A revenue station-house at Dhaki and several smaller houses were built for the use of Range officers. Ninety-seven miles of new roads were constructed at a cost of R14,000. Of these 24 miles were in the Darjeeling Division and 26 miles in the Singhbhum Division.

North-Western Provinces and Oudh.—The expenditure was less than in the previous year by some R20,000, due partly to efforts made to reduce expenditure, partly to the fact that road and building work in these provinces is nearing completion. The Local Government remark—

“The nature and cost of the works executed under this head during the year are summarised and compared with the results of the previous year in the following table :—

Circles.	ROADS AND BRIDGES.		BUILDINGS.		Other works.	Total.	Percentage on gross expenditure.
	New works.	Repairs.	New works.	Repairs.			
	R	R	R	R			
Central	3,264	26,294	8,330	5,173	1,191	39,252	12.24
Oudh	4,253	9,075	22,773	16,002	3,352	45,454	15.08
School	3,390	7,883	4,994	5,515	1,813	23,595	7.81
TOTAL	10,906	43,252	31,097	16,690	6,356	1,08,301	11.62
Total, 1895-96	54,158		47,787		6,356	1,08,301	11.62
Total, 1894-95	64,172		55,576		6,444	1,29,741	13.89*

* Exclusive of expenditure on construction of wells (R1,786).

† Exclusive of expenditure on repairs to wells (R456).

The only important expenditure on new building work took place in the Oudh Circle, where R24,500 were spent. The chief works were 2nd class rest-houses in Kberi and Bahraich and a head-quarters house in Gonda. Eight quarters for Rangers or Guards were also taken in hand or completed. Under roads the main expenditure was R26,000 spent on repairs in the Central Circle, where the nature of the country involves heavy annual repairs to the export roads from the hill forests to the plains. In this Circle 53 miles, in the Oudh Circle 27 miles, and in the School Circle 43 miles of new roads were constructed.

Punjab.—The following contrasts the expenditure of the year with that of 1894-95 :—

Year.	DWARINAS.			ROADS AND BRIDGES.		TOTAL.
	New work.	Repairs.	Total.	New work.	Repairs.	
	R	R	R	R	R	
1894-95	5,326	3,916	9,242	1,790	2,799	4,589
1895-96	6,423	3,364	9,787	1,408	2,260	3,668

The bungalows at Ulānsa, Nadāon and Taklech commenced in previous years were finished. A small rest house was made at Pakka Mari, and a rest-house at Langera was commenced, and a house at Nachar was completed. Five new Range-quarters and 4 Guards' huts were built as well as an office at Kalatop, and at the Chenab sale depôt a good deal of work still remains in building quarters for the subordinate staff. Road-work was, with the exception of Chānga Mānga, where 126 miles of road were repaired, confined to the Hill Divisions; 46 miles of new roads and paths were constructed, chiefly narrow inspection paths. Eight miles were made in Hazara along the Kunbar river, 8 miles in the Khanpur range, 7½ miles in Chamba, 7 miles in Bashahr, and nearly 7 miles in Kalesar.

Central Provinces.—The expenditure of the year, compared with that of the previous year, was as follows :—

NATURE OF WORK.	BUILDINGS.		ROADS AND BRIDGES.		TOTAL.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
	R	R	R	R	R	R
New construction	9,245	15,511	8,507	3,027	17,833	18,538
Repairs	4,238	4,157	6,030	4,223	10,268	8,980
TOTAL	13,483	19,668	14,617	7,850	28,100	27,518

In the Southern Circle, several new roads, aggregating 83 miles, were commenced or completed at a cost of R3,000, whilst 1,536 miles of roads were repaired at a cost of nearly R4,000. A considerable amount of building was done; 145 new works were completed at a cost of R13,800. Four rest-houses, costing R2,200, and three Sub-Divisional Officers' quarters, costing R1,190, were built; the remaining expenditure was incurred in much needed work in

the direction of providing decent accommodation for the Subordinate Staff. Forty-one quarters for rangers, sub-rangers, and foresters, and 89 quarters for forest-guards were built.

In the Northern Circle, no new work under communications and buildings was undertaken, with the exception of one mile of new road and the construction of 31 new quarters for the Subordinate Establishment at a cost of R1,700.

Burma.—In Lower Burma an expenditure of R3,239 was incurred on new buildings in the Tenasserim Circle, and of nearly R29,000 in the Pegu Circle. Of this latter sum R8,100 were spent on a site for a forest bungalow at Rangoon; a house at Zigon, in the Tharrawaddy Division, was built at a cost of R4,600, and a similar house at Tharrawaddy was commenced. In Pegu a new forest office cost R7,000, and in Henzada R4,000 were spent on a house and office at head-quarters. There was no road-work, but R2,800 were spent on blasting obstructions in floating streams draining the North Nawin and the Chaungzauk reserves.

In Upper Burma nearly R24,000 was spent on new buildings; the principal works were the re-roofing with shingles of the Bhamo Divisional office and bungalow (R3,000), the completion of the Tigyaing office and house (R1,900), the purchase of a bungalow at Katha (R4,000), and at Magok (R2,000); eight smaller rest-houses were constructed at a cost of R2,200. Under roads and bridges R1,756 were spent on new work, the most important items being R1,453 spent in the Bhamo Division on the construction of two roads, one of 11 miles, the other of 5 miles in length. No departmental blasting work was done.

Assam.—The following table shows the expenditure incurred under this head, as compared with that of the previous year:—

Nature of work.	Roads.	Buildings.	Other works.	TOTAL.
	R	R	R	R
New construction	638	8,172	125	8,935
Repairs	2,737	9,322	977	13,036
Total, 1895-96	3,375	17,494	1,102	21,971
Total, 1894-95	2,580	15,141	889	18,610

There was thus but little expenditure on new roads, the chief items being a bridge over the Bamnai river in Goalpara, and the completion of the Dhonipara-Kulsi and the Barduar-Choygaon roads in Kamrup; 221 miles of roads were kept in repairs. Under buildings the chief item of expenditure was the purchase of a bungalow at Tezpar (R4,020). Range offices were built at Guma and at Darrang. Rupees 9,300 were spent on repairs to existing buildings and R1,100 on fencing and clearing compounds.

Coorg.—Thirty-three miles of new roads were made at a cost of R1,469. In North Coorg but little remains to be done in the matter of new roads, while in South Coorg a few more roads are required. Rupees 1,125 were spent on repairs.

No important building work was undertaken, but various small works were completed at a cost of some R2,000. Repairs cost R1,100.

Ajmere.—Nine miles of new roads were completed at a cost of R248. Repairs cost R384. The roads and paths are stated to be in a very backward state, particularly in Merwara.

A house and office were completed by the Engineering Department, and two new houses for Guards were made.

Baluchistan.—A new path, about 1 mile, was made in the Zangi Lora Plantation by the ordinary establishment; two new huts for Guards cost R46, and repairs to buildings cost R367.

Andamans.—Rupees 1,878 were spent on communications, of which R632 were on account of lifting 2 miles of tram-lines from Ali Masjid to Kadakachang, and in-laying about $\frac{1}{2}$ a mile of tramways there; R910 were spent on repairs to existing tramways, R550 were spent on buildings.

Berar.—The charges of the year compare as follows with those of the year before:—

Nature of work.	1894-95.	1895-96.
	R	R
Roads	13,806	7,625
Buildings	9,934	6,193
Wells	1,182	1,230
TOTAL	24,922	15,048

There was thus a considerable reduction in expenditure. One mile of new cart-road and 14 miles of new bridle-paths were constructed and repairs were carried out costing R6,800.

Of the R6,198 spent on buildings, R2,300 were spent on repairs, whilst new works were— 1 rest-house (R1,200), 1 office (R1,700), 2 Rangers' quarters (R450), 1 revenue-station (R30) and 2 Guards' houses (R89).

Madras.—The expenditure was as follows, as contrasted with the previous year:—

NATURE OF WORK.	1894-95.	1895-96.
	R	R
Roads and bridges	32,007	28,313
Buildings	34,143	41,108
Other works	3,263	2,662
TOTAL	69,413	72,083

Expenditure thus shows a decrease under roads and other works but an increase under buildings which occurred in the Northern and Southern Circles.

The question of a general scheme of forest roads has not been lost sight of but remains pending until more progress has been made in working-plans. Of new road-work during the year, 28 miles in Kistna (R2,266), the Peddur road in North Arcot, 2 miles (R1,940), 6 miles in the Nilgiris (R334), contribution towards the Anamalai-Sethumadai road (R2,385) were the chief items, whilst R16,000 were spent on repairs.

The results of the tramway working up to 30th June 1896 have been calculated to be—

	Net loss.	Net profit.
	R	R
Sriharikota	747	...
Casuarina plantation, Nellore . . . . .	...	23,603
Cuddapah	3,742	...
South Coimbatore	22,004	...

Of the amount spent on buildings, the chief works were part construction of a range house at Nandyal (R3,190), rest houses at Bhakrapet, Cuddapah District (R935), at Talamalai (R1,615), near Bellaju (R1,605), at Thattakarai (R1,069), at Punachi (R925), at Kansapuram (R761), at Chettimadam (R680) and at Paliangudi (R786). Numerous other smaller works, rangers' and subordinates' quarters and sandalwood storing houses were also carried out. R15,800 were spent on repairs to existing buildings.

Bombay.—The following statement shows the expenditure incurred, by Circles:—

CIRCLES.	NEW WORK.		REPAIRS.		TOTAL.
	Buildings.	Roads.	Buildings.	Roads.	
	R	R	R	R	
Northern	3,482	100	3,046	647	7,275
Central	1,562	...	759	157	2,478
Southern	692	3,426	2,573	2,224	8,915
Sindh	212	...	335	...	547
TOTAL	5,943	3,526	6,713	3,028	19,215

There was thus a total expenditure of R19,215, as compared with R20,720 during the previous year.

In the Northern Circle three rest-houses were completed at a cost of R2,213, and several houses for forest-guards were completed. In the Central Circle the Vaijapur rest-house was completed (R912), four new wells were sunk (R350) and 31 houses for forest-guards were built (R300). In the Southern Circle two wells were sunk (R450) and R2,500 were spent on repairs. In Sindh R547 were spent, R200 of which were the cost of a new office building.

The only important road work was in the Southern Circle, where R3,426 were spent on the construction of 15 miles of new roads, chiefly in the Northern Division of Kánara,

CHAPTER II.

PROTECTION AND IMPROVEMENT.

I.—GENERAL PROTECTION.

The following table exhibits the breaches of forest laws during the year and shows how they were disposed of:—

Province.	Number of cases taken into Court.		Number of cases compounded.		Total.		Proportion of Convictions to total number of cases decided by the Courts.	
	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.
							Per cent.	Per cent.
Bengal	264	125	1,163	958	1,427	1,083	89.7	92.0
North-Western Provinces and Oudh	125	123	637	530	762	658	84.0	81.2
Punjab	1,058	907	2,317	1,952	3,375	2,859	81.3	81.5
Central Provinces	372	216	4,285	3,542	4,657	3,758	80.7	79.6
Burma (Lower)	(a)434	(b)423	2,158	2,793	2,592	3,016	88.7	87.0
Burma (Upper)	389	216	428	(c)344	817	560	75.1	74.1
Assam	122	138	311	339	433	477	81.1	83.3
Coorg	8	12	130	207	138	219	62.5	83.3
Ajmere	46	43	25	19	71	62	100	97.6
Baluchistan	72	41	7	35	79	76	90.3	87.8
Andamans	1	...	...	...	1	...	100	...
TOTAL	2,891	2,249	11,461	10,519	14,352	12,768	82.1	82.6
Berar	95	134	618	704	713	838	77.9	70.1
Total Bengal Presidency	2,986	2,383	12,079	11,223	15,065	13,606	81.9	81.9
Madras	3,862	4,039	4,531	5,109	8,393	9,148	79.4	81.5
Bombay	2,632	2,493	4,343	3,660	7,475	6,153	80.4	78.8
GRAND TOTAL	9,480	8,915	21,453	19,902	30,933	28,907	80.5	80.8

(a) Includes 26 cases in which the persons implicated absconded.

(b) Includes 31 cases in which the persons implicated absconded, and which were not taken into account in the Review for 1894-95.

(c) Erroneously entered as 449 cases in the Review for 1894-95.

The number of cases taken into Court has somewhat increased.

For this the larger provinces in the Bengal Presidency, except the North-Western Provinces and Oudh, are mainly responsible. However, even now the number of cases taken into Court and the convictions obtained compare favourably with the same incidents in Madras and Bombay. The proportion of cases compounded is much larger in the Bengal Presidency than in either of the others.

The following table classifies the cases of which cognizance was taken during the year, as well as those in which the offenders remained undetected, under the various heads of offences, and is consequently much more instructive from a Forester's point of view than the general table above. It gives a good

idea of the main difficulties the department has to deal with in protecting the State property entrusted to it—

PROVINCE.	CASES TAKEN INTO COURT.				COMPOUNDED CASES.				CASES IN WHICH THE OFFENDERS REMAINED UNDETAINED.				TOTALS OF EACH CLASS OF OFFENCE.				GRAND TOTAL OF CLAIMS.
	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	56	187	13	36	3	688	418	27	96	3	...	...	153	847	491	65	1,496
N.-W. P. and Oudh	29	59	14	40	41	210	185	208	6	...	...	...	71	318	189	245	803
Punjab	114	591	269	99	1	977	1,334	79	339	49	16	9	454	1,587	1,617	178	3,831
Central Provinces	173	123	35	44	96	2,944	1,264	234	103	89	...	...	874	3,046	1,300	269	4,988
Burma (Lower)	37	344	1	67	3	1,927	3	341	14	9	...	...	44	2,280	4	429	2,757
Burma (Upper)	4	323	...	40	1	263	...	179	5	5	...	...	10	587	...	216	613
Assam	6	94	...	6	...	289	...	21	4	5	...	...	10	388	...	30	490
Coorg	3	5	...	1	...	4	...	91	35	...	...	...	3	9	...	36	141
Ajmere	1	49	...	...	...	24	...	1	...	...	...	...	1	67	...	...	71
Baluchistan	...	56	25	...	...	7	...	...	3	11	...	...	3	74	26	...	110
Andamans	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
TOTAL	410	1,773	363	353	134	7,263	3,285	1,101	669	170	17	15	1,123	9,204	3,645	1,699	15,441
Berar	13	61	4	23	15	452	67	29	36	21	...	...	64	554	91	63	768
Total Bengal Presidency.	423	1,823	367	376	159	7,744	3,352	1,130	606	191	17	16	1,187	9,758	3,736	1,523	16,203
Madras	...	Details	not available	...	...	...	...	...	...	...	...	...	94	4,930	3,699	767	9,610
Bombay	114	940	1,037	662	67	1,468	3,041	276	2,093	1,588	184	116	2,274	3,996	4,262	953	11,465
GRAND TOTAL	...	...	...	...	...	...	...	...	...	...	...	...	2,555	19,084	11,927	3,232	37,298

In the Bengal Presidency, 1,187 conflagrations occurring in fire-protected forests were attributed to intentional firing. In the large majority of cases this was not, it may be assumed, done with malicious intent, but in order to obtain new grass, for purposes of shikar or through mere carelessness. It is astonishing how difficult it is to impress upon the uneducated native mind the amount of damage that is done by setting light to a forest. They will not realize it, and it requires time and patience and help from the Revenue authorities to educate the natives in this respect and to eradicate inherited habits; but it is evident from the constant increase of the areas which in most provinces escape being burnt without special means of protection, that considerable progress has been made in teaching the necessary respect for forest property. Exemplary punishments are needed only where malice has been proved.

In the Bengal Presidency the cases connected with fire in specially protected forests amounted to 7.33 per cent. of the total of all cases, in Madras to 0.97 per cent., and in Bombay to 19.79 per cent. Grazing in closed forests accounts in the Bengal Presidency for 23.05 per cent. of all cases, in Bombay for 37.10 per cent., and in Madras for 32.84 per cent. The balance of the offences is made up by unauthorized felling, theft from the forests and in transit, and minor offences. Most of such offences mean an immediate loss of revenue, but as a rule do not affect the well-being and reproduction of the forests in the same way as those committed in respect of fires and of illicit grazing in forests in the stage of reproduction.

II.—PROTECTION FROM FIRE.

It has already been shown in the foregoing paragraphs, dealing with general protection, that a considerable percentage of the offences against the forest laws is connected with forest fires. It is evident that it would be of great use if the information under this head was further investigated and tabulated as proposed in the Inspector-General of Forest's review for 1894-95, but the

necessary information is not forthcoming in the reports, and the attempt has to be postponed.

The following table shows the progress and cost of protection of forests from fire by artificial isolation and special fire guards :—

PROVINCE.	AREA, IN SQUARE MILES.				Proportion of Failures to area attempted.		Cost				Proportion of area under fire-protection to total area of forests in charge of the Forest Department.	
	Attempted.		Protected.				Per square mile protected.		Per acre protected.			
	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.
				Per cent.	Per cent.	R	R	Pies.	Pies.	Per cent.	Per cent.	
Bengal	1,957	1,874	1,373	1,865	29·8	0·5	7½	5½	2	1½	14·66	14·45
North-Western Provinces and Oudh	2,840	(a)2,804	2,514	2,780	11·47	0·8	21½	18½	7·2	6	72·76	71·84
Punjab	703	639	643	589	8·5	7·8	4	4	1·3	1·3	11·66	10·72
Central Provinces	5,875	(b)5,475	5,445	5,282	6·6	3·5	10½	10	3	2½	29·87	27·46
Burma (Lower)	781	615	712	550	8·8	10·6	59	61	17½	18	10·57	8·69
Burma (Upper)	526	408	467	389	11·0	4·6	12½	10	3½	3	9·67	9·25
Assam	1,202	1,193	1,053	1,192	12·40	0·08	9	8	2½	2½	7·81	6·76
Coorg	204	(c)204	182	169	10·8	17·1	54	46	16	14	22·87	22·84
Ajmere	127	127	127	127	...	...	2½	3	0·80	0·83	85·23	85·23
TOTAL	14,215	13,339	12,556	12,949	11·6	2·9	15½	13½	4·7	3·8	*19·70	*17·77
Berar	1,419	1,397	1,391	1,390	2·0	0·5	9½	9½	3	3	33·96	33·43
Total Bengal Presidency	15,634	14,736	10,947	14,333	10·8	2·7	15½	13	4·6	3·6	*20·48	*18·60
Madras	5,594	(d)4,833	5,241	4,541	6·3	6·0	8	9½	2½	3½	29·32	25·73
Bombay	9,403	(e)9,359	8,721	8,867	7·2	5·2	8½	3½	1·1	1·0	62·81	65·59
GRAND TOTAL	30,631	28,928	27,909	27,741	8·9	4·1	10½	9½	2·11	2·6	*27·75	*25·61

* Andamans and Baluchistan left out of account, as no special measures were there taken for protection against fire.

(a) Difference of 164 square miles between this figure and that entered in the Review for 1894-95 is due to correction for that year made by the Conservator of Forests, Central Circle, in the 1895-96 Report. The necessary alterations have been made in the corresponding columns that follow.

(b) Difference of 1,046 square miles between this figure and that entered in the Review for 1894-95, is due to revised figures having been furnished by the Conservator of the Northern Circle. The necessary alterations have been made in the corresponding columns that follow.

(c) Erroneously entered as 205 square miles in the Review for 1894-95. The necessary alterations have been made in the corresponding columns that follow.

