

FORESTRY COMMISSION.

TENTH ANNUAL REPORT  
OF THE  
FORESTRY COMMISSIONERS.

Year ending September 30th, 1929.

*(Presented pursuant to Act 9 & 10 Geo. V.. c. 58, s. 8(4).)*

---

*Ordered, by The House of Commons, to be printed,  
1st July, 1930.*

---

LONDON.

PRINTED AND PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE.

To be purchased directly from H.M. STATIONERY OFFICE at the following addresses:

Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh;

York Street, Manchester; 1, St. Andrew's Crescent, Cardiff;

15, Donegall Square West, Belfast;

or through any Bookseller.

1930.

Price 1s. 3d. net.



## CONTENTS.

	PAGE
<b>Review of the First Ten Years' Work, 1919-1929</b>	4
Origin of the Commission ... ..	4
Personnel of the Commission ... ..	4
Finance ... ..	5
<i>Review of Receipts and Payments</i> ...	6
The Acland Programme...	9
Summary of Work Done ...	10
<i>Land Acquisition</i> ...	10
<i>Planting Programme</i> ... ..	12
<i>State Forests</i> ... ..	12
<i>Assistance to Local Authorities and Private Owners</i>	14
The Commissioners' Estates ... ..	15
<i>The Forests</i> ... ..	16
Education ... ..	20
<i>Higher Forestry Education</i> ...	21
<i>Apprentices' Schools</i> ...	21
Research and Experiment ...	22
<i>Production</i> ... ..	22
<i>Establishment of Plantations</i> ... ..	22
<i>Treatment of Established Plantations</i>	23
<i>Protection</i> ... ..	23
<i>Utilisation</i> ... ..	23
Special Services ...	24
<i>Imperial Forestry</i> ...	24
<i>Consultative Committees</i>	24
<i>Statistical Inquiries</i> ...	25
<i>Publications</i> ...	25
<i>Miscellaneous</i> ... ..	25
Forest Workers' Holdings ...	25
Staff ... ..	26
<b>The Second Decade, 1929-1939</b> ...	27
The Approved Programme ...	28
<i>Finance</i> ... ..	28
<i>Forestry Operations</i> ... ..	29
<i>Advances for Afforestation Purposes</i>	29
<i>Education</i> ... ..	30
<i>Research</i> ... ..	30
<i>Special Services</i> ... ..	30
<i>Forest Workers' Holdings</i>	30
Private Forestry ... ..	30

<b>Operations—Forest Year, 1928–1929</b> ... ..	32
Finance ... ..	32
Land Acquisition ... ..	32
Planting Programme ... ..	32
<i>State Forests</i> ... ..	32
<i>Assistance to Local Authorities and Private Owners</i> ... ..	32
The Forestry Fund ... ..	32
General Organisation ... ..	35
Forestry Operations ... ..	35
<i>Supervision</i> ... ..	35
<i>Acquisition of Land, Buildings and Standing Timber</i> ... ..	37
<i>Cultural Operations</i> ... ..	38
<i>Plantations</i> ... ..	38
<i>Cost of Planting</i> ... ..	50
<i>Forest Fires</i> ... ..	50
<i>Nurseries</i> ... ..	51
<i>Seed Supply</i> ... ..	52
Advances for Afforestation Purposes ... ..	52
Education ... ..	53
<i>Apprentices' Schools</i> ... ..	53
<i>Grants to Universities and Colleges</i> ... ..	53
<i>Imperial Forestry Institute</i> ... ..	53
Research and Experiment ... ..	54
<i>Advisory Committee on Forestry Research</i> ... ..	55
Agency and Advisory Services ... ..	55
Special Services ... ..	56
<i>Publications</i> ... ..	56
<i>Exhibits at Agricultural Shows</i> ... ..	56
<i>Consultative Committees</i> ... ..	56
Forest Workers' Holdings ... ..	59
Income ... ..	60
<b>Employment in the Commission's Forests</b> ... ..	61
<b>Appendix I—Imports of Timber, Wood Manufactures and Pulp of Wood</b> ... ..	64
<b>Appendix II—List of the Commission's Publications</b> ... ..	68
<b>Map, showing Acquisition of Land</b> ... ..	<i>Facing 40 &amp; 41</i>

# TENTH ANNUAL REPORT

of the

## FORESTRY COMMISSIONERS.

Year ending September 30th, 1929.

---

### REVIEW OF THE FIRST TEN YEARS' WORK, 1919-1929.

This Report covers the Forest Year ending 30th September, 1929, in the course of which the ten-year period covered by the Financial section of the Forestry Act, 1929, expired. It is, therefore, a convenient opportunity to review progress.

The circumstances under which the Forestry Commission was set up and the task which was given to it have been stated at considerable length in previous Reports, notably in the First Annual Report (year ended 30th September, 1920) and the Fifth Annual Report (year ended 30th September, 1924). It is, therefore, unnecessary to repeat the details, but it may be permissible to recall the following facts:—

*Origin of the Commission.*—The very heavy demands on the home woods during the Great War provided a practical demonstration of the national utility of forests, and in 1918 Government decided that it was necessary for the State to take an active part in the production of timber. This decision was embodied in the Forestry Act, 1919, which followed very closely the advice tendered by the Acland Committee.\* Two important principles were followed, first, the work was placed in charge of a body of Commissioners, non-political in character but with a spokesman in the House of Commons, and, second, Parliament undertook to vote in year-to-year instalments against Estimates, a total sum of £3½ millions for the first ten years' work. Both these principles provided for that continuity in policy and outlook which is so essential to success in forestry. The Acland Committee also recommended a year-to-year planting programme and, although this was not embodied in the Forestry Act, it was accepted by the Commissioners as their standard of achievement.

*Personnel of the Commission.*—There have been comparatively few changes in personnel. Lord Lovat was Chairman from the beginning until 3rd March, 1927, when he was succeeded by Lord Clinton. Sir John Stirling-Maxwell

---

\* Final Report of the Forestry Sub-Committee of the Reconstruction Committee (Cd. 8881), May, 1917.

was appointed Chairman on Lord Clinton's resignation at the end of the tenth year. The following is a complete list of Commissioners :—

	<i>First Appointment.</i>
Lord Lovat (First Chairman)	29th November, 1919.
Lord Clinton (Second Chairman) ... ..	29th November, 1919.
Sir John Stirling-Maxwell* (Third Chairman) ... ..	29th November, 1919.
Sir Francis Acland* ... ..	29th November, 1919.
Sir L. Forestier-Walker, M.P. (Resigned 16th January, 1929) ... ..	29th November, 1919.
Mr. T. B. Ponsonby (Resigned 23rd January, 1924) ... ..	29th November, 1919.
Mr. R. L. Robinson* ... ..	29th November, 1919.
Col. W. Steuart-Fotheringham*	29th November, 1919.
Sir Hugh Murray* ... ..	23rd January, 1924.
Mr. W. R. Smith, M.P.* ... ..	27th February, 1925.
Col. Sir George Courthope, M.P.* ... ..	11th October, 1927.
Major C. W. M Price ... ..	16th January, 1929.
Mr. J. H. Alpass, M.P.* ... ..	29th November, 1929.
Mr. D. R. Grenfell, M.P.* ... ..	29th November, 1929.

### Finance.

The total sum paid into the Forestry Fund from the Exchequer during the ten financial years, ending 31st March, 1929, was £3½ millions, of which £430,000 was voted for the relief of unemployment. Receipts from operations amounted to £783,755 and in accordance with the Forestry Act, 1919, were also paid into the Forestry Fund.

Although in the upshot the full statutory amount was credited to the Forestry Fund during the ten-year period, there have been times during which considerable uncertainty has existed as to the annual provision of funds. The chief example was that following the Second Interim Report of the Committee on National Expenditure (1922), when the Commissioners were forced to make many reductions in staff and to curtail essential activities, such as land acquisition, all of which in the long run proved the reverse of economical and entailed great inconvenience to the development of the work.

The object of the ten-year programme was to avoid uncertainty. Uncertainty is the worst enemy of the Commissioners' work, and they have therefore noted with satisfaction that successive Chancellors of the Exchequer have come more and more to appreciate that point of view.

---

\* Member of the present Commission.

When allowance is made for certain disturbing factors, it will be seen that the estimates prepared by the Acland Committee have worked out with considerable accuracy. On the one hand there have been unexpected receipts due to the transfer of the former Crown Woodlands to the Commissioners, and a reduction in expenditure on land acquisition and on planting; on the other hand forest workers' holdings, not originally contemplated, have been established on a considerable scale, and a good deal of unexpected work in relief of unemployment was carried out.

## REVIEW OF RECEIPTS AND PAYMENTS.

It will be convenient under the head of Finance to review briefly to September 30th, 1929, the main heads of revenue and expenditure. The financial tables\* and analysis in the body of this Report cover 10½ financial years but only 10 complete forest years, an anomaly due to the fact that the financial year closes on 31st March when planting operations are still proceeding actively.

*Receipts* from operations at 30th September, 1929, amounted to £851,484, of which the main items were:—

	£	Per cent.
Forestry Operations—		
Land and buildings ... ..	52,087	6·1
Rents (including mining rents and royalties) ... ..	259,350	30·5
Forest produce ... ..	372,106	43·7
Other sales (including stores, live stock, rabbits, gravel, etc.)	108,379	12·7
Forest Workers' Holdings—		
Rents ... ..	24,010	2·8

*Payments* amounted to £4,502,018 distributed according to Parliamentary sub-heads in the following way:—

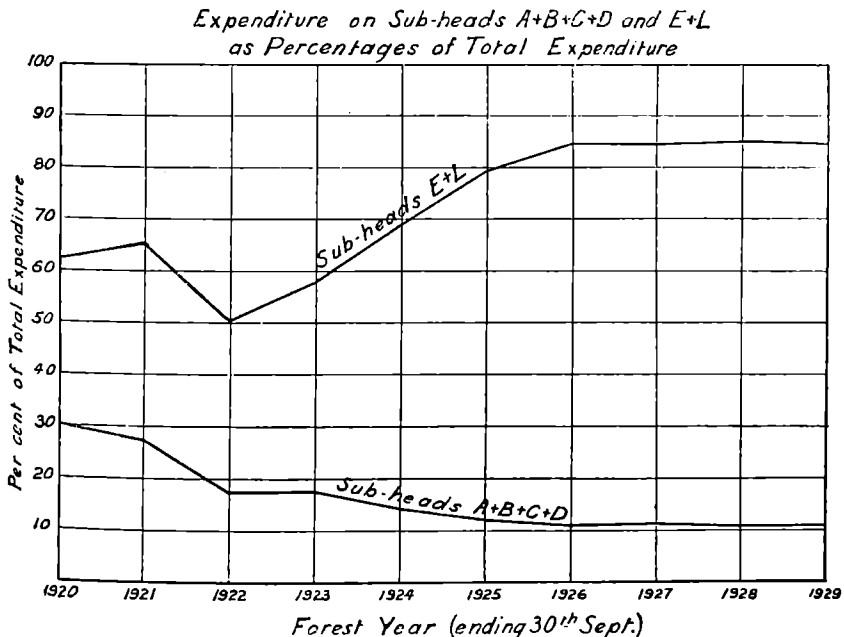
	£	Per cent.
A.—Salaries, Wages and Allowances ... ..	494,157	11·0
B.—Headquarters' Charges ... ..	22,676	0·5
C.—Assistant Commissioners' Charges .....	30,586	0·7
D.—Divisional Officers' Charges ... ..	74,434	1·7
E.—Forestry Operations ... ..	3,118,837	69·3
F.—Advances for Afforestation Purposes ... ..	207,824	4·6
G.—Education ... ..	76,004	1·7
H.—Research and Experiment ... ..	36,927	0·8
J.—Agency and Advisory Services ... ..	91,776	2·0
K.—Special Services ... ..	23,342	0·5
L.—Forest Workers' Holdings ... ..	325,455	7·2
Total ... ..	£4,502,018	100

\* See particularly Table I, p. 32.

Of the above sub-heads, A, B, C and D represent payments in connection with the staff (excluding foresters and foremen) and administration of the Commission. It has been the Commissioners' policy steadily to devolve responsibility so far as consistent with efficiency and thus to keep these sub-heads at the lowest possible figure. Of the remaining sub-heads, E. Forestry Operations and L. Forest Workers' Holdings represent the main effective functions of the Commissioners; G. Education, H. Research and Experiment, and K. Special Services are of assistance in carrying out these main functions but also assist in the general development of forestry in the country, while F. Advances for Afforestation Purposes and J. Agency and Advisory Services, serve the last-named object only.

In the early stages, when the work was in process of organisation and planting operations were small the proportionate total of sub-heads A, B, C and D was necessarily high and amounted in 1920 to 30·3 per cent. of the total expenditure on all heads. From that figure it fell to 13·9 per cent. in 1924 and to 10·9 per cent. in 1929, the average for the ten years being 13·8 per cent. If the totals of A, B, C and D are compared with the turnover (payments plus receipts) to which they more properly relate, the corresponding figures are 27·2 per cent. for 1920, 11·1 per cent. for 1924, 9·0 per cent. for 1929 and 11·6 per cent. for the average of the period.

While the proportion of expenditure on staff and administration has fallen, that on the effective heads of E. Forestry Operations and L. Forest Workers' Holdings, has increased. This is clearly brought out in the diagram below.



