Annual Report On The Forest Administration Of Nigeria For Year 1949 - 50

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Annual Report on the Forest Administration of Nigeria for the year 1949-50

General Statement

In the Northern Region good progress was made with preliminary proposals for Forest Reservation, in spite of the shortage of officer staff, and the West had a most profitable year, showing a Forestry surplus of £103,707 against £56,325 last year, but in the Eastern Region it was one of disappointment and frustration. The Nigerian exports of timber and wood products were valued by Customs at £1,419,337 for 1949 against £1,112,434 for 1948 and there was intense activity in the timber trade, almost entirely confined to the Western Region. This increased activity was matched by an increase in log stealing and in the general confusion of sub-contracting, speculation and competitive approaches to forest owners, but in general the trade was very healthy.

2. It is frequently asked by the layman how long this active trade can continue before it fails from exhaustion of timber supplies. The answer is, of course, that it can go on for ever, granted reasonable administration. The timber from the unreserved lands, which for the moment supply a large proportion of the output, must fail, but that in the permanent Forest Reserves, which will come more and more into use, balancing the failure of outside sources, is replaced by regeneration as it is cut. There is every reason to suppose that Nigeria can support a timber trade of the present size, but probably no larger, for ever.

3. The period under review ended with a disappointment which may be of great significance for the future of Forestry in Nigeria; in both the Northern and the Eastern Regions the Department was required to make considerable reductions in its Development programme, for these Regions fear that they are building up an organisation which they might not be able to maintain when the assistance of the Development fund comes to an end. But the Forestry Plan depends entirely and absolutely upon the eventual absorption of staff recruited under Development Estimates in the normal Estimates of Nigeria, as accepted by Legislative Council in the Forest Administration Plan (Sessional Paper No. 13 of 1948, Table XII). The possibility has therefore arisen that the Plan must be brought to a halt and recruiting stopped. Large areas of Northern Nigeria would then have to remain undeveloped as far as Forestry is concerned, and in the East progress would be hindered by lack of working votes; there can be no return to the diffusion of an inadequate staff over the whole country.

4. The strength of Senior Service Staff rose from fifty-six to sixty-three but Colonial Forest Service Staff only rose from fifty-one* to fifty-three, nine recruits being offset by seven retirements. The transfer of another officer early in the coming year will reduce total strength to sixty-two and Colonial Forest Service strength to fifty-two. This total of sixty-two includes three Accountants, two Engineers and an Administrative Assistant. The Provincial and Headquarters staff is therefore fifty-six against a total aimed at in the Forestry Plan of sixty-four for 1949-50.

5. The first two Nigerian Assistant Conservators, of the Nigerian Forest Service, were appointed on their return from a special course at Oxford (1948-49, 2)† at the beginning of November. An African from the Department was appointed Forest Accountant and an African from the Veterinary Department was appointed Administrative Assistant. The two latter were posted to the Chief Conservator's Office. A Nigerian of the Junior Service is at Nottingham University (1948-49, 2), two more Nigerians went up to Oxford in October to read the special Forest Officers' Course at the Imperial Forestry Institute, a fourth is at University College, Ibadan (1948-49, 2), and a fifth was accepted by the College this year. Both the men at Ibadan will read a general Science Degree, and, like the other three, are selected men who have proved themselves in the field as Forest Supervisors or Assistants. Four Forest Assistants were put up for the Ibadan University College entrance examination by the Department this year, and two others sat the examination independently, but only the one was successful. The difficulty is that these men have spent some years in the forest since they left school and are at a great disadvantage in an examination of this kind. A period of study leave has been suggested for the future in order to enable selected men to prepare for the examination. It is also recorded that an African with long clerical service in the Department was promoted to a Senior Service post in the Medical Service.

6. The posting of Conservators to the Regional Assistant Chief Conservators' offices (1948-49, 5) has proved to be a most satisfactory change, saving office work and giving more opportunities for touring. It has not, however, been adopted in the North on account of the great distances between stations in that Region.

7. The Northern Region is still well below planned strength in its officer postings and only five of the twelve provinces had a Provincial Forest Officer. Under these circumstances the addition of 2,093 square miles of approved Reserve proposals and 428 square miles of fully constituted Reserves during the year is most encouraging. The full staffing of the Northern Region depends upon the implementation of the Forest Administration Plan. Granted funds and the certainty of eventual absorption into normal Estimates, the recruiting position is favourable and the two Southern Regions are well staffed; the bulk of new recruits should therefore go to the North from now on. The profitable utilisation, under

* Last year's Report showed fifty-two in Standard Form XII by the wrong inclusion in Column 2 of one officer who should have been in Column 3.

† This and other similar references throughout the Report indicate the year and paragraph of a previous Annual Report, in this case the 1948-49 Annual Report, paragraph 2.

present day conditions, of the poor Northern savannah woodlands continues to be a problem and a solution is not yet in sight, although their eventual value to an expanding community is certain. A considerable amount of knowledge was gained of the immediate difficulties.

8. The Western Region has already been mentioned as showing a Forestry surplus of £103,707 for the year. The Region, having the advantage over other Regions of extensive and rich high forest, almost exclusively supplies the export trade and Forestry is well established in it. Planned working for a sustained yield, and parallel regeneration operations, are well in hand in Benin. The new agreements (1948-49, 43) give security for twenty-five years to the operating firm, security to the forest owners in the shape of guarantee by the firm to pay substantial agreed damages in the event of abandonment of work, and security to the forest manager in the declaration of annual coupes five years in advance of felling. A similar agreement for certain Ondo forests is in draft, but delay has been caused by the failure of the licensee to declare his coupe nominations by 1st January, 1950.

9. It is clear that the export and local trades must go hand in hand for the proper utilisation of forest in Nigeria. The one cannot do without the other and in all but exceptional cases the export trade is the first necessity, to cover the main overheads and make the building up of a local market an economic possibility. Such local markets are at present very small but their development is essential if full use is to be made of all the timber that will become available under intensive felling.

10. The most satisfactory development of the year in the Western Region was that in Ijebu Province, where three concessionaires, one European and two Africans, held areas of Reserved forest, none of which was large enough, by itself, to maintain a sawmill (1947-48, 39). These forests, in consequence, could not be worked intensively enough to pay for regeneration operations. The first mentioned of these concessionaires, only, was actually working his area. There seemed little hope of efficient planned management for a sustained yield, but the solution has come in the amalgamation of all interests as one company, the Omo Sawmills of Nigeria Limited. The company comprises the three existing licensees along with Messrs Mallinson of London and the Colonial Development Corporation, the last named being the controlling shareholder. The three areas, with fourteen square miles of the Oshun Forest Reserve, total 428 square miles and can now be worked as one Working Circle maintaining a sawmill in the forest. It will have an annual coupe of approximately 4¼ square miles, with area control of yield and regeneration by the Tropical Shelterwood System, both of which are now well understood from experience in Benin. In connection with the initiation of planned management, with its heavy expenditure on regeneration, it is interesting to quote figures from Benin for African Timber and Plywood, Limited, Working Circle of 808 square miles.

	1945-6	1946-7	1947-8	1948-9	1949-50
	£	£	£	£	£
Regeneration Costs	3,177	10,241	9,017	8,520	10,625
Revenue Surplus paid to N.A. ...	8,868	3,892	12,224	23,552	32,108
Royalties to Individuals	674	762	917	2,183	2,944

11. In the Eastern Region it proved impossible during the year either to find a competent agent prepared to initiate exploitation of the Cross River Forests (1948-49, 18), or to secure the necessary reservation of the Bakossi forests, where a competent timber company is prepared to operate. Under these and similar discouraging circumstances, a great deal of useful reserve consolidation was accomplished; the small Mamu Reserve near Onitsha was gridded and examined with a view to initiating Departmental exploitation, and the small Stubbs Creek Reserve was put under Working Plan to serve the Oron Sawmill. There are still hopes that the Mines Development Syndicate will eventually require large quantities of timber at Abakaliki, and create an opportunity for the intensive and systematic working of the large Cross River and Cameroon forests, mainly composed of species little known in the world's markets. Given such an opportunity the main forestry problem of the East would be solved. It is a plain fact that the local peasant demand cannot begin to touch it.

12. It may be noted that the demand for export timber has led to the renewal of competitive buying of logs at Degema, in the Eastern Region, from the remnant forests which the Department and the timber firms had had to abandon. (1948-49, 23).

13. The Forest Policy of Nigeria, set out in the Forest Administration Plan and in the 1945-46 Annual Report, controls the activities of the Department. Section II was implemented in the satisfactory progress in reservation of the Savannah Woodlands of the North. With regard to section III, the Forest Estate is, practically speaking, established in the West, and approaching that state in the East. Progress under section IV was good and is described in Chapter II of this Report. Some doubts developed within the Department during the year as to the extent to which section V fits in with the rapid political developments which have taken place since the Policy was written. The point is touched upon in paragraph 49 of this Report. Action under section VI was particularly vigorous in the Ondo Province, and is reported in paragraph 102. It has not been possible to develop ancillary timber industries as laid down in section VII, for the export trade has been more than sufficient preoccupation for all those who are interested in timber. Paragraph 17 of this Report has reference to section VIII.

14. Total expenditure at £293,215, exceeded total revenue by £52,714, against £102,322 in the previous year, the decrease again being due to increased revenue in the Western Region. Travelling and transport were more costly than in previous years and silviculture and other forest improve-

ments showed a small increase. Of the total expenditure, £30,416 was incurred under the Colonial Development and Welfare Scheme and £1,837 upon the resettlement of ex-servicemen. The total allocation of Colonial Development and Welfare funds for the year was £58,870 (Table XIIIA of the Forest Administration Plan), increased to £67,540 in the current Estimates, but expenditure continued at a lower level than provision owing to the past lag in recruitment of staff.

15. The chapters which follow deal in detail with the work of the Department during the year and full statistics are set out in the Standard Forms.

Chapter I.—The Forest Estate

STANDARD FORMS I AND II

16. It is necessary to repeat that Nigeria is predominantly a savannah woodland country and that the closed high forest is limited to a comparatively narrow coastal belt, a large part of which is heavily farmed. It is also necessary to repeat that Standard Form I is of little value at the present time and that the truer measure of the situation is Standard Form II. A very great part of the forest and savannah woodland of Nigeria is the bush fallow of the present system of peasant agriculture and will never be available as permanent forest.

17. A seconded Administrative Officer (1948-49, 29) has now been absorbed into the Department as a Forest Estate Officer, posted to Bauchi Province. He comments, very truly, that the greatest potential danger to the security of the Forest Estate is the complete lack of control over the bush fallow. Forest reservation cannot be used as a means of restoring the fertility of exhausted lands, with a view to returning them to agriculture. The limited area of Forest Reserves which can be obtained will barely be sufficient for the timber and fuel needs of the country and they all must be, eventually, intensively managed for a sustained yield as permanent forest. It is strongly held by the Forest Department that the control of the bush fallow is purely an agricultural matter, even though it is most important to Forestry. The Nigerian peasant farm is not, and should never be regarded as, the area under crops in any one year and no more. It is an entity composed of a series of areas, not necessarily contiguous; one of these supplies the crop area each year, while the remainder are progressively recovering under a bush or woodland fallow. Those others become available in sequence in future years, and the number of areas required to form a complete series is the number of years locally necessary for woodland growth to restore fertility. If each farmer has not control over a complete series, he cannot prevent new farmers cropping what should be his bush fallow. If his lands are not limited he himself will not make a proper provision for bush fallow. In either of these cases the system of agriculture breaks down once population and farming expand beyond a certain limit; the area of land under crops each year loses all proportion to the available fallow. Then follows the outcry, so often listened to, for deforestation of Reserves. But deforestation can only delay the final reckoning. Either the system of bush fallow farming must be maintained or the system of agriculture must be changed to a more intensive one, if a serious situation is not to arise. It

is believed by many forest officers that the bush fallow system can only be maintained by the clear acceptance of a farm as comprising a *complete series* of crop and bush fallows, and by the employment of surplus population otherwise than on the land.

18. There is now little conflict between Forestry and the Sleeping Sickness control authorities so far as human trypanosomiasis is concerned, for the riverain Tsetse responsible for the spread of the disease can be controlled by purely local methods. But the sparsely inhabited Savannah Woodlands suitable for forest reserves are still a major difficulty, for *Glossina morsitans* abounds in them and is fatal to grazing stock. The situation was examined at the end of the year by officers of the West African Institute of Trypanosomiasis Research, the Sleeping Sickness Service and the Forest Department, and conclusions were arrived at. These will next be discussed with the Veterinary Department, which is principally concerned but could not be brought into the discussion until Tsetse Control and Forestry had arrived at a compromise between themselves. Briefly it is held by the Trypanosomiasis Research authorities that *G. morsitans* will continue to be a danger to domestic stock in any area holding the larger gregarious antelopes in quantity. The grazing of stock in savannah reserves in the North must be accepted by foresters, not only to make the fullest use of the grass, which this type of woodland will always contain, but for the practical reason that a Reserve would rarely be approved by a Native Authority except on such an understanding. It is accepted that extermination of the mammalian fauna is undesirable; a very few large Forest Reserves will therefore be approved by Tsetse Control Authorities, where game can be allowed to increase naturally. In such Reserves no Tsetse Control will be attempted, although they will be fully used for Forestry; they will inevitably be unsafe for grazing. But at the same time solicitude for the game cannot be allowed to prevent the economic development of the country. In general practice, therefore, the Forest authorities will undertake to keep large game in Forest Reserves at a stocking sufficiently low to satisfy the Tsetse Control authorities. It is clear that this undertaking could not be implemented in practice in very large Reserves, but it certainly can in smaller Reserves, isolated by farmlands. The limitation of the size of Forest Reserves is therefore accepted by the Forest Department. After discussion a provisional limit of a hundred square miles in area and a minimum distance between Reserves of five miles was suggested, for *G. morsitans* country only, of course. It is accepted that, so long as game control is effective, the Tsetse Control authorities shall not interfere with the vegetation or management of such limited Reserves except at the request of the Forest Department. The proposals will, it is hoped, be developed into a formal statement of policy in the coming year.

19. A matter having an important bearing on the security of the Forest Estate came under consideration towards the end of the year. Certain uses are made by the people of those forests and woodlands which are available for reservation, for example, the collection of firewood, hunting, or the grazing of stock. The Native Authority and the people would not agree to the reservation of such forests unless there were provision for the reasonable continuance of these uses. Such uses have, in consequence, been

loosely admitted at Reserve Settlements as unrestricted rights without any close definition, and, with an increasing population, they can become a burden which may stultify the management of a Forest. Examination of the problem indicates that these forest uses are in fact mostly subject to the control of chiefs or a Native Authority, which is exercised in the general interests of the community; they are not true rights. Provision for them is in such cases better expressed as an obligation resting on the Native Authority than as a right to individuals; as an obligation to supply firewood, for example, rather than as a right to take it where and as the individual wishes. Such obligation can easily be defined, as an " object of management " for a Reserve, so that the needs of the people can be met in the most efficient way. The suggestion was put forward, therefore, that in future provision should be made for the local use of Forest Reserves not by the improper description of such use in the form of rights to individuals but by a clear statement of the " objects of management " binding the owners of a Forest Reserve, to be set out in the Gazette Notice constituting it. The proposal is now under discussion.

20. With regard to the details of Standard Form I it is only necessary to say that minor alterations from last year are the effect of reservation, consolidation and revised estimate. The only change of importance is the reduction in the total area of " communal forest " (Col. 9) of 3,146 square miles. This is the result of the withdrawal of the Forestry Regulations from the unreserved parts of the Bamenda Province and the Mamfe Division of the Cameroons. There is no change in the physical condition of the vegetation but the area is reclassified as agricultural instead of forest land. It is worthy of note that the Western Region has no more than 15.1 per cent of its area under Forest Reserve and that the Eastern Region has only 10.5 per cent. In both these cases reservation is for practical purposes complete and the areas will, if anything, be diminished as consolidation proceeds. There is no chance of any significant addition, and the achievement is markedly less than the 25 per cent which was considered desirable. The Northern figure of 5.53 per cent is not significant as reservation is still in an early stage.

21. Standard Form II merits closer attention, and shows the different situations in the three Regions. The North, in spite of its small staff, has made excellent progress in the addition of 2,115 square miles of preliminary proposals and 444 square miles of constituted Reserves. The West shows little change from last year, as would be expected from the most advanced Region, with almost all its Reserves constituted and demarcated. The East is in an intermediate position; it can have little to add in the way of new proposals and its Forest Estate is nearing completion, but it has a large area, 1,447 square miles of constituted Reserves which await final demarcation.

22. Nearly half of the Northern Forest Reserves are in the one Province of Sokoto. The most important of the new proposals made during the year covered 385 square miles in Sokoto, 558 square miles in Zaria, 450 square miles in Bauchi and 688 square miles in Bornu.

23. In the West no progress could be made with the Akure-Ofosu Reserve in the Ondo Province (1947-48, 18), although the area was demarcated

two years ago. A Supreme Court judgement had decided that the Akure Native Authority is the owner of the land but dispute continues.

24. In the East a total of 115 square miles of additional Reserves had been proposed in Kumba Division of the Cameroons and received the approval of the Native Authority, but the approval to the Bakossi proposal of 40 square miles was subsequently withdrawn. In the Makoko proposal of 57 square miles, settlement disclosed that a large part was in the Cameroons Development Corporation Estate. The general hardening of the Kumba Native Authorities against the creation of more Forest Reserves is noted and the situation deteriorated seriously during the year. Their attitude is perhaps due in part to the expropriation of so large an area of land, originally taken by the German Government of the Cameroons, and now allotted to the Cameroons Development Corporation Estates, but it is most unfortunate. With their co-operation it would be possible to establish a valuable forest industry in this sparsely inhabited and poor area and there is grave danger that the opportunity will be lost.

25. Consolidation proceeded during the year. In the North work was completed in the large Kwiambana Reserve and is in progress in the Zamfara, of Sokoto Province. The Osara and Otete Reserves in Kabba Province were completed. In the West eleven consolidating orders were approved and awaited publication at the end of the year, seventeen were being scrutinised before submission for publication, and three were being prepared (1948-49, 26). The development of the Omo Sawmills project in Ijebu Province (Paragraph 10 of this Report) made it necessary to complete the consolidation of the Omo Forest Reserve as rapidly as possible. The Provincial Forest Officers, Abeokuta and Ijebu Ode and one officer supernumerary to establishment were all employed on the task and the field work has been completed (1948-49, 24). In the East difficulty was encountered in the demarcation of the Anambra Reserve of Onitsha Province (1948-49, 28). The northern boundary is described as the "boundary between the Northern and Southern Provinces", but this has never been established on the ground and was so vaguely described in the Gazette that it is impossible to follow with any accuracy. Attempts to cut it led to dispute between rival claimants of the land, the Igalas and the Aguleris, and the intervention of the Administrative Officers concerned was necessary. It was not possible to commence consolidation in the Ossomari Reserve (1948-49, 57), the Provincial Forest Officer being fully occupied with the Anambra and Mamu Reserves. Consolidation of the Uwet-Odot,Umon-Ndealichi and Lower Enyong Reserves was completed (1948-49, 28).