(d) Difference of 146 square miles between this figure and that entered in the Review for 1894-95, is due to revised figures having been furnished by the Conservators, Central and Southern Circles, in the 1895-96 Reports. The necessary alterations have been made in the corresponding columns that follow.

(e) Difference between this figure and that entered in the Review for 1894-95 is due to the fact that in the 1894-95 returns the area of the Dangs, 678 square miles, was erroneously shown as specially protected.

An attempt has been made to analyse the causes of fire in specially-protected areas in the following tabular form; but it will be seen that only a few Circles have given the information required for this purpose.

The importance of this form to the local Forest Administrations is great, in so far as it shows at a glance the efficiency of the protection afforded against fires entering from the outside, and should give a good idea with regard to the main sources of fires originating in the interior of protected areas and of the chief dangers which have to be guarded against. In one Circle all fires caused during the year by intentional firing are attributed to malice, and in another none. The information is probably incorrect in either case, and until the Form is fully understood in all divisions and its importance recognized, no general useful conclusions can be drawn.

PROVINCE.	(A.) Fires caused by accident or through carelessness in burning fire-lines.		(B.) Fires entering the forests by crossing exterior fire-traces.		By workmen employed in the forests by purchasers of forest-produce and by yak-cutters either accidentally or through carelessness.		By villagers, travellers, etc., passing through the forests either accidentally or through carelessness.		By Railway engines.		By lightning, or by fire-balloons.		BY INTENTIONAL FIRING.				Cause unknown.		TOTAL (A), (B) AND (C).			
	In order to obtain new grass.		In order to turn out game, or to reduce cover.		Maliciously.		Total.															
	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.	No.	Area burnt, in acres.				
Bengal	Details not given in Report.																					
N.-W. P. and Oudh.	Central Circle	Details only partially given in Report.																				
	Oudh Circle	6	2,225	13	15,955	...	...	5	46,738	...	...	...	...	...	55	45,553	55	45,553	6	1,428	64	114,894
	School Circle	10	145	5	1,613	4	821	17	1,920	3	1,200	10	5,791	10	5,791	7	6,094	58	20,294
TOTAL		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Funjab			71	20,161	...	...	160	12,279	6	121	...	...	201	68,587	...	...	201	68,578	96	19,940	324	118,097
Central Provinces.	Northern Circle	Details not given in Reports.																				
	Southern Circle																					
TOTAL		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lower Burma	Pegu Circle	5	...	...	22	...	...	5	...	...	...	...	...	...	20	...	20	...	1	...	54	34,105
	Tenasserim Circle	4	83	...	4	2,439	...	4	342	...	...	...	...	...	...	...	...	...	5	7,731	17	10,605
TOTAL		9	...	...	26	...	...	10	...	...	...	...	...	...	20	...	20	...	6	...	71	44,710
Upper Burma	Eastern Circle	Details only partially given in Reports.																				
	Western Circle																					
TOTAL		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assam			9	27,000	...	...	...	...	...	...	...	...	2	365	4	1,678	6	2,033	...	...	23	29,365
Coorg			...	...	4	8,573	...	...	...	...	...	...	...	...	14	8,915	14	8,915	...	...	33	14,277
Ajmere			...	...	1	80	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	83
Baluchistan			...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	3	...
Andamans			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Berar			1	4,500	12	1,850	...	...	...	...	...	...	...	...	4	5,336	4	5,336	8	4,094	20	17,732
Madras	Northern Circle	Details only partially given in Reports.																				
	Central Circle																					
	Southern Circle																					
TOTAL		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay	Northern Circle	Details only partially given in Reports.																				
	Central Circle																					
	Southern Circle																					
	Sindh Circle																					
TOTAL		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

III.—REGULATION OF GRAZING.

The table below shows that the area entirely closed to grazing amounted in the Bengal Presidency to 35·78 per cent. of the whole forest area in charge of the Department, in Madras to 12·9 per cent. and in Bombay to 18·53 per cent. In addition 19·69 per cent. are closed against browsers in the Bengal Presidency, 84·56 per cent. in Madras, and 45·66 per cent. in Bombay. The large percentage of entire closure in the Bengal Presidency, as compared with Madras and Bombay, is due to the fact that the former includes several large provinces (Bengal, Burma and Assam) in which practically no demand exists for grazing inside reserves. The increase in the acreage closed in this Presidency is more than accounted for by the addition of new reserves in Burma. In Bombay the reports show that the area entirely closed to grazing was reduced by 376 square miles—or by upwards of 10 per cent. This concession was, however, but partially extended to closure against browsers and the area in this column shows consequently an increase of 284 square miles.

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. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.	Sq. ms.
Bengal	5,877	5,041	20	3,437	2,179	11	4,034	1	...	13,848	7,221	31
North-Western Provinces and Oudh	3,766	1,714	575	94	16	4	43	1	30	3,908	1,731	309
Punjab	1,830	531	335	1,378	7	97	2,973	61	224	6,028	699	664
Central Provinces	19,283	2,929	5,834	...	...	...	384	...	23	19,657	2,929	5,667
Lower Burma	7,373	6,956	7,319	...	...	...	...	...	...	7,373	6,956	7,319
Upper Burma	5,439	4,465	2	...	...	...	...	...	...	5,439	4,465	2
Assam	3,985	2,988	937	...	...	...	11,658	...	...	15,373	2,688	967
Coorg	238	84	...	654	...	...	...	...	...	238	84	...
Ajmere	139	35	103	...	...	...	...	...	...	149	36	113
Baluchistan	175	121	...	...	...	...	...	...	...	175	121	...
Andamans	73	...	...	...	...	...	1,954	...	...	1,954	...	...
Besse	4,178	1,330	61	...	...	...	...	...	...	4,178	1,330	61
Total Bengal Presidency	51,921	25,814†	15,056	5,561	2,203	113	20,993	63	287	78,474	28,079†	15,456
Madras	12,888	...	...	...	...	...	6,690	...	...	19,078	2,465	10,132
Bombay	12,173	...	...	2,786	...	...	...	...	...	14,959	2,772†	6,532†
GRAND TOTAL	...	...	...	...	...	...	...	...	...	112,511	33,316†	35,419†

The following table shows, so far as information is available, the number of animals which in each circle grazed in the forests open to grazing :—

PROVINCE.	Circle.	AT FULL RATES.					AT PRIVILEGED RATES.					BY RIGHT UNDER SETTLEMENT.					DURING SEIZURE 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.	Other animals.	
Bengal . . . . .	. . . . .	6,698	11,989	1,575	...	14	8,688	175,632	19,429	...	548	49,191	156,335	49,191	...	...	45	219	...	...	5
N.-W. P. and Oudh.	Central	23,148	88,728	3,970	10	3,530	1,313	5,133	52,027	...	275	27,835	82,177	15,638	...	880	5,452	31,345	682	...	32	
	Oudh	10,986	47,531	2,612	...	163	18,406	102,541	2,909	...	110	2,878	19,987	...	...	...	1,049	3,780	362	...	171
	School	10,323	33,764	14,345	9,915	11,549	1,174	8,530	123	...	...	399	18,331	61,464	...	...	13	1,354	...	...	...
	TOTAL	44,463	176,023	20,927	9,925	15,242	18,893	116,204	55,059	...	385	31,112	120,495	77,102	...	880	6,514	36,479	1,044	...	203	
Punjab . . . . .	. . . . .	88,868	106,476	327,738	5,626	552	1,300	16,412	235,070	109	1,204	17,250	148,211	112,629	176	2,604	3,054	9,210	5,260	500	30
Central Provinces.	Northern	113,609	582,232	27,939	109	1,061	8,503	33,969	2,841	...	39	...	...	...	...	...	47,261	171,563	25,612	...	...
	Southern	117,593	1,014,630	164,847	...	433	...	...	...	...	...	...	...	...	...	...	284	4,598	124	...	...
	TOTAL	231,202	1,596,862	192,786	109	1,494	8,503	33,969	2,841	...	39	...	...	...	...	...	47,545	176,161	25,736	...	...
Burma (Lower)	Pegu	468	1,105	...	...	...	...	...	...	...	...	10,599	46	...	...	...	...	...	...	...	...
	Tenasserim . . . . .	...	...	...	...	...	...	...	...	...	...	3,132	304	49	...	23	...	...	...	...	...
	TOTAL	468	1,105	...	...	...	...	...	...	...	...	13,731	350	49	...	23	...	...	...	...	...
Burma (Upper)	Eastern . . . . .	...	...	...	...	...	...	...	...	...	...	...	9,720	...	...	...	3,000	...	...	...	400
	Western	40	...	...	...	...	...	12	...	...	...	109	4,920	...	...	...	80	...	...	...	...
	TOTAL	40	...	...	...	...	...	12	...	...	...	109	14,640	...	...	...	3,080	...	...	...	400
Assam . . . . .	. . . . .	18,315	4,374	56	...	79	...	...	...	...	...	...	...	...	...	...	274,601	565,184	66,915	...	3,375
Coorg . . . . .	. . . . .	469	8,161	...	...	...	...	...	...	...	...	5,601	...	...	...	...	...	...	...	...	...
Ajmere . . . . .	. . . . .	...	25	...	...	...	133	541	...	...	...	678	5,218	...	...	...	...	...	...	...	...
Baluchistan . . . . .	. . . . .	104	876	4,968	...	...	...	...	...	...	...	671	15,622	1	221	...	...	...	...	...	...
Andamans . . . . .	. . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Berar . . . . .	. . . . .	120,307	681,630	275,274	122	8,529	1,707	23,661	...	...	...	48	79,137	...	...	...	17	4,826	...	...	...
	TOTAL BENGAL PRESIDENCY.	460,931	2,586,531	823,324	15,782	25,910	39,224	366,431	312,399	109	2,176	112,119	530,668	254,593	177	3,731	334,856	793,099	98,955	500	4,013	
Madras Presidency.	Northern	Information not available.				
	TOTAL
Bombay Presidency.	Northern	1,711	9,492	...	...	...	1,546	6,922	...	...	...	3,032	3,900	...	...	...	49,086	227,355	18,421	...	828
	Central	13,682	108,991	401,369	...	7,823	49,495	456,037	186,914	...	925	...	...	...	...	...	27,538	235,340	494	...	1,011
	Southern	6,505	16,707	63,776	...	251	102,311	282,705	82,617	...	172	...	...	...	...	...	25,412	86,220	788	...	...
	Sindh	60,716	72,102	342,109	8,779	1,369	8,500	21,127	53,368	805	...	4,355	20,890	...	...	624	88	588	352	164	718
	TOTAL	82,614	207,292	807,254	8,779	9,443	573,770	766,791	322,299	805	1,097	7,387	24,790	...	...	624	102,124	549,498	20,055	164	2,357

A large decrease took place in the number of animals of all kinds which were grazed in the forests of the Central Provinces and the Berars at full rates, and though in the Central Provinces several hundred thousand animals were admitted at privileged rates and free during the pleasure of Government, the total deficiency in comparison with previous years is still considerable. This is doubtless due to the scarcity which prevailed and caused the death of a large number of cattle.

In all other provinces the number of animals admitted to forest grazing has either remained stationary or increased, but there is no information available as regards Madras.

The extremely liberal policy as regards forest grazing is clearly indicated by the following table, which shows that whilst R15,04,000 were realized on this account during the year, R14,30,000 were foregone:—

Province.	Circle.	Amount realized.	Amount foregone.
		R	R
Bengal	Central	17,118	92,900
North-Western Provinces and Oudh	Oudh	20,346	41,800
	School	25,654	16,800
		22,100	10,700
	TOTAL	68,100	69,300
Punjab	Northern	74,756	1,50,100
Central Provinces	Southern	1,53,541	45,800
		1,77,237	600
	TOTAL	3,30,778	46,400
Lower Burma	Pegu	909	80
	Tenasserim . . . . .	.....	3,800
	TOTAL	909	3,880
Upper Burma	Eastern . . . . .	.....	7,900
	Western	21	10,500
	TOTAL	21	18,400
Assam . . . . .	.....	11,065	2,63,500
Coorg . . . . .	.....	2,275	1,400
Ajmere . . . . .	.....	2,032	3,800
Baluchistan . . . . .	.....	743	8,500
Andamans . . . . .	.....	.....	.....
Berar . . . . .	.....	2,11,936	22,260
Total Bengal Presidency		7,19,729	6,80,430
Madras Presidency	Northern	1,24,747	1,40,100
	Central	1,62,681	400
	Southern	53,068	1,700
	TOTAL	3,40,496	1,42,200
Bombay Presidency	Northern	6,793	1,37,000
	Central	2,79,369	3,47,800
	Southern	1,00,638	94,100
	Sindh	57,110	28,600
	TOTAL	4,43,910	6,07,500
	GRAND TOTAL	15,04,135	14,30,130

The number of cattle impounded has not been recorded in the majority of the reports and the table below is again very incomplete. However it shows that the impoundings vary enormously in the different provinces. In the Punjab some 1,617,000 head of cattle of all kinds were grazed in the forest under the control of the Forest Department, and in Bombay some 3,487,000; but whereas in the former province only 26,002 animals (2.5 per cent.) were impounded, 373,196 (10.7 per cent.) were treated in this manner in the Bombay Presidency—

Province.	Circle.	Cases of illicit grazing.	Number of head of cattle impounded.
Bengal . . . . .	.....	431	1,697
North-Western Provinces and Oudh	Central	44	P
	Oudh	90	P
	School	35	P
	TOTAL	169	P
Punjab . . . . .	.....	1,617	26,002
Central Provinces	Northern	510	P
	Southern	790	P
	TOTAL	1,300	P
Lower Burma	Pegu	2	.....
	Tenasserim	2	.....
	TOTAL	4	.....
Upper Burma	Eastern . . . . .	.....	.....
	Western . . . . .	.....	.....
	TOTAL	.....	.....
Assam . . . . .	.....	2	P
Coorg . . . . .	.....	93	793
Ajmere . . . . .	.....	3	2,455
Faluchistan . . . . .	.....	26	4,266
Andamans . . . . .	.....	.....	.....
Berar . . . . .	.....	91	P
Total Bengal Presidency . . . . .	.....	3,736	P
,, Madras Presidency	Northern	802	P
	Central	2,190	P
	Southern	837	P
	TOTAL	3,829	P
,, Bombay Presidency	Northern	79	7,852
	Central	2,295	321,994
	Southern	7	14,511
	Sindh	1,881	28,839
	TOTAL	4,262	373,196
	GRAND TOTAL	11,327	P

P Information not given in Reports.

IV.—REPRODUCTION AND SYLVICULTURE.

Our working-plans prove that considerable attention is paid to the application of correct silvicultural principles to our Indian forests. The progress in this direction has been good, and the treatment under which the principal timber-producing species most successfully reproduce themselves is now generally understood. The majority of officers in the higher grades, and many of those who were educated at the Dehra Forest School, occupy themselves with the study and solution of silvicultural problems to an extent quite unknown not so very many years ago, when these studies were, so to say, the monopoly of a few officers in each Province. This growing interest in silvicultural problems, the more general and more scientific applications of the principles taught to our officers during their technical training, may be ascribed to three main causes.

In the first instance there has been a considerable increase in the numerical strength of Divisional Officers, and in the proportion of technically-trained men amongst them.

The next reason is the great improvement which has taken place both numerically and in general efficiency in the India-trained staff, more especially in the Provincial and Ranger services. This naturally has its effect on the lower subordinate class, and the Divisional Officer is less a slave of close supervision over the executive carrying out of silvicultural operations than he used to be, at a time not so far back, when he had to personally supervise each thinning, and the marking out of each improvement or regeneration felling.

The third and by no means the least important cause is found in the preparation of working-plans and the present centralization of their criticism and control. Each of such plans, or at least groups which refer to forests of a similar character, contain silvicultural problems and proposals to solve them by practical application of sound silvicultural principles. No doubt sooner or later the valuable information now scattered through many volumes will result in monographs on the treatment of special distinct classes of forests. In the meantime we may well be satisfied with the general progress made in the study of Indian silviculture and its practical application, and especially with the general interest taken in this, the Forester's most important duty; for though we have learned much there is still much more to learn.

Natural reproduction is so gradual and so few exceptional incidents occur, that it serves no practical purpose to record progress from year to year. The two main conditions which are necessary to obtain a satisfactory reproduction are a permanent protection from fire and from grazing whilst reproduction is actually in progress.

It has been brought forward by one or two officers in Burma that the danger to reproduction caused by fire has been overrated, and that under certain circumstances such fires, even if uncontrolled, are beneficial to the reproduction of teak. This is a matter of such importance that, though the Supreme Government's opinion on these remarks has been noted in last year's review, it is considered right to add here a short resumé of the opinion of a large number of officers, who were consulted by the Burma Government on the question in point. The officers consulted rank amongst the best and most

successful sylviculturists in the province, and the resumé of their opinions is given in the following note:—

It is desirable to remark, in the first place, that evergreen, tidal, and riparian forests need not be considered at all as they are not subject to fires; that it is necessary to treat the question of fire-protection as regards its effects upon the soil itself, upon the reproduction and upon the existing growing stock; and that for the general discussion of the subject it is advisable to separate the deciduous forests into the three following classes:—

- (a) Those in which the valuable species occur with a dense under-growth of evergreen, periodically and gregariously flowering bamboos, which more or less prevent the natural reproduction of the tree-growth except when the bamboos seed.
- (b) Those in which the bamboo undergrowth possesses a lighter foliage and flowers sporadically, as well as gregariously, and in which the reproduction of tree-growth can always take place, though more particularly at the time when the cover has been opened up by the general, but also sporadic, flowering of the bamboo.
- (c) Those with an undergrowth of shrubs, herbaceous plants, and grasses only, and in which the valuable species are generally found as mixed forests, though occasionally, and more particularly in the case of catch, growing in a pure state.

There is a general consensus of opinion that fire-protection does not actually result in the production of regular humus in any of the above classes of forests, but that nevertheless the condition of the soil is greatly benefited by protection and, on the other hand, its productive power injuriously affected by constant recurring fires. Where fire is common the fallen leaves and other decaying vegetable matters are transformed into a layer of ashes which is blown away by the wind and washed away by the rains, so that the whole benefit to the soil is lost; and this is not all, for the torrential rain of the south-west monsoon also removes the top layer and most nutritive portion of the soil itself, so that in unprotected forests it is found that the small stones do not rest on the general level of the ground, but are supported by little pinnacles of earth, left when the surrounding exposed soil was washed away. There can, however, be little or no doubt that in fire-protected forests, the manuring principles of the decaying vegetable substances are returned to the soil, not in the usual form of humus, but more indirectly through the faeces and decomposing bodies of the myriads of earth worms, ants, beetles, and other insects who consume such forest débris as fallen stems, dead wood, and leaves, and after extracting their requisite nourishment from it, emit the faeces, not in the form of more or less altered organic matter, but as a very fine, pure and fertile loam. It is true that this product also is liable to be washed away by the rain, but where fire-protection is successful the covering of dead leaves—and this is more particularly the case in forests of class (a)—lasts long enough to prevent the washing away of the surface soil before the live cover has re-established itself. The fact that fire-protection greatly benefits the soil is, then, beyond question.

In forests of class (a), protection from fire, or the occurrence of fire, can have no direct influence on the actual reproduction of trees, except during, and for some years after the flowering of the bamboos. It is possible then that a fire, occurring just when the culms begin to dry and before the bamboo seed has germinated, might be beneficial to the reproduction, but the cost to the growing-stock would be practically incalculable, and it is far from certain whether the fire, which would of necessity be a fierce one, might not very injuriously affect the seeding power of the mature trees during the critical period when reproduction can take place.

