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**ADMINISTRATION REPORT**  
ON THE  
**FOREST DEPARTMENT**  
OF THE  
**CENTRAL PROVINCES**  
FOR THE YEAR ENDING  
**31st March 1930**

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GOVERNMENT OF THE CENTRAL PROVINCES.  
FOREST DEPARTMENT.

*Nagpur, the 19th January 1931.*

READ—

The report by the Chief Conservator of Forests on Forest Administration in the Central Provinces and Berar for the year 1929-30.

RESOLUTION.

1. **Révenue.**—Despite the bad agricultural conditions obtaining in the northern districts and the large fall in market prices for lac the year under report was a favourable one for the department. The gross receipts rose from 54·42 to 59·97 lakhs, the highest figure ever reached, while the gross expenditure fell from 40·43 to 39·75 lakhs. When due-allowances have been made for outstandings of revenue and for the value of stocks of timber on hand at the close of the year, the actual surplus on the working of the year comes to twenty-six and a half lakhs, as compared with sixteen lakhs for the previous year. The chief factors which contributed to these results were more intensive exploitation under newly introduced working plans in the Northern Circle; the demands of the railways and the Gun Carriage Factory at Jubbulpore for Allapilli teak in the Southern Circle; and heavier sales of timber and fuel obtained from departmental fellings in Berar, where a failure of the usual supply of "karbi" also led to a greater demand for grass and for grazing facilities. With this exception it is safe to attribute the rise in profits to the increasing adoption of the policy of substituting departmental exploitation for that of middlemen. Experience of the new policy is gradually converting the middlemen themselves, and many contractors now prefer to act as agents or brokers and buy their timber at the depôts of the department, instead of speculating in the purchase of coupes.

2. **Working Plans.**—The progress in the revision of working plans has been well maintained. New plans have been finally sanctioned for the forests of the Hoshangabad, North Raipur and Seoni divisions, while revised plans were introduced for the Chhindwara and Jabulpore-Narsinghpur divisions, which have since been sanctioned. The field work necessary for the preparation of new plans for the Nimar and Bhandara divisions and for the valuable forests comprised in the Allapilli and Pedigundam Ranges in the Chanda district has been completed. A start has also been made on the stock mapping of the important sal forests of the Balaghat district. The working plans branch has fully justified its creation five years ago, and the task of controlling it is increasing in importance, but it is still too early to take up the question of altering its status.

3. **Raipur Forest Tramway.**—The working of the Raipur Forest Tramway showed a further reduction in the annual deficit, which fell to Rs. 17,619, but the position of the tramway still gives cause for anxiety. The net earnings increased by Rs. 24,193, but the increase was partly due to the introduction of passenger traffic, which can never be of more than secondary importance. An increase in this traffic may be expected as the scanty population of the area learns to appreciate the new means of locomotion, and the extension of the line into Jeypore State will undoubtedly stimulate traffic; but if the line is to become a paying proposition under present conditions it is essential to concentrate on increasing the goods traffic, and there must be a careful scrutiny of expenditure and a constant examination of the best methods of attracting fresh traffic.

4. **Buildings and Roads.**—It is regrettable that the financial stringency again necessitated the curtailment of the programme for housing, the provision of which, especially for the subordinate staff, is indirectly remunerative, as improvement in the health of the forest staff prevents loss of time through sickness. Almost equally important is the question of quarters for gazetted assistants, but this cannot be dealt with until there is an all-round improvement in financial conditions. It is unfortunate that it has also been necessary to curtail the expenditure on roads. Economies in this respect have

wisely been confined to new construction, the addition to the forest road mileage recorded this year being 100 miles less than that added last year. Over Rs. 60,000 was also spent from famine funds on the construction and improvement of forest roads in the northern districts. Government regards this as a most useful form of famine relief, and experience indicates that it can be utilized more frequently in the future with advantage. The *pro forma* accounts of forest roads constructed out of loan funds indicate how profitable this type of investment can be. The total expenditure, including cost of construction and maintenance, together with supervision charges and interest on capital, amounts to slightly over six lakhs, while the increase of revenue from the forests opened out by the new roads has been five and a half lakhs. Even on a cautious estimate it is plain that these roads offer a fruitful means of adding to the resources of the province.

5. **Forest offences.**—The number of forest offences again showed a decline, being 668 less than in the previous year. The fall in the cases of unauthorized felling was particularly noticeable in the Northern Circle, where forests were thrown open to the free removal of head loads of dry fuel on account of scarcity. Of the 340 cases put up in court, 244 involving 545 persons resulted in convictions and 37 in acquittals, but it is satisfactory to note that the percentage of convictions rose from 83 to 87 per cent of the total number of decided cases.

6. **Free concessions.**—The total value of forest produce removed by all agencies was Rs. 71,79,862 almost 8 lakhs above the figure of the preceding year. Major produce accounted for nearly half this increase, and minor produce, including bamboos and grazing, for the rest. The total value of the grazing allowed was Rs. 29,46,035, but of this Rs. 13,75,778 represents concession rates for agricultural cattle and actual receipts were Rs. 15,09,923. The area of forests available for grazing was 85 per cent, and there is no justification for the opinion so frequently expressed in non-official circles that closures to grazing are excessive. The demand for grazing facilities is on the increase, and the number of cattle admitted for grazing during the year under report rose by 112,600.

7. **Pests.**—The department is to be congratulated on the success of its efforts to cope with the sal borer. An expenditure of a lakh and a quarter spread over four years, was effective in reducing the damage done by this destructive pest—an indication of what may be achieved by the proper application of the results of research. Government hopes that there will be no relaxation of vigilance. The babul borer is still troublesome, and, though it inflicts less damage than the sal borer, it is hoped that the co-operation of the people of Berar will be available when circumstances make an energetic attack on it possible. The campaign against lantana continued to yield useful results, but here again it is essential that there should be no slackening if the spread of this shrub is to be controlled effectively.

8. Mr. Malcolm held the office of Chief Conservator till March 6th, 1930, and the thanks of Government are due to him for his efficient administration of the department. On his departure on leave he was succeeded by the Conservator of the Northern Circle, Mr. Bell, who has deserved appreciation for the successful handling of his charge as well as for the interesting report that he has written. The Governor in Council has noted with pleasure the names of the officers whose good work has been specially commended, and he desires to express his satisfaction with the work of the department as a whole during the year.

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ORDER.—Ordered that a copy of this resolution be submitted to the Government of India, Department of Education, Health and Lands (Forests), and that a copy be forwarded to the Chief Conservator of Forests and to the Conservators of Forests, Northern, Southern and Berar Circles, for information and guidance; also that it be published in the supplement to the *Central Provinces Gazette*.

By order of the Governor in Council,

H. GOWAN,

Chief Secretary to Government,

Central Provinces.

# REPORT ON THE FOREST ADMINISTRATION IN THE CENTRAL PROVINCES FOR THE YEAR ENDING 31ST MARCH 1930.

## CHAPTER I.—CONSTITUTION OF STATE FORESTS.

### 1. ALTERATION IN AREAS.

1. The transfer, for convenience of administration, of the North Raigarh Block from Balaghat in the Southern Circle to South Mandla increased the area of the Northern Circle by 47 square miles. A small decrease of 1 square mile in the Berar Circle due to disforestation of "C" class forest was counterbalanced by a similar increase in the Northern Circle as a result of recalculation of areas and thus the total area under the management of the department remained the same as last year, viz., 19,641 square miles as shown below :—

			Sq. miles.
A Class	...	...	18,203
B "	...	...	441
C "	...	...	323
Ahiri Leased Range	...	...	174
Total			19,641

### 2. FOREST SETTLEMENTS.

2. In the Berar Circle an area of .04 square mile awaiting settlement at the commencement of the year, was taken in hand and finally settled. Areas of .68 square mile in the Northern Circle, .28 square mile in the Southern Circle and .20 square mile in the Berar Circle were taken in hand, but remained unsettled at the close of the year.

### 3. DEMARCATION.

3. The total length of boundaries in the Northern Circle increased by 50 miles due to transfer of part of North Raigarh Block from the Southern Circle. There was an increase of 204 miles in the Berar Circle as a result of check of boundaries of certain forest villages in Akola and Melghat.

The total length of boundaries at the close of the year was 35,357 miles against 35,121 miles last year.

4. 254 miles of new boundaries were artificially demarcated and 5,826 miles of old boundaries repaired at a total cost of Rs. 18,901, of which Rs. 38 were spent on laying out fields for agri-sylvicultural plots.