From 1920 to 1922 inclusive the planting programme was on an expanding basis, it then remained steady at approximately 10,000 acres per annum for the next two years when it again began to expand. The Crown Woods were transferred to the Commissioners in 1924 in which year also the formation of Forest Workers' Holdings was begun.

A clearer view of the objects on which expenditure has been incurred may be obtained from Table IIa (p. 34) since in that table sub-heads A, B, C and D have been distributed over sub-heads E. to L. in order to arrive at the total cost of each service under these sub-heads. The following table shows the distribution of expenditure for the first, fifth and tenth forest years and also for the average of the ten years. In 1920, 86·4 per cent. of the cost was incurred in respect of E., in 1924, 76·8 per cent. in respect of E. and L. and in 1929, 94 per cent. in respect of E. and L.

*Distribution of Expenditure—Based on Table IIa, p. 34.*

Sub-head.	1920.	1924.	1929.	Average of the 10 years.
	Per cent.	Per cent.	Per cent.	Per cent.
E.—Forestry Operations ... ..	86·4	75·0	83·4	78·3
F.—Advances for Afforestation Purposes	0·4	14·3	2·2	5·4
G. and H.—Education, Research and Experiment.	9·7	4·7	3·1	4·1
J.—Agency and Advisory Services ...	2·1	1·1	0·2	2·2
K.—Special Services ... ..	1·4	3·1	0·5	1·3
L.—Forest Workers' Holdings ...	—	1·8	10·6	8·7
	100	100	100	100

Since, during the ten years, 87 per cent. of the expenditure has been incurred on Forestry Operations and Forest Workers' Holdings, it may be interesting to give some further details concerning those heads.

The table below relative to Forestry Operations shows the figures in 1920, 1925 and 1929. At first sight the item 16·2 per cent. (Overhead Charges, 5·5 per cent.; Superior Supervision, 5·7 per cent.; and Local Supervision, 5·0 per cent.) may seem unduly high but it has to be borne in mind that much of the work is not related to current planting operations but is rather in the nature of capital expenditure. Such for example is the large amount of time taken up in examining and reporting on land for acquisition.



*Distribution of Expenditure on Sub-head E.—Forestry Operations (Table E. p. 36).*

	1920 and 1921.	1925.	1929.	Average of the 10 years.
	Per cent.	Per cent.	Per cent.	Per cent.
Overhead Charges, Superior Super- vision and Local Supervision.	21·9	15·1	14·7	16·2
Acquisition of Land ... ..	37·8	25·0	25·9	22·4
Cultural Operations ... ..	31·5	40·4	41·0	43·0
Preparation and Sale of Produce ...	0·6	3·9	3·6	3·4
Roads and Buildings ... ..	2·8	4·5	2·9	3·3
Stores and Miscellaneous ... ..	5·4	11·1	11·9	11·7
	100	100	100	100

As regards Forest Workers' Holdings, 9·2 per cent. of the expenditure was on Superior Supervision and Overhead Charges (a considerable amount of building work was done by direct labour); 26·1 per cent. on the Acquisition of Land and Buildings; 58·6 per cent. on Buildings; 4·5 per cent. on Fencing, Drainage, etc. and 1·6 on Rents, Rates, Taxes, etc. The figures for 1925 and 1929 are also given in the table below:—

*Distribution of Expenditure on Sub-head L.—Forest Workers' Holdings (Table L. p. 59).*

	1925.	1929.	Average 1924–29.
	Per cent.	Per cent.	Per cent.
Superior Supervision and Overhead Charges ...	6·5	12·2	9·2
Acquisition of Land, Buildings, etc. ... ..	48·1	9·7	26·1
Buildings ... ..	41·6	67·7	58·6
Fencing, Drainage, etc. ... ..	1·1	8·6	4·5
Rents, etc., Rates and Taxes, and Other ... ..	2·7	1·8	1·6
	100	100	100

### The Acland Programme.

The Acland Committee recommended the following conifer programmes:—

	<i>Acres.</i>
Total area to be afforested in 80 years ...	1,770,000
Total area to be afforested in first 40 years ...	1,180,000

*To be planted in the first 10 years.*

	<i>Acres.</i>
(a) With conifers by the State ... ..	150,000
(b) With hardwoods by the State ... ..	unspecified
(c) By local authorities and private individuals with State aid ... ..	110,000

In addition to the total area to be planted with conifers by the State in the ten years, the Acland Committee laid down the annual rates of planting and of land acquisition.

**Summary of Work Done.**

The table below shows in parallel columns the work done during the decade and the proposals of the Acland Committee. The number of forest workers' holdings established is also included for convenience.

Work.	Acland Programme.	Actuals to 30th Sept. 1929.
<i>Acquisition of plantable land.</i>	Acres.	Acres.
For planting conifers ... ..	382,000	310,230
Devastated hardwood areas ... ..	20,000	
	402,000	
<i>State planting.</i>		
Conifers ... ..	150,000	130,768
Hardwoods ... ..	Unspecified.	7,511
		138,279
<i>State-aided planting</i> ... ..	110,000	76,736
<i>Forest Workers' Holdings</i> ... ..	Nil.	618 completed. 245 in progress.

The deviations from the Acland programme are discussed below.

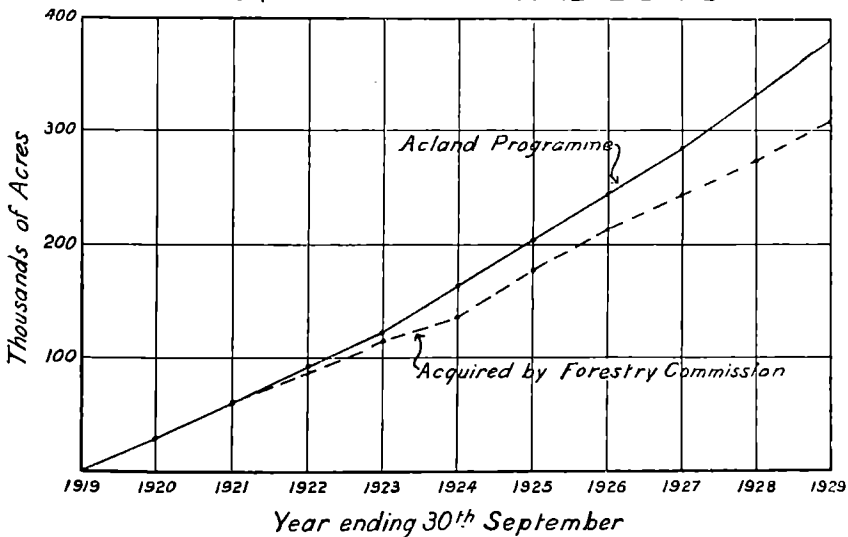
**LAND ACQUISITION.**

The total area of plantable land acquired to 30th September, 1929, was 310,230 acres compared with 402,000 acres (382,000 acres for conifers and 20,000 acres for hardwoods) recommended by the Acland Committee. The shortage was, therefore, 91,770 acres, or 22·8 per cent. of the total. The table below shows the annual deviations from the prescribed acquisitions, while the diagram compares year by year the cumulative total acquired with the area prescribed to be acquired for conifers only.

*Acquisition of Plantable Land.*

Year ended 30th Sept.	By Lease or Feu.			By Purchase.			Total.		
	Proposed (Acland Report).	Actual.	Excess (+) Deficit (-).	Proposed (Acland Report).	Actual.	Excess (+) Deficit (-).	Proposed (Acland Report).	Actual.	Excess (+) Deficit (-).
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1920 ...	8,800	24,776	+ 15,976	22,000	6,434	- 15,566	30,800	31,210	+ 410
1921 ...	9,200	19,774	+ 10,574	22,000	13,186	- 8,814	31,200	32,960	+ 1,760
1922 ...	8,800	22,703	+ 13,903	22,000	687	- 21,313	30,800	23,390	- 7,410
1923 ...	8,800	21,885	+ 13,085	22,000	6,704	- 15,296	30,800	28,589	- 2,211
1924 ...	17,600	8,099	- 9,501	24,000	12,356	- 11,644	41,600	20,455	- 21,145
1925 ...	18,000	16,194	- 1,806	22,000	24,835	+ 2,835	40,000	41,029	+ 1,029
1926 ...	17,600	10,476	- 7,124	22,000	25,974	+ 3,974	39,600	36,450	- 3,150
1927 ...	18,000	11,301	- 6,699	22,000	19,454	- 2,546	40,000	30,755	- 9,245
1928 ...	26,400	11,559	- 14,841	22,000	19,516	- 2,484	48,400	31,075	- 17,325
1929 ...	26,800	9,992	- 16,808	22,000	24,325	+ 2,325	48,800	34,317	- 14,483
Total	160,000	156,759	- 3,241	222,000	153,471	- 68,529	382,000	310,230	- 71,770

Note.—In addition, 4,866 acres were acquired in Ireland to 31st March, 1922.

*ACQUISITION OF PLANTABLE LAND*

Broadly, the reason for the shortage on the acquisition programme has been uncertainty as to finance. The first deviation from the prescribed programme took place, for reasons already referred to, in 1921-22, when negotiations on many desirable subjects were dropped. From 1924 to 1926, the rate of acquisition was approximately correct, though no arrears were made up, but from 1926 to 1929 the rate again fell away.

Another obstacle has been the difficulty of securing afforestable land only in distinction to mixed subjects. It has frequently arisen that owners have been willing to sell or lease large blocks of afforestable land only on condition that agricultural land, buildings, and even mansion houses are taken as well.

The acquisition of sufficient plantable land is of fundamental importance in carrying out a planting programme. When an area of afforestable land has been acquired there are many factors which limit the rate at which it should be planted. The existing utilisation and tenancies have to be considered, almost every area has its individual silvicultural requirements which cannot be satisfactorily ascertained except by experience, supplies of plants have to be arranged for either from local or central nurseries, and finally the question of providing forest workers with employment over a series of years has to be carefully thought out. It has proved a mistaken policy, in practice, to plant up areas too quickly.

The calculations on which the Acland Committee based the relation between rate of acquisition and rate of planting have proved to be substantially correct so far as the first decade is concerned, and the shortage, which is referred to later, in the planting programme followed almost automatically on the failure to secure the requisite area of plantable land.

The average price paid for plantable land was £3 5s. 9d. per acre which, having regard to the use to which such land is put, the Commissioners believe to be fair both to the vendors and to the State. There are undoubtedly in Great Britain very large areas of uncultivated land which when stripped of buildings is of no greater worth than the average price paid hitherto and is yet well suited for growing timber. As explained on p. 29 the planting programme for the second decade entails the acquisition of 60,000 acres per annum. The Commissioners have hitherto avoided compulsory acquisition and have relied on the interest of landowners in afforestation and on fair dealing to provide the annual quota of land. It is hoped that a similar attitude will prove successful in respect of the larger programme of the second decade, but it must be pointed out that should it not, there are many areas of unutilised land and derelict woodland which the State would be justified in taking compulsorily.

## PLANTING PROGRAMME.

### (A) STATE FORESTS.

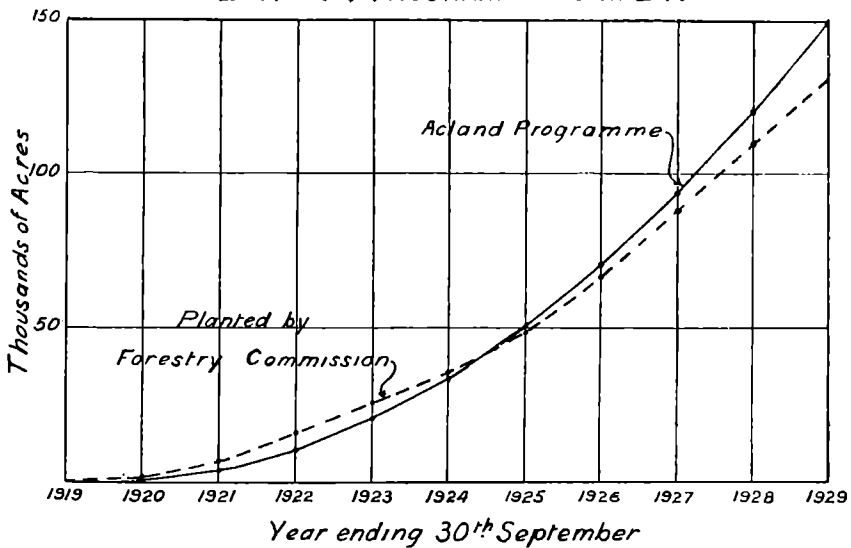
*Total.*—The total area planted in the decade was 138,279 acres, of which 130,768 acres were with conifers.

*Conifers.*—The area planted annually with conifers is compared with the Acland programme in the table below, and the cumulative totals are shown graphically in the diagram.

*Planting Programme : Conifers.*

Year.	Acland Committee's Programme.	Actually planted.	Excess (+) Deficit (-) on Acland Committee's Programme.
	Acres.	Acres.	Acres.
1st year, 1919-20 ...	Nil	1,164	+ 1,164
2nd „ 1920-21 ...	3,300	5,451	+ 2,151
3rd „ 1921-22 ...	6,700	9,346	+ 2,646
4th „ 1922-23 ...	10,000	9,466	- 534
5th „ 1923-24 ...	13,300	9,796	- 3,504
6th „ 1924-25 ...	16,700	14,078	- 2,622
7th „ 1925-26 ...	20,000	17,513	- 2,487
8th „ 1926-27 ...	23,300	21,752	- 1,548
9th „ 1927-28 ...	26,700	21,522	- 5,178
10th „ 1928-29 ...	30,000	20,680	- 9,320
Total ...	150,000	130,768	- 19,232

*Note.*—In addition, 1,697 acres were planted in Ireland to 31st March, 1922.