It is a fact that in forests of class (b), teak is better represented in areas subjected to fire than in protected forests, and that this is due to teak being more capable of withstanding, and to a certain extent of outgrowing, the effects of fire than any other tree. Nevertheless the effect of fires in forests of this class is most pernicious: for although we may obtain fewer teak seedlings in a fire-protected area, we know that these are healthier, grow faster and will yield better timber. We know also that by fire-protection we avoid constant injury to, and interference with, the development of the growing-stock while we prevent the steady deterioration of the soil.

Forests of class (c) are mainly important as catch-producing areas and, as regards teak, are of no very great extent and are mainly confined to Upper Burma. The teak in them is chiefly produced in family groups, the formation of which can be encouraged and accomplished without the use of fires. The benefit conferred upon catch-reproduction, by no other means

than fire-protection, is a matter of common knowledge, and no further arguments are needed to prove the advisability of protection in forests of this character.

The majority of the officers consulted are then in favour of fire-protection, and the question may be summed up by saying that while protection in teak forests increases the fertility of the soil, and at any rate tends to increase the luxuriance and rate of growth of all classes of the growing-stock, and ensures an eventual yield of good and sound material, the constant occurrence of fire can only result in the gradual deterioration both of the soil and the growing-stock. Finally, it is possible to ensure the advantage gained in certain forests by the occurrence of fires, that is to say, the better representation of teak, by means of improvement fellings, but it is impossible to safeguard them from the damage caused by fires by any means other than fire-protection.

The expenditure incurred on cultural operations, carried out for the purpose of assisting natural reproduction, is exhibited in the following table :—

	R		R
Bengal	6,100	Coorg	1,861
North-Western Provinces and Oudh	7,171	Ajmere	1,611
Punjab	1,986	Baluchistan	160
Central Provinces	1,239	Andamans	434
Lower Burma	14,813	Berar	1,090
Upper Burma	1,308	Madras	8,795
Assam	32	Bombay	13,357

Total R30,007

The table below shows the progress made in the artificial cultivation of compact areas :—

PROVINCE.	AREA IN ACRES.											
	AT COMMENCEMENT OF THE YEAR.			ADDED DURING THE YEAR.			EXCLUDED DURING THE YEAR.			BALANCE AT THE CLOSE OF THE YEAR.		
	Regular Plantations.	Taungya.	TOTAL.	Regular Plantations.	Taungya.	TOTAL.	Regular Plantations.	Taungya.	TOTAL.	Regular Plantations.	Taungya.	TOTAL.
Bengal	3,193	...	3,193	...	...	...	52	...	52	3,141	...	3,141
North-Western Provinces and Oudh.	3,119	...	3,119	...	...	...	...	...	...	3,119	...	3,119
Punjab	492	...	492	133	...	132	128	...	128	496	...	496
Burma (Lower)	4,001	35,552	39,553	...	(a) 5,820	5,820	...	...	...	4,001	41,372	45,373
Burma (Upper)	(b) 126	443	569	8	289	292	21	45	66	109	687	795
Assam	2,479	...	2,479	61	...	61	...	...	...	2,540	...	2,540
Coorg	2,002	(c) 103	2,105	100	103	203	...	...	...	2,102	206	2,308
Ajmere	(d)	...	...	...	...	...	...	...	...	...	...	...
Baluchistan	1,430	...	1,430	...	...	...	...	...	...	1,430	...	1,430
Andamans	81	...	81	...	...	...	...	...	...	81	...	81
TOTAL	16,923	36,098	53,021	296	6,212	6,508	201	45	246	17,018	42,265	59,283
Berar	655	...	655	...	...	...	...	...	...	655	...	655
Total Bengal Presidency.	17,578	36,098	53,676	296	6,212	6,508	201	45	246	17,673	42,265	59,938
Madras Presidency	48,143	...	48,143	942	...	942	22,625	...	22,625	26,460	...	(e) 26,460
Bombay	10,131	...	10,131	561	...	561	135	...	135	10,557	...	10,557
GRAND TOTAL	75,852	36,098	111,950	1,799	6,212	8,011	22,961	45	23,006	54,690	42,265	96,955

N. B.—Plantations which begin to yield major produce and are treated as forests have been excluded from this statement.

(a) Six acres obtained by rectification of previous area figures.

(b) Difference from the area shown in the Review for 1894-95 is due to the exclusion under this head of 19 acres classified as "Nurseries" and "Orchards."

(c) Increase of 103 acres as compared with entry made in the Review for 1894-95 is due to correction of Form No. 56 for that year in the Provincial Report for 1895-96.

(d) In the Review for 1894-95, 880 acres were shown under this head. It appears, however, from the Report for 1895-96 that this area comes instead under the head of "Cultural Operations."

(e) Includes 10,493 acres of topes.

The expenditure under this head was distributed over the various provinces as follows :—

	R		R
Bengal	832	Coorg	3,595
North-Western Provinces and Oudh.	1,220	Ajmere . . . . .	...
Punjab	1,384	Baluchistan	8,455
Central Provinces . . . . .	...	Andamans . . . . .	...
Lower Burma	59,560	Berar . . . . .	...
Upper Burma	2,992	Madras	34,070
Assam	6,859	Bombay	4,605

Total R1,23,879

CHAPTER III.

WORKING AND OUTTURN.

The outturn of all forests in timber and fuel, bamboos and minor forest produce, as well as average outturn per square mile, is shown in the following statement:—

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.	B.	C. ft.	No.	B.	C. ft.	No.
Bengal	18,422,404	7,840,649	1,10,885	19,275,575	4,444,381	2,08,660	544,460	8,415,533	10,416	4,134	1,334	18	5,608	1,293	60	135	2,200
North-Western Provinces and Oudh.	6,314,559	12,011,405	2,57,715	4,430,285	212,594	16,940	791,165	243,300	2,951	1,677	3,189	68	47,132	2,262	180	18,239	5,300
Punjab	3,459,354	639,722	1,29,820	16,480,145	—	1,87,551	11,635,252	106,920	1,35,906	2,059	381	77	11,976	—	136	3,911	30
Central Provinces	14,330,368	13,469,091	5,70,197	—	—	—	—	—	—	731	685	29	—	—	—	—	—
Burma (Lower)	1,896,037	4,736,054	30,310	15,111,468	16,425,275	30,632	—	—	—	277	632	41	(a)	(a)	(a)	—	—
Burma (Upper)	4,865,658	1,262,724	42,757	11,831,752	19,164,015	2,31,273	—	—	—	918	238	8	(a)	(a)	(a)	—	—
Assam	1,338,643	1,688,220	5,025	—	—	—	11,354,893	3,563,517	3,97,724	377	458	11	—	—	—	971	37
Coorg	399,224	—	4,016	286,745	401,330	19,308	—	—	—	1,677	—	17	433	614	294	—	—
Ajmere	213,175	23,820	79,617	100	—	130	1,450	—	—	1,376	1,719	171	573	—	1	145	—
Baluchistan	3,821	—	10,031	—	—	—	445,498	—	—	20	22	—	57	—	—	415,493	—
Andamans	1,050,690	131,797	906	—	—	—	1,184,690	536,380	2,039	14,530	1,805	12	—	—	—	630	200
Berar	1,455,862	2,497,488	2,90,220	—	—	—	—	—	—	351	398	85	—	—	—	—	—
Madras (b)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bombay (c)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(a) Chapter IV of the Lower Burma Forest Act and of the Upper Burma Forest Regulation extends protection to certain trees and produce in unoccupied lands generally. The area of these unencumbered lands to which protection is afforded is not known.
 (b) The forests of the Madras Presidency yielded 16,646,431 cubic feet of timber and fuel, 33,725,819 bamboos, and ₹10,79,986 worth of minor produce. Dividing these figures by the 19,078 square miles of forests under the Forest Department, the average outturn per square mile was 878 cubic feet of timber and fuel; 1,785 bamboos, and ₹56 worth of minor produce.
 (c) The forests of the Bombay Presidency yielded 71,525,741 cubic feet of timber and fuel, 3,152,347 bamboos, and ₹11,78,356 worth of minor produce. Dividing these figures by the 14,958 square miles of forest under the Forest Department, the average outturn per square mile was 4,732 cubic feet of timber and fuel, 546 bamboos, and ₹79 worth of minor produce.

In the following statement the amounts of forest produce collected and removed by Government agency are contrasted with those removed by purchasers:—

PROVINCE.	TIMBER		FUEL		BAMBOOS		MINOR PRODUCE (WATTLE, GRASS AND GRAIN)	
	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.
	C. ft.	C. ft.	C. ft.	C. ft.	No.	No.	B.	B.
Bengal	214,825	5,150,541	104,879	16,705,959	105,037	15,911,426	246	1,000
N.-W. P. and Oudh	529,438	1,923,729	2,115,042	2,685,942	194,426	11,951,804	19,551	1,700
Punjab	557,715	506,453	2,605,184	2,071,990	635,180	111,462	1,162	2,000
Central Provinces	176,063	891,701	1,394,026	10,259,340	88,753	13,999,482	13,671	4,800
Burma (Lower)	2,379,801	7,711,995	200	6,679,850	300	21,020,460	47	—
Burma (Upper)	872,643	11,748,140	1,500	3,724,720	4,200	19,835,289	857	2,400
Assam	73,514	2,370,629	11,739	646,751	1,643	3,112,049	784	61
Coorg	62,944	399,045	—	216,700	—	391,583	8,212	13
Ajmere	533	18,585	—	217,302	—	23,820	919	4
Baluchistan	718	1,876	7,807	433,731	—	—	412	1
Andamans	229,583	38,150	—	3,955	—	70,000	—	1
Total	4,597,807	30,760,844	6,240,377	43,498,240	1,029,539	65,727,375	41,121	13,070
Berar	—	459,930	—	983,466	—	2,494,588	—	2,840
Total Bengal Presidency	4,597,807	31,220,774	6,240,377	44,481,706	1,029,539	88,221,963	41,121	16,910
Madras	424,495	2,409,066	2,897,561	10,829,705	57,067	33,611,403	16,959	10,000
Bombay	1,203,797	6,564,906	9,126,282	35,452,294	5,505	7,628,412	62,449	6,500
GRAND TOTAL { 1895-96	6,226,099	40,194,745	18,264,220	90,763,705	1,092,111	139,461,778	1,20,529	38,000
{ 1864-95	5,694,297	39,985,639	28,056,781	69,791,064	1,616,237	132,196,511	1,88,064	30,250
Difference in 1895-96	+531,802	+209,066	-9,792,561	+20,972,641	-624,126	-2,734,733	-68,125	+7,750

These figures compare with those of the previous year as follows:—

AGENCY BY WHICH MATERIAL WAS REMOVED.	TIMBER.		FUEL.		BAMBOOS.		MINOR PRODUCE (INCLUDING GRASS AND GRAZING).	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
	C. ft.	C. ft.	C. ft.	C. ft.	No.	No.	R	R
Government Purchasers	5,694,297 89,925,689	6,226,009 40,194,745	28,056,761 69,791,064	18,264,220 90,763,705	1,616,237 132,196,511	1,092,111 129,461,778	1,88,654 82,62,473	1,30,529 83,66,978
TOTAL	45,679,936	46,420,844	97,847,825	109,027,925	183,812,748	130,553,889	84,51,127	84,87,507

This shows an increase of 740,800 cubic feet in the total amount of timber exported, most of which occurred under Government agency. The chief increased exports by Government agency were 193,000 cubic feet in Bengal, 390,000 cubic feet in Lower Burma, and 50,000 cubic feet in Madras, whilst the North-Western Provinces, the Punjab, and Bombay show decreases under this head of working. There was also an increase of 209,000 cubic feet in the amount of timber removed by purchasers. Most of the provinces show increased amounts under this head, of which the chief were 849,000 cubic feet in Bengal, 96,000 cubic feet in the Central Provinces and 1,221,000 cubic feet in Lower Burma. Against this has to be set a falling off of 2,317,000 cubic feet in the North-Western Provinces and Oudh. The number of bamboos exported fell off by 3,258,000. The value of minor forest produce removed from the forests rose from R16,00,000 in 1894-95 to nearly R24,00,000, being an increase of R8,00,000 or 50 per cent. Of this it is estimated that produce to the value of R2,99,500 was removed by right-holders or by free-grantees.

The actual amount realized by sale of minor forest produce was R16,05,000 as compared with R15,12,000 during the previous year. The increase occurred almost wholly in Madras, where there was a rise in the sales of minor forest produce of R1,84,000. The value of grazing dues realized was less than in the former year by R57,000.

The following table shows the estimated value of forest produce given free of royalty to the village right-holders and free-grantees:—

Timber.	Fuel.	Bamboos.	Minor Produce.	Grass and Grazing.	Total.
R	R	R	R	R	R
3,99,620	11,10,350	1,04,020	2,99,560	16,87,100	86,00,650

The following gives the detail by provinces:—

Bengal.—The total exports, as compared with the previous year, were as follows:—

	Timber.	Fuel.	Total.	Bamboos.	Grass and minor produce.
	C. ft.	C. ft.	C. ft.	No.	R
1895-96	5,557,480	32,684,959	38,242,439	20,700,563	8,30,931
1894-95	4,493,234	30,195,623	34,688,856	22,049,274	2,75,172
Difference in 1895-96	+1,064,246	+2,489,337	+3,553,583	-348,711	+55,759

There was thus a considerable increase in the outturn of both timber and fuel. The figures given include amounts given to right-holders, but the increase of 3 million cubic feet was due to improved demand; there was a large increase in the quantity of timber removed departmentally, 214,000 cubic feet, as against 20,000 cubic feet the previous year, being thus

CHAPTER III.

WORKING AND OUTTURN.

The outturn of all forests in timber and fuel, bamboos and minor forest produce, as well as average outturn per square mile, is shown in the following statement :—

PROVINCE.	RESERVED FORESTS.			PROTECTED FORESTS.			UNCLASSIFIED FORESTS.			AVERAGE OUTTURN PER SQUARE MILE.					
										RESERVED FORESTS.		PROTECTED FORESTS.		UNCLASSIFIED FORESTS.	
	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	
C. ft.	No.	R.	C. ft.	No.	R.	C. ft.	No.	R.	C. ft.	No.	R.	C. ft.	No.	R.	
Bengal	18,422,404	7,840,649	1,10,885	19,275,575	4,444,381	2,09,660	544,460	8,415,533	10,416	2,134	1,334	18	5,608	1,233	60
North-Western Provinces and Oudh.	6,314,959	12,011,405	2,57,715	4,430,385	212,594	16,940	791,165	243,300	2,951	1,677	3,189	68	47,132	2,262	180
Punjab	3,453,354	639,722	1,29,820	16,480,145	...	1,87,551	11,635,252	106,920	1,36,906	2,059	381	77	11,976	...	136
Central Provinces	14,380,368	13,469,091	5,70,197	...	...	...	...	...	...	731	685	29	...	...	...
Burma (Lower)	1,896,037	4,736,054	80,310	15,111,468	16,425,275	30,692	...	...	...	277	692	41	(a)	(a)	(a)
Burma (Upper)	4,865,688	1,262,724	42,757	11,891,762	19,164,015	2,31,273	...	...	...	918	238	8	(a)	(a)	(a)
Assam	1,338,943	1,688,220	5,025	...	...	...	11,354,893	3,563,517	3,97,724	377	458	14	...	...	971
Coorg	399,224	...	4,016	286,746	401,330	19,308	...	...	...	1,677	17	433	614	294	...
Ajmere	242,175	23,820	79,647	100	...	130	1,450	...	1,376	1,749	171	573	...	...	1
Baluchistan	3,881	...	10,031	...	...	...	445,498	...	20	22	...	57	...	...	445,498
Andamans	1,050,690	131,797	906	...	...	...	1,184,690	536,380	2,099	14,530	1,805	12	...	...	630
Berar	1,465,862	2,497,488	2,90,220	...	...	...	...	...	...	351	398	85	...	...	...
Madras (b)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay (c)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(a) Chapter IV of the Lower Burma Forest Act and of the Upper Burma Forest Regulation extends protection to certain trees and produce in unoccupied lands generally. The area of these undemarked lands to which protection is afforded is not known.

(b) The forests of the Madras Presidency yielded 16,648,431 cubic feet of timber and fuel, 33,725,819 bamboos, and 110,79,896 worth of minor produce. Dividing these figures by the 19,078 square miles of forests under the Forest Department, the average outturn per square mile was 873 cubic feet of timber and fuel; 1,765 bamboos, and Rs 6 worth of minor produce.

(c) The forests of the Bombay Presidency yielded 71,525,741 cubic feet of timber and fuel, 8,152,247 bamboos, and 111,78,356 worth of minor produce. Dividing these figures by the 14,958 square miles of forest under the Forest Department, the average outturn per square mile was 4,752 cubic feet of timber and fuel, 545 bamboos, and Rs 7 worth of minor produce.

In the following statement the amounts of forest produce collected and removed by Government agency are contrasted with those removed by purchasers :—

PROVINCE.	TIMBER		FUEL		BAMBOOS		MINOR PRODUCE (INCLUDING GRASS AND GRAZING).	
	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.	Removed by Government.	Removed by Purchasers.
	C. ft.	C. ft.	C. ft.	C. ft.	No.	No.	R.	R.
Bengal	214,825	5,150,541	104,879	16,705,959	105,037	15,911,426	216	1,33
N.-W. P. and Oudh	529,438	1,923,729	2,115,042	2,685,942	194,426	11,951,804	19,551	1,73
Punjab	557,715	506,453	2,605,184	2,071,990	635,180	111,462	1,162	2,10
Central Provinces	176,063	891,701	1,394,026	10,259,340	88,753	13,999,492	13,571	4,68
Burma (Lower)	2,379,801	7,711,995	200	6,679,850	300	21,020,460	47	55
Burma (Upper)	872,643	11,748,140	1,500	8,724,720	4,200	19,835,289	867	2,42
Assam	73,544	2,370,628	11,739	646,751	1,643	3,112,049	784	61
Coorg	62,944	399,045	...	216,700	...	391,593	3,212	12
Ajmere	533	18,585	...	217,302	...	23,820	919	4
Baluchistan	718	1,876	7,807	439,731	...	...	442	1
Andamans	229,583	38,150	...	3,955	...	70,000	...	1
Total	4,597,807	30,760,844	6,240,377	43,498,240	1,029,539	85,727,375	41,121	13,67
Berar	...	459,930	...	983,466	...	2,494,588	...	2,84
Total Bengal Presidency	4,597,807	31,220,774	6,240,377	44,481,706	1,029,539	88,221,963	41,121	16,52
Madras	424,495	2,409,066	2,597,581	10,829,705	57,067	33,611,403	16,959	10,64
Bombay	1,203,797	6,564,905	9,126,292	35,452,294	5,505	7,628,412	62,449	6,51
GRAND TOTAL { 1895-96	6,226,099	40,194,745	18,264,220	90,763,705	1,092,111	139,461,778	1,20,529	33,50
{ 1864-95	5,694,297	39,985,689	28,056,761	69,791,064	1,616,237	132,196,511	1,88,654	30,25
Difference in 1895-96	+531,802	+209,056	-9,792,541	+20,972,641	-524,126	-2,734,733	-68,125	+3,41

These figures compare with those of the previous year as follows :—

AGENCY BY WHICH MATERIAL WAS REMOVED.	TIMBER.		FUEL.		BAMBOOS.		MINOR PRODUCE (INCLUDING GRASS AND GRAZING).	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Government .	C. ft. 5,694,297	C. ft. 6,226,099	C. ft. 28,056,761	C. ft. 18,264,220	No. 1,616,237	No. 1,092,111	R 1,83,654	R 1,20,529
Purchasers .	89,985,659	40,194,745	69,791,064	90,763,705	132,196,511	129,461,778	32,62,473	33,66,978
TOTAL	45,679,936	46,420,844	97,847,825	109,027,925	133,812,748	130,553,889	84,51,127	84,87,507

This shows an increase of 740,800 cubic feet in the total amount of timber exported, most of which occurred under Government agency. The chief increased exports by Government agency were 193,000 cubic feet in Bengal, 390,000 cubic feet in Lower Burma, and 50,000 cubic feet in Madras, whilst the North-Western Provinces, the Punjab, and Bombay show decreases under this head of working. There was also an increase of 209,000 cubic feet in the amount of timber removed by purchasers. Most of the provinces show increased amounts under this head, of which the chief were 849,000 cubic feet in Bengal, 96,000 cubic feet in the Central Provinces and 1,221,000 cubic feet in Lower Burma. Against this has to be set a falling off of 2,317,000 cubic feet in the North-Western Provinces and Oudh. The number of bamboos exported fell off by 3,258,000. The value of minor forest produce removed from the forests rose from R16,00,000 in 1894-95 to nearly R24,00,000, being an increase of R8,00,000 or 50 per cent. Of this it is estimated that produce to the value of R2,99,500 was removed by right-holders or by free-grantees.

