M.R.O. 1—77,006—8-5-37.

(1) Number of pages 16

(2) Date of repair 13-9-40

(3) Initials of the Referend

1/19

MADRAS RECORD OFFICE.

Government of Madras.

Revenue **DEPARTMENT.**

G.O. No. 1531-1538 Press / Mis.

Dated 5-3- 18 89

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Land Revenue), dated 30th November 1888, Forest No. 625 :—

THE HON. W. S. WHITESIDE.

Read—the following letter from A. W. PEET, Esq., Acting Conservator of Forests, Northern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 18th July 1888, No. 1251 :—

I have the honor to forward the annual Forest Administration Report for the Northern Circle for the year 1887-88.

ENCLOSURE.—Administration Report for 1887-88.

Read—the following letter from J. W. CHERRY, Esq., Acting Conservator of Forests, Southern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 28th September 1888, No. 1832 :—

I have the honor to submit the Annual Report of the Southern Circle for the year 1887-88, together with the prescribed appendices, excepting the one for exotics, which will be separately printed and forwarded in time to be submitted with the report to Government.

2. The report has this year been printed before submission to the Board in accordance with their instructions on last year's report. This has caused some delay, which I trust will not recur next year as we shall be in a better position to judge and allow for the time the printing takes.

3. The returns took a long time to compile, print and correct, and did not reach me for the commencement of the report, until the 8th of August, several references having had to be made to District Forest-officers regarding the correctness or meaning of their figures.

4. I have endeavoured to supply in this report all the omissions noticed by the Government in the last report, but it has not been easy as the Board's orders on the last Government review only reached me on the 6th of June or nearly a month after the District Forest-officers had submitted their reports.

5. I trust the Board will not think I have introduced too many abstracts into the report. The returns are so full of items and explanatory notes that I found it difficult to describe matters except through such abstracts, and I was anxious to show to District Forest-officers (with view to facilitating future reports) in what form the informations for their several districts would be useful.

6. But for the orders which, I am told, exist, forbidding districtwar abstracts, I should have given the figures for each district in all cases, for it is very important that District Forest-officers should know how this office has dealt with the figures pertaining to each of their districts, and it will be very useful for the Conservator, when on inspection tours, to have such district abstracts at hand to refer to.

7. If District Forest-officers would give talukwar or range abstracts, the Conservators totals for each division, and the Board totals for each circle, it would simplify comparisons and conclusions.

ENCLOSURE.—Administration Report for 1887-88.

Read—the following letter from A. W. PEET, Esq., Acting Conservator of Forests, Northern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 20th October 1888, No. 1611 :—

Referring to the Board's Proceedings of the 8th January 1887, No. 9, I have the honor to forward, as an accompaniment to the Annual Report for 1887-88, a map of the Presidency (scale 1 inch = 16 miles) showing—

(1) Reserved forests under section 16.
(2) Proposed reserved forests under section 4.
(3) Reserved lands under section 26.

ENCLOSURE.—Map showing reserved forests, proposed reserved forests, and reserved lands.

Resolution—dated 30th November 1888, Forest No. 625.

The Board submit to Government the forest report for 1887-88.

2. The staff of the department stood at the following strength, during the year, showing a slight increase in foresters and forest guards on the scale of the previous year :—

(*a*) Controlling—			
Conservators	Northern Circle	1	2
	Southern do.	1	
Deputy Conservators	Northern do.	4	11
	Southern do.	7	
Assistant do.	Northern do.	7	13
	Southern do.	6	
(*b*) Executive—			
Sub-Assistant Conservators	Northern do.	6	12
	Southern do.	6	
Rangers	Northern do.	21	51
	Southern do.	30	
Foresters	Northern do.	50	123
	Southern do.	73	
Forest guards	Northern do.	348	707
	Southern do.	359	

The Conservators were Mr. Peet in the Northern Circle acting for Mr. Gamble on leave, and Colonel Campbell Walker and for three months Mr. Cherry, in the Southern Circle.

The average areas of charges in the two circles were as under :—

	Southern Circle.		Northern Circle.	
	Total area.	Reserve area.	Total area.	Reserve area.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Conservator	62,980	7,555	78,700	7,180
District Forest-officer	4,845	581	7,870	718
Range officer	913	109	1,140	104
Forest guard	175	21	226	20

3. The gross receipts of the year amounted to Rs. 13,74,920 and the charges to Rs. 11,18,212, leaving a *plus* balance of Rs. 2,56,708.

4. The area under the control of the department was increased during the year by 2,338 square miles, (in addition to the 2,492 square miles, by which the Northern Circle figures of last year have been raised, owing, it is stated, to rectification of areas and the inclusion among "reserved lands" of lands notified for settlement under section 4.) A very large area of waste land has thus been added, and the total area now under control amounts to 17,000 square miles. The advisability of still further adding to it from districts, in which the percentage of forest reserve is small, is now under consideration, and with it the connected question of village forests and the organizing of a complete forest system for each district will be disposed of.

The subjoined table shows the changes that occurred in the several classes of forests :—

—	Area on 31st March 1887.			Added during the year 1887-88.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
A. Reserved forests under Act ..	474 +1	1,838	2,313	150½	564	714½
B. Forests reserved under previous rules	786	280	1,066	..	..	..
C. Leased forests	198½	..	198½	..	..	..
D. Reserved lands	3,838 +2,492	3,655	9,985	227	2,088	2,315
E. Other forests	..	1,099	1,099	..	166	166
Total ..	7,789½	6,872	14,661½	377½	2,818	3,195½

—	Excluded during 1887-88.			Area on 31st March 1888.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
	8	9	10	11	12	13
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
A. Reserved forests under Act ..	..	..	..	625½	2,402	3,027½
B. Forests reserved under previous rules	16½	36	52½	769½ 198½	244 ..	1,013½ 198½
C. Leased forests	..	..	..	6,357½	5,152½	11,510
D. Reserved lands	199½	590½	790	..	1,250	1,250
E. Other forests	..	15	15	..	..	..
Total ..	216	641½	857½	7,951	9,048½	16,999½

The whole of the 198½ square miles shown under "leased forests" belongs to the Northern Circle; the 46 square miles in the Southern Circle are shown, 29 square miles under "reserved forests" and 17 square miles under "reserved lands."

Form 59 B of the Northern Circle shows 17½ square miles as having been transferred to 59 A (reserved forests). On comparing the two forms, however, it is observed that only 16½ square miles have been so transferred, this area too being identical with part of the extent transferred from form 59 C (reserved lands). From this it is evident that the two forms are not exclusive of each other as they ought to be. About half a square mile (342 acres), has been shown in 59 A as constituting the Moyar reserved forest in the Nilgiris: but the area does not appear to have been transferred from either 59 B or 59 C.

150½ square miles of reserved lands in the Northern Circle and 564 in the Southern were notified under section 16 as against 328 and 313 in 1886-87.

At paragraph 11 of his report, the Northern Circle Conservator says that 166 square miles had to be *deducted* from the figures given last year under reserved lands in Ganjam. No such figures were, however, given last year, and instead of there being a *deduction* of 166 square miles there has been an *addition* of 554 square miles.

The following table compares the areas under each class of forest at the close of the year :—

—	Reserved forests.		Reserved lands.		Leased and other forests.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Northern Circle ..	474 + 1	625½	3,838 + 2,492	6,357½	984½	968
Southern do. ..	1,838	2,402	3,655	5,152½	1,379	1,494
Total ..	2,313	3,027½	9,985	11,510	2,363½	2,462

4. (*a*) *Settlement.*—The subjoined abstract shows the progress made in this direction :—

—	Unsettled.		Settled.	Balance
	Balance on 31st March 1887.	Added during 1887-88.	During 1887-88.	To be settled.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Southern Circle	1,725	1,141	564	2,302
Northern do.	6,114¾	227	199½	6,142¼
Total ..	7,839¾	1,368	763½	8,444¼

Of the 2,302 square miles shown as balance in the Southern Circle, 794 have been settled and reported on but not declared; and 684 settled but not reported on. Similar information is not given for the Northern Circle, but the Conservator states that over a hundred blocks had been finally settled and were awaiting notification under section 16.

The backwardness of settlement is therefore more apparent than real and the current year should see a large increase to the settled area, a great deal due to work which was done in the year under report. Settlement work is almost complete in the Nílgiris and is making good progress in Salem, Cuddapah and Nellore: large areas in Kurnool and Godávari are virtually completed. The disposal of the numerous claims to trees and lands, included in the Sríharikót reserve, has caused much delay, as have also the shrotriem and zemin claims in the same district: progress in Bellary and Anantapur, mainly owing to the two districts being placed under one District Forest-officer, who had not time to attend to settlement, was slow.

The greater part of the area is being settled by the four Special Forest Settlement-officers appointed to the work.

District details of the work done during the year will be found in the subjoined table :—

Southern Circle.	Area already settled.	Balance at the close of the year 1886-87.	Notified under section 4 in 1887-88.	Notified under section 16 in 1887-88.	Balance to be settled.
Chingleput	63	35	15	24	26
North Arcot	195	174	314	..	488
South Arcot	3	217	14	59	172
Salem	172	525	111	388	248
Trichinopoly	31	148	..	13	135
Tanjore	..	7	12	..	19
Coimbatore (North) ..	99	..	470	..	470
Coimbatore (South) ..	566	..	..	..	..
Madura	287	95	108	16	187
Tinnevelly	287	252	50	..	302
Malabar (North) ..	118	143	..	..	143
Malabar (South) ..	16	24	19	24	19
South Canara	1	105	28	40	93
Total ..	1,838	1,725	1,141	564	2,302

Northern Circle.	Area already settled.	Balance at the close of the year 1886-87.	Notified under section 4 in 1887-88.	Notified under section 16 in 1887-88.	Balance to be settled.
Ganjam	..	540½	..	8½	532
Vizagapatam	..	..	8	..	8
Godávari	..	646½	65½	+ 4	708
Kistna	..	691½	15½	13 + 8	686
Nellore	1½	511	6½	37	480½
Cuddapah	272	1,573	..	+37 78	1,458
Kurnool	..	1,677	41½	..	1,718½
Bellary	..	1984	3	..	201¼
Anantapur	13½	156½	87	..	243½
Nílgiris	188	120	..	14	106
Total ..	475	6,114¾	227	150½ +49	6,142¼

5. *Demarcation.*— In the Southern Circle 1,701 miles were demarcated at a cost of Rs. 11,613, the average per mile being Rs. 6-13-2 against Rs. 7-11-2 last year; in the Northern Circle 1,645 miles were done at a cost of Rs. 27,225, the average per mile being Rs. 16-8-9. The style of demarcation varies from an actual wall to simple posts, but the usual form appears to be that of cleared lines with cairns at the angles. In the Southern Circle the planting of palmyras and cuttings of banyans and other trees along the boundary line, is being tried and, as a means of showing out the boundary, should be very effective: with the style the cost, too, varies; but except in

Cuddapah and Anantapur, where the excess is reported to be due in the one case to fraud and in the other to mismanagement, it does not appear to be in any case excessive. In the Northern Circle, the work paid for was more than double that paid for in the Southern Circle; Ganjam Rs. 6,535, 138 miles; Cuddapah Rs. 5,650, 177 miles; Kistna Rs. 4,827, 206 miles; Nellore, Rs. 3,798, 429 miles, coming first in the former and Salem in the latter. The possibility of a uniform system of demarcation is being considered, but meanwhile, both Conservators should draw as distinct a division as possible between the rough and the completed demarcation and between the creation of new lines and the upkeep of old ones.

The Conservator, Southern Circle, has made an effort to estimate the work remaining to be done, but his data are too rough for the estimate to be of any use.

6. *Survey.*—Only one block, a fire-protected one, was surveyed in the Northern Circle. In the Southern Circle some departmental work was done, chiefly in the direction of outline surveys of reserved blocks; but though useful as preliminary work, it is not relied on as being very accurate; some 117 square miles are estimated to have been surveyed in this way, at a cost of Rs. 5,864 or a little over Rs. 50 a square mile.

The following work was also done by the Survey of India Party, viz. :—

Madura. { Topography of 245 square miles on the 1-inch scale.
Do. of 8 square miles on the 4-inch scale.

Tinnevelly.—Triangulation in advance of 1,000 square miles; and a bill for Rs. 11,000 was sent in for it. Almost the whole of the topography, however, is on too small a scale, to be of use in carrying out working-plans and will have to be repeated on the 4-inch scale. This will be done by the same party, to whom, it was decided after considerable discussion throughout the year, to entrust the whole of the forest survey work of the Presidency for the future.

A forest atlas of the Presidency on a small scale, showing reserved forests, proposed reserved forests and reserved lands, was prepared during the year and supplied to Government, to Collectors and to Conservators.

7. *Working-plans.*—Settlement is not yet sufficiently advanced for much to be accomplished in the way of working-plans; a commencement, however, of getting things into order has been made in some districts; in the Northern Circle, the Nílgiri plantations, the Sandúr leased forest and the Balapalle forest continued to be worked on the preliminary plans already drawn up; a cyclone blew down so many trees as to alter the working of the plan drawn up for the Sríharikót jungles, and the plan suggested for some of the Kistna blocks will have to be altered, now that it is probable that the railway will be worked with Singareni coal, instead of with fuel; the rough plan drawn up for Ganjam was not acted upon during the year and a fresh one is being drawn up, the chief features of which are rest, either complete or partial, for reserves overworked under the permit system, and selection fellings by blocks in the remainder. In the Southern Circle, existing plans were worked upon in North Arcot (996 acres), Salem, Trichinopoly and South Coimbatore; new plans were submitted to Government for parts of the Bolampatti range; a plan was matured for an area of 21 square miles in Trichinopoly, and other plans are under discussion. In future reports, Conservators are requested to show, in statement form, the area under working-plans: this is the real test of forest organization, but it cannot be gathered from the present reports.

8. *Fire-protection.*—The subjoined table shows the area attempted and the area burnt in each circle, as also the cost incurred :—

Northern Circle.

Districts.	Area attempted.	Burnt.	Expenditure.	Cost up to end of year.	Since when protected.
	SQ. MLS.	SQ. MLS.	RS.	RS.	
Ganjam	70¾	1½	1,622	2,682	1885
Vizagapatam	..	..	..	..	..
Godávari	115	43¼	98	98	1887 & 1888.
Kistna	36	..	804	3,106	1884 & 1885.
Nellore	117½	7⅛	376	641	1885.
Cuddapah	318	22	4,334	21,739	In different years beginning from 1867.
Kurnool	30	3½	275	2,755	1884 & 1887.
Bellary	274½	19⅛	3,140	10,708	Different years beginning from 1883.
Anantapur	79½	⅛	1,234	5,270	1884, 1885 & 1886.
Nilgiris	279	4¼	2,566	10,699	Different years from 1883.
Total ..	1,320	101	14,449	57,698	

Southern Circle.

Districts.	Area attempted.	Burnt.	Expenditure.	Cost up to end of year.	Since when protected.
	SQ. MLS.	SQ. MLS. ACS.	RS.	RS.	
Chingleput	24⅛	21	283	2,166	1883, 1884, 1887 and 1888.
North Arcot	488	SQ. MLS. 7½	2,423	13,451	Various years from 1879.
South Arcot	121¼	„ 1½	1,232	4,423	Various years from 1877.
Salem	48¼	..	2,471	12,637	Various years from 1881.
Trichinopoly	68¾	ACS. 50	676	1,649	Various years from 1885-86 and 1887-88.
Tanjore	..	..	..	..	..
Coimbatore, North	3¾	..	278	977	Various years from 1879.
Coimbatore, South	25⅝	..	1,791	5,822	Various years from 1882-83.
Madura	283⅜	SQ. MLS. 1	4,600	18,668	Various years from 1882-83.
Tinnevelly	77¼	SQ. MLS. 2⅜	3,039	7,771	Various years from 1884-85.
Malabar, North	52½	„ 2¾	1,136	3,283	Various years from 1882-83 and 1887-88.
Malabar, South	43½	..	1,794	8,561	Various years from 1860-61.
South Canara	13	ACS. 2	988	1,619	Various years from 1882-83.
Total ..	1,250	SQ. MLS. 15½ and ACS. 73	20,712	81,027	

ABSTRACT.

Northern Circle	1,320	101	14,449	57,698
Southern do.	1,250	15½	20,712	81,027
Total ..	2,570	116½	35,161	1,38,725

From the above it will be seen that the percentage of failures to area attempted is 7·65 for the Northern Circle and 1·14 for the Southern. Out of 1,320 square miles attempted in the former circle, 612 were under special protection and the balance under the ordinary staff. In the Southern Circle, the figures were respectively 1,250, 665 and 585 square miles.

The total cost of operations amounted to Rs. 14,449 for the Northern Circle and Rs. 20,712 for the Southern Circle, giving an average of Rs. 10-9-0 per square mile for the former and Rs. 16-5-0 for the latter circle.

Fire protection is most forward in North Arcot 488, Cuddapah 318, Madura 283, the Nilgiris 279 and Bellary 274 square miles; but in all districts, except Vizagapatam and Tanjore, a beginning has been made, and the percentage of successes to failures was in most cases fair. Forty-five square miles were burnt in Godávari, but early in the season, so that much damage was not done; two considerable fires occurred in Ganjam and fires are reported from North Arcot and Tinnevelly. The protection of areas by the ordinary staff was, if the figures are reliable, most successful, and the Board would like to have been furnished with some idea of the forest growth on these areas. The figures compare with those of last year as follows:—

Circle.	1886-87. Area attempted.	1886-87. Area protected.	1886-87. Cost.	1887-88. Area attempted.	1887-88. Area protected.	1887-88. Cost.
	SQ. MLS.	SQ. MLS.	RS.	SQ. MLS.	SQ. MLS.	RS.
Northern	1,081	1,043	16,811	1,320	1,219	14,449
Southern	1,168	1,016	12,133	1,250	1,234	20,712
Total ..	2,249	2,059	28,944	2,570	2,453	35,161

In regard to unprotected areas, the information given is indefinite: in Godávari firing is universal; in Kistna 10 per cent. escapes; in Kurnool 15 per cent; in the Southern Circle all areas not reserved are burnt. Even if accurate, the figures are misleading, for even if an area escapes one year, it is probably burnt the next, all the more destructively. The Board do not believe that any area in the ordinary dry forests escapes for a series of years.

It is observed that the statements made in the body of the Northern Circle report in respect of fire protection do not all agree with the information furnished in the return. Thus, while form 62 shows 200 square miles as having been specially protected and 118 as having been under ordinary protection in Cuddapah, the report gives the figures at 214 and 101, respectively. Again, in Bellary only 103 square miles are said to have been attempted, but the form gives the figure at 274.

It may also be remarked that in bringing forward the figures of last year, a great many alterations * have been made, which affect the classified totals. The explanation given is that errors of omission and commission had crept into the last year's return and that they have been corrected now.

As per report.	Specially protected. ACS.	Ordinarily protected. ACS.
*1886-87 ...	259,567	390,497
1887-88 ...	301,282	351,528
Difference ...	+ 41,715	— 38,969

	ACS.
Area omitted in 1886-87	2,876
Deduct area given in excess in 1886-87.	130
	2,746

9. *Grazing.*—The receipts under this head amounted to Rs. 59,773 in the Northern and Rs. 46,038 in the Southern Circle.

District details are given below:—

Northern Circle.

	RS.
Ganjam	...
Vizagapatam	...
Godávari	947
Kistna	38,711
Nellore	12,784
Cuddapah	1,227
Kurnool	4,888
Bellary	403
Anantapur	16
Nilgiris	797
Total ...	59,773

Southern Circle.