*PLANTING PROGRAMME: CONIFERS*

The shortage on the total for the decade was 19,232 acres or 12.8 per cent. The Acland programme was an expanding one beginning with nil in the first year and growing at the rate of 3,300 acres per annum to 30,000 acres in the tenth year. An excellent start was made, and by 1922 the rate of planting was well in advance of the prescribed rate. For reasons of finance the planting rate was then stabilised at nearly 10,000 acres per annum for three years. From 1924 to 1927 more money was available and the expanding programme was resumed. From 1927 to 1929, the rate of planting fell away slightly, again owing to difficulties of finance which had curtailed land acquisition.

*Broadleaved Species.*—The total area planted with broadleaved species as shown in the table below was 7,511 acres exclusive of a few hundred acres in the former Crown Forests which have been put under natural regeneration.

	Acres.
1919-20	116
1920-21	236
1921-22	175
1922-23	635
1923-24	395
1924-25	592
1925-26	422
1926-27	1,509
1927-28	1,639
1928-29	1,792
	—
Total	7,511
	—

In criticisms of the Commissioners' planting policy attention has been drawn to the great preponderance in area of coniferous over broadleaved plantations. A memorandum on the subject was accordingly issued in December, 1929, and has since been published in the technical press.\* Briefly, in the economics of timber production the scales are heavily weighted against broadleaved species as compared with conifers. In a sense this is fortunate since the overwhelming demand is for softwood timber, but it is necessary nevertheless to maintain a home supply of hardwoods. While, therefore, the Commissioners consider that the most important problem immediately before them is to provide a supply of softwoods, in replacement of the woods so heavily depleted during the War, they are not neglecting opportunities of acquiring suitable hardwood soils and concurrently they are attempting to improve methods of raising hardwood crops.

#### (B) ASSISTANCE TO LOCAL AUTHORITIES AND PRIVATE OWNERS.

The area proposed by the Acland Committee to be afforested or replanted by local authorities and private owners with State assistance during the decade was 110,000 acres. The actual area planted amounted to 76,736 acres, but this area will be further increased to a small extent when current programmes have been completed.

Two methods of encouraging planting have been adopted. The first of these was the proceeds-sharing scheme initiated by the Development Commissioners in respect of two undertakings. One of the schemes has since dropped out but the other (with

---

\* Production of Hardwoods. *The Scottish Forestry Journal*, March, 1930, and *The Quarterly Journal of Forestry, R.E.A.S.*, April, 1930.

Liverpool Corporation in respect of their Lake Vyrnwy catchment area) has proceeded satisfactorily. The total area afforested under proceeds-sharing schemes amounted to 2,373 acres. This method of procedure, while superficially attractive, has failed to appeal to owners of woodland and afforestable land, and little progress is likely on similar lines.

The second method of encouragement on which the Commissioners have mainly relied is that of direct grants on an acreage basis. Owing to the restrictive conditions imposed on State-aid by the Forestry Act, 1919, no progress was made during the planting seasons 1919-20 and 1920-21. These conditions were suspended in respect of grants placed at the disposal of the Commissioners for the relief of unemployment and a beginning was made on a large scale in 1921-22. The restrictive conditions were entirely repealed by the Forestry (Transfer of Woods) Act, 1923, and thereafter considerable progress was made.

The table below shows the work for which grants have been paid.

Year.	Planted.	Prepared for Planting.	Cleared of Scrub.
	Acres.	Acres.	Acres.
1921-22 ...	10,192	9,127	3,322
1922-23 ...	6,148	6,075	2,015
1923-24 ...	6,530	2,772	1,721
1924-25 ...	7,467	2,597	1,391
1925-26 ...	4,675		267
1926-27 ...	6,849	—	538
1927-28 ...	5,512	—	197
1928-29 ...	6,419	—	292
<b>Total</b>	<b>53,792</b>	<b>20,571</b>	<b>9,743</b>

### The Commissioners' Estates.

At 30th September, 1929, the Commissioners had under their charge 602,000 acres of land, of which 251,000 acres had been acquired by purchase, 231,000 acres by long lease or feu and the balance, approximately 120,000 acres, had been transferred to them from the Commissioners of Crown Lands under the Transfer of Woods Act, 1923.

In acquiring land the Commissioners have kept constantly in view their main functions which are to establish forests and forest workers' holdings. The acquisition of assets surplus to those requirements has been avoided so far as possible and where it has been necessary to acquire surplus assets in order to build up desirable forest properties the policy is to dispose of them as rapidly as sound business permits.

The table below gives a list, exclusive of forest workers' holdings, of subjects and rentals at 30th September, 1929. The total number of lettings is 3,486 of an annual value of £59,847.

Description.	England and Wales.		Scotland.		Total—Great Britain.	
	No.	Rental.	No.	Rental.	No.	Rental.
Agricultural Holdings—		£		£		£
Under £20 per annum ...	251	1,653	155	1,440	406	3,093
Over £20 per annum ...	144	8,146	74	7,342	218	15,488
Foresters' Houses (including District Officers' Houses in Scotland).	80	—	31	90	111	90
Cottages ... ..	250	2,026	70	353	320	2,379
Residential Property ... ..	39	4,906	2	220	41	5,126
Sporting ... ..	138	3,375	85	5,443	223	8,818
Ground Rents and Feus ... ..	135	1,729	62	137	197	1,866
Easements, Licences and Forest Dues.	1,440	1,290	24	47	1,464	1,337
Miscellaneous Buildings ... ..	22	337	5	172	27	509
Apprentices' Schools ... ..	1	—	1	—	2	—
Hotels ... ..	1	160	—	—	1	160
Mines and Quarries—						
Coal ... ..	220	14,650	—	—	220	14,650
Other ... ..	140	5,290	2	25	142	5,315
Mining and other Accommodations.	76	488	3	10	79	498
Bothies ... ..	—	—	31	—	31	—
Piers ... ..	—	—	4	518	4	518
<b>Total ... ..</b>	<b>2,937</b>	<b>44,050</b>	<b>549</b>	<b>15,797</b>	<b>3,486</b>	<b>59,847</b>

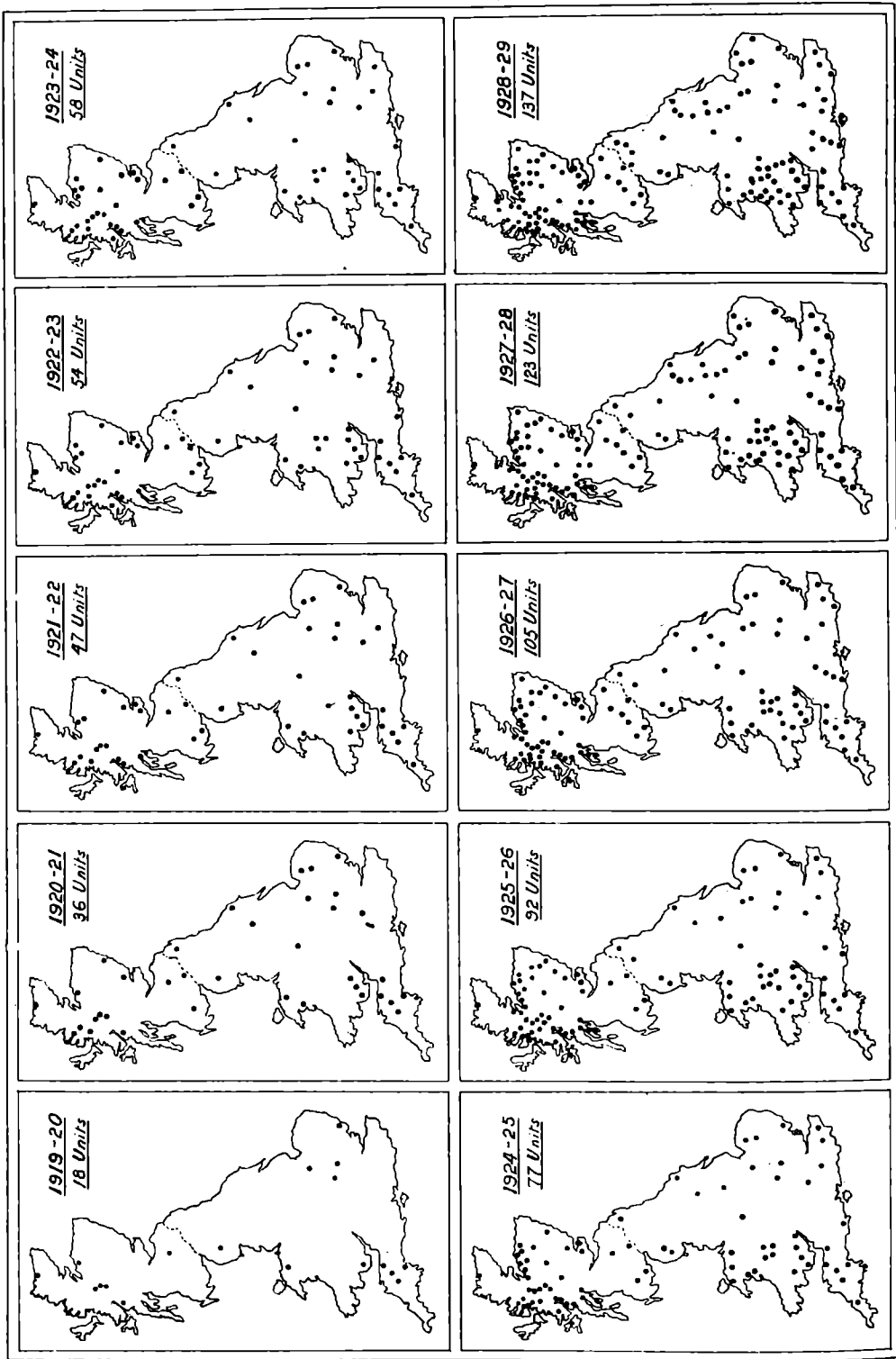
### THE FORESTS.

The total area of forest was 202,744 acres, of which 138,279 acres were planted or replanted by the Commissioners, 7,783 acres were acquired by purchase and 62,554 acres were transferred under the 1923 Act. In addition to the area already under forest and plantations, there were 164,168 acres of plantable land awaiting afforestation. The total area of forest and potential forest was, therefore, 366,912 acres.

In all there were 152 forest units, the individual names and distribution of which are shown on the maps facing pp. 40 and 41; 65 units are in England, 22 in Wales and Monmouth and 65 in Scotland. Of these units 15 are transferred subjects (12 in England, 2 in Wales and Monmouth and 1 in Scotland), and the remainder, namely 137 have been acquired by the Commissioners and form the nuclei of new State forests. The small sketch maps facing this page show the number and distribution of the new units year by year over the decade. At the end of the first year there were 18, at the end of the fifth 58, and at the end of the tenth year 137 units.







Sketch maps illustrating the progress of the acquisition of forest units, excluding forests transferred under the Forestry (Transfer of Woods) Act, 1923.

The units cover a very wide range of conditions and thus differ one from another in various respects such as size, character of land and so on.

As regards size, the units may be classified, on the area of afforestable land which they contain, as follows:—

Area.	No. of Units.		
	England and Wales.	Scotland.	Great Britain.
<i>Acres.</i>			
Under 500 ... ..	7	5	12
500-1,000 ... ..	16	14	30
1,000-2,000 ... ..	29	19	48
2,000-4,000 ... ..	20	21	41
4,000-8,000 ... ..	12	6	18
8,000 and over ... ..	3	—	3
Total ... ..	87	65	152

The largest units were in England, Thetford Chase (24,307 acres), New Forest (22,410 acres) and Allerston (9,715 acres); in Wales, Vaughan (9,079 acres) and Clocaenog (8,475 acres); in Scotland, Clashindarroch (7,978 acres). In each case the area stated is the amount of plantable land including land already planted.

The area of a unit at 30th September, 1929, is not necessarily its ultimate size. From time to time units are amalgamated as intervening land is acquired. It is interesting to note that some of the larger units started in quite a small way and have gradually been enlarged. Nor has the initiative always come from the Commissioners. Landowners, after a few years' experience of the Commissioners' work in their neighbourhood, have in certain cases approached the Commissioners with offers of more land.

The Commissioners prefer not to start a new unit except with a fair assurance that there will be available at least 1,000 acres of plantable land, but provided that a small unit is conveniently situated with regard to other afforestable land they have not, as a rule, experienced any great difficulty in increasing its size to that acreage.

The transferred subjects are mostly old woodland, although two of them (Inverliever in Scotland and Hafod Fawr in Wales) had been specifically acquired by the Office of Woods as experiments in afforestation. They include intact two of the ancient Royal Forests (New Forest and the Forest of Dean) and the

remnants of others such as Bere, Salcey, Hazelborough and Delamere. The bulk of the standing timber is second- and third-class oak which has deteriorated in recent years owing to defoliation by caterpillars and other causes. The transferred subjects also include Highmeadow, Tintern, Dymock and other woods which contain excellent young plantations and some good timber.