The actual amount realized by sale of minor forest produce was R16,05,000 as compared with R15,12,000 during the previous year. The increase occurred almost wholly in Madras, where there was a rise in the sales of minor forest produce of R1,84,000. The value of grazing dues realized was less than in the former year by R57,000.

The following table shows the estimated value of forest produce given free of royalty to the village right-holders and free-grantees :—

Timber.	Fuel.	Bamboos.	Minor Produce.	Grass and Grazing.	Total.
R 8,99,620	R 11,10,350	R 1,04,020	R 2,99,560	R 16,87,100	R 26,00,650

The following gives the detail by provinces :—

Bengal.—The total exports, as compared with the previous year, were as follows :—

	Timber.	Fuel.	Total.	Bamboos.	Grass and minor produce.
	C. ft.	C. ft.	C. ft.	No.	R
1895-96	5,557,480	32,684,959	38,242,439	20,700,563	3,30,931
1894-95	4,493,234	30,195,623	34,688,856	22,049,274	2,75,173
Difference in 1895-96	+1,064,246	+2,489,337	+3,553,583	—348,711	+55,759

There was thus a considerable increase in the outturn of both timber and fuel. The figures given include amounts given to right-holders, but the increase of 3 million cubic feet was due to improved demand; there was a large increase in the quantity of timber removed departmentally, 214,000 cubic feet, as against 20,000 cubic feet the previous year, being thus

exported, chiefly in the form of sleepers for the Rai Bareli-Benares Railway. There was also a substantial increase in the quantity of both timber and fuel removed by purchasers. The number of bamboos sold was much less, chiefly in the Chittagong Division, whilst the value of minor forest produce exported by purchasers rose from R1,29,000 in 1894-95 to R1,35,000.

North-Western Provinces and Oudh.—The Local Government in their resolution of the forest administration remarks:—

“The following statement summarizes the returns showing the outturn and gross yield of forest produce in the three Circles:—

Timber.

Circle.	1894-95.	1895-96.	Difference in 1895-96.
	C. ft.	C. ft.	C. ft.
Central	998,000	1,002,000	+4,000
Oudh	4,102,000	1,342,000	-2,760,000
School	805,000	706,000	-99,000
TOTAL	5,905,000	3,050,000	-2,855,000

Firewood.

Circle.	1894-95.	1895-96.	Difference in 1895-96.
	C. ft.	C. ft.	C. ft.
Central	4,018,000	3,337,000	-621,000
Oudh	4,921,000	2,951,000	-1,970,000
School	1,863,000	2,139,000	+276,000
TOTAL	10,802,000	8,487,000	-2,315,000

Minor produce.

Circle.	1894-95.	1895-96.	Difference in 1895-96.
	R	R	R
Central	2,77,862	2,46,862	-31,000
Oudh	1,04,090	91,378	-12,712
School	70,314	64,178	-6,136
TOTAL	4,52,266	4,02,418	-49,848

This shows large decreases in timber in the Oudh and School Circles, and in fuel in the Oudh and Central Circles, whilst minor forest produce fell off in all three Circles.

Timber and firewood removed by purchasers was less by more than 4,000,000 cubic feet than in the previous year. Under minor forest produce the chief decreases were owing to short sales of bamboos in the Central Circle, and to the restriction of grazing privileges in the Oudh Circle. The general decrease in the outturn was owing to depression in trade consequent on the prevailing unfavourable agricultural conditions.

Punjab.—The following statement shows the total amount of all produce removed from the forests as compared with the previous year:—

Agency by which produce was removed.	Timber.	Fuel.	Bamboos.	Grass and grazing.	Minor produce.
	C. ft.	C. ft.	No.	R	R
Government	557,715	2,605,184	635,180	191	971
Purchasers	506,453	2,071,990	111,462	2,02,524	8,412
Free-grantees	459,170	52,966	.....	4,741	2
Right-holders	399,386	24,921,887	.....	1,92,475	44,961
Total { 1895-96	1,922,724	29,652,027	746,642	3,99,931	54,346
{ 1894-95	1,578,073	29,186,358	767,189	3,93,123	53,918
Difference in 1895-96	+344,651	+465,669	-20,547	+6,793	+528

From this it is observed that there was an increase in the total amount of timber exported but this was almost entirely due to an increase in the amount removed by right-holders and free-grantees. There was a large decrease in the amount of timber removed by Government agency, chiefly in the Chamba Division. There was also a slight decrease in fuel removed departmentally, but a considerable increase (674,000 cubic feet) in fuel removed by purchasers, due to a greater demand for fuel for the Railway and the Chenab Canal works in the Chenab Division. Under other heads the outturn shows but little variation from that of the previous year.

Central Provinces.—The total outturn of timber and fuel compared with the previous year was—

YEAR.	TIMBER.		FUEL.	
	Northern Circle.	Southern Circle.	Northern Circle.	Southern Circle.
1894-95	C. ft. 483,155	C. ft. 541,164	C. ft. 3,643,150	C. ft. 8,392,470
1895-96	527,389	564,224	5,502,935	7,785,820
Difference in 1895-96	+44,234	+23,060	+1,859,785	—606,650

There was a slight increase in the total amount of timber extracted, but a large decrease in the outturn of fuel from the Southern Circle. Of the total outturn, it is estimated that no less than 23,849 cubic feet of timber and 1,635,389 cubic feet of fuel were removed by right-holders and free-grantees. Notwithstanding the fact that many forests were thrown open to free-grazing, there was a large decrease in the number of cattle grazing. This was owing to heavy mortality due to epidemics. In the Northern Circle sales of grass were some 6,000 tons more than in the previous year, and more than two-thirds of the fodder extracted was absorbed by free-grantees. In the Southern Circle, on the other hand, exports of grass fell off by 6,000 tons. Taking the two Circles together there was a decrease in bamboo sales, whilst minor forest produce, including grazing and bamboos, was sold to the value of Rs. 57,373, as against Rs. 69,000 in the previous year. The forests were thrown open to the people for the collection of edible fruits and roots, the quantity consumed being unknown.

Burma.—The following table exhibits the outturn of timber and fuel from Upper and Lower Burma with the agency of exploitation:—

Agency by which material was removed.	TIMBER.						FUEL.					
	LOWER BURMA.			UPPER BURMA.			LOWER BURMA.			UPPER BURMA.		
	Pegu Circle.	Tenasserim Circle.	Total.	Eastern Circle.	Western Circle.	Total.	Pegu Circle.	Tenasserim Circle.	Total.	Eastern Circle.	Western Circle.	Total.
	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.
Government	1,168,863	1,210,938	2,379,801	346,567	26,078	372,643	.....	200	200	1,500	.....	1,500
Purchasers	4,270,594	3,441,401	7,711,995	8,569,573	3,178,567	11,748,140	5,453,018	1,228,832	6,679,850	3,286,336	438,368	3,724,720
Free-grantees	139,228	8,737	147,963	173,160	108,312	281,472	.....	.....	.....	10,416	.....	10,416
Right-holders	.....	86,014	86,014	39,152	36,090	75,242	.....	1,682	1,682	543,317	.....	543,317
Total, 1895-96	5,578,683	4,747,090	10,325,773	9,128,452	3,319,045	12,447,497	5,453,018	1,228,714	6,681,732	3,841,569	438,368	4,279,933
Total, 1894-95	5,002,808	3,557,492	8,560,300	9,730,449	2,275,009	12,005,458	5,833,365	1,684,028	7,517,393	3,252,001	382,647	3,634,648
Difference in 1895-96	+575,875	+1,189,598	+1,765,473	—601,997	+1,044,036	+442,039	—380,347	—455,314	—835,661	+589,568	+55,737	+645,305

The total amount of timber of all kinds from Upper and Lower Burma was 33,764,955 cubic feet, of which 13,000,000 cubic feet was teak: 9,600,000 cubic feet of teak were extracted from the forests of Upper Burma and 3,400,000 from those of Lower Burma. This shows an increase of very nearly 800,000 cubic feet, as compared with the previous year. There was a considerable increase in the demand for pyinkado timber, which has been found excellent for railway sleepers.

The following table shows the number of bamboos, the value of grazing and other minor produce during the year, compared with the previous year:—

AGENCY BY WHICH MATERIAL WAS REMOVED.	BAMBOOS.						GRASS AND GRAZING.						MINOR PRODUCE.					
	LOWER BURMA.			UPPER BURMA.			LOWER BURMA.			UPPER BURMA.			LOWER BURMA.			UPPER BURMA.		
	Pegu Circle.	Tenasserim Circle.	Total.	Eastern Circle.	Western Circle.	Total.	Pegu Circle.	Tenasserim Circle.	Total.	Eastern Circle.	Western Circle.	Total.	Pegu Circle.	Tenasserim Circle.	Total.	Eastern Circle.	Western Circle.	Total.
No.	No.	No.	No.	No.	No.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.	R.
Government	300	...	900	4,200	...	4,200	...	...	...	...	...	...	...	47	47	...	879	887
Purchasers	17,926,900	3,099,580	21,026,480	12,559,564	7,275,785	19,835,349	909	...	909	...	21	21	16,991	15,668	32,659	1,08,821	1,40,834	2,49,155
Free grantees	...	...	...	2,200	...	2,200	...	...	...	5,500	40	5,540	...	...	...	...	...	...
Right-holders	57,900	82,469	140,369	585,050	...	585,050	23,000	3,798	26,798	2,430	10,458	12,888	128	461	589	2,906	2,633	5,539
Total in 1895-96	17,985,100	3,176,229	21,161,329 ^(a)	13,150,954	7,275,785	20,426,739 ^(b)	23,909	3,798	27,707	7,930	10,519	18,449	17,119	16,176	33,295	1,11,735	1,43,846	2,55,581
" 1894-95	15,083,100	3,411,785	18,444,885 ^(c)	13,892,504	8,852,342	22,744,846 ^(d)	32,939	3,851	36,790	†	†	†	16,712	22,868	39,580	1,44,030	97,561	2,41,591
Difference in 1895-96	+2,952,000	-235,556	+2,716,444	-741,550	-1,576,557	-2,318,107	-9,030	-53	-9,083	...	...	...	+407	-6,692	-6,285	-32,295	+46,285	+13,990

• Approximate.
† Figures not available.

(a) Value ₹53,338.
(c) " ₹55,224.

(b) Value ₹46,848.
(d) " ₹59,339.

There has therefore been an increase in the number of bamboos exported from Lower Burma of 2,700,000, and a decrease in Upper Burma of very nearly the same amount. An increase of R46,000 under minor forest produce took place in the Western Circle of Upper Burma, where R1,26,000 were realized for catch, as against R82,000 in the previous year.

The total revenue from minor forest produce including bamboos and grazing amounted to R4,34,000.

Assam.—The following gives the gross outturn of timber and fuel as compared with that of the previous year :—

Agency by which material was removed.	1894-95.			1895-96.		
	Timber.	Fuel.	Total.	Timber.	Fuel.	Total.
	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.
Government	66,972	20,682	87,654	78,544	11,739	85,283
Purchasers	2,529,326	943,244	3,472,570	2,370,629	643,751	3,017,380
Free-grantees	566, 94	2,133,892	2,699,786	454,309	9,186,564	9,640,873
TOTAL	3,162,392	3,097,618	6,260,010	2,898,482	9,845,054	12,743,536

According to this, the outturn was nearly doubled, but it will be seen that the increases occurred entirely under the head of free-grantees, and there is reason to suppose that the figures are here incorrect. The actual outturn by Government agency and by purchasers has varied but little, and shows a fall as compared with the operations of the previous year. It was again not found possible to dispose of the sal timber available from the Goalpara forests.

Under sales of minor forest produce to purchasers there was a total falling-off of R5,000. India-rubber realized less by R4,800 and commutation fees by R4,500. Reeds and agar show an increase of R4,000.

Coorg.—The outturn of all forest produce was as follows compared with that of the previous year :—

	Timber.		Sandal-wood.		Fuel.		Bamboos.		Grass and Grazing.		Other minor produce, including cardamoms.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	C. ft.	No.	No.	R	R	Rs	Rs
Government	83,713	59,944	3,200	3,000	...	...	3,593	...	...	...	643	596
Purchasers, including confiscations.	158,851	170,780	...	...	243,375	216,700	415,323	391,583	...	2,616	354	867
Villagers and others	105,110	228,265	...	...	...	...	...	...	2,694	...	13,291	12,845
Free-grantees	5,714	7,281	...	...	...	...	5800	9,747	5,824	6,400	...	...
TOTAL	443,388	466,270	3,200	3,000	243,375	216,700	424,716	401,330	8,518	9,016	14,288	14,308

Timber removed by Government agency was thus less, and that removed by purchasers more than in 1894-95. Amounts given to right-holders show an increase of more than 34,000 cubic feet. The outturn of sandal-wood was less by 130 tons or 5,200 cubic feet. There was a slight decrease under bamboos, and a slight increase in the value of grazing. Rupees 12,800 were realized from the sale of cardamoms.

Ajmere.—The following table shows the outturn from reserved forests, and compares it with the previous year :—

Agency by which produce was removed.	Timber and Fuel.		Other Produce.		Difference in 1895-96.	
	1894-95.	1895-96.	1894-95.	1895-96.	Timber and Fuel.	Other produce.
	C. ft.	C. ft.	R	R	C. ft.	R
Government	...	533	...	919	+538	+919
Purchasers	233,160	234,337	4,601	4,387	+1,177	-114
Free-grantees	1,200	860	67	1,688	-340	+1,601
Right-holders	10,836	7,445	79,789	78,102	-3,391	-6,878
TOTAL	245,196	243,175	84,348	80,076	-2,021	-4,272

There was practically no export from the protected forest, but 100 cubic feet of timber and fuel were removed, and minor forest produce sold to the value of R130. The variations from the outturn of the previous year were unimportant.

Baluchistan.—The outturn of the past two years was as follows:—

Agency by which material was removed.	Timber,	Fuel,	Grass and Grazing,	Other produce,
	C. ft.	C. ft.	R	R
Government	718	7,807	83	409
Purchasers	1,876	438,731	944	140
Free-grantees	247	...	...	20
Right-holders . . . . .	...	...	8,505	...
TOTAL	1895-96	446,538	9,482	569
	1894-95	361,469	8,198	402
Increase in 1895-96	1,294	65,069	284	167

There was thus a slight rise in the amount of timber, most of which was exported by purchasers from Unclassed forests. Four hundred and thirty-eight thousand cubic feet of fuel were removed under permits from Unclassed forests and 3,200 cubic feet from State forests by Government agency. Agricultural operations at Shibu were practically abandoned. Five hundred and sixty maunds of hay, value R130, were made. The value of grazing by right-holders' cattle is estimated at R8,500.

Andamans.—The amounts of timber and fuel removed, as compared with 1894-95 were:—

Agency by which material was removed.	Timber.		Fuel.	
	1894-95.	1895-96.	1894-95.	1895-96.
	C. ft.	C. ft.	C. ft.	C. ft.
Government	260,965	229,583	...	...
District Officers	36,988	24,767	823,410	1,581,425
Purchasers	23,571	38,150	3,238	3,955
Free-grantees	37,500	37,500	330,000	330,000
TOTAL	359,024	330,000	1,156,648	1,915,380

The timber removed by Government agency was thus 31,000 cubic feet less than in the previous year. One thousand five hundred and seventy-four padouk trees were felled, yielding 2,655 logs. One hundred and thirty-six thousand cubic feet of padouk were received in sale depôts from the forest, 432 cubic feet of white *chuglam* were shipped to Calcutta and made into oars. There was an important increase in timber removed by purchasers of 14,500 cubic feet due to a brisker demand for *gurjan* planking in Calcutta, and a decrease of 48,000 in the number of bamboos sold, owing to the substitution of planking for bamboo tatties for houses. There was an increase of R345 in the value of minor forest produce sold.

Berar.—The outturn of the two years compares as follows:—

MATERIAL REMOVED.	1894-95.	1895-96.	1895-96.		
			Increase.	Decrease.	
Timber c.ft.	478,938	459,930	.....	19,008
Fuel c.ft.	1,026,275	983,496	.....	42,789
Bamboos No. in 100's	20,159	24,946	4,787	.....
Grass value R	87,500	86,799	.....	701
Grazing value R	2,11,139	2,11,952	813	.....
Miscellaneous value R	25,627	35,540	9,913	.....
	} Fruits, dye-stuffs, lac, waif-wood and other sources,	129	216	87
		5,620	4,687	933
Gross revenue per square mile	112	119	7	.....
Net revenue per square mile	51	64	13	.....

There was a good demand for all products during the year, and as a rule sales at good prices were brisk. There were increased sales of timber in Ellichpur and Wun and of fuel in Amraoti, Buldana, and Wun. There was an increase in the number of bamboos exported, whilst the revenue from grass and grazing remained much the same. There was an important increase in the value of minor produce of nearly ₹10,000 due to increased sales of fruits, chiefly *Ailda*. Produce was given away free to concessionnaires to the value of nearly 3 lakhs of rupees.

Madras.—The following shows the total yield under timber and other produce, as compared with that of the previous year:—

Agency by which material was removed.	Timber, including sandal wood.		Fuel.		Bamboos.		Minor produce, including grass and grazing-fee.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Government	274,152	423,476	2,186,122	2,897,561	36,881	57,067	21,516	16,959
Purchasers	2,364,872	2,409,068	9,839,061	10,829,705	29,716,907	33,611,403	8,58,986	10,60,371
Free-grant	28,632	70,878	551	12,074	39,507	57,949	568	2,099
Right-holders . . . . .	.....	2,828	.....	45	.....	.....	.....	457
Total	2,777,658	2,907,046	12,025,734	13,739,385	29,792,195	33,725,619	8,81,070	10,79,886
Increase in 1895-96 . . . . .	.....	129,388	.....	1,713,651	.....	2,932,624	.....	1,98,816
Percentage of increase over the previous year's total . . . . .	.....	4.6	.....	12.2	.....	13.2	.....	22.6

There was thus an increase in the outturn of all kinds of forest produce under departmental operations. Timber shows an increase of 48,000 cubic feet, chiefly in Ganjam, Kistna, North and South Malabar, and Tinnevely. There was also an increase in fuel collections in most of the divisions. The amount of sandal-wood shows a decrease of 338 cubic feet. An increase of 20,000 in the number of bamboos is noticeable, and of 12,000 maunds in the amount of minor forest produce collected. Under produce removed by purchasers, increases occur under all heads. The most noticeable item is the rise of ₹1,89,000 in the value of minor forest produce. This is due to a variety of causes, such as the leasing of the right to remove *Cassia Fistula* bark in Ganjam, better methods of auction in Vizagapatam, better prices for *tangedu* bark, date-tree revenue, rent of Neriya cardamom forests, and the sales of *vembadam* and *avaram* barks in South Coimbatore. The total value of minor forest produce removed by purchasers amounted to ₹10,62,000.