5. The schemes of boundary demarcation were adhered to in all Circles as far as possible.

#### 4. FOREST SURVEYS.

6. No special forest survey was undertaken during the year.

7. The Forest Map Office, Dehra Dun, published 32 one inch to 1 mile sheets and 22 one inch to 4 miles sheets of the working plan maps of Hoshangabad, Seoni, North Chanda, North Raipur and Betul.

#### 5. CONSTITUTION OF STATE FORESTS.

8. The total cost under this head was Rs. 43,427 against Rs. 45,634 last year.

### CHAPTER II.—MANAGEMENT OF STATE FORESTS.

#### 1. REGULATION OF MANAGEMENT.

##### (a) PREPARATION AND CONTROL OF REGULAR WORKING PLANS.

10. Good progress has been made with the revision of working plans. The sanction of Government was received to new plans, covering an area of 2,291 square miles, for the forests of Hoshangabad, North Raipur and Seoni. The prescriptions of the two former were brought into force with effect from 1st July 1928 and the latter a year later. Revised plans were also introduced on the 1st July 1929 in Chhindwara and Jubbulpore-Narsinghpur for 1,251 square miles of forest, but the final drafts of the working plans have still to receive the sanction of the Local Government. Field work necessary for the preparation of new plans for Nimar (1,425 square miles), Bhandara (533 square miles) and the Allapilli and Pedigundum Ranges (190 square miles) in South Chanda was completed. The draft plans for the two latter forests were drawn up, but not submitted to Government before the close of the year. In addition, a working plan party was engaged for a part of the year in the stock-mapping of the sal forests of Balaghat.

11.—The working plans branch, since its creation in 1925, has already completed or started plans for nearly half the divisions of the province: these new plans have been based on a very complete examination of the forests combined with an elaborate system of stock-mapping, showing the type and quality of forest in every block. The concentration of work and the more complete exploitation prescribed by these modern plans are responsible in large part for the increase of revenue in the Northern Circle from Rs. 12,65,727 in 1927-28 to Rs. 16,14,652 in the year under report. At the same time regeneration of the forests is having close attention for the first time and thinning of congested stands is provided for on a larger scale than heretofore, which will be of immense silvicultural benefit to the forests.

The very great importance to the province of the working plans branch cannot be too strongly stressed, and there can be little doubt that the post of Superintendent should be made a Conservatorship, to permit of this important work being entrusted to the more experienced officers in the Province. As matters stand, a great deal of work has fallen on territorial Conservators and the Chief Conservator in connection with the preparation of these new plans.

#### (b) PRELIMINARY WORKING PLANS.

12. Field work in connection with the revision of the Nimar plan was completed and the preliminary working plan report sanctioned shortly after the close of the year.

### 2. COMMUNICATIONS AND BUILDINGS.

#### (a) ROADS AND BRIDGES.

13. Construction of 188 miles of main roads and 2 miles of feeder roads cost Rs. 83,689. The Southern Circle carried out the greater part of this work and added 111 miles of new roads at a cost of Rs. 47,017. In all three circles some important projects were undertaken; most of the work being done in Chhindwara, Balaghat, Nagpur-Wardha and Betul.

In addition, a large sum of Rs. 65,317 was spent out of Famine Funds on the construction and improvement of 329 miles of roads in the northern districts as

relief measures. In North Mandla, Jubbulpore-Narsinghpur and Seoni, the work undertaken was of a most useful character and the expenditure incurred will be largely recovered in due course by increased sales of forest produce. In Damoh and Saugor, on the other hand, there was not much scope for tapping valuable forest areas, but the improvement of communications will be of benefit to the public.

14. The expenditure on maintenance rose from Rs. 88,439 to Rs. 99,987, the length of main roads repaired being 8,883 miles. In addition, 537 miles of feeder roads were repaired as compared with 440 miles last year.

Considerable outlay on special repairs to 104 miles of old roads in the Berar Circle is mainly responsible for the bigger repair bill, but the average cost of repairs for the Province is still only Rs. 11 per mile.

15. The *pro formâ* accounts of forest roads constructed out of loan funds have been made up to the end of the year 1928-29. The figures show that the total outlay by the Forest Department, including cost of construction and maintenance of these roads, together with supervision charges and interest on capital, amounts to Rs. 6,07,796. The estimated extra revenue derived by this extension and improvement of communications is Rs. 5,60,726, and provided Divisional Forest Officers' estimates are reasonably accurate, the results are highly satisfactory.

#### RAIPUR FOREST TRAMWAY.

16. The results of working since the opening of the line in 1926-27 are given in the subjoined statement :—

Year.	Gross earnings.	Working costs.	Net earnings.	Fixed charges.	Deficit.
	Rs.	Rs.	Rs.	Rs.	Rs.
1926-27	1,13,332	52,569 (a)	60,763	51,372	+ 9,391
1927-28	1,65,887	1,24,679	41,208	1,24,419	-83,211
1928-29	2,05,832	1,24,025	81,807	1,27,515	-45,708
1929-30 (b)	2,20,350	1,14,350	1,06,000	1,32,000	-26,000

(a) Working costs low, because part of expenditure debited to construction.  
 (b) Provisional figures. Audit report not yet received.

For 1929-30 the final audit figures are not yet known, but net earnings are approximately correct, so that up to June 1930 the deficit has been Rs. 1,45,528, against which the surplus forest revenue in the South Raipur division was Rs. 2,39,728. The outturn of this division would have been greater but for the substitution by the railways of steel for sal sleepers and the tramway would have paid its way in the near future apart from the development of a land locked tract which in itself is an object justifying considerable expenditure.

The figures for the last season's working show an improvement in net earnings of Rs. 24,193 over the previous year's figures. This is due to a great extent to increased export of forest produce by Dear & Co. from Jeypore State, and to the introduction of passenger traffic. 29,685 passengers were carried and paid Rs. 18,126 in fares. Against this there has been a falling off in exports of sleepers by South Raipur on account of the very small order placed with the Department by the Railway Board. There are, however, prospects of a larger order in 1930-31. It is clear that under existing conditions there can be no immediate considerable increase in the amount of traffic carried, but it is almost certain that there will be a steady, if slow, improvement as new markets are found for the Sal timber and when grain and other general produce are attracted to the tramway in larger quantities.

The deficit of Rs. 26,000 during 1929-30 is nearly counterbalanced by a rise of Rs. 22,814 in the surplus of the South Raipur division during the year.

The Diwan of Jeypore has under consideration a project of an extension of the line into the State, and should this materialize, a big impetus will be given to traffic and the proposal to bridge the Mahanadi might be seriously considered.

#### (b) BUILDINGS.

17. Expenditure incurred on buildings was Rs. 1,29,051, of which Rs. 58,871 were spent on new works and Rs. 70,180 on repairs against Rs. 1,06,821 and Rs. 67,275, respectively, in the preceding year. Funds were available for carrying out a large programme, but were curtailed at the request of Government on account of the financial stringency arising from the failure of crops in the northern districts for the second year in succession. Such money as was spent was principally utilized in the

provision of quarters for the subordinate staff and more particularly for forest guards, for whom over one hundred and eight nakas were built or partly constructed. There has been no improvement in the provision of quarters for gazetted Assistants and there appears little prospects of funds being voted for Public Works Department bungalows for these officers. The only remedy will be for the Forest Department to construct such quarters itself, and this question is under consideration.

### (c) MISCELLANEOUS.

18. Expenditure on wells, tanks and miscellaneous works was Rs. 35,042, of which Rs. 19,122 were spent on new works and Rs. 15,920 on repairs, against Rs. 30,917 and Rs. 16,694 last year. The major portion of the expenditure was, as usual, on wells.

### 3. PROTECTION OF FORESTS.

#### (a) GENERAL PROTECTION.

19. The number of forest offences fell from 19,433 in 1928-29 to 18,775 or by about 3½ per cent in 1929-30.

The following statement compares the figures with those of the previous year and with the average of the past three years :—

Nature of offences.	Average of three years ending 1927-28.	1928-29.	1929-30.	Increase or decrease.	Percentage.
I.—Injury by fire ...	501	820	611	—209	3
II.—Unauthorized fellings	8,545	8,307	7,818	—489	42
III.—Unauthorized grazing	9,242	9,215	9,416	+201	50
IV.—Other offences ...	1,152	1,101	930	—171	5
Total ...	19,440	19,443	18,775	—668	100

The reason for the decrease of cases under "Injury by fire" which is shared by all Circles, has been given in paragraphs 25 and 26.