As regards the character of the land purchased and leased by the Commissioners, the variations are so great that a statement of the main types with a few illustrations must suffice. Perhaps the poorest type of all is represented by sand dunes (Culbin and Pembrey) which nevertheless are capable of carrying good crops of Corsican pine. The sandy heaths represent a very low level of utilisation and large areas have been secured in East Anglia (Thetford and Rendlesham), Dorset (Wareham), Stafford (Cannock Chase), Nottingham (Clipstone) and Fife (Tentsmuir). These heaths are suitable chiefly for Scots and Corsican pines, with some broadleaved species on the better soils. Considerable areas of devastated woodlands and unproductive coppice have also been acquired, examples being Bodmin, Quantocks, Chepstow Park, Wyre, Mortimer, Gwydyr and Chiddingfold in England and Wales, and Port Clair, Barcaldine and Glenurquhart in Scotland. As a rule such areas are very good for timber growth but are expensive to afforest if they have been allowed to lie derelict. The total area of devastated woodland and coppice which had been acquired amounted to 76,200 acres. The chalk downs of the south of England, exemplified by Friston and Buriton, are characterised by thin, dry soils which present difficulties to the establishment of trees but they should ultimately grow good crops of beech with some ash in the moister hollows.

The remaining land is situated chiefly in the west and north of Britain and is either poor hill grazing or (in Scotland) deer forest. These areas are difficult to describe briefly, except by reference to the prevailing vegetation types which are again intimately related to the geological formations. The most productive land is the bracken-covered slope which indicates generally a good depth of soil and good drainage, and is suitable, according to elevation and exposure, for quick-growing species such as Douglas fir and the larches. A fair proportion of land of this type has been secured, notably in Wales (Glangwili, Radnor, Kerry, Dovey, Vaughan); in Yorkshire (the Allerston dales); in the Lake District (Thornthwaite); in the south of Scotland (Glentress, Closeburn); and in the various forests along the Caledonian Canal.

Passing to the other extreme, the more elevated heather moors, it has been the practice to exclude such land for the most part as unplantable. As a rule both exposure and soil conditions are difficult. The soil is often peaty and associated with a pan and

the trees which best resist the exposure, namely, the spruces, are difficult to establish in heather. Recent large-scale ploughing experiments at Allerston suggest that on certain types of moorland, by suitable soil cultivation this difficulty may be overcome at reasonable cost.

Between these extremes, and neglecting for the moment the deeper peat areas, there are numerous stages through dry grass slopes to wet rushy and molinia ground. An outstanding feature of these poor hill pastures is the large proportion of wet ground due to neglect of drainage; Norway and Sitka spruces grow excellently on such land and provided the drains receive adequate attention are quite wind firm. Among the units in which the proportion of molinia and rush land is high may be mentioned, in England, Halwill, North Tyne, and Kershope; in Wales, Margam, Beddgelert, Glasfynydd, and Clocaenog; in Scotland, Newcastleton, Closeburn, Glenbranter, and the western forests generally.

The deer forests which have been acquired include Achnashellach, Glen Righ, Glenmore and Glengarry. They lie characteristically in the wilder and more mountainous country, corresponding with the harder and less easily weathering rocks. The soils are wet and deposits of peat alternating with moraines are common on the lower ground. The proportion of afforestable land is low and the costs of fencing high. Consequently it is only under exceptionally favourable circumstances that deer forests form good subjects for afforestation.

Reference has already been made to peat deposits which occur in one form or another, and in varying proportions, in practically all the units situated on the west side of the country in the high rainfall areas. The Commissioners have been cautious about including peat areas in their plantable ground. Certain types indicated by molinia and juncus will certainly grow good crops of trees after drainage, while others indicated by predominance of scirpus appear to be extremely difficult. Between the two are many forms which are excluded pending the results of experimental work.

The rate of growth of the plantations made under such diverse conditions has naturally varied very greatly. Some of the larch (European and Japanese) and Douglas fir plantations planted in the earlier years have already reached the thicket stage and will require thinning in the course of the next few years. Poles between 25 and 30 feet in height have already been cut for exhibition purposes. The pine plantations (Scots and Corsican) generally show very pleasing growth and the oldest have just formed a complete canopy. The spruce plantations are more variable. The Norway spruce is notoriously slow in starting,

though it atones for this in later life. The Sitka spruce starts more quickly and particularly in the wetter districts is already growing rapidly. Improvements in methods of planting spruces have done much to eliminate the initial check in growth. The above species constitute the bulk of the coniferous plantations which have so far been made, but other species such as the western red cedar (*Thuja plicata*) and the hemlock (*Tsuga heterophylla*) and more recently the Murray pine (*Pinus Murrayana*) have also been used.

In the earlier years mistakes were made in the allocation of species to different types of land; the general tendency being to assess land at too high a planting value and thus to plant exacting species, such as Douglas fir, on land not really suited to them. Since, however, the area planted annually has been on an expanding basis such mistakes have been on a comparatively small scale.

The growth of hardwood plantations is so slow in the initial stages that there is at present little to report. Here, again, some mistakes have been made, mainly in the direction of insufficient nursing. With oak some very successful work has been done by the direct sowing of acorns and by natural regeneration under the shelter of the old crop.

### Education.

The conduct of forestry operations in Great Britain rests in the hands of three types of men for whom different courses of training are required. The first is the full-time forest officer whose functions, subject to the general policy laid down by the Commissioners, are to plan and control operations. The second includes landowners and land agents who have to deal with woods in varying degree according to the character of individual estates. The third is the forester whose duties are mainly the supervision of actual work, such as planting in the woods.

The Commissioners recruit annually from two to three forest officers, only occasionally an estate officer, and every year hitherto some ten or fifteen foresters. The British Universities train forest officers not only for the home service but also for the forest services of the Colonial Empire, to some extent but far less than formerly for India and occasionally for the Dominions. Land-agents in qualifying for their profession do not always find access to organised courses in forestry, though the Universities and Agricultural Colleges usually include a certain amount of forestry in their agricultural courses and the Surveyors' Institution holds a special examination in forestry. Foresters for the home service are trained in the Commissioners' Apprentices' Schools in the Forest of Dean and Benmore. These schools are also open to men who intend obtaining employment on private estates and from time to time are attended by men from the Colonial services.

*Higher Forestry Education.*—At the time of the establishment of the Forestry Commission instruction for forest officers was provided at the following Universities: Oxford, Cambridge, Wales (Bangor), Durham (Armstrong College), Edinburgh and Aberdeen. It was found impossible on the score of cost for the Commissioners fully to assist all these Universities to the extent of enabling them to provide all the staff required by a first-class teaching institution and it was decided to make to each, with the exception of Edinburgh University (which had previously been endowed by the Development Commission) a grant of £500 per annum. Armstrong College subsequently discontinued the training of forest officers and the grant was reduced. The Commissioners' records are defective for the first two years, but it would appear that the average attendance of forestry students at the Universities was approximately 140 per annum for the whole period, and in round numbers 300 degrees and 200 diplomas were awarded.

As the result of recommendations of the Empire Forestry Conference of 1920 and 1923, the Imperial Forestry Institute was founded at Oxford in 1924 with the object of affording courses of advanced study, its work comprising post-graduate instruction, the training of research officers and the provision of courses for selected officers from the forest services of the Empire. The cost has been met mainly by the Colonial Office and the Commissioners but the Empire Marketing Board have also made a contribution towards expenses during the last two years. The Commissioners' contribution has averaged about £2,000 per annum. The Imperial Forestry Institute has been attended during the five years since its inauguration by 149 students. These included, post-graduate probationers: Great Britain 4, India 8, South Africa 6, Colonial Services 43; forest officers on leave: India 18, Colonial Services 59, Dominion Services 2; private students 9.

*Apprentices' Schools.*—During the ten-year period 325 forest apprentices have attended courses of training at the Forestry Commission's Schools, 201 have received certificates and 154 have been appointed to positions under the Forestry Commission. At the commencement of the Commissions' operations there were two schools in Great Britain (at the Forest of Dean and Chopwell) and it was considered advisable to establish two more (at Beaufort and Burley). When the scale of planting operations was curtailed in 1921 the number was reduced to two, namely one in Scotland at Beaufort and the other at Parkend in the Forest of Dean. The Scottish school has since been removed from Beaufort to Benmore, Argyllshire.

Immediately after the war and in co-operation with the Ministry of Labour two schools for disabled soldiers who desired

a forestry training were temporarily established at Birnam in Perthshire and at Brockenhurst in the New Forest but these schools were discontinued in 1922.

### Research and Experiment.

Throughout the decade the Commissioners have kept steadily before them the importance of placing their work on a scientific basis, and by research and experiment of solving the numerous problems which confronted them. These problems naturally group themselves into five categories in accordance with the processes of growing and marketing timber.

*Production of Timber under varying Conditions.*—In selecting land for afforestation it is necessary to know not only that it will support a crop of timber but also how much of any given species it will produce in a given time. This knowledge is the foundation on which subsequent plantation work is built, and it can be secured only by accurate measurements and by the analysis of conditions of growth of existing crops of timber. A great deal of attention has consequently been given to this work. Over 1,200 temporary sample plots were measured during the war years and numerous permanent sample plots have since been established for measurement at regular intervals. These plots also serve in part the purpose referred to below under "Treatment of established plantations."

Since, however, the existing timber crops do not cover all possible conditions of growth, it has been found necessary to lay down a number of experimental plantations which in due course will supply the information now missing.

*Establishment of Plantations.*—This, the second in order of the main processes of the Commissioners' work, has many ramifications. It is divisible into two main sections—nursery work, or the raising of plants, and plantation work itself. Under certain conditions also it is possible to form plantations by sowing the seed direct.

The problems in the first instance are biological in character, because only by understanding of the habits and correct treatment of plants can successful plantations be formed. In the second instance they are commercial in the sense that the desired results have to be secured at the least possible cost. Between the two—the best silvicultural result and the cheapest result—lies the optimum practical result, which may be very difficult to find.

The investigations of the Commissioners have thus led them into such questions as the provenance of tree seeds, e.g. Douglas fir and Sitka spruce from various stations in Western America, and larches and pines in Europe and in Japan; most aspects of nursery work, such as density of sowing and of transplanting, and



various aspects of plantation work, such as spacing of plants, age and size for different conditions, degree of soil preparation. Special attention has been paid to the treatment of peaty soils, and by close study of existing vegetation types and the development of special planting methods, certain kinds of peaty soils have been proved to be easily afforestable. Other types have been found so far to be intractable. The upland calluna heaths and the heavy soils of the Midlands and south of England, the latter being devoted to the growth of oak, have also received considerable attention.

Altogether there are now several hundred acres under experimental plots distributed among upwards of thirty forests.

*Treatment of Established Plantations.*—One of the first problems which will have to be faced in the near future will be the thinning of extensive areas. In anticipation of this, various methods and degrees are being tried in permanent sample plots which are kept under observation and carefully re-measured at intervals of about five years.

*Protection.*—Safeguarding the forests against insect and fungus pests, as well as against fire and weather conditions, has constantly to be borne in mind. A number of insect and fungus pests have been investigated in the nursery and in the plantation, and at the moment there is none which cannot be kept within reasonable control, with the exception of the oak tortrix and associated caterpillars. These insects periodically defoliate the oaks of southern England, and the causes which promote their large-scale attacks are not yet understood. On the other hand hedgerow elms have recently been attacked by the Dutch elm disease, for which there is no known remedy.

The study of forest trees in relation to meteorological conditions is also receiving attention, and in particular the incidence of late spring frosts on different species.

*Utilisation.*—By a decision of a Cabinet Committee on the Co-ordination of Scientific Research in Government Departments, the investigation of forest products was devolved in 1921 on the Department of Scientific and Industrial Research. That Department accordingly set up a Forest Products Research Board, on which the Commissioners are represented, and has established a Forest Products Research Laboratory at Princes Risborough. The Commissioners have co-operated with the Research Board in joint inquiries relating to the utilisation of home-grown timber and pit-props and from time to time have supplied material required by the Board for their investigations. The pit-prop experiments which have been carried out both in the laboratory and in the mine indicate that home-grown props, when properly prepared and graded, are in general as good as the imported.

Sales of forest produce from the State forests are gradually increasing in importance, and in 1928-29 amounted to £66,312. In this connection it is pleasing to note that by studying markets, and carefully preparing and classifying produce, material which was formerly considered unsaleable can now be disposed of at a profit. It is confidently anticipated that when the new forests are in a position to yield steady supplies of well-grown forest produce ready markets will be found for the out-turn.

In order to secure the best possible advice on the complex problems connected with forest research the Commissioners have recently set up an Advisory Committee, a detailed reference to which will be found on p. 55.

### **Special Services.**

*Imperial Forestry.*—The Commissioners are empowered under the Forestry Act 1919 to make or aid in making such inquiries as they may think necessary for the purpose of securing an adequate supply of timber in the United Kingdom and promoting the production of timber in His Majesty's dominions. Their first step in this direction was to convene the first British Empire Forestry Conference which was held in London in 1920. The second was held in Canada in 1923 and the third in Australia and New Zealand in 1928. The fourth is to meet in South Africa in 1933.

Apart from drawing public attention to the importance of forestry in the individual units of the Empire the Conferences have done excellent work in collecting together data as to the resources and utilisation of the forests of the Empire, in working out the guiding principles of forest policy, in developing education, research and general technique and finally in reporting on local problems submitted to them.