	Rs.
Chingleput	1,244
North Arcot	30
South Arcot	2,226
Salem	...
Trichinopoly	5,140
Tanjore	593
Coimbatore (North)	29,049
Coimbatore (South)	5,584
Madura	1,524
Tinnevelly	609
Malabar (North)	...
Malabar (South)	27
South Canara	12
Total ...	46,038

As in the last year, the revenue under this item was largest in Kistna. In Nellore, the kanchas (pasture lands) were taken up by the department for the first time and Rs. 12,784 realized. It is expected that the item will show a steady increase in future years. In Kurnool, Mr. Hooper tried the system of grazing permits with marked success. 75,660 head of cattle were grazed and a revenue of Rs. 4,888 made. The rate was only an anna per head, but it is proposed to double it this year. It is satisfactory to note that the people take to the system kindly, but too rapid an increase of fees must not be attempted. In Anantapur, 25,945 head loads of grass were removed, apparently free of payment, from the Muchukota forest. In the Southern Circle, the grazing revenue was largest in North Coimbatore. No fees were levied in North Arcot, Salem, Malabar and South Canara, but it is intended to levy them from next year in the first two districts. As regards the other two, it is doubtful whether in view of the large extent of private forests available for the purpose and of the limited number of local cattle, the State forests will ever be indented on for grazing.

The Conservators' remarks on this subject are interesting and show that the tact and caution exercised by them in the matter are bearing fruit, that grazing is being gradually brought under control and that the fee system is being successfully introduced, without complaint on the part of the ryots: the same tact and caution must continue to be exercised and progress in the direction of the 4 lakhs of revenue, which the Conservator, Southern Circle, looks forward to, must be slow: forest conservancy must not be lost sight of in the desire to make revenue and the exclusion of goats altogether—some 23,000 were among the cattle licensed in Kurnool—and the restriction of other cattle to particular blocks, in rotation, are matters which will give Conservators and Collectors room for the exercise of much discretion.

10. *Police.*—The prosecutions for forest offences instituted during the year and their disposal are exhibited in the subjoined statement:—

Circle.	Pending from 1886-87.	In 1887-88.	Total.	Convictions.		Acquittals.		Compounded.		Total.	
				No.	Persons.	No.	Persons.	No.	Persons.	No.	Persons.
Northern Circle.	103	1,455	1,558	888	2,122	339	1,055	206	655	1,433	3,832
Southern do.	156	1,644	1,800	791	1,646	230	925	581	1,575	1,627	4,305
				withdrawn.		25	159				
						255	1,084				
Total ..	259	3,099	3,358	1,679	3,768	594	2,139	787	2,230	3,060	8,137

Percentage of convictions to total cases.

—	Pending.	Percentage of convictions to total disposed of.	Percentage of compounded cases to total disposed of.
Northern Circle	125	61·9	14·3
Southern do.	173	48·61	35·7

and the following statement compares the results of the year with those of previous years:—

—	Cases.	Convictions.	Acquittals.
1885-86	2,269	1,280	832
1886-87	2,493	1,120	543
1887-88	3,358	1,679	594

Two hundred and six cases were compounded during the year in the Northern Circle, the number of persons implicated being 655, as against 581 and 1,575 in the other circle. The compensation realized in the former circle was Rs. 1,148, which gives an average of Rs. 1-12-0 per person accused and Rs. 5-9-2 per case. The Southern Circle figures were respectively Rs. 3,271, 2-1-3 and 5-10-1. By far the largest number of cases occurred in Salem, 356; Trichinopoly, 344; then come Kistna, 331; Cuddapah, 280 and Vizagapatam, 216. The increase in Salem is said to be due to the increase of watchers; the majority of these cases were compounded. It will be seen that more use was made of the power to compound in the Northern Circle compared with last year, 206 cases against 111.

The Northern Conservator has entered a compounded case as "acquitted"; this is not understood.

11. *Roads and Buildings.*—A comparatively small amount was spent in the Northern Circle on roads: of Rs. 21,200 allotted, Rs. 6,879 only were spent, the rest being partly transferred to other heads, but mainly allowed to lapse. Most work was done in Cuddapah, where the work of making roads in the Balapalle and Seshachalam reserves was steadily continued, 10 miles for Rs. 2,520 and the Nílgiris, where steady progress was also made at a cost of Rs. 2,202: a certain amount of tracing work was also done in Ganjam and 9 miles of road completed in Godávari. Better work was done in the Southern Circle, where Rs. 14,024 were spent, of which Rs. 4,610 were for repairs and Rs. 9,414 for new works. The chief items were the Kariar Kannai Kottai Odai road and Parapavillai bridge in Tinnevelly, the Madapalli-gulur road in North Malabar and the Dhoni road and Walayar bridge in South Malabar. Materials were also collected for the Amerdi bridge in North Arcot and a number of small but useful works carried out.

In respect of *buildings* good work has been done in both circles: in the Northern Circle, Rs. 14,604 were spent and in the Southern Circle, Rs. 17,307. In Kurnool, the Forest-officer's head-quarter bungalow was completed and in Malabar the District Forest-officer's bungalow at Nilambúr was in course of construction: besides these, two range houses were completed and one begun in Cuddapah: five substantial buildings were built in Ganjam: one rest-house was completed and three others begun in Godávari: five rest houses were constructed in North Coimbatore and two in Madura: a ranger's office was built in Tinnevelly and two other buildings begun and one rest house was built in Chingleput and a number of guards' houses and tannah huts were also constructed.

The expenditure under these heads is compared in the subjoined table :—

Circle.	Roads.		Buildings.	
	1886-87.	1887-88.	1886-87.	1887-88.
	Rs.	Rs.	Rs.	Rs.
Southern Circle	9,524	14,024	15,443	17,307
Northern do.	11,219	6,879	14,461	14,604
Total ..	20,743	20,903	29,904	31,911

12. *Natural Reproduction.*—Conservators speak now with the experience of several years, and of a large area of forests, under varying degrees of protection, and they report that, given protection from fire and cattle, the natural reproduction is sufficiently strong to reclothe the ground: the rapidity of growth, of course, depends greatly on soil and rainfall, but even on the dryest and barest hill sides, it seems to be only a matter of time: the essential is complete protection, and the Conservators give numerous specific instances of successful regrowth where this has been obtained. The most valuable trees, sal, teak, Hardwickia, Pterocarpus and satinwood, as also blue-gum and casuarina are reported to be also the most vigorous reproducers, both from coppice and from seed; in regard to the latter it would be interesting to learn how far the time of the fall of the seed affects its struggle for existence. Complaint is made in some cases, that the first growth is a dense scrub of elephant grass, bushes or thorny creepers, and fears are expressed that this may kill out the young seedlings: the experiment requires to be watched; but in the dryer districts, at any rate, some such covering appears necessary to protect the young seedlings from the drought of the hot weather; and though such protection may be unnecessary for the moister forests, it seems probable that the young trees will push through it in time, while the cost of removing it would probably be prohibitive.

13. *Artificial reproduction.*—Artificial reproduction on the contrary was not satisfactory, and though in particular places plantations such as those of casuarina on the coast, or blue gum on the hills, or teak at Nilambúr, may pay, as a general rule they appear to be most unsuccessful, and anything in the shape of broadcast sowing appears to be absolutely useless.

The figures for the year show a slight increase under "plantations" and a slight decrease under "cultural operations." They are as follows:—

—	Regular plantations.		Cultural operations.		Remarks.
	1886-87.	1887-88.	1886-87.	1887-88.	
	Rs.	Rs.	Rs.	Rs.	
Northern Circle	9,191	* 14,729	1,662	* 1,394	* As per form 60, but less than form 64 by Rs. 728 incurred on plantations and cultural operations which have proved failures or been abandoned or sold.
Southern do.	29,275	† 24,609	3,634	1,978	† Less than form 64 by Rs. 171 incurred in 1885-86, but adjusted in 1887-88.
Total ..	38,466	39,338	5,296	3,372	

The only noticeable points are the heavy loss of casuarina seedlings in Nellore, over 50,000, and Chingleput, over 13,000, and the extensive planting of palmyras in Tinnevelly, over 100,000, and Cuddapah, 30,000: the planting of teak, mahogany and bamboos was continued at Nilambúr, and seedlings of Hardwicka and Satinwood were planted out at Balapalle. The Cuddapah mahoganies are reported not to be a success.

14. *Topes.*—There were 364 topes in the Northern Circle with an area of 13,715 acres. The cost of maintenance during the year, exclusive of Rs. 163, which should have been shown in the previous year's return, amounted to Rs. 3,348.

In the Southern Circle, there were 1,281 topes, with an area of 18,883 acres: Rs. 3,381 were spent on them. In this circle some of the topes were handed over to Local and Municipal bodies, and some to the Land Revenue Department.

15. The total expenditure on plantations, cultural operations and topes amounted to Rs. 20,213 for the Northern and Rs. 30,139 for the Southern Circle. The following statement compares the year's expenditure on the improvement of forests with those of past years :—

—	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.		Total.
					Northern Circle.	Southern Circle.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sowing and planting ..	65,326	70,423	63,244	64,721	20,213	30,139	50,352
Fire-protection ..	11,223	18,945	25,467	28,956	14,449	20,712	35,161
Other works	36,793	22,306	25,302	27,979	5,313	26,291	31,604
Total ..	113,342	1,11,674	1,14,013	1,21,656	39,975	77,142	1,17,117

16. *Exotics.*—The results of the experiments with exotics have been given in separate appendices. Germination from the seed of *date* fruits purchased in the bazaar was good and the plants appear to stand transplanting well; in both these respects, they are fully equal to the specially-imported seed and offsets; of the latter, 417 are alive of the 517 received in the Southern Circle in 1886-87, and are said to be looking healthy: the difference in the percentage of casualties even in plantations in the same district, as in Tanjore, seems to show that some of the loss was avoidable: the dates are reported to do better on the sandy soil of the East, than in the wet climate of the West Coast. Nothing is said about fruiting, and the formation of plantations on an extended scale was postponed to the present year. Wherever they have had a good soil and moist climate, *mahoganies* have done well: in Nilambúr, a tree, 14 years old, is 71 feet high and 46 inches in girth, at breast high; in the Kullar range, trees planted in 1885-86 have attained a height of from 10 to 14 feet; in Wynaad, plants planted out in the year, average 3½ feet in height, and in Trichinopoly, plants obtained in 1886, range from 8 to 11½ feet high; in poor and dry soil, the growth is not so good, and in Srîharikót the plantation is said to be a failure; as with the dates, much of the loss appears to be due to want of either care or experience in transplanting and tending, and is probably avoidable; the plants suffer badly from borers and beetles; in private gardens in Madras, *e.g.*, Mr. H. C. King's, they grow luxuriantly.

The giant *bamboos* in Wynaad made vigorous growth: the various *rubber* plants and the Ipecacuanha there, also did well; the latter was tested by the Government Botanist and found to yield excellently. The commencement of what promises to be a successful experiment was made with Sappan wood in Wynaad, 2,000 seeds being planted out and germinating without a failure: a few *eucalypti* have grown at heights down to 2,500 feet and are said to be doing well; they seeded at Palmanér; 78 *olive* trees, a foot high, raised from seeds sent in 1886-87, are also in the Wynaad nurseries; in the same place, Lancewood seems to have been a failure.

The Conservator of Forests, Northern Circle, should arrange his report by subjects, instead of by districts.

17. *Yield and working.*—The timber returns of the Northern Circle have not been carefully prepared. The several cognate forms do not tally, and even the last year's figures have not been correctly brought forward in some instances. The Conservators, moreover, though, in accordance with the Board's instructions, they have returned the quantities collected and disposed of in tons, instead of in the various measures hitherto used, have used different factors for the conversion. Thus, while 50 cubic feet of timber make a ton in the Northern Circle, 40 are given as its equivalent in the Southern. Again, 75 cubic feet of bamboos are taken as equal to a ton in the one circle, while in the other the measurement is regulated by local circumstances. The Southern Conservator's multiples appear to have been those contained in his

Circular *re* permits, approved in Board's Proceedings, dated 10th March 1885, No. 151, Forests.

Correcting these mistakes the subjoined abstract shows the total yield of the year in the two circles. The figures are not fully available for free grants in the Northern Circle in the report for which money value is given instead of quantity:—

—	Timber.			Firewood.			Bamboos.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7	8	9	10
By Departmental agency ..	3,794	3,432	7,226	16,493	9,422	25,915	1,711	238	1,949
,, consumers	27,260	27,375	54,635	1,06,349	1,49,773	2,56,082	36,230	27,206	63,436
,, confiscations, &c. ..	3,550	336	3,886	150	243	393	84	28	112
,, free grants	..	1,259	1,259	..	113	113	..	569	569
Total ..	34,604	32,402	67,006	1,22,992	1,59,511	2,82,503	38,025	28,041	66,066

—	Sandalwood.			Minor produce.			Total.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
	11	12	13	14	15	16	17	18	19
By Departmental agency ..	19	27	46	50	422	472	22,067	13,541	35,608
,, consumers	..	..	..	13,481	25,880	39,361	1,83,320	2,30,194	4,13,514
,, confiscations, &c. ..	..	..	..	..	65	65	3,784	672	4,456
,, free grants	..	..	..	..	110	110	..	2,051	2,051
Total ..	19	27	46	13,531	26,477	40,008	2,09,171	24,658	4,55,629

NOTE.—The above statemont does not include grazing and fodder grass for which details of *quantity* removed are not available.

The free grants are still large in Vizagapatam, the quantities being 415 tons of timber, 553 of firewood and 1,192 of minor produce. The only other district requiring notice in the Northern Circle is Ganjam, where some 1,330 trees were given away for rebuilding houses destroyed by fire. In the Southern Circle, the grants were largest in South Canara (911 tons of timber, value Rs. 3,300) and Salem (518 tons of bamboos, value Rs. 1,460).

18. *Departmental operations.*—The "selection fellings" of the year show a decrease in both circles. The trees felled were:—

	Northern Circle.	Southern Circle.
Teak	222	488
Sal	1,220	...
Eucalyptus	13,857	...
Vengai	...	386
Rosewood	...	168
Miscellaneous	1,519	3,375
Total ...	16,818	4,417

The figures last year were 19,657 and 8,157, respectively. In the former circle, unsatisfactory work was done in Ganjam, where much worthless timber was carted into the depôts,—the question raised by the Conservator of writing off a quantity of

this has been disposed of separately (Board's Proceedings, dated 10th September 1888, Forest No. 481),—and in the Nílgiris, where fellings were slack and made at haphazard: in Sríharikót less fuel was cut, because the Madras market was still glutted with storm wood. The short felling in the Southern Circle occurred in North Malabar where the demand at the usual prices had fallen while there was a large stock on hand.

In the Northern Conservator's report (paragraph 30), it is stated that most of the bamboos (included by him in "selection fellings," but excluded by the Board) were felled in Cuddapah and Bellary; but form 68 does not show any bamboos as having been cut in Bellary. The correct district is Ganjam. This mistake has been followed by the entire omission of the bamboos in form 69.

The timber and other produce collected by the department during the year are compared below:—

—	Northern Circle.		Southern Circle.		Total.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.
Timber	1,051	3,794	5,997	3,432	7,048	7,226
Firewood	24,042	16,493	12,156	9,422	36,198	25,915
Bamboos	450	1,711	200	238	650	1,949
Sandalwood	22	19	11	27	33	46
Minor produce	160	50	382	422	542	472

The total departmental sales of the year from both depôts and forests were as follows:—

—	Quantity.			Value.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7
	TONS.	TONS.	TONS.	RS.	RS.	RS.
Timber	2,566	3,992	6,558	47,280	1,08,660	1,55,940
Firewood	10,216	9,758	19,974	54,883	40,729	95,612
Bamboos	1,491½	316	1,807	2,406	852	3,258
Sandalwood	17½	3	20	5,804	690	6,494
Minor produce	33	348	381	4,920	36,438	41,358

—	Rate per ton for 1887-88.			Rate per ton for 1886-87.		
	In Northern Circle.	In Southern Circle.	Average.	In Northern Circle.	In Southern Circle.	Average.
	8	9	10	11	12	13
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Timber	18 7 0	27 3 6	22 13 3	17 6 3	20 15 7	19 2 11
Firewood	5 5 11	4 2 9	4 12 4	5 0 1	2 8 7	3 12 4
Bamboos	1 9 9	2 11 1	2 2 5	2 0 0	..	..
Sandalwood	341 6 7	230 0 0	285 11 3	409 1 6	361 3 6	385 2 6
Minor produce	149 1 6	104 11 3	126 14 5	51 10 0	73 7 0	62 8 6

Out of these the following quantities were received into and sold from depôts:—

—	Timber.		Firewood.		Bamboos.		Sandalwood.		Minor produce.	
	Received.	Sold.	Received.	Sold.	Received.	Sold.	Received.	Sold.	Received.	Sold.
	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.
Northern Circle	2,839	2,456	4,771	6,375	1½	1½	..	..	76¼	42¼
Southern do.	1,787	1,841	2,574	2,633	148	299	27	3	99	100
Total ..	4,626	4,297	7,345	9,008	149½	300½	27	3	175¼	142¼

The stock on hand at sale depôts at the close of the year amounted to—

—	Timber.	Firewood.	Bamboos.	Sandal-wood.	Minor produce.
Northern Circle	583	719	1½	..	104½
Southern do.	1,527	429	5	36	..
Total ..	2,110	1,148	6½	36	104½

the total value being, respectively, Rs. 24,351 and Rs. 53,780, against Rs. 25,091 and Rs. 64,927 last year.

19. *Removals by purchasers themselves.*—By far the largest proportion of the forest revenue comes in under this head; the amounts realized amounting to Rs. 4,43,904 for the Northern Circle and Rs. 6,03,580 for the Southern, against Rs. 4,09,078 and Rs. 5,40,115 last year. In the Northern Circle the receipts were largest in Cuddapah, Kurnool and Godávari. In the last-mentioned district, there was an increase of about Rs. 20,000 over the revenue of last year, due, the Conservator states, to merchants getting over their objection to sale by the cubic foot. In Kurnool, there was a decrease, owing to the introduction of the system of issuing permits for individual trees when standing instead of for the cart-loads when cut. In the Southern Circle the receipts rose by about Rs. 63,465 and the quantity removed was some 13,000 tons more than last year. Madura, Trichinopoly, Salem and North Arcot were the largest contributors.

20. *Financial.*—The results of the year's working are summed up in the following abstract:—

—	Revenue.	Expenditure.			Balance.
		A. Conservancy and Works.	B. Establish-ments.	Total.	
	Rs.	RS.	RS.	RS.	RS.
Northern Circle	5,64,723	2,13,009	2,35,785	4,53,794	1,10,929
Southern do.	8,10,197	3,35,437	3,28,981	6,64,418	1,45,779
Total ..	13,74,920	5,53,446	5,64,766	11,18,212	2,56,708

It will thus be seen that there was a balance of Rs. 1,10,929 in favor of the Northern Circle and of Rs. 1,45,779 in favor of the Southern, making a net surplus of a little over the 2½ lakhs required from the department.

This is of course exclusive of capital invested in live stock, tools and plant, acquisition of lands, &c.