The Northern Circle is chiefly responsible for the decrease in cases of unauthorized fellings, which is due

to throwing open of forests to free removal of head loads of dry fuel on account of scarcity in 5 of the northern districts.

The decrease of 106 cases of illicit grazing in the Northern Circle is attributed to the suspension of grazing dues in three divisions, and the increase of 180 cases in the Berar Circle is ascribed to thorough grazing checking and increased demand for grazing due to deficient rainfall. The increase of 127 cases in the Southern Circle has not been explained.

The decrease of cases under "Other offences" occurred chiefly in the Berar Circle. In Yeotmal alone there was a decrease of 130 cases due to the dropping of a considerable number of petty cases as well as others which had not been adequately enquired into.

20. The shooting rules were amended during the year to prevent shooting of animals other than Carnivora from motor cars or with the aid of artificial lights in Government Forests. This unsportsmanlike practice is still common along pucca roads in the neighbourhood of Jubbulpore and in the Damoh district.

Eighteen cases of illicit shooting occurred in the Northern Circle. Poaching is very common in South Mandla which alone reports 13 cases. The large extent of forest guard's beats in this division encourages poaching.

21. Forty-five cases were pending in Courts from the previous year to which 295 new cases were added, making a total of 340 cases. Of these, 244 resulted in conviction involving 545 persons and 37 in acquittals; 43 remained pending and 16 were withdrawn. Of the latter, 15 were eventually compounded and 1 was dropped.

The percentage of convictions was 87 as against 73 in 1927-28 and 83 in 1928-29, and the punishments awarded by the Courts were satisfactory.

22. The number of cases dealt with under section 68 of the Indian Forest Act was 17,175 involving 44,866 persons, as compared with 18,017 cases involving 48,243 persons; the average amount of compensation per case and per person being Rs. 11-12-2 and Rs. 4-8-0 against Rs. 11-4-10 and Rs. 4-3-7, respectively, in the previous year.

The circle figures compare as follows :—

Year.	Northern Circle.		Southern Circle.		Berar Circle.	
	Per case.	Per person.	Per case.	Per person.	Per case.	Per person.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. ps	Rs a. p.	Rs. a. p
1929-30 ...	7 1 4	3 5 11	11 12 11	4 1 6	14 11 9	5 9 1
1928-29 ...	7 14 3	3 0 1	8 14 6	3 3 7	15 3 5	5 14 0
Difference ...	-0 12 11	+0 5 10	+2 14 5	+0 13 11	-0 7 8	-0 4 11

The decrease in the amount of compensation realized in the Berar Circle is due to the introduction of a more lenient policy in dealing with these cases generally. The scale of compensation levied, more particularly in grazing cases, had risen higher than was necessary. The increase in the Southern Circle was due to high compensation levied in North Raipur. An enquiry showed that the amounts demanded were excessive in certain cases, and special instructions in the matter were issued by the Conservator.

In 1,214 cases the offenders were not detected as against 1,482 cases in the previous year.

23. Only one case was reported during the year under the Wild Birds and Animal Protection Act, VIII of 1912.

24. Rewards to the extent of Rs. 1,861 were paid to subordinates and informants in 354 cases as compared with Rs. 1,286 in 293 cases in the previous year.

#### (b) PROTECTION FROM FIRE.

25. The area under systematic protection increased by 1,950 square miles due to the introduction of the revised fire protection rules in certain divisions of the Southern and Berar Circles.

Out of 13,538 square miles for which special measures of protection were taken; 12,910 square miles were successfully protected. The percentage of success was 95 which is the same as last year. The failure in the Northern Circle was only 3 per cent, whereas in the Berar and Southern Circles it was 5 and 6 per cent, respectively.

The cost of protection per square mile fell from Rs. 4-12-3 to Rs. 4-8-1 in the Northern Circle, from Rs. 11-3-3 to Rs. 8-8-4 in the Southern Circle and from Rs. 5-12-8 to Rs. 4-14-1 in the Berar Circle.

There was a decrease of 174 fires in the Northern Circle and 5 in the Berar Circle, while there was an increase of 20 fires in the Southern Circle. In the Northern Circle the area burnt was 160 square miles less than in the previous year; this was counterbalanced by an increase of 62 square miles in the Southern Circle and 133 square miles in the Berar Circle. The larger area burnt in the latter circle is attributed partly to early cessation of the monsoon and partly to the apathy of the people who, under the influence of political agitation, did not turn out to extinguish fires.

26. The following statement summarizes the causes, etc., of fires :—

Origin of fires.	Number of fires.			Area burnt.		
	Northern Circle.	Southern Circle.	Berar Circle.	Northern Circle.	Southern Circle.	Berar Circle.
				Acres.	Acres.	Acres.
A.—In burning fire lines ...	16	20	23	3,363	7,287	28,425
B.—By crossing exterior fire lines.	53	40	35	28,161	81,174	42,363
C.—Fires inside the forest—						
By workmen employed in the forest.	14	5	12	5,464	1,238	8,768
By villagers and travellers	35	14	41	7,317	3,791	25,944
By railway engines ...	4	6	3	538	3,096	1,660
By lightning or fire balloons.	8	...	...	4,974	...	...
In order to obtain new grass.	...	...	...	...	...	...
To reduce cover	1	1	...	30	38	...
Malicious	...	1	...	...	91	...
Causes unknown	204	177	102	60,423	45,608	42,084
Total for 1929-30 ...	335	264	216	110,270	142,323	149,244
Total for 1928-29 ...	509	244	221	212,896	102,810	64,086
Difference ...	-174	+20	-5	-102,626	+39,513	+85,158
GRAND TOTAL		-159			+22,045	

The number of fires which broke out when burning fire lines rose from 31, consuming 13 square miles in 1928-29, to 59, consuming 61 square miles in 1929-30, the increase being shared by all circles. The Southern and Berar Circles report more fires which entered Government forest by crossing exterior lines. This indicates that closer supervision of line burning is required. One large fire which occurred late in the hot weather in South Raipur was caused by sparks from an engine on the forest tramway.

27. Non-official witnesses in their evidence before the Forest Committee complained against the practice of "early burning" which they say deprives them of grass for their cattle in the hot weather months. The new fire protection rules introduced in 1927-28 do not contemplate "early burning" except under certain conditions and with the special sanction of the Conservator and yet the Conservator reports that 2,609 square miles were "early burnt" in the Southern Circle. It would appear that the rules for "General protection" have been wrongly interpreted. The correct procedure under "General protection" is the continuance of burning fire lines without the expensive precaution of cutting guide lines. This can be done, with little danger of burning the whole forest, if the grass is set fire to at a distance of about 2 furlongs on each side of roads, paths, fire-lines, etc., and allowed to burn inwards to the line or road, as the case may be. This method is successfully followed in the Khandesh division of Bombay and should be adopted in this province.

28. The total cost of fire protection by circles compares as follows :—

Year.	Northern Circle.	Southern Circle.	Berar Circle.	Total.
	Rs.	Rs.	Rs.	Rs.
1929-30	23,678	31,254	19,459	74,391
1928-29	24,113	32,166	17,741	74,020
Difference	-435	--912	+1,718	+371

## (c) PROTECTION FROM CATTLE.

29. Areas closed and open to grazing during the year compare as follows with the figures for 1928-29 :—

	1928-29.	1929-30.
	Sq. miles.	Sq. miles.
I.—Closed partially or entirely ...	2,987	2,871
II.—Open to all animals including browsers ...	3,440	3,521
III.—Open to all animals except browsers ...	13,214	13,249

The total area of the three circles is 19,641 square miles, of which 16,770 square miles or 85 per cent was available for grazing.

An opinion often voiced in non-official circles is that closures to grazing are excessive, but there is no justification for this view. The comparatively small area so closed comprises the coupes where fellings have recently taken place, and the closure is necessary to safeguard the seedlings and coppice shoots. During closure, the presence of tall grass renders the young forest growth liable to the even greater danger from fire and Forest officers can be relied upon to admit grazing at the earliest possible moment compatible with the immunity of the young trees from damage by grazing.

30. **Grazing settlements.**—Good progress has been made with regard to grazing settlements. Those sanctioned last year for Hoshangabad and North Raipur were introduced on the 1st July 1929. A revised settlement for Chhindwara and a new settlement for Seoni received the sanction of Government and will be brought into force next year. Reports received from the Special Revenue officers deputed for this purpose on the revised working plans for Jubbulpore-Narsinghpur and Bhandara are under consideration.