The Commissioners have also been able to assist various parts of the Empire in different ways and in return have received substantial help. In one direction in particular, namely in the provision of tree seeds, they have to thank Canada for important and reliable supplies of Pacific Coast species.

*Consultative Committees.*—Consultative Committees which were established for England, Scotland, Ireland and Wales respectively, in March 1920, have given careful consideration to matters referred to them by the Commissioners, including such questions as grants for planting, taxation of woodlands, railway rates, fire protection and the disposal of thinnings. The Consultative Committee for England held 26 meetings during the ten years; the Scottish Committee met 18, and the Welsh Committee 22 times. The Commissioners desire to express their appreciation of the work of the gentlemen who have been good enough to give their time to this task.

*Statistical Inquiries.*—The position of Great Britain's timber supply and that of the Empire as a whole, has been examined in relation to the forest resources of the countries from which our imports of timber are obtained.

A survey of the woodlands of Great Britain was completed in 1926 with the assistance of landowners, land agents and private organisations who were good enough to furnish the necessary data and without whose help the desired report could not have been compiled. At the request of the Board of Trade a census of the production of home-grown timber was undertaken and was published with the woodlands census in 1928.

*Publications.*—There have been issued during the ten years 11 bulletins, 20 leaflets, some of which have been revised and reprinted, and 10 reports including those dealing with the census of woodlands and the census of production. The Commissioners have also issued publications in connection with the Imperial Forestry Conferences, including a number of papers on technical subjects. A list of the principal publications will be found on page 67.

*Miscellaneous.*—As part of their education policy the Commissioners have prepared forestry exhibits annually for use at the principal agricultural shows.

### **Forest Workers' Holdings.**

Although the desirability of creating small holdings simultaneously with afforestation operations was recognised by the Acland Committee no financial provision was made for them in the estimates for the first decade. Permission to proceed was not obtained until 1924 and the first holdings were established in the forest year ended 30th September, 1925. The main object of the scheme is to provide, under sound living conditions, a body of skilled workers whose interests are closely identified with those of the forest. The scheme therefore makes a contribution towards land settlement on the one hand and towards the working of the forests on the other. Incidentally it makes for the better utilisation of small areas of good land which are frequently found in connection with mountain and heath land and it gives to an industrious man an opportunity to supplement his earning capacity. The main features of the scheme, namely the limitation of the size of holdings to 10 acres and under, the limitation of the numbers to 5 holdings per thousand acres of plantable land and the guarantee to holders of not less than 150 days employment per annum, have been discussed in detail in previous reports. It must suffice here to say with regard to size that forest workers appear to prefer the smaller holdings and that in the majority of cases they look to the forest to provide them with practically full time employment.

Perhaps the best test of the success of the scheme is the fact that vacant holdings are very readily taken up.

It is anticipated that the forest workers' holdings scheme will not return in cash more than 2 per cent. to 3 per cent. on the capital invested in it, and to that extent it is uneconomic. There is no doubt, however, that in the poorer agricultural districts it represents the only available method of arresting the decay of the countryside. In such localities the expenditure of money on afforestation has been chiefly on the wages of workmen; derelict cottages have been reconditioned and new ones have been built. This flow of capital into rural areas has undoubtedly rejuvenated them, in some cases in a spectacular way. Moreover it is a permanent effect since the plantations will absorb more and more labour as they mature.

The total number of holdings established from 1924 to the 30th September, 1929, was 618 and at the latter date 245 were in course of establishment.

### Staff.

Before concluding this brief review of the work of the first decade, the Commissioners desire to place on record their appreciation of the excellent work of their staff, both outdoor and indoor, over the whole period. Ten years ago there was no organised forest service in Great Britain. The problems which the staff had to face were new and unusual in the Civil Service and they had to be faced without forest traditions and experience. At an early stage the numbers of the staff were severely reduced while a little later new duties, in the establishment of forest workers' holdings, were placed upon them without any corresponding increase in strength. The following figures illustrating the numbers of technical and clerical officers in relation to the Commissioners' turnover are perhaps the best tribute which can be paid to the staff :—

Financial Year.	Turnover.	Staff.		
		Technical.	Clerical, etc.	Total.
	£			
1920-21 ...	310,000	68	89	157
1923-24 ...	303,000	32	56	88
1926-27 ...	719,000	55	85	140
1929-30 ...	890,000	70	100	170

## THE SECOND DECADE, 1929-1939.

At the beginning of 1927 the Commissioners having in view the expiration on March 31st 1929 of the financial provisions made under the Forestry Act 1919 raised with Government the general question of Forest Policy. It was suggested that the position might be considered in two stages, namely :—

(1) General Forest Policy.

(2) The Programme for the second decade (being an instalment of Policy) which the country was in a position to undertake.

As regards general Forest Policy the Commissioners contended that in order to ensure a supply of home-grown timber (both softwood and hardwood) adequate for the normal well-being of the nation and for safety in time of national emergency it was necessary to proceed steadily with the afforestation of un-cultivated land and the improvement of existing woodlands. They were able to show from the Census of Woodlands, 1924, that the current position was far from satisfactory and that despite the efforts made by the State since the Commission was established the outlook had become worse.\* There were no indications that reliance might be placed on private effort to remedy the defect but rather the reverse.

The Commissioners suggested as the final objectives of their Forest Policy, those laid down by the Acland Committee, namely the maintenance of the then existing 3,000,000 acres of woodland in a productive state and the addition thereto in the course of 80 years of a further 1,770,000 acres. To this they added, as a measure to assist in the permanent settlement of rural workers on the land, the provision of holdings for the forest workers under sound economic conditions.

The Commissioners also proposed that the State planting programme for the second decade should lie between a minimum of 330,000 acres and a maximum of 550,000 acres. The minimum programme, they considered, would at least make a just contribution towards the 80-year scheme while the maximum was necessary if the devastated woodland areas and the woodlands classed as non-productive in the Census of Woodlands were to be made good within the next half century. They felt also that serious attention should be given to ensuring that felled areas, scrub and coppice were planted either by the owners, if necessary with the aid of grants, or by the State after the exercise, if necessary, of powers of compulsory acquisition.

---

\* See *Report on Census of Woodlands and Census of Production of Home-grown Timber, 1924*, and also the Commissioners' *Seventh Annual Report, 1926*, in which the Census data are reviewed in some detail.

The decision of Government was announced in the House of Commons in July 1928 by the Chancellor of the Exchequer (Mr. Churchill) in the following terms.

“ The Government have undertaken to ask Parliament to vote a total sum of £5,500,000 into the Forestry Fund in agreed annual instalments during the 10 years commencing 1st April, 1929, as compared with the sum of £3,500,000 which has been provided during the last 10 years. In addition, the Forestry Commission will enjoy an increased revenue from forest products of about £1,400,000 in all as compared with £775,000 which is the estimated figure for the first 10 years. These sums will enable the Commission to provide 225,000 acres of new plantations, to devote £1,000,000 to forest workers' holdings, and to make grants for other purposes, including the planting of municipal and private land, and forestry education and research. The Government fully appreciate the importance of proceeding with the agreed policy of forestry development, and of endeavouring to ensure, so far as the national finances permit, that the country shall grow an adequate proportion of its timber requirements. Having regard, however, to the many competing demands on the Exchequer, they regret that the increased provision now proposed is the utmost which the Exchequer can undertake at the present time.”

In June 1929 the Commissioners were invited by the recently formed Inter-departmental Committee on Unemployment to re-submit their proposals paying special attention to the formation of forest holdings in connection with any extended programme of afforestation. This they did and final authority to proceed with the schemes authorised below was received in September of the same year.

### **The Approved Programme.**

*Finance.*— The Lords Commissioners of the Treasury have agreed to ask Parliament to vote, as grants in aid of the Forestry Fund over the ten financial years 1929 to 1938, such sums not exceeding approximately £9,000,000 in the aggregate (including the sum of £500,000 previously voted for 1929) as might be necessary to carry out an afforestation programme amounting to a total of 330,000 acres for the decade and to create 3,000 forest workers' holdings. It is the intention of the Treasury that the sum of £9,000,000 shall cover the total expenditure of the Commissioners on all purposes in the decennium and that should it be found that the afforestation programme of 330,000 acres can be carried out at less than the anticipated cost or that the expenditure on holdings falls short of £1,870,000 (the Commissioners' estimate) the total provision should be reduced accordingly.

In order to arrive at the total amount available for spending in the second decade the receipts from operations must be added to the £9,000,000 new money to be paid by the Exchequer into the Forestry Fund. These receipts are estimated at £2,160,000 for the decade which brings the total estimated to be available for spending up to £11,160,000. The actual estimate of total expenditure for the programme (which includes 23,000 acres of replacements in addition to 330,000 acres of afforestation) was £11,275,000 or £115,000 more than the above total of £11,160,000.

*Forestry Operations.*—The estimated cost for the decade is slightly over £8,000,000. Provision is made for the acquisition of plantable land at a uniform rate of 60,000 acres per annum. The total planting programme is placed at 353,000 acres made up of 330,000 acres of afforestation and 23,000 acres of replacements, that is of replanting existing plantations.

As the second decade had already begun when the larger programme was sanctioned and preparation had been made for the smaller programme only (i.e. for a steady planting programme of 22,500 acres per annum) it was decided not to attempt too great a programme in the early years but having consolidated the existing position in 1929-30 and 1930-31 with a programme of 25,000 acres per annum to embark again on a policy of rapid expansion. The annual planting programme for the decade is as follows :—

*State Forests : Proposed Planting Programme.*

Forest Year.	Area to be planted.		
	To be afforested.	Replacements of existing plantations.	Total.
	Acres.	Acres.	Acres.
1929-30 ...	22,000	3,000	25,000
1930-31 ...	22,000	3,000	25,000
1931-32 ...	25,000	3,000	28,000
1932-33 ...	30,000	2,000	32,000
1933-34 ...	33,000	2,000	35,000
1934-35 ...	36,000	2,000	38,000
1935-36 ...	39,000	2,000	41,000
1936-37 ...	40,000	2,000	42,000
1937-38 ...	41,000	2,000	43,000
1938-39 ...	42,000	2,000	44,000
Total for the Decade.	330,000	23,000	353,000

*Advances for Afforestation Purposes.*—It is proposed to continue the system of planting grants and it is anticipated that between £140,000 and £150,000 may be expended on this work during the decade.

*Education.*—The estimated expenditure is £100,000 and will provide for grants to institutions teaching forestry and for maintaining the existing forest apprentices' schools on a rather larger scale.

*Research.*—Between £90,000 and £100,000 will be required for this service which is steadily expanding.

*Special Services.*—Expenditure is placed at £20,000

*Forest Workers' Holdings.*—It is proposed to establish in all 3,000 holdings at an average cost of approximately £625 or £1,870,000 in all. In deference to the wishes of the Unemployment Committee it is proposed to aim at making 350 holdings in each of the first five years and 250 in each of the second five years of the decade.

### **Private Forestry.**

The Commissioners desire to add to the summary of the State programme for the second decade a few remarks on the outlook in the privately-owned woodlands of the country. The Acland Committee, in allocating the first decade planting programme between State and private enterprise pointed out that if the home production of timber was to be maintained at a given level it would be necessary for the former to increase its efforts by the amount by which those of private owners declined.

The Acland Report was drawn up in 1917-18 at a time when the war and post-war inroads on the woods could not be accurately predicted. The full effects were not ascertainable until the Census of Woodlands, 1924, had been completed and it then appeared that not only had the fellings been far greater than had been anticipated but that the remaining woods were much poorer in character.

It had been hoped that the first decade would witness the planting up of arrears of fellings accumulated during the war and the second, improvement of existing woodlands and a large extension of the area under forest. These expectations are very unlikely to be realised.

The measures which the Commissioners have taken to improve private forestry consist of the provision of grants for planting, technical advice as to the conduct of operations and educational facilities, the conduct of research and the dissemination of information. These activities are noted elsewhere in this Report but it is sufficient to state here that they have not been successful in arresting the deterioration of the home woodlands in private ownership much less in restoring the pre-war position. It would appear that the principal causes lie deep in the national economic position and are not easily remediable. Landowners



financially are better able to plant when agriculture is prosperous; the woods may be the only estate asset which is really saleable when money is needed for current purposes or to meet emergencies such as Death Duties.

This state of affairs is thoroughly unsatisfactory as derelict forest land is frequently better suited than bare heath or mountain land for timber production and moreover its planting entails no disturbance of existing land utilisation. There are three main lines of action to which recourse is possible :—

(1) State assistance. The Commissioners have remitted to their Consultative Committees the question of what further steps might reasonably be taken.

(2) Restrictions on the user of woodlands, such as State permission to fell or compulsory replanting. This is a form of pressure which the State has hesitated to apply to any other form of private property.

(3) Acquisition and replanting by the State of felled and derelict woodland. This procedure has already been applied by the Commissioners but purely on a voluntary basis.

In reviewing the whole situation with regard to private forestry the Commissioners have come to the conclusion that while they do not suggest any immediate changes it may become necessary in due course to ask Parliament for additional powers.

---

## OPERATIONS—FOREST YEAR 1928-1929.

### Finance.

The balance remaining in the Forestry Fund at 30th September, 1928, was £384,259. Payments into the Fund amounted to £645,354, and out of the Fund to £680,147. The balance at the end of the year was consequently £349,466.