Chapter II.—Management and Survey

STANDARD FORM III

26. The area under Working Plans shows a nett increase of 126 square miles but 103 square miles of this covers Communal Forestry Areas, where the application of plans is not always effective (1948-49, 36). The Western Region shows only a small increase but this does not indicate a lack of progress. The planned area should show a very considerable increase in the near future by the addition of the Ondo and Ijebu Ode forests. In

the case of the former (1947-48, 38) there have been unforeseen delays but in the case of the latter progress has been much more rapid than could have been expected from the situation last year.

27. The area shown as "under plans" in the relevant Standard Form refers to the whole area to which the plans apply and not merely to the actual area under operations in any one year.

28. *Intensive Working Plans.*—As indicated last year the only Intensive Plan, that for the Sanga River Concession Area of 23 square miles, required adjustment. There is an excessive proportion of overmature timber in the high forest outliers which form the Working Circle. The Basal Area method of yield control (1946-47, 26), even with relaxation, left many of the largest trees to stand over to the next felling cycle, that is for another twenty-five years, and the sawmill, being confined in its annual cut to the largest trees, found many with hollow butts or useless. It was therefore decided to exclude all trees of more than 14 feet in girth from the assessment of growing stock on which the permissible cut is calculated, and to allow the mill to take all these overmature trees in addition to the permissible cut. The effect of this overfelling is that the permissible cut now includes trees down to 11 feet in girth, and it is justified by the utilisation of the old trees in the present felling cycle before they are lost by decay.

29. *Simple Working Plans.*—These are plans in which yield is controlled by limitation of area felled. The forests covered by them are of three categories, Communal Forestry Areas, Plantations and Natural Forest.

30. The Communal Forestry Areas (1948-49, 36), almost entirely in the North-West Circle of the Northern Region, require little comment. Their working leaves much to be desired but the Assistant Chief Conservator of Forests, Northern Provinces, expresses the view that the ragged communal exploitation of a coupe, which is usual, does little harm silviculturally. This is probably the case *provided* the exploited coupe is left untouched to regenerate by coppice. But it is suspected that in many cases the coupes near a village are not so left, but are subjected to surreptitious and selective hacking year after year. Although grazing is usually a desirable subsidiary use of forest in the Northern savannah woodland, it is absolutely essential that stock should be kept out of vulnerable young regeneration. This is rarely the case in Communal Forestry Areas.

31. The orthodox plantations also require little comment (1948-49, 37). The Kuru Plantation on the Jos Plateau was put under simple Working Plan during the year and the first coupe was thrown open to the local villagers to cut free for themselves, with the object of convincing them that Forest Reserves are of some practical value. It included a fine stand of *Callitris* poles, and poles are a commodity not easily come by on the Plateau, but they were all cut up for firewood. The Akilla Plantations (1948-49, 80, 81) in Ijebu Province are now being extended under approved Working Plan. The year's prescriptions were carried out and the records brought up to date. These fine and extensive timber plantations are one of the Department's most notable achievements. They are at present difficult of access, and cannot therefore find a market for intermediate

yields from thinning, but this will be remedied when the new main road from Lagos to Benin reaches the Omo Reserve, in which the plantations lie.

32. In the Enugu Pitprop Plantations thinnings made necessary by the raising of the rotation from eight to fifteen years, at the request of the Colliery (1948-49, 37), were almost completed during the year, but pitprop production will now virtually cease until 1955, when trees of the required size will become available. It was decided that the objection of the Health Authority to the planting of *Gmelina,* in the extension to these Enugu Plantations, should not be challenged, but the Director of Medical Services and the Chief Conservator recorded their agreement that in the future a Health Authority should clearly put forward any conditions to be imposed upon forest reservation *before* the Forest Department is committed to such reservation, and should not thereafter interfere with forestry practice so long as it complies with the conditions. Should the conditions proposed make forest management impossible, and their imposition receive the sanction of higher authority, the Reserve would not, of course, be made.

33. The most important Natural Forests under Simple Plan are the Benin Forests, the Akure Reserve in Ondo Province, and the Anara Reserve in the Zaria Province.

34. The difficulties of working the Anara Reserve were referred to last year (1948-49, 40). The savannah woodland of the Reserve has been found, by reason of the excessive number of hollow and faulty trees, to furnish no more than 11 cubic feet of mill logs to the acre, from which 2.5 cubic feet of sawn timber are produced. At the present rate of output the mill would require an annual coupe of 2,500 acres. Under the clear felling system which is the basis of the Working Plan some 12,500 cords of firewood would also have to be disposed of annually, to clear a coupe of this size. There is no market for such a quantity, particularly as the extension to Kaduna Air Port makes available large supplies of cheap firewood close to the town. It was decided that clear felling must be continued and that therefore the size of the coupe must be dictated by the probable market for firewood, probably at about 400 acres. It follows that either the mill must close down or it must satisfy its log requirements by advance fellings, disregarding a sustained yield so far as sawn timber is concerned. The importance of this experimental mill, in developing the supply of small dimensioned sawn timber in the Northern Savannahs, is such that the latter alternative was chosen. The Working Plan will be revised accordingly and the area will become a pole and firewood Working Circle with salvage felling of mill timber in advance. It will be necessary to make a new attempt to study the problem of a *sustained yield* of savannah mill timber in another Working Circle.

35. The Naraguta Reserve on the Jos Plateau, mainly of *Isoberlinia doka,* produced a clear profit to the Native Administration of £102 from the year's coupe of forty acres, another indication (1948-49, 11, 12) that the value of a forest lies more in the intensity of local demand for its produce than in the quality of that produce. Firewood and poles are very difficult to get in Jos.

36. The Akure Reserve in the high forest of Ondo Province (1948-49, 41) continued to give difficulty in that it again proved impossible to work the whole coupe of 370 acres. The suggestion mentioned in last year's Report, that the excess timber in the coupe should be sold to private operators, proved unworkable in practice. Exploitation nevertheless was very markedly improved by the use of two Fordson tractors and trailers.

37. A new European firm, Messrs A. G. Finch and Company, has applied for licences in Ondo Province over the Owo, Ifon and Okeluse Reserves of 246 square miles in Owo Division and the Irele Reserve of 14 square miles in Okitipupa, all previously unworked because they were inaccessible and not of first quality. A strict area control of yield will be enforced and a vegetational survey is in progress over the Owo Division group to determine the effective high forest area*, for fixing the acreage of the annual coupe. These Reserves contain varying proportions of savannah.

38. In Benin Division the new agreement covering the working of Nigerian Hardwoods Limited over 60 square miles of Forest Reserve was signed at the end of the year by the firm and the Native Authority. The British West African Timber Company Limited has now, after some years' delay, accepted strict area control of fellings over its Forest Reserve holdings of 360 square miles. The new agreement, to give effect to this, was not completed by the end of the year.

39. Messrs African Timber and Plywood Limited have concentrated upon salvage felling of unreserved forest in Benin since the introduction, in 1944, of area felling control. This was to allow the Forest Department time to establish a lead in regeneration operations. As a result the firm now has an undercut of some 30 square miles in its Logging Allocation of 8 square miles a year in the Reserves and it is not certain that it can make this up. Any saving of forest is of course desirable from the point of view of reducing the sanctioned overcut in the firm's "Plywood Allocation" which was one of its conditions for accepting the imposition of controlled felling by the Department in 1944, but the objection to an undercut in the Logging Allocation is that the regeneration has to stand under the shelterwood longer than was planned. Extra cleanings may be required, with an increase of expenditure.

40. The "merchantability" clause in the Benin Agreements has been strictly enforced during the year. This requires the exploiting firm to pay for all timber defined as merchantable of some fourteen major species listed in the Agreement, whether extracted from the forest, left at the stump or left as standing trees. In the case of lesser known species, not listed in the Agreement, the firm pays only on the volume extracted from the forest. An Assistant Conservator, with commercial knowledge of timber work and recruited on agreement, was posted with the special duty of instructing the Forest staff in methods of measurement and assessing of merchantable timber. This greatly improved the standard of logging and reduced the amount of waste; the costs of the officer's services were far more than repaid by the very marked increase of revenue.

* Now found to be 186 square miles.

41. *Regeneration Plans.*—The Maifoni and Limanti Reserves in Bornu Province (1948-49, 44) are only nominally under regeneration plan—the situation on the ground is confused and unsatisfactory owing to indiscriminate felling in past years. Firewood cutting continued under plan in the Upper Gimi and Nimbia Reserves south of the Jos Plateau. The year's coupe of 150 acres produced a net profit to the Native Administration of £159. The problem is that the Savannah Woodland here, on the rainy side and at the foot of the Jos Plateau, almost approaches forest in stocking and growth. Many of the trees are too large for firewood production by hand tools and it is probable that a sawmill of the Anara type is necessary to obtain efficient exploitation.

42. *General.*—The proposal for payment of forest revenue to the Ishan Native Authority (Benin Province) has not yet reached finality (1948-49, 45). It has been necessary to hold all revenue on deposit throughout the year owing to the delay of the Native Authority in signing the undertaking that it will honour its existing licences and reimburse Central Government for any expenditure on Forestry.

43. The very welcome development in Ijebu Province has been referred to in paragraph 7 of this report. Under the Tropical Shelterwood System which will be applied, regeneration operations commence five years before commercial felling in each coupe. In Benin African Timber and Plywood Limited confined themselves to salvage felling while the necessary regeneration lead was being established by the Department but in Ijebu Province there are no adequate salvage fellings available and the Company's work must start at once in the Reserve. It will be necessary, therefore, to leave the first five coupes to purely natural seeding and to commence regeneration operations in Coupe 6. It is to be noted that the southern area of the Omo Reserve known as J6, of approximately 100 square miles, has been set aside for small scale local operators and is excluded from the Working Circle.

44. In Egbado (Ilaro) Division of Abeokuta Province progress was made in developing the management of three high forest Reserves, too small for the application of strict area control. This Egbado group of Reserves, the Ilaro, Ohumbe and Eggua, have an effective high forest area of 45 square miles only. A selection system with special minimum girth limits and a felling cycle of ten years is proposed, the Reserves to be grouped and opened successively in ten equal annual coupes. Silvicultural work will be confined to creeper cutting. One of the Reserves is under licence until 1951 and the inauguration of the scheme must therefore be deferred until then. Exploitation thereafter will be by permit for individual trees, preferably for local use in the Province. One of the Reserves, the Ilaro, was originally obtained by Deed of Grant which expires in 1954. In October, 1949, the matter was taken up with members of the Egbado Council. General concern was expressed at the heavy rate of timber exploitation and for the future of local timber supplies, and members agreed to support the reconstitution of the Ilaro Reserve as a Native Administration Reserve so that it should not be lost. A draft statement of policy incorporating these suggestions for management of the group and reconstitution of the Ilaro Reserve was submitted to the Council, but there were delays and the statement had not been accepted by the end of the year.

45. The difficulties of the Eastern Region have been mentioned in paragraph 11 of this Report. No agency has yet been found to exploit the Cross River Forests in Ikom and Obubra Divisions of Ogoja Province (1948-49, 18), although Messrs Norken Lumber Company still show a certain interest and commenced a timber Survey in the Ukpon Reserve towards the end of the year. Under these conditions it is the more tantalising that in Kumba Division of the Cameroons, where the Société Africaine Forestiere et Agricole have been working outside Reserves for many years and have the necessary organisation ready to hand, the controlled exploitation of rich forest is held up because reservation is opposed by the Native Authorities.

46. Plans to work the small but rich Effium Reserve in Ogoja Province and the small Bende Reserves of Owerri Province are under discussion.

47. The Mamu Reserve in Onitsha Province, of some 20 square miles, has been gridded into compartments and a vegetation type survey has been completed. Intensive enumeration of typical high forest compartments has been commenced and will be finished shortly. The Reserve is a mosaic of savannah woodland and high forest in which latter there is a fair quantity of *Gossweilerodendron*. The next step will be an arrangement of compartments to make possible the writing of a working plan.

48. Arrangements have been concluded whereby Messrs Oron Sawmill are to work an area of 33 square miles in the northern part of the Stubbs Creek Reserve under plan. Work will be commenced at once under permit for one year, at the end of which it is hoped that an agreement will have been accepted and issued.

49. *Finance of Management.*—The profitable results of forestry in Benin have been referred to in paragraph 10 of this Report, but it is not proposed to recommend the transfer of the Omo and Oshun Government Forest Reserves to Native Administration control. (Paragraph 43 of this Report). It is always doubtful whether any local authority, in Nigeria or elsewhere, can truly be said to be competent to carry out complicated forest management plans or relied upon to provide the necessary long term security, although the assumption has been made in the past, and an appearance of competence can be maintained by efficient support. The creation of the Regional Houses of Assembly, however, with their unofficial majorities, has developed a new situation. Control of forest management by the Region now gives scope to local interest and influence and the case for its devolution to Native Administrations has lost a great deal of its force. But it is accepted that whatever the status of the Forest Reserve, it is most desirable that the *profit* of forest management, or a substantial part of it, should go to the forest owners, represented by the Native Authority. A " formula " similar to the Benin formula (1947-48, 46) will therefore be drawn up to cover the Omo and Oshun Forest Reserves in Ijebu Province.

50. Small sums have been set aside by five of the Ibadan Division Sub-Treasuries as reserves to meet future forest regeneration commitments.

51. *Publication of Plans.*—The Working Plans for Messrs African Timber and Plywood Limited and I. T. Palmer's Working Circles in Benin Division have been rewritten in Standard Form and are in operation. They

have not yet been submitted to the Governor for final acceptance as certain small alterations in their form are still considered to be desirable. The Akilla Plantations Plan, Ijebu Province, and plans for the four Working Circles at Olokemeji, Abeokuta Province, are now in final form.

52. In the Eastern Region "Evolutionary Working Plans" have been devised for Reserves and are in course of preparation. The object of these Plans is to ensure continuity of work in the establishment and protection of Reserves which cannot yet be worked, and to provide for the proper recording of information on vegetation and other matters. Prescriptions will, of course, be simple and may amount to little more than provision for boundary cleaning. It is obvious that a full scale working plan cannot be drawn up until a forest can be exploited, and it is believed that these Evolutionary Plans will serve a useful purpose. They might possibly be better described as Establishment or Maintenance Plans.

53. Publication of Plans is out of the question owing to the practical difficulties of typing and supplying maps for more than the bare requirement of working and record copies. It is evident that the time is approaching when the Department will have to have a Working Plans clerical and mapping branch.

54. *Survey.*—The Western Region reports 1,008 miles of chain and compass traverse and 24 miles of river survey in the Ukpe Sobe Reserves done with range-finder and compass. No aerial surveys in the Forestry programme of Forest Reserves were made during the year but the survey of the township of Sapele incidentally showed enormous numbers of logs in the neighbouring creeks and lagoons and sketch maps were prepared to assist the log control officers at Sapele in their attempt to prevent log stealing.

55. It has been suggested that a complete cover of aerial photographs, for a Reserve would serve as a valuable and legally acceptable record, to be used as evidence in case of farm or village encroachment.

Chapter III.—Communications and Transport

STANDARD FORM IV

56. From the Northern Region it is reported that the survey of the Bornu extension of the Nigerian Railway from Nguru to Maiduguri has been started. The Forest Department in this Region is poorly equipped with Departmental motor transport; it has no more than two vehicles, both very old Dodge Desert Trucks, but two Bedford heavy duty pick-up trucks have been approved in the 1950-51 Estimates.

57. From the West it is reported that timber firms and contractors are turning more and more to road transport. There are now no forest tramways in Nigeria, the last having been replaced during the year by a motor road. Logs are now transported by road from Amahor to Sapele, a one day journey, instead of being floated down the Osiomo River, a three weeks journey. In Abeokuta Province timber trucks are now using the main Lagos road from the North, with a very appreciable increase of utilisation, for isolated pockets of timber previously inaccesible can thus be brought out. So long a haul, often seventy or eighty miles, is only made possible by the present very high prices for timber.

58. Nevertheless, Messrs Norken Lumber Company have been experimenting with fair success in rafting logs down the Niger from Aboh Division. This had previously been considered to be impracticable.

59. The African Timber and Plywood Limited, in Benin, is now using locally made logging-arches with considerable success. The firm intends, after felling and topping, to extract the whole bole length with these, without cross-cutting, to the gantry where the trees will be measured and cross-cut. The limit will probably be stems of some 16 tons in weight. The Forest Department welcomes the innovation for it will reduce damage to forest, increase the efficiency of utilisation of each stem, and facilitate supervision of measurement. It is hoped, also, that it will prove to be the end of that picturesque but objectionable practice of squaring logs in the forest, an operation which leaves a great area of slab and chips. Nothing will grow through this, and a blank is created in the very place, the site of a parent tree, where strong regeneration should be expected.

60. In the Eastern Region the extensive road development is proving increasingly useful to Forest Officers and visits can now be quickly paid to places which previously took many days. On the other hand the high labour rates ruling in towns and the large demand for labour on road construction make work in the "bush" less and less attractive to peasant and town man alike. In many places carriers, so essential to the work of the Department, are almost impossible to engage. From Bamenda, only, was it reported that carrier transport is still readily available and reliable. Travelling on foot for all grades of forest touring staff is becoming increasingly difficult and permanent carriers, although costly, are essential in Onitsha and southern Cameroons charges, particularly for field staff. Ikom could not afford a gang this year (1948-49, 56); if the steadily increasing cost of transport continues, and available funds do not keep pace with the increase, there must be an inevitable and progressive falling off in efficiency.

Chapter IV.—Forest Protection

Standard Form V

61. *Against Man.*—The usual fluctuations of the statistics set out in Standard Form V do not require comment. The North records that lopping is difficult to control in the more northerly reserves. It is mainly the work of shepherds, who are often truculent, bringing in their goats and sheep for the dry season from the French Colonie du Niger. The Shehu and Council of Bornu issued an instruction, achieved after prolonged negotiation, for the eviction from Reserves of all illegal settlers and farmers.

62. In the West there was a large increase in the illegal felling of Abura (*Mitragyna ciliata*), for which there was a great demand in the United Kingdom during the year. This is a tree of the swamps and during the wet season it can be felled directly into the water. Detection is therefore very difficult, even if patrolling of the creeks were not hampered by the independence of the waterside people. Log stealing, particularly near Sapele, continued to increase. A Government Assistant Ranger and two

Forest Guards were posted to Sapele with the special task of log control. After a six months trial they were withdrawn, and the work was again left to the normal staff, as it was decided that nothing effective could be done without a much larger special staff and a European Officer posted on the spot. This could not be provided. The Nigeria Police have also given attention to the problem.

63. The Assistant Chief Conservator, Western Region. points out that a decrease in offences in Ishan is largely due to the reduction of the list of " Farm Trees ", that is, of trees which are protected by the Native Authority *outside* Forest Reserves, to four species only. He observes that the term " Farm Trees ", that is, of trees which are protected by the Native Authority originally designed to encourage and protect a well distributed but not excessive number of fruit, fodder, firewood or shade trees in the dry farmlands of the Northern Region, where good woodland is scarce. Its meaning has been distorted in the South to cover species which are of no use to the farmer, but have some financial value as timber, although it may not be high. The destruction of really valuable timber trees by burning is obviously wasteful and undesirable, but protection should not be carried too far. It is not in any way desirable that agriculture should be handicapped by trees useless to the farmer on farms, once Reservation is complete, although it is reasonable to make the best use of those already standing on newly cleared farms. Under the Native Authority Timber Revenue Collection Rules, which are replacing the Forestry Regulations outside Reserves in the fully reserved Divisions of the Western Region, such trees are more correctly described as " Specially Protected Trees " and that definition is strictly confined to mature trees of a very few species which are of particular timber value.