31. The number of cattle impounded was 12,144 against 10,834. The Northern and Southern Circles show a decrease of 425 and 188 cattle, respectively, and Berar Circle an increase of 1,923. The large increase in the latter circle is attributed to owners being untraceable and a large number of stray cattle being impounded in consequence.

(d) PROTECTION AGAINST INJURIES FROM NATURAL CAUSES.

32. Frost.—The cold weather was a mild one and no appreciable damage from frost occurred in any of the circles. Slight damage to ghont in Saugor and to coppice shoots in certain low forest felling series in Hoshangabad is reported from the Northern Circle. Teak in low lying areas in the Melghat and Nimar Divisions of the Berar Circle was affected to some extent.

Trees damaged by last year's severe frost have revived better than was expected, but in Nimar recovery has only been partial and mortality, especially among teak, has been heavy. In Damoh, lac insects were wiped out over all low lying areas but surprisingly little mortality took place on higher ground, where fortunately the ghont trees are most abundant. In most cases only the crowns of the ghont trees have suffered and are being replaced by vigorous shoots from below the point of injury.

33. Wind an hail.—Strong winds caused slight damage in the Baloda Range of Bilaspur and in exposed localities in Damoh and Amraoti, where a number of trees were uprooted.

34. Drought.—The year was one of short rainfall in the Northern and Berar Circles, resulting in the growth of coppice and plantations being retarded. In Hoshangabad the rains stopped early in September and caused the almost complete failure of teak stumps and seedlings put out to fill blanks in regeneration areas. Lac suffered to some extent in Damoh and Hoshangabad by the late arrival of the monsoon and intense heat in May and June.

35. Wild animals.—The Northern Circle reports browsing by deer of young coppice shoots in most of the clear felled areas in all divisions. The most noticeable damage in the Southern Circle was done by Chital to the Semal plantations in Nagpur-Wardha. Seedlings and young bamboo plants suffered as usual from rodents in plantations in Berar and browsing by Nilgai in the agri-sylvicultural plots in Yeotmal and Nimar was much in evidence. The lessee of the right to catch wild cattle in the Bhongaon Reserve of Buldana relinquished his licence in May as

he failed to make a profit out of his keddah operations due to mortality among the cattle after capture. The work was continued departmentally at a small profit. In all, 41 head of cattle were captured, but the herd is still estimated to contain about 140 animals.

36. Insects.—The teak defoliator was active in some parts of Seoni and Chhindwara. In the same divisions and in Hoshangabad a teak sapwood borer was noticed to be very prevalent in coupes felled during the rains. It was identified by Dehra Dun as *Xyloterchus quadripes*. Locusts attacked the leaves of most species over considerable areas in Nimar, but the damage was not appreciable.

37. The sal borer.—The Sal borer (*Hoplocerambyx spinicornis*) attack has been definitely overcome; the total cost of the measures taken to deal with the epidemic since 1926 has amounted to Rs. 1,25,801. In South Mandla operations were confined to the burning of infested trees felled in the previous year. In Balaghat it was decided that the attack had not subsided sufficiently to warrant complete abandonment of remedial measures, and so trap tree operations combined with beetle-catching were repeated during the early part of the rains of 1929, resulting in the capture of 108,622 beetles as against 654,339 in the previous year. No further operations will be necessary anywhere for the present, but it is most essential that the department should be on the look out for any recrudescence of attacks beyond the normal of 1 per cent of the growing stock, or alternatively one tree per acre, and take immediate steps to deal with such on the lines which have proved so successful during the past three years.

38. The babul borer.—*Coelosterna Scabrata* again caused considerable damage in Berar, more particularly in Amraoti, where the Silviculturist reports that 70 to 80 per cent of babul trees in young regeneration areas were attacked by the beetles. The Imperial Entomologist carried out investigations at Sagada during the rains of 1929 to determine the emergence period of the beetle and its normal length of life. The information obtained has been communicated to Divisional Officers in Berar and will be of valuable assistance should remedial measures on a large scale become necessary at any time. This beetle has been active all over Berar for many years and

the Conservator is of the opinion that its extermination by hand collection or grubbing out of infested individual trees is out of the question. He considers that to a large extent the attack is due to the mistake made in planting babul pure and in unsuitable localities. On moist fertile soils the babul is said to throw off the attack, which is only fatal in dry and unsuitable areas. The remedy suggested is to clear-fell the infected forests and replant with more suitable species; it is proposed to work on these lines as soon as the agricultural outlook in Berar improves.

39. **Loranthus.**—This parasite is very common in the Northern Circle on mowha, achar and tendu trees and steps were taken to remove it as far as practicable. The Berar slopes of the Melghat forests are reported to contain a lot of loranthus, but no steps appear to have been taken to deal with it.

40. **Lantana.**—This pest has got such a hold in the forests of the Melghat, where 197,102 acres are estimated to have been invaded by the shrub, that the present Divisional Forest Officer considers total eradication to be impracticable except at a prohibitive cost. The policy he has adopted is to damage lantana by fire sufficiently to permit of the working of the annual coupes, and to keep it in check long enough to give regeneration of teak and other valuable tree species a chance of establishing themselves. A complete history of the introduction of lantana into the Melghat and full details of the measures taken to deal with it during the past 30 years will be found in the report of the Berar Circle. During the year under report this shrub was uprooted over an area of 6,507 acres and burnt over 9,600 acres at a total expenditure of Rs. 3,474.

The valuable Bori forest of Hoshangabad is also infested with lantana and calls for a more intensive campaign otherwise there may be a repetition of the history of the Melghat. In this division eradication was only carried out over 13 acres. Lantana is also reported to be spreading in village lands adjacent to Government forests in the Kharmer Valley of South Mandla and the Deputy Commissioner is endeavouring to persuade the people to eradicate it.

41. **Climber cutting.**—The following statement shows the area over which climbers were cut in each

Circle during the year as compared with the preceding two years :—

Circle.		1927-28.	1928-29.	1929-30.
		Acres.	Acres.	Acres.
Northern	...	326,961	99,948	164,650
Southern	...	122,216	156,590	125,729
Berar	...	17,279	57,622	27,412

The total expenditure in the three Circles was Rs. 13,989 against Rs. 15,970 last year. As usual, a great deal of this useful work was done by forest guards while on patrolling duty.

### CHAPTER III.—SILVICULTURE.

#### SECTION I.—FORMATION AND REGENERATION OF FORESTS.

##### 1. GENERAL PROGRESS OF AREAS UNDER REGENERATION.

42. Areas definitely under regeneration have largely increased owing to the introduction of the uniform system for teak high forests under new working plans for Hoshangabad, Seoni, Chhindwara and Jubbulpore-Narsinghpur in the Northern Circle. Fellings in periodic block I of the sal and teak high forests of South Raipur and North Chanda, respectively, were continued. The progress of regeneration under the uniform system has been satisfactory on the whole and is dealt with in the succeeding paragraphs.

##### 2. ESTABLISHMENT OF REPRODUCTION UNDER WORKING PLANS OR SCHEMES.

43. (a) *Mainly natural.*—In the teak high forests of the Northern Circle the fellings in periodic block I consisted of the removal of the overwood and the freeing of the advance growth, the latter being cut back where it had suffered from suppression, and was in consequence not likely to respond to the removal of the overhead canopy. Such advance growth, together with the coppice reproduction resulting from the fellings, was sufficient to ensure the restocking of the area worked over. The Conservator, however, points out that the first regeneration fellings were confined to well

stocked areas containing abundance of advance growth and he is pessimistic as to results under less favourable conditions. He is of opinion that in the very dry forests of the Northern Circle the absence of grass is the main factor in the establishment of regeneration, which, only appears where the overhead canopy is sufficiently dense to restrict the growth of grass. These views are held by most forest officers in the northern divisions and the success of the uniform system in these teak forests must largely depend on the care exercised by the Working Plans Officer in selecting the areas for inclusion in periodic block I.

In the moister teak forests of Chanda, however, the conditions appear to be just the reverse. Reports from North Chanda testify to excellent regeneration from seed under a light canopy of mature teak seed-bearers in almost all coupes in periodic block I worked last year. In South Chanda teak regeneration is reported to be almost absent over the greater part of the denser forests in the Allapilli Range.

In the South Raipur sal high forests, regeneration, resulting from primary fellings in the earlier compartments taken up, has made excellent progress in places, the young woods now 20 to 30 feet in height, having formed thickets with a close canopy, and the removal of the remaining shelterwood is imperative. Experience gained during the five years of the currency of this plan has convinced the local officers that primary fellings can be made heavier with advantage, and in one compartment, recently worked in which the overwood was removed in one operation, the regeneration responded splendidly.