### Land Acquisition.

Acquisition during the year amounted to 56,699 acres, of which 35,488 acres were classified as plantable. Disposals amounted to 8,767 acres (1,171 acres plantable), thus reducing the net acquisition of plantable land to 34,317 acres. Net acquisitions to the end of the forest year 1929 are compared in the table on page 11.

### Planting Programme.

#### (A) STATE FORESTS.

*Conifers.*—The area planted during the year was 20,680 acres, compared with 30,000 acres under the Acland programme.

*Broadleaved Species.*—The area planted during the year was 1,792 acres.

#### (B) ASSISTANCE TO LOCAL AUTHORITIES AND PRIVATE OWNERS.

6,419 acres were planted and 292 acres cleared of scrub by means of grants during the year, while 229 acres were planted in connection with a proceeds-sharing scheme initiated by the Development Commissioners.

### The Forestry Fund.

The position of the Forestry Fund at September 30th, 1929, and at the same date in previous years is shown in Table I.

*Table I.—Forestry Fund Account.*

Year ending 30th September.	Balance from preceding Year.	Receipts.				Payments.	Balance remaining in the Fund 30th September.
		For Forestry Fund Proper.		For Relief of Unemployment.	Total.		
		Parliamentary Votes.	Other (Table II. Head Z.)	Parliamentary Votes.		Table II. Heads A. to L.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
	£	£	£	£	£	£	£
1920	Nil.	478,000	12,229	—	490,229	106,858	383,371
1921	383,371	200,000	29,149	—	229,149	318,768	293,752
1922	293,752	20,000	24,544	250,000	294,544	398,431	189,865
1923	189,865	153,000	40,736	100,000	293,736	271,615	211,986
1924	211,986	453,000	85,942	80,000	618,942	332,748	498,180
1925	498,180	300,000	121,933	—	421,933	517,452	402,661
1926	402,661	335,000	122,341	—	457,341	608,066	251,936
1927	251,936	645,400	127,764	—	773,164	618,997	406,103
1928	406,103	485,600	141,492	—	627,092	648,936	384,259
1929	384,259	500,000	145,354	—	645,354	680,147	349,466
Total	—	3,570,000	851,484	430,000	4,851,484	4,502,018	—

Receipts and payments by Parliamentary Heads of Accounts are shown in Table II. Total payments rose from £648,936 to £680,147, an increase of £31,211. The main increases were on Forestry Operations by £12,578 to £501,217 and Forest Workers' Holdings by £11,499 to £76,225. Receipts rose from £141,492 to £145,354, and net payments were therefore £27,349 greater than in the previous year. The balances remaining in the Fund at September 30th are large because the Forest Year closes in the middle of the Financial Year.

Table II.—Payments and Receipts by Parliamentary Heads of Account.

Year ending 30th September.	A. Salaries, Wages and Allowances.	B. Headquarters Charges.	C. Assistant Commissioners' Charges.	D. Divisional Officers' Charges.	E. Forestry Operations.	F. Advances for Afforestation Purposes.	G. Education.	H. Research and Experiment.	J. Agency and Advisory Services.	K. Special Services.	L. Forest Workers' Holdings.	Total Pay- ments.	Z. Re- ceipts.	Net Pay- ments.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	£	£	£	£	£	£	£	£	£	£	£	£	£	£
1920...	25,156	577	1,825	4,829	66,560	—	4,547	1,538	1,577	259	—	106,858	12,229	94,629
1921...	71,925	1,256	3,880	10,207	208,630	352	9,222	3,340	9,557	399	—	318,768	29,149	289,619
1922...	51,459	4,454	5,242	7,614	201,139	51,050	10,386	2,686	63,395	1,006	—	398,431	24,544	373,887
1923...	38,050	2,137	2,439	4,722	156,965	30,790	8,717	2,308	15,151	10,336	—	271,615	40,736	230,879
1924...	37,685	1,847	1,512	5,287	224,438	45,247	4,830	2,810	2,096	1,960	5,036	332,748	85,942	246,806
1925...	49,191	2,315	2,770	7,643	369,281	31,166	7,460	2,601	—	2,850	42,175	517,452	121,933	395,519
1926...	51,769	2,097	2,864	8,685	451,124	12,012	8,192	3,981	—	3,403	63,939	608,066	122,341	485,725
1927...	53,836	2,934	3,108	8,455	450,854	14,024	7,525	4,424	—	483	73,354	618,997	127,764	491,233
1928...	56,190	2,256	3,500	8,107	488,639	10,776	7,594	5,872	—	1,276	64,726	648,936	141,492	507,444
1929...	58,894	2,803	3,446	8,885	501,217	12,407	7,531	7,367	—	1,370	76,225	680,147	145,354	534,793
Total	494,157	22,676	30,584	74,434	3,118,837	207,824	76,004	36,927	91,776	23,342	325,455	4,502,018	851,484	3,650,534

The working results for 1929 and previous years are shown in Table IIa, in which all salaries, wages, allowances and similar charges which have to be kept separate for Parliamentary purposes are allocated to the appropriate objects of expenditure. Income and expenditure for each year are brought to account whether or not they have been received and paid respectively. This table is the basis of those appearing later in the Report and differs from Table II, which shows cash transactions only. Further differences, apart from the allocation of salaries, etc., referred to above, are due to adjustments in respect of produce used for forest purposes and of land and buildings transferred from the forests to workers' holdings.

Table IIa.—Expenditure and Income Classified by Objects.

Year ending 30th Septem- ber.	Expenditure.										Income.						Net Expenditure Col. (11) less Col. (19).						
	Sub-heads A. to D., i.e. Superior Super- vision and Overhead Charges.			E. Forestry Opera- tions. (4)	F. Advances for Afforestation Purposes. (5)	G. Education. (6)	H. Research and Experiment. (7)	J. Agency and Ad- visory Services. (8)	K. Special Services. (9)	L. Forest Workers' Holdings. (10)	(11) Total Cols. (3) to (10) Inclusive. (11)	Z.1 Forestry Opera- tions. (12)	Z.2 Education. (13)	Z.3 Agency and Ad- visory Services. (14)	Z.4 Research and Experiment. (15)	Z.5 Forest Workers' Holdings. (16)		Advances for Purposes. (17)	Z.6 Special Services. (18)	(18) Total Cols. (12) to (18) Inclusive. (18)	(20)		
	Total.	Sub-heads B. to L.	Capital (Un- allocated).																			(1)	(2)
1920	86,990	85,170	1,820	334,148	1,373	21,544	15,472	7,809	5,401	—	387,567	37,337	199	688	—	—	—	—	—	—	38,224	349,343	
1921	53,384	51,868	1,516	229,644	60,426	12,357	6,646	60,658	13,495	—	384,742	30,899	1,396	547	—	—	411	252	—	—	34,172	360,570	
1922	44,342	44,286	56	181,099	37,505	11,792	5,125	18,148	6,937	—	260,552	33,607	1,510	36	10	—	89	12	—	—	35,264	225,288	
1923	36,634	36,426	208	247,037	47,147	8,243	7,139	3,785	10,253	5,901	329,713	90,698	324	13	9	8	64	11	—	—	91,130	238,583	
1924	57,207	57,453	—246	406,156	34,399	9,953	6,411	1,962	8,192	56,538	523,365	131,439	468	135	43	1,257	201	36	—	—	136,579	386,786	
1925	61,998	61,805	193	493,323	14,330	10,608	7,432	2,001	4,399	75,820	608,726	122,846	29	600	110	3,374	—	—	—	—	—	126,959	481,767
1926	61,929	63,178	—249	504,099	16,893	9,513	8,342	1,544	3,161	82,556	625,719	137,415	107	218	93	6,074	—	—	—	—	143,107	481,892	
1927	67,605	68,239	—734	537,366	13,522	9,437	10,786	1,661	5,807	95,976	673,821	156,042	9	64	93	8,216	—	—	—	—	19	164,443	609,378
1928	68,977	68,423	554	51,100	2,693	1,042	1,26	1,317	2,284	8,951	68,977	—	—	—	—	—	—	—	—	—	—	68,977	
1929	Direct	—	—	526,167	12,712	8,342	11,086	—	1,357	64,184	623,848	172,445	9	38	133	8,694	—	—	—	—	14	181,333	442,516
Total, 1929	68,977	68,423	554	577,267	15,315	9,384	12,212	1,317	3,641	73,135	692,625	172,445	9	38	133	8,694	—	—	—	—	14	181,333	511,492
Total:																							
Great Britain	541,966	538,848	3,118	3,510,139	241,470	102,831	79,565	98,885	61,176	389,926	4,487,110	915,828	4,051	2,339	1,058	27,623	765	347	—	—	952,011	3,585,099	
Percentage...	—	—	0.1	78.2	5.4	2.3	1.8	2.2	1.3	8.7	100	96.2	0.4	0.2	0.1	2.9	0.1	0.1	—	—	100	—	
Ireland	27,262	26,479	783	18,674	—	2,877	—	57,966	10,215	—	90,514	690	80	25,245	—	—	—	26	—	—	26,041	64,473	
Grand Total...	569,228	565,327	3,901	3,528,813	241,470	105,708	79,565	156,850	71,391	389,926	4,577,624	916,518	4,131	27,584	1,058	27,623	765	373	—	—	978,052	3,559,572	

Note.—Salaries of Instructors in Forest Apprentices' Schools and of Research and Experiment Officers are shown under Salaries, Wages, etc. (A.) in Table II, but under Education (G.) and Research (H.) in the above Table.

**Sub-heads A to D, General Organisation : Expenditure : £68,977.**

There is an increase in expenditure over 1928 of £1,472 due to normal expansion. During the year the number of District Officers increased from 33 to 36.

**Sub-head E, Forestry Operations : Expenditure, £577,267 ;  
Income, £172,445.**

Details of expenditure and income are given in Table E below. Compared with 1928, gross expenditure increased by £39,901 and receipts by £16,403. Acquisition of land cost £52,571 more at £149,781, but expenditure on cultural operations and on stores and miscellaneous decreased by £10,664 to £236,567 and £9,951 to £68,475 respectively.

*Overhead Charges*, £23,475 ; *Superior Supervision*, £27,625, and *Local Supervision*, £33,587.—The first of these is an apportioned sum representing the expenditure on all salaries, allowances and office charges other than those of Divisional Officers, District Officers, Deputy Surveyors and their Assistants (all of which are included under superior supervision), and foresters and foremen (included under local supervision). During the year the number of foresters and foremen was increased by 26 from 209 to 235.

Table E.—Analysis of Forestry Operations.

Year ending 30th September.	Expenditure. (Table IIa. Col. (4).)							Income. (Table IIa. Col. (12).)							
	(1) Overhead Charges.	(2) Superior Supervision.	(3) Local Supervision.	(4) Acquisition of Land, etc.	(5) Cultural Operations.	(6) Preparation and Sale of Produce.	(7) Roads and Buildings.	(8) Stores and Miscellaneous.	(9) Total.	(10) Sales of Land, Buildings, etc.	(11) Rents.	(12) Forest Produce.	(13) Other.	(14) Total.	(15) Net Expenditure.
1920	38,454	28,227	1,286	40,393	19,611	357	1,472	2,432	334,148	300	154	9,272	153	9,879	296,811
1921			5,093	85,803	85,638	1,680	7,986	15,766		—	5,059	20,444	1,955	27,458	
1922	16,371	17,639	9,816	17,191	129,414	3,918	4,779	30,516	229,644	540	6,474	7,283	16,702	30,999	198,645
1923	18,496	12,709	10,552	27,768	82,359	4,287	5,049	19,879	181,099	900	5,951	16,902	9,854	33,607	147,492
1924	9,525	16,447	14,352	49,418	114,356	9,217	7,318	26,404	247,037	10,839	25,284	42,852	11,743	90,698	156,339
1925	18,783	24,046	18,433	101,471	164,125	15,684	18,485	45,129	406,156	23,626	39,367	55,055	16,391	134,439	271,717
1926	20,778	24,444	24,224	118,607	200,889	16,576	17,954	69,851	493,323	16,398	42,086	44,664	19,698	122,846	370,477
1927	23,059	24,133	27,430	99,867	230,543	23,543	20,813	54,711	504,099	3,467	45,483	74,047	14,418	137,415	366,684
1928	22,839	24,787	29,407	97,210	247,231	22,649	14,817	78,426	537,366	15,576	49,116	74,841	16,509	156,042	381,324
1929	23,475	27,625	33,587	149,781	236,567	20,942	16,815	68,475	577,267	7,222	55,137	94,436	15,650	172,445	404,822
Total	191,780	200,057	174,130	787,509	1,510,733	118,853	115,488	411,589	3,510,139	78,868	274,091	439,796	123,073	915,828	2,594,311
Percent- age	5.5	5.7	5.0	22.4	43.0	3.4	3.3	11.7	100	8.6	30.0	43.0	13.4	100	

Note.—The figures relating to Ireland (during 1920-23) are omitted.

*Acquisition of Land, Buildings and Standing Timber: Expenditure, £149,781.*—During the year £130,673 was paid in respect of purchases of land, including the standing timber and buildings thereon, and £19,108 in respect of land held on long lease or feu.

The average rent or feu duty for land acquired for forestry operations during the year by lease or feu is approximately 2s. per acre and the average price for the land purchased, approximately £2 per acre, or if the whole be charged against plantable land only, 2s. 8d. and £3 3s. respectively. Land and buildings for forest workers' holdings are excluded.