64. A re-enumeration by a licensee of unreserved licenced areas in Ife, Oyo Province, shows that almost 50 per cent of the exploitable timber trees have been destroyed by farmers in the five years since the first enumeration.

65. The Eastern Region emphasises the importance of destroying illegal farms when a conviction is obtained, and not allowing the offender to reap his crops. Without such precaution crime can be made to pay and there is every inducement to repeat the offence. The encroachment on the Ossomari Reserve (1948-49, 57) required police assistance and finally sixteen persons were prosecuted of whom twelve were fined £10 each and four discharged on appeal. The Provincial Officer reports that petty offences have continued but that the local population now show reasonable respect for the Reserve.

66. *Against Fire.*—The Northern Region reports that fire entered Zaria, Ilorin, Kabba Plantations and some Communal Forestry Areas in Benue, but that the plantations were successfully protected this year in Sokoto, Katsina and Kano.

67. The West reported fires in plantations at Akaranga and Olokemeji in Abeokuta Province, Eleyele, Iseyin East, Oyo and Shaki in Oyo Province. The Provincial Forest Officer notes that the date of the Bere festival should be carefully watched in Oyo as it marks the commencement of the grass-burning season, the object being, of course, to get a good burn

for hunters and farmers. Burning started on 8th January in Oyo in 1950. In Benin there was a fire of between 20 and 30 acres in the Obajire Taungya in the Obaretin Reserve and one of about 1 acre in the Ogba Fuel Plantation. Both fires were due to carelessness in an exceptionally dry period. There is such small fire risk during most of the year in Benin that people do not appreciate the danger of a very dry spell (1947-48, 71).

68. A serious fire occurred in the Enugu Pitprop Plantation of the Eastern Region in late February, caused by sparks from a passing railway engine. The fire broke out almost simultaneously in three places and, fanned by a high wind, got into the crowns of the Teak, a most unusual occurrence. Thirty-five acres of Teak and *Gmelina* were burnt over and a house and garage were destroyed in the labour lines. The Forest Assistant quartered in the house, being on duty elsewhere in the plantations, lost all his possessions, but damage to the growing stocks was slight as both species are fire hardy.

69. *Against Pests.*—The weed *Eupatorium odoratum* (1948-49, 62), previously confined to the Enugu Pitprop Plantations, has now been observed at Enugu Aerodrome. In the Plantation it is capable of smothering coppice growth and establishes tangles up to ten feet high. No method has yet been found of dealing with it.

70. The quick entry of pinhole borer into such species as *Pycnanthus angolensis* and *Terminalia superba* is remarkable, fresh logs being attacked at the ends, as they lie in the forest, within twenty-four hours of felling. If an insecticide could be found sufficiently cheap and effective for practical use, the treatment of such species *at the stump* would increase the available timber supplies of Nigeria more than anything else could do. This protection at the stump is the real problem and of far greater importance than the treatment of sawn timber, which is reasonably well understood.

Chapter V.—Silviculture

Standard Form VI

(i) Natural Regeneration

71. *Savannah Woodland. Guinea Savannah Zone.*—Inspection of the felled areas of the Anara Reserve has shown that the regeneration situation is not at all as bad as was feared last year (1948-49, 63). Coppice shoots have come away and there is almost certainly full replacement, although no observable improvement in stocking. Fire is certainly the great enemy to regeneration, but opinion is gaining ground that a factor of almost equal importance is the condition of the soil. Where, as is usually the case, the soil is hard and compacted there is no sucker growth at all, but there is excellent growth wherever there has been hoeing or cultivation. This observation received unexpected confirmation from the Niger Agricultural Project of the Colonial Development Corporation, at Mokwa near Jebba. In the very extensive tractor-ploughed lands of the project, which had been very thoroughly stumped before ploughing, the woody regrowth was really excellent from a forester's point of view, disconcerting though it may be to a farmer. The regrowth came from stumps sufficiently small to have been

overlooked in the clearing and from roots cut by the plough; its quantity was due to the number of cut roots and its vigour was obviously due to the turning of the soil. This example has taken the Department a step further in its knowledge of the management of savannah woodland but the main obstacle to its application is still the very poor financial return from the utilisation of such woodland. The five or six cords of firewood and 2.5 cubic feet of sawn timber produced to the acre at Anara will certainly not pay for cultural operations.

72. The problem of fire is dealt with at length in the report from the Northern Region. Clear felling, without cultivation of the soil, certainly induces a vigorous growth of grass which increases enormously the severity of fire damage, but the silvicultural possibilities of selective felling (1948-49, 63) cannot be fully tested at Anara owing to the small number of trees worth selecting, as reported in paragraph 30 above. *Organised* shifting cultivation, as a method of reducing the grass, is economically and administratively impossible over large Savannah Reserves. The problem of fire protection must therefore be dealt with by other methods.

73. Early burning has been accepted in Nigeria for many years but the Northern Region reports that there are certain doubts which have arisen in the minds of some officers of that Region. The small experimental fire control plots in Zaria Province are reported to show clearly that three years complete protection followed by an early burn in the fourth year have produced a remarkable improvement in woodland density. It is further reported that the plots do not provide much evidence in favour of early burning except as an alternative to *no* protection resulting in late fires. It must be pointed out here, however, that in the large Savannah Reserves, traversed by hunters, honey collectors and herdsmen, three years complete protection *cannot* be guaranteed, as it can in small plots, and that in any one or all of those years a very damaging *late* burn may occur (1947-48, 75, 1948-49, 60). It is here suggested that the complete protection of limited regeneration areas for a limited number of years might well be possible, provided the rest of the forest were burned early, to meet, so far as is compatible with Forestry, the requirements of hunters and herdsmen. Complete prohibition of burning over large areas, even if it does not infringe upon admitted rights, would so adversely affect the interests of these men that they would make it almost impossible. Nevertheless, these doubts as to the value of early burning will have to be seriously considered and the evidence giving rise to them must be examined further.

74. Examination of the plots is reported to demonstrate that the complete protection of *Isoberlina woodland*, which has never been cut over, has improved density and crown development. It had been held previously that fire protection had little effect in improving mature savannah woodland, as this had lost its power to respond, and that the full effects of fire protection could only be obtained where there had been preliminary coppicing. The point requires further investigation.

75. *Savannah Woodland: Sudan Savannah Zone.*—The excellent effect on Sudan Savannah Woodland of protection from fire, cutting and stock is shown in the small Gage Bluff Reserve near Sokoto. It is situated

on an ironstone escarpment and stocked by natural re-growth of *Acacia seyal, Acacia arabica, Acacia senegal, Balanites aegyptiaca, Bauhinia sp.** (Kalgo), *Guiera senegalensis* (Sabra), scrubby *Combretum micranthum* and *Anogeissus schimperi*. Grazing and browsing have been effectively prohibited for a number of years. The Reserve was cut over some eight to ten years ago, and parts of it are now an impenetrable thicket, ten to twelve feet high, of coppice shoots and seedling stems. The records show that much fruitless time and money had been spent in earlier years in attempts to stock the area by planting indigenous and exotic species. There is no longer a fire problem, but this is in part due to the rocky lateritic ground which, in the Sudan Savannah, rarely supports much grass, even if there is no suppression of it by shrub growth. A similar area in the Majiya Reserve also near Sokoto has been protected from fire and grazing since 1936, when it carried a scattered cover of *Guiera* (Sabara) and *Combretum* (Geza) scrub grazed or cut down to eighteen inches. It is now covered with spreading bushes 10 feet high, amongst which are many *Bauhinia* and *Balanites*. Attempts to plant neem (*Azadirachta*) in the blanks have repeatedly failed, as did 1,000 stumps of *Acacia arabica* in 1949.

76. The small fire control plots near Bimasa in Sokoto are reported to show that annual early burning has little, if any advantage over late burning in the Sudan Savannah, but that complete protection, even with periodic accidental fires, leads to thickening of uncut woodland and gives best results after coppicing. The practical aspect of the problem, however, is the possibility of *achieving* complete protection over large areas without the risk of frequent late fires. The possibility is admittedly far greater in the Sudan Savannah, with its lighter grass growth, than in the Guinea, but the question needs further study before the established practice of early burning is changed. It is reported that complete protection leads to an increase of grasses of high grazing value at the expense of other grasses. There is, however, a possibility that closure of the plots to grazing may have something to do with this.

77. *Forest Outliers.—Guinea Savannah Zone.*—The difference between the regeneration in forest outliers in Plateau Province at Kafanchan and in the Sanga River Reserve of the Northern Region (1948-49, 64) has been further looked into but no conclusions have been reached yet. The most marked peculiarity of all these *Kurumis*† or outliers in the areas concerned is the individual character of each. In the Kafanchan outlier *Chlorophora excelsa* (Iroko) and *Aubrevillea kerstingii* were very common, while in some of the Sanga River *kurumis* there are excellent stands of *Khaya grandifoliola* growing almost gregariously and in others *Triplochiton scleroxylon* is a frequent species. Three main differences have been reported between the exploited areas of Kafanchan and those of Sanga River. In the former, wartime exploitation in 1942 and 1943 took everything that could be used as a railway sleeper regardless of sustained yield; in the latter exploitation is selective under a felling cycle. In the former there has been no entry of fire; in the latter there have been frequent ground fires, some entering from the savannah and others lighted in the dry leaves of the forest floor by

* Now *Piliostigma reticulatum*.

† The Hausa word for a Forest Outlier.

hunters and the exploiting company's labourers. In the former regeneration is excellent; in the latter it is poor and patchy. The problem must receive further study, for these outliers are of great importance. Not only are they very rich in timber but, by reason of their situation in the heart of a poor savannah woodland region, their timber is of especial value to the countryside.

78. *High Forest.*—The management of the Gambari Group Reserve of the Western Region (1948-49, 65) is not satisfactory from a silvicultural point of view; regeneration is not making the headway it should, but no solution to the problem of this forest, also, was arrived at during the year. Regeneration counts showed an average of only forty seedlings to the acre above 6 inches high, mostly *Triplochiton*, and seedlings are not considered as established until they are 3 feet high. The highest figures were from a compartment which had had no treatment at all, but of the remainder, areas which had the full regular treatment of fuel cutting, followed by climber cutting, showed the best figures. A remarkable flush of *Triplochiton* seedlings, up to 2 feet high occurred along a stretch of exploitation road which had been cleared during the 1948-49 dry season when these trees were seeding, but not subsequently used. The cleared trace was the normal 15 feet wide and through dense forest. The Regional Report offers the suggestion that soil disturbance may be of more importance to this species in its initial stages than the full light previously thought to be the main requirement. But soil disturbance means heavy expenditure and the economics of silviculture must be a controlling factor.

79. The fears expressed in Benin (1948-49, 67, 1948-49, 127 (*iii*)) that exploitation would nullify the achievement of the Tropical Shelterwood System, by the destruction of regeneration, have proved to be groundless. An area of 191 acres of the first treated compartment to be exploited, Usonigbe 21, was examined by the newly posted Silvicultural Assistant six months or so after the completion of all exploitation operations. The compartment as a whole was originally poor forest. A few big trees had been taken out during the nineteen thirties and intensive felling under plan took place between September, 1948, and July, 1949. The yield of 161 cubic feet Hoppus of timber to the acre was obtained from an average of 0.69 merchantable trees to the acre, and was very far below the accepted estimated average of 440 cubic feet for Benin. This will indicate the poverty of the compartment in seedbearers. This poverty in itself reduced the amount of felling damage and would have invalidated conclusions, had not the area for examination been chosen especially to include a gantry site, hauling ways and secondary growth on old farms; damage was heavy and everything was against an encouraging result. But an actual count, covering twenty economic species, showed an average to the acre for the whole 191 acres of 135 seedlings (over 3 feet in height), saplings and young trees, the last being natural advance growth. Of these 135 an average of forty-four plants to the acre were over 10 feet in height and thoroughly well established. Quite apart from statistics the good growth of this regeneration and the very reasonable degree of care which had been taken in felling and extraction are both apparent on inspection. Saplings have survived undamaged at the edge of hauling ways, close to felled stumps and amongst

the crowns of felled trees. That a proportion,* and perhaps a high proportion, of regeneration may be lost in exploitation is obvious and accepted, but it is clear that enough for adequate stocking will remain.

80. In order that accurate statistics shall be available of actual regeneration lost in exploitation, the Silvicultural Assistant, at the end of the year, made a detailed examination of Compartment Usonigbe 2 which will be felled in the coming year. The regeneration of the compartment was considered typical, and it is hoped that it is so, for it yielded a far better count than was expected. The figures for a closed counting area of 135 acres have already been examined in detail and the following extract is of great interest. It refers to saplings more than 10 feet high of twenty merchantable species only and the figures are an actual count, not multiplications from small quadrats. The highest stocking was 936 such saplings to the acre.

Counts were made for individual acres and of these

2	acres	each	contained	0-100	economic Saplings 10 feet high or more
3	,,	,,		100-200	,, ,,
10	,,	,,		200-300	,, ,,
21	,,	,,		300-400	,, ,,
42	,,	,,		400-500	,, ,,
33	,,	,,		500-600	,, ,,
11	,,	,,		600-700	,, ,,
4	,,	,,		700-800	,, ,,
7	,,	,,		800-900	,, ,,
2	,,	,,		900-1,000	,, ,,
Total...135 acres					

In these 135 acres there are approximately ten acres of tangle, of which about half is covered by the climbing palms, *Calamus* or *Ancistrophyllum*. A second count will be made when exploitation is complete.

81. The Assistant Chief Conservator, Western Region, points out that the 3,655 acres of Akure Reserve now under treatment are interesting in that they show three variations of T.S.S., and that general observation tends to support the now accepted impression that the opening of the canopy *must* be gradual if a satisfactory stocking of *Entandrophragma spp.* (Sapele wood, etc.), is to be obtained. These valuable economics are shade tolerant and relatively slow growing in early youth and anything other than a gradual opening of the canopy brings in a flush of light demanders which quickly suppresses them by physical competition. The orthodox T.S.S. method, or *slight* variations thereto, gives the initial protection from competition which the shade tolerant species require, and later gives opportunity to the light demanders to enter, when the *Entandrophragmas* are well established and better able to hold their own. Even so they have a difficult struggle at Akure against the very rapid growth of *Mansonia altissima*. Incidentally this latter species coppices vigorously when cut as a sapling, and it is fortunate that it is itself quite a useful economic.

* A count in a very intensively felled compartment in the Akure Reserve (paragraph 127 of this Report) made after this Report was written showed a loss of 34 per cent in 32 acres, some 180 established plants an acre being left. Losses are expected to be much less in Benin.

82. The area under natural regeneration in Benin Division now totals 79,442 acres and, although it has its failures, the results are on the whole most impressive. It is not out of place at this stage to pay a tribute to Mr P. C. Lancaster, now Conservator of Forests, who as Provincial Forest Officer, Benin, initiated the very difficult task of large scale application of these planned operations and placed them on the sound footing which has made subsequent expansion a comparatively simple matter. Benin forestry owes a great deal to his energy, organising ability and knowledge.

83. The first stage has been passed through in the silviculture of the T.S.S. operations. At Akure, and now in Benin, there are compartments where exploitation operations are finished, and seeding must be accepted as complete. Up to this stage there has been periodic cleaning of undergrowth, first down to the ground and later to knee level, leaving the economic saplings isolated like plumes. This has been necessary to give the economics a lead over all possible competition. But ground cleaning must not be continued beyond the point where it ceases to be essential or it would make impossible the re-establishment of the natural high forest structure in the regenerated crops, which is an important object of the system. An essential component in this structure is the middle story, most of which is at present economically useless, but which fulfils the very necessary function of covering and shading the soil, and of keeping the forest clear of climbers, a task that cannot be accomplished by the isolated crowns of the mature emergent economics. This middle story has had to be temporarily removed to give the necessary light for the new crop of seedlings, but once these are well away it must be brought back.

84. The next problem to be dealt with, therefore, is that of effecting a transition from ground cleaning to climber cutting, and nothing more, as a post exploitation operation. The middle story, previously kept in check, must now be encouraged to cover the ground, to push up the economics and to keep them clear of creepers. The difficulty is that, in forest where the middle and upper stories have largely been removed, a dense herbacious tangle is the result of cessation of ground cleanings. To put labourers through such tangle can only result in the equivalent of another ground cleaning. If middle story species are to be given a chance of re-establishing themselves it will probably be necessary, therefore, to leave the tangle untouched for a year, or perhaps more, until the regeneration and middle story coppice growth have lifted it sufficiently for the men to work their way *beneath* it. Once they can do that the transition is accomplished; the young crops will only require periodic climber cutting till they are established, and all backward regeneration must be abandoned. Instructions were issued for such transition operations in Compartment Akure IA in Ondo, and Usonigbe 21 and a Sapoba 1947 Taungya in Benin.

85. The Western Region reports that in Benin certain silvicultural operations have been put out to contract with men who have been employed on the work for a number of years. Although it seems to have been a successful change, it is not possible, the report notes, to be sure without a longer trial. Rates laid down are 2s 1d to 2s 2d an acre for climber cutting and 2s an acre for cleaning. Poisoning and regeneration counts are still carried on by direct labour.

86. Akure T.S.S. costs were reduced from 32s 1d to about 25s 1d to the aere for all operations. This figure refers to the costs of the series of operations as carried out in different Compartments in the year and not to the series as carried out in one compartment over several years. The reduction is stated to be attributable to the greater experience of the supervising staff in allotting working tasks.

87. There was a profuse seeding of *Triplochiton scleroxylon* at the beginning of the year under review, and in Benin, cleanings were put forward, as far as possible, to take advantage of it.

88. An Assistant Conservator was posted as Silvicultural Assistant this year; his first task was the re-organisation of Headquarters silvicultural records, but that which made his posting essential was the progress of T.S.S. in Benin, where valuable information was accumulating and urgently called for efficient record. In earlier years it was more important to "get on with the job" than to record it, where shortage of staff made a choice necessary. But it is now clear that a recording silviculturist is essential. By the end of the year under review he had re-organised under a decimal system, with the Revised Oxford Classification of subjects, all records, which were previously classified by provinces.

(ii) Artificial Regeneration

89. The statistics for Artificial Regeneration in Standard Form VI relate entirely to Taungya Plantations of indigenous species.

90. The Benin taungyas were increased by the normal 836 acres of planting, but results are very poor in a number of the planting areas. The reason for this was an unauthorised alteration of technique involving the use of natural seedlings, with poor root systems, collected direct from the high forest and transplanted into the nursery, and also an attempt to double the daily planting task, which led to careless stumping and planting. A further unauthorised departure from accepted technique was planting in belts of six lines 12 ft × 12 ft, of the fast growing *Terminalia spp.* and *Sarcocephalus diderichii*, followed by twelve lines, 6 ft × 6 ft, of the slower growing *Meliaceae*, instead of in the usual mixture. The matter was adjusted and a return will be made, of course, to proved technique in the coming season.