Bombay.—The following abstract from the Government Resolution reviewing the annual reports fully analyses the yield during the year:—

Circles.	Agency by which material was removed.	MATERIAL REMOVED.					AVERAGE OUTPUT PER SQUARE MILE OF ALL FORESTS.		
		Timber.	Fuel.	Total wood.	Bamboos.	Minor produce.	Timber and Fuel.	Bamboos.	Minor produce.
		Cub. ft.	Cub. ft.	Cub. ft.	No.	R	Cub. ft.	No.	R
Northern Circle.	Government	101,455	142,448	243,903	1,212	...	...	...	...
	Purchasers	3,330,076	9,169,569	12,549,645	*1,735,154	9,462	...	...	...
	Free-grants	6,888	...	6,888	2,400	...	...	...	...
	Right-holders	...	559,978	559,978	...	...	...	...	...
	Total	3,488,419	9,871,995	13,360,414	1,738,768	9,462	18,257	11,074	151
Central Circle	Government	243,746	2,057,295	2,301,041	...	5,406	...	...	...
	Purchasers	1,920,949	2,002,829	3,922,778	1,256,694	4,33,231	...	...	...
	Free-grants	24,748	...	24,748	...	...	...	...	...
	Right-holders	...	4,232,125	4,232,125	...	3,65,193	...	...	...
	Total	2,189,443	8,292,249	10,481,692	1,256,694	8,03,830	1,6504	1974	1264
Southern Circle.	Government	770,617	3,532,696	4,303,315	4,293	56,915	...	...	...
	Purchasers	4781,949	4,127,072	4,912,021	14,636,564	1,30,838	...	...	...
	Free-grants	64,255	5,719	69,974	11,639	...	...	...	...
	Right-holders	...	...	...	...	...	...	...	...
	Total	11,619,821	7,665,489	9,285,310	4,652,496	1,87,803	1,770	887	36
Sind Circle	Government	87,979	3,393,841	3,481,820	...	128	...	...	...
	Purchasers	478,931	20,152,824	20,631,755	...	80,993	...	...	...
	Free-grants	3,305	9,584	17,889	...	100	...	...	...
	Right-holders	...	174,798	174,798	...	900	...	...	...
	Total	575,215	23,731,047	24,308,262	...	82,121	22,844	...	77
All Circles combined.	Government	1,203,797	9,126,282	10,330,079	5,505	62,449	...	...	...
	Purchasers	6,564,905	35,452,294	42,017,199	7,628,412	6,54,574	...	...	...
	Free-grants	104,196	15,303	119,499	14,039	100	...	...	...
	Right-holders	...	4,966,901	4,966,901	...	3,66,063	...	...	...
	Grand Total for 1895-96.	7,872,898	39,560,780	57,433,678	7,647,956	10,83,216	4,022	535	76
Grand Total for 1894-95.	7,955,969	33,317,869	41,273,858	3,511,494	7,29,688	2,893	596	51	
Differences in 1895-96.	-83,071	+16,242,911	+16,159,820	-863,538	+2,53,528	+1,129	-61	+25	

* Besides cart-loads, head-loads, etc., of bamboos.

† These averages are per square mile of the total forest area of the Northern Circle, excluding the leased forests of the Dangs.

‡ Besides khandis, cart-loads, etc., of sandal-wood.

§ Besides trees, pieces, etc., of sandal-wood.

|| Besides 518 cart-loads of dry bamboos.

¶ Besides 14,092,063 cubic feet of timber and fuel, 504,294 bamboos, and minor produce of the value of 293,140 removed under privileges.

Receipts from grass and grazing were Rs5,84,774 as against Rs5,83,156 in the previous year.

CHAPTER IV.

FINANCIAL RESULTS.

The gross revenue realized during the Financial year was Rs 1,70,99,380 and the surplus was Rs 77,66,770. This shows an increase of Rs 3,10,500 in the gross revenue, and of Rs 3,51,000 in the surplus as compared with the financial results of the year 1894-95. Both the gross revenue and the surplus are higher than the averages of the five preceding years, which were Rs 1,62,46,000 and Rs 73,70,500, respectively. The principal variations in revenue and surplus, as compared with the previous year, were—

	Revenue.	Surplus.
Bengal	+1,23,000	+54,000
North-Western Provinces and Oudh	-57,000	-63,000
Lower Burma	+1,40,000	+1,60,000
Upper Burma	+1,18,000	+82,000
Madras	+2,16,000	+1,67,000
Bombay	-2,13,000	-1,03,000

The following table gives the revenue and the surplus realized in each province compared with the average of the preceding five years, as well as the proportion of surplus to gross revenue, and the net revenue realized per square mile of forest :—

Province.	REVENUE.		SURPLUS.		DEFICIT.		Proportion of Surplus to gross Revenue.	Net Revenue per square mile of land under control of Forest Department.
	1895-96.	Average for preceding 5 years.	1895-96.	Average for preceding 5 years.	1895-96.	Average for preceding 5 years.		
	Rs	Rs	Rs	Rs	Rs	Rs	Per cent.	Rs
Imperial	2,690	5,191	...	...	77,720	79,661	...	...
Bengal	9,18,710	7,71,821	4,52,640	3,67,826	...	...	49.2	33.9
North-Western Provinces and Oudh.	16,01,340	16,78,008	6,58,480	7,36,959	...	...	41.1	168.7
Punjab	10,14,500	9,22,560	3,36,080	2,60,933	...	...	33.1	55.7
Central Provinces	9,96,940	11,89,464	44,600	3,29,640	...	...	4.4	2.3
Burma (Lower)	34,14,550	31,76,541	20,56,810	18,77,598	...	...	60.2	278.7
Burma (Upper)	22,81,280	19,01,311	17,05,420	14,65,603	...	...	74.7	313.5
Assam	4,25,030	3,93,868	1,38,890	1,22,733	...	...	32.7	9.0
Coorg	1,35,250	1,65,195	49,410	85,436	...	...	36.5	55.4
Ajmere	15,640	15,483	...	982	90	...	...	...
Baluchistan	14,930	18,478	...	...	26,840	25,563	...	...
Andamans	1,32,120	2,69,495	50,100	87,795	...	...	22.7	15.4
Forest School	4,310	1,943	...	...	63,640	50,843	...	...
Forest Surveys (Imperial)	510	640	...	...	29,440	25,581	...	...
TOTAL	1,09,57,800	1,05,10,001	52,74,700	51,54,351	...	...	48.1	70.9
Berar	4,94,340	4,77,103	2,48,830	2,56,621	...	...	50.3	59.5
Total Bengal Presidency	1,14,52,140	1,09,87,103	55,23,530	54,10,972	...	...	48.2	70.3
Madras	21,10,570	17,81,603	6,64,960	4,51,473	...	...	31.5	34.9
Bombay	35,36,670	34,77,360	15,78,280	15,08,125	...	...	44.6	105.5
GRAND TOTAL	1,70,99,380	1,62,46,071	77,66,770	73,70,570	...	...	45.4	69.0

The proportion of expenditure to the gross revenue during the five years 1890-91 to 1894-95 remained at 54, the same as it was for the five years 1889-90 to 1893-94. The figures for the quinquennial periods since 1870-71 are given below :—

Quinquennial periods.	Gross Revenue.	Expenditure.	Proportion of expenditure to gross revenue.
	R	R	Per cent.
1870-71 to 1874-75	58,61,935	41,62,348	71
1875-76 to 1879-80	68,24,880	46,24,476	68
1880-81 to 1884-85	94,40,793	60,55,048	64
1885-86 to 1889-90	1,26,90,828	76,24,157	60
1890-91 to 1894-95	1,62,46,077	88,75,505	54

In estimating the value of forest-produce removed free of duty by right-holders or granted free by Government, it has been noticed that in former years no uniform method of calculation had been adopted, and that in the different provinces the value placed on the various articles of forest-produce differed so largely as to render the tables quite unreliable for purposes of comparison. It was found, for instance, that the value placed upon timber given to right-holders varied from Re. 1 per cubic foot to as much as 50 cubic feet for one rupee. Steps have been taken during the past year to ensure that the value of produce given away free should be calculated in all provinces in the same manner. It was considered that much of the produce thus removed was often of inferior quality, and that it frequently comes from localities so remote as to prevent its extraction at full market rates, and that it would be fair to value all such produce at half the average rates paid by purchasers, whilst for grazing the ordinary rates prevailing in the locality concerned should be entered. The value of produce given away free from Government forests, calculated in this manner in all the provinces, is shewn in the following table :—

PROVINCES.	Timber.	Fuel.	Bamboos.	Minor produce.	Grass and Grazing.	Total.
	R	R	₹	R	R	R
Bengal	9,200	89,200	6,100	62,300	94,200	2,61,000
North-Western Provinces and Oudh	60,000	54,000	1,000	10,000	74,000	1,99,000
Punjab	82,000	4,24,000	...	36,000	1,86,000	6,78,000
Central Provinces	2,000	9,000	5,000	21,000	98,000	1,35,000
Burma (Lower)	10,000	300	600	600	4,000	15,500
Burma Upper)	91,600	12,600	61,700	12,800	25,500	2,04,200
Assam	40,000	2,62,000	7,000	77,000	2,64,000	6,50,000
Coorg	1,000	...	70	...	6,400	7,470
Ajmere	270	50	...	40	38,000	38,360
Baluchistan	50	...	...	20	8,500	8,570
Andamans	1,600	40,000	50	400	...	42,050
Berar	70,600	54,000	20,000	13,000	1,39,000	2,96,600
Madras	60,000	76,000	2,400	46,000	1,42,000	3,26,400
Bombay	21,900	89,300	100	20,400	6,07,500	7,38,500
TOTAL	8,99,620	11,10,350	1,04,020	2,99,560	16,87,100	36,00,650

This does not include the free use of unclassified forest areas not under departmental control or which are controlled only as regards certain reserved trees or produce. It is for this reason that the figures for Burma, for instance, appear so low. Nor does it take into account the fact that in the Central Provinces, for instance, the royalty on forest produce and grazing has been considerably reduced from previous rates.

It is thus apparent that produce to the value of R36,00,650 was removed by right-holders or given under Government authority to free-grantees. This amounts to 21 per cent. of the gross revenue from all the forests. In Ajmere the value of produce given away free amounted to more than double

the gross revenue realized, in Assam it was half as much again, and in the Punjab it amounted to 66 per cent. These facts show the great value of the Government forest estates, apart from the revenue realized from them, in supplying the needs of the surrounding population.

The following statement shows the revenue and expenditure under the various heads, with the proportion of the gross receipts expended :—

		Amount.			
		R			
Gross Receipts	(a) Wood	1,25,60,550			
	(b) Minor forest produce	15,27,530			
	(c) Forest stamps and commutation fees for forest produce	6,73,810			
	(d) Grazing	15,56,040			
	(e) Revenue from forests not managed by Government	3,43,040			
	(f) Miscellaneous	4,38,410			
	TOTAL REVENUE		1,70,89,390		
		Amount.	Proportion of Expenditure to gross Revenue.		
		R	Per cent.		
Expenditure	A. Recurring.	(i) Superior Staff	21,40,690	12.52	
		(ii) Exchange compensation allowance.	2,50,820	1.47	
		(iii) Subordinate Staff (including Rangers, Foresters, and Guards.)	13,95,074	8.16	
		(iv) Office Establishments (including Contingencies.)	7,56,790	4.42	
		(b) Working	(1) Extraction	25,28,410	14.79
			(2) Roads and Buildings	4,30,820	2.52
			(3) Fire-protection	2,74,290	1.60
			(4) Cultural operations	3,68,070	2.15
	(5) Live-stock, stores, and plant.		1,99,640	1.17	
	(6) Working-plans*		66,800	0.39	
	(7) Rent for leased forests		1,57,620	0.92	
	(8) Miscellaneous		74,970	0.44	
	(c) Expenditure on realization of revenue from forests not managed by Government.	-14,630	0.08		
	(d) Forest Science and Education (including all "A" and "B" charges of Forest School.)	90,006	0.53		
	TOTAL		87,48,630	51.16	
	B. Extraordinary.	(e) Forest Settlement	55,210	0.32	
		(f) " Surveys	4,22,280	2.47	
		(g) " Demarcation	1,06,490	0.62	
		TOTAL	5,83,980	3.41	
	GRAND TOTAL EXPENDITURE		93,32,610	54.57	
Net Revenue		77,86,770	45.43		

* Exclusive of "B" charges.

Details of the financial results in the different provinces were as follows :—

Bengal.—For the Financial year the surplus revenue amounted to Rs. 52,640, as against Rs. 98,280 in the previous year. This is considerably more than has before been realized.

The following statement shows the difference in the receipts under the several main heads for the Forest year :—

HEADS.	1895-96.	1894-95.	Difference in 1895-96.
	R	R	R
Timber	4,18,869	3,53,928	+ 64,441
Fuel	2,96,322	2,52,454	+ 43,868
Bamboos	48,610	50,958	- 2,348
Grazing and fodder	17,953	16,535	+ 1,418
Minor products	1,10,858	1,08,919	+ 1,939
Other items	11,865	9,880	+ 1,985
Drift and confiscated produce	8,646	7,913	+ 733
Miscellaneous	23,057	25,082	- 2,025
TOTAL	9,85,680	8,25,669	+ 1,10,011

The revenue for the Forest year was thus $\text{Rs. } 1,10,000$ more than in the previous year. The charges also increased, due chiefly to the preparation of sleepers in the Kurseong, Singhbun, and Angul Divisions, purchase of additional tents, and increased works under communications and buildings.

North-Western Provinces and Oudh.—The following table extracted from the Government of India review exhibits the financial results of the Financial and Forest years :—

YEAR.	Circle.	Receipts.	Charges.	Surplus.	Proportion of Surplus to gross Receipts.
		R	R	R	Per cent.
Forest year (1st July to 30th June).	Central	5,67,242	3,20,670	2,46,572	43.4
	Oudh	4,98,648	3,01,272	1,97,376	39.5
	School	4,00,972	3,09,926	91,046	22.7
	Total in 1895-96	14,66,862	9,31,868	5,34,994	36.4
	" " 1894-95	16,64,743	9,69,211	6,95,532	41.8
	Decrease in 1895-96	1,97,881	37,343	1,60,538	5.4
Financial year (1st April to 31st March).	Central	6,30,147	3,38,088	2,92,059	46.3
	Oudh	5,47,977	2,98,532	2,49,445	45.5
	School	4,23,220	3,06,243	1,16,977	27.6
	Total in 1895-96	16,01,344	9,42,863	6,58,481	41.1
	" " 1894-95	16,58,250	9,36,310	7,21,940	43.5
	Difference in 1895-96	- 56,906	+ 6,553	- 63,459	- 2.4
Average for the 5 years ending 1894-95.		16,78,008	9,41,055	7,36,953	43.9

The Government of India make the following remarks :—

"There was thus a falling off in the receipts, as compared with the previous Financial year, of ₹56,906 and in the surplus of ₹63,459. The proportion of surplus to gross receipts fell to 41.1, or 2.8 per cent. less than the average of the past five years. The various causes of this falling off are fully explained, the chief being balances due for fuel by the Commissariat, the gradual exhaustion of the surplus stocks in the Oudh Circle and general depression in trade owing to bad harvests and scarcity. At the same time it must not be overlooked that produce to the estimated value of ₹1,99,000, of which ₹74,000 represent grazing dues foregone, has been given away free to right-holders or grantees. The total revenue realized being ₹16,01,344, it follows that 12 per cent. of the gross outturn has been granted free of charge.

The Government of India have no doubt that the main cause of the decreased receipts is depression in trade, owing to the prevailing unsatisfactory agricultural conditions; and until these conditions have passed away and more prosperous times prevail, they scarcely expect forest revenue in the North-Western Provinces and Oudh to regain the level of former years. They see, however, no reason to doubt that, so soon as the country recovers from the effects of the prevailing scarcity, the forest revenue will again rise to, if not surpass, the figures formerly realized."

Punjab.—The following statement gives the financial results for the Forest and Financial years, as compared with the year before :—

Period.	Receipts.	Charges.	Surplus.	Proportion of Surplus to Gross Revenue.
	₹	₹	₹	
Forest year { 1895-96	10,18,087	6,81,385	3,36,702	33.1
. { 1894-95	10,81,224	7,37,992	3,43,832	31.8
Difference in 1895-96	-63,137	-56,007	-7,130	+1.3
Financial year { 1895-96	10,14,494	6,78,416	3,36,078	33.1
. { 1894-95	10,32,400	7,22,120	3,10,310	30.5
Difference in 1895-96	-17,906	-43,704	+25,768	+2.6
Average for the five Financial years ending 1894-95	9,22,560	6,61,627	2,60,933	28.2

For the Financial year the surplus was thus ₹25,768 more than in 1894-95, but the surplus for the Forest year was less by ₹7,130. This was chiefly due to a decrease of over a lakh from timber prepared by departmental agency, owing to the dullness of the timber market in Jhelum, and smaller receipts of timber on the Chenáb and Rávi. There was also a decrease of ₹18,000 in the value of fuel collected by departmental agency, but an increase of ₹38,000 from fuel removed by purchasers. It is estimated that produce to the value of ₹6,77,800 was given away free to right-holders and free grantees.

Central Provinces.—The following remarks by the Chief Commissioner in his Resolution reviewing the annual reports may usefully be repeated :—

"The financial results of the year, as has been the case for two or three years past, are unsatisfactory. The bad years, the reduction of sales, the competition of private forests, the excision of land for ryotwari cultivation, the regulation of fellings and the free grants are all cited with truth as causes for the decline in receipts. They have been accompanied by an increase in capital cost on such work as surveys, working-plans, demarcation, buildings, and roads. Consequently no just criticism of the forest administration can be based on a mere superficial scrutiny of the financial returns of the last few years.

The causes for decrease of receipts are in great measure temporary, while most of the increased expenditure has to be incurred once and for all.

"The financial results of the year are shown in the following table :—

		1894-95.	1895-96.
<i>Receipts.</i>			
Southern Circle		₹ 5,39,212	₹ 4,92,118
Northern "		5,04,094	4,23,244
	TOTAL	10,43,306	9,20,362
<i>Expenditure.</i>			
Southern Circle		4,77,713	4,72,726
Northern "		4,01,326	3,86,401
	TOTAL	8,79,039	8,59,127
<i>Surplus.</i>			
Southern Circle		61,499	19,392
Northern "		1,02,768	41,843
	TOTAL	1,64,267	61,235

The surplus has now fallen to 6.6 per cent. of the gross earnings. But the real results of the year may be more correctly ascertained if to the receipts be added the value of free grants, and if amounts spent on capital account be deducted from the expenditure.