*Land acquired from 29th November, 1919, to 30th September, 1929.*

	By Lease and Feu.			By Purchase.			Total by Lease, Feu and Purchase.
	Plantable (including planted).	Other Land.	Total.	Plantable (including planted).	Other Land.	Total.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>England and Wales—</i>							
Finally completed ...	91,123	10,166	101,289	86,722	17,369	104,091	205,380
Entry secured ...	2,065	114	2,179	—	—	—	2,179
Total ...	93,188	10,280	103,468	86,722	17,369	104,091	207,559
<i>Scotland—</i>							
Finally completed ...	61,771	58,134	119,905	66,749	80,350	147,099	267,004
Entry secured ...	1,800	6,040	7,840	—	—	—	7,840
Total ...	63,571	64,174	127,745	66,749	80,350	147,099	274,844
Total, Great Britain	156,759	74,454	231,213	153,471	97,719	251,190	482,403
<i>Ireland (to 31st March, 1922)...</i>	2,287	532	2,819	2,579	795	3,374	6,193
Grand Total ...	159,046	74,986	234,032	156,050	98,514	254,564	488,596

*Note.*—The Forestry (Transfer of Woods) Orders 1924 to 1926 transferred to the Forestry Commissioners the bulk of the Crown Woodlands. The area so transferred, additional to the total area acquired by lease, feu and purchase, viz. 482,403 acres, amounts to approximately 120,000 acres of which 62,554 acres are carrying timber or are under forestal treatment.

The total area acquired during the forest year 1928-29 amounted to 56,699 acres, of which 35,488 acres were classified as plantable. On the other hand disposals amounted to 8,767 acres (1,171 acres plantable).

The area in Great Britain in respect of which the legal formalities of acquisition by the Department had been completed by 30th September, 1929, was 472,384 acres, the corresponding figures in the two previous annual reports being 416,199 and 331,177 acres. In addition to these completed acquisitions,

entry has been secured to a number of other properties. Details are given in the above table, which also shows the area of "plantable" and "other land," i.e., land which is either too poor to plant or is required for other purposes.

The net total area acquired in Great Britain to 30th September, 1929, is 482,403 acres, of which 310,230 acres were classified at the time of acquisition as plantable. Of the plantable area, 179,910 acres (58 per cent.) are situated in England and Wales and 130,320 acres (42 per cent.) in Scotland.

*Cultural Operations: Expenditure, £236,567.*—Expenditure on cultural operations relates to plantations and nurseries, of which the former absorbed £175,093 and the latter £61,474. An analysis of expenditure is given in Table E.5.

*Plantations.*—The total area planted or sown during the year was 22,472 acres, of which 20,680 acres were placed under conifers and 1,792 acres under broadleaved species.

The total addition to the woodland area of Great Britain was 16,562 acres, the remaining plantations being on the site of felled woodlands. In making these plantations and in beating-up the previous years' plantations 49,468,000 trees were planted, of which 43 per cent. were Scots and Corsican pines, 27 per cent. Norway and Sitka spruces, 14 per cent. European and Japanese larches and 7 per cent. Douglas fir.



Table E.5.—Analysis of Cultural Operations (Table E, Column (5)).

Year ending 30th Sept.	PLANTATIONS.							NURSERIES.				Grand Total.	
	Prepara- tion of Ground.	Drain- age.	Fencing.	Plant- ing.	Weed- ing and Clean- ing.	Beating up.	Forest Pro- tection.	Total.	New Works.	Uptkeep.			
										Seed.	Labour and Other.		Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
1920	£ 3,375	£ 843	£ 3,279	£ 3,561	£ 705	£ —	£ 183	£ 11,946	£ 1,090	£ 1,127	£ 5,448	£ 7,665	£ 19,611
1921	10,781	1,794	12,550	27,310	1,860	665	2,342	57,302	3,731	5,297	19,308	28,336	85,638
1922	17,741	4,352	12,231	24,137	3,070	3,767	2,869	68,167	3,848	8,253	49,146	61,247	129,414
1923	11,550	4,065	10,577	12,622	6,423	2,135	3,385	50,757	1,050	2,739	27,813	31,602	82,359
1924	12,804	4,361	14,448	13,901	15,089	5,897	6,334	72,834	999	5,665	34,858	41,522	114,356
1925	16,920	10,515	20,311	22,615	22,620	9,526	9,152	111,659	2,955	3,173	46,338	52,466	164,125
1926	18,052	9,125	26,684	28,621	28,262	13,071	13,527	137,342	4,309	6,170	53,068	63,547	200,889
1927	19,522	12,496	36,354	35,928	34,528	9,310	17,744	165,882	3,598	7,367	53,696	64,661	230,543
1928	20,864	15,033	35,403	38,442	37,935	13,867	16,934	178,478	2,535	4,253	61,965	68,753	247,231
1929	20,341	18,563	32,621	36,076	33,007	11,134	23,351	175,093	1,189	4,062	56,223	61,474	236,567
Total	151,950	81,147	204,458	243,213	183,499	69,372	95,821	1,029,460	25,304	48,106	407,863	481,273	1,510,733
Percentage	10.1	5.4	13.5	16.1	12.1	4.6	6.3	68.1	1.7	3.2	27.0	31.9	100

Note.—The figures relating to Ireland (during 1920-23) are omitted.

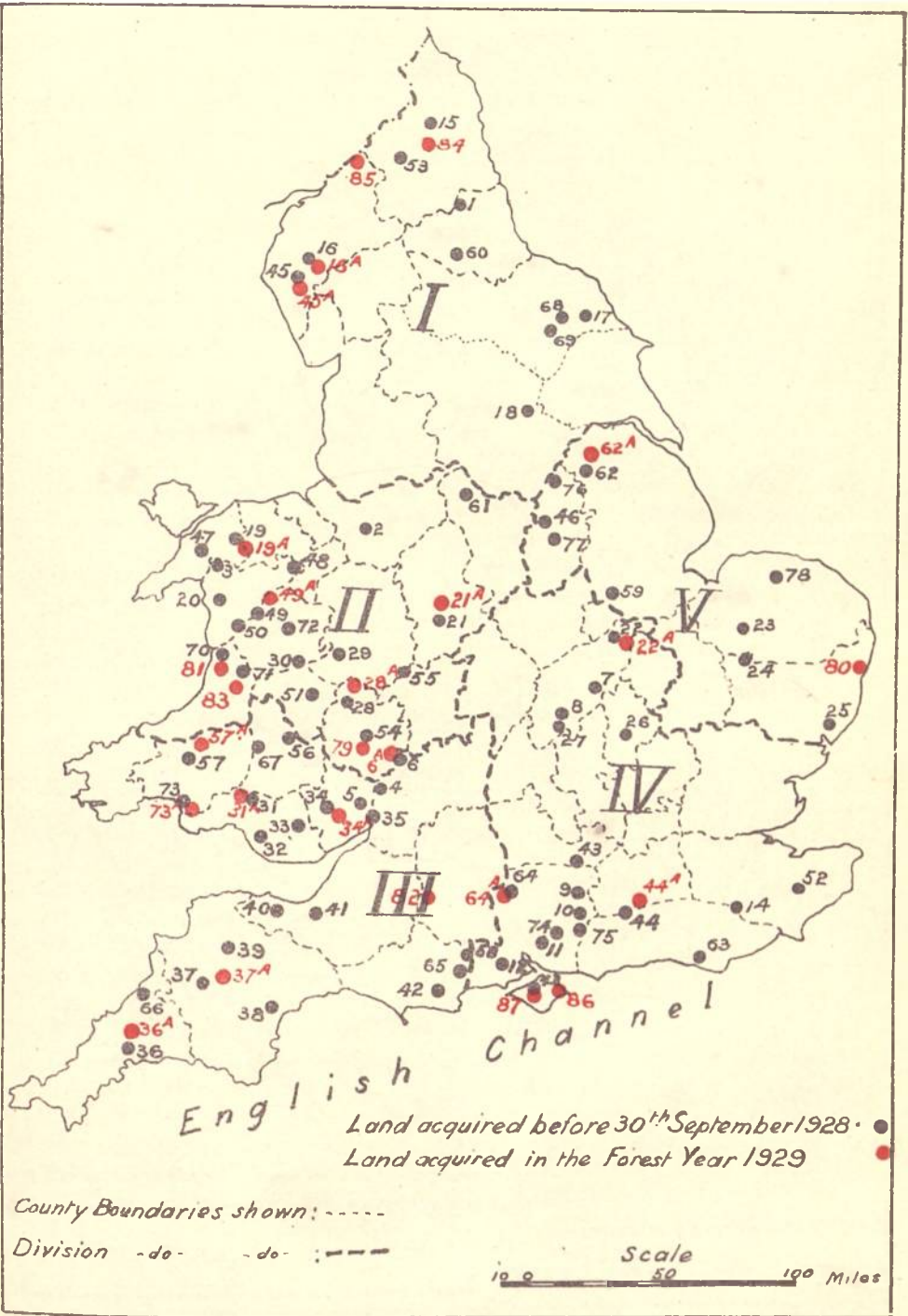
## ENGLAND AND WALES.

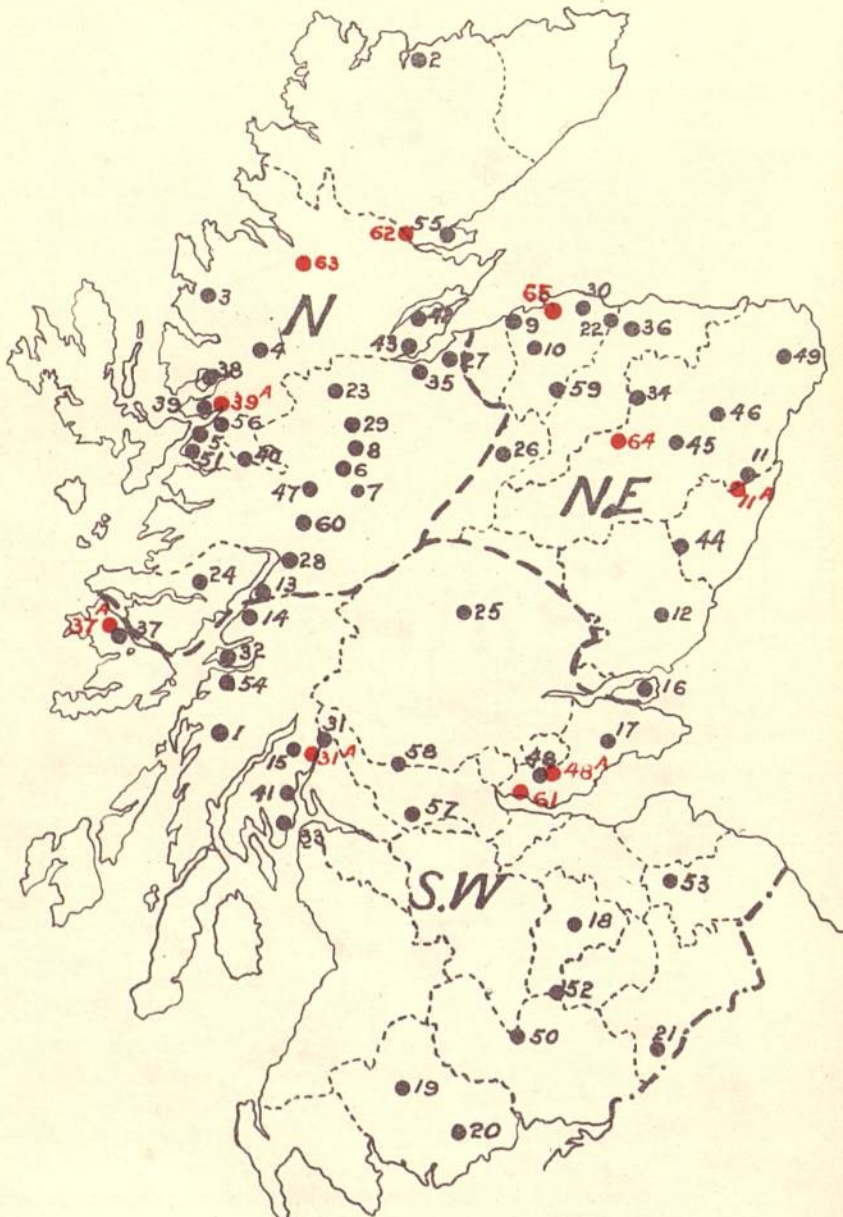
## FORESTRY COMMISSION AREAS.