(iii) Plantations

91. The Assistant Chief Conservator, Northern Region, points out that plantations have been, on the whole, most disappointing in the North. There are a few exceptions of limited extent, such as the exotic *Dalbergia sissoo* and *Azadirachta indica* (Neem) in one or two specially favoured sites, but, by and large, there have been far more expensive failures than successes. Several species make a good start and thereafter check or even die, and others, grown for coppice, show heavy stump mortality even after the first felling. Investigations are continuing and it is obvious that good growth in town avenues, with available water and fertile soil, is no guarantee of success in an extensive plantation which has to be established on poor soil, and must endure the long dry season unwatered.

92. At Akilla, in the Western Region, the lateness of the Rains retarded the germination of *Sarcocephalus diderichii* (Opepe), and transplanting in the nursery was still taking place in January. The plants have responded well, however, and should be suitable for stumping by the end of June, 1950. Twenty-five acres were planted during the year (1948-49, 80) with 75 per cent *Sarcocephalus* and 25 per cent *Khaya ivorensis* and *Lovoa klaineana*. The former shows very few failures, while the two latter, especially *Khaya*, show rather a high mortality rate. The *Meliaceae* were planted out as one year "striplings" and it would seem that they needed another year in the nursery. Cleaning has been done by farmers who put in their crops in the planting area. The extensive planting of cassava, normally prohibited, was here allowed and its heavy shade too often drew the plants up so that they could not stand alone when the cassava was cleared. The cassava was planted in the same year and only shortly after the plantation crop. If it is to be allowed at all it should probably be planted not before the tree crop is a year old. Clearing of the normal compartment of sixty acres for 1950 was satisfactorily completed by the end of March. Work was begun on 1st December and this would seem to be the latest date for starting clearing if the benefit of the usually dry month of February is to be obtained for burning slash. Burning this year in February was much better than last year, when it was done in March. Clearing costs were approximately £4 an acre against £7 an acre last year.

93. At Ogba in Benin, sowing at stake of the indigenous *Pentaclethra macrophylla* was continued in accordance with plan (1948-49, 82). It is again reported that growth is poor and doubts were expressed whether the species will produce a firewood crop in the ten years laid down by the Plan.*

94. From the Eastern Region, the Provincial Forest Officer, Bamenda, refers to the establishment of *Eucalyptus* in the mountain grasslands there. He emphasises the necessity for raising large and hardy plants and recommends leaving the seedlings in the nursery without watering or shading them through one dry season, to harden them. He also comments on the tendency to start planting near the nursery at the bottom of the slopes. As a result the most vigorous seedlings, taken from the nursery when there is ample choice, are planted in the best localities, and the smaller and weaker, taken when nursery stocks are depleted, are left for the tops of the slopes where conditions are least favourable. Unquestionably, he says, it is an economy to spend money on raising good strong stock in ample quantities, to ensure initial success and avoid expensive filling. The Australian Forestry and Timber Bureau very kindly identified the eucalypts used in these plantations (1948-49, 83). They are *E. camaldulensis* Dehn. (*Syn.*, *E. rostrata* Schlect.), *E. saligna* (Sydney Blue Gum), *E. robusta* (Swamp Mahogany) and *E. grandis* (Flooded Gum or Rose Gum).

95. At Enugu it is very noticeable that young planted *Gmelina arborea* is greatly affected by the care it gets in the first year after planting out. In these plantations this care depends entirely upon the farmers who grow

* An inspection made after this Report was written, however, showed that growth, although rather slow, was very healthy. *Pentaclethra* will obviously do better here than the *Cassia siamea* which it replaces. That species starts well but is very sickly at twelve years old and will not endure a second coppice rotation.

crops among the young plants, and do all the cleaning. The vigour of plants in good clean farms is most conspicuous when compared with the lack of it in those on weedy ill-tilled farms, and the difference is observable for two or three years at least. No doubt a contributory factor is that planting is also done, at Enugu, by farmers and not by direct labour—the slovenly farmer will plant trees with less care in the first place.

(iv) Amenity Planting

96. There are sixteen, nineteen and eighteen distributing nurseries in Adamawa, Bornu and Benue Provinces respectively. *Gmelina arborea* is rapidly growing in popularity for planting near compounds in Benue and in that Province 206,000 plants of this species were distributed to farmers. This amenity work is carried out directly by Native Administration Forestry Staff, advised only by Forest Officers who happen to be passing on tour.

Chapter VI.—Production and Trade

STANDARD FORMS VII-X

97. Standard Form VII applies only to the produce which is taken under control, exercised directly or indirectly by the Forest Department, and it does not apply to the very large quantities which are taken free.

98. The total equivalent round volume of timber for produce so taken was 28,937,966 cubic feet, an increase of 3,133,030 cubic feet on last year's figure, and its value £965,263, an increase of £515,001. This rather astonishing and disproportionate increase is due very largely to a revised estimate of the value of timber, as it lies in the forest, in Benin. An average value of 1s 6d a cubic foot was put on logs as compared with last year's average estimated value of 6d a cubic foot for logs. Values have certainly increased and this more realistic view from the main exporting area is accepted. The total number of trees felled, under control, increased from 63,957 to 94,906, which accorded with the increase in total volume, but the indication is that the additional trees felled were mostly of small volume. Logs, mostly for export, and timber sawn in the forest, mainly for local use, both showed increases and the only further comment necessary is that charcoal showed a marked fall. The recorded value of charcoal, however, is based largely on the exports of one concern and it is understood that these fell sharply, although the reason is not known.

99. The expansion in the use of little known species (1948-49, 91) suffered a check, the percentage of "Other Species" shown in Table A falling to 4.5 per cent from 8.7 per cent last year. This probably indicates increased selectivity in the world's markets but does not necessarily mean any approaching difficulty in disposing of an *adequate* number of species for the proper utilisation and regeneration of the forest. The listed species are twenty in number and "Others" number twenty-three. It is inevitable that a certain number of species, marketed on trial, will not prove a success, and with increasing experience the market may well show increasing discrimination. Every additional species which can find a regular place in the market is an advantage both silviculturally and economically, but it is

certain that enough species have already established themselves for effective practical working, even if the peak of experiment in marketing has been passed for the present boom.

100. It should be pointed out that the removal of Forestry control from unreserved lands, particularly in the Eastern Region, means that much felling is no longer recorded; local demand, therefore, is a great deal higher than the records of this Report would indicate. It is reported from the Eastern Region that local demand for sawn timber has risen in the Southern Cameroons owing to the extensive building programmes of the Cameroons Development Corporation and of Messrs Elders and Fyffes. It had been hoped that the extensive Cameroons Development Corporation estates would be made self-supporting in the matter of timber.

101. It will be observed from Appendix I (Trees Felled) that although the number of trees felled in Reserves rose sharply in the Western Region, their proportion to those felled outside Reserves remained about the same, in the neighbourhood of a fifth. In this Region the number of trees felled in Reserves will rise steadily from now on until all firms are felling their full annual coupe. The more important licensees have in the past four years concentrated on their areas outside Reserves to " salvage " as much timber as possible before it is destroyed by farmers, but they are now moving into the Reserves. Unlicenced operators are all, of course, working outside Reserves. The Eastern Provinces show a sharp drop in trees felled in Reserves but this is due to abandonment of the Reserves in the Rivers Province, which proved impossible to control. Fellings presumably still continue in them but are no longer recorded.

102. Concern has again been expressed in the Eastern Region at the amount of felling in the unreserved lands, from which control has been removed (1947-48, 64, 67). But the Assistant Chief Conservator points out that a crop of timber trees cannot be maintained on farmlands without drastic interference with farming activities. The old trees left standing when new farms are made must disappear in time by being used, or by natural death; very few will be replaced. There is only one way of maintaining a permanent and sufficient supply of forest produce, and that is by setting aside adequate land for the growth of forests. If land cannot be spared, the district must go short of timber or rely on import. Against this, the continued occurrence of *Chlorophora excelsa* (Iroko) in the Ibadan farmlands is worthy of notice. It shows that there are possibilities in short-boled " farm " or " park " trees as a supplementary source of timber. The supply of Iroko in the neighbourhood of Ibadan has been pronounced as " almost exhausted " throughout the last twenty-eight years at least, but limited amounts are still produced. Prophecies of exhaustion are obviously dangerous, but farm timber supplies can certainly do no more than meet limited domestic requirement. They are quite inadequate for the demands of development.

103. The Northern Region reports that the timber market near Zaria Railway Station averages stocks of some 5,000 cubic feet of lumber, mostly *Chlorophora* (Iroko), *Khaya spp.* (Mahogany), *Triplochiton* (Obeche) and some *Entandrophragma spp.* (Sapele wood). The pass hammer marks show

that it comes from Benue, the southern part of the Plateau Province, Oyo and even Benin. Prices are up to 9s 6d a cubic foot for Iroko and Mahogany, and up to 8s 6d a cubic foot for Obeche.

104. The Western Region reports great activity in the Ondo Province and says that practically all the lands outside Reserves are parcelled out under local agreements giving " owner's consent " to take timber. There has been a fierce scramble for these " consents " and even the poorest and smallest of areas is keenly sought after. Competition gives rise to many disputes between owners and local contractors, over boundaries and the identity of the owner. The contractors are usually financed by larger concerns, which cannot themselves obtain " consent ". It happens from time to time, of course, that the same area is " given " to more than one contractor, but most of the disputes are eventually settled, as far as is possible, by the Ondo Native Authority. Competition for " owner's consent " is also bitter in Ishan (Benin Province) and Warri and has given rise to minor political troubles and appeals to the Courts.

105. An unfortunate result of the timber boom is the influx into the industry of so many brokers and contractors with little or no experience behind them. There are many who are interested in quick profits only and these are often made, it is feared, at the expense of contractor's labourers.

106. In general the timber industry of Nigeria, both internal and export, is booming. Although there is considerable disregard for the conventions and a notable ignorance of the meaning of a contract on its fringes, the trade is taking full advantage of its opportunities and is doing its work well. A great deal of money is being made at all levels, not merely by a few, and it is probable, as so frequently is the case, that the greatest profits are being made where least is invested and the smallest risk run, by those who have no permanent interest in the business.

(ii) Mill Production

107. Standard Form IX shows an increased output with a correspondingly increased value. The total of man days worked, however, decreased considerably. The statistics are probably not sufficiently reliable for any conclusion to be drawn from this.

108. The Eiritz Sawmill in the Sanga River Reserve of the Northern Region (1948-49, 94) took 11,404 cubic feet of logs compared with 10,119 cubic feet in the previous year. The difficulty in getting pitsawyers for the breakdown of logs continued, but the relaxation in Basal Area control noted in paragraph 28 of this Report has eased that of log supply.

109. The Department's Anara Mill is discussed in Chapter VIII (Research and Investigation) as is the Forest Department Sawmill at Aponmu.

110. In the Ondo and Oyo Provinces there were eight small sawmills operating during the year (1948-49, 96) including the Forest Department Mills at Aponmu and Ibadan. The latter, formerly the Research Yard Mill (1948-49, 106) was closed as a commercial business at the end of the year under review as it was considered undesirable to compete with private enterprise now that the shortage of sawn timber in Ibadan is no longer acute. Only

three of these mills are owned and managed by Nigerians, and an increase in local enterprise in this direction would be welcome. A small new mill was erected at Agbabu in Ondo Province by a European firm, Messrs A. G. Finch and Company which should start operating in April, 1950. In Benin Province, African Timber and Plywood Limited's plywood mill was in full work and the Company's new sawmill should be in full operation in the near future. The Nigerian Hardwood Company Limited increased the input to its mill by 80,000 cubic feet over last year, when it was not in full work (1948-49, 97). The Honourable G. Obaseki's mill continued in operation on a small scale and Messrs Norken's Lumber Company sawmill commenced operations on a small scale on 1st December, 1949. There are also the Brian Sawmill and that belonging to James Thomas and Sons at Sapele.

111. It must be appreciated that these mills vary from the completely modern and efficient Sapele plywood mill to concerns which produce no more than 25 cubic feet a day.

112. The Eastern Region and the Colony of Lagos have no points which require comment in the matter of their sawmills this year.

(iii) Export

113. The Export statistics, recorded by Customs and set out in Standard Form X, refer to the calendar year 1949 and not to the financial year 1949-50 covered by this Report. Log exports were 4,392,100 cubic feet, valued at £847,091, against 3,227,800 cubic feet, valued at £623,506, last year. Sawn timber exports were 598,400 cubic feet, valued at £205,492, against 516,400 cubic feet, valued at £156,273, last year. The export of veneer was replaced by that of plywood, now manufactured in quantity by the Sapele Mill. The plywood exported was valued at £281,277 and the total value of logs, lumber, veneer, plywood and charcoal exported was £1,419,337.

(iv) Departmental Production

114. In the Northern Region the Anara Sawmill produced 4,330 cubic feet of sawn timber, 3,339 poles and 3,213 cords of firewood. In the West the Aponmu Sawmill produced 65,736 cubic feet against 45,561* cubic feet last year. The intake was 187,239 cubic feet. The Gambari Reserve produced 81,557 cubic feet of pitsawn timber and 13,249 cords of firewood. Olokemeji produced 2,332 poles and 808 cords of firewood, a reduction due to the restriction of coupe under the new Working Plan. Ibadan Fuel Plantations sold 21,788 poles and 847 cords of firewood and other plantations in Oyo Province 9,182 poles and 1,341 cords. The "Research Yard" sawmill produced 15,432 cubic feet of sawn timber. In the East the Enugu Plantation produced 94,027 pitprops between 4 feet and 12 feet in length, the majority being 4 feet, and 1,530 cords of fuel.

115. Departmental working therefore produced 85,498 cubic feet of millsawn timber (68,920), 81,577 cubic feet of pitsawn (97,896), 36,641 poles (40,137), 21,088 cords of firewood (20,341) and 94,027 short pitprops (140,487). The figures in brackets are those of last year.

* A mistake was made in paragraphs 106 and 107 of the 1948-49 Annual Report where input was given instead of output for the Aponmu Mill.

(v) Minor Forest Produce

116. Standard Form XIII has little significance, except as a very slight indication of the types of minor forest produce which are used. Exports shown in Table X show what are commercially profitable. No comment need be offered beyond a report that the apparent increase of £9,392 in the value of Gum Arabic taken is not a true increase; it includes £10,334 in respect of the 1948-49 crop, only recently advised by the firms concerned. In actual fact, therefore, the drop in production last year was some £14,000, not £24,000 (1948-49, 109), and there has been a further, but slight fall of £1,000 in the year under review.

Chapter VII.—Rural Planning and Development

117. The doubts which made themselves felt at the end of the year with regard to the future of the Forest Administration Plan have been mentioned in paragraph 3 of this Report.

118. The place of woodland in the Colonial Development Corporation's Niger Agricultural Project at Mokwa, near Jebba in the savannah of the Northern Provinces, was decided between the Department and the Corporation during the year. The Project will cover 30,000 acres or more; the primary safeguard which is necessary is the preservation of a sufficient mosaic of woodland in the Project to maintain the original character of the locality. A farming population has been introduced to a previously uninhabited area and made dependent upon ploughing and a herbaceous fallow, but should the Project collapse, unlikely though this may be, the farmers would have to revert to hoe cultivation and a bush fallow. They would then require sufficient woodland for farming and that must be preserved, but while the scheme is in being it must be managed for a sustained yield of forest produce—it cannot stand idle. The domestic household fuel requirements of the scheme would not absorb the annual cut necessary to keep the required area in health and the Forest Department therefore welcomes the Manager's strong views that ploughing should be by steam power and not as at present by tractor. A permanent supply of wood fuel for steam could be made available within the Project, and the vast quantities of wood which now have to be burnt in the course of clearing could be used. Imported fuel, apart from its expense, is exposed to all the possibilities of interruption of supply, and it is hoped, therefore, that the possibilities of steam ploughing will be thoroughly investigated. It was agreed that, whatever the outcome of such investigation, areas of woodland should be preserved sufficient in total to supply both the domestic fuel requirements of the farmers and also the requirements of steam ploughing, should this latter be decided upon. The former will be in the form of a wood to each farm settlement and the latter in belts separating unit farms. A clear-cutting compartment system with coppice regeneration will be used and in total the woodland is estimated as sufficient to permit a return to bush fallow hoe cultivation if this ever became necessary. The Department is completely satisfied that the Corporation has thus made the necessary insurance against deterioration of the locality in the event of the scheme's failure, and also provided as far as possible for its own fuel requirements.

119. In the Western Region it was decided to hand over to the Regional Production Development Board the western part, some 16 square miles, of the Oshun Reserve in Ijebu Province. This Reserve was given to the Crown, for the development of forestry or agriculture, some forty years ago and classified as a Forest Reserve. This western part, however, has always been honeycombed with small farms. Some ten or twelve years ago the area which was not, for this reason, susceptible to forest management was divided by a cut trace from the eastern part where the forest was intact and free of rights. Local opinion was against dereservation of the western part, for the privileged farmers who are there feel that they would be swamped by intruders if control were removed. The solution now arrived at is satisfactory, therefore, to the people, and to the Forest Department, which wishes to abandon the western area. The Board intends to organise the development of good farming in this area. The eastern portion of the Reserve, about fourteen square miles, will form part of the Omo Sawmills Working Circle referred to in paragraph 10 of this Report.

120. The need for control over the bush fallows of the country has been dealt with in paragraph 17 of this Report.

121. Two settlement schemes are reported on in the North, one at Jema'a and the other at Shendam, both in Plateau Province. In the case of Jema'a the forest estate is already assured and the requirements of the countryside are provided for. The settlement scheme need only provide for its own forest produce requirements. In Shendam, however, forest reservation has not commenced, but the Reserve proposals, already put forward in the Forest Reconnaissance report, cover large areas which the Administration now hopes to develop as settlements. If the Forestry proposals are not to be carried through the settlement scheme must provide not only for its own forest produce requirements but for those of the countryside as a whole. The Jos, Pankshin and Southern Divisions of the Plateau Province will certainly have an inadequate forest estate; Jama'a has made its contribution to the Province as a whole and Shendam is the one remaining Division where there are still large areas of woodland available for allocation. Settlement Schemes and Forestry clash in that both demand unpopulated country free of rights; they are therefore in competition for the same areas, and great care must be exercised lest undue stress on one or the other upset the economic balance of the countryside. The stress is unlikely to be upon Forestry, for there is a persistent and dangerous belief that forest land is waste land, and that the rôle of a Forest Department is confined to the afforestation of areas devastated by nature or by man. It is always difficult to persuade authority and the general public that the conservation of existing resources is preferable to an attempt at their replacement after they have been destroyed.

122. The discussions between the Trypanosomiasis Research Institute and the Forest Department have been commented on in paragraph 18 of this Report.

Chapter VIII.—Investigation and Research

123. *The Forest Department Sawmill, Aponmu.*—The recovery of this Mill, forecast last year (1948-49, 117), took longer than was expected and the corner was not turned until September, 1949. During the first half of the

present year, 1949-50, the operating loss was £156 13s 3d,* but for the second half there was an operating profit of £1,097 19s 1d, and the operating profit for the year was £941 5s 10d. On 31st March, 1950, the accumulated profit since the inception of the scheme was £2,938 3s 11d. It is to be noted that the operating loss for the previous year 1948-49 was £501 6s 4d and the accumulated profit since the inception of the scheme on 31st March, 1949, was £1,996 18s 1d. These figures were not available when the last Annual Report was written.