The following statement shows the receipts and charges for the six years during which the new system, inaugurated by Dr. Brandis, has been in force, and seeing that Dr. Brandis' forecast was for simple equilibrium only, it may be considered very creditable to the department:—

—	Receipts.	Charges.	Surplus.
	RS.	RS.	RS.
1882-83	9,03,914	6,36,558	2,67,356
1883-84	9,58,991	7,80,916	1,78,075
1884-85	11,62,689	8,84,421	2,78,268
1885-86	11,98,600	9,36,431	2,62,169
1886-87	12,46,783	11,55,687	91,096
1887-88	13,74,920	11,18,212	2,56,708

The following statement shows the actuals compared with the estimates:—

Receipts.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	96,660	37,133	— 59,527	1,86,958	1,10,528	— 76,430
(b) Firewood and charcoal .	72,080	57,517	— 14,563	43,850	41,668	— 2,182
(c) Bamboos	3,200	2,365	— 835	1,860	805	— 1,055
(d) Sandalwood	10,000	5,804	— 4,196	4,200	690	— 3,510
(e) Grass and other minor produce	9,890	4,920	— 4,970	31,625	36,439	4,814
II. Timber and other produce removed from the forests by consumers or purchasers—						
(a) Timber	1,10,000	1,19,871	9,871	89,300	98,883	9,583
(b) Firewood and charcoal ..	1,14,900	1,01,263	— 13,637	1,67,038	1,58,618	— 8,420
(c) Bamboos	42,700	44,370	1,670	76,025	76,254	229
(d) Grazing and fodder grass.	58,200	59,773	1,573	31,875	46,038	14,163
(e) Other minor produce ..	94,750	1,18,627	23,877	1,94,341	2,23,787	29,446
III. Confiscated, drift and waifwood.	10,230	9,328	— 902	2,916	3,054	138
IV. Revenue from forests not managed by Government ..	..	14	14	..	..	..
V. Miscellaneous—						
(a) Fines and forfeitures ..	310	334	24	1,400	1,573	173
(b) Refunds	570	448	— 122	550	3,402	2,852
(c) Other sources	1,510	2,956	1,446	4,862	8,458	3,596
Total ..	6,25,000	5,64,723	— 60,277	8,36,800	8,10,197	— 26,603

Charges.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	36,410	24,246	— 12,164	62,847	45,243	— 17,604
(b) Firewood and charcoal ..	30,350	39,565	9,215	16,405	16,759	354
(c) Bamboos	1,450	1,218	— 232	790	216	— 574
(d) Sandalwood	3,600	3,067	— 533	1,340	1,193	— 147
(e) Grass and other minor produce	7,250	3,056	— 4,194	20,110	28,296	8,186
II. Timber and other produce removed from the forests by consumers or purchasers ..	26,810	24,162	— 2,648	55,729	44,483	— 11,246
III. Confiscated, drift and waifwood	1,570	1,800	230	965	200	— 765
IV. Revenue from forests not managed by Government ..	..	24	24	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government	13,500	13,500	..	4,010	1,943	— 2,067
VI. Live and dead stock—						
(a) Purchase of cattle ..	10,000	..	— 10,000	1,170	4,122	2,952
(b) Feed and keep of cattle ..	2,300	1,336	— 954	8,408	6,583	— 1,825
(c) Stores, tools and plant ..	9,300	3,627	— 5,673	6,560	5,678	— 882
VII. Communications and buildings—						
(a) Roads and bridges ..	21,200	6,879	— 14,321	17,025	14,024	— 3,001
(b) Buildings	31,900	14,604	— 17,296	26,000	17,307	— 8,693
(c) Other works	800	883	83	1,100	1,157	57
VIII. Demarcation, improvement and extension of forests—						
(a) Demarcation	18,600	27,225	8,625	15,628	11,613	— 4,015
(b) Compensation for land and rights	12,400	8,650	— 3,750	6,747	45,723	38,976
(c) Surveys and working-plans	3,450	1,385	— 2,065	7,669	5,864	— 1,805
(d) Plantations	20,300	20,213	— 87	36,763	30,139	— 6,624
(e) Protection from fire ..	15,600	14,449	— 1,151	24,820	20,712	— 4,108
(f) Other works	6,200	5,313	— 887	31,436	26,291	— 5,145

Charges—cont.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
IX. Miscellaneous—						
(*a*) Refunds	480	1,043	563	965	1,643	678
(*b*) Law charges	440	1,070	630	1,550	2,353	803
(*c*) Other do.	2,090	694	— 1,396	3,263	3,895	632
Total ..	2,76,000	2,18,009	— 57,991	3,51,300	3,35,437	— 15,863
I. Salaries—						
(*a*) Conservators	12,400	12,500	100	17,450	20,401	2,951
(*b*) Superior officers	76,000	75,389	— 611	98,200	1,00,209	2,009
(*c*) Subordinate forest and depôt establishments ..	70,000	64,250	— 5,750	94,500	88,964	— 5,536
(*d*) Office establishments ..	30,000	28,870	— 1,130	44,700	43,580	— 1,120
(*e*) Deputation and special allowance	..	..	..	902	54	— 848
II. Travelling allowances—						
(*a*) Conservators	4,000	3,306	— 694	3,200	3,388	188
(*b*) Superior officers	20,000	18,287	— 1,713	23,000	22,662	— 338
(*c*) Subordinate forest and depôt establishments ..	19,000	17,400	— 1,600	29,000	26,952	— 2,048
(*d*) Office establishments ..	4,520	4,781	261	7,200	6,233	— 967
III. Contingencies—						
(*a*) Stationery	190	67	— 123	266	63	— 203
(*b*) Carriage of tents and recorus	1,660	1,475	— 185	2,903	2,052	— 851
(*c*) Rents, rates and taxes ..	875	897	22	1,349	1,418	69
(*d*) Pay of police guards ..	..	..	..	..	..	..
(*e*) Official postage	2,375	3,073	698	5,720	5,449	— 271
(*f*) Sundries	4,980	5,490	510	10,110	7,556	— 2,554
Total ..	2,46,000	2,35,785	— 10,215	3,38,500	3,28,981	— 9,519
Total of A, Conservancy and works ..	2,76,000	2,18,009	— 57,991	3,51,300	3,35,437	— 15,863
Grand Total of all expenditure ..	5,22,000	4,53,794	— 68,206	6,89,800	6,64,418	— 25,382

It will be seen that the revenue did not come up to the revised estimates of the year in either circle. The difference was larger in the Northern Circle than in the Southern, which fell off only by Rs. 26,600. The chief deficits occurred in Ganjam, Nellore, Kurnool and Nílgiris. In the first-named district the season for work was lost by the absence of a District Forest-officer during part of the time. Nellore firewood is still unable to find a market owing to the large stock of stormwood with which the local depôts are glutted. The non-realization of sums due from the Bellary-Kistna Railway is said to account for the short receipt in Kurnool. In the Nílgiris the budget was exaggerated.

The difference in expenditure was also great in the Northern Circle, and was mainly due to non-utilization of allotments. In Ganjam it was under Timber and Roads and has been already explained; in Godávari it was due to the non-purchase of elephants; in Nellore it was due to delay in indenting for a tramway and in settling compensation for claims to trees in the Sríharikota reserves; in Kurnool it was under Roads and Buildings, and included non-payment for the head-quarter's bungalow; in Nílgiris it was due to slack fellings of timber and abandonment of the proposed site for a bungalow at Mudumalai as being unhealthy.

In the Southern Circle, the difference was not large and requires no special notice. There was a falling off under I (*a*) Rs. 17,604, II Rs. 11,246 and VII (*b*) Rs. 8,693, but this was more than compensated by the increase under I (*e*) Rs. 8,186 and VIII (*b*) Rs. 38,976. During the year the Amarampalem forest estate was purchased at a court sale for Rs. 42,000 odd. The absence of officers on leave caused savings under B. in both circles.

Compared with last year, the expenditure under A and B was as follows:—

—	Northern Circle.			Southern Circle.		
	1886-87.	1887-88.	Difference.	1886-87.	1887-88.	Difference.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A	2,20,443	2,18,009	— 2,434	3,80,192	3,35,437	— 44,755
B	2,14,523	2,35,785	+ 21,262	3,40,529	3,28,981	— 11,548
Total ..	4,34,966	4,53,794	+ 18,828	7,20,721	6,64,418	— 56,303

The following statement shows the ledger account of each district:—

Districts.	Receipts.	Charges.	Surplus.	Districts.	Receipts.	Charges.	Surplus.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Cuddapah	1,45,202	75,070	70,132	Tinnevelly	56,794	45,996	10,798
Salem	1,26,409	60,413	65,996	Anantapur	19,655	14,030	5,625
North Arcot	1,05,904	56,546	49,358	Tanjore	9,327	6,931	2,396
Coimbatore, North ..	83,541	34,545	48,996	Chingleput .. .	20,153	18,003	2,150
Godávari	70,323	28,276	42,047	South Canara	57,194	56,084	1,110
South Arcot	91,212	50,237	40,975	Malabar, North	28,160	28,980	— 820
Kistna	77,665	36,966	40,699	Bellary	28,860	30,841	— 1,981
Kurnool	78,157	40,003	38,154	Vizagapatam	5,389	7,687	— 2,298
Nellore	80,290	58,957	21,333	Ganjam	20,079	40,115	— 20,036
Madura	68,609	38,227	20,382	Nílgiris	39,076	63,760	— 24,684
Coimbatore, South ..	72,284	58,964	13,320	Malabar, South	50,082	92,098	— 42,016
Trichinopoly	50,387	37,637	12,750				

21. *General.*—Excluding the unsatisfactory work in Ganjam and Nílgiris, the Board think that the year's working may be considered good. Steady progress is being made in reservation and settlement, rough working-plans are taking the place of the wasteful permit system, fire-protection is becoming something more than a mere name and forests are being opened out with roads and buildings. Grazing is also being brought under control and made to pay. Colonel C. Walker visited five districts and Mr. Cherry three in the Southern Circle, and Mr. Peet visited nine districts in the Northern Circle. District Forest-officers also travelled well; Messrs. Hooper, Homfray, Somers-Smith and Somasundra Mudaliar heading the list for time spent in camp. As usual, the want of superior officers was much felt, Vizagapatam and Anantapur having no proper District Forest-officers at all, and Ganjam being placed for six months under a Sub-Assistant; the lower grades are, however, being gradually strengthened by the appointment of men trained at the Dehra Dun School.

The Board regret the delay in the submission of this report. The Southern Circle Conservator's report was only received on 1st October last and his appendix on exotics not till 30th idem. In addition to this, the mistakes in the Northern Circle report have been most numerous and the necessary correction and ascertainment of correct figures in the Board's office have necessarily taken much time.

(True Copies and Extract.)

(Signed) H. A. SIM,
Acting Secretary.

To the Secretary to Government, Revenue Department,
with two reports, and a map (to be returned).

Copy to the Conservator of Forests, Southern Circle.
" to the Conservator of Forests, Northern Circle.
" to all Collectors.
" to the Examiner of Forest Accounts.

ORDER—dated 5th March 1889, No. 153, Revenue.

Forest, No. 16.

With their Proceedings read above, the Board of Revenue submit the annual reports of the Conservators of Forests on the administration of the Forest Department during the year 1887-88.

2. These reports, together with the Board's review of them, should reach the Government on or before the 1st September, but they have never been submitted till some months after that date, and the explanations offered have invariably been unsatisfactory. If the books of the District and Central offices are kept with care and the entries regularly posted up to date, it ought to be quite possible for the District officers to submit full reports and accurate statements by the 15th of May, and the Conservators should then be able to despatch their reports before the 15th of July. The Board will submit a special report on the subject and endeavour to suggest a radical cure for this chronic delay.

The defective nature and the general inaccuracy of the report of the Northern Circle have on previous occasions been noticed by the Board, the Government and the Government of India, and His Excellency the Governor in Council regrets to find that there has been no improvement in this respect. The numerous errors, both in the statements and in the body of the report, can only be due to want of ordinary care, and, although the fault may originally rest with District Forest officers, His Excellency in Council must hold the Conservator mainly responsible for the many defects which detract so largely from the value of his report.

3. *Area of Forests.*—The following statement shows the extent of the forests administered by the department and the changes that have occurred in the area during the year:—

Class of forests.	Area on 31st March 1887		Added during the year.	Excluded during the year.	Difference.	Area on 31st March 1888.	
	As given in the report for 1886-87.	As since corrected.					
Northern Circle.							
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	
A. Reserved forests under Act V.	474	475	150	..	+ 150	625	From B and D.
B. Reserved forests under previous rules.	787	786	..	17	— 17	769	17 to A. This is also included in the area transferred from D to A.
C. Leased forests ..	198	199	..	..	..	199	
D. Reserved lands ..	3,837	6,329	235	200	+ 35	6,364	150 to A. Fifty excluded at settlement.
E. Other forests	..	..	..	..	..	..	
F. Unclassed forests and waste lands.	..	..	..	..	..	..	
Total ..	5,296	7,789	385	217	+ 168	7,957	
Southern Circle.							
A. Reserved forests under Act V.	1,838	1,813	560	..	+ 560	2,373	From D.
B. Reserved forests under previous rules.	280	262	..	18	— 18	244	To D.
C. Leased forests ..	49	46	..	..	..	46	
D. Reserved lands ..	3,655	4,454	1,242	560	+ 682	5,136	560 transferred to A, 18 transferred from B, 15 from E, and 1,209 from F.
E. Other forests	1,099	1,099	166	15	+ 151	1,250	166 from F. 15 to D.
F. Unclassed forests and waste lands.	..	..	..	..	..	..	
Total ..	6,921	7,674	1,968	593	+ 1,375	9,049	
Grand Total ..	12,217	15,463	2,353	810	+ 1,543	17,006	

The area given in column 3 differs in some cases very widely from that shown in the preceding column. The most striking variations are under the head of reserved lands, the real area of which was very much understated in the reports for 1886-87, owing, in the Southern Circle, to a very considerable error in estimating the actual extent and in the Northern Circle, to the omission of over 2,000 square miles of forest of this class. The Government are unable to accept with confidence even the revised figures now given, for the area shown, under B in the Northern Circle appears to be included under D also, and the Conservator, Southern Circle, seems himself to have some doubt as to the propriety of his classification in respect of the extent under E. The Board should make further inquiries on these two points and every endeavour should be made to furnish correct figures with the reports for 1888-89. The alterations which may be found necessary should also be fully explained, and the tables appended to the report should be consistent with one another and with the statements made in the text.

The actual addition to the area of reserved forests during the year was 560 square miles in the Southern and 150 square miles in the Northern Circle, or a total of 710 square miles against 685 square miles in 1886-87. The area of all classes of forests under the control of the department on the 31st March 1888 was 17,006 square miles, the real net addition during the year, as distinguished from increase due to mere correction of area, being 1,543 square miles.

4. In his review of the reports for 1886-87, His Excellency the Governor in Council directed that he should be furnished with a detailed report of the forest requirements of each district and of the measures which it was proposed to take to meet them, but up to the present these instructions have not been complied with in a single instance; yet it is clear from the annexed statement that much still remains to be done, and the Government trust that the Board will not suffer any further delay to occur in the disposal of this important matter.

Districts.	Total area excluding feudatory and tributary states.	Area excluding zemindaries and whole inam villages.	Cultivated area.	Remainder.			Forests under the control of the Forest Department.	Percentage of column 8 to column 3.	Percentage of column 8 to column 7.
				Uncultivated and forest.	Area for which returns are not available.	Total of columns 5 and 6.			
1	2	3	4	5	6	7	8	9	10
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.		
Ganjam	8,369	2,273	571	380	1,319	1,699	557	24·5	32·7
Vizagapatam	16,992	1,864	188	107	1,568	1,675	8	·4	·5
Godavari	7,857	3,713	1,451	1,771	791	2,262	776	20·9	34·3
Kistna	8,397	5,481	2,957	2,391	134	2,525	855	15·6	33·8
Nellore	8,765	4,044	1,528	2,516	..	2,516	744	18·4	29·5
Cuddapah	8,722	7,494	1,937	5,557	..	5,557	2,287	30·5	41·1
Anantapur	5,274	4,307	1,724	2,220	362	2,582	261	6·0	10·1
Bellary	5,606	4,158	2,216	1,940	..	1,940	264	6·3	13·6
Kurnool	7,769	5,919	1,788	4,132	..	4,132	1,718	29·0	41·6
Chingleput	2,842	2,051	907	1,106	..	1,106	155	7·5	14·0
North Arcot	7,497	3,768	1,263	2,505	..	2,505	861	22·8	34·3
South Arcot	5,140	4,860	2,152	2,707	..	2,707	1,068	22·0	39·4
Tanjore	3,654	2,204	1,674	810	..	810	28	1·2	3·4
Trichinopoly	4,732	2,532	1,633	899	120	1,019	236	9·3	23·1
Madura	8,658	3,193	1,503	1,260	430	1,690	692	21·6	40·9
Tinnevelly	5,387	3,518	2,242	1,276	..	1,276	607	17·2	47·7
Coimbatore	7,860	7,173	3,683	2,392	1,099	3,491	2,518	35·1	72·1
Nilgiris	957	957	293	664	..	664	487	50·9	73·3
Salem	7,724	5,580	1,959	3,622	..	3,622	1,010	18·1	27·8
South Canara	3,902	3,882	625	3,257	..	3,257	1,020	26·3	31·3
Malabar	5,584	5,565	1,376	4,188	..	4,188	854	15·3	20·4
Total ..	141,687	84,536	33,769	45,400	5,823	51,223	17,006	20·1	33·2

5. *Settlement.*—The area finally settled during the year is, of course, the same as the addition to reserved forests, and has been given above; but this does not adequately represent the settlement work actually done, as final notifications had not been issued at the close of the year for many of the blocks which had then been completely settled. So far as can be gathered from the information furnished by the Conservators,

the progress made was good in the Southern but less satisfactory in the Northern Circle. For the latter circle the area which was settled by the end of the year but not notified is not given, and this makes it difficult to judge of the real work done. It would be convenient if tables similar to those given in paragraphs 7 and 8 of Mr. Cherry's report were in future compiled for both circles. It is observed that in his report for 1886-87 the Conservator, Southern Circle, stated that the settlement of 1,016 square miles had been practically completed by the end of that year, yet the total area finally notified in 1887-88 was only 560 square miles. This, taken in conjunction with the fact that there is still a very large extent which has been settled but for which notifications have not yet been issued, points to great delay in the preparation or transmission of the necessary reports and draft notifications. In order to get some idea of the real position of affairs, the Government desire to be furnished with a statement of all reserves of which the settlement has been completed but for which notifications have not yet been issued. The statement should show the dates of completion of settlement, expiry of appeal time, and receipt of the report and notification by the Collector, the Conservator and the Board.

Neither the Board's review nor the reports give any definite account of the work done by each of the four Special Forest Settlement officers, nor has the statement called for in paragraph 2 of G.O., dated 27th July 1888, No. 516, Revenue, been furnished. His Excellency in Council is thus unable to review the work of these officers, and the question of their retention after the expiry of the present sanction must be disposed of separately. The matter is one of some urgency and the two statements required by the Government should be submitted by the Board with the least possible delay.

6. *Demarcation.*—The following table shows the extent of boundary demarcated and its cost. Neither of the Conservators is able to frame any reliable estimate of the work remaining to be done.

—	Up to 1886-87.			1886-87.			1887-88.			Total.		
	Miles.	Cost.	Average cost per mile.	Miles.	Cost.	Average cost per mile.	Miles.	Cost.	Average cost per mile.	Miles.	Cost.	Average cost per mile.
		RS.	RS. A. P.		RS.	RS. A. P.		RS.	RS. A. P.		RS.	RS. A. P.
Northern Circle ..	1,029	24,117	19 15 2	1,003	19,202	19 2 3	1,645	27,225	16 8 9	3,677	70,544	19 2 11
Southern Circle ..	3,178	35,247	11 1 5	1,134	8,735	7 11 2	1,701	11,613	6 13 2	6,013	55,595	9 3 11
Total ..	4,207	59,364	14 1 9	2,137	27,937	13 1 2	3,346	38,838	11 9 8	9,690	126,139	13 0 3

His Excellency in Council regards the progress made as extremely satisfactory, the amount of work done being particularly good in Nellore, Godávari and Kistna in the Northern Circle and in North Arcot and Salem in the Southern. Now that the survey of the forests is to be systematically taken in hand, the demarcation must be steadily pushed forward and the Conservators should direct their special attention to the subject. The cost of demarcation per mile was less than in the previous year in both circles, but in the Northern Circle it is still too high and endeavours should be made to reduce it. The Government await the report promised by the Conservator on the mismanagement that has taken place in the construction of walls in Anantapur.

7. *Surveys.*—The Conservator, Northern Circle, states in paragraph 17 of his report that there were no survey operations in his circle during the year, but he mentions in the preceding paragraph that a fire-protected block was surveyed and plotted by Mr. Hearsey. In the Southern Circle 117 square miles were surveyed by the Forest Department, but the result is said to be unsatisfactory and the whole of what has hitherto been done will have to be done over again by the Madras Party of the Survey of India who, under recent arrangements, have undertaken the forest survey

of the Presidency. This party worked in Madura in the year under review and completed the survey of eight square miles on the scale required by the Forest Department. It also surveyed 245 square miles on the one-inch scale which is not large enough for forest purposes. This mistake appears to have arisen from a most regrettable misunderstanding on the part of Colonel Campbell Walker. In order that some progress may be made with survey in the Northern Circle, it has been decided that the Madras Survey Party now working in Bellary and Anantapur should survey the forests of those districts. The Government consider that the admittedly useless departmental surveys should now be discontinued unless arrangements can be made for securing greater accuracy.