The value of the free grants is estimated to have been—

	R
Northern Circle	75,129
Southern „	9,950
	85,079

and deductions on account of capital expenditure may be calculated as follows:—

	R
Demarcation (new work)	2,051
Surveys	68,150
Working-Plans	13,501
Roads and Buildings (new work)	18,538
	TOTAL
	1,02,240

The corrected figures of receipts, expenditure and surplus will then stand—

	R
Receipts	10,05,443
Expenditure	7,56,887
Surplus	2,48,556

These figures of true receipts and true working expenses are more encouraging than those showing the cash income and expenditure of the year."

Burma.—The following table, abstracted from the Government of India's Resolution reviewing the annual reports, exhibits the results of the Financial and Forest years, compared with the year 1894-95. It will be seen that the surplus for the Financial year exceeded that of last year by more than 3 lakhs of rupees, and was nearly 5 lakhs above the average of the last five years:—

	CIRCLE.	Receipts.	Charges.	Surplus.	Proportion of Surplus to gross Revenue.
		R	R	R	Per cent.
FOREST YEAR.	Pegu	15,90,475	6,44,485	9,45,990	59.4
	Tenasserim	17,22,512	7,08,326	10,19,186	59.1
	Total Lower Burma	33,12,987	13,47,811	19,65,176	59.3
	Eastern	15,69,283	3,63,693	12,05,590	76.8
	Western	7,08,106	2,01,634	5,06,472	71.5
	Total Upper Burma	22,77,389	5,65,327	17,12,062	75.1
	Grand Total Burma, 1895-96	55,90,376	19,13,138	36,77,238	65.7
	" " " 1894-95	55,95,886	18,64,501	37,31,385	66.6
	Difference in 1895-96	-5,510	+48,637	-54,147	-0.9
	FINANCIAL YEAR.	Pegu	16,88,689	6,15,403	10,23,286	62.4
Tenasserim		17,75,851	6,83,675	10,92,176	61.5
Total Lower Burma		34,14,540	12,99,078	21,15,462	61.9
Eastern		15,75,065	3,67,816	12,07,269	76.6
Western		7,06,198	2,08,047	4,98,151	75.4
Total Upper Burma		22,81,263	5,75,863	17,05,420	74.7
Grand Total Burma, 1895-96		56,95,823	18,74,941	38,20,882	67.0
" " " 1894-95		54,86,780	19,17,990	35,18,790	64.7
Difference in 1895-96		+2,59,043	-43,049	+3,02,092	+2.3
Average for the five years ending 1894-95.					
	} Lower Burma	31,76,541	12,98,943	18,77,598	59.0
	} Upper Burma	19,01,811	4,85,708	14,65,603	77.0
	} TOTAL Burma	50,77,952	17,84,651	33,43,201	65.8

Taking the Forest year, in Lower Burma there was a decrease in the value of timber exported by Government agency of R1,39,000, but on the other hand the value of timber removed by purchasers rose by R1,38,000. The total revenue was R33,12,987, as against R33,77,899 in the previous year.

In Upper Burma the value of timber removed by Government agency rose by R15,600 and that of timber removed by purchasers by R12,441.

Assam.—The following table shows the receipts under the several heads of revenue during the Forest year as compared with the two previous years:—

Budget Heads.	1893-94.	1894-95.	1895-96.	Difference in 1895-96, compared with 1894-95.
	R	R	R	R
I.—Timber and other produce removed from the forests by Government agency.	17,990	15,162	7,552	—7,610
II.—Timber and other produce removed from the forests by consumers and purchasers.	3,78,840	3,48,357	3,10,547	—37,810
III.—Drift and waif wood and confiscated forest produce.	14,731	8,014	5,788	—2,226
IV.—Revenue from forests not managed by Government.	39,124	30,977	32,887	+1,910
V.—Miscellaneous	42,126	42,196	47,708	+5,512
TOTAL	4,92,811	4,44,706	4,04,482	—40,224

The decrease of R40,000 in the receipts is more than accounted for by a decrease of R56,900 in the receipts for timber on waste-land grants for special cultivation. Expenditure during the Forest year was R7,600 more than during 1894-95 and the surplus fell by nearly R48,000. For the Financial year, however, the surplus of R1,38,896, although R24,000 less than in the previous year, was some R16,000 more than the average of the past five years.

Coorg.—The following statement gives the financial results of the Forest year:—

Period.	Receipts.	Charges.	Surplus.	Proportion of Surplus to gross Receipts.	
	R	R	R	Per cent.	
Forest year	1895-96	1,45,120	73,624	71,496	49
	1894-95	1,44,170	93,842	50,328	35
	Difference in 1895-96	+950	—20,218	+21,168	+14
Financial year	1895-96	1,35,245	85,835	49,410	36
	1894-95	1,53,050	86,140	66,910	43
	Decrease in 1895-96	17,805	305	17,500	7
	Average for the five years ending 1894-95.	1,65,195	79,759	85,436	52

During the Financial year therefore the surplus was less by R17,500 than in the previous year; but, on the other hand, the fact that during the Forest year an increased surplus of R21,000 was realized augurs well for the Financial year 1896-97. The charges for the Forest year also show a substantial decrease as compared with those of the year before, and this is the reason of the increased surplus, the actual revenue realized being R950 only more than in 1894-95.

Ajmere.—The results of the year's working were—receipts R15,380, expenditure R16,467, leaving a deficit of R1,087. The following table gives the results for the past seven years:—

	1890-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
	R	R	R	R	R	R	R
Receipts	11,592	15,266	19,799	16,909	14,343	12,837	15,380
Expenditure	12,701	12,720	13,986	18,771	15,696	14,794	16,467
Surplus or Deficit	-1,109	+2,546	+5,813	-1,862	-1,353	-1,907	-1,087

The receipts vary considerably from year to year. They are highest in years of scarcity when there is a larger demand for grazing and fodder.

The expenditure was higher than usual, owing to the distribution of two-thirds of the net profits of the last five years amongst the proprietors of land taken up for forest, and to this being charged as "Forest" expenditure.

Baluchistan.—The following table shows the financial results of the Forest year, as compared with the two years preceding:—

YEAR.	Revenue.	Expenditure.	Deficit.
	R	R	R
1893-94	21,395	63,829	42,434
1894-95	15,191	44,543	29,357
1895-96	14,751	36,352	21,631

The Agent to the Governor General in his review of the report remarks—

"The large decrease in revenue in 1894-95, compared with that for 1893-94, was attributed chiefly to a scanty fall of rain and snow and to the demand for firewood being smaller in consequence. The decrease shown for 1895-96, as compared with 1893-94, would appear also to be due partly to the same cause. Compared, however, with the figures for 1894-95, which include a sum of R800 realized by the sale of Government bullocks, the revenue for 1895-96 shows a favourable increase of R361. Adding to this the considerable decrease in expenditure of R27,417 compared with 1893-94, and of R8,166 compared with 1894-95, the financial result of the working of the Forest Department in Baluchistan for the year 1895-96 are on the whole satisfactory."

Andamans.—The financial results of the year, compared with the previous two years were as follows:—

Year.	Revenue.	Expenditure.	Surplus or Deficit.	
	R	R	R	
Forest year {	1893-94	3,37,460	2,44,497	+ 92,963
	1894-95	1,04,823	1,17,066	- 12,743
	1895-96	3,82,174	3,31,640	+ 50,534
Financial year {	1893-94	4,41,788	2,44,547	+ 1,97,241
	1894-95	1,14,535	1,22,776	- 8,241
	1895-96	1,32,130	1,02,021	+ 30,099

The increase is due to the disposal of the cargoes in London, increased requirements of the Madras Gun Carriage Factory, and to a greater demand for padouk amongst trading firms in Calcutta. Prices realized for padouk in London continued to be low, varying from 2 shillings to 2s. 3d. a cubic foot, as against 3 shillings to 4s. 6d. realized in 1893-94.

Expenditure was less by R20,000, due chiefly to a short supply of labour, causing a decrease in the amount of timber brought to depôt and a curtailment in works of improvement.

Berar.—The following table compares the financial results of the Forest and Financial year with those of the previous year:—

Year.	Receipts.	Charges.	Surplus.	Proportion of Surplus to gross Revenue.	
	R	R	R	Per cent.	
Forest year	1895-96	4,95,899	2,27,862	2,68,037	54
	1894-95	4,66,014	2,49,188	2,16,826	46
	Difference in 1895-96	+ 29,885	- 21,326	+ 51,211	+ 8.
	Average for the five years ending 1894-95.	4,77,102	2,20,481	2,56,621	54
Financial year	1895-96	4,94,339	2,44,003	2,50,336	50
	1894-95	4,73,400	2,51,640	2,21,760	46
	Difference in 1895-96	+ 20,939	- 7,637	+ 28,576	+ 4
	Average for the five years ending 1894-95.	4,77,102	2,20,481	2,56,621	54

The Conservator in his annual report remarks—

“ In connection with forest finance in Berar, the following figures are interesting:—

Financial Years.	Average Receipts.	AVERAGE CHARGES.		Surplus.
		(i). Capital..	(ii). Ordinary..	
	R	R	R	R
1881-83 to 1885-86	2,88,460	13,340	1,40,870	1,34,250
1886-87 to 1890-91	4,13,710	12,680	1,61,180	2,39,950
1891-92 to 1895-96	4,78,670	24,800	2,10,990	2,43,020

These figures show that while the forest estate has been steadily improved by capital expenditure on new roads, surveys and new forest areas, etc., and the ordinary expenditure has included large sums spent on the protection from fire and grazing of constantly increasing areas, the financial position has steadily improved without taking the capital value of the forests into consideration.”

There is no doubt that the financial position of the department has steadily improved and the results obtained during the year 1895-96, are very satisfactory. They are due in great measure to the general prosperity of Berar, resulting from the splendid cotton crop of 1895.

Madras.—The financial results are exhibited in the following table:—

Year.	Circle.	Receipts.	Charges.	Surplus or Deficit.	Proportion of Surplus to gross Revenue.
		R	R	R	Per cent.
Forest year	Northern	7,23,859	3,83,877	+ 3,39,982	47
	Central	9,39,783	5,60,995	+ 3,78,788	40
	Southern	5,04,088	5,24,116	- 20,078	...
	Total in 1895-96	21,67,630	14,68,988	+ 6,98,642	32
	“ “ 1894-95	19,77,182	14,54,298	+ 5,22,884	26
	Increase in 1895-96	1,90,448	14,690	1,75,758	6.
Financial year	Northern	6,63,061	3,77,645	+ 2,90,416	43
	Central	9,21,402	5,41,857	+ 3,79,545	41
	Southern	5,21,105	5,26,104	- 4,999	...
	Total in 1895-96	21,10,568	14,45,608	+ 6,64,962	31
	“ “ 1894-95	18,94,029	13,86,345	+ 5,07,684	27
	Increase in 1895-96	2,16,539	59,261	1,57,278	4
Average for the five years ending 1894-95.	17,81,608	13,30,135	4,51,473	25	

Extraordinary expenditure amounted to about ₹1,20,000; but against this may be placed extraordinary revenue realized from timber on land taken up for cultivation. There was thus during the Financial year a very substantial increase in the gross revenue realized and in the surplus which was ₹2,13,000 in excess of the average for the five years ending 1894-95. The increase is mainly due to higher prices realized for the leases of *Cassia auriculata* (tangedu) bark, increased supplies of firewood to the Madras Railway in Salem, increased sales of timber and fuel in the Nilgiris, improved system of collection of grazing dues, revenue from leases to lop date trees, and the crediting to "Forests" of revenue derived from timber on land given over for cultivation. The variation in expenditure compared with the previous year was but small.

Bombay.—The following remarks by the Government of Bombay review the financial position :—

* The financial results of the year under review and the preceding year are compared in the following statement :—

Circle.	Receipts.		Expenditure.		Net Revenue.		Increase or decrease in net revenue in 1895-96.
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	
	₹	₹	₹	₹	₹	₹	
Northern	7,88,680	7,83,283	2,75,932	2,97,437	4,62,748	4,85,846	+ 23,098
Central	7,84,401	7,59,605	5,42,471	5,27,207	2,41,930	2,32,398	- 9,532
Southern	15,25,028	14,93,084	8,16,630	8,64,353	7,09,348	6,43,731	- 65,617
Sind	6,79,823	4,65,745	4,17,757	2,34,807	2,62,066	2,30,938	- 31,128
TOTAL	27,27,932	25,06,717	20,51,840	19,13,804	16,76,092	15,92,913	- 83,179

It will be seen that the net revenue of the year was less by ₹83,179 than that of the previous year. The increase in the Northern Circle was due to receipts on account of the sale of trees in occupied and waste lands in the Pauch Maháls, and but for the cost of special working-plans, planting and fire-protection operations, of a new Conservatorship and of an additional Cooper's Hill recruit, the surplus would have been still larger. In the Central Circle the decrease in net revenue was due to the low prices obtained for forest-produce. In the Southern Circle the falling off was due partly to smaller sales at the Kodibág depôt, partly to delay on the part of the Southern Marátha Railway Company in paying for fuel supplied to them, and partly to the cost of supplying the fuel. In the Sindh Circle the substitution of the coupe contract system for the former departmental arrangements caused a decrease both in revenue and in expenditure, as the contract year does not coincide with the year for which the report is submitted. Special expenditure on demarcation was also incurred, and the special recoveries on account of outstandings which had swelled the receipts of the preceding year did not recur."

CHAPTER V

I.—ESTABLISHMENT

Of the nineteen permanent Conservators, three were on furlough. One hundred and fifty-one Deputy and Assistant Conservators were on duty throughout the year, sixteen officers of the Imperial Controlling Staff being on leave. Mr. McDonell remained on foreign service in charge of the Kashmir forests, and Mr. Slade continued to be in charge of the Siam Forest Department, which has since the close of the year been further strengthened by the deputation of three more officers from the forest staff of Burma. Eleven young officers trained at Cooper's Hill came out to India towards the close of 1895. Under the scheme for the development of the Provincial Service, which formed a part of the reorganization of the Forest Service sanctioned in 1891, it is intended to gradually transfer 43 appointments from the Imperial to the Provincial Service. Up to the close of the year 1895-96 two appointments only had been so transferred. However, at the time of writing this review, the total number of posts transferred amounts to 12; and as the present scale of recruitment from England is fixed for some years at 6 officers per annum, it will probably be found possible to complete the proposed numerical separation of the two services within the next 8 or 10 years, though it will not be for some years after that the posts actually to be transferred will be absorbed.

Of the eighty-seven posts originally sanctioned for the Provincial Service, eighty were filled by permanent occupants during the year. During the year sanction was received to the reorganization of the subordinate staff in Burma to the great satisfaction of all concerned. Under this scheme, which came into force on the 1st March 1896, the greater portion of the hitherto temporary establishment became permanent, and it was found possible to man the staff in a more satisfactory manner throughout the province. The arrangements made involve an increase in the cost of the permanent establishment of R78,000, while the expenditure on temporary establishment is less by R39,000.

The insufficiency of the subordinate establishment elsewhere is a fact which has been recognized for some years past, and the fact that, in some cases, loss of revenue, and in others harm to the forests resulted therefrom, was again brought prominently forward in the reports for the year. Happily the sanction of the Government of India and the Secretary of State has since been received to the proposed reorganization of the forest staff. This scheme had been under consideration for the past 10 years; and its adoption will, it is believed, result ultimately in considerable increases of revenue, and in the present by improving the prospects of the staff, will permit the employment of more and better-trained officials to the benefit of the forest estates of which they will be placed in charge.

Conservators on the whole report favourably on the work of the subordinate staff, but in the Central Provinces, Bombay, and Madras the reports are unfavourable, and the conduct of the staff leaves much to be desired. In the Northern Circle of the Central Provinces, for example, no less than two-thirds of the staff of foresters were punished, and the discipline both here and in the Southern Circle requires the careful attention of the Conservators. In the Bengal Presidency some serious cases of defalcation occurred, no less than three head clerks of Divisional Officers being implicated. These cases seem to indicate

that such officials are peculiarly exposed to temptation in connection with the large sums of money which pass through their hands, and Local Governments have accordingly been addressed by the Government of India, with the view of introducing possible improvements in the control of such transactions, and in the departmental system of accounts.

II.—EXPERIMENTS.

The following are the more noteworthy experiments connected with the introduction of exotics and the changing of the natural habitat or manners of growth of indigenous trees:—

The plantations of *Robinia pseudo-acacia* in and around Simla continue to thrive, but efforts to raise this plant at elevations below 4,000 feet have hitherto not been very successful in this district, though the species is doing well in Dehra Dun, Lansdowne and Naini Tal. In Peshawar and Kohat, also, it has succeeded, and some plants have also been raised in the Hoshiarpur District, which it is intended to use in planting out in the "choa." The result of this experiment will be watched with great interest. In Bengal the sowings of this species have not been successful. Experiments made in this province with the "utis" (*Alnus nepalensis*) on landslips also proved a failure. The failure must probably be attributed to some difference in the surface soil, for the experiments were conducted within the natural habitat of the species concerned.

The experiment of propagating "khair" and "haldu" in accordance with the provisions of the Kumaun working-plan was unsuccessful, and after a third trial and failure the Forest officers of the Central Circle have decided to abandon the project.

An attempt was made to extend the resin works, which have proved entirely successful in the hill forests of the Jaunsar Division, to the "chir" trees grown in the Saharanpur Division. The amount of resin yielded by these trees growing somewhat out of their natural habitat was found to be so small that the attempt was abandoned. The comparative absence of resin in trees of the same species which produce an abundance at higher elevations close by is a fact worthy of notice. Further experiments will be carried out in regard to this and will also be undertaken in order to ascertain the comparative yield of the rubber-trees in different localities. Without such precautions large sums of money may be frittered away.

The Charduar rubber plantation in Assam was enlarged by a few acres only. It covers an area of 2,165 acres, and has been a complete success so far as the propagation of the rubber-tree (*Ficus elastica*) is concerned.

The best method of propagation has been found to be by raising plants from seed in nurseries, where they are transplanted two or three times and kept until they are some 12 feet high. They are then planted out in mounds and are high enough to be out of the reach of deer, which destroy small young seedlings. Rubber-trees may also be raised from cuttings, but so far the information at present available tends to show that the plants thus raised are not so hardy, and that they do not throw down aerial roots nearly so quickly as the plants raised from seed, and that consequently they take much longer to develop and at any given age yield less rubber.

Experiments have also been made of planting out the young rubber in the forks of trees, a method which has the advantage of at once placing them out of the reach of their great enemies, elephants and deer, and of giving them the

necessary light overhead without the necessity of making extensive and expensive clearances in the evergreen forests. These experiments have usually failed, principally, it is thought, because too often the plants were placed in the forks of sound trees. In many cases sufficient nourishment was provided to keep them alive, but no inducement was offered to establish a connection with the soil. It is a matter of regret that the experiment was abandoned and that the forest was cleared for a regular extension of the plantation, instead of trying to induce the plants established in the forks of trees to connect themselves with the soil. Further experiments seem desirable in this direction. The young plants should, however, be placed in unsound or girdled trees, or some device, such as hollow bamboos filled with vegetable mould should be arranged, so as to enable the rubber roots to develop and reach the ground. Once they have done this their subsequent satisfactory growth is assured, and it is evident that this method, merely necessitating the killing out of a few practically valueless trees, must be infinitely cheaper than opening out belts in the evergreen forests and the clearing thereof for several years, the building of mounds, and the raising of large plants. It has been estimated that, with the experience gained from past experiments and failures, it is possible to plant up an acre with rubber raised from seed at a cost not exceeding R40 per acre; and this may be much less if grass land is operated upon.