Regeneration by coppice was as usual successful in the coppice and coppice with standards working circles in most divisions. The only failures reported are from Akola due to scanty rainfall and from certain frost liable areas in the Northern Circle, where clear fellings have proved unsuitable and necessitated amendments to the Hoshangabad Working Plan.

44. (b) *Mainly artificial.*—Very little rain fell in the forests of the Northern and Berar Circles during September and October and this period of drought adversely affected artificial regeneration. Almost complete failure attended the attempts to supplement natural regeneration

in periodic block I areas in the Northern Circle by planting natural teak transplants and stumps in prepared pits. The one exception was the 10 acre teak taungya plantation in the Bori reserve of Hoshangabad referred to in last year's report, which is now fully stocked. A further area of 45 acres taken in hand in the same compartment was not quite so successful and will necessitate partial re-sowing. The working plans for the babul bans of Berar prescribe clear fellings and restocking by artificial sowings combined with dry cultivation. Regeneration has been completed over an area of 7,161 acres under these methods and at the close of the year regeneration was still in progress over 3760 acres. The condition of the latter areas was unsatisfactory on account of a very poor monsoon.

### 3. PLANTATIONS AND OTHER FORMS OF REGENERATION NOT UNDER WORKING PLANS OR SCHEMES.

45. Operations were continued for the creation of plantations of teak and other species by agri-silvicultural methods in poorly stocked forests in Yeotmal. The Marwadi plantations were weeded and tended but no fresh sowings made. At Pathrot extensive sowings were made of neem, siris, garari and saj to replace failures in the lines. Germination was excellent, particularly of neem and siris, a full stocking being obtained in 4 plots. The Tiwsala plantations which consist principally of teak, khair and babul were maintained and blanks filled up with teak, siris, anjan and tinsa. A feature of the Phiski plantations is the success of *Gmelina arborea* which has attained a height of 10 feet in two years. New plantations were started over 410 acres in the Kinwat reserve, where teak was the principal species sown, along with a small mixture of shisham, bija and tinsa. The work of extending bamboo plantations in Yeotmal and Akola was less successful than in past years, on account of the short rainfall. Nearly 4,000 bamboo seedlings were transplanted in the Umerda block from the nursery, but only 20 per cent survived. In Akola 4,617 bamboo rhizomes were transplanted in selected localities, but more than two-thirds proved failures.

In the Southern Circle 22 acres of teak plantations were created in North Raipur and 16 acres added to those in South Raipur. Two small plantations of semal were started in Bilaspur and promise well.

46. Tending.—This consisted generally of weeding, thinning and climber cutting in plantations.

SECTION II.—TENDING OF THE GROWING STOCK.

47. Cutting back operations, thinnings and cleanings were carried out in all circles to the extent of funds and labour available and a comparative tabular statement of work done is given below :—

Circle.	1928-29.					1929-30.				
	Area in acres.	Cost in rupees.	Cost per acre.	Revenue from sold material in rupees.	Revenue per acre.	Area in acres.	Cost in rupees.	Cost per acre.	Revenue from sold material in Rupees.	Revenue per acre.
<i>Northern Circle.</i>		Rs.	Rs. a. p.	Rs.	Rs. a. p.		Rs.	Rs. a. p.	Rs.	Rs. a. p.
Thinnings	14,795	9,891	0 10 8	25,423	1 11 6	25,660	25,185	0 15 8	95,214	3 11 4
Cutting back operations	22,969	9,596	0 6 8	22,905	1 15 11	6,591	3,020	0 7 4	1,840	0 4 6
Total	37,764	19,487	...	48,328	...	32,251	28,205	...	97,054	..
<i>Southern Circle.</i>										
Preliminary regeneration fellings.	550	1,130	2 0 10	990	1 12 11	755	1,237	1 10 3	2,550	3 6 0
Thinnings	44,004	31,821	0 11 7	1,35,405	3 1 3	41,977	38,401	0 14 8	1,56,738	3 11 6
Cutting back operations	25,594	7,441	0 4 8	21,812	0 13 8	22,311	7,333	0 5 3	29,730	1 5 4
Total	70,148	40,392	...	1,58,207	...	65,043	46,971	...	1,89,018	...
<i>Berar Circle.</i>										
Thinnings	33,804	12,931	0 6 1	39,841	1 2 10	25,061	9,537	0 6 1	33,822	1 5 7
Cutting back operations	31,072	11,753	0 6 1	16,432	0 8 6	22,351	10,626	0 7 7	24,633	1 1 8
Total	64,876	24,684	...	56,273	...	47,412	20,163	...	58,455	...
Grand Total!	172,788	84,563	...	2,62,808	...	1,44,706	95,339	...	3,44,527	...

Sales of material felled realized Rs. 3,44,527, an increase of Rs. 81,719 over the previous year, due to the removal of overmature trees and much heavier thinnings under the prescriptions of New Plans.

## CHAPTER IV.—EXPLOITATION.

### SYSTEM OF MANAGEMENT.

#### 1. MAJOR FOREST PRODUCE.

48. The areas worked under different methods of treatment compare as follows with those of 1928-29 :—

Circle.	Clear fellings.	Selection fellings.	Improvement fellings.	Coppice with standard fellings.	Concentrated regeneration fellings.	Transition fellings.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Northern	9,517	...	8,694	6,882	6,112	...	31,205
Southern	14,898	7,575	48,829	12,999	755	2,062	87,118
Berar	2,557	...	47,613	6,570	4,332	...	61,072
Total for 1929-30	26,972	7,575	1,05,136	26,451	11,199	2,062	1,79,395
Total for 1928-29	19,215	1,721	1,25,577	24,657	13,691	3,000	1,87,864
Difference	+7,757	+5,854	-20,441	+1,794	-2,492	-938	-8,469

The Southern Circle shows an increase of 6,462 acres, while the Northern and Berar Circles show a decrease of 9,163 and 5,768 acres, respectively.

Selection fellings in South Raipur for sleepers account for the increase in area worked in the Southern Circle. The slump in prices of cotton in Berar affected the demand and many coupes could not be sold. The decrease in the Northern Circle is the result of the introduction of concentrated fellings under the provisions of recent working plans.

**Clear fellings.**—The main increase is in the Northern Circle due to introduction of revised working plans in Chhindwara and Jubbulpore-Narsinghpur. The increase in the Southern Circle is due to the areas of the coupes of the year being larger than those of the previous year in some divisions.

**Selection fellings.**—This system, which was hitherto confined to South Chanda, was extended to South Raipur to obtain sleepers; hence the increase.

**Improvement fellings.**—There was a large decrease of 17,177 acres in the Northern Circle due to the introduction of new plans in Jubbulpore-Narsinghpur, Chhindwara and Seoni which prescribe other methods of treatment. The decrease in the Southern and Berar Circles were due to limited operations against the sal borer in Balaghat and to a large number of coupes remaining unsold in Amraoti for want of demand.

**Coppice-with standards.**—The main increase was in the Northern Circle for the reasons given under "Improvement fellings".

**Concentrated regeneration fellings.**—The decrease is due to correct classification of the areas under different methods of treatment in Hoshangabad and to operations in periodic block I areas in South Raipur being confined to secondary fellings in the overwood and cleanings in the young regeneration.

**Transition fellings.**—The decrease of 2,175 acres in the Berar Circle due to this system being discontinued in Akola was partially counterbalanced by an increase of 1,237 acres in the Southern Circle due to more extensive operations in South Chanda and Nagpur-Wardha.

**Unregulated fellings.**—These were permitted as usual in all circles and 268,036 c. ft. of timber and 4,798,336 c. ft. of fuel were removed during the year. The total revenue realized was Rs. 1,29,291 against Rs. 1,44,041 in the previous year.

## 2. MINOR FOREST PRODUCE.

49. The value of minor produce removed was Rs 11,89,534 against Rs. 12,31,955 in the previous year.

**Bamboos.**—The Berar Circle shows an increase of Rs. 11,368 due to better demand, while the Northern and Southern Circle show decreases of Rs. 11,836 and Rs. 39,161, respectively, due to famine in northern districts and less extraction in some divisions of the Southern Circle where people were engaged in marrying their children before the "Sharda Act" came into operation.