8. *Working Plans.*—Much could not be done in the way of preparation of satisfactory working plans as no regular survey of forest areas has been made; and the selection and settlement of reserves take up most of the time of the establishment.

If the proposals for strengthening the superior staff which His Excellency in Council has submitted to the Government of India are sanctioned, it will be possible to form a special Working Plans Party which will follow in the wake of the surveyors and assist the local officers in drawing up schemes for the proper working of the forests.

9. *Fire Protection.*—There was a very satisfactory improvement both in the area over which protection was attempted and in the success obtained, the results in the latter respect being particularly good in the Southern Circle.

Circle.	Area attempted.				Percentage of area attempted in which protection was successful.			
	1884-85.	1885-86.	1886-87.	1887-88.	1884-85.	1885-86.	1886-87.	1887-88.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.				
Northern	720	728	1,168	1,320	97	96	87	92
Southern	744	906	1,081	1,250	98	98	96	99
Total ..	1,464	1,634	2,249	2,570	97	97	91	95

The total cost was Rs. 35,161 or an average of Rs. 13·7 per square mile. The Government observe that, in the Bombay Presidency, nearly the whole of the area under the control of the Forest Department is specially protected from fire, and this, too, at the very small cost of two annas per square mile. The Conservators should endeavour to ascertain under what arrangements this singularly satisfactory result is obtained.

10. *Grazing.*—The revenue from grazing fees has risen from Rs. 81,203 to Rs. 1,05,811 or by 30 per cent., and this gratifying increase appears to have been obtained without the infliction of any heavy additional tax. His Excellency in Council notices with approval Mr. Hooper's judicious action in levying at first a fee of only one anna per head per annum, and he commends this course to the favorable attention of all Collectors. The fee may be subsequently increased but this should not be done too rapidly and the amount of each increment should be small. Where the area of unreserved land available for pasture is comparatively limited free grazing must be provided for the cattle required for agricultural or domestic purposes, and the Government observe with satisfaction that this point has not been lost sight of by Mr. Cherry. As the policy of charging fees is more generally introduced this matter will become of increasing importance, and great care will be necessary on the part of Collectors and District Forest officers to prevent reasonable discontent being caused in those localities where the pasture lands have all been brought under control although the

free and unrestricted use of them by the villagers' cattle has hitherto been customary. It is clear that the ryots are already beginning to appreciate the advantages to themselves of conservation and control, and if the wise and cautious policy of the past few years is steadily maintained the Government do not doubt that in a comparatively short time cattle-owners will be converted from an attitude of distrust, if not actual hostility, into one of hearty co-operation.

His Excellency in Council regards the results which have been obtained during 1887-88 in dealing with this difficult question as one of the most satisfactory features of the year's working.

11. *Forest Offences.*—The number of forest offences reported in each of the past four years is shown below :—

Circle.	1884-85.	1885-86.	1886-87.	1887-88.
Northern	757	848	994	1,455
Southern	1,007	1,154	1,339	1,644
Total ..	1,764	2,002	2,333	3,099

It will be seen that there was a considerable increase in the year under review but it is only to be expected that with the steady extension of conservation the offences brought to notice should be more numerous. Two-thirds of the offences were under the head of "unauthorized felling or removal of timber or forest produce," but in the Southern Circle the number of cases of grazing without permission was comparatively large. Of the cases, which were taken before the courts, 75 per cent.* resulted in convictions, which is an improvement upon the proportion in the previous year (67 per cent.), and is decidedly satisfactory. The figures for each circle are—

* If the 25 cases which were withdrawn be included, the percentage is 74.

	1886-87.	1887-88.
Northern Circle	65	72
Southern Circle	70	77

The number of cases compounded has increased from 571 to 787. The Government presume that the acquitted case which was shown under the head of "compounded" is one which, when taken before the compounding officer, was found to be false or at least not proven. There must be a number of such cases and it would be interesting if they were shown separately. The officers who are empowered to compound should not presume that the case against every accused person who is willing to compound is necessarily a true one, but he should carefully examine the record and ascertain whether it discloses a *primâ facie* case. It is perhaps unnecessary to add that any tendency to send up cases which are obviously so weak as to be quite untenable in a court should be promptly checked.

12. *Natural Reproduction.*—The fact that if a forest is carefully protected from fire and excessive grazing, reproduction will proceed satisfactorily without artificial planting or sowing, is now so generally established that it is only necessary to draw attention to exceptions to this rule and to endeavour to ascertain the causes of failure. In the majority of cases these causes are to be found in the non-fulfilment of the conditions required for success, viz., the exclusion of fire and the prevention of excessive grazing, but the reports give instances where failure cannot be explained in this way and where other reasons for it must be sought for. Thus, in the Anamalai forests of South Coimbatore the young seedlings have not succeeded in pushing their way through the strong coarse grass which has grown vigorously in the absence of fire and grazing. In the report for 1886-87 it was stated that this difficulty was being overcome, but it now appears that these hopes of success were premature. In Anantapur the dying off in the hot weather of the seedlings which had sprung up in the rainy season was

remarked upon in the review of the reports for 1886-87, and the experiment of closing a few areas against both grazing and the cutting of grass was recommended. This suggestion was of course too late to be acted upon in 1887-88 but Mr. Peet proposes to give effect to it. In meeting difficulties of this kind the experience of the Inspector-General of Forests with the Government of India would be of great value, and His Excellency in Council feels sure that any requests from Conservators for advice and assistance would be cordially and promptly complied with by Mr. Ribbentrop.

Before leaving this subject His Excellency the Governor in Council thinks it advisable to point out that it is not the wish of the Government that attempts should be made to grow high forest on the whole of the reserves and reserved lands. Many of them are primarily needed as pasture grounds, and in the case of such areas grazing requirements must not be sacrificed to the necessities of natural reproduction.

13. *Artificial Reproduction.*—The areas under regular plantations and cultural operations increased during the year by 802 and 488 acres, respectively. The extension was chiefly made in Nellore, North Malabar, Trichinopoly and South Arcot in the case of the former, and in Cuddapah, Nellore, Tinnevelly and North Malabar in that of the latter. The expenditure shows an increase under plantations and a decrease under cultural operations. During the year under review the results of artificial reproduction were discouraging in the Northern Circle and not altogether satisfactory in the Southern Circle. In Nellore the ravages of some insect which has not yet been identified seem to have caused most serious damage to the plantations. The Government have read with much interest Mr. Peet's remarks on the subject of the continuous planting of a single species of tree. The matter will no doubt receive the attention of Mr. Gamble who has now resumed charge of the circle.

	Area.		Cost.	
	1886-87.	1887-88.	1886-87.	1887-88.
			Rs.	Rs.
Plantations.				
Northern Circle ..	6,423	7,092	9,191	14,729
Southern Circle ..	11,786	11,919	29,275	24,609
Total ..	18,209	19,011	38,466	39,338
Cultural Operations.				
Northern Circle ..	878	977	1,662	1,394
Southern Circle ..	2,972	3,361	3,634	1,978
Total .	3,850	4,338	5,296	3,372

14. *Exotics.*— The Board have given an interesting summary of the reports of the Conservators on exotics and His Excellency in Council has little to add to their remarks. The year's operations affirm the conclusion stated by Government in the review of the reports for 1886-87 that the cultivation of the date-palm has in this Presidency passed the experimental stage and may now be conducted on an extensive scale. It is said that the seeds of date fruits bought in the bazaars have been found to give good results, but in October 1888 Mr. Hadfield, the officer who made the experiments with this kind of seed, reported that 50 per cent. of the plants put out had died. It is not impossible that as good seed may be obtained in the West Coast bazaars as that imported by Mr. Duthie from Arabia, but until this is proved by experiment no large area should be planted with it. The Government have already issued orders to this effect. It is noted with satisfaction that the mahogany has, on the whole, thriven well in the Southern Circle.

15. *Communications and Buildings.*—A considerable proportion of the budget allotment under this head has been, as in previous years, left unutilized. In fact, the percentage of unexpended balance was considerably higher than in the preceding year. Employment of the establishment on settlement and demarcation cannot, as was observed by Government in the review of the last report, be accepted as a sufficient explanation of the short expenditure. The working of the Nellore portable tramway and the possibility of introducing this means of carriage more extensively should have been noticed by the Conservators. It is gathered from other papers that the Nellore line, which is $2\frac{3}{4}$ miles in length, has been most successful. The cost of transport has

	Revised estimate.	Actuals.	Percentage of unexpended balance.
	Rs.	Rs.	
1886-87 ...	78,311	51,719	34
1887-88 ...	98,025	54,854	44

thereby been reduced from one rupee to two annas per ton, and the greater facility for working is said to be in itself sufficient to render its use profitable, for the damage which was caused by carts to the stools left for coppice, and the difficulty experienced, when carts were employed, in getting out the necessary quantity of wood during the working season have both disappeared. These results were rightly regarded as so encouraging as to justify the introduction of portable tramways into other districts, and during the current year lines have been laid in South Coimbatore (7 miles) and North Arcot (2 miles), while an additional length of 5½ miles has been purchased for Nellore.

16. *Yield and Working.*—The quantity of every kind of produce has been given in tons, but in G.O., dated 1st August 1887, No. 741, Revenue, it was ordered, in compliance with the wishes of the Government of India, that the outturn of timber and fuel should be stated in cubic feet. There seems, too, to be some little doubt regarding the scale of conversion employed by the Conservator, Northern Circle, for though in one place he gives 50 cubic feet as the equivalent of a ton, yet the entries of eighths of a ton would seem to indicate the use of a different rate. In these circumstances His Excellency in Council considers that it would be unsafe to accept the figures as they stand, and he resolves to request each Conservator to furnish a statement showing for 1886-87 and 1887-88 the yield of timber and fuel in cubic feet, of minor produce in maunds of 25 lb., and of bamboos by number. The various code forms must be very carefully examined and all inconsistencies satisfactorily cleared up. The yield should be shown under the three heads of "Government agency," "Private purchasers" and "Free grants." The statement should be prepared and submitted with as little delay as is possible in order that it may be transmitted to the Government of India in time to be incorporated in the "Review of Forest Administration in British India."

17. *Financial Results.*—The actual receipts and disbursements of the year fell short of the revised estimates as usual, the receipts being less by Rs. 86,880 and the expenditure by Rs. 93,588. Compared with the figures of the previous year, however, the financial results of the working of the department show an improvement, the surplus having increased from Rs. 91,096 to Rs. 2,46,403:—

	Northern Circle.		Southern Circle.		Total.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Receipts	5,52,248	5,64,723	6,94,535	8,10,197	12,46,783	13,74,920
Charges	4,34,966	4,53,794	7,20,721	6,74,723	11,55,687	11,28,517
Surplus ..	+ 1,17,282	+ 1,10,929	— 26,186	+ 1,35,474	+ 91,096	+ 2,46,403
Percentage ..	+ 27	+ 24	— 3	+ 20	+ 8	+ 22

The charges as given above exceed those given by the Board and Conservators by Rs. 10,305, which is the amount charged for work done by the Survey of India. The steady advance in revenue, which has been continuous for the past five years, was maintained, while the charges showed a slight decrease. The expenditure included Rs. 42,000 for the purchase of a valuable forest in Malabar, at least Rs. 40,000 on account of settlement, about Rs. 53,000 for demarcation and survey, and Rs. 54,000 on communications. These are all items of which the greater part would be debited to capital account if that distinction were made, and when once the forests are settled, demarcated and surveyed and provided with good roads the total expenditure will probably be less than it is now, even if the staff be considerably augmented, while the income may be relied upon to rise much higher as the forests are brought under systematic working. The district which yielded the largest surplus was Cuddapah (Rs. 70,132), Salem being next with Rs. 65,996. The highest rate of profit was

realized in the Godávari (150 per cent.), while in each of the marginally noted districts it was over 100 per cent. In Cuddapah the rate was 93 per cent. As already explained in the review of the budget the deficit of Rs. 42,016 in South Malabar is almost entirely due to the expenditure (Rs. 42,000) on the purchase of the Amarampalan forests. The deficits of Rs. 20,000 in Ganjam and of Rs. 24,000 in Nílgiris are most disappointing and are largely, if not entirely, due to unsatisfactory administration.

	Per cent.
North Coimbatore	140
Kistna	110
Salem	110

18. *General.*—His Excellency the Governor in Council considers that, on the whole, the work done during the year may be regarded as very satisfactory. There was an improvement in the extent added to the area of reserved forests, and if there had not been so much delay in the submission of the settlement records and draft notifications the addition would have been much greater; demarcation made good progress, and though but little was done in the way of surveys and the preparation of working plans this was not the fault of the department; the advance towards the final solution of the difficult grazing question was particularly satisfactory, while the attempts to protect the forests from fire were both more extensive and more successful than in the previous year; there was an increase in the number of forest offences reported, but this is probably due to improved detection; the progress made with the construction of roads and buildings, though somewhat better than in 1886-87, still leaves much to be desired, but the remarks of Government on the results of that year can only begin to bear fruit during 1888-89; the subject of the yield of the forests will be dealt with in a subsequent order on receipt of the special report called for, but it may be gathered that it was generally fair with the exception of the regrettable failures in Ganjam and the Nílgiris; the superior officers appear to have travelled well, especially those mentioned in paragraph 24 of the Board's Proceedings, and the year seems to have been a healthy one on the whole; lastly the financial results of the administration showed a great improvement, the surplus revenue being 170 per cent. in excess of that obtained in 1887-88.

19. The year 1887-88 completes the first *quinquennium* since the reorganization, which was initiated by the visit of Dr. (now Sir Dietrich) Brandis and the passing of the Forest Act in 1882 but did not come fully into operation until 1883-84. During this period of five years the area under the control of the Forest Department increased from 2,794* to 17,006 square miles, of which 2,998 were formally reserved, while over a great portion of the remainder conservation was nearly as strict as in the case of reserved forests. It is evident, too, that this control was something more than nominal, for the revenue derived from forests has risen from Rs. 9,03,914 to Rs. 13,74,920. Sir Dietrich Brandis estimated the receipts at Rs. 9,00,000 per annum for the first five years, and he put the charges at the same figure, but instead of merely paying its way the department has, during the period in question, earned a net income, aggregating Rs. 10,66,316. How far the increased revenue indicates merely better systems of working resulting in greater receipts from purely commercial transactions and how far it consists of what is practically additional taxation, it is not possible to ascertain with any accuracy. Receipts from timber, bamboos and sandalwood might perhaps be classed under the former head and those from firewood and charcoal and grazing and fodder grass under the latter. But there still remains the most important item of minor produce, and this it is impossible to classify in the above manner. There can, however, be but little doubt that a considerable portion of the increased revenue is due to a charge being made for produce which was formerly enjoyed free and it is well to remember this fact in considering proposals for sudden additions

*Includes area under the old jungle conservancy, but not the Nallamalais or the Nílgiri slopes towards Coimbatore.

Timber, Bamboos, &c.

	Rs.
1887-88	4,96,703
1882-83	4,24,699
Increase ...	72,004

Firewood and Charcoal.

	Rs.
1887-88	3,59,066
1882-83	2,13,154
Increase ...	1,45,912

Grazing and Fodder Grass.

					Rs.
1887-88	...	...	...	...	1,05,811
1882-83	...	...	...	...	85,329
			Increase	...	20,482

Other Minor Produce.

					Rs.
1887-88	...	...	...	...	3,83,773
1882-83	...	...	...	...	1,47,432
			Increase	...	2,36,341

to fees or the withdrawal of privileges which have long existed. At the same time His Excellency in Council entertains no doubt that the disposal of the forest produce of the State forms a legitimate source of revenue, and it must be remembered that the increased expenditure which has accompanied the increased revenue *pari passu* has been incurred for improvements to the sources of supply of pasture and of fuel which are not only advantageous but absolutely necessary to the interests of the ryots.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

To the Commissioners of Land Revenue.
" the Commissioner of Revenue Settlement, Land Records and Agriculture.
" the Superintendent of Revenue Survey.
" the Superintendent, Government Central Museum.
" the Government Botanist.
" the Accountant-General.

No. 153-A, Revenue.

Copy to the Government of India, Revenue and Agricultural Department.

(Signed) C. A. GALTON,
Secretary to Government.

Exd. A. D. Xavier.

180 Copies.

SECT. GOVT. OF INDIA 17 MAR 88 REV. DEPT.
REVENUE & AGRICULTURAL DEPARTMENT GOVERNMENT OF INDIA

10/0

The Secretary Stuart

Jam requested
obliged for the 200
in Transmitting with
begs ref & Satisfy.
I presume we shall
eventually see his
information officially
in the Annl Report.

Yrs sincy
Elliot.

1888.

GOVERNMENT OF INDIA.

REVENUE AND AGRICULTURAL DEPARTMENT.

FORESTS.

Note on Forest Tramways in Madras, by Mr. H. A. Stuart, C.S., Secretary to the Government of Madras, dated 30th July 1888.

G. C. Press, Simla.—No. 351 R. & A. D.—14-9-88—30.

Note on Forest Tramways in Madras, by Mr. H. A. Stuart, C.S., Secretary to the Government of Madras, dated 30th July 1888.

THE question of using Portable Tramways in the Forests of this Presidency was first raised in 1885, when the Collector of Nellore recommended the purchase of 1 mile 220 yards, for the purpose of the transport of fuel from *Casuarina* plantations and the Sriharikot forest to the banks of the Buckingham Canal. Eventually $2\frac{1}{4}$ miles of straight line, with 300 feet of curved line, 20 wagons, and the necessary crossings, inclined planes, skid plates, &c., were purchased from Messrs. Fowler and Co., and these have been in use since the end of 1885 or beginning of 1886. An additional $\frac{1}{2}$ mile of line was purchased for use in the same District at the end of 1886.

2. Attention was again called to the subject by the Circular from the Inspector-General of Forests to the Government of India, dated 15th April 1887, and, in consequence of this, and the highly satisfactory results obtained in Nellore, the use of portable tramways in forests is now being extended. In January last 7 miles were ordered for the Coimbatore District, and 2 miles for North Arcot, and these have just been received. $5\frac{1}{2}$ miles will shortly be ordered for Nellore, and provision has been made in the Budget of 1888-89 for the purchase of 5 miles, with the necessary rolling-stock, for employment in the Nallamalai forests of the Kurnool District. As settlement advances and the forests come under systematic working, it is probable that this means of transport will be introduced extensively.

3. The $2\frac{3}{4}$ miles now being used in Nellore is Fowler's 24-inch gauge Portable Tramway. The rails weigh 10 lbs. to the yard, and the weight of one section, 15 feet long with four sleepers, is 134 lbs. The total cost of 1 mile 220 yards of permanent-way, with 10 improved sugar-cane wagons, type "J," and some extras, was £453-4-4; freight to Madras and insurance amounted to £65; and the total cost delivered at site was Rs. 6,955, exchange being at 1*s.* $6\frac{1}{4}$*d.* The trucks were fitted together and the line laid by peons and plantation coolies, without any skilled labour, the cost being trifling. The line is easily movable from place to place, and has been taken up and relaid many times. The financial result of substituting the tramway for carts in Nellore was a reduction of the cost of transport from one rupee to two annas a ton, and the capital cost will be repaid in a very short time. But this is not the only advantage obtained by the introduction of tramways, for the Collector of Nellore has reported that the greater facility of working is alone sufficient to make their use desirable. When carts were used, much damage was done to the stumps of felled trees, and reproduction was almost impossible. The tramway, again, permits of the removal in one day of the same quantity which it formerly took a week or more to get out, and this greater rapidity in working allows of the cutting being confined to the proper season, while the delivery of the wood to the purchaser soon after it is cut prevents the decrease in weight due to dryage and loss of bark.

It is stated by Mr. Vincent, the District Forest Officer of Nellore, that the rails and sleepers, which are of steel, appear to stand any amount of rough usage, and that there have been no breakages of the trucks, although they have been very roughly handled.