124. The recently appointed Departmental Accountants accomplished an extremely useful service in making up these accounts and in looking into the affairs of the Mill. Their investigations incidentally disclosed irregularities upon which the Police have been asked to take action. The Department has been severely handicapped in the past by the lack of its own accounting officers.

125. The two Fordson tractors (1948-49, 117), hauling over the road with a very short manhaul from the bush, have solved the immediate problem of supply to the mill (1947-48, 139) and are a decided success.

126. It is clear that this Mill, at all events, is not really suitable for management as a Government concern with the inevitable restrictions which would not apply to a commercial venture. But nevertheless it has continued to serve an invaluable purpose in the way of investigation. As a pilot scheme it has been fully justified. Not only has it made possible more intensive exploitation than any where else in Nigeria but it makes clear to the Department what restrictions can be applied to commercial working and what can not. As an example, the Department has become far more sympathetic than it might otherwise have been towards firms whose concessions contain large quantities of *Brachystegia;* it still cannot itself find an economic method of either using or destroying this species at Aponmu (1947-48, 141).

127. The Mill provides an interesting comparison with commercial intensity of working. African Timber and Plywood Limited in Benin extracted from Compartment Usonigbe 6, of 1 square mile, 497 cublic feet to the acre, from 1.68 trees to the acre, and paid a revenue of £6 19s 4d to the acre. This was for export and to supply the Sapele sawmill; caterpillar tractors were used in the forests and there was a long road haul by lorry. At Aponmu with a hand haul of two miles to the mill, the Department extracted from Sub-Compartments 4A, 4B and 5A, totalling 153 acres, 1,087 cubic feet to the acre, and paid a revenue of £8 8s 0d to the acre. With a short hand haul of half a mile, and a tractor haul of two miles on the road, the Department extracted from Sub-Compartments 4C, 4D and 5C, totalling 130 acres, 1,837 cubic feet to the acre, and paid a revenue of £22 16s 0d to the acre. It is of course possible that this intensive exploitation at Aponmu, taking everything that can be used regardless of the margin of profit, is uneconomic. It may contribute to the precarious financial position of the Aponmu mill, but it nevertheless gives a lead which is of the greatest

* This loss, made in spite of an 8,488 cu. ft. increase of production, was due to the writing off of an accumulation, over some years, of unsaleable timber and to extensive repairs to buildings, with an increase to their capital value.

importance, even if it would not be reasonable to expect commercial felling to reach such intensities yet. It must, however, be pointed out that this Aponmu Forest is as rich as any in Nigeria.

128. *Anara Sawmill.*—This small mill (1948-49, 120) showed a nett loss of £817 from the inception of the project up to 30th September, 1949, the last date to which final accounts have been drawn up. The difficulties of forest management which have been brought to light by the mill have been commented upon in paragraph 34 of this Report. There have been encouraging features, such as the sale of the whole output, which, small though it is, was most difficult to sell at first, and it has also been shown that if saws are kept in proper order the timber produced is reasonably smooth and true to dimension, but the continued and increasing financial loss is disappointing. It would seem inevitable in Nigeria that even so small a Departmental enterprise accumulates an ever increasing number of employees all requiring quarters. A whole village has grown up at Anara, producing no more than perhaps ten cords of firewood and 25 cubic feet of sawn timber a day. This can never be economic and such a small project can only be successful if it is in the hands of a few local men, working for themselves and living at the local standard of the countryside. If the Anara Mill shows the way to such local enterprise, the cost of the project will have been money well spent.

129. The mill was idle for some time after an employee with little experience of driving, had attempted, without permission, to drive the tractor. He killed himself, and completely destroyed the tractor. His dependents were awarded £90 compensation.

130. *Charcoal.*—Some 2,000 lbs of charcoal were made by local methods from the clear felling, without selection of species, of an area of less than half an acre of savannah woodland in western Oyo. The charcoal was sent to Warri for test in the charcoal burning power plant there. The average yield was about 560 lbs of charcoal from a cord of wood, 128 cubic feet stacked. The test has not been made yet.

131. *Medicinal Plants.*—The Department contributed what assistance its field staff could give to representatives of the British Medical Research Council and others who were carrying out investigations into the possibility that *Strophanthus sarmentosus,* or related species, might prove to be a source of Cortizone.

132. *Silviculture.*—The three experimental Tropical Shelterwood Plots of five acres each in the Southern Bakundu Reserve in the Cameroons received a climber cutting, seedling count and first poisoning (1948-49, 75). The poisoning was, however, carried out in March, 1950, instead of October, 1949. The delay was due to the late arrival of supplies of antidote to sodium arsenite, for, although occasion has never yet arisen for use of the antidote, it is not safe to work with the poison unless supplies of antidote are actually with the labourers. The operation may not therefore be successful, for rain may wash out the poison. This first poisoning was heavy, the entire middle storey, with the exception of economic species, being treated. Some 107 trees to the acre were poisoned, chiefly *Coula edulis, Strombosia spp., Picralima sp., Diospyros sp.* and *Maba sp.* The seedling count in

November, 1949, showed *Microberlinia bisulcata, Cynometra spp., Pterocarpus sp., Chrysophyllum sp., Irvingia barteri, Staudtia sp., Guarea sp., Khaya ivorensis, Mimusops d'jave* as economics, and amongst the 3 feet to 10 feet high class were *Microberlinia, Cynometra, Pterocarpus, Staudtia, Guarea, Khaya* and *Piptadenia.* In certain patches *Khaya ivorensis* seedlings and saplings are locally numerous and in Plot 3 *Staudtia stipitata,* a valuable species in the Cameroons, is common in the middle storey. It is to be noted that the striped black and white timber *Zebrano* or *Zingana,* which some years ago was in great demand amongst the timber men of the French Cameroons, has been identified as *Microberlinia bisulcata.* It was formerly believed to be *Brachystegia sp. nov.,* and does not occur, so far as is known, west of these Cameroons Forests.

133. The point was again raised whether T.S.S. will prove adequate in these forests, in the lack of Meliaceous seed bearers, and whether some form of enrichment treatment is not necessary (1947-48, 47). In this connection a small investigation had been initiated in 1948 in the Southern Bakundu Reserve near Banga Camp. After a heavy fruiting of *Mimusops d'jave,* hundreds of seedlings of this species appeared on the verges of the Victoria motor road, and about 150 of these were planted out in old felling gaps, three seedlings to each gap. The only treatment they have received has been occasional cutting of creepers and competing shrubs. It has long been known that these flushes of *Mimusops* regeneration occur and then fade out, but in this case the survival rate was still high in March, 1950, the saplings were vigorous and the tallest had reached six feet. It is realised of course that the costs of whatever treatment is devised must be balanced by revenue from the forest. In a Region where adequate funds for routine protection can only be obtained with the greatest difficulty, it cannot be expected that there will be any provision for forest improvement without immediate compensatory return.

134. Progress has been disappointingly slow in the establishment of a test nursery at Aningeje, in the Oban Reserve of Calabar Province. Seed supply is the difficulty. The object of the nursery is to test the growth of valuable species which only occur occasionally in the Oban forests, but which are often of good form where they do occur. There is a possibility that the poverty of these forests may be due to past interference by man and a remedy may lie in the introduction of suitable seed bearers.

135. *Botanical Research.*—The Herbarium at Ibadan has been maintained in very good order and requires no comment. No research has been undertaken but it is hoped that it will be possible to appoint a Forest Botanist in the coming year.

Chapter IX.—Finance

Standard Forms XI and XII

136. The detailed summary of Forest Revenue and Expenditure from all sources is set out in Standard Form XI and a comparison with previous years in Standard Form XII.

137. The total revenue from all sources, £240,501, shows an increase of £44,918 which was almost entirely due to increased commercial activity in the Western Region (1948-49, 130). The Northern Region shows a fall in Native Administration revenue of £5,392 which is largely due to the closing of the Idoma Pitsawn Timber Scheme at the end of the previous year (1948-49, 106). This fall is of course offset by a corresponding decrease in expenditure under exploitation.

138. Total expenditure was £293,215, an increase of only £88. The normal increase of expenditure in a growing Department is masked by the reduction in exploitation mentioned in the previous paragraph, and also by savings due to the retirement of senior officers who were only replaced after an interval by new recruits. These savings are reflected in the fall in Personal Emoluments shown against Headquarters (Nigeria) under Colonial Government expenditure.

139. The excess of expenditure over revenue again decreased this year, to £52,714, as against £102,322 last year.

140. Forest Headquarters, with negligible revenue and carrying all officers leave salaries and passages for the Department, showed a deficit of £41,330, against £46,105 last year. The reduction was in Personal Emoluments mentioned in paragraph 136 above and in purchases of equipment.

141. The Western Region, established and with forests of high export value, shows a nett surplus for Central Government and Native Authorities of £103,707.

142. The Eastern Region shows a deficit of £39,396 against £42,310 last year. Forest expenditure in this Region is essential for the maintenance of the economic balance of the countryside, so far as it has been possible to establish it, until such time as the forests can be brought into production. It is as necessary as expenditure upon health and the maintenance of public order, for the protection of the means by which men live is as important as the protection of life itself. Every economy has been forced upon the Department in the year under review, and, *within reason,* this can be endured, for the East is now at the end of the most important stage, establishment of the forest estate. So long as it can protect what it has obtained, it will not go back, even though it can make no advance without increased funds.

143. The first comment in the previous paragraph applies also to the Northern Region, showing a deficit of £76,104 against £71,017 last year, but with the additional remark that the North has still a long way to go before it reaches the stage arrived at in the East. To halt now would be dangerous, for with delay all chance may be lost of acquiring an adequate forest estate and the expansion of uncontrolled farming may destroy the economic balance more completely than in the East.

144. An analysis of his expenditure by the Assistant Chief Conservator, Eastern Region, is of interest. He notes the ever increasing cost of transport, which this year amounted to 22.7 per cent of total expenditure whereas in

1946-47 it was 8.7 per cent. The rise in cost is illustrated by the following figures for transport:—

	£
1946-47	5,671
1947-48	7,132
1948-49	10,328
1949-50	11,824

He writes " The efficiency of the Department is absolutely dependent upon its mobility, but these increases do not indicate that more travelling has been done, they simply emphasise the increased costs of all forms of transport, over which there is no control as rates are laid down by Regulation ". His expenditure on transport for 1949-50 shows that 64 per cent was spent on travelling on normal duties, 14 per cent on transport allowances, 20 per cent on leave and transfer, and 2 per cent on railway fares and freight. These proportions seem reasonable and it is impossible to suggest how any economy can be effected without loss of efficiency.

145. He comments with regard to revenue and expenditure generally that in Kumba Division of the Cameroons, £6,149 was spent and £8,419 of revenue was produced, a surplus of £2,270 going to the small Kumba Native Authority. There is no reasonable doubt that with proper management a most profitable industry could be built up in that area, and it is no fault of the Forest Department that it has not been; the obstacle is the refusal of the Native Authority to agree to the necessary Reservation. There is a very real danger that an excellent chance of development may be lost in the same way as was the potential timber industry of Ahoada in this Region (1948-49, 23).

Chapter X.—Staff and Training

STANDARD FORM XIII

146. The strength of the officer staff of the Department has been commented upon in paragraph 4 of this Report.

147. The long awaited promotions to the rank of Senior Assistant Conservator were made during the year (1948-49, 138).

148. New appointments to the Senior Service were the following:—

A. L. Roxburgh, C.F.S.,* Assistant Conservator of Forests, with effect from 20.10.49.

E. I. O. Akpata, N.F.S.,† Assistant Conservator of Forests, with effect from 1.11.49.

E. M. O. Chukwuogo, N.F.S., Assistant Conservator of Forests, with effect from 1.11.49.

A. G. Bramwell, C.F.S., Assistant Conservator of Forests, with effect from 26.11.49.

J. L. Masson, C.F.S., Assistant Conservator of Forests, with effect from 15.12.49.

A. J. L. Mitchell, C.F.S., Assistant Conservator of Forests, with effect from 15.12.49.

M. S. Foulstone, C.F.S., Assistant Conservator of Forests, with effect from 15.12.49.

* C.F.S.—Colonial Forest Service.

† N.F.S.—Nigerian Forest Service.

C. A. M. Nash, C.F.S., Assistant Conservator of Forests, with effect from 17.12.49.

J. D. Long, C.F.S., Assistant Conservator of Forests, with effect from 22.12.49.

W. J. Harrison, C.F.S., Assistant Conservator of Forests, with effect from 10.1.50.

J. S. Lightbody, C.F.S., Assistant Conservator of Forests, with effect from 17.2.50.

A. J. Invald, Forest Engineer, with effect from 20.10.49.

149. The following promotions were made in the Senior Service:—

J. R. Lockie, Assistant Chief Conservator of Forests, with effect from 6.4.49.

J. Smith, Conservator of Forests, with effect from 1.4.49.

D. McIntosh, Conservator of Forests, with effect from 1.4.49.

P. C. Lancaster, Conservator of Forests, with effect from 6.4.49.

M. Robson, Conservator of Forests, with effect from 22.4.49.

K. R. MacDonald, Conservator of Forests, with effect from 20.6.49.

J. Dundas, Senior Assistant Conservator of Forests, with effect from 1.4.49.

Dr J. H. Mackay, Senior Assistant Conservator of Forests, with effect from 1.4.49.

P. A. Allison, Senior Assistant Conservator of Forests, with effect from 1.4.49.

P. C. Randell, Senior Assistant Conservator of Forests, with effect from 1.4.49.

A. K. F. Nicol, Senior Assistant Conservator of Forests, with effect from 1.4.49.

J. W. Costello, Senior Assistant Conservator of Forests, with effect from 1.4.49.

T. F. Betts, Senior Assistant Conservator of Forests, with effect from 2.4.49.

J. C. K. McElderry, Senior Assistant Conservator of Forests, with effect from 2.4.49.

L. C. M. Wedderburn, Senior Assistant Conservator of Forests, with effect from 2.4.49.

M. E. Dommen, Senior Assistant Conservator of Forests, with effect from 6.4.49.

H. B. Burgess, M.C., Senior Assistant Conservator of Forests, with effect from 22.4.49.

T. I. Rees, Senior Assistant Conservator of Forests, with effect from 20.6.49.

T. W. Hussey, Senior Assistant Conservator of Forests, with effect from 15.8.49.

150. The following officers left the Service during the year:—

Col. J. S. Vorley, C.B.E., I.F.S., Senior Assistant Conservator of Forests, expiry of agreement on 20.2.50.

P. F. Mason, Assistant Conservator of Forests, resigned on 12.2.50, for personal reasons requiring him to live in the United Kingdom.

151. The following officers retired during the year:—

G. R. G. Kerr, Assistant Chief Conservator of Forests, on 1.6.49.
F. T. Brand, Conservator of Forests, on 20.6.49.
G. C. R. Gray, Conservator of Forests, on 18.12.49.
R. F. Clarke-Butler-Cole, Senior Assistant Conservator of Forests, on 15.8.49.
J. W. Costello, Senior Assistant Conservator of Forests, on 13.2.50.

152. The following additional particulars are given for Junior Service Staff:—

New Appointment

Rank	*Staff (Nigeria Estimates)*	*Staff (C.D.W.S. Estimates)*	*Total*
CLERICAL :			
Third Class Clerks	1	19	20
Clerical Assistant...	1	—	1
Telephone Attendant	1	—	1
Messengers	3	4	7
FIELD :			
Forest Assistants	3	16	19
Forest Guards	2	—	2
	11	39	50

Promotion

CLERICAL :			
Assistant Chief Clerks	4	—	4
First Class Clerks	3	—	3
Clerical Assistants	3	—	3
FIELD :			
Regional Forest Officers...	2	—	2
Forest Assistant, Grade I	2	—	2
Foresters	3	—	3
	17	—	17

Resignation

CLERICAL :			
First Class Clerks	1	—	1
Third Class Clerks	2	3	5
Messengers	—	2	2
FIELD :			
Forest Assistant, Grades II and III ...	3	22	25
Assistant Forest Draughtsman	1	—	1
Forest Guards	3	—	3
	10	27	37

Termination of Appointment

Rank	*Staff (Nigeria Estimates)*	*Staff (C.D.W.S. Estimates)*	*Total*
CLERICAL :			
Messengers	—	3	3
FIELD :			
Forest Assistant	—	1	1
	—	4	4
Dismissal			
CLERICAL :			
Third Class Clerks	1	1	2
Messenger	1	—	1
FIELD :			
Forest Assistant	1	—	1
Forest Guards	2	—	2
	5	1	6
Retirement			
CLERICAL :			
Assistant Chief Clerks	1	—	1
Second and Third Class Clerks ...	4	—	4
Clerical Assistants	2	—	2
FIELD :			
Foresters	2	—	2
Forest Guards	3	—	3
	12	—	12
Invaliding			
CLERICAL :			
First Class Clerks	1	—	1
FIELD :			
Forest Surveyor	1	—	1
Forester	1	—	1
Forest Guard	1	—	1
	4	—	4
Death			
CLERICAL :			
Third Class Clerk	1	—	1
Assistant Forest Draughtsman	1	—	1
FIELD :			
Forest Assistant	—	1	1
Forest Guard	1	—	1
	3	1	4

Transfer

Rank	*Staff (Nigeria Estimates)*	*Staff (C.D.W.S. Estimates)*	*Total*
CLERICAL :			
Assistant Chief Clerk	1	—	1 *
First Class Clerk	1	—	1 *
Telephone Attendant	1	—	1
	3	—	3

153. The following are the increases of Establishment, Senior (Officer) and Junior (Subordinate) Services:—

Senior Service

Rank	*Staff (Nigeria Estimates)*	*Staff (C.D.W.S. Estimates)*	*Total*
Assistant Conservator of Forests ...	—	9	9
Forest Accountant	1	—	1
Administrative Assistant, Grade II ...	1	—	1
Total	2	9	11

Junior Service

Forest Assistant, Grade I	1	—	1
Forest Assistant, Grades II and III ...	—	18	18
First Class Clerks	3	—	3
Second and Third Class Clerks ...	—	25	25
Carpenters	5	—	5
Messengers	1	19	20
Total	10	62	72

(iv) Training

IBADAN FOREST SCHOOL, 1949

154. The School was dealt with at some length in the last Annual Report and can be dismissed shortly this year. In January, 1949, the School year opened with forty-one students, of whom sixteen successfully passed out in December, 1949, and twenty-three resigned during the year. The appointment of one man was terminated. One man who failed his final examination will be given a revision course in 1950. Usually the men who resign do so because they find themselves unsuited to a Forest Assistant's life, but the present year was disappointing in that the majority of the men who resigned could have done well in the work had they persevered. There was no apparent dissatisfaction with the School—and close enquiries were

* On promotion to other Departments.

made to confirm this—but it would appear that a number of the men, like so many of their generation in Nigeria, were dazzled by the hopes of scholarships and higher training offered in other walks or seats of life and did not seriously intend to take up the career of a Forest Assistant. They were nevertheless prepared to take advantage of the opportunities offered by the School for further study and of the salary paid to a Forest Assistant in training (1947-48, 172).

155. The Promotion Course (1948-49, 146) was completed on 30th June, 1949, and all four men were successful. These students were exceptionally keen and hardworking.

156. Mention must be made of the School Museum, which now contains as useful a study collection of Nigerian mammals as can be found, probably, in West Africa. This is entirely due to the work of Mr D. R. Rosevear, Deputy Chief Conservator of Forests.