**Lac.**—The decrease (—Rs. 39,960) shared by all circles was almost entirely due to the fall of the T. N. Shellac rate from Rs. 90 per maund in 1928-29 to Rs. 55

per maund in 1929-30. A better crop in Damoh and a considerable expansion of operations in Saugor increased the output of the Northern Circle from 2,619 maunds to 3,942 maunds and the fall in market prices was a sore disappointment to the staff after their very praiseworthy achievement.

**Grass (fodder and thatching).**—The Northern Circle shows an increase of Rs. 5,873 due to free removal in the areas affected by famine and the Berar Circle Rs. 53,961 due to keen demand on account of failure of the "Karbi" crop. The fall of Rs. 10,471 in the Southern Circle is attributed to poor demand for thatching grass in Bilaspur and South Raipur.

**Harra.**—The Northern and Berar Circles show small decreases of Rs. 799 and Rs. 615, while the Southern Circle shows a large decrease of Rs. 33,617 due to 22,000 maunds of harra collected departmentally remaining unsold during the year.

**Mohwa and Achar.**—The main decrease (—Rs. 5,681) occurred in the Northern Circle due to the failure of the crop in Damoh owing to the disastrous effect of the frost of the previous year.

**Minerals.**—Out of the total increase of Rs. 10,945, Yeotmal in the Berar Circle alone is responsible for Rs. 7,436 due to extensive removal of muram and stone by Government, local bodies and railway departments.

The small variations under hides and horns (—Rs. 827), rusa grass (+Rs. 2,320) and tendu leaves (—Rs. 1,483) are in accordance with ordinary fluctuations from year to year.

**Miscellaneous.**—The increase of Rs. 19,429 shared by all circles was due to better demand.

**50. Grazing.**—The total number of animals, excluding transit and nomadic cattle which grazed in Government forests, rose from 3,564,756 to 3,677,356 or by 112,600. The Northern Circle shows a decrease of 30,269 cattle due to heavy mortality amongst cattle in Damoh, Saugor and Seoni; while the Southern and Berar Circles show increases of 8,812 and 1,34,057 cattle, respectively. The large increase in the latter circle was chiefly due to partial failure of "Karbi" crop.

The total grazing fees actually realized rose from Rs. 14,36,928 to Rs. 15,09,923 to which must be added

Rs. 13,75,778, being the difference between full grazing fees and the reduced fees charged for certain privileged classes of cattle.

51. Annual and monthly transit licences.—Fees from these licenses amounted to Rs. 60,111 against Rs. 58,623 in the previous year, making the total revenue from grazing Rs. 15,70,034 as compared with Rs. 14,95,551.

### AGENCY OF EXPLOITATION.

#### 1. DEPARTMENTAL AGENCY.

52. Major produce.—The outturn of the year compares as follows with that of the previous year :—

Year.	Cubic feet in thousands.		
	Timber.	Fuel,	Total.
1929-30	7,283	8,483	15,766
1928-29	6,507	13,241	19,748
Difference	+776	-4,758	-3,982

Under timber the Northern and Southern Circles show increases of 354,000 c. ft. and 541,000 c. ft., respectively due to expansion in departmental working, while the Berar Circle shows a decrease of 119,000 c. ft. due to such exploitation being not undertaken in Akola, Amraoti, Betul and the Melghat in the coupes of the year.

The largest operations were as usual in South Chanda where 169,045 c. ft. of teak logs were carted from Allapilli, Pedigundam and Dhaba Ranges to Ballarshah Depôt and a further 42,250 c. ft. of inferior timber cut up in the saw mill. An even larger output is expected next year as arrangements have been made for transport of the timber by motor lorries instead of by carts as at present. The financial results of the season's working are as follows :—

Revenue	Rs.	4,65,018
Add value of timber at the close of the year	...	2,33,605
Total	...	6,98,623
Deduct value of stock at the beginning of the year	...	2,31,036
		4,67,587
Deduct expenditure during the year	...	1,65,245
Surplus	...	3,02,342

Departmental conversion of sal was continued in Balaghat where 24,172 sleepers were sawn, most of which were despatched during the year. This represents 54,521 c. ft. of timber which the Conservator estimates to be the normal output of these sal forests. Difficulty was experienced in securing skilled sawyers locally and 100 pairs had to be imported from Bihar and Orissa. Owing to a smaller order for sleepers similar operations in South Raipur sal forests had to be curtailed and only 31,776 sleepers were sawn. The financial results in South Raipur were as shown below :—

Revenue	...	Rs.	1,19,502
Add value of stock in hand on the 31st March 1930	...		48,911
			<u>1,68,413</u>
Deduct value of stock at the beginning of the year	...		52,474
			<u>1,15,939</u>
Deduct expenditure during the year	...		62,233
Surplus	...		<u>53,706</u>

In the Northern Circle regeneration fellings and thinnings, prescribed by the new working plans for Jubbul-pore-Narsinghpur, Chhindwara, Seoni and Hoshangabad, were done by the department, and in the last mentioned division most of the felled material was extracted to sale depôts and disposed of at weekly auctions. This system of complete exploitation has proved very successful and resulted in a net profit of Rs. 1,51,382, as per details shown below :—

Area worked over	...	Acres.	12,605
Cost	...	Rs.	63,882
Revenue realized	...		2,15,264
Net revenue	...		<u>1,51,382</u>

In the adjoining teak forests of Nimar and Melghat the antiquated system of sale on licences to the Korku forest villagers is still in force, and a change is clearly advisable, because the income from teak in the Melghat is the same as it was 25 years ago. The matter has been considered at various times, but apprehension of losing the labour supply has deterred the local officers from launching on departmental exploitation which would very probably give a far better return for the material sold.

Under fuel, the Northern Circle shows an increase of

702,000 c. ft., while the Southern and Berar Circles show decreases of 4,618,000 c. ft. and 842,000 c. ft., respectively. The large decrease in the Southern Circle is attributed partly to the coupes of the year in Bhandara and North Chanda being poorly stocked and partly to the coupes in the mixed forest ranges of South Raipur being sold standing to contractors.

53. The saw mill at Allapilli worked at a profit of Rs. 34,329 as compared with Rs. 1,02,248 in the previous year. This large decrease in the year's profit was due to a breakdown on account of a crack in the boiler and also to increased expenditure on remodelling the mill. Commercial Accounts have been introduced from 1st April 1930, which will give more accurate figures of the profits on the mill in future years.

54. **Minor produce.**—The revenue under this head fell from Rs. 2,15,613 to Rs. 1,74,564 or by Rs. 41,079. The main decrease was in the Northern (—Rs. 10,561) and Southern (—Rs. 28,565) Circles due to poor prices for lac and non-disposal of harra collected departmentally during the year.

## 2. PURCHASERS.

55. **Major produce.**—The outturn of the year compares as follows with that of the previous year :—

Year.	Cubic feet in thousands.		
	Timber.	Fuel.	Total.
1929-30	3,824	17,899	21,723
1928-29	4,521	20,109	24,630
Difference	—697	—2,210	—2,907

Under timber, the Northern and Berar Circles show increases of 93,000 c. ft., and 51,000 c. ft., respectively, due to larger number of coupes being sold standing, while the Southern Circle shows a decrease of 841,000 c.ft., due mainly to the lessees working smaller areas.

The decrease under fuel was shared by all circles. In the Northern Circle no purchaser came forward to purchase coupes in the divisions where free removal of head loads by poor people as a famine relief was allowed and in the Southern and Berar Circles the coupes were poorly stocked.

As in the previous year, the Bengal Timber Trading Company, Limited, were granted a one year lease to exploit sal trees killed by the sal borer in Banjar, Motinala and Karanja Ranges of South Mandla. The work of the company was on the whole satisfactory.

The balance of sleepers in stock at the close of the previous year was 29,419. New conversions amounted to 39,396 and sleepers despatched to 34,248, leaving a balance of 35,567 on hand at the close of the year. The royalty paid by the firm amounted to Rs. 81,962 against Rs. 88,371 in the previous year.

56. **Minor produce.**—The revenue from this source was Rs. 24,90,463 against Rs. 24,29,891 in the previous year or Rs. 60,572 more, the main increase being under grazing in the Berar Circle.