Fifty rubber-trees, planted out in 1874, had in 1895, at the age of 21 years, an average height of 78 feet and an average girth of 18 feet at the base. Trees 15 years old were found to have an average height of 64 feet with a girth of 9 feet. It remains, however, to be proved whether the plantation will prove a financial success or not.

Some attempts to propagate the *Ficus elastica* in North Malabar have been mostly unsuccessful, but the Ceara rubber (*Manihot Glaziovii*), a tree introduced from South America, is doing well in both North and South Malabar, and is reproducing itself naturally from seed. Some rubber taken from these trees was valued in London at two shillings a pound, that is at, say, R125 a maund. The rubber from the *Ficus elastica* from the Charduar plantation has been valued in Calcutta at R110 a maund. The successful propagation of the rubber-yielding trees has become a subject of the very greatest interest and importance. At the same time that the consumption of the article has increased by leaps and bounds—for bicycle and carriage wheels and for the needs of electrical science, for example—the caoutchouc-yielding forests are gradually being worked out in all countries where they are known to exist. The quantity of rubber exported from Assam has fallen from 7,200 maunds in 1887-88 to 3,200 maunds in 1895-96 in spite of a constant rise in price. It has been found impossible to prevent illicit tapping of the naturally grown rubber-trees, scattered as they are over miles of almost impenetrable forest, with probably not more than 20 rubber-trees to the square mile. This probably applies with equal force to all rubber-yielding forests in the world, and the only prospect of success seems therefore to be by establishing plantations where the trees can be efficiently protected and the unlawful extraction of the rubber be guarded against.

Steps have been successfully taken to extend lac cultivation in the Central Provinces and in Berar, but the exceptionally dry hot season was against the experiment. It may be noticed that an experiment in Jeypore of propagating the lac insect on *chilla* trees was brought to an untimely end through a protest from the Shikar officers of the State, who represented to the Durbar that the insect would make the trees leafless, and obtained an order for the breaking off of all the insect-bearing twigs, in order to provide shelter for game.

In Madras experiments with a number of exotics continued to be made during the year. Insects, and late and insufficient rains have caused damage, but the result is reported to have been on the whole satisfactory. *Sabai* grass, useful for paper-making, was planted in the Sâtpudâs and did fairly well. *Pinus Khasya* sown in the Poona Division all died.

Sample plots for the purpose of ascertaining the rate of growth of the sâl tree, as well as the influence on the growth of thinnings, were kept up in the North-Western Provinces. Careful observations have now been kept up in some of these plots for 17 years, and the results, which are most interesting and instructive, have been utilised in framing the working-plans in force in these provinces. Such plots, in which the trees are numbered and periodically measured, may with advantage be started wherever it is desired to ascertain the rate of growth of species which do not form distinct annual rings. Unfortunately, in the plots hitherto kept up, only girth measurements have been taken—a fact which renders it impossible to ascertain the actual volumetric increase during any given time. It is advisable that in all future sample plots this omission should be rectified and that the heights of the trees observed should be taken accurately as well as the girths.

Attention was drawn to the value of the fibre of the *rhea* plant (*Bhõmeria nivea*), and some experimental plantings were made in the Tharrawaddy garden and in Mandalay. The young plants are reported to be doing well.

The importance of preparing in a practical manner extracts suitable for tanning has for some years been recognized. Our Indian forests grow several species which contain valuable tanning agents. But in the majority of cases their distance from the markets and consequent cost of extraction have hitherto prevented their use commercially. An interesting paper on this subject was published by Mr. E. E. Fernandez, and a rise in the general demand during the year for suitable tannin extracts caused greater attention to be paid to the question. Consequently a series of experiments has been arranged with the object of ascertaining from what materials the most valuable extracts can be prepared, which will, it is hoped, eventually result in the opening out of an important industry. The attention of all Forest officers is directed to this interesting subject.

III.—EXPORTS OF FOREST-PRODUCE.

The following tables gives the amounts and value of various articles exported from India during the year :—

ARTICLES OF FOREST-PRODUCE.	QUANTITY IN TONS OF 20 CWT.; IN THE CASE OF TEAK, CUBIC TONS.		VALUATION AT PORT OF SHIPMENT IN 1895-96.	
	Average of five years, 1890-91 to 1894-95.	In 1895-96.	Total.	Per ton.
Caoutchouc	473	352	R 9,91,356	R 2,816
Lac—				
Button	1,375	1,948	36,29,800	1,868
Shell	5,608	8,134	1,46,31,466	1,798
Stick and other kinds	76	58	75,654	1,804
Lac-dye	9	3	1,705	2,273
Sandal-wood, ebony and other ornamental woods	Information	not available	9,37,759	...
Cutch and gambier	9,250	9,186	87,96,106	418
Myrabolams	41,672	50,001	40,45,598	81
Teak	50,361	63,516	67,09,744	105
Cardamoms	128	63	1,86,744	3,107
Total in 1895-96 . . . . .	...	133,258	3,50,15,022	...
" 1894-95 . . . . .	...	134,028	2,93,98,186	...
Difference in 1895-96 . . . . .	...	— 770	+ 56,16,836	...

There was thus a total rise in the value of exports of R56,16,000, the increase occurring chiefly under lac, sandalwood, cutch and teak. Under teak alone the value of wood exported exceeded that of the previous year by R10,00,000. In connection with the teak trade the following abstract from notes by the Bombay-Burma Trading Corporation, Limited, are interesting :—

“The teak market in Europe has been one of considerable activity during the year under review owing to increased demand, chiefly for Naval purposes; and consequent on the scarcity of Burma wood, prices have been higher than for many years back, the closing rates being £12.5 to £12-10 for cargo timber (squares), and £10-10 to £11-10 for Europe planks of the usual market specification.

It is estimated that about 75,000 tons have gone into consumption in Europe during the period under review, against an average of only about 55,000 tons in the immediately preceding years, the increased requirements of the Admiralty, Naval construction for the Home and Foreign Governments, and renewed demand for Railway purposes, accounting—practically for the whole of the increase, the Continental demand having been almost stationary, and there having been no expansions of the trade in other directions.

Siam has again taken a large share in the Home trade. The arrivals in Bangkok during the last floating season aggregated 65,000 logs against about 72,000 in the preceding year, but an ever-increasing portion of the supplies is finding its way into the Home markets, and fully one-third of the requirements of the Western countries is now being met by Siam teak, the timber realizing within a fraction the rates ruling for Burma wood.”

It will be observed that, although there was an increase in the total value of articles exported, there was a considerable fall in rubber (R1,60,000), in lac-dye (R24,000), myrabolams (R6,04,000), and cardamoms (R1,00,000).

It is interesting to notice that in the year 1885-86 the total value of articles of forest-produce exported from India was placed at R1,71,00,000 against R3,59,00,000 during 1895-96. During the past ten years therefore exports have more than doubled in value—a fact which shows how rapidly the resources of the forests of the Indian Empire are being developed.

IV.—TECHNICAL EDUCATION AND RECRUITMENT:

There is little of additional importance to notice under the head of technical education. The officers for the Imperial Service continue to be trained in England at Cooper's Hill College. Six young men were selected by competitive examination to undergo the Cooper's Hill course, whilst 11 officers who had been successful at the final examination joined their appointments in India. At the Dehra Dun Forest School a change in the teaching staff is to be noticed. The School remained under the directorship of Mr. J. S. Gamble, M.A., except for a short period when he went on privilege leave, during which time Mr. A. Smythies officiated for him. At the close of the year Mr. F. Gleadow, Professor of Forestry at the Poona College of Science, was appointed Deputy Director, *vice* Mr. Smythies, who went to Burma as Officiating Conservator. The other members of the School staff were Mr. A. F. Gradon, Instructor, Mr. C. G. Rogers, Mr. B. B. Osmaston, and Babu Upendro Nath Kanjilal. The School staff was also assisted by the Assistant Agricultural Chemist, the Deputy Superintendent of the Indian Museum, the Superintendent of Forest Surveys, and the officers of the School Circle.

The number of students at the School shows a decrease compared with previous years, 54 paid students and 29 private students attending, as against a total of 106 in the year before. No certificates with honours were awarded. Twenty-nine students obtained certificates as Rangers and 5 as Foresters. At the final examination held in March 1896 no less than 6 stipendiary students failed

to obtain certificates. The Government of India drew attention to this fact in their Resolution reviewing the School Report for 1895-96, and consider that stipendiary students whose progress of conduct is unsatisfactory should, in accordance with the School rules 12(IX) and 28, have their stipends reduced or withdrawn, or should be removed from the School rather than be allowed to remain there at Government expense, only to fail at the final examination.

The Provincial Service of Extra-Deputy and Extra-Assistant Conservators will in the future be entirely recruited from officers who have been educated at the Dehra Dun Forest School or, in the case of the Bombay Presidency, from the Pooona College of Science. With the growing importance of the Provincial Service it becomes every day of greater necessity that its members should have received a thorough technical education. The men who obtain with difficulty, or with the aid of grace marks, a Ranger's certificate at the Dehra School, are scarcely up to the desired standard, and some further qualification will probably be required to render officers eligible for promotion to the rank of Extra-Assistant Conservator.

V.—FOREST ADMINISTRATION IN NATIVE STATES.

Copies of the Forest Administration Reports were received from the Mysore, Kashmir, Jodhpore, and Jeypore Native States. In Mysore, Mr. L. Ricketts, who retired towards the end of 1895, was replaced by Colonel Campbell-Walker. Owing mainly to a slackness in demand for sandal-wood, the forest revenue in this State decreased slightly as compared with the results of 1894-95, but, on the other hand, the area of the "State Forests" was increased by 141 square miles; while a commencement was made towards systematic management by starting the enumeration of sandal trees in all the districts. It is observed that the question of forming further considerable areas into "Reserves" and "State Forests" is being considered by the Darbar, that some little progress was made in preliminary surveys of reserved areas, but that a large amount of work still remains to be carried out as regards demarcation and forest-settlements before any great progress can be made in the preparation of working-plans.

In Kashmir the net revenue rose from Rs. 3,39,000 to Rs. 5,36,360, this large increase being due to an extension in the departmental sleeper works. Excellent progress has also been made in the estimation of forest areas, in demarcation and in boundary surveys, and the Government of India view with satisfaction the great advance made in the management of the forests during the past five years of Mr. McDonell's administration. At the same time it is trusted that the importance of taking measures to ascertain the permanent possibility of these very valuable deodar forests, will not be lost sight of.

The forest administration in Jeypore and Jodhpore continued to be satisfactorily carried out, though the number of browsers shown as grazing in the open forests in Jeypore seems to be somewhat excessive, as the figures given in Forms Nos. 54 and 55 show that 78,000 acres of forest were grazed over by 153,082 of these animals. Concerning forest conservancy in States that do not issue printed Administration Reports, it is to be noticed that Mr. Thompson, lately Conservator of Forests in the Central Provinces, has been appointed to the charge of the Sirmur State forests, and that the preparation of simple working-schemes for the more important of the numerous small States surrounding Simla has been commenced.

APPENDICES.

Summary of the Revenue and Expenditure

BUDGET HEADS.	BENGAL PRESIDENCY (BRITISH)										
	Imperial.	Bengal.	North-Western Provinces and Oudh.	Punjab.	Central Provinces.	Burma (Lower).	Burma (Upper).	Assam.	Coorg.	Ajmere.	Baluchistan.
REVENUE.											
I.—Timber and other produce removed from the forests by Government agency.	...	24,440	4,25,890	6,10,920	1,29,300	18,89,740	1,80,260	4,530	76,070	...	1,590
II.—Timber and other produce removed from the forests by consumers or purchasers.	2,690	8,52,300	11,06,960	8,02,390	8,33,930	10,25,900	20,15,430	3,33,070	58,220	15,290	1,090
III.—Drift and waif wood and confiscated forest produce.	...	8,810	15,460	70,560	2,360	2,35,340	43,570	6,060	...	...	...
IV.—Revenue from forests not managed by Government.	...	...	11,540	2,180	...	2,64,910	...	80,640	...	...	11,440
V.—Miscellaneous . . . . .	...	22,900	41,490	28,450	31,350	48,660	37,020	47,780	960	350	520
Total Revenue	2,690	9,18,710	16,01,340	10,14,500	9,96,940	34,14,550	22,81,280	4,25,080	1,35,250	15,640	14,930
EXPENDITURE.											
A.—CONSERVANCY AND WORKS.											
I.—Timber and other produce removed from the forests by Government agency.	...	39,160	2,15,020	2,49,210	36,410	5,21,090	41,660	9,270	10,340	...	1,330
II.—Timber and other produce removed from the forests by consumers or purchasers.	...	54,990	41,340	3,380	1,23,170	16,170	4,770	28,300	...	...	...
III.—Drift and waif wood and confiscated forest produce.	...	2,390	7,620	13,570	40	96,400	18,770	160	...	...	...
IV.—Revenue from forests not managed by Government.	...	...	3,860	...	...	8,510	...	...	...	...	2,290
V.—Rent of leased forests, and payments to shareholders in forests managed by Government.	...	...	13,700	40,070	90	...	...	15,450	...	...	...
VI.—Live-stock, stores, tools and plant	...	9,430	19,080	3,920	8,650	37,890	29,660	11,310	590	270	430
VII.—Communications and buildings . . . . .	...	50,340	1,15,200	37,440	30,210	28,570	27,490	16,810	9,210	880	360
VIII.—Demarcation, improvement, and extension of forests.	...	30,470	1,13,150	26,580	2,41,350	2,25,980	52,820	33,030	18,200	1,980	14,050
IX.—Miscellaneous . . . . .	...	2,550	9,000	1,910	4,300	5,010	3,130	1,840	1,520	130	50
Total A.—Conservancy and Works	...	1,89,380	5,38,030	3,78,080	4,44,620	9,39,620	1,78,350	1,16,170	39,860	3,260	18,460
B.—ESTABLISHMENTS.											
I.—Salaries	65,660	2,33,930	3,43,690	2,42,190	4,32,240	3,51,710	8,35,970	1,40,470	35,480	10,720	20,050
II.—Travelling allowances	11,340	31,870	32,500	38,240	43,600	45,810	50,670	21,510	8,850	1,240	2,760
III.—Contingencies	3,410	10,880	21,640	21,910	31,380	20,600	10,870	7,990	2,150	510	490
Total B.—Establishments.	*80,410	2,76,680	4,04,830	3,02,340	5,07,220	4,18,120	3,97,510	1,69,970	45,980	12,470	23,300
Grand Total of Expenditure	80,410	4,66,070	9,42,860	6,78,420	9,52,340	13,57,740	5,75,860	2,86,140	85,840	15,730	41,770
SURPLUS	...	4,52,640	6,58,480	3,36,080	44,600	20,56,810	17,05,420	1,38,890	49,410	...	...
DEFICIT	77,720	...	...	...	...	...	...	...	...	90	26,640

* Includes salary of the Inspector-General and Assistant Inspector-General

IX I.

the Forest Department in India for the Financial year 1895-96.

TERRITORIES).			Total Bengal Presidency (British Territories).	Madras.	Bombay.	Total British Provinces.	Berar.	GRAND TOTAL.	BUDGET HEADS.
Andamans.	Forest School.	Forest Surveys (Imperial)							
R	R	R	R	R	R	R	R	R	REVENUE.
2,29,150	...	...	34,21,180	3,30,060	13,65,470	51,66,710	...	51,66,710	I.—Timber and other produce removed from the forests by Government agency.
8,770	...	...	65,64,300	16,53,700	20,62,170	1,02,80,170	4,89,610	1,07,69,780	II.—Timber and other produce removed from the forests by consumers and purchasers.
...	...	...	3,37,160	11,920	8,390	4,05,470	190	4,05,660	III.—Drift and waif wood and confiscated forest produce.
...	...	...	3,30,710	...	22,330	3,43,040	...	3,43,040	IV.—Revenue from forests not managed by Government.
200	4,310	510	2,64,450	64,890	80,310	4,09,650	4,540	4,14,190	V.—Miscellaneous.
32,120	4,310	510	1,09,57,800	21,10,570	35,36,670	1,66,05,040	4,94,340	1,70,99,380	Total Revenue.
EXPENDITURE.									
A.—CONSERVANCY AND WORKS.									
44,400	...	...	11,67,890	1,82,320	5,91,140	19,41,250	...	19,41,250	I.—Timber and other produce removed from the forests by Government agency.
210	...	...	2,72,330	88,740	45,510	4,06,580	88,500	4,45,08	II.—Timber and other produce removed from the forests by consumers or purchasers.
...	...	...	1,39,010	2,630	390	1,42,080	...	1,42,080	III.—Drift and waif wood and confiscated forest produce.
...	...	...	14,630	...	...	14,630	...	14,630	IV.—Revenue from forests not managed by Government.
...	...	...	69,310	21,090	50,100	1,40,500	17,120	1,57,620	V.—Rent of leased forests and payments to shareholders in forests managed by Government.
23,080	970	2,550	1,53,830	31,980	10,160	1,96,020	4,590	2,00,610	VI.—Live-stock, stores, tools and plant.
2,270	520	...	3,19,300	71,770	19,790	4,10,860	20,430	4,31,340	VII.—Communications and buildings.
1,030	...	4,360	7,63,500	2,72,950	2,32,120	12,68,570	24,570	12,93,140	VIII.—Demarcation, improvement, and extension of forests.
4,420	3,570	30	37,410	7,550	33,060	78,020	520	78,540	IX.—Miscellaneous.
81,410	5,060	6,940	29,37,260	6,78,930	9,82,270	45,98,510	1,05,780	47,04,290	Total A.—Conservancy and Works.
B.—ESTABLISHMENTS.									
18,200	56,360	16,970	23,03,640	6,03,560	3,17,570	37,24,770	1,11,560	38,36,330	I.—Salaries.
2,260	3,810	40	3,01,000	1,22,300	1,16,180	5,39,330	16,050	5,55,430	II.—Travelling allowances.
150	2,720	6,000	1,41,200	40,870	42,370	2,24,440	12,120	2,36,560	III.—Contingencies.
20,610	62,890	23,010	27,45,840	7,66,630	9,76,120	44,88,590	1,39,780	46,28,320	Total B.—Establishments.
1,02,020	67,950	23,950	56,83,100	14,45,610	19,58,390	90,87,100	2,45,510	93,32,610	Grand Total of Expenditure.
30,100	...	...	52,74,700	6,64,960	15,73,280	75,17,940	2,48,830	77,66,770	SURPLUS.
...	63,640	29,440	DEFICIT.

of Forests and their establishments and contingencies.

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APPENDIX II.*

Revenue, Expenditure and Surplus of the Forest Department throughout India during the 25 years from 1871-72 to 1895-96.

REVENUE.