157. *Courses in the United Kingdom.*—Two Nigerians successfully completed the special Officer's Course at the Imperial Forestry Institute, Oxford (1948-49, 156), and returned to Nigeria. They were appointed Assistant Conservators in the Nigerian Forest Service, on trial, on 1st November, 1949. Two other Nigerians of the Department commenced a similar course at Oxford in October, 1949. One Nigerian of the Department is still at Nottingham University reading for a degree in Botany. Four Assistant Conservators of the Colonial Forest Service went up to the Imperial Forestry Institute at Oxford, for the usual twelve months Post Graduate Course, in October, 1949, and one officer returned from the previous course.

158. *University College, Ibadan.*—One Forest Assistant is still reading for a science degree at University College, Ibadan, and a second entered the College in October, 1949. Two others selected by the Department failed the entrance examination and the qualifications of a third were found to be insufficient. Two Forest Assistants who sat the College entrance examination on their own initiative, also failed.

Chapter XI.—Legislation

159. Of the legislation affecting Forestry which was enacted in the period under review the following is the most important:—

(*i*) Public Notice No. 82. Labour Advisory Board for Timber Industry in the Western Provinces, setting up a Board to inquire into the rates of wages and the conditions of employment of persons employed in the Timber Industry in the Provinces of Ondo, Benin, Ijebu and Abeokuta with a view to fixing minimum wages and making recommendations in respect thereto for consideration by the Governor in Council.

(*ii*) Native Authority Public Notice No. 14. The Forestry (Northern Provinces Native Authorities) Rules, 1949, amending Rule 35 of the Forestry (Northern Provinces Native Authorities) Rules, 1942, Native Authority Public Notice No. 46 of 1942, concerning the grant of timber licences and adding a new Rule 35A, stating that notification of the acceptance of a Working Plan shall be published in the Gazette.

(*iii*) Native Authority Public Notice No. 17. The Forestry (Southern Provinces Native Authorities) (Amendment) Rules, 1949, inserting Rule 40A stating that where a Native Authority with the approval of the Chief Conservator decides upon a Working Plan it shall publish the fact in the Gazette.

(*iv*) Order No. 8. The Rivers Province Forest Reserves (De-reservation) Order, 1949, notifying the de-reservation of the Ogbede, Mangrove No. 2, Taylor Creek and Taylor Creek No. 2 Reserves in the Rivers Province.

(*v*) Regulation No. 3. The Wild Animals Preservation (Bornu Province Game Reserves) Regulations, 1949, declaring ten Game Reserves in Bornu Province.

(*vi*) Public Notice No. 12. The United Kingdom Timber Control, notifying (*a*) cessation of bulk purchase of hardwood timber by the United Kingdom Timber Control (*b*) permission for private purchases of hardwood timber in the United Kingdom as from 16th January, 1950 (*c*) removal of price control of imported hardwood timber in the United Kingdom and permission to import hardwoods from Nigeria on open individual licence.

(*vii*) Native Authority Public Notice No. 4. The Forestry (Southern Provinces Native Authorities) Rules, notifying the inclusion of the Ibadan Division, Illa District and Ijesha Native Authorities of Oyo Province in the Schedule to Native Authority Public Notice No. 74 of 1943 with effect from 1st April, 1948, as accepting the Forestry (Southern Provinces Native Authorities) Rules.

(*viii*) Native Authority Public Notice No. 11. The Timber Revenue Collection (Ikeja Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ikeja Area Native Authority with effect from 21.12.49.

(*ix*) Native Authority Public Notice No. 12. The Timber Revenue Collection (Ejinrin Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ejinrin Area Native Authority with effect from 21.12.49.

(*x*) Native Authority Public Notice No. 13. The Timber Revenue Collection (Ikorodu Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ikorodu Area Native Authority with effect from 21.12.49.

(*xi*) Native Authority Public Notice No. 14. The Timber Revenue Collection (Epe Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Epe Area Native Authority with effect from 21.12.49.

(*xii*) Native Authority Public Notice No. 15. The Timber Revenue Collection (Ibeju Clan Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ibeju Clan Area Native Authority with effect from 21.12.49.

(*xiii*) Native Authority Public Notice No. 16. The Timber Revenue Collection (Lekki Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Lekki Area Native Authority with effect from 21.12.49.

(*xiv*) Native Authority Public Notice No. 17. The Timber Revenue Collection (Eti-Osa Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Eti-Osa Area Native Authority with effect from 21.12.49.

(*xv*) Native Authority Public Notice No. 18. The Timber Revenue Collection (Awori Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Awori Area Native Authority with effect from 21.12.49.

(*xvi*) Native Authority Public Notice No. 19. The Timber Revenue Collection (Egun-Awori Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Egun-Awori Area Native Authority with effect from 21.12.49.

(*xvii*) Native Authority Public Notice No. 20. The Timber Revenue Collection (Ijede Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ijede Area Native Authority with effect from 21.12.49.

(*xviii*) Native Authority Public Notice No. 21. The Timber Revenue Collection (Ikosi Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Ikosi Area Native Authority with effect from 21.12.49.

(*xix*) Native Authority Public Notice No. 22. The Timber Revenue Collection (Eredo Area Native Authorities) Rules, 1949, notifying the making of Forestry Rules by Eredo Area Native Authority with effect from 21.12.49.*

(*xx*) Native Authority Public Notice No. 26. The Native Authority (Bush Burning) No. 1 Order, enabling the Moroa Native Authority of Plateau Province to make rules regarding bush burning and to inflict punishment on persons contravening the Order.

(*xxi*) Native Authority Public Notice No. 27. The Native Authority (Bush Burning) No. 2 Order, enabling the Kagoro Native Authority of Zaria Province to make rules regarding bush burning and to inflict punishment on persons contravening the Order.

(*xxii*) Native Authority Public Notice No. 28. The Native Authority (Bush Burning) No. 3 Order, enabling the Jada Native Authority of Zaria Province to make rules regarding bush burning and to inflict punishment on persons contravening the Order.

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* All the Native Authorities mentioned in (*viii*) to (*xix*) are in the Colony of Lagos.

Chapter XII.—Miscellaneous

160. *Publication.*—Owing to printing difficulties it was not possible to publish a number of *Farm and Forest,* although one is complete and ready. The collection of subscriptions remains suspended. *An Outline of Nigerian Vegetation* by Mr R. W. J. Keay, Assistant Conservator of Forests, was printed and published by the Government Printer, Lagos, and will prove most useful.

161. *Conferences.*—Mr D. R. Rosevear, Deputy Chief Conservator of Forests, attended the British African Land Utilisation Conference in Jos from 7th November to 15th November, 1949, and the International African Conference on Indigenous Rural Economy in Jos from 17th November to 24th November, 1949. Both he and Mr F. S. Collier, C.B.E., Chief Conservator of Forests, attended the Third International West African Conference at Ibadan in December, 1949, together with Mr P. A. Allison, Senior Assistant Conservator of Forests and Mr R. W. J. Keay, Assistant Conservator of Forests.

162. *Wild Animals Preservation.*—The re-draft of the Wild Animals Preservation Ordinance was discussed and revised in the light of discussion (1948-49, 162). It is still under consideration by Government. Protection of wild animals is extremely difficult in Nigeria and is hardly effective at present except in the case of Elephant and Hippopotamus, and to a limited extent in the case of Gorilla, confined to parts of Ogoja Province and the Cameroons, and of Chimpanzee. Generally speaking, nevertheless, the fauna holds its own everywhere where it is not dispossessed by farm extension; it never has been as conspicuous in Nigeria as in less inhabited and more open countries.

163. *Acknowledgement.*—This Annual Report is the last to be written by the present Chief Conservator before his retirement and he would like to record his appreciation of the loyal support given him at all times by the Department in the office and in the field. He would also like to thank the Administrative Officers, officers of other Departments and Native Authorities who have given their help to Forestry and, in particular, the commercial timber firms, whose co-operation has been notable. Unanimity within the Department and appreciation of its aims by those connected with its work have made his task a pleasant one.

F. S. COLLIER, C.B.E.,
Chief Conservator of Forests.

STANDARD FORM I

AREA IN SQUARE MILES OF FOREST LAND ON 31ST MARCH, 1950

Territorial unit and/or category of forest land	Total area of unit	State Forest				Communal Forest				Private Forest	Total Forest Reserves (Cols. 3, 4, 7, 8)	Total Forest land	Percentage of whole Area	
		Production Reserves	Protection Reserves	Unreserved	Total State Forest	Production Reserves	Protection Reserves	Unreserved	Total Communal Forest				Forest Reserves (Cols 3, 4,7,8)	Total Forest land
1	2	3	4	5	6	7	8	9	10	11	12A	12	13	14
Mangrove ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Forest ..	—	—	28	—	28	71	417	4,105	4,593	—	516	4,621	—	—
Savannah ..	—	4	268	—	272	546	14,589	93,105	108,240	—	15,407	108,512	—	—
Northern Provinces ..	281,807*	4	296	—	300	617	15,006	97,210	112,833	—	15,923	113,133	5.65	40.1
Mangrove ..	—	—	40	—	40	—	—	650	650	—	40	690	—	—
High Forest ..	—	2	2,223	—	2,225	1	1,642	1,917	3,560	50	3,868	5,835	—	—
Savannah ..	—	—	221	—	221	—	501	—	501	—	722	722	—	—
Eastern Provinces ..	45,998	2	2,484	—	2,486	1	2,143	2,567	4,711	50	4,630	7,247	10.1	15.8
Mangrove ..	—	—	—	—	—	—	6	1,210	1,216	—	6	1,216	—	—
High Forest ..	—	1,344	251	—	1,595	1,826	442	6,708	8,976	—	3,863	10,571	—	—
Savannah ..	—	35	548	—	583	3	2,192	3,964	6,159	—	2,778	6,742	—	—
Western Provinces ..	44,071	1,379	799	—	2,178	1,829	2,640	11,882	16,351	—	6,647	18,529	15.1	42.0
Mangrove ..	—	3	—	—	3	—	—	76	76	—	3	79	—	—
High Forest ..	—	6	—	—	6	—	—	294	294	—	6	300	—	—
Savannah ..	—	—	—	—	—	—	—	50	50	—	—	50	—	—
Colony	1,381	9	—	—	9	—	—	420	420	—	9	429	.6	31.1
Mangrove ..	—	3	40	—	43	—	6	1,936	1,942	—	49	1,985	—	—
High Forest ..	—	1,352	2,502	—	3,854	1,898	2,501	13,024	17,423	50	8,253	21,327	—	—
Savannah ..	—	39	1,037	—	1,076	549	17,282	97,119	114,950	—	18,907	116,026	—	—
Nigeria	373,257	1,394	3,579	—	4,973	2,447	19,789	112,079	134,315	50	27,209	139,338	7.3	37.3
Nigeria, 31st Mar., 1949	373,024	1,456	3,701	—	5,157	2,397	19,494	115,225	137,116	50	27,048	142,323	7.3	38.2

* Area of Kano Province has been revised as result of Kano Survey, 1950

STANDARD FORM II

STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST MARCH, 1950

Territorial unit and/or category of reserve	Reserves approved but not legally constituted				Reserves constituted but not completely demarcated				Reserves constituted and demarcated			
	On 1st April, 1949	Added during year	Excluded or transferred to col. 6 or 10	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded or transferred to col. 10	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950
1	2	3	3A	4	5	6	7	8	9	10	11	12
Government	—	—	—	—	—	—	—	—	300	—	—	300
Native Administration	4,948	2,093	356	6,685	102	—	102	—	14,863	428	2	15,289
Communal Forest Areas	—	22	8	14	—	—	—	—	318	16	—	334
Northern Provinces ..	4,948	2,115	364	6,699	102	—	102	—	15,481	444	2	15,923
Government	523	—	162	361	1,468	—	21	1,447	1,202	1	164	1,039
Native Administration	345	25	27	343	—	—	—	—	2,144	—	—	2,144
Communal Forest Areas	—	—	—	—	—	—	—	—	—	—	—	—
Eastern Provinces ..	868	25	189	704	1,468	—	21	1,447	3,346	1	164	3,183
Government	225	—	—	225	—	—	—	—	2,178	—	—	2,178
Native Administration	303	—	25	278	11	—	—	11	4,453	5	—	4,458
Communal Forest Areas	—	—	—	—	—	—	—	—	—	—	—	—
Western Provinces ..	528	—	25	503	11	—	—	11	6,631	5	—	6,636
Government	—	—	—	—	—	—	—	—	9	—	—	9
Native Administration	—	—	—	—	—	—	—	—	—	—	—	—
Communal Forest Areas	—	—	—	—	—	—	—	—	—	—	—	—
Colony	—	—	—	—	—	—	—	—	9	—	—	9
Government	748	—	162	586	1,468	—	21	1,447	3,689	1	164	3,526
Native Administration	5,596	2,118	408	7,306	113	—	102	11	21,460	433	2	21,891
Communal Forest Areas	—	22	8	14	—	—	—	—	318	16	—	334
Nigeria	6,344	2,140	578	7,906	1,581	—	123	1,458	25,467	450	166	25,751

STANDARD FORM III

STATEMENT IN SQUARE MILES OF PROGRESS MADE IN WORKING AND OTHER PLANS DURING THE YEAR ENDED 31ST MARCH, 1950

Territorial unit and/or type of plan	Area under Plans				Area not under plans on 31st March, 1950	Total area columns (5, 6)	Area for which plans were revised during year
	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950			
1	2	3	4	5	6	7	8
A. Intensive ..	23	—	—	23	—	—	—
B. Simple.. ..	361	116	13	464	—	—	—
C. Regeneration ..	99	1	9	91	—	—	—
D. Simple Protection	—	—	—	—	—	—	—
E. Early Burning	—	—	—	—	—	—	—
F. Grazing ..	—	—	—	—	—	—	—
G. Anti-Erosion ..	—	—	—	—	—	—	—
Northern Provinces	483	117	22	578	112,555	113,133	—
A. Intensive ..	—	—	—	—	—	—	—
B. Simple.. ..	3	—	—	3	—	—	—
C. Regeneration ..	—	—	—	—	—	—	—
D. Simple Protection	—	—	—	—	—	—	—
E. Early Burning	—	—	—	—	—	—	—
F. Grazing ..	—	—	—	—	—	—	—
G. Anti-Erosion ..	—	—	—	—	—	—	—
Eastern Provinces ..	3	—	—	3	7,244	7,247	—
A. Intensive ..	—	—	—	—	—	—	—
B. Simple.. ..	1,571	6	—	1,577	—	—	—
C. Regeneration ..	—	16	—	16	—	—	—
D. Simple Protection	—	—	—	—	—	—	—
E. Early Burning	—	—	—	—	—	—	—
F. Grazing ..	—	—	—	—	—	—	—
G. Anti-Erosion ..	—	—	—	—	—	—	—
Western Provinces ..	1,571	22	—	1,593	16,936	18,529	—
A. Intensive ..	—	—	—	—	—	—	—
B. Simple.. ..	—	9	—	9	420	429	—
C. Regeneration ..	—	—	—	—	—	—	—
D. Simple Protection	—	—	—	—	—	—	—
E. Early Burning	—	—	—	—	—	—	—
F. Grazing ..	—	—	—	—	—	—	—
G. Anti-Erosion ..	—	—	—	—	—	—	—
Colony	—	9	—	9	420	429	—
A. Intensive ..	23	—	—	23	—	—	—
B. Simple.. ..	1,935	131	13	2,053	—	—	—
C. Regeneration ..	99	17	9	107	—	—	—
D. Simple Protection	—	—	—	—	—	—	—
E. Early Burning	—	—	—	—	—	—	—
F. Grazing ..	—	—	—	—	—	—	—
G. Anti-Erosion ..	—	—	—	—	—	—	—
Nigeria	2,057	148	22	2,183	137,155	139,338	—

STANDARD

RECORD IN MILES OF FOREST COMMUNICATIONS

Territorial unit, etc.	P.W.D. Roads			Other Roads			Bridle and Inspection Paths		
	Added	Abandoned	Total at end of year	Added	Abandoned	Total at end of year	Added	Abandoned	Total at end of year
1	2	3	4	5	6	7	8	9	10
Northern Provinces	101	16	698	178	5	278	26	50	4,148
Eastern Provinces ..	8	1	137	5	14	38	449	88	2,089
Western Provinces ..	15	—	161	35	10	454	13	24	1,401
Colony	—	—	—	—	—	—	—	—	3
Nigeria	124	17	996	218	29	770	488	162	7,641

FORM IV

FOR THE YEAR ENDED 31ST MARCH, 1950

Railways			Tramways			Floating streams in use			
Added	Abandoned	Total at end of year	Added	Abandoned	Total at end of year	Added	Abandoned	Total at end of year	
								All season	Wet season only
11	12	13	14	15	16	17	18	19	20
12	—	71	—	—	—	17	—	17	—
—	—	4	—	—	—	76	276	101	174
—	—	3	—	23	—	222	—	819	177
—	—	—	—	—	—	—	—	9	—
12	—	78	—	23	—	315	276	946	351

STANDARD FORM V

SUMMARY OF FOREST OFFENCES FOR THE YEAR ENDED 31ST MARCH, 1950

Territorial unit and/or category of offence	Cases taken to Court					Cases dealt with departmentally		Offenders unknown		Total all Offences		Confiscated property sold or released		Compensation for damage	
	Imprisonment without option of fine	Fine		Cautioned and discharged	Acquitted										
	Cases	Cases	Amt.	Cases	Cases	Cases	Amt.	Cases	Estimated loss	Cases	Persons	Cases	Amt.	Cases	Amt.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			£				£		£				£		£
Northern Provinces ..	8	2,239	1,987	27	41	4	11	6	27	2,325	2,581	18	3	28	29
Eastern Provinces ..	15	58	238	14	25	121	186	284	3,173	517	564	5	9	1	2
Western Provinces ..	7	386	1,535	23	11	620	2,254	25	141	1,072	1,073	192	1,016	12	103
Colony	—	3	13	1	3	—	—	—	—	7	7	—	—	3	18
NIGERIA	30	2,686	3,773	65	80	745	2,451	315	3,341	3,921	4,225	215	1,028	44	152

SUMMARY

INSIDE RESERVES			£				£		£				£		£
Major Forest Produce ..	6	220	446	6	4	142	511	106	449	485	560	10	15	2	4
Minor Forest Produce ..	—	237	174	8	1	36	24	23	245	305	346	6	3	—	—
Farming	7	62	260	13	21	19	10	154	2,570	276	332	—	—	—	—
Other Offences	1	228	291	2	—	38	36	15	25	283	329	7	5	—	—
Total	14	747	1,171	29	26	235	581	298	3,289	1,349	1,567	23	23	2	4
OUTSIDE RESERVES			£												
Major Forest Produce ..	14	1,249	2,051	25	35	473	1,803	17	52	1,813	1,887	185	1,001	14	119
Minor Forest Produce ..	1	388	309	11	—	22	29	—	—	422	443	6	4	—	—
Farming	—	7	5	—	—	—	—	—	—	7	7	—	—	—	—
Other Offences	1	295	237	—	19	15	38	—	—	330	321	1	—	28	29
Total	16	1,939	2,602	36	54	510	1,870	17	52	2,572	2,658	192	1,005	42	148
NIGERIA	30	2,686	3,773	65	80	745	2,451	315	3,341	3,921	4,225	215	1,025	44	152
NIGERIA, 31ST MAR., 1949	12	3,017	3,599	107	30	646	1,744	237	691	4,049	4,626	127	358	124	357

STANDARD FORM VI

STATEMENT IN ACRES OF PROGRESS IN CONCENTRATED REGENERATION AND AFFORESTATION DURING THE YEAR ENDED 31ST MARCH, 1950

Territorial Unit	Regeneration of exploited Forest										Afforestation of land not hitherto under Forest of value				Cost of all operations including tending
	Area under regeneration						Area of completed regeneration				Area of plantations				
	Type of regeneration	On 1st April, 1949	Added during year	Abandoned during year	Transferred to col. 8	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950	
1	2	3	4	4A	5	6	7	8	9	10	11	12	13	14	15
															£
Northern Provinces	N	2,602	6,033	—	8,535	100	51,489	9,170	5,488	55,171	—	—	—	—	—
	A	11	29	10	11	19	17	21	—	38	7,019	180	509	6,690	48
	Total	2,613	6,062	10	8,546	119	51,506	9,191	5,488	55,209	7,019	180	509	6,690	48
Eastern Provinces	IN	43	35	(*a*)15	28	35	293	59	—	352	—	—	—	—	207
	A	—	—	—	—	—	—	—	—	—	—	(*b*)58	—	58	(*e*)300
	IA	26	6	—	26	6	—	26	—	26	2,068	144	(*c*)1,301	911	560
	IM	7	12	—	7	12	86	7	—	93	—	—	—	—	90
	SN	—	15	—	—	15	—	—	—	—	—	—	—	—	5
	Total	76	68	15	61	68	379	92	—	471	2,068	202	1,301	969	1,162
Western Provinces	N	76,350	6,747	—	—	83,097	—	—	—	—	—	—	—	—	12,733
	A	6,575	826	—	—	7,401	1,343	—	—	1,343	5,770	419	10	6,179	9,699
	SA	—	—	—	—	—	5,956	—	—	5,956	—	—	—	—	—
	SN	6,543	1,640	—	—	8,183	—	—	—	—	—	—	—	—	5,547
	Total	89,468	9,213	—	—	98,681	7,299	—	—	7,299	5,770	419	10	6,179	27,979
Colony	N	6	—	—	—	6	—	—	—	—	—	—	—	—	—

(*a*) Transferred to SN. 15 acres in Victoria formerly under IN.
(*b*) 43 acres transferred from IA plus 15 acres New Plantation (Onitsha Province).
(*c*) 1,177 acres Udi plantations plus 43 acres transferred to A plus 66 acres Bamenda plus 15 acres Colliery equal to 1,301 acres.
(*e*) Includes £214 for nursery at Anigege (Calabar) where as yet no planting has been done.