### 3. RIGHTS, PRIVILEGES AND FREE GRANTS.

57. The following statement shows the amount and value of forest produce removed free or at concession rates :—

Produce.	1928-29.		1929-30.	
	Cubic feet in thousands.	Value.	Cubic feet in thousands.	Value.
<i>Right holders (in C Class forests of Berar).</i>		Rs.		Rs.
Major produce ... { Timber ...	118	3,602	118	3,602
... { Fuel ...	...	374	...	374
Minor produce ... { Grass ...	...	2,400	...	2,400
... { Grazing ...	...	...	...	...
Total ...	118	6,376	118	6,376
<i>Concessionaries.</i>				
Major produce ... { Timber ...	1	84	4	236
... { Fuel ...	14	436	1,809	24,417
... { Bamboos ...	...	4,528	...	5,081
Minor produce ... { Grass ...	...	11,132	...	10,867
... { Grazing ...	...	11,73,840	...	12,25,138
... { Miscellaneous ...	...	1,397	...	1,929
Total ...	15	11,91,417	1,813	12,67,668
<i>Free grantees.</i>				
Major produce ... { Timber ...	242	28,412	389	35,107
... { Fuel ...	2,125	51,664	2,123	54,606
... { Bamboos ...	...	7,760	...	9,160
Minor produce ... { Grass ...	...	19,720	...	21,974
... { Grazing ...	...	1,43,170	...	1,50,266
... { Miscellaneous ...	...	35,035	...	43,353
Total ...	2,367	2,85,761	2,512	3,14,466

The increase under free grantees is due chiefly to the forests in North Mandla, Jubbulpore-Narsinghpur, Damoh, Saugor and Seoni in the Northern Circle, having been thrown open to the public for free removal of head loads of dry fuel, grass and edible fruits on account of scarcity. The total value of these concessions at scheduled rates comes to Rs. 51,158. This value, however, does not represent the earnings of the people from the sale of the produce which are considerably higher. The form of concession chiefly taken advantage of was the removal of head loads of fuel. The total number so removed was not less than 975,404 valued at Rs. 28,741.

58. **Outturn and sources of forest produce.**—The total value of major and minor produce extracted by all agencies is shown below :—

		Cubic feet in thousands.	Value.
			Rs.
<i>Major produce.</i>			
Timber	...	11,500	23,05,271
Fuel	...	30,432	7,39,022
Total	...	41,932	30,44,293
<i>Minor produce.</i>			
Bamboos	...	...	4,03,001
Grass	...	...	3,81,455 ✓
Grazing	...	...	29,46,035
Other minor produce	...	...	4,05,078
Total	...	...	41,35,569
Grand Total	...	...	71,79,862

against last year's figure of Rs. 63,83,490. The variations have already been explained in the preceding paragraphs.

## CHAPTER V.—FINANCIAL RESULTS.

59. **Revenue.**—The total receipts rose from Rs. 54,42,335 in 1928-29 to Rs. 59,97,508 or by Rs. 5,55,173 in 1929-30, the increase being shared by all three circles. This gross revenue is the highest ever recorded and would have been even better, but for the bad agricultural year in some of the northern

districts and for the large fall in market prices for lac. The increase of Rs. 1,61,135 in the Northern Circle is entirely accounted for under timber and fuel and is due not to any rise in market prices, but to the more intensive exploitation under new working plans and to successful departmental sales of teak in Hoshangabad. The increase of Rs. 2,04,213 in the Southern Circle is due mainly to larger sales of timber from South Chanda to the railways and the Gun Carriage Factory in Jubbulpore.

The increase of Rs. 1,89,727 in Berar Circle is the result of a heavy demand for grass and grazing consequent on an inadequate supply of "karbi" in Berar. Sales of timber and fuel obtained from departmental fellings also contributed to the higher revenue.

60. The sources of revenue were as follows :—

	1928-29.	1929-30.
	Rs.	Rs.
Departmental agency ...	16,45,716	19,79,079
Purchasers ...	34,11,054	35,69,645
Miscellaneous ...	3,50,878	4,14,463
Leased Forests ...	34,687	34,321
Total ...	54,42,335	59,97,508

while classification by produce shows :—

	1928-29.	1929-30.
	Rs.	Rs.
Timber ...	18,35,665	22,45,636
Fuel ...	5,48,366	6,46,430
Bamboos ...	4,20,784	4,01,232
Grazing and fodder grass ...	16,93,460	17,80,922
Other produce ...	5,03,501	4,19,962
Miscellaneous ...	4,05,872	4,69,005
Leased forests ...	34,687	34,321
Total ...	54,42,335	59,97,508

**61. Expenditure.**—The figures of the year compare as follows with that of the previous year :—

	1928-29.			1929-30.		
	A.—Conservancy and works.	B.—Establishments.	Total expenditure.	A.—Conservancy and works.	B.—Establishments.	Total expenditure.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Northern Circle ...	3,89,150	7,15,857	11,05,007	3,87,561	6,93,166	10,80,727
Southern Circle ...	7,67,133	7,47,125	15,14,258	7,41,764	7,26,668	14,68,432
Berar Circle ...	3,66,509	6,69,014	10,35,523	3,65,441	6,61,742	10,27,183
Working Plans Division.	11,329	1,30,194	1,41,523	8,461	1,22,054	1,30,515
Forest Utilization Division:	2,568	16,523	19,091	1,036	24,030	25,066
Loss by exchange ...	...	213	213	...	748	748
Interest on Capital expenditure.	1,72,636	...	1,72,636	1,80,757	...	1,80,757
<b>Total ...</b>	<b>17,09,325</b>	<b>22,78,926</b>	<b>39,88,251</b>	<b>16,85,020</b>	<b>22,28,408</b>	<b>39,13,428</b>
<b>Add General Direction.</b>	...	54,903	54,903	...	62,514	62,514
<b>Grand Total ...</b>	<b>17,09,325</b>	<b>23,33,829</b>	<b>40,43,154</b>	<b>16,85,020</b>	<b>22,90,922</b>	<b>39,75,942</b>

There was a small decrease of Rs. 24,305 under "A.—Conservancy and Works" due to less expenditure incurred in the Southern Circle on new roads and Rs. 42,907 under "Establishments" due mainly to the absence of some officers on leave out of India or on deputation and to the training of less number of students in Forest Colleges.

**62. Surplus.**—The surplus rose from Rs. 13,99,181 in 1928-29 to a recorded figure of Rs. 20,21,566 in 1929-30. To this should be added Rs. 1,27,807 on account of higher outstandings of revenue which rose to Rs. 3,79,850 and Rs. 4,95,069 on account of the value of stocks of timber, etc.; in favour of the year. The true surplus was therefore Rs. 26,44,442 against Rs. 16,20,967 in the previous year.

**63.** The value of live and dead stock after allowing for depreciation fell from Rs. 14,21,828 to Rs. 13,78,062 or by Rs. 43,766.

## CHAPTER VI.—RESEARCH AND EXPERIMENTS.

64. The work done under this head has been dealt with in the report of the Superintendent of Working Plans and Research, Central Provinces, which has been published separately.

## CHAPTER VII.—ADMINISTRATION.

65. **Gazetted Officers.**—Mr. C. A. Malcolm continued to hold the post of Chief Conservator of Forests up to the 6th March 1930 when he proceeded on leave and was succeeded by the writer of this report.

The circle charges were held as shown below :—

Circle.	Name.	From	To
Northern	Mr. C. F. Bell	1-4-1929	7-6-1929
	„ R. T. Jenkin	8-6-1929	7-10-1929
	„ C. F. Bell	8-10-1929	26-2-1930
	„ L. Mason	27-2-1930	31-3-1930
Southern	„ J. Carr	1-4-1929	31-3-1930
Berar	„ C. E. C. Cox	1-4-1929	31-3-1930

Mr. H. S. George succeeded Mr. C. M. Harlow early in April 1929 as Superintendent, Working Plans and Research, and held the post until he proceeded on leave in March 1930 when he was replaced by Mr. H. C. Watts.

Mr. H. C. B. Jollye held the post of Forest Utilization Officer; Central Provinces, up to 3rd June 1929 when he proceeded on leave. The Chief Conservator of Forests carried on the duties of this post up to 14th October 1929 when Mr. R. T. Jenkin became available who continued to hold the post till 10th March 1930 when he proceeded on leave and was succeeded by Mr. Abdus Salam.

Twelve out of 23 divisions remained in the same hands throughout the year, in nine there was a permanent change of Divisional Officers and in the remaining two divisions, changes were due to officers proceeding on short leave.

**66. Imperial Forest Service.**—Two vacancies in the Imperial Forest Service were filled by Messrs. T. MacDonald and M. M. Tasdique Hussain. The former, on arrival from England, was posted to the Northern Circle and the latter, on passing the new Imperial Forest Service Course at Dehra Dun, was attached to Betul in the Berar Circle.