4. Since the Nellore plant was purchased, Messrs. Fowler and Co.'s prices have been considerably reduced; but, owing to the fall in the rate of exchange, the cost in rupees is much about the same. The cost of the seven miles, with twelve wagons and many extras, recently supplied for the Coimbatore District was £3,086 delivered at Madras. A statement showing in detail the various articles included in this order is appended.

Portable Railway suitable for Animal-power.—System A (page 12 of John Fowler and Co.'s (Leeds) Catalogue of Light Railways, No. 43, Part IV), with steel rails, steel corrugated sleepers, and wrought-steel chairs rivetted on full width of sleepers, 14 lbs. per yard, 2-feet gauge:—

	7 miles.
Crossings	5.
Portable Turn-table, 3′ diameter	1.
Weighing Machine, 3′ 6″ square	1.
Wagons, type H. H. (catalogue, page 45)	12 pairs.
Tool-box...	1.
Eccentric tongs	4.
Spare clutch bolts	1,000.
Screw keys	1 dozen.
Jim-crow rail bender bar	1.
Steel crowbars	6.
Hand hammers	6.
Striking hammers	2.
Spades	6.
Picks and shafts...	3.
Curved sections of assorted lengths of line and of a radius of 30 feet ...	¼ mile.
Self-acting switches, with balanced hand lever, box, and connections complete.	4.
Note.—These are intended to switch off the wagons in case of accident or back running, the switches being arranged to act automatically.	
Patent rail-bending machine, with adjustable rollers grooved to suit the rails, and worked by spur gearing and hand fly-wheel, mounted upon a suitable platform wagon, so as to be run along the line as it is laid	1.
Note.—This machine will bend the rail a true curve of any radius (see catalogue, page 24).	
Brake cars, with platform and stand for brakesman, fitted with powerful screw clip gear acting on the rails	6.
Note.—These cars are specially constructed for steep inclines, and are capable of controlling 2 of the wagons loaded on the descent.	
Portable hand-crane to lift 2½ tons, with cast-iron under carriage and chequered platform, mounted on 8 steel wheels fitted with single and double purchase hoisting gear, powerful friction brake and safety catch, jib of wrought-iron (see catalogue, page 52)	1.
Draught pole for bullocks, to suit sockets on truck, with pin and hook complete	1.
Duplicate parts for Trucks.	
Wheels and axles	20 pairs.
Axle-boxes complete	20.
Spare bushes for axle-boxes	100.
Draught chains for animal traction	10.
Total Price ...	£2,736
Freight to Madras ...	£350
GRAND TOTAL ...	£3,086

PROCEEDINGS OF THE BOARD OF REVENUE
(LAND REVENUE).

THE HON. W. S. WHITESIDE.

READ—the following letter from A. W. PEET, Esq., Acting Conservator of Forests, Northern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 18th July 1888, No. 1251:—

I have the honor to forward the annual Forest Administration Report for the Northern Circle for the year 1887-88.

ENCLOSURE.—Administration Report for 1887-88.

READ—the following letter from J. W. CHERRY, Esq., Acting Conservator of Forests, Southern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 28th September 1888, No. 1832:—

I have the honor to submit the Annual Report of the Southern Circle for the year 1887-88, together with the prescribed appendices, excepting the one for exotics, which will be separately printed and forwarded in time to be submitted with the report to Government.

2. The report has this year been printed before submission to the Board in accordance with their instructions on last year's report. This has caused some delay, which I trust will not recur next year as we shall be in a better position to judge and allow for the time the printing takes.

3. The returns took a long time to compile, print and correct, and did not reach me for the commencement of the report, until the 8th of August, several references having had to be made to District Forest-officers regarding the correctness or meaning of their figures.

4. I have endeavoured to supply in this report all the omissions noticed by the Government in the last report, but it has not been easy as the Board's orders on the last Government review only reached me on the 6th of June or nearly a month after the District Forest-officers had submitted their reports.

5. I trust the Board will not think I have introduced too many abstracts into the report. The returns are so full of items and explanatory notes that I found it difficult to describe matters except through such abstracts, and I was anxious to show to District Forest-officers (with view to facilitating future reports) in what form the informations for their several districts would be useful.

6. But for the orders which, I am told, exist, forbidding districtwar abstracts, I should have given the figures for each district in all cases, for it is very important that District Forest-officers should know how this office has dealt with the figures pertaining to each of their districts, and it will be very useful for the Conservator, when on inspection tours, to have such district abstracts at hand to refer to.

7. If District Forest-officers would give talukwar or range abstracts, the Conservators totals for each division, and the Board totals for each circle, it would simplify comparisons and conclusions.

ENCLOSURE.—Administration Report for 1887-88.

READ—the following letter from A. W. PEET, Esq., Acting Conservator of Forests, Northern Circle, to the Secretary to the Commissioners of Land Revenue, dated Madras, 20th October 1888, No. 1611:—

Referring to the Board's Proceedings of the 8th January 1887, No. 9, I have the honor to forward, as an accompaniment to the Annual Report for 1887-88, a map of the Presidency (scale 1 inch = 16 miles) showing—

(1) Reserved forests under section 16.
(2) Proposed reserved forests under section 4.
(3) Reserved lands under section 26.

ENCLOSURE.—Map showing reserved forests, proposed reserved forests, and reserved lands.

RESOLUTION—dated 30th November 1888, Forest No. 625.

The Board submit to Government the forest report for 1887-88.

2. The staff of the department stood at the following strength, during the year, showing a slight increase in foresters and forest guards on the scale of the previous year:—

(*a*) Controlling—

Conservators	Northern Circle	1	2
	Southern do.	1	
Deputy Conservators	Northern do.	4	11
	Southern do.	7	
Assistant do.	Northern do.	7	13
	Southern do.	6	
(*b*) Executive—			
Sub-Assistant Conservators	Northern do.	6	12
	Southern do.	6	
Rangers	Northern do.	21	51
	Southern do.	30	
Foresters	Northern do.	50	123
	Southern do.	73	
Forest guards	Northern do.	348	707
	Southern do.	359	

The Conservators were Mr. Peet in the Northern Circle acting for Mr. Gamble on leave, and Colonel Campbell Walker and for three months Mr. Cherry, in the Southern Circle.

The average areas of charges in the two circles were as under:—

	Southern Circle.		Northern Circle.	
	Total area.	Reserve area.	Total area.	Reserve area.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Conservator	62,930	7,555	78,700	7,180
District Forest-officer	4,845	581	7,870	718
Range officer	913	109	1,140	104
Forest guard	175	21	226	20

3. The gross receipts of the year amounted to Rs. 13,74,920 and the charges to Rs. 11,18,212, leaving a *plus* balance of Rs. 2,56,708.

4. The area under the control of the department was increased during the year by 2,338 square miles, (in addition to the 2,492 square miles, by which the Northern Circle figures of last year have been raised, owing, it is stated, to rectification of areas and the inclusion among "reserved lands" of lands notified for settlement under section 4.) A very large area of waste land has thus been added, and the total area now under control amounts to 17,000 square miles. The advisability of still further adding to it from districts, in which the percentage of forest reserve is small, is now under consideration, and with it the connected question of village forests and the organizing of a complete forest system for each district will be disposed of.

The subjoined table shows the changes that occurred in the several classes of forests:—

—	Area on 31st March 1887.			Added during the year 1887-88.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
A. Reserved forests under Act ..	474 +1	1,838	2,313	150½	564	714½
B. Forests reserved under previous rules	786	280	1,066	..	..	..
C. Leased forests	198½	..	198½	..	..	..
D. Reserved lands	3,838 +2,492	3,655	9,985	227	2,088	2,315
E. Other forests	..	1,099	1,099	..	166	166
Total ..	7,789½	6,872	14,661½	377½	2,818	3,195½

—	Excluded during 1887-88.			Area on 31st March 1888.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
	8	9	10	11	12	13
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
A. Reserved forests under Act ..	..	..	..	625½	2,402	3,027½
B. Forests reserved under previous rules	16½	36	52½	769½	244	1,013½
C. Leased forests	..	..	..	198½	..	198½
D. Reserved lands	199½	590½	790	6,357½	5,152½	11,510
E. Other forests	..	15	15	..	1,250	1,250
Total ..	216	641½	857½	7,951	9,048½	16,999½

The whole of the 198½ square miles shown under "leased forests" belongs to the Northern Circle; the 46 square miles in the Southern Circle are shown, 29 square miles under "reserved forests" and 17 square miles under "reserved lands."

Form 59 B of the Northern Circle shows 17½ square miles as having been transferred to 59 A (reserved forests). On comparing the two forms, however, it is observed that only 16½ square miles have been so transferred, this area too being identical with part of the extent transferred from form 59 C (reserved lands). From this it is evident that the two forms are not exclusive of each other as they ought to be. About half a square mile (342 acres), has been shown in 59 A as constituting the Moyar reserved forest in the Nilgiris: but the area does not appear to have been transferred from either 59 B or 59 C.

150½ square miles of reserved lands in the Northern Circle and 564 in the Southern were notified under section 16 as against 328 and 313 in 1886-87.

At paragraph 11 of his report, the Northern Circle Conservator says that 166 square miles had to be *deducted* from the figures given last year under reserved lands in Ganjam. No such figures were, however, given last year, and instead of there being a *deduction* of 166 square miles there has been an *addition* of 554 square miles.

The following table compares the areas under each class of forest at the close of the year:—

—	Reserved forests.		Reserved lands.		Leased and other forests.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Northern Circle ..	474 + 1	625½	3,838 + 2,492	6,357½	984½	968
Southern do. ..	1,838	2,402	3,655	5,152½	1,379	1,494
Total ..	2,313	3,027½	9,985	11,510	2,363½	2,462

4. (*a*) *Settlement.*—The subjoined abstract shows the progress made in this direction:—

—	Unsettled.		Settled.	Balance
	Balance on 31st March 1887.	Added during 1887-88.	During 1887-88.	To be settled.
	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.
Southern Circle	1,725	1,141	564	2,302
Northern do.	6,114¼	227	199½	6,142¼
Total ..	7,839¾	1,368	763½	8,444¼

Of the 2,302 square miles shown as balance in the Southern Circle, 794 have been settled and reported on but not declared; and 684 settled but not reported on. Similar information is not given for the Northern Circle, but the Conservator states that over a hundred blocks had been finally settled and were awaiting notification under section 16.

The backwardness of settlement is therefore more apparent than real and the current year should see a large increase to the settled area, a great deal due to work which was done in the year under report. Settlement work is almost complete in the Nílgiris and is making good progress in Salem, Cuddapah and Nellore: large areas in Kurnool and Godávari are virtually completed. The disposal of the numerous claims to trees and lands, included in the Srísharikót reserve, has caused much delay, as have also the shrotriem and zemin claims in the same district: progress in Bellary and Anantapur, mainly owing to the two districts being placed under one District Forest-officer, who had not time to attend to settlement, was slow.

The greater part of the area is being settled by the four Special Forest Settlement-officers appointed to the work.

District details of the work done during the year will be found in the subjoined table:—

Southern Circle.	Area already settled.	Balance at the close of the year 1886-87.	Notified under section 4 in 1887-88.	Notified under section 16 in 1887-88.	Balance to be settled.
Chingleput	63	35	15	24	26
North Arcot	195	174	314	..	488
South Arcot	3	217	14	59	172
Salem	172	525	111	388	248
Trichinopoly	31	148	..	13	135
Tanjore	..	7	12	..	19
Coimbatore (North) ..	99	..	470	..	470
Coimbatore (South) ..	566	..	..	..	..
Madura	287	95	108	16	187
Tinnevelly	287	252	50	..	302
Malabar (North) ..	118	143	..	..	143
Malabar (South) ..	16	24	19	24	19
South Canara	1	105	28	40	93
Total ..	1,838	1,725	1,141	564	2,302

Northern Circle.	Area already settled.	Balance at the close of the year 1886-87.	Notified under section 4 in 1887-88.	Notified under section 16 in 1887-88.	Balance to be settled.
Ganjam	..	540½	..	8½	532
Vizagapatam	..	..	8	..	8
Godávari	..	646½	65½	+ 4	708
Kistna	..	691½	15½	13 + 8	686
Nellore	..	511	6½	37 +37	460½
Cuddapah	272	1,573	..	78	1,458
Kurnool	..	1,677	41½	..	1,718½
Bellary	..	198¾	3	..	201¾
Anantapur	13½	156½	87	..	243½
Nilgiris	188	120	..	14	106
Total ..	475	6,114¼	227	150½ +49	6,142¼

5. *Demarcation.*—In the Southern Circle 1,701 miles were demarcated at a cost of Rs. 11,613, the average per mile being Rs. 6-13-2 against Rs. 7-11-2 last year; in the Northern Circle 1,645 miles were done at a cost of Rs. 27,225, the average per mile being Rs. 16-8-9. The style of demarcation varies from an actual wall to simple posts, but the usual form appears to be that of cleared lines with cairns at the angles. In the Southern Circle the planting of palmyras and cuttings of banyans and other trees along the boundary line, is being tried and, as a means of showing out the boundary, should be very effective: with the style the cost, too, varies; but except in

Cuddapah and Anantapur, where the excess is reported to be due in the one case to fraud and in the other to mismanagement, it does not appear to be in any case excessive. In the Northern Circle, the work paid for was more than double that paid for in the Southern Circle; Ganjam Rs. 6,535, 138 miles; Cuddapah Rs. 5,650, 177 miles; Kistna Rs. 4,827, 206 miles; Nellore, Rs. 3,798, 429 miles, coming first in the former and Salem in the latter. The possibility of a uniform system of demarcation is being considered, but meanwhile, both Conservators should draw as distinct a division as possible between the rough and the completed demarcation and between the creation of new lines and the upkeep of old ones.

The Conservator, Southern Circle, has made an effort to estimate the work remaining to be done, but his data are too rough for the estimate to be of any use.

6. *Survey.*—Only one block, a fire-protected one was surveyed in the Northern Circle. In the Southern Circle some departmental work was done, chiefly in the direction of outline surveys of reserved blocks; but though useful as preliminary work, it is not relied on as being very accurate; some 117 square miles are estimated to have been surveyed in this way, at a cost of Rs. 5,864 or a little over Rs. 50 a square mile.

The following work was also done by the Survey of India Party, viz.:—

Madura. { Topography of 245 square miles on the 1-inch scale.
Do. of 8 square miles on the 4-inch scale.

Tinnevelly.—Triangulation in advance of 1,000 square miles; and a bill for Rs. 11,000 was sent in for it. Almost the whole of the topography, however, is on too small a scale, to be of use in carrying out working-plans and will have to be repeated on the 4-inch scale. This will be done by the same party, to whom, it was decided after considerable discussion throughout the year, to entrust the whole of the forest survey work of the Presidency for the future.

A forest atlas of the Presidency on a small scale, showing reserved forests, proposed reserved forests and reserved lands, was prepared during the year and supplied to Government, to Collectors and to Conservators.

7. *Working-plans.*—Settlement is not yet sufficiently advanced for much to be accomplished in the way of working-plans; a commencement, however, of getting things into order has been made in some districts; in the Northern Circle, the Nílgiri plantations, the Sandúr leased forest and the Balapalle forest continued to be worked on the preliminary plans already drawn up; a cyclone blew down so many trees as to alter the working of the plan drawn up for the Srísharikót jungles, and the plan suggested for some of the Kistna blocks will have to be altered, now that it is probable that the railway will be worked with Singareni coal, instead of with fuel; the rough plan drawn up for Ganjam was not acted upon during the year and a fresh one is being drawn up, the chief features of which are rest, either complete or partial, for reserves overworked under the permit system, and selection fellings by blocks in the remainder. In the Southern Circle, existing plans were worked upon in North Arcot (996 acres), Salem, Trichinopoly and South Coimbatore; new plans were submitted to Government for parts of the Bolampatti range; a plan was matured for an area of 21 square miles in Trichinopoly, and other plans are under discussion. In future reports, Conservators are requested to show, in statement form, the area under working-plans: this is the real test of forest organization, but it cannot be gathered from the present reports.

8. *Fire-protection.*—The subjoined table shows the area attempted and the area burnt in each circle, as also the cost incurred:—

Northern Circle.

Districts.	Area attempted.	Burnt.	Expenditure.	Cost up to end of year.	Since when protected.
	SQ. MLS.	SQ. MLS.	RS.	RS.	
Ganjam	70¾	1½	1,622	2,682	1885
Vizagapatam	..	..	..	..	..
Godávari	115	43½	98	98	1887 & 1888.
Kistna	36	..	804	3,106	1884 & 1885.
Nellore	117½	7⅛	376	641	1885.
Cuddapah	318	22	4,334	21,739	In different years beginning from 1867.
Kurnool	30	3½	275	2,755	1884 & 1887.
Bellary	274½	19½	3,140	10,708	Different years beginning from 1883.
Anantapur	79½	⅛	1,234	5,270	1884, 1885 & 1886.
Nilgiris	279	4¼	2,566	10,639	Different years from 1883.
Total ..	1,320	101	14,449	57,698	

Southern Circle.

Districts.	Area attempted.	Burnt.	Expenditure.	Cost up to end of year.	Since when protected.
	SQ. MLS.	SQ. MLS.	RS.	RS.	
Chingleput	24½	ACS. 21	283	2,166	1883, 1884, 1887 and 1888.
North Arcot	488	SQ. MLS. 7½	2,423	13,451	Various years from 1879.
South Arcot	121½	„ 1½	1,233	4,423	Various years from 1877.
Salem	48½	..	2,471	12,637	Various years from 1881.
Trichinopoly	68¾	ACS. 50	676	1,649	Various years from 1885-86 and 1887-88.
Tanjore	..	..	..	..	..
Coimbatore, North	3¾	..	278	977	Various years from 1879.
Coimbatore, South	25⅞	..	1,791	5,822	Various years from 1882-83.
Madura	283¾	SQ. M. 1	4,600	18,663	Various years from 1882-83.
Tinnevelly	77½	SQ. MLS. 2⅜	3,039	7,771	Various years from 1884-85.
Malabar, North	52½	„ 2⅜	1,136	3,283	Various years from 1882-83 and 1887-88.
Malabar, South	43½	..	1,794	8,561	Various years from 1860-61.
South Canara	13	ACS. 2	988	1,619	Various years from 1882-83.
Total ..	1,250	SQ. MLS. 15½ and ACS. 73	20,712	81,027	

ABSTRACT.

Northern Circle	1,320	101	14,449	57,698
Southern Circle	1,250	15½	20,712	81,027
Total ..	2,570	116½	35,161	1,38,725

From the above it will be seen that the percentage of failures to area attempted is 7·65 for the Northern Circle and 1·14 for the Southern. Out of 1,320 square miles attempted in the former circle, 612 were under special protection and the balance under the ordinary staff. In the Southern Circle, the figures were respectively 1,250, 665 and 585 square miles.

The total cost of operations amounted to Rs. 14,449 for the Northern Circle and Rs. 20,712 for the Southern Circle, giving an average of Rs. 10-9-0 per square mile for the former and Rs. 16-5-0 for the latter circle.

Fire protection is most forward in North Arcot 488, Cuddapah 318, Madura 283, the Nílgiris 279 and Bellary 274 square miles; but in all districts, except Vizagapatam and Tanjore, a beginning has been made, and the percentage of successes to failures was in most cases fair. Forty-five square miles were burnt in Godávari, but early in the season, so that much damage was not done; two considerable fires occurred in Ganjam and fires are reported from North Arcot and Tinnevelly. The protection of areas by the ordinary staff was, if the figures are reliable, most successful, and the Board would like to have been furnished with some idea of the forest growth on these areas. The figures compare with those of last year as follows:—

Circle.	1886-87.			1887-88.		
	Area attempted.	Area protected.	Cost.	Area attempted.	Area protected.	Cost.
	SQ. MLS.	SQ. MLS.	RS.	SQ. MLS.	SQ. MLS.	RS.
Northern	1,081	1,043	16,811	1,320	1,219	14,449
Southern	1,168	1,016	12,133	1,250	1,234	20,712
Total ..	2,249	2,059	28,944	2,570	2,453	35,161

In regard to unprotected areas, the information given is indefinite: in Godávari firing is universal; in Kistna 10 per cent. escapes; in Kurnool 15 per cent; in the Southern Circle all areas not reserved are burnt. Even if accurate, the figures are misleading, for even if an area escapes one year, it is probably burnt the next, all the more destructively. The Board do not believe that any area in the ordinary dry forests escapes for a series of years.