STANDARD FORM VI—*continued*

STATEMENT IN ACRES OF PROGRESS IN CONCENTRATED REGENERATION AND AFFORESTATION DURING THE YEAR ENDED 31ST MARCH, 1950

Territorial Unit	Regeneration of exploited Forest										Afforestation of land not hitherto under Forest of value				Cost of all operations including tending
		Area under regeneration					Area of completed regeneration				Area of plantations				
	Type of regeneration	On 1st April, 1949	Added during year	Abandoned during year	Transferred to col. 8	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950	On 1st April, 1949	Added during year	Excluded during year	On 31st March, 1950	
1	2	3	4	4A	5	6	7	8	9	10	11	12	13	14	15
	N	78,958	12,780	—	8,535	83,203	51,489	9,170	5,488	55,171	—	—	—	—	12,733
	IN	43	35	15	28	35	293	59	—	352	—	—	—	—	207
	A	6,586	855	10	11	7,420	1,360	21	—	1,381	12,789	657	519	12,927	10,047
	IA	26	6	—	26	6	—	26	—	26	2,068	144	1,301	911	560
	IM	7	12	—	7	12	86	7	—	93	—	—	—	—	90
	SA	—	—	—	—	—	5,956	—	—	5,956	—	—	—	—	—
	SN	6,543	1,655	—	—	8,198	—	—	—	—	—	—	—	—	5,522
Nigeria	Total	92,163	15,343	25	8,607	98,874	59,184	9,283	5,488	62,979	14,857	801	1,820	13,838	29,189

STANDARD FORM VII

OUTTURN IN SOLID CUBIC FEET OF TIMBER AND FUEL FOR THE YEAR ENDED 31ST MARCH, 1950

Territorial unit, kinds or sources of wood	Logs	Sawn	Sleepers	Shingles	Other hewn wood	Other split wood	Round wood	Pulpwood	Firewood	Charcoal	Total equivalent in round timber	Total value in £
1	2	3	4	5	6	7	8	9	10	11	12	13
Northern Provinces	11,401	153,220	—	—	11,790	75,996	216,938	—	6,861,402	140	7,937,344	66,739
Eastern Provinces	131,400	98,600	—	—	600	9,900	48,100	—	319,300	—	910,400	27,826
Western Provinces	11,720,517	681,341	—	—	3,080	19,205	74,440	—	2,006,032	—	19,778,822	860,556
Colony	106,002	2,838	—	—	—	—	—	—	—	68,400	311,400	10,142
NIGERIA	11,969,320	935,999	—	—	15,470	105,101	339,478	—	9,186,734	68,540	28,937,966	965,263
NIGERIA, 31ST MARCH, 1949	9,840,486	839,315	16,106	—	17,197	61,894	539,733	—	8,751,536	130,283	25,804,936	450,262

STANDARD

OUTTURN BY VALUE (IN £ STERLING) OF MINOR FOREST PRODUCE

Territorial unit, source of produce	Animal Products		Gums, Wild Rubber, etc.			Oil Seeds, etc.					
	Bees-wax	Honey	Niger Gutta	Gum Arabic	Wild Rubber	Palm Oil	Palm Kernels	Shea Nuts	Cocoa	Palm Wine	Barks and Chew-Sticks
Northern Provinces	2,550	—	1,744	29,712	—	—	10,556	15,089	—	217	—
Eastern Provinces	—	—	—	—	427	—	—	—	—	—	47
Western Provinces	—	—	—	—	—	370	290	—	—	270	2
Colony	—	—	—	—	—	—	—	—	—	—	—
Nigeria	2,550	—	1,744	29,712	427	370	10,846	15,089	—	487	49
Nigeria, 31st March, 1949	2,384	174	2,510	20,320	427	369	196	47,002	10	615	42

FORM VIII

RECORDED AS TAKEN DURING THE YEAR ENDED 31st MARCH, 1950

MISCELLANEOUS

Palm scantlings, etc.	Canes	Bamboos and other poles	Wrapping leaves	Fibres, Pandanus, etc.	Sponges	Brush wood	Sand, stone and clay	Thatching grass	Cynastrum bulbs	Cam-wood	Yam sticks	Total
—	—	645	—	38	—	—	—	—	—	—	—	60,55
—	—	—	—	—	—	—	—	—	—	13	4	49
—	283	10	178	16	36	28	22	—	—	—	—	1,50
—	—	—	—	—	—	—	—	—	—	—	—	—
—	283	655	178	54	36	28	22	—	—	13	4	62,54
766	152	1,066	202	23	26	41	40	96	—	—	—	76,46

STANDARD FORM IX

PRIMARY FOREST INDUSTRIES

Territorial unit, particulars of industry	Quantity of wood or minor produce (home-grown or imported) consumed during year	Value of Out-turn *ex* mill or factory	Number of persons employed during year (man-days)	Remarks
1	2	3	4	5
Sawmilling :—		£		
Northern Provinces	338,699	3,951	9,089	
Eastern Provinces	43,695	8,455	25,628	
Western Provinces	3,669,872	625,322	639,645	
Colony	509,498	147,669	205,429	
NIGERIA	4,561,764	785,397	879,791	
NIGERIA, 1948-49	3,932,352	717,381	1,111,063	

STANDARD FORM X

IMPORTS AND EXPORTS OF TIMBER, WOOD PRODUCTS AND MINOR FOREST PRODUCE DURING THE YEAR ENDED 31st DECEMBER, 1949

Category	Gross imports		Gross exports		Net imports or *exports*		Average annual net imports or *exports* for quinquennium ended 31st Dec., 1949		Percentage by value of gross imports or exports from or to different sources or destinations during the year
	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	
1	2	3	4	5	6	7	8	9	10
Unmanufactured :									
Timber—Logs :									
Total	—	—	43,921	847,091	*43,921*	*847,091*	*29,037*	*459,952*	*United Kingdom* .. 86.2% *South Africa* .. .. 1.7% *United States of America* 2.1% *Others* 10.0%
Sawn :									
Total	169	1,683	5,984	205,492	*5,815*	*203,809*	*6,333*	*173,288*	*United Kingdom* .. 79.3% *South Africa* .. .. 3.5% *United States of America* 3.1% *West African Colonies* 5.6% *Others* 8.5%
Animal Products :									
Anaphe (wild silk) lb	—	—	—	—	—	—	—	—	
Bees wax „ lb	—	—	108,721	10,069	*108,721*	*10,069*	*93,034*	*6,822*	
Reptile skins .. lb	—	—	80,640	82,547	*80,640*	*82,547*	*91,038*	*121,334*	
Other skins .. lb	—	—	11,200	12,358	*11,200*	*12,358*	*40,072*	*22,563*	
Ivory .. .. lb	—	—	—	—	—	—	—	—	
Total	—	—	200,561	104,974	*200,561*	*104,974*	*224,144*	*150,719*	
Fibres, Flosses, etc. :									
Piassava Fibre .. tons	—	—	1,002	47,062	*1,002*	*47,062*	*1 230*	*51.349*	
Kapok floss .. tons	—	—	86	12,199	*86*	*12,199*	*52*	*5 823*	
Total	—	—	1,088	59,261	*1 088*	*59 261*	*1 282*	*57 172*	
Gums, Resins, Latices, etc. :									
Gum arabic .. lb	—	—	1,880 441	44,114	*1,880,441*	*44 114*	*3,619,915*	*78,679*	
Gum copal .. lb	—	—	14 560	325	*14,560*	*325*	*8,888*	*173*	
Other gums .. lb	—	—	248,008	12,479	*248,008*	*12,479*	*301,242*	*8,640*	
Wild rubber .. lb	—	—	6	2	*6*	*2*	*175,111*	*9,446*	
Total	—	—	2,143,015	56,920	*2,143,015*	*56,920*	*4,105,156*	*96,938*	

STANDARD FORM X—*continued*

IMPORTS AND EXPORTS OF TIMBER, WOOD PRODUCTS AND MINOR FOREST PRODUCE DURING THE YEAR ENDED 31ST DECEMBER, 1949

Category	Gross imports		Gross exports		Net imports or *exports*		Average annual net imports or *exports* for quinquennium ended 31st Dec., 1949		Percentage by value of gross *imports* or exports from or to different sources or destinations during the year
	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	Hundreds of cu. ft.	Value in £	
1	2	3	4	5	6	7	8	9	10
Manufactured :									
Wood and Timber :									
Charcoal .. tons	—	—	546	8,950	*546*	*8,950*	*550*	*7,175*	
Casks, shooks, staves tons	—	145,520	—	—	—	*145,520*	—	*67,688*	Average for 1946-49 only
Others	—	22,688	—	1,023	—	*21,665*	—	*20,785*	
Total	—	168,208	546	9,973	*546*	*158,235*	*550*	*95,648*	
Veneers	—	—	1,275	76,527	*1,275*	*76,527*	*1,703(a)*	*153,381(a)*	*United Kingdom* .. 100%
Plywood	—	1,066	—	281,277	—	*280,211*	—	*140,667(b)*	
Matches (gross boxes) :									
Total	518,580	206,124	—	—	518,580	206,127	342,279	130,413	
Paper and Pulp Products :									
Total	—	262,809	—	—	—	262,809	—	221,854	
Other Cellulose Products :									
Artificial Silk (wholly) lb	12,516,569	1,531,445	—	—	12,516,569	1,531,445	—	745,916	
Artificial Silk (partly) lb	3,865,971	645,428	—	—	3,865,971	645,428	—	341,248	
Total	16,382,540	2,176,873	—	—	16,382,540	2,176 873	—	1,087,164	
NIGERIA TOTAL ..	—	2,816,763	—	1,641,515	—	1,175,248	—	421,275	
NIGERIA TOTAL TO 31ST DECEMBER, 1948 ..	—	1,799,306	—	1,377,540	—	421,766	—	139,911	

(*a*) Average for three years only

(*b*) Average for two years only.

SUMMARY IN £ STERLING OF REVENUE AND

Territorial or other unit	REVENUE								
	Timber and Fuel	*Minor Forest Produce*	*Reimbursements*	*Miscellaneous*	*Total*	*Personal Emoluments*	*Travelling*	*Other Administrative Charges*	*Maintenance of Buildings*
1	2	3	4	5	6	7	8	9	10
	£	£	£	£	£	£	£	£	£
COLONIAL GOVERNMENT:									
Northern Provinces ..	228	195	—	6	429	25,976	7,640	649	198
Eastern Provinces ..	1,650	96	—	261	2,007	23,455	11,150	100	2,745
Western Provinces ..	55,430	425	3,920	3,223	62,998	31,869	8,792	483	365
Colony	1,665	16	—	31	1,712	690	261	—	—
Nigeria	—	—	—	—	—	30,840	6,043	145	33
Total, Govt. £	58,973	732	3,920	3,521	67,146	112,830	33,886	1,377	3,341
NATIVE ADMINISTRATIONS:									
Northern Provinces ..	12,578	892	—	475	13,945	29,650	466	10	61
Eastern Provinces ..	8,814	20	—	47	8,881	1,170	674	5	1
Western Provinces ..	144,876	715	—	2,323	147,914	14,487	4,467	—	1,160
Colony	—	—	—	—	—	273	75	—	—
Total, N.A s £	166,268	1,627	—	2,845	170,740	45,580	5,682	15	1,222
Total, Govt. and N.A s	225,241	2,359	3,920	6,366	237,886	158,410	39,568	1,392	4,563
Colliery	2,540	75	—	—	2,615	—	—	—	—
Enugu Township (*a*)	—	—	—	—	—	—	—	—	—
Total .. £	2,540	75	—	—	2,615	—	—	—	—
Total, Nigeria £	227,781	2,434	3,920	6,366	240,501	158,410	39,568	1,392	4,563

(*a*) No figures as Timber Production Scheme has been handed over to Commerce and Industries.

FORM XI

EXPENDITURE FOR THE YEAR ENDED 31ST MARCH, 1950

Expenditure											
Annually Recurrent											
Equipments	*Research and Education*	*Protection Work*	*Silvicultural Work*	*Other Forest Improvements*	*Exploitations*	*Reimbursements*	*Miscellaneous*	*Total A.R.*	*Special (Non-recurrent)*	*Grand Total*	*Surplus or Deficit*
11	12	13	14	15	16	17	18	19	20	21	22
£	£	£	£	£	£	£	£	£	£	£	£
381	66	20	319	541	771	—	70	36,631	—	36,631	—36,202
833	—	219	531	2,505	19	—	244	41,801	76	41,877	—39,870
578	854	433	3,111	2,848	639	—	522	50,494	612	51,106	+11,892
—	—	—	—	—	—	—	—	951	—	951	+ 761
869	1,122	—	—	308	145	—	680	40,185	1,145	41,330	—41,330
2,661	2,042	672	3,961	6,202	1,574	—	1,516	170,062	1,833	171,895	—104,749
1,456	31	1,432	11,772	7,281	154	—	1,534	53,847	—	53,847	—39,902
48	—	125	754	—	5,347	—	—	8,124	—	8,124	+ 757
2,171	—	2,489	15,302	18	11,703	3,920	382	56,099	—	56,099	+91,815
4	—	—	—	—	—	—	—	352	—	352	— 352
3,679	31	4,046	27,828	7,299	17,204	3,920	1,916	118,422	—	118,422	+52,318
6,340	2,073	4,718	31,789	13,501	18,778	3,920	3,432	288,484	1,833	290,317	—52,431
—	—	572	441	1,550	335	—	—	2,898	—	2,898	— 283
—	—	—	—	—	—	—	—	—	—	—	—
—	—	572	441	1,550	335	—	—	2,898	—	2,898	— 283
6,340	2,073	5,290	32,230	15,051	19,113	3,920	3,432	291,382	1,833	293,215	—52,714

STANDARD FORM XII

COMPARATIVE FINANCIAL STATEMENT IN POUNDS STERLING FOR THE TEN YEARS ENDED 31ST MARCH, 1950

Territorial or other unit	1940			1941			1942			1943			1944		
	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GOVERNMENT :															
Nigeria, Headquarters	—	12,107	−12,107	—	11,002	− 11,002	—	19,256	− 19,256	1,495	22,941	− 21,446	2,167	24,589	− 22,422
Colony	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Southern Provinces :															
Western Region	23,907	33,209	— 9,302	25,798	20,393	+ 5,405	36,239	26,630	+ 9,609	45,278	50,841	— 5,563	19,304	22,014	— 2,710
Eastern Region													13,067	32,088	—19,021
Northern Region	57	17,736	− 17,679	150	10,524	− 10,374	303	9,990	− 9,687	5,968	22,866	− 16,898	56	15,917	− 15,861
TOTAL, GOVERNMENT	23,964	63,052	− 39,088	25,948	41,919	− 15,971	36,542	55,876	− 19,334	52,741	96,648	− 43,907	34,594	94,608	− 60,014
NATIVE ADMINISTRATION :															
Nigeria, Headquarters	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Colony	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Southern Provinces :															
Western Region	19,791	11,697	+ 8,094	25,912	12,930	+ 12,982	33,666	14,965	+ 18,701	34,816	18,860	+ 15,956	48,046	24,011	+ 24,035
Eastern Region													526	876	— 350
Northern Region	5,630	10,024	− 4,394	7,996	12,914	− 4,918	10,197	14,151	− 3,954	11,076	20,294	− 9,218	18,677	26,732	− 8,055
TOTAL, NATIVE ADMINISTRATION	25,421	21,721	+ 3,700	33,908	25,844	+ 8,064	43,863	29,116	+14,747	45,892	39,154	+ 6,738	67,249	51,619	+ 15,630
Total, Government and N.A.	49,385	84,773	− 35,388	59,856	67,763	− 7,907	80,405	84,992	− 4,587	98,633	135,802	− 37,169	101,843	146,227	− 44,384
Colliery and Enugu Township	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL, NIGERIA	49,385	84,773	− 35,388	59,856	67,763	− 7,907	80,405	84,992	− 4,587	98,633	135,802	− 37,169	101,843	146,227	− 44,384