Mr. E. A. Rooke proceeded on leave preparatory to retirement. The department loses a valuable officer who has risen from the rank of Forest Ranger to that of Deputy Conservator. The writer is glad of this opportunity of recording his appreciation of his long and excellent services.

**67. Central Provinces Forest Service.**—Two temporary posts of Extra-Assistant Conservators of Forests were sanctioned during the year to meet the pay of the two probationers in excess of the sanctioned cadre. These posts will be absorbed in the cadre as soon as clear vacancies occur.

**68. Services of officers.**—All Divisional Forest Officers are reported to have worked well. The Conservator, Northern Circle, makes special mention of the services of Mr. V. K. Maitland, to whose untiring zeal and energy the success of the departmental operations in Hoshangabad are so largely due, of Messrs. Willford and Rai Sahib Laiq Singh for the successful manner in which they have introduced the new working plans of their divisions, and of Mr. P. R. Katpitia for the further increase in the output of lac in Damoh.

In the Southern Circle Mr. H. C. Watts is commended for his excellent work as Director of the Forest School, which he did a great deal to improve and ~~Mr.~~ **Mr.** Takle and Khan Sahib Abdul Jabbar for the efficient management of their large and important charges.

In Berar, the Conservator brings specially to notice the good work of Messrs. D. R. Dutt, H. S. Sodhi, and Khan Sahib Nazir Abbas.

**69. Subordinate Forest Service.**—The work of the upper subordinate staff is reported to be satisfactory on the whole. Difficulty in the recruitment of suitable men for the posts of forest guards still continues on account of the inadequacy of their pay and prospects in relation to the arduous duties they are called upon to perform.

Since the close of the year under report the outdoor staff have had to deal with forest satyagraha or the breaking of the forest laws on an unprecedented scale by the people. To combat this a large amount of extra work has been thrown on the whole of the outdoor staff all over the province. The response from all ranks has been worthy of the best traditions of the service and the Commissioner of Berar has recorded his appreciation of the good work done in his division in this respect which the writer heartily endorses. At the same time the officers of the department realize that without the splendid assistance so readily given by the Police and District Officers, the small scattered forest staff would have been unable to save the valuable forest estate from serious damage.

70. **Training.**—Ten candidates secured the higher standard certificate at the Madras Forest College and were appointed as Rangers. The general opinion is that there has been a falling off in the standard of efficiency among recent recruits to the Ranger grade. The question of training the Central Provinces candidates at the Forest College, Dehra, Dun, in future, is under consideration.

71. **Balaghat Forest School.**—Of the 45 students who went through the course of 1928-29, 3 passed by the higher standard with credit, 17 by the higher standard, 24 by the lower standard and 1 failed. The course of 1929-30 started with 49 students.

72. **Punishment.**—The table given below gives details of casualties and punishments inflicted:—

Subordinate.	Services dispensed with.	Dismissed.	Retired.	Resigned.	Died.	Total casualties.	Fines and degradations.
Rangers ...	1927-28...	1	...	3	...	3	7
	1928-29...	...	...	5	...	1	6
	1929-30...	...	1	3	...	1	6
Deputy Rangers.	1927-28...	2	2	9	1	2	15
	1928-29...	1	1	6	1	4	13
	1929-30...	...	...	6	2	3	11
Foresters	1927-28...	9	2	2	4	4	21
	1928-29...	10	4	5	12	6	37
	1929-30...	3	6	3	5	3	20
Forest guards.	1927-28...	147	36	25	155	33	396
	1928-29...	125	37	22	133	39	356
	1929-30...	81	71	27	110	30	319
Clerks ...	1927-28...	6	...	4	9	7	26
	1928-29...	3	1	3	9	5	21
	1929-30...	4	4	8	13	3	32

There is a decrease in the punishments inflicted on forest guards which is about 17 per cent less than in the previous year.

73. **Health.**—Due to early cessation of the rains, malaria was less prevalent than usual in the Berar Circle. The health of the staff was normal in the Northern and Southern Circles except in Hoshangabad, Mandla and Bilaspur where the staff suffered a good deal from malaria throughout the year.

The provision of travelling dispensaries for the malarial tracts is urged for the benefit of the forest staff and forest villagers. The only dispensary of this kind in the field at present is the one started in the Melghat four years ago. This the local officers consider to have been of little use, due to frequent changes and unsatisfactory selections of the medical officers placed in charge.

The question of the extension of bad climate allowance has been under consideration and a list of new tracts to which it is proposed to extend the allowance has been provisionally approved by Government.

74. All Divisional offices were inspected by the Conservators except the North Mandla office.

75. **Touring.**—The touring of Gazetted officers was adequate.

76. The relations with the Revenue and other departments continued to be satisfactory.

#### CHAPTER VIII.—GENERAL.

77. **Forest villages.**—Thirteen new forest villages were established, 12 were deserted and 10 of the previously deserted villages were re-established during the year. At the close of the year there were 338 forest villages in the Northern Circle, 344 in the Southern Circle and 359 in the Berar Circle.

78. **Taccavi.**—Advances to the extent of Rs. 1,37,627 were made to forest villagers, recoveries amounted to Rs. 1,20,503 and Rs. 86,156 remained outstanding as against Rs. 69,032 in the previous year. The outstandings in Hoshangabad, South Raipur, Melghat and Betul at the commencement and close of the year were very heavy as compared with other divisions. Attempts should be made to reduce them.

79. **Malguzari forests.**—There was no change in the number of village forests controlled by the department in the Berar and Southern Circles. In the Northern Circle, seven malguzari forests were brought under special protection during the year, while 16 such forests were released. In addition 17 forests under direct watch and ward of the Forest Department in Chhindwara were taken over by the Deputy Commissioner.

80. **Shooting Permits and Game Protection.**—951 shooting permits were issued during the year against 905 in the previous year. The following statement gives the number and details of animals shot by permit-holders and exempted officers :—

	1927-28.	1928-29.	1929-30.
Tigers .. .. .	172	153	143
Panthers .. .. .	113	106	66
Bears .. .. .	56	52	52
Sambhur .. .. .	153	119	128
Chital .. .. .	86	94	98
Other deer .. .. .	165	162	204
Pigs .. .. .	199	214	187

Besides this, 408 pigs were killed in organized beats and by forest villagers and the staff.

Twenty-seven poaching and illicit shooting cases were dealt with during the year.

81. **Elephants.**—Anarkali in Bhandara, Maulapiari in Bilaspur and Jaitara in South Raipur remained under veterinary treatment for sometime during the year. Except for minor ailments, which were successfully treated, the remaining 20 elephants are reported to be in good condition.

82. **Forest Rest-houses.**—The income from fees for occupation of rest-houses was Rs. 2,337 against Rs. 1,511 in the previous year. The whole of the revenue derived from this source might well be earmarked for improvement in the furniture and appointments of these buildings.

83. **The Forest Relief Fund.**—The amount at credit of this fund rose from Rs. 1,435 to Rs. 7,375 of which Rs. 6,637 were invested in 3½ per cent Government Paper

to the face value of Rs. 10,000, leaving a cash balance of Rs. 737-14-0 with the Imperial Bank of India, Nagpur. The writer's thanks are due to the gentlemen who subscribed to the fund which is now in a position to meet the urgent demands which come from the widows and orphans of low paid forest subordinates from time to time and which cannot be met by the Provincial Compassionate Fund.

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C. F. BELL,

*Offg., Chief Conservator of Forests,  
Central Provinces.*

NAGPUR :

*The 19th September 1930.*

## APPENDIX A.

*List showing the scientific and vernacular names of the trees mentioned in the report.*

Vernacular Names.	Scientific Names.
Achar	... <i>Buchanania latifolia.</i>
Anjan	... <i>Hardwickia binata.</i>
Babul	... <i>Acacia arabica.</i>
Bija	... <i>Pterocarpus marsupium.</i>
Garari	... <i>Cleistanthus collinus.</i>
Ghont	... <i>Zizyphus xylopyra.</i>
Harra	... <i>Terminalia chebula.</i>
Khair	... <i>Acacia catechu.</i>
Mohwa	... <i>Bassia latifolia.</i>
Nim	... <i>Azadirachta indica.</i>
Saj	... <i>Terminalia tomentosa.</i>
Sal	... <i>Shorea robusta.</i>
Semal	... <i>Bombax malabaricum.</i>
Siris	... <i>Albizzia lebbek.</i>
Sisham	... <i>Dalbergia latifolia.</i>
Tendu	... <i>Diospyros melanoxylon.</i>
Tinsa	... <i>Ougeinia dalbergioides.</i>