It is observed that the statements made in the body of the Northern Circle report in respect of fire protection do not all agree with the information furnished in the return. Thus, while form 62 shows 200 square miles as having been specially protected and 118 as having been under ordinary protection in Cuddapah, the report gives the figures at 214 and 101, respectively. Again, in Bellary only 103 square miles are said to have been attempted, but the form gives the figure at 274.

As per report.	Specially protected.	Ordinarily protected.
	ACS.	ACS.
*1886-87 ...	259,567	390,497
1887-88 ...	301,282	351,528
Difference ...	+ 41,715	— 38,969

It may also be remarked that in bringing forward the figures of last year, a great many alterations * have been made, which affect the classified totals. The explanation given is that errors of omission and commission had crept into the last year's return and that they have been corrected now.

	ACS.
Area omitted in 1886-87	2,876
Deduct area given in excess in 1886-87.	130
	2,746

9. *Grazing.*—The receipts under this head amounted to Rs. 59,773 in the Northern and Rs. 46,038 in the Southern Circle.

District details are given below:—

Northern Circle.

	RS.
Ganjam	...
Vizagapatam	...
Godávari	947
Kistna	38,711
Nellore	12,784
Cuddapah	1,227
Kurnool	4,888
Bellary	403
Anantapur	16
Nilgiris	797
Total ...	59,773

Southern Circle.

	Rs.
Chingleput	1,244
North Arcot	30
South Arcot	2,226
Salem	...
Trichinopoly	5,140
Tanjore	593
Coimbatore (North)	29,049
Coimbatore (South)	5,584
Madura	1,524
Tinnevelly	609
Malabar (North)	...
Malabar (South)	27
South Canara	12
Total ...	46,038

As in the last year, the revenue under this item was largest in Kistna. In Nellore, the kanchas (pasture lands, were taken up by the department for the first time and Rs. 12,784 realized. It is expected that the item will show a steady increase in future years. In Kurnool, Mr. Hooper tried the system of grazing permits with marked success. 75,660 head of cattle were grazed and a revenue of Rs. 4,888 made. The rate was only an anna per head, but it is proposed to double it this year. It is satisfactory to note that the people take to the system kindly, but too rapid an increase of fees must not be attempted. In Anantapur, 25,945 head loads of grass were removed, apparently free of payment, from the Muchukota forest. In the Southern Circle, the grazing revenue was largest in North Coimbatore. No fees were levied in North Arcot, Salem, Malabar and South Canara, but it is intended to levy them from next year in the first two districts. As regards the other two, it is doubtful whether in view of the large extent of private forests available for the purpose and of the limited number of local cattle, the State forests will ever be indented on for grazing.

The Conservators' remarks on this subject are interesting and show that the tact and caution exercised by them in the matter are bearing fruit, that grazing is being gradually brought under control and that the fee system is being successfully introduced, without complaint on the part of the ryots: the same tact and caution must continue to be exercised and progress in the direction of the 4 lakhs of revenue, which the Conservator, Southern Circle, looks forward to, must be slow: forest conservancy must not be lost sight of in the desire to make revenue and the exclusion of goats altogether—some 23,000 were among the cattle licensed in Kurnool—and the restriction of other cattle to particular blocks, in rotation, are matters which will give Conservators and Collectors room for the exercise of much discretion.

10. *Police.*—The prosecutions for forest offences instituted during the year and their disposal are exhibited in the subjoined statement:—

Circle.	Pending from 1886-87.	In 1887-88.	Total.	Convictions.		Acquittals.		Compounded.		Total.	
				No.	Persons.	No.	Persons.	No.	Persons.	No.	Persons.
Northern Circle.	103	1,455	1,558	888	2,122	339	1,055	206	655	1,433	3,832
Southern Circle.	156	1,644	1,800	791	1,646	230	925	581	1,575	1,627	4,305
				withdrawn.		25	159				
						255	1,084				
Total ..	259	3,099	3,358	1,679	3,768	594	2,139	787	2,230	3,060	8,137

Percentage of convictions to total cases.

—	Pending.	Percentage of convictions to total disposed of.	Percentage of compounded cases to total disposed of.
Northern Circle	125	61·9	14·3
Southern Circle	173	48 61	35·7

and the following statement compares the results of the year with those of previous years:—

—	Cases.	Convictions.	Acquittals.
1885-86	2,269	1,280	832
1886-87	2,493	1,120	543
1887-88	3,358	1,679	594

Two hundred and six cases were compounded during the year in the Northern Circle, the number of persons implicated being 655, as against 581 and 1,575 in the other circle. The compensation realized in the former circle was Rs. 1,148, which gives an average of Rs. 1-12-0 per person accused and Rs. 5-9-2 per case. The Southern Circle figures were respectively Rs 3,271, 2-1-3 and 5-10-1. By far the largest number of cases occurred in Salem, 356; Trichinopoly, 244; then come Kistna, 331; Cuddapah, 280 and Vizagapatam, 216. The increase in Salem is said to be due to the increase of watchers; the majority of these cases were compounded. It will be seen that more use was made of the power to compound in the Northern Circle compared with last year, 206 cases against 111.

The Northern Conservator has entered a compounded case as "acquitted"; this is not understood.

11. *Roads and Buildings.*—A comparatively small amount was spent in the Northern Circle on roads: of Rs. 21,200 allotted, Rs. 6,879 only were spent, the rest being partly transferred to other heads, but mainly allowed to lapse. Most work was done in Cuddapah, where the work of making roads in the Balapalle and Seshachalam reserves was steadily continued, 10 miles for Rs. 2,529 and the Nilgiris, where steady progress was also made at a cost of Rs. 2,202: a certain amount of tracing work was also done in Ganjam and 9 miles of road completed in Godávari. Better work was done in the Southern Circle, where Rs. 14,024 were spent, of which Rs. 4,610 were for repairs and Rs. 9,414 for new works. The chief items were the Kariar Kannai Kottai Odai road and Parapavillai bridge in Tinnevelly, the Madapalli-gulur road in North Malabar and the Dhoni road and Walayar bridge in South Malabar. Materials were also collected for the Amerdi bridge in North Arcot and a number of small but useful works carried out.

In respect of *buildings* good work has been done in both circles: in the Northern Circle, Rs. 14,604 were spent and in the Southern Circle, Rs. 17,307. In Kurnool, the Forest-officer's head-quarter bungalow was completed and in Malabar the District Forest-officer's bungalow at Nilambúr was in course of construction: besides these, two range houses were completed and one begun in Cuddapah: five substantial buildings were built in Ganjam: one rest-house was completed and three others begun in Godávari: five rest houses were constructed in North Coimbatore and two in Madura: a ranger's office was built in Tinnevelly and two other buildings begun and one rest house was built in Chingleput and a number of guards' houses and tannah huts were also constructed.

The expenditure under these heads is compared in the subjoined table :—

Circle.	Roads.		Buildings.	
	1886-87.	1887-88.	1886-87.	1887-88.
	Rs.	Rs.	Rs.	Rs.
Southern Circle	9,524	14,024	15,443	17,307
Northern Circle	11,219	6,879	14,461	14,604
Total ..	20,743	20,903	29,904	31,911

12. *Natural Reproduction.*—Conservators speak now with the experience of several years, and of a large area of forests, under varying degrees of protection, and they report that, given protection from fire and cattle, the natural reproduction is sufficiently strong to reclothe the ground: the rapidity of growth, of course, depends greatly on soil and rainfall, but even on the dryest and barest hill sides, it seems to be only a matter of time: the essential is complete protection, and the Conservators give numerous specific instances of successful regrowth where this has been obtained. The most valuable trees, sal, teak, Hardwickia, Pterocarpus and satinwood, as also blue-gum and casuarina are reported to be also the most vigorous reproducers, both from coppice and from seed; in regard to the latter it would be interesting to learn how far the time of the fall of the seed affects its struggle for existence. Complaint is made in some cases, that the first growth is a dense scrub of elephant grass, bushes or thorny creepers, and fears are expressed that this may kill out the young seedlings: the experiment requires to be watched; but in the dryer districts, at any rate, some such covering appears necessary to protect the young seedlings from the drought of the hot weather; and though such protection may be unnecessary for the moister forests, it seems probable that the young trees will push through it in time, while the cost of removing it would probably be prohibitive.

13. *Artificial reproduction.*—Artificial reproduction on the contrary was not satisfactory, and though in particular places plantations such as those of casuarina on the coast, or blue-gum on the hills, or teak at Nilambúr, may pay, as a general rule they appear to be most unsuccessful, and anything in the shape of broadcast sowing appears to be absolutely useless.

The figures for the year show a slight increase under "plantations" and a slight decrease under "cultural operations." They are as follows:—

—	Regular plantations.		Cultural operations.		Remarks.
	1886-87.	1887-88.	1886-87.	1887-88.	
	Rs.	Rs.	Rs.	Rs.	
Northern Circle	9,191	* 14,729	1,662	* 1,394	* As per form 60, but less than form 64 by Rs. 728 incurred on plantations and cultural operations which have proved failures or been abandoned or sold.
Southern Circle	29,275	† 24,609	3,634	1,978	† Less than form 64 by Rs. 171 incurred in 1885-86, but adjusted in 1887-88.
Total ..	38,466	39,338	5,296	3,372	

The only noticeable points are the heavy loss of casuarina seedlings in Nellore, over 50,000, and Chingleput, over 13,000, and the extensive planting of palmyras in Tinnevelly, over 100,000, and Cuddapah, 30,000: the planting of teak, mahogany and bamboos was continued at Nilambúr, and seedlings of Hardwicka and Satinwood were planted out at Balapalle. The Cuddapah mahoganies are reported not to be a success.

14. *Topes.*—There were 364 topes in the Northern Circle with an area of 13,715 acres. The cost of maintenance during the year, exclusive of Rs. 163, which should have been shown in the previous year's return, amounted to Rs. 3,348.

In the Southern Circle, there were 1,281 topes, with an area of 18,883 acres: Rs. 3,381 were spent on them. In this circle some of the topes were handed over to Local and Municipal bodies, and some to the Land Revenue Department.

15. The total expenditure on plantations, cultural operations and topes amounted to Rs. 20,213 for the Northern and Rs. 30,139 for the Southern Circle. The following statement compares the year's expenditure on the improvement of forests with those of past years :—

—	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.		Total.
					Northern Circle.	Southern Circle.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sowing and planting ..	65,326	70,423	63,244	64,721	20,213	30,139	50,352
Fire-protection ..	11,223	18,945	25,467	28,956	14,449	20,712	35,161
Other works	36,793	22,306	25,302	27,979	5,313	26,291	31,604
Total ..	113,342	1,11,674	1,14,013	1,21,656	39,975	77,142	1,17,117

16. *Exotics.*—The results of the experiments with exotics have been given in separate appendices. Germination from the seed of *date* fruits purchased in the bazaar was good and the plants appear to stand transplanting well; in both these respects, they are fully equal to the specially-imported seed and offsets; of the latter, 417 are alive of the 517 received in the Southern Circle in 1886-87, and are said to be looking healthy: the difference in the percentage of casualties even in plantations in the same district, as in Tanjore, seems to show that some of the loss was avoidable: the dates are reported to do better on the sandy soil of the East, than in the wet climate of the West Coast Nothing is said about fruiting, and the formation of plantations on an extended scale was postponed to the present year. Wherever they have had a good soil and moist climate, *mahoganies* have done well: in Nilambúr, a tree, 14 years old, is 71 feet high and 40 inches in girth, at breast high; in the Kullar range, trees planted in 1885-86 have attained a height of from 10 to 14 feet; in Wynaad, plants planted out in the year, average 3½ feet in height, and in Trichinopoly, plants obtained in 1886, range from 8 to 11½ feet high; in poor and dry soil, the growth is not so good, and in Sríharikót the plantation is said to be a failure; as with the dates, much of the loss appears to be due to want of either care or experience in transplanting and tending, and is probably avoidable; the plants suffer badly from borers and beetles; in private gardens in Madras, *e.g.*, Mr. H. C. King's, they grow luxuriantly.

The giant *bamboos* in Wynaad made vigorous growth: the various *rubber* plants and the Ipecacuanha there, also did well; the latter was tested by the Government Botanist and found to yield excellently. The commencement of what promises to be a successful experiment was made with Sappan wood in Wynaad, 2,000 seeds being planted out and germinating without a failure: a few *eucalypti* have grown at heights down to 2,500 feet and are said to be doing well; they seeded at Palmanér; 78 *olive* trees, a foot high, raised from seeds sent in 1886-87, are also in the Wynaad nurseries; in the same place, Lancewood seems to have been a failure.

The Conservator of Forests, Northern Circle, should arrange his report by subjects, instead of by districts.

17. *Yield and working.*—The timber returns of the Northern Circle have not been carefully prepared. The several cognate forms do not tally, and even the last year's figures have not been correctly brought forward in some instances. The Conservators, moreover, though, in accordance with the Board's instructions, they have returned the quantities collected and disposed of in tons, instead of in the various measures hitherto used, have used different factors for the conversion. Thus, while 50 cubic feet of timber make a ton in the Northern Circle, 40 are given as its equivalent in the Southern. Again, 75 cubic feet of bamboos are taken as equal to a ton in the one circle, while in the other the measurement is regulated by local circumstances. The Southern Conservator's multiples appear to have been those contained in his

Circular *re* permits, approved in Board's Proceedings, dated 10th March 1885, No. 151, Forests.

Correcting these mistakes the subjoined abstract shows the total yield of the year in the two circles. The figures are not fully available for free grants in the Northern Circle in the report for which money value is given instead of quantity:—

—	Timber.			Firewood.			Bamboos.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7	8	9	10
By Departmental agency ..	3,794	3,432	7,226	16,493	9,422	25,915	1,711	238	1,949
,, consumers	27,260	27,375	54,635	1,06,349	1,49,773	2,56,082	36,230	27,206	63,436
,, confiscations, &c. ..	3,550	336	3,886	150	243	393	84	28	112
,, free grants	..	1,259	1,259	..	113	113	..	569	569
Total ..	34,604	32,402	67,006	1,22,992	1,59,511	2,82,503	38,025	28,041	66,066

—	Sandalwood.			Minor produce.			Total.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
	11	12	13	14	15	16	17	18	19
By Departmental agency ..	19	27	46	50	422	472	22,067	13,541	35,608
,, consumers	..	..	..	13,481	25,880	39,361	1,83,320	2,30,194	4,13,514
,, confiscations, &c.	..	..	..	..	65	65	3,784	672	4,456
,, free grants	..	..	..	..	110	110	..	2,051	2,051
Total ..	19	27	46	13,531	26,477	40,008	2,09,171	24,658	4,55,629

NOTE.—The above statement does not include grazing and fodder grass for which details of *quantity* removed are not available.

The free grants are still large in Vizagapatam, the quantities being 415 tons of timber, 553 of firewood and 1,192 of minor produce. The only other district requiring notice in the Northern Circle is Ganjam, where some 1,330 trees were given away for rebuilding houses destroyed by fire. In the Southern Circle, the grants were largest in South Canara (911 tons of timber, value Rs. 3,300) and Salem (518 tons of bamboos, value Rs. 1,460).

18. *Departmental operations.*—The "selection fellings" of the year show a decrease in both circles. The trees felled were:—

	Northern Circle.	Southern Circle.
Teak	222	488
Sal	1,220	...
Eucalyptus	13,857	...
Vengai	...	386
Rosewood	...	168
Miscellaneous	1,519	3,375
Total ...	16,818	4,417

The figures last year were 19,657 and 8,157, respectively. In the former circle, unsatisfactory work was done in Ganjam, where much worthless timber was carted into the depôts,—the question raised by the Conservator of writing off a quantity of

this has been disposed of separately (Board's Proceedings, dated 10th September 1888, Forest No. 481),—and in the Nílgiris, where fellings were slack and made at haphazard: in Sríharikót less fuel was cut, because the Madras market was still glutted with storm wood. The short felling in the Southern Circle occurred in North Malabar where the demand at the usual prices had fallen while there was a large stock on hand.

In the Northern Conservator's report (paragraph 30), it is stated that most of the bamboos (included by him in "selection fellings," but excluded by the Board) were felled in Cuddapah and Bellary; but form 68 does not show any bamboos as having been cut in Bellary. The correct district is Ganjam. This mistake has been followed by the entire omission of the bamboos in form 69.

The timber and other produce collected by the department during the year are compared below:—

—	Northern Circle.		Southern Circle.		Total.	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.
Timber	1,051	3,794	5,997	3,432	7,048	7,226
Firewood	24,042	16,493	12,156	9,422	36,198	25,915
Bamboos	450	1,711	200	238	650	1,949
Sandalwood	22	19	11	27	33	46
Minor produce	160	50	382	422	542	472

The total departmental sales of the year from both depôts and forests were as follows:—

—	Quantity.			Value.		
	Northern Circle.	Southern Circle.	Total.	Northern Circle.	Southern Circle.	Total.
1	2	3	4	5	6	7
	TONS.	TONS.	TONS.	RS.	RS.	RS.
Timber	2,566	3,992	6,558	47,280	1,08,660	1,55,940
Firewood	10,216	9,758	19,974	54,883	40,729	95,612
Bamboos	1,491½	316	1,807	2,406	852	3,258
Sandalwood	17¼	3	20	5,804	690	6,494
Minor produce	33	348	381	4,920	36,438	41,358

—	Rate per ton for 1887-88.			Rate per ton for 1886-87.		
	In Northern Circle.	In Southern Circle.	Average.	In Northern Circle.	In Southern Circle.	Average.
	8	9	10	11	12	13
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Timber	18 7 0	27 3 6	22 13 3	17 6 3	20 15 7	19 2 11
Firewood	5 5 11	4 2 9	4 12 4	5 0 1	2 8 7	3 12 4
Bamboos	1 9 9	2 11 1	2 2 5	2 0 0	..	..
Sandalwood	341 6 7	230 0 0	285 11 3	409 1 6	361 3 6	385 2 6
Minor produce	149 1 6	104 11 3	126 14 5	51 10 0	73 7 0	62 8 6

Out of these the following quantities were received into and sold from depôts:—

—	Timber.		Firewood.		Bamboos.		Sandalwood.		Minor produce.	
	Received.	Sold.	Received.	Sold.	Received.	Sold.	Received.	Sold.	Received.	Sold.
	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.	TONS.
Northern Circle	2,839	2,456	4,771	6,375	1½	1½	..	..	70¼	42¼
Southern ,, ...	1,787	1,841	2,574	2,633	148	299	27	3	99	100
Total ..	4,626	4,297	7,345	9,008	149½	300½	27	3	175¼	142¼

The stock on hand at sale depôts at the close of the year amounted to—

—	Timber.	Firewood.	Bamboos.	Sandal-wood.	Minor produce.
Northern Circle	583	719	1½	..	104½
Southern ,, ...	1,527	429	5	36	..
Total ..	2,110	1,148	6½	36	104½

the total value being, respectively, Rs. 24,351 and Rs. 53,780, against Rs. 25,091 and Rs. 64,927 last year.

19. *Removals by purchasers themselves.*—By far the largest proportion of the forest revenue comes in under this head; the amounts realized amounting to Rs. 4,43,904 for the Northern Circle and Rs. 6,03,580 for the Southern, against Rs. 4,09,078 and Rs. 5,40,115 last year. In the Northern Circle the receipts were largest in Cuddapah, Kurnool and Godávari. In the last-mentioned district, there was an increase of about Rs. 20,000 over the revenue of last year, due, the Conservator states, to merchants getting over their objection to sale by the cubic foot. In Kurnool, there was a decrease, owing to the introduction of the system of issuing permits for individual trees when standing instead of for the cart-loads when cut. In the Southern Circle the receipts rose by about Rs. 63,465 and the quantity removed was some 13,000 tons more than last year. Madura, Trichinopoly, Salem and North Arcot were the largest contributors.