STANDARD FORM XII—*continued*

COMPARATIVE FINANCIAL STATEMENT IN POUNDS STERLING FOR THE TEN YEARS ENDED 31ST MARCH, 1950

Territorial or other unit	1945-46			1946-47			1947-48			1948-49			1949-50		
	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GOVERNMENT :															
Nigeria, Headquarters	602	20,416	− 19,814	1,686	27,589	− 25,903	1,795	44,962	− 43,167	—	46,105	− 46,105	—	44,330	− 41,330
Colony	—	—	—	1,517	948	+ 569	2,801	1,166	+ 1,635	2,085	1,090	+ 995	1,712	951	+ 761
Southern Provinces :															
Western Region	24,029	33,799	− 9,770	25,406	39,953	− 14,547	28,240	51,977	− 23,737	50,571	53,103	− 2,532	62,998	51,106	+ 11,892
Eastern Region	29,301	42,402	− 13,101	36,444	60,158	− 23,714	7,376	43,574	− 36,198	1,278	41,280	− 40,002	2,007	41,877	− 39,870
Northern Region	133	16,923	− 16,790	139	21,737	− 21,598	162	32,309	− 32,149	361	33,811	− 33,450	429	36,631	− 36,202
TOTAL, GOVERNMENT	54,065	113,540	− 59,475	65,192	150,385	− 85,193	40,374	173,988	− 133,614	54,295	175,389	− 121,094	67,146	171,895	− 104,749
NATIVE ADMINISTRATION :															
Nigeria, Headquarters	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Colony	—	—	—	—	—	—	—	—	—	—	—	—	—	352	— 352
Southern Provinces :															
Western Region	62,850	31,163	+ 31,687	68,542	37,238	+ 31,304	77,419	44,243	+ 33,176	113,556	51,709	+ 61,847	147,914	56,099	+ 91,815
Eastern Region	1,041	1,953	− 912	1,780	3,403	− 1,623	5,100	6,655	− 1,555	4,870	8,146	− 3,276	8,881	8,124	+ 757
Northern Region	27,816	34,009	− 6,193	17,700	44,273	− 26,573	27,316	53,137	− 25,821	19,337	56,904	− 37,567	13,945	53,847	− 39,902
TOTAL, NATIVE ADMINISTRATION	91,707	67,125	+ 24,582	88,022	84,914	+ 3,108	109,835	104,035	+ 5,800	137,763	116,759	+ 21,004	170,740	118,422	+ 52,318
Total, Government and N.A.	145,772	180,665	− 34,893	153,214	235,299	− 82,085	150,209	278,023	− 127,814	192,058	292,148	− 100,090	237,886	290,317	− 52,431
Colliery and Enugu Township	12,036	2,225	+ 9,811	3,845	3,531	+ 314	5,490	6,499	− 1,009	3,525	5,757	− 2,232	2,615	2,898	− 283
TOTAL, NIGERIA	157,808	182,890	− 25,082	157,059	238,830	− 81,771	155,699	284,522	− 128,823	195,583	297,905	− 102,322	240,501	293,215	− 52,714

STANDARD FORM XIII

STRENGTH OF FOREST STAFF ON 31ST MARCH, 1950

Territorial or other unit	Senior staff			Intermediate staff		Subordinate field staff					Clerical Staff	Technical subordinates	Marine Staff	Permanent labour force	Other miscellaneous staff
	Colonial Forest Service	Others	Total	Recruited in Europe	Recruited locally	Forest Rangers	Deputy and Assistant Rangers and Foresters	Forest Guards	Others	Total					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Headquarters, Total ..	8	4	12	—	28 (*d*)	—	—	1	—	1	29	11	—	44	25
Northern Provinces :															
Government	9	2	11	—	30	—	9	14	—	23	54	3	—	27	33
Native Administration	—	—	—	—	1	12	45	297	331	685	10	6	—	240	10
Total ..	9	2	11	—	31	12	54	311	331	708	64	9	—	267	43
Eastern Provinces :															
Government	9	—	9	—	21	—	20	67	1	88	26	2	—	111	18
Native Administration	—	—	—	—	—	—	—	20	—	20	—	—	—	37	—
Total ..	9	—	9	—	21	—	20	87	1	108	26	2	—	148	18
Western Provinces :															
Government	13	3	16	—	33	3	29	58	13	103	38	1	26	200	22
Native Administration	—	—	—	—	—	5	14	138	60	217	17	8	2	930	7
Total ..	13	3	16	—	33	8	43	196	73	320	55	9	28	1,130	29
Colony :															
Government	—	—	—	—	—	—	3	3	—	6	—	—	—	—	—
Native Administration	—	—	—	—	—	—	—	7	—	7	—	—	—	—	—
Total ..	—	—	—	—	—	—	3	10	—	13	—	—	—	—	—
Special Duty :															
Government	1 (*a*)	—	1	—	5 (*b*)	—	—	—	—	—	—	—	—	—	—
Leave :															
Government	12	1	13	—	—	—	—	—	—	—	1	—	—	—	—
Nigeria :															
Government	52	10	62	—	117	3	61	143	14	221	148	17	26	382	98
Native Administration	—	—	—	—	1	17	59	462	391	929	27	14	2	1,207	17
GRAND TOTAL ..	52	10 (*c*)	62	—	118	20	120	605	405	1,150	175	31	28	1,589	115
TOTAL ON 31ST MARCH, 1949..	52	4	56	—	122	13	119	570	427	1,129	175	17	28	1,718	118

(*a*) Seconded to Iraq

(*c*) 3 Accountants
2 Forest Engineers
1 Forest Estate Officer
1 Officer on Agreement
2 Nigerian A.C.F's
1 Administrative

(*b*) 2 at Oxford University
1 at Nottingham
2 at Ibadan University College

(*d*) 1 Master, Forest School
1 Forest Assistant i/c Herbarium
1 Forest Assistant, Silviculture
25 Students (5 paid by Benin N.A.)

	Inside Reserve								
	For Export			*For Local Use*			*Total in Reserve*		
	1947-48	1948-49	1949-50	1947-48	1948-49	1949-50	1947-48	1948-49	1949-50
Adamawa	...	...	...	...	...	—	...	—	—
Bauchi	...	...	...	...	...	—	...	—	—
Benue	...	...	...	...	...	—	...	—	—
Bornu	...	...	...	—	...	—	...	—	—
Plateau	...	...	...	—	95	78	...	95	78
Niger	...	...	...	...	...	—	...	—	—
Kabba	...	...	...	...	...	—	...	—	—
Zaria	...	...	...	...	...	—	...	—	—
Kano	...	...	...	—	...	—	...	—	—
Katsina	...	...	...	...	...	—	...	—	—
Ilorin	...	...	...	...	...	—	...	—	—
Sokoto	—	...	...	...	—	—	...	—	—
Total, N.Ps.	—	—	—	—	*95	*78	—	95	78
Cameroons	—	...	...	111	8	8	111	8	8
Ogoja	...	...	...	21	2	8	21	2	8
Onitsha	...	...	...	38	62	10	38	62	10
Calabar	...	...	...	—	11	9	—	11	9
Rivers	...	...	...	3,247	1,521	—	3,247	1,521	—
Owerri	...	...	...	—	—	—	—	—	—
Total, E.Ps.	—	—	—	3,417	1,604	35	3,417	1,604	35
Ondo	2,034	2,322	2,585	127	50	66	2,161	2,372	2,651
Pilot Mill	905	—	—	—	760	1,048	905	760	1,048
Benin N.A.	4,068	5,996	9,850	82	52	—	4,150	6,048	9,850
Benin Remainder	—	—	—	—	—	—	—	—	—
Warri	—	—	—	—	—	—	—	—	—
Abeokuta	259	248	316	—	—	—	259	248	316
Ijebu	444	880	1,015	53	25	68	497	905	1,083
Oyo	—	—	—	405	646	413	405	646	413
Total, W.Ps.	7,710	9,446	13,766	667	1,533	1,595	8,377	10,979	15,361
Colony	—	—	—	—	—	—	—	—	—
TOTAL, NIGERIA	7,710	9,446	13,766	4,084	3,232	1,708	11,794	12,678	15,474

*Figure from Mr. Eiritz Licence Area.

Outside Reserve									Grand Total		
For Export			For Local Use			Total, outside Reserve					
1947-48	1948-49	1949-50	1947-48	1948-49	1949-50	1947-48	1948-49	1949-50	1947-48	1948-49	1949-50
—	—	—	434	158	3,288	434	158	3,288	434	158	3,288
—	—	—	332	237	848	332	237	848	332	237	848
—	—	—	996	751	916	966	751	916	966	751	916
—	—	—	452	715	735	452	715	735	452	715	735
—	—	—	1,055	928	940	1,055	928	940	1,055	1,023	1,018
—	—	—	893	1,167	1,298	893	1,167	1,298	893	1,167	1,298
—	—	—	1,490	1 019	1,191	1,490	1,019	1,191	1,490	1,019	1,191
—	—	—	1,594	1,985	1,855	1,594	1,985	1,855	1,594	1,985	1,855
—	—	—	1,567	1,980	1,889	1,567	1,980	1,889	1,567	1,980	1,889
—	—	—	560	797	344	560	797	344	560	797	344
—	—	—	317	226	253	317	226	253	317	226	253
—	—	—	997	1,597	1,685	997	1,597	1,685	997	1,597	1,685
—	—	—	10,657	11,560	15,242	10,657	11,560	15,242	10,657	11,655	15,320
317	186	299	1,791	744	634	2,108	930	933	2,219	938	941
—	—	—	693	—	—	693	—	—	714	2	8
—	—	—	981	—	—	981	—	—	1,019	62	10
—	—	—	1,061	1,025	—	1,061	1,025	—	1,061	1,036	9
—	—	—	15	—	—	15	—	—	3,262	1,521	—
—	—	—	—	—	—	—	—	—	—	—	—
317	186	299	4,541	1,769	634	4,858	1,955	933	8,275	3,559	968
5,354	5,633	11,234	2,085	1,282	2,002	7,439	6,915	13,236	9,600	9,287	15,887
—	—	—	—	—	—	—	—	—	905	760	1,048
16,965	12,967	22,624	828	467	713	17,793	13,434	23,337	21,943	19,482	33,187
3,951	4,836	6.222	446	307	415	4,397	5,143	6,637	4,397	5,143	6,637
1,596	2,214	7,792	400	347	145	1,996	2,561	7,937	1,996	2,561	7,937
1,206	1,420	1,790	1,041	772	668	2,247	2,192	2,458	2,506	2,440	2,774
2,059	1,130	1,810	1,870	1,017	1,253	3,929	2,147	3,063	4,426	3,052	4,146
378	1,894	2,541	3,178	2,526	3,252	3,556	4,420	5,793	3,961	5,066	6,206
31,509	30,094	54,013	9,848	6,718	8,448	41,357	36,812	62,461	49,734	47,791	77,822
2,190	817	751	138	129	45	2,328	946	796	2,328	946	796
34,016	31,097	55,063	25,184	20,176	24,369	59,200	51,273	79,432	70,994	63,951	94,906

TABLE A

ANALYSIS OF TREES FELLED IN HIGH FOREST TIMBER CONCESSIONS ONLY, SHOWING NUMBERS AND PERCENTAGES

Species	1949-50		1948-49	
	Number	*Percentage*	*Number*	*Percentage*
Khaya ivorensis and K. grandifoliola (African mahogany)	4,824	19.9	4,462	22.2
Triplochiton scleroxylon (Obeche)	5,924	24.5	3,510	17.4
Gossweilerodendron balsamiferum (Agba)	1,139	4.7	884	4.4
Entandrophragma cylindricum (Sapele Wood)	967	4.0	690	3.4
Lovoa klaineana (African Walnut)	802	3.3	937	4.7
Guarea spp.	1,030	4.3	1,099	5.4
Terminalia ivorensis (Idigbo)	532	2.2	390	1.9
Entandrophragma angolense var. macrophyllum (Gedunohor)	671	2.8	481	2.4
Chlorophora excelsa (Iroko)	317	1.3	225	1.1
Sarcocephalus diderrichii (Opepe)	641	2.7	360	1.8
Cistanthera papaverifera (Otutu)	269	1.1	194	1.0
Terminalia superba (Afara)	2,159	8.9	1,652	8.2
Antiaris spp.	248	1.0	622	3.1
Brachystegia spp.	286	1.2	237	1.2
Canarium schweinfurthii	128	0.5	220	1.1
Daniellia ogea	129	0.5	297	1.5
Mansonia altissima (Ofun)	1,689	7.0	780	3.9
Mitragyna ciliata (Abura)	862	3.6	647	3.2
Piptadenia africana	373	1.6	429	2.1
Pycnanthus angolense (formerly P. kombo)	96	0.4	273	1.3
Others *	1,098	4.5	1,744	8.7
Total	24,184	100	20,133	100

**Afzelia spp.*	152	B/F	437
Albizzia spp.	6	*Distemonanthus benthamianus*	171
Alstonia congensis	2	*Entandrophragma candollei*	138
Berlinia spp.	38	*Fagara spp.*	12
Ceiba pentandra	71	*Lophira procera*	31
Celtis spp.	66	*Pausinystalia*	1
Cleistopholis	1	*Pterocarpus spp.*	14
Cola cordifolia	9	*Pterygopodium*	1
Cylicodiscus gabunensis	47	*Scottellia coriacea*	117
Cynometra	1	*Pterygota macrocarpa*	11
Diospyros	43	*Sterculia spp.*	70
Discoglypremna	1	*Strombosia pustulata*	95
C/F	437	Total	1,098

TABLE B

EXPORT OF TIMBER—JANUARY-DECEMBER, 1949

	Logs				Sawn				Veneers				Plywood				Charcoal			
	1949		1948		1949		1948		1949		1948		1949		1948		1949		1948	
	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in cu. ft.	Value in £	Quantity in tons	Value in £	Quantity in tons	Value in £
eche)	1,335,550	165,794	829,446	103,390	153,830	50,585	154,953	39,963	—	—	—	—	—	—	—	—	—	—	—	—
cum ..	281,069	57,488	347,483	65,242	61,479	24,134	34,321	14,018	—	—	—	—	—	—	—	—	—	—	—	—
andi- ay) ..	258,482	70,870	272,503	81,345	122,351	43,113	94,838	31,258	—	—	—	—	—	—	—	—	—	—	—	—
) ..	80,296	23,394	68,228	19,306	15,980	6,473	7,895	4,040	—	—	—	—	—	—	—	—	—	—	—	—
..	195,224	46,264	127,569	26,561	199	68	5,126	2,518	—	—	—	—	—	—	—	—	—	—	—	—
e var ıor) ..	132,919	26,656	74,298	13,753	11,886	3,847	6,498	1,533	—	—	—	—	—	—	—	—	—	—	—	—
ɔo) ..	65,153	13,151	94,039	15,565	7,790	2,628	8,686	2,303	—	—	—	—	—	—	—	—	—	—	—	—
Walnut)	139,711	29,070	110,200	21,413	30,502	10,030	23,474	8,047	—	—	—	—	—	—	—	—	—	—	—	—
Opepe)	73,942	24,192	36,061	12,401	1,583	624	4,261	1,502	—	—	—	—	—	—	—	—	—	—	—	—
..	97,973	24,582	100,202	25,061	30,430	9,817	27,128	7,752	—	—	—	—	—	—	—	—	—	—	—	—
imi) ..	67,950	17,846	80,113	20,024	2,298	776	22	5	—	—	—	—	—	—	—	—	—	—	—	—
(Otutu)	31,434	9,763	27,823	8,646	749	382	3,050	1,055	—	—	—	—	—	—	—	—	—	—	—	—
miferum ..	374,707	55,268	191,316	32,790	125,584	40,577	121,759	34,206	—	—	—	—	—	—	—	—	—	—	—	—
tipulosa ..	626,133	146,446	158,509	33,088	15,032	4,750	9,245	3,635	—	—	—	—	—	—	—	—	—	—	—	—
..	24,070	8,600	—	—	5,431	2,529	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	14,585	2,367	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
amiana ..	28,592	5,820	—	—	2,016	671	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	16,477	2,271	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	103,107	29,797	15,621	3,468	—	—	3,112	827	—	—	—	—	—	—	—	—	—	—	—	—
candollei ..	16,453	4,194	—	—	468	171	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	299	323	—	—	414	252	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	7,275	2,852	—	—	136	44	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	345	70	842	96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
..	400,378	80,013	693,499	141,357	10,259	4,021	12,059	3,611	—	—	—	—	—	—	—	—	—	—	—	—
..	4,392,124	847,091	3,227,752	623,506	598,417	205,492	516,427	156,273	127,548	76,527	335,713	332,655	—	281,277	1	2	546	8,950	1,390	13,134

TABLE C

AKURE FOREST RESERVE
EXPLOITATION AND REGENERATION DATA
SUBCOMPARTMENTS 4c, 4d, 5c
TOTAL AREA—136 ACRES

No.	Botanical Name	Volume extracted in log in cub. ft. Q.G. (*Hoppus*)			No. of Young Plants * from 1′ high to 1′ Girth Bh. at 6′ spacing		
		Total	Average per acre	Per cent	Total	Average per acre	Per cent
1.	*Entandrophragma spp.*	44,243	325¼		1,644	12	
2.	*Cistanthera papaverifera*	33,334	245		1,968	14½	
3.	*Mansonia altissima*	11,039	81¼	40	2,403	18	38½
4.	*Khaya spp.*	5,400	40		434	3	
5.	*Chlorophora excelsa*	3,990	29¼		254	2	
6.	*Guarea spp.*	996	7¼		1,225	9	
7.	*Afzelia africana*	3,263	24		306	2¼	
8.	*Berlinia sp.*	1,128	8¼		—	—	
9.	*Albizzia sp.*	894	6½	2	411	3	4¼
10.	*Piptadenia africana*	139	1		275	2	
11.	*Distemonanthus benthamianus*	—	—		—	—	
12.	*Triplochiton scleroxylon*	70,351	517¼		872	6½	
13.	*Terminalia superba*	13,919	102¼		604	4½	
14.	*Cordia spp.*	5,936	43¾	36½	1,155	8½	12¾
15.	*Terminalia ivorensis*	233	1¾		—	—	
16.	*Sterculia rhinopetala*	25,889	190¾		1,614	12	
17.	*Celtis sp.*	12,431	91½		1,535	11¼	
18.	*Ongokea klaineana*	2,740	20		—	—	
19.	*Holoptelia grandis*	2,715	20		47	—	
20.	*Daniellia ogea*	1,249	9		—	—	
21.	*Parinarium sp.*	1,013	7½		—	—	
22.	*Aningueria robusta*	962	7		1,475	11	
23.	*Klainedoxa gabonensis*	749	5½		—	—	
24.	*Chrysophyllum sp.*	581	4¼		1,046	7¾	
25.	*Lannea acidissima*	578	4¼	20½	—	—	40½
26.	*Sterculia oblonga*	475	3½		—	—	
27.	*Irvingia gabonensis*	391	3		—	—	
28.	*Cylicodiscus gabonensis*	291	2		246	1¾	
29.	*Scottelia coriaceae*	266	2		—	—	
30.	*Pterocarpus osun*	232	1¾		736	5½	
31.	*Fagara sp.*	97	¾		—	—	
32.	*Tetrapleura tetraptera*	36	—		—	—	
33.	*Eriocoelium kerstingii*	—	—		1,011	7½	
34.	*Funtumia elastica*	—	—		668	5	
35.	*Amphimas pterocarpoides*	2,228	16½	1	821	6	4
36.	*Pycnanthus angolensis*	64	½		—	—	
	Total	247,852	1,822	—	20,750	152½	—

	£	s	d
Total Revenue	2,896	0	0
Revenue per acre	21	3	0

* Count made after all exploitation operations were complete. Only twenty-two species counted.

ORGANISATION OF STAFF IN CIRCLES AND PROVINCIAL CHARGES ON 31ST OF MARCH, 1950