PROVINCES.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Imperial†	2,334	2,771	1,225	1,144	1,465	2,490	1,36,772	16,716	17,214	18,837	27,407	30,732	32,907	26,574	14,708	4,186	4,847	4,017	4,758	6,370	6,688	5,240	2,680	4,980	2,690
Bengal	1,44,713	1,49,852	1,79,366	1,85,932	1,98,273	2,22,401	4,26,228	4,16,027	4,49,324	5,61,340	6,33,734	6,98,959	6,94,331	5,71,152	5,97,432	6,53,634	6,57,794	6,76,907	7,68,718	7,27,382	7,99,553	7,44,880	8,01,610	7,95,670	9,18,710
North-Western Provinces and Oudh	11,70,300	19,39,115	19,32,677	13,63,359	12,64,356	11,50,671	12,03,108	11,26,755	10,39,966	9,42,228	10,66,094	10,13,403	16,11,383	15,72,319	14,61,495	15,73,556	12,47,454	14,62,802	17,14,159	16,37,879	17,31,514	16,52,540	17,09,860	16,58,250	16,01,340
Punjab	7,10,216	6,52,995	7,32,539	8,34,874	9,09,831	5,98,754	6,83,711	5,00,619	6,49,819	6,71,678	6,88,308	7,66,709	9,10,177	7,49,352	8,50,419	11,27,277	7,86,936	10,45,788	9,21,713	8,34,370	10,20,074	8,12,630	9,13,300	10,32,430	10,14,530
Central Provinces	5,57,128	4,81,673	5,63,367	6,80,938	7,26,176	6,61,326	6,83,910	8,32,862	10,06,724	8,50,139	11,72,834	9,77,647	9,94,769	10,27,202	10,36,894	9,57,410	10,93,369	11,80,405	11,56,161	12,13,461	13,59,900	12,30,850	11,34,480	10,08,630	9,96,940
Burma (Lower)	7,72,400	8,27,569	10,68,621	10,74,802	17,79,020	15,51,408	16,03,082	11,37,562	11,60,190	15,16,613	22,31,804	25,03,896	25,09,275	16,70,982	20,23,859	19,96,667	22,18,897	26,09,306	31,34,716	36,77,671	28,58,114	35,83,370	34,89,350	32,74,200	34,14,550
Burma (Upper)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,08,074	2,96,876	15,79,928	18,06,070	16,44,297	13,27,300	20,76,630	22,95,750	21,62,580	22,81,280
Assam	...	...	...	65,949	61,870	81,568	1,34,326	1,61,779	1,64,335	1,68,997	1,66,054	2,46,605	2,11,445	1,80,414	1,96,656	2,12,011	2,67,312	2,09,882	3,79,498	3,26,793	3,26,129	3,82,830	4,88,500	4,35,090	4,25,030
Coorg	92,466	84,425	1,10,289	58,015	1,07,460	75,927	1,01,015	52,020	1,01,786	87,857	1,00,364	1,38,022	87,822	1,13,230	89,386	99,291	1,27,028	1,36,183	92,753	1,35,561	1,82,897	1,80,680	1,73,790	1,53,050	1,35,250
Ajmere	...	24	304	202	410	905	3,002	1,241	1,861	1,124	4,065	7,128	8,198	10,456	9,697	11,274	14,293	13,574	11,592	15,266	19,799	14,880	14,620	12,940	15,640
Forest Surveys (Imperial)	...	...	...	...	21	...	...	63	88	272	...	248	26	234	202	241	40	315	220	2,104	257	520	240	80	510
Forest School	...	...	...	...	...	...	...	...	...	...	...	...	...	73	273	415	777	449	1,237	1,194	1,788	1,980	1,990	2,790	4,310
Andamans	5,880	6,862	4,184	5,516	5,263	4,679	1,301	5,564	2,437	27,724	48,407	70,858	24,782	12,213	23,944	31,870	1,04,062	1,06,075	1,62,195	1,58,326	2,72,338	8,60,490	4,41,790	1,14,530	1,32,120
Total	34,56,043	41,45,286	45,97,567	42,50,730	50,54,246	43,50,129	49,76,455	42,71,208	46,13,894	48,46,869	61,39,121	64,51,305	70,85,108	50,44,204	63,04,965	67,77,906	68,19,685	91,19,610	1,01,53,811	93,80,674	99,06,351	1,10,47,530	1,14,67,900	1,06,55,120	1,09,42,870
Madras	5,76,261	5,95,188	6,13,653	5,14,401	6,77,873	5,92,573	5,50,310	6,06,788	6,26,168	7,36,880	8,06,908	9,06,442	9,53,704	11,66,916	11,98,650	12,46,911	13,74,920	15,15,006	15,57,627	17,95,408	16,94,216	15,77,210	19,47,180	18,94,030	21,10,570
Bombay	11,50,215	11,46,405	11,88,089	12,24,051	13,48,672	12,26,658	12,61,528	11,81,894	15,24,712	15,22,807	18,28,117	20,90,363	25,03,100	27,74,942	33,66,286	30,32,676	30,32,577	28,50,190	31,37,696	32,88,220	32,84,649	32,69,550	37,94,350	37,50,030	35,36,670
Total (British India)	51,82,619	58,86,879	63,99,309	59,89,182	69,80,701	61,69,360	67,88,233	60,59,890	67,64,774	71,06,556	87,74,146	94,48,100	1,05,41,912	98,85,982	1,08,69,901	1,10,57,493	1,12,27,182	1,34,84,806	1,48,49,134	1,44,64,302	1,48,85,216	1,58,94,290	1,72,09,490	1,62,99,180	1,65,90,110
Benar	1,56,543	2,56,563	2,63,256	2,60,674	2,32,782	2,53,072	2,79,236	2,88,704	3,07,500	2,60,556	2,33,511	2,92,014	3,08,248	2,97,185	3,10,851	3,26,261	4,06,447	4,07,977	4,40,541	4,87,109	5,11,185	4,31,020	4,82,800	4,73,490	4,94,540
Forest Surveys (Benar.)	...	...	...	...	...	...	...	...	...	...	...	...	...	934	631	651	536	...	...	...	...	...	...	...	...
Baluchistan	...	...	...	...	...	...	...	...	...	14,376	18,616	5,039	4,752	6,089	14,862	14,021	14,463	5,668	13,827	15,724	20,609	19,030	20,730	16,300	14,930
GRAND TOTAL	53,38,062	61,43,442	66,62,565	62,49,356	72,12,573	64,22,432	70,87,529	63,48,594	70,72,274	73,87,463	90,26,273	97,45,153	1,08,54,832	1,01,90,170	1,12,05,345	1,13,98,486	1,16,48,288	1,38,98,451	1,53,03,572	1,49,67,135	1,54,17,010	1,63,44,240	1,77,13,000	1,67,66,890	1,70,89,580

* The figures in this statement have been revised by the Comptroller and Auditor-General.
 † Includes certain... (partially illegible)

EXPENDITURE.

PROVINCES.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.*	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Imperial*	66,580	67,150	79,216	81,210	48,239	44,004	96,069	63,956	73,810	65,291	77,535	87,268	98,265	96,306	88,245	86,259	78,626	86,199	81,311	85,414	65,788	1,07,270	80,840	84,950	80,410
Bengal . . .	1,10,989	1,00,777	1,39,274	1,01,361	1,42,676	2,14,497	2,62,913	3,38,875	2,75,743	3,35,361	3,94,512	3,92,103	3,87,813	4,11,915	3,70,399	4,22,781	3,90,866	3,76,270	3,98,150	4,14,004	4,22,930	3,81,610	4,04,040	3,97,390	4,66,070
North-Western Provinces and Oudh . . .	11,10,671	11,74,566	11,90,794	10,61,392	7,36,979	8,61,362	7,28,926	8,09,977	7,16,594	6,79,574	9,16,212	8,39,025	10,41,365	10,20,101	9,74,519	9,19,580	8,30,749	8,44,544	9,63,151	9,19,195	9,64,211	9,28,540	9,63,020	9,36,310	9,42,860
Punjab . . .	7,07,619	8,90,369	6,11,556	6,58,983	5,56,911	5,25,659	5,20,631	5,23,564	4,80,676	4,95,368	5,16,269	5,60,750	6,53,146	5,58,070	6,75,483	7,16,510	6,77,912	5,93,885	6,45,855	6,53,041	6,40,275	6,56,270	6,36,430	7,22,120	6,79,420
Central Prov- inces . . .	2,31,633	2,50,578	2,85,939	2,94,449	3,73,327	2,90,295	3,22,024	3,93,755	5,22,574	4,95,512	4,97,013	4,12,247	4,36,058	4,95,821	4,45,432	4,99,234	5,52,689	6,68,697	6,96,445	7,35,554	8,03,915	8,51,400	9,32,190	9,76,060	9,52,240
Barma (Lower)	3,79,217	3,38,759	4,75,304	6,63,547	4,15,669	10,05,554	8,58,231	7,18,402	7,52,490	7,12,568	11,50,224	12,28,955	12,17,323	12,12,233	11,50,952	10,75,830	10,32,694	12,31,944	13,32,344	10,86,474	12,25,121	13,63,250	13,41,640	13,78,230	13,57,740
Barma (Upper)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,188	1,21,152	7,85,129	2,73,800	3,02,315	2,73,859	4,41,750	5,20,860	5,39,760	5,75,880
Assam . . .	...	...	...	60,367	62,397	90,520	1,01,153	1,28,028	1,32,829	1,42,725	1,65,361	1,71,823	1,98,582	1,97,699	2,11,494	2,12,287	2,26,392	2,09,905	2,57,129	2,83,852	2,67,525	2,64,070	2,68,220	2,72,010	2,86,140
Cooch . . .	70,178	29,479	45,952	37,969	40,168	33,692	26,268	24,829	55,165	56,487	59,796	64,770	75,023	76,951	66,690	74,068	72,629	80,175	72,420	65,818	66,860	73,080	66,890	86,140	85,840
Ajmere . . .	...	13,054	17,932	15,261	27,266	22,400	14,928	13,445	13,750	12,423	13,954	11,284	14,574	16,316	16,469	20,794	18,897	15,676	12,701	12,720	13,986	15,000	15,900	14,900	15,730
Forest Surveys (Imperial) . . .	...	...	59,556	78,060	58,830	58,929	60,165	60,325	46,878	40,335	42,489	41,565	30,910	19,822	19,180	28,248	32,968	22,164	21,188	24,324	28,682	22,160	27,900	28,840	29,950
Forest School . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	22,568	24,239	30,831	33,129	32,961	29,646	35,191	44,347	50,400	65,530	65,981	67,950
Andamans . . .	1,651	1,896	...	...	...	1,307	1,096	...	7,177	2,160	2,306	1,840	12,161	22,760	37,035	25,769	62,679	57,295	94,975	1,30,052	1,79,949	2,31,210	2,44,550	1,22,780	1,02,020
Total . . .	26,79,886	28,64,728	29,06,523	30,52,589	28,63,632	31,48,279	30,04,442	30,82,949	30,78,691	30,37,821	38,35,871	38,01,740	41,67,252	41,50,563	40,79,137	41,14,548	41,31,532	50,04,844	48,79,615	47,47,864	52,09,608	53,86,020	55,68,010	56,26,470	56,42,330
Madras . . .	3,91,921	5,48,745	4,74,920	5,95,941	5,92,039	6,35,560	5,65,624	4,95,914	5,48,527	5,19,270	6,03,419	6,45,352	7,86,783	8,96,506	9,37,972	11,53,122	11,29,212	12,20,794	11,61,237	12,46,813	13,24,254	13,30,390	13,62,770	13,66,350	14,45,610
Bombay . . .	5,97,831	7,25,031	7,21,594	8,36,675	7,94,141	8,38,979	8,77,716	10,04,923	10,76,989	11,67,347	11,69,181	12,78,770	15,64,172	17,78,723	18,39,461	19,52,910	19,44,005	16,93,962	17,70,691	18,69,887	19,31,457	19,04,970	20,71,940	20,67,920	19,58,360
Total (British India) . . .	36,67,690	41,38,565	41,02,037	44,85,205	42,49,812	46,22,818	44,47,782	45,83,786	47,04,207	47,24,441	56,08,471	57,25,862	65,18,157	68,25,791	68,56,570	72,20,580	72,04,750	79,19,600	78,11,543	78,64,754	84,65,319	86,21,380	90,22,720	90,86,740	90,46,330
Berar . . .	1,00,829	83,621	86,350	91,389	81,449	94,652	1,08,968	1,07,350	1,10,596	1,28,968	1,52,965	1,55,054	1,56,779	1,52,649	1,59,242	1,71,704	1,83,765	1,70,212	1,76,549	1,68,621	1,66,366	2,29,220	2,54,250	2,51,640	2,45,510
Forest Surveys (Berar) . . .	...	...	...	...	...	...	...	...	...	...	...	...	15,043	34,804	42,940	45,472	42,098	23,965	6,464	...	...	...	...	...	...
Baluchistan . . .	...	...	...	...	...	...	...	...	...	16,416	17,682	11,962	16,311	13,266	15,799	17,836	17,753	15,994	17,962	29,450	30,497	55,620	63,730	40,910	41,720
GRAND TOTAL . . .	37,68,469	42,22,138	41,88,387	45,76,594	43,41,311	47,17,470	46,57,750	46,91,136	48,14,713	48,69,825	57,79,138	58,92,878	67,06,580	70,26,510	70,74,551	74,55,592	74,48,366	81,29,761	80,12,518	80,63,125	86,94,182	88,06,230	93,40,700	93,73,280	93,33,610

* Includes pay of Inspector-General of Forests, certain home charges, and undistributable and petty local items.

APPENDIX II—concluded.

SURPLUS.

PROVINCES.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Imperial*	-64,196	-64,379	-77,961	-80,066	-46,774	-41,514	38,673	-47,240	-56,596	-46,404	-50,228	-56,536	-65,359	-69,732	-73,537	-82,113	-73,779	-82,182	-76,552	-79,044	-59,100	-1,02,030	-78,160	-79,970	-77,720
Bengal . . .	33,730	49,075	40,092	84,571	55,598	7,904	1,63,315	77,352	1,73,776	2,25,959	2,38,122	3,11,776	3,06,521	1,59,237	2,27,033	2,30,853	2,67,426	3,00,637	3,70,568	3,13,388	3,66,622	2,63,270	3,97,570	3,98,280	4,52,640
North-Western Provinces and Oudh . . .	60,829	7,64,449	7,41,833	3,02,056	5,27,377	2,89,309	4,74,182	3,16,778	3,23,372	2,62,654	1,49,882	1,74,378	5,69,498	5,52,218	4,86,978	6,53,976	4,16,706	6,18,258	7,51,008	7,18,684	7,73,303	7,24,000	7,46,840	7,21,940	6,58,480
Punjab . . .	2,597	-2,37,374	1,20,983	1,75,891	3,52,920	73,095	1,63,083	-22,935	1,69,143	1,76,310	1,72,039	2,05,959	2,57,031	1,91,282	1,74,938	4,10,767	1,09,024	4,51,833	2,75,858	1,81,329	2,79,799	1,56,380	2,76,870	3,10,310	2,36,060
Central Pro- vinces . . .	3,25,495	2,31,095	2,82,428	3,66,489	3,52,849	3,71,031	3,61,876	4,59,104	4,84,150	3,54,627	6,75,371	5,65,400	5,58,711	6,31,331	5,91,462	4,58,117	5,40,430	5,11,708	4,59,736	4,77,907	5,55,985	3,79,450	2,02,290	32,570	44,600
Barma (Lower)	3,83,183	4,90,810	5,93,317	4,11,255	8,63,361	5,45,854	7,44,851	4,19,160	4,26,700	3,04,045	10,81,580	11,274,941	11,291,451	4,58,749	8,72,907	9,22,837	11,86,203	13,77,361	18,01,872	15,91,197	15,32,993	22,20,120	21,47,710	18,95,970	20,56,810
Barma (Upper)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,05,886	1,75,724	7,94,799	15,32,270	13,41,982	9,53,441	16,34,880	17,74,890	16,22,820	17,05,420
Assam . . .	...	...	...	5,582	-1,527	-8,952	33,173	35,751	31,506	26,272	693	67,782	11,833	-17,235	-14,838	-276	40,420	93,977	1,22,369	42,941	68,604	1,18,760	2,20,280	1,63,080	1,38,390
Coorg . . .	22,238	64,946	64,332	20,016	67,292	42,285	64,747	17,191	46,621	21,370	40,568	73,252	12,739	26,282	23,696	25,203	54,399	56,008	20,333	69,743	96,037	1,07,590	86,900	66,910	49,410
Ajmere . . .	...	-13,030	-17,628	-15,079	-26,936	-21,555	-11,924	-12,204	-11,889	-11,299	-9,889	-4,158	-6,376	-5,860	-6,772	-9,470	-4,604	-2,102	-1,109	2,546	5,813	-110	-1,280	-2,060	-90
Forest Surveys (Imperial)	...	...	59,556	-78,090	-58,909	-58,929	-60,165	-60,262	-46,840	-40,063	-42,489	-41,247	-30,904	-19,589	-18,978	-28,107	-32,828	-21,849	-20,968	-22,220	-26,625	-21,640	-27,660	-29,760	-29,440
Forest School .	...	...	...	...	...	...	...	...	...	...	...	...	...	-22,495	-23,966	-30,416	-32,352	-32,512	-28,409	-34,007	-42,559	-48,420	-63,540	-63,190	-63,640
Andamans . .	4,229	4,966	4,181	5,516	5,383	3,372	205	5,564	-4,740	25,574	46,101	69,038	12,601	-547	-13,091	6,101	41,383	49,780	67,220	28,274	92,429	1,29,280	1,97,240	-8,250	30,100
Total	7,78,155	12,80,558	15,92,044	11,98,141	21,90,614	12,01,850	19,72,013	11,88,259	15,35,203	18,09,045	23,03,250	26,49,565	29,17,856	17,93,641	32,25,828	26,63,358	26,68,152	41,14,766	52,74,196	46,32,720	46,96,743	56,61,510	58,79,950	50,28,650	53,01,540
Madras . . .	1,84,340	46,442	1,38,733	-81,540	85,834	-42,987	-15,314	1,10,874	77,641	2,17,610	2,03,489	2,61,090	1,66,971	2,70,411	2,60,678	93,789	2,45,708	2,94,212	3,96,890	5,48,495	3,69,962	2,46,820	5,84,410	5,07,680	6,64,960
Bombay . . .	5,52,384	4,21,374	4,66,495	3,87,376	4,54,531	3,87,879	2,83,812	1,76,971	4,47,723	3,55,460	6,58,936	8,11,583	9,38,920	9,96,119	15,26,825	10,79,766	10,88,572	11,56,228	13,67,005	14,18,333	13,53,192	13,64,580	17,22,410	16,82,110	15,78,239
Total (British India)	15,14,879	17,48,374	22,97,272	15,03,977	27,30,979	15,46,542	23,40,511	14,76,104	20,60,567	28,82,115	31,65,675	37,22,238	40,23,755	30,60,171	40,13,331	23,36,913	40,22,432	55,65,206	70,37,591	65,99,548	64,19,597	72,72,910	81,86,770	72,18,440	75,44,790
Berar . . .	54,719	1,72,932	1,76,906	1,69,285	1,41,282	1,58,420	1,69,268	1,81,354	1,96,994	1,37,588	80,526	1,36,960	1,51,439	1,44,538	1,36,609	1,54,582	2,22,682	2,37,765	2,63,992	3,18,188	3,12,819	2,01,790	2,28,550	2,21,760	2,48,830
Forest Surveys (Berar)	...	...	...	...	...	...	...	...	...	...	...	...	-15,043	-33,870	-42,309	-44,821	-41,502	-23,955	-6,464	...	...	...	...	...	...
Baluchistan .	...	...	...	...	...	...	...	...	...	-2,040	934	-6,923	-12,159	-7,177	-837	-2,755	-3,690	-10,326	-4,065	-13,726	-9,888	-36,590	-43,000	-24,610	-26,240
GRAND TOTAL	15,69,593	19,21,306	24,74,178	16,73,262	28,72,262	17,04,953	25,09,779	16,57,458	22,57,561	25,17,663	32,47,135	38,52,275	41,47,992	31,63,660	41,30,794	39,42,894	41,99,922	57,68,690	72,91,054	69,04,010	67,22,828	74,38,110	83,72,220	74,15,560	77,06,770