20. *Financial.*—The results of the year's working are summed up in the following abstract:—

—	Revenue.	Expenditure.			Balance.
		A. Conservancy and Works.	B. Establishments.	Total.	
	RS.	RS.	RS.	RS.	RS.
Northern Circle	5,64,723	2,18,009	2,35,785	4,53,794	1,10,929
Southern do.	8,10,197	3,35,437	3,28,981	6,64,418	1,45,779
Total ..	13,74,920	5,53,446	5,64,766	11,18,212	2,56,708

It will thus be seen that there was a balance of Rs. 1,10,929 in favor of the Northern Circle and of Rs. 1,45,779 in favor of the Southern, making a net surplus of a little over the 2½ lakhs required from the department.

This is of course exclusive of capital invested in live stock, tools and plant, acquisition of lands, &c.

The following statement shows the receipts and charges for the six years during which the new system, inaugurated by Dr. Brandis, has been in force, and seeing that Dr. Brandis' forecast was for simple equilibrium only, it may be considered very creditable to the department:—

—	Receipts.	Charges.	Surplus.
	RS.	RS.	RS.
1882-83	9,03,914	6,36,558	2,67,356
1883-84	9,58,991	7,80,916	1,78,075
1884-85	11,62,689	8,84,421	2,78,268
1885-86	11,98,600	9,36,431	2,62,169
1886-87	12,46,783	11,55,687	91,096
1887-88	13,74,920	11,18,212	2,56,708

The following statement shows the actuals compared with the estimates:—

Receipts.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	96,660	37,133	— 59,527	1,86,958	1,10,528	— 76,430
(b) Firewood and charcoal ..	72,080	57,517	— 14,563	43,850	41,668	— 2,182
(c) Bamboos	3,200	2,365	— 835	1,860	805	— 1,055
(d) Sandalwood	10,000	5,804	— 4,196	4,200	690	— 3,510
(e) Grass and other minor produce	9,890	4,920	— 4,970	31,625	36,439	4,814
II. Timber and other produce removed from the forests by consumers or purchasers—						
(a) Timber	1,10,000	1,19,871	9,871	89,300	98,883	9,583
(b) Firewood and charcoal ..	1,14,900	1,01,263	— 13,637	1,67,038	1,58,618	— 8,420
(c) Bamboos	42,700	44,370	1,670	76,025	76,254	229
(d) Grazing and fodder grass.	58,200	59,773	1,573	31,875	46,038	14,163
(e) Other minor produce ..	94,750	1,18,627	23,877	1,94,341	2,23,787	29,446
III. Confiscated, drift and waifwood.	10,230	9,328	— 902	2,916	3,054	138
IV. Revenue from forests not managed by Government ..	..	14	14	..	..	..
V. Miscellaneous—						
(a) Fines and forfeitures ..	310	334	24	1,400	1,573	173
(b) Refunds	570	448	— 122	550	3,402	2,852
(c) Other sources	1,510	2,956	1,446	4,862	8,458	3,596
Total ..	6,25,000	5,64,723	— 60,277	8,36,800	8,10,197	— 26,603

Charges.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	36,410	24,246	— 12,164	62,847	45,243	— 17,604
(b) Firewood and charcoal ..	30,350	39,565	9,215	16,405	16,759	354
(c) Bamboos	1,450	1,218	— 232	790	216	— 574
(d) Sandalwood	3,600	3,067	— 533	1,340	1,193	— 147
(e) Grass and other minor produce	7,250	3,056	— 4,194	20,110	28,296	8,186
II. Timber and other produce removed from the forests by consumers or purchasers ..	26,810	24,162	— 2,648	55,729	44,483	— 11,246
III. Confiscated, drift and waifwood	1,570	1,800	230	965	200	— 765
IV. Revenue from forests not managed by Government ..	..	24	24	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government	13,500	13,500	..	4,010	1,943	— 2,067
VI. Live and dead stock—						
(a) Purchase of cattle ..	10,000	..	— 10,000	1,170	4,122	2,952
(b) Feed and keep of cattle ..	2,300	1,336	— 954	8,408	6,583	— 1,825
(c) Stores, tools and plant ..	9,300	3,627	— 5,673	6,560	5,678	— 882
VII. Communications and buildings—						
(a) Roads and bridges ..	21,200	6,879	— 14,321	17,025	14,024	— 3,001
(b) Buildings	31,900	14,604	— 17,296	26,000	17,307	— 8,693
(c) Other works	800	883	83	1,100	1,157	57
VIII. Demarcation, improvement and extension of forests—						
(a) Demarcation	18,600	27,225	8,625	15,628	11,613	— 4,015
(b) Compensation for land and rights	12,400	8,650	— 3,750	6,747	45,723	38,976
(c) Surveys and working-plans	3,450	1,385	— 2,065	7,669	5,864	— 1,805
(d) Plantations	20,300	20,213	— 87	36,763	30,139	— 6,624
(e) Protection from fire ..	15,600	14,449	— 1,151	24,820	20,712	— 4,108
(f) Other works	6,200	5,313	— 887	31,436	26,291	— 5,145

Charges—cont.

—	Northern Circle.			Southern Circle.		
	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.	Revised estimate, 1887-88.	Actuals, 1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
IX. Miscellaneous—						
(*a*) Refunds ..	480	1,043	563	965	1,643	678
(*b*) Law charges	440	1,070	630	1,550	2,353	803
(*c*) Other do.	2,090	694	— 1,396	3,263	3,895	632
Total ..	2,76,000	2,18,009	— 57,991	3,51,300	3,35,437	— 15,863
I. Salaries—						
(*a*) Conservators	12,400	12,500	100	17,450	20,401	2,951
(*b*) Superior officers	76,000	75,389	— 611	98,200	1,00,209	2,009
(*c*) Subordinate forest and depôt establishments ..	70,000	64,250	— 5,750	94,500	88,964	— 5,536
(*d*) Office establishments ..	30,000	28,870	— 1,130	44,700	43,580	— 1,120
(*e*) Deputation and special allowance	..	..	..	902	54	— 848
II. Travelling allowances—						
(*a*) Conservators	4,000	3,306	— 694	3,200	3,388	188
(*b*) Superior officers	20,000	18,287	— 1,713	23,000	22,662	— 338
(*c*) Subordinate forest and depôt establishments ..	19,000	17,400	— 1,600	29,000	26,952	— 2,048
(*d*) Office establishments ..	4,520	4,781	261	7,200	6,233	— 967
III. Contingencies—						
(*a*) Stationery	190	67	— 123	266	63	— 203
(*b*) Carriage of tents and records	1,660	1,475	— 185	2,903	2,052	— 851
(*c*) Rents, rates and taxes ..	875	897	22	1,349	1,418	69
(*d*) Pay of police guards ..	..	..	..	..	..	..
(*e*) Official postage	2,375	3,073	698	5,720	5,449	— 271
(*f*) Sundries	4,980	5,490	510	10,110	7,556	— 2,554
Total ..	2,46,000	2,35,785	— 10,215	3,38,500	3,28,981	— 9,519
Total of A, Conservancy and works ..	2,76,000	2,18,009	— 57,991	3,51,300	3,35,437	— 15,863
Grand Total of all expenditure ..	5,22,000	4,53,794	— 68,206	6,89,800	6,64,418	— 25,382

It will be seen that the revenue did not come up to the revised estimates of the year in either circle. The difference was larger in the Northern Circle than in the Southern, which fell off only by Rs. 26,600. The chief deficits occurred in Ganjam, Nellore, Kurnool and Nílgiris. In the first-named district the season for work was lost by the absence of a District Forest-officer during part of the time. Nellore firewood is still unable to find a market owing to the large stock of stormwood with which the local depôts are glutted. The non-realization of sums due from the Bellary-Kistna Railway is said to account for the short receipt in Kurnool. In the Nílgiris the budget was exaggerated.

The difference in expenditure was also great in the Northern Circle, and was mainly due to non-utilization of allotments. In Ganjam it was under Timber and Roads and has been already explained; in Godávari it was due to the non-purchase of elephants; in Nellore it was due to delay in indenting for a tramway and in settling compensation for claims to trees in the Srîharikota reserves; in Kurnool it was under Roads and Buildings, and included non-payment for the head-quarter's bungalow; in Nílgiris it was due to slack fellings of timber and abandonment of the proposed site for a bungalow at Mudumalai as being unhealthy.

In the Southern Circle, the difference was not large and requires no special notice. There was a falling off under I (*a*) Rs. 17,604, II Rs. 11,246 and VII (*b*) Rs. 8,693, but this was more than compensated by the increase under I (*e*) Rs. 8,186 and VIII (*b*) Rs. 38,976. During the year the Amarampalem forest estate was purchased at a court sale for Rs. 42,000 odd. The absence of officers on leave caused savings under B. in both circles.

Compared with last year, the expenditure under A and B was as follows:—

—	Northern Circle.			Southern Circle.		
	1886-87.	1887-88.	Difference.	1886-87.	1887-88.	Difference.
	RS.	RS.	RS.	RS.	RS.	RS.
A	2,20,443	2,18,009	— 2,434	3,80,192	3,35,437	— 44,755
B	2,14,523	2,35,785	+ 21,262	3,40,529	3,28,981	— 11,548
Total ..	4,34,966	4,53,794	+ 18,828	7,20,721	6,64,418	— 56,303

The following statement shows the ledger account of each district:—

Districts.	Receipts.	Charges.	Surplus.
	RS.	RS.	RS.
Cuddapah	1,45,202	75,070	70,132
Salem	1,26,409	60,413	65,996
North Arcot	1,05,904	56,546	49,358
Coimbatore, North ...	83,541	34,545	48,996
Godávari	70,323	28,276	42,047
South Arcot	91,212	50,237	40,975
Kistna	77,665	36,966	40,699
Kurnool	78,157	40,003	38,154
Nellore	80,290	58,957	21,333
Madura	58,609	38,227	20,382
Coimbatore, South ...	72,284	58,964	13,320
Trichinopoly	50,387	37,637	12,750
Tinnevelly	56,794	45,996	10,798
Anantapur	19,655	14,030	5,625
Tanjore	9,327	6,931	2,396
Chingleput	20,153	18,003	2,150
South Canara	57,194	56,084	1,110
Malabar, North	28,160	28,980	— 820
Bellary	28,860	30,841	— 1,981
Vizagapatam	5,389	7,687	— 2,298
Ganjam	20,079	40,115	— 20,036
Nílgiris	39,076	63,760	— 24,684
Malabar, South	50,082	92,098	— 42,016

24. *General.*—Excluding the unsatisfactory work in Ganjam and Nílgiris, the Board think that the year's working may be considered good. Steady progress is being made in reservation and settlement, rough working-plans are taking the place of the wasteful permit system, fire-protection is becoming something more than a mere name and forests are being opened out with roads and buildings. Grazing is also being brought under control and made to pay. Colonel C. Walker visited five districts and Mr. Cherry three in the Southern Circle, and Mr. Peet visited nine districts in the Northern Circle. District Forest-officers also travelled well; Messrs. Hooper, Homfray, Somers-Smith and Somasundra Mudaliar heading the list for time spent in camp. As usual, the want of superior officers was much felt, Vizagapatam and Anantapur having no proper District Forest-officers at all, and Ganjam being placed for six months under a Sub-Assistant; the lower grades are, however, being gradually strengthened by the appointment of men trained at the Dehra Dun School.

The Board regret the delay in the submission of this report. The Southern Circle Conservator's report was only received on 1st October last and his appendix on exotics not till 30th idem. In addition to this, the mistakes in the Northern Circle

report have been most numerous and the necessary correction and ascertainment of correct figures in the Board's office have necessarily taken much time.

(True Copies and Extract.)

Acting Secretary.

To the Secretary to Government, Revenue Department,
with two reports, and a map (to be returned).

Copy to the Conservator of Forests, Southern Circle.
" to the Conservator of Forests, Northern Circle.
" to all Collectors.
" to the Examiner of Forest Accounts.

Exd. A. D. Xavier.

REVENUE DEPARTMENT.

1888.

Board of Revenue

(Land Revenue).

MADRAS.

Printed December th.

Proceedings, dated 30th November 1888,
Forest No. 625.

GOVERNMENT OF MADRAS
REVENUE DEPARTMENT
8 DEC 88

Submitting to Government, with remarks, Forest Administration Report for 1887-88.

Read Ord. No. 8514.

Order:- d/5-3-89 No. 153

With their Proceedings read above the Board of Revenue submit the annual reports of the Conservators of Forests on the administration of the Forest Dept. during the year 1887-88.

2. These reports together with the Board's review of them, should reach the Govt. on or before the 1st September, but they have never been submitted till some months after that date, and the explanations offered have invariably been unsatisfactory.

of the books of the Distt. and central offices are kept with care and the entries regularly posted up to date it ought to be quite possible for the District Officers to submit full reports and accurate statements by the 15th of May, and the Conservators should then be able to despatch their reports before the 15th of July. The Board will submit a special report on the subject and endeavour to suggest a radical cure for this chronic delay.

The defective nature and the general inaccuracy of the report of the Northern

Circle have on previous occasions been noticed by the Board, the Governm and the Govt. of Ind and His Excellency the Governor in Council regrets to find that there has been no improvement in this respe The numerous errors, both in the statements and in the body of the report can only be due to want of ordinary care, and although the fault may originally rest with Distt. Forest Officers H. E. in Council must hold the Conservator mainly responsible for the many defects which detract so largely from the value of his report.

area 4

Area of Forests.

2. The following statement shows the ~~area~~ extent of the forests administered by the Dept and the changes that have occurred in the area during the year.

(Here enter Statement A)

5

The area given in col. 3 differs in some cases very widely from that shown in the preceding col: The most striking variations are under the head of Reserved Lands, the real area of which was very much understated in the reports for 1885-87, owing in the S.C. part to figures which were even approximate a very considerable error in estimating the actual extent, and in the N.C. to the omission of over 2000 square miles of forest of this class. The Govt. are ~~still~~ unable to accept with confidence even the revised figures now

given; for the area shown under B in the N.C. appears to be included under D also;—and the Conservator, S.C. seems himself to have some doubt as to the propriety of his classification in respect of the extent under E. The Board shd. make further inquiries on these two points ~~& see~~ and every endeavour shd. be made to ~~obtain~~ furnish correct figures with the Reports for 1888-89.

The ~~& to~~ alterations which may be found necessary shd. also be fully explained; ~~as the~~ and the tables ~~statements~~ appended to the Report should be consistent with one another and with the statements made in the text.

The actual addition to the area of Reserved Forests during the year was 560 sq. miles in the Southern and 150 sq. miles in the N. Circle,

Reservation

A

1/12

57

Class of Forests.		area on 31st March 1887 as given in the Report for 1886-87	area on 31st March 1887 as since corrected	Additions during the year	Exclusions during the year	Difference	area on 31st March 1888.	
				NORTHERN CIRCLE.				
		Sq. M.	Sq. M.	Sq. M.	Sq. M.	Sq. M.	Sq. M.	
A	Reserved Forest under Act V	474	475	150	-	+150	625	~~150~~ 7 from B & D
B	Reserved Forest under previous rules	784	786	:	17	-17	769	17 to A. This is also included in the area transferred from D to A.
C	Leased Forests	198	199	"	"	"	199	
D	Reserved Lands	3837	6329	235	200	+35	6364	150 to A: 50 excluded at Settlement.
E	Other Forests	"	"	"	"	"	"	
F	Unclassed Forests & waste lands							
	Total	5296	7789	~~3~~85	217	+168	7957	
				SOUTHERN CIRCLE				
A	Reserved Forests under Act V	1838	1813	560	"	+560	2373	~~560~~ 7 from D.
B	Reserved Forests under previous rules	280	262	"	18	-18	244	To D.
C	Leased Forests	49	46	"	"	"	46	
D	Reserved Lands	3655	4454	1242	560	+682	5136	560 transferred to A. 18 transferred from B. 15 from E = 1209 for 166 from F: 15 to D.
E.	Other Forests	1099	1099	166	15	+151	1250	
F	Unclassed Forests & waste lands	"	"	"	"	"	"	
	Total	6921	7674	1968	593	+1375	9049	
	Grand Total	12,217	15,463	2353	810	+1543	17,006	

or a total of 4410 square miles, against 6865 square miles in 1886-87. The area of all classes of forests under the control of the Department on the 31st March 1888 was 14,006 square miles, the real net addition during the year, as distinguished from increase due to more correct [illegible] of area, being 1543 square miles.

3. In his review of the reports for 1886-87 His Excellency the Governor in Council directed that he should be furnished with a detailed report of

Districts.	Total area exclusive of Jaghire & Zamindary states	area excluding Zamindaris & whole inam villages.	Cultivated area.	Remainder. Uncultivated & forest.	Remainder. area probably returning are not available	Remainder. Total of Cols 5 & 6	Forests under the control of the Forest Dept.	Percentage of Col 8 on Col 3	Percentage of Col 8 on Col 7
	Sq miles	Sq miles	Sq miles	Sq miles	Sq miles	Sq miles	Sq miles		
Ganjam	8,369	2,273	571	380	1,319	1,699	557	24·5	32·7
Vizagapatam.	16,992	1,864	188	107	1,568	1,675	8	·4	·5
Godavari	7,857	3,713	1,451	1,771	791	2,262	776	20·9	34·3
Kistna	8,397	5,481	2,957	2,391	134	2,525	855	15·6	33·8
Nellore	8,765	4944	1,528	2,676	"	2,516	744	18·4	29·5
Cuddapah	8,722	7,494	1,937	5,557	"	5,557	2,287	30·5	41·1
Anantapur	5,274	4,317	1,724	2,220	362	2,582	261	6.0	10·1
Bellary	5,605	4,158	2,216	1,940	"	1,940	264	6·3	13·6
Kurnul	7,769	5,919	1,788	4,132	"	4,132	1,718	29.0	41·6
Chingleput	2,872	2,057	907	1,106	"	1,106	155	7·5	14·0
N. Arcot	7,497	3,768	1,263	2,505	"	2,505	861	22·8	34·3
S. Arcot.	5,140	4,880	2,152	2,707	"	2,707	1,068	22.0	39·4
Tanjore	3,664	2,214	1,674	810	"	810	28	1·2	3·4
Trichinopoly	4,732	2,532	1,633	899	121	1,019	236	9·3	23·1
Madura	8658	3,193	1503	1,260	430	1690	692	21·6	40·9
Tinnevelly	5,387	3,518	2,242	1,276	"	1,276	607	17·2	47·7
Coimbatore	7,800	7,173	3,683	2,392	1099	3,491	2,618	35·1	72·1
Nilgiris	957	957	293	664	"	664	487	50·9	73·3
Salem	7,724	5,580	1,954	3,622	"	3,622	1,010	18·1	27·8
S. Canara	3,902	3,862	625	3,257	"	3,257	1,020	26·3	31·3
Malabar.	5,584	5565	1,376	4,188	"	4188	854	15·3	21·4
Total.	141,687	84,536	33,769	45,400	5,123	51,223	17,006	20·1	33·2

65

FE 65

Settlement.

4. The area finally settled during the year is, of course, the same as the addition to Reserved Forests, and has been given above; but this does not adequately represent the settlement work actually done as final notⁿ had not been issued at the close of the year for many of the blocks which had then been completely settled. So far as can be gathered from the information furnished by the Conservators the progress made was good in the Southern but less satisfactory in the Northern Circle. For the latter Circle, ~~[illegible]~~ the area which was settled by the end of the year but not notified ~~[illegible]~~ is not given and this makes it difficult to judge of

the real work done. It would be convenient if tables similar to those given in paras 7 & 8 of Mr Cherry's Report were in future compiled for both Circles. It is observed that in his report for 1886-87 the Con. S.C. stated that the settlement of 1016 sq. miles had been practically completed by the end of that year, yet the total area finally notified in 1887-88 was only 560 sq. miles ~~or little more than half this~~. This, taken in conjunction with the fact that there is still a very large Extent which has been settled but for which not yet been issued, points to great delay in the preparation or transmission of the necessary reports and draft & not yet the Govt. accordingly desires to be furnished

In order to get some idea of the real position of affairs

with a statement of all reserves of which the settlement has been completed but for wh. notifs have not yet been issued. The statement shd. show the dates of completion of settlement, expiry of appeal time, and receipt of the report and notifs by the Collr, the Conservator and the Board.

Neither the ~~Reports nor the~~ Boards review nor the Reports ~~which~~ give any definite account of the work done by each of the four Special Forest Settlement Officers, although ~~a detailed~~ nor has the statement furnished called for in para 2 of G.O. 27 July 1888, No 516, Rev., been furnished. H.E. in C. is thus unable to review the work of these officers, and the question of their retention after the

Circles, but in the Northern Circle it is still too high and endeavours should be made to reduce it. The Govt: awaits the report promised by the Conservator on the mismanagement that has taken place in the construction of walls in Anantapur.

6. Surveys - The Conservator N. C. states in para 17 of his report that there were no survey operations in his circle during the year, but he mentions in the preceding para that a fire protected block was surveyed and plotted by Mr. Hearsey. In the Southern Circle

11½ square miles were surveyed by the Forest Department but the result is said to be unsatisfactory and the whole of what has hitherto been done will have to be done over again by the Madras party of the Survey of India who, under recent arrangement, have undertaken the Forest Survey of the Presidency. This party worked in Madura in the year under review and completed the survey of eight square miles on the scale required by the Forest Dept. It also surveyed 245 square miles on the one-inch scale which is not large enough

for forest purposes. This mistake appears to have arisen from a most regrettable misunderstanding on the part of Colonel Campbell Walker. It has also been decided that the Madras Survey Party now working in Bellary and Anantapur should survey the forests of those districts. The Govt. considers that the admittedly useless departmental surveys should now be discontinued unless arrangements can be made for securing greater accuracy.

In order that some progress may be made with survey in the N. Circle

4. Working plans. Much could not be done in the way of preparation of

of satisfactory working plans, as no regular survey of forest areas has been made; and the selection + settlement of reserves taken up most of the time of the establishment.

If the proposals for strengthening the superior staff, which M. E. in Council has submitted to the Government of India are sanctioned, it will be possible to form a special Working Plans Party which will follow in the wake of the surveyors and assist the local officers in drawing up schemes for the proper working of the forests.

Fire Protection.

8. There was a very satisfactory improvement in both in the area over which protection was attempted and in the success obtained, the results in the latter respect being particularly good in the Southern Circle:

Circle	Area attempted			
	1884-85	1885-86	1886-87	1887-88
	Sq. M.	Sq. M.	Sq. M.	Sq. M.
Northern	720	728	1168	1320
Southern	744	906	1081	1250.
Total	1464	1634	2249	2570

Circle	Percentage of area attempted in which protection was successful			
	1884-85	1885-86	1886-87	1887-88
Northern	97.	96	87	92
Southern	98	98	96	99
Total	97	97	91	95

The total cost was Rs 35161

or an average of Rs 13·7 per square mile. The Govt. observes that in the Bombay Presidency ~~the~~ nearly the whole of the area under the control of the Forest Dept. is specially protected from fire, and this, too, at the very small cost of ~~Re~~ two annas per square mile. The Conservators should endeavour to ascertain under what arrangements this singularly satisfactory result is obtained.

Grazing.

9. The revenue from grazing fees has risen from Rs 81,203 to Rs 1,05,811 or by 30 per cent. and this gratifying increase appears to have been obtained without the infliction of any heavy additional tax. H.E. in C. notices with approval Mr. Hooper's judicious action in

levying at first a fee of only one anna per head per annum, and he commends this course to the favorable attention of all Collectors. The fee may be subsequently increased but this should not be done too rapidly and the amount of each increment should be small. Where the area of unreserved land available for pasture is comparatively limited free grazing must be provided for the cattle required for agricultural or domestic purposes, and the Government observes with satisfaction that this point has not been

lost sight of by Mr. Cherry, As the policy of charging fees is more generally introduced this matter will become of increasing importance and great care will be necessary on the part of Collectors and District Forest Officers to prevent reasonable discontent being caused in those localities where the pasture lands have all been brought under control although the customary free and unrestricted use of them by the villagers' cattle has hitherto been ~~be~~ ~~trained~~. It is clear that the ryots are already beginning to appreciate the advantages to themselves of conservation and control and if the wise and cautious policy of the past few years is steadily maintained, the Govt. does not doubt that in a comparatively short time, Cattle owners will be converted from an attitude of distrust, if not actual hostility, into one of hearty co-operation. His Excellency in Council regards the results which have been obtained during 1887-88 in dealing with this difficult & as one of the most satisfactory features of the year's working.

from sub para

Forest Offences

10. The number of forest offences reported in each of the past four years is shown below:

Circle	1884-85	1885-86	1886-87	1887-88
Northern	754	848	994	1455
Southern	1004	1154	1339	1644
Total	1764	2002	2333	3099

It will be seen that there was a considerable increase in the year under review but it is only to be expected that with the steady extension of conservation the ~~number~~ offences brought to notice should be more numerous. Two-thirds of the offences were under the head of Unauthorized felling or removal of timber or forest produce, but in the S. C. the number of cases of grazing without permission was comparatively large

* If the 25 cases wh. were withdrawn be included the percentage is 74.

~~It~~ Of the cases which were taken before the Courts, 75 per cent* resulted in convictions, which is an improvement upon the proportion in the previous year (67 per cent), ~~It~~ and is decidedly satisfactory. The figures for each Circle are

	1886-87	1887-88
N.C.	65	72
S.C.	70	77

The number of cases compounded has increased from 571 to 787. The Govt. presume that the ~~compounded~~ acquittal case which was shown under the head of 'compounded' is one which when taken before the compounding officer was found to be false or at least not proven. There must be a number of such cases and it would be interesting if they were shown separately

The ~~xxx~~ officers who are empowered to compound should not ~~accept~~ so presume that the case agst. every accused person who is willing to compound is necessarily a true one, but he should carefully examine the record and ~~to~~ ascertain whether it discloses a prima facie case. It is perhaps unnecessary to add that any tendency to send up ~~bogus~~ ~~cases~~ cases which are obviously so weak as to be quite untenable in any Court should be promptly checked.

Natural Reproduction.

11. The fact that if a forest is ~~xxxxxx~~ carefully protected from fire and excessive grazing, reproduction will proceed satisfactorily without artificial planting or sowing is now so generally established that it is only ~~xx~~ necessary to draw attention to the exceptions to this rule and to endeavour to ascertain the causes of failure. In the majority of cases these causes are to be found in the non-fulfilment of the conditions required for success, viz. the exclusion of fire and the prevention of excessive grazing, but the reports ~~xx~~ give instances where failure cannot be explained in this way and where other reasons for it must be sought for. Thus in the Anamalai forests of S. Coimbatore the young seedlings have not succeeded in pushing their way through the strong coarse grass which has grown vigorously ~~xxx~~ in the absence of fire and grazing. In the Report for 1886-87 it was stated that this difficulty was being overcome ~~xxx~~ but ~~xxxx~~ it now ap-

pears that these hopes of success were premature. ~~Since~~ In Dr. Anantapur the dying off in the hot weather of the seedlings which had sprung up in the rainy season ~~which~~ was remarked upon in the review of the Report for 1886-87 ~~and~~ ~~these~~ ~~were~~ ~~again noted~~ and the experiment of closing a few areas against both grazing and the cutting of grass was recommended. This suggestion ~~was~~ ~~had~~ of course too late to be ~~was~~ acted upon in 1887-88 but Mr. Peet proposes to give effect to it. In meeting difficulties of this kind the experience of the Inspector General of Forests with the Govt. of India would be of great value and H.E. in C. feels sure that any requests from Conservators and for advice and assistance would be cordially and promptly complied

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with by Mr. Ribbentrop.

Before leaving this subject H.E. the C. in C. thinks it advisable to point out that ~~many~~ it is not reserves and reserved lands. Many of them are primarily ~~grazing~~ needed as pasture grounds, and in the case of such grazing areas the requirements ~~of~~ must not be sacrificed to the necessities of natural reproduction.

the wish of the Government that attempts shd. be made to grow high forest on the whole of the

Artificial Reproduction

12. The areas under regular plantations and cultural operations increased during the year by 802 and 408 acres ~~in the Northern and Southern Circle~~ respectively. The extension was chiefly made in Nellore, North Malabar, Trichinopoly and South Arcot in the case of the former, and in Cuddapah, Nellore, Tinnevelly

	Area		Cost.	
	1886-87	87-88.	1886-87	87-88.
Plantations.				
Northern Circle	6423	7092	9191	14729
Southern Circle	11,786	11,919	29,275	24,609
Total	18,209	19,011	38,466	39,338
Cultural Operations				
Northern Circle	878	977	1,662	1,394
Southern Circle	2,972	3,361	3,634	1,978
Total	3,850	4,338	5,296	3,372

2

and North Malabar in that of the latter. The expenditure shows an increase under Plantations and a decrease under Cultural operations. During the year under review the results of artificial reproduction were discouraging in the N. Circle and not altogether satisfactory in the Southern Circle. In Nellore the ravages of some insect which has not yet been identified seem to have caused most serious damage to the plantations. The Govt. has perused with much interest Mr. Peet's remarks on the subject of the continuous planting of a single species of tree. The matter will no doubt receive

receive the attention of Mr. Gamble who has now resumed charge of the Circle.

13. Exotics :- The Board has given an interesting summary of the Reports of the Conservators on exotics and H. E. in C. has little to add to their remarks. The year's operations affirm the conclusion stated by Govt. in the review of the reports for 1886-87, that the cultivation of the date palm has in this Presidency passed the experimental stage, and may now be conducted on an extensive scale. It is said that the seeds of date fruits bought in the bazaars have been

found to give good results, but in October 1888 Mr. Hadfield, the officer who made the experiments with this kind of seed, reported that 50 per cent of the plants put out had died. It is not impossible that as good seed may be obtained in the West coast bazaars as that imported by Mr. Duthie from Arabia, but until this is proved by experiment no large area should be planted with it. The Govt. has already issued orders to this effect. The Mahogany has thriven well on the whole in the Southern Circle.

Communications

It is noted with satisfaction that

Note. I saw a few mahogany trees planted in Sirsi at Sirsi & Balsamgiri Khargas grown wonderfully. Khargas planted in the Jubilee year 1887 were then 9 ft. high & 15 in. girth in Mr. Hadfield's

	R.E....	Actuals...	P.C. of unexpended balance.
1886-87 ...	78311 ...	51719 ...	34.
1887-88 ...	98025 ...	54857 ...	44.

Communications & Buildings.—13. A considerable proportion of the budget allotment under this head has been, as in previous years, left unutilized. In fact, the per centage of unexpended balance was considerably higher than in the preceding year. Employment of the establishment in settlement and demarcation cannot, as was observed by Government in the review of the last report, be accepted as a sufficient factory explanation of

of the short expen-
diture. The work-
ing of the Nellore
portable tram-
way and the possi-
bility of introducing
this means of carri-
age more extensively
should have been
noticed by the Con-
servators. It is gather-
ed from other papers
that the Nellore line,
which is $2\frac{3}{4}$ miles
in length, has been
most successful. The
cost of transport has
thereby been reduced
from one rupee to
two annas per ton,
and the greater faci-
lity for working is
said

said to be in itself
sufficient to render
its use profitable, for
the damage which
was caused to the carts
to the stools kept for
coppice, and the diffi-
culties experienced by
when carts were em-
ployed in getting out
the necessary quantity
of wood during the
working season have
both disappeared. Thus
results here are rightly
regarded as so encour-
aging as to justify
the introduction of portable
tramways into other districts,
and during the current year
lines have been laid in S.
Coimbatore (7 miles) and N. Arcot
(2 miles) while an additional
length of 5½ miles

has been purchased for Mellon.

Yield and Working.

14. The quantity of every kind of produce has been given in tons, but in F.D. 1st Aug. 1887, No 741 Rev., was ordered, in compliance with the wishes of the Govt. of India, that the outturn of timber and fuel should be stated in cubic feet. There seems, too, to be some little doubt regarding the scale of conversion employed by the Conservator, N.C. for though in one place he gives 50 cubic feet as the equivalent of a ton, the yet the entries of eighths of a ton wd. seem to indicate the use of a different table rate. In these circumstances H.F. in C. considers that it wd. be unsafe to accept the figures as they stand and he resolves to request each Conservator to furnish a statement showing for 1886-87 and 1887-88 the yield of timber and fuel in cubic feet, of minor produce in maunds of 25 lbs, and of bamboo by number. The various Code forms Statements must be very carefully examined and all any inconsistencies satisfactorily cleared up. The yield shd. be shown under the three heads 'Indication the of 'Govt. Agency', 'Private Purchasers' and 'Free Grants'. The statement should be prepared and submitted with as little delay as is possible in order that it may be transmitted to the Govt. of India in time to be incorporated in the 'Review of Forest Admn in British India'.

lbs in maunds of 25 lbs. 1 lb is 160 under the maund of 82 lbs?

Financial Results.

15. The actual receipts and disbursements of the year fell short of the revised estimates as usual, the receipts being less by Rs. 86,880 & the expenditure by Rs. 93,588. Compared with ~~the~~ figures of the previous year, however, the financial results of the working of the Dept. show an improvement, the surplus having increased from Rs. 91,096 to Rs. 2,46,403.

	Northern Circle		Southern Circle		Total	
	1886-87.	1887-88.	1886-87.	1887-88.	1886-87.	1887-88.
Receipts ...	5,52,248	5,64,723	6,94,535	8,10,197	12,46,783	13,74,920
Charges ...	4,34,966	4,53,794	7,20,721	~~664,418~~ 6,74,723	11,55,687	11,28,517
Surplus	+ 1,17,282	+ 1,10,929	- 26,186	+ ~~145,779~~ 1,35,474	+ 91,096	+ 2,46,403
Percentage	+27	+24	-3	+20	+8	+22

The charges as given above exceed those given by the Board of Conservators by Rs. 10,305, which is the amount charged for work done by the Survey of India. The steady advance in revenue which has been continuous for the past five years was maintained while the charges showed a slight decrease. The expenditure included Rs. 42,000 for the purchase of a valuable forest in Malabar, at least Rs. 40,000 on account of settlement, about Rs. 56,000 for demarcation and survey and Rs. 54,000 on communications. These are all items of which the greater part would be debited to capital account

account if that distinc-
-tion were made, and
when once the forests
are settled, demarcated
and surveyed and pro-
-vided with good roads
the total expenditure will
probably be less than
it is now, even if
the staff be considerably
augmented, while the
income may be relied
upon to rise much
higher as the forests
are brought under
systematic working.

The district which yield-
-ed the largest surplus was
Cuddapah (Rs. 70,132) Salem
being next with Rs. 65,996.
The highest rate of profit
was realized in the Godavari
150 per cent.- while in
each

each of the marginally

		%
N. Coimbatore	...	... 140
Kistna	...	... 110
Salem	...	... 110

noted distri
it was over
100 per cent
In Cuddapah the rate, wo
93%. As already explaine
in the review of the budg
the deficit of Rs. 42,016 in
S. Malabar is almost
entirely due to the expend
-iture (Rs. 42,000) on the pur
-chase of the Amarampa
-lam forests. The deficits
of Rs. 20,000 in Ganjam
and of Rs. 24,000 in Nilgir
are most disappointing
and are largely if not
entirely due to unsatis
-factory administration

General.-

16 His Excellency the
Governor in Council con
-siders that on the whole
the

the work done during the year may be regarded as very satisfactory — There was an improvement in the extent added to the area of reserved forests, and if there had not been so much delay in the submission of the settlement records and draft notifications the addition would have been much greater; the demarcation made good progress and though but little was done in the way of surveys and the preparation of working plans this was not the fault of the department; the advance towards the final solution of the

the difficult grazing question was particularly satisfactory, while the attempts to protect the forests from fire were more successful than in the previous year, there was an increase in the number of forest offences reported, but this is probably due to improved detection; the progress made with the construction of roads and buildings, though somewhat better than in 1886-87 still leaves much to be desired but the remarks of Govt. on the results of that year can only begin to bear fruit during 1888-89; the subject of the yield of the forests will be dealt with in a subsequent order, on receipt of the special report called for but it may be gathered that it was generally fair

with the exception of the regrettable failures in Ganjam and the Nilgiris; the superior officers appear to have travelled well, especially those mentioned in para 24 of the Board's Progs: and the year seems to have been a healthy one on the whole; lastly the financial results of the administration shows a great improvement, the surplus revenue being 17½ per cent in excess of that obtained in 1887-88.

14. The year 1887-88 complete the first quinquennium since the reorganization, which was initiated by the visit of Dr (now Sir Dietrich) Brandis and the passing of the Forest Act in 1882 but did not come fully into operation until 1883-84. During this period of five years the area under the management control of the Forest Dept has increased from 2794* to 17,006 square miles of which 2998 were formally reserved whole over a greater portion of the remainder, conservation was nearly as strict as in the case of reserved forests. It is evident that this control was something more than nominal, for the revenue

* Includes area under the old Jungle Conservancy, but not the Nallamalais or the Nilgiri slopes towards Coimbatore.

derived from forests has risen from Rs 9,03,914 to Rs 13,74,920. Sir Dietrich Brandis estimated the receipts at Rs 9,00,000 per annum for the first five years and he put the ~~receipts~~ charges at the same figure, but instead of merely ~~receiving~~ paying its way the Dept has, during the period in q^n, ~~earned~~ earned a net income aggregating Rs 10,66,316. How far the increased revenue indicates mainly better systems of working resulting ~~in~~ in greater receipts from purely commercial transactions and how far it consists of what is practically add^l taxation it is not possible ~~to~~ to ascertain with any accuracy. ~~Receipts~~ Receipts from Timber [illegible] Bamboos and Sandalwood might perhaps be classed under the former head and those from

Timber, Bamboos &c.

	Rs
1887-88:	4,96,703
1882-83:	4,24,699
Increase:	Rs 72,004

Firewood & Charcoal

	Rs
1887-88	3,59,066
1882-83	2,13,154
Increase	Rs 1,45,912

Grazing & Fodder Grass

	Rs
1887-88	1,05,811
1882-83	85,329
Increase	Rs 20,482

Other Minor Produce

	Rs.
1887-88:	3,83,773
1882-83:	1,47,432
	2,36,341

Firewood & Charcoal and Grazing and Fodder Grass under the latter. ~~The~~ But there still remains the most important item of Minor Produce, ~~which is not~~ and this it is impossible to classify in the above manner. There can, however, be but little doubt ~~that~~ a considerable portion of that the increased revenue is ~~largely~~ due ~~owing~~ to ^a changes being made for produce which was formerly enjoyed free ~~by the people~~, and it is well to remember this fact in considering proposals for sudden additions to fees or the withdrawal of privileges which have long existed. At the same time H.E. in C. ~~considers~~ entertains no doubt that the disposal of the forest produce of the State forms a legitimate source of revenue, and it must be remembered that ~~he has no hesitation in saying~~

Review of the Forest Administration Report for 1887-88

Hon. Mr. Carstin.
Hon. Mr. Stokes.
H.E. the Governor.

that the increased expenditure which has accompanied the increased revenue ~~shows~~ pari passu has ~~greatly~~ benefit been incurred for improvements to the sources of supply of pasture and fuel which are not only advantageous but absolutely necessary to the interests of the ryots

Hon
22/2

20/2

No 153 A
Copy to the Govt of India, R & A Department.

578 Cases 22.3.

190
8

To the Commrs of L.R. with map ret'd
25 Commr of R & L
11 Supt of Rev Survey
3 Supt Govt C. Museum
2 Govt Botanist
6 Accts Genl
} Aso. 22.3.89.

C. 28/2
R. 4/3

26.2.17

Govt. of {1889} Madras.

REVENUE.

Issued

Encl.

Read.

G.O., 5th March 1889,
Nos. 153, 153A.

MARCH.

Forest Administration Report for 1887-88.

Review of the —.