1. Chopwell.*	36. Bodmin.
2. Delamere.*	36A. Do. (addition to).
3. Hafod Fawr.*	37. Halwill.
4. Dean Forest.*	37A. Do. (addition to).
5. Tintern.*	38. Haldon.
6. Dymock.*	39. Eggesford.
6A. Do. (addition to).	40. Exmoor.
7. Salcey.*	41. Quantocks.
8. Hazelborough.*	42. Wareham.
9. Alice Holt.*	43. Bramshill.
10. Woolmer.*	44. Chiddingfold.
11. Bere.*	44A. Do. (addition to).
12. New Forest.*	45. Ennerdale.
13. Parkhurst.*	45A. Do. (addition to).
14. Bedgebury.*	46. Clipstone.
15. Rothbury.	47. Beddgelert.
16. Thornthwaite.	48. Cynwyd.
16A. Do. (addition to).	49. Dovey.
17. Allerston.	49A. Do. (addition to).
18. Selby.	50. Corris Valley.
19. Gwydyr.	51. Radnor.
19A. Do. (addition to).	52. Lyminge.
20. Vaughan.	53. North Tyne Valley.
21. Cannock Chase.	54. Haugh.
21A. Do. (addition to).	55. Wyre.
22. Rockingham.	56. Brecon.
22A. Do. (addition to).	57. Glangwili.
23. Swaffham.	57A. Do. (addition to).
24. Thetford Chase.	58. Ringwood.
25. Rendlesham.	59. Bourne.
26. Ampthill.	60. Hamsterley.
27. Brackley.	61. Hope.
28. Mortimer.	62. Laughton.
28A. Do. (addition to).	62A. Do. (addition to).
29. Walcot.	63. Friston.
30. Kerry.	64. Micheldever.
31. Rheola.	64A. Do. (addition to).
31A. Do. (addition to).	65. Ferndown.
32. Margam.	66. Wilsey Down.
33. Llantrisant.	67. Glasfynydd.
34. Llanover.	68. Rosedale.
34A. Do. (addition to).	69. Ampleforth.
35. Chepstow.	70. Cwmeinion.

\* Former Crown Wood.

[Continued on p. 41.]





Land acquired before 30<sup>th</sup> September 1928 ●

Land acquired in the Forest Year 1929 ●

County Boundaries shown: - - - - -

Division - do. - do. - do. - do. -

Scale

10 0 50 100

71. Tarenig.	79. Chase.
72. Mathrafel.	80. Dunwich.
73. Pembrey.	81. Brynnawr.
73A. Do. (addition to).	82. Bruton.
74. Westbury.	83. Myherin.
75. Buriton.	84. Harwood.
76. Bawtry.	85. Kershope.
77. Sherwood.	86. Combley.
78. Swanton.	87. Brighstone.

## SCOTLAND.

### FORESTRY COMMISSION AREAS.

1. Inverliever.*	34. The Bin.
2. Borgie.	35. Craig Phadrig.
3. Slattadale.	36. Ordiequeish.
4. Achnashellach.	37. Salen.
5. Ratagan.	37A. Do. (addition to).
6. Inchnacardoch.	38. North Strome.
7. South Laggan.	39. South Strome.
8. Port Clair.	39A. Do. (addition to).
9. Culbin.	40. Glenshiel.
10. Monaughty.	41. Glenfinart.
11. Kirkhill.	42. Findon.
11A. Do. (addition to).	43. Kessock.
12. Montreathmont.	44. Drumtochty.
13. Glen Righ.	45. Midmar.
14. Glenduror.	46. Kennay.
15. Glenbranter.	47. Glengarry.
16. Tentsmuir.	48. Blairadam.
17. Edensmuir.	48A. Do. (addition to).
18. Glentress.	49. Deer.
19. Bennan.	50. Closeburn.
20. Dalbeattie.	51. Eilanreach.
21. Newcastleton.	52. Greskine.
22. Teindland.	53. Edgarhope.
23. Glenurquhart.	54. Fearnoch.
24. Glenhurich.	55. Dornoch.
25. Drummond Hill.	56. Inverinate.
26. Glenmore.	57. Lennox Castle.
27. Culloden.	58. Loch Ard.
28. Nevis.	59. Scootmore.
29. Craig-nan-Eun.	60. Clunes.
30. Altonside.	61. Devilla.
31. Ardgartan.	62. Balblair.
31A. Do. (addition to).	63. Lael.
32. Barcaldine.	64. Clashindarroch.
33. Benmore.	65. Roseisle.

\* Former Crown Wood.

## Plantations. Year ended 30th

Forest.	Area planted (acres).					
	Afforested.		Re-afforested.		Total.	
	Coni- fers.	Broad- leaved.	Coni- fers.	Broad- leaved.	Coni- fers.	Broad- leaved.
Alice Holt, Hants* ...	—	—	33	—	33	—
Allerston, Yorks ...	412	11	—	—	412	11
Ampleforth, Yorks ...	138	10	—	—	138	10
Amptill, Bedford ...	8	12	—	—	8	12
Bawtry, Notts ...	123	9	—	—	123	9
Beddgelert, Carnarvon ...	5	—	88	—	93	—
Bedgebury, Kent and Sussex*	—	—	221	16	221	16
Bere, Hants* ...	—	—	2	17	2	17
Bodmin, Cornwall ...	—	—	32	—	32	—
Bourne, Lincoln ...	—	—	30	53	30	53
Brackley, Bucks and Northants	—	—	—	32	—	32
Bramshill, Berks and Hants	325	—	—	—	325	—
Brecon, Brecknock ...	110	—	—	—	110	—
Brightstone, Isle of Wight	102	—	—	—	102	—
Buriton, Hants ...	—	207	—	—	—	207
Cannock Chase, Stafford ...	105	—	—	—	105	—
Chepstow, Glos. and Mon- mouth	60	—	99	—	159	—
Chiddingfold, Surrey ...	—	—	51	72	51	72
Chopwell, Durham* ...	—	—	—	—	—	—
Clipstone, Nottingham ...	322	62	206	12	528	74
Corris Valley, Merioneth ...	112	—	45	—	157	—
Cwmeion, Cardigan ...	50	—	—	—	50	—
Cynwyd, Merioneth ...	176	—	27	—	203	—
Dean Forest, Glos., Here- ford, and Monmouth*	—	—	88	169	88	169
Delamere, Cheshire* ...	—	—	32	10	32	10
Dovey, Merioneth and Montgomery	430	—	43	—	473	—
Dunwich, Suffolk ...	123	—	—	—	123	—
Dymock, Gloucester <sup>c</sup> ...	—	—	119	64	119	64
Eggesford, Devon ...	—	—	45	—	45	—
Ennerdale, Cumberland ...	162	—	—	—	162	—
Exmoor, Somerset... ...	43	—	87	—	130	—
Ferndown, Dorset ...	40	—	116	—	156	—
Friston, Sussex ...	17	64	—	—	17	64
Glangwili, Carmarthen ...	175	—	79	—	254	—
Glasfynydd, Brecknock ...	229	—	—	—	229	—
Gwydyr, Carnarvon ...	227	—	151	—	378	—
Hafod Fawr, Merioneth*... ..	—	—	—	—	—	—
Haldon, Devon ...	175	—	75	—	250	—
Halwill, Devon ...	105	—	9	—	114	—
Hamsterley, Durham ...	318	13	—	—	318	13
Haugh, Hereford ...	—	—	43	8	43	8
Hazelborough, Northants*	—	—	—	4	—	4
Hope, Derby ...	100	—	—	—	100	—
Kerry, Montgomery ...	50	—	52	—	102	—
Loughton, Lincoln ...	214	20	—	—	214	20
Llanover, Monmouth ...	104	—	45	—	149	—

September, 1929—England and Wales.

Species planted, including beating up (thousands).									Forest.
Scots and Corsican Pines.	Eur. and Jap. Larches.	Douglas Fir.	Norway and Sitka Spruces.	Oak.	Ash.	Beech.	Others.	Total.	
33	14	8	9	19	—	1	4	88	Alice Holt.*
619	205	39	50	—	3	154	3	1,073	Allerston.
99	115	—	20	—	—	53	—	287	Ampleforth.
14	—	—	—	44	—	—	—	58	Amptbill.
228	13	—	7	—	16	—	—	264	Bawtry.
3	31	—	131	—	—	—	—	165	Beddgelert.
100	21	160	94	32	—	—	3	410	Bedgebury.*
—	23	—	—	60	—	—	—	83	Bere.*
11	21	21	8	—	—	1	—	62	Bodmin.
—	44	14	24	—	73	—	—	155	Bourne.
—	—	—	14	—	—	—	9	23	Brackley.
340	4	74	129	—	—	—	—	547	Bramshill.
82	65	30	123	—	—	—	—	300	Brecon.
182	2	—	—	—	—	12	—	196	Brightstone.
—	256	—	—	—	—	248	—	504	Burton.
89	129	—	18	—	—	23	5	264	Cannock Chase.
66	121	62	22	—	13	—	19	303	Chepstow.
17	8	38	75	211	32	—	2	383	Chiddingfold.
1	4	11	5	—	—	—	—	21	Chopwell.*
1,400	307	—	—	167	—	—	87	1,961	Clipstone.
1	69	71	111	—	—	—	11	263	Corris Valley.
6	39	—	50	—	—	—	—	95	Cwmeion.
30	80	28	207	—	—	—	1	346	Cynwyd.
67	110	34	128	179	68	90	47	723	Dean Forest.*
68	46	1	1	—	—	—	4	120	Delamere.*
22	210	127	519	—	—	—	—	878	Duvey.
259	—	—	—	—	—	—	—	259	Duuwich.
—	158	—	12	118	16	—	—	304	Dymock.*
1	2	55	—	—	—	—	—	58	Eggesford.
25	—	58	214	—	—	1	—	298	Ennerdale.
30	47	75	67	—	—	—	—	219	Exmoor.
223	2	2	38	—	—	—	—	265	Ferndown.
65	59	—	—	—	—	70	20	214	Friston.
96	72	111	107	—	—	—	—	386	Glangwili.
—	1	—	414	—	—	—	—	415	Glasfynydd.
143	316	122	227	—	—	5	9	822	Gwydyr.
—	—	—	15	—	—	—	—	15	Hafod Fawr.*
240	—	193	—	—	—	—	—	433	Haldon.
74	49	21	149	—	—	—	1	294	Halwill.
137	201	15	109	—	—	81	22	565	Hamsterley.
—	61	3	—	38	1	—	—	103	Haugh.
—	3	—	—	4	—	—	—	7	Hazel-borough.*
34	38	—	88	—	—	29	—	189	Hope.
25	21	14	193	—	—	—	2	255	Kerry.
423	18	—	71	—	—	—	14	526	Laughton.
235	115	—	48	—	—	—	—	398	Llanover.

## Plantations. Year ended 30th

Forest.	Area planted (acres).					
	Afforested.		Re-afforested.		Total.	
	Coni- fers.	Broad- leaved.	Coni- fers.	Broad- leaved.	Coni- fers.	Broad- leaved.
Llantrisant, Glamorgan ...	67	—	77	—	144	—
Lyminge, Kent ...	—	—	85	15	85	15
Margam, Glamorgan ...	30	—	—	—	30	—
Mathrafel, Montgomery ...	—	—	85	6	85	6
Micheldever, Hants ...	—	134	3	64	3	198
Mortimer, Hereford, Radnor and Salop	168	—	349	6	517	6
New Forest, Hants* ...	—	—	242	80	242	80
North Tyne Valley, Northumberland.	122	—	—	—	122	—
Parkhurst, Isle of Wight*	—	—	1	25	1	25
Pembrey, Carmarthen ...	87	—	—	—	87	—
Quantocks, Somerset ...	3	—	139	—	142	—
Radnor, Radnor ...	192	—	10	—	202	—
Rendlesham, Suffolk ...	81	—	20	—	101	—
Rheola, Glamorgan ...	46	—	146	—	192	—
Ringwood, Hants ...	201	—	13	—	214	—
Rockingham, Northants ...	22	53	93	151	115	204
Rosedale, Yorks ...	213	—	—	—	213	—
Rothbury, Northumberland	—	—	—	—	—	—
Salcey, Bucks and Northants*	—	—	—	5	—	5
Selby, Yorks ...	—	—	—	—	—	—
Sherwood, Notts ...	444	19	—	—	444	19
Swaffham, Norfolk ...	258	14	5	101	263	115
Swanton, Norfolk ...	12	—	57	—	69	—
Tarenig, Cardigan and Montgomery	103	—	—	—	103	—
Thetford Chase, Norfolk and Suffolk	1,658	118	613	17	2,271	135
Thornthwaite, Cumberland	238	9	—	—	238	9
Tintern, Monmouth*	—	—	28	45	28	45
Vaughan, Merioneth ...	251	—	—	—	251	—
Walcot, Salop ...	—	—	26	—	26	—
Wareham, Dorset ...	208	—	—	—	208	—
Weasbury, Hants ...	—	26	—	—	—	26
Wilsey Down, Cornwall ...	85	—	—	—	85	—
Wyre, Worcester ...	—	—	169	—	169	—
Total ...	9,049	781	3,979	972	13,028	1,753
By direct sowing (included above)	149	—	—	53	149	53

\* Former Crown Wood.



September, 1929—England and Wales—contd.

Species planted, including beating up (thousands).									Forest.
Scots and Corsican Pines.	Eur. and Jap. Larches.	Douglas Fir.	Norway and Sitka Spruces.	Oak.	Ash.	Beech.	Others	Total.	
5	46	96	85	—	—	—	—	232	Llantrisant.
—	96	38	—	—	—	—	3	137	Lyminge.
19	66	—	36	—	—	—	—	121	Margam.
—	74	27	20	—	10	—	—	131	Mathrafel.
—	186	—	6	89	5	138	—	424	Micheldever.
77	648	16	59	—	5	—	—	805	Mortimer.
393	161	84	191	164	—	194	10	1,197	New Forest.*
70	1	—	168	—	—	—	11	250	North Tyno Valley.
—	4	17	1	24	8	4	15	73	Parkhurst.*
173	—	—	2	—	—	—	3	178	Pembrey.
1	82	76	21	—	—	—	—	180	Quantocks.
66	175	45	129	—	—	10	2	427	Radnor.
601	—	—	—	1	—	1	3	606	Rendlesham.
35	156	5	211	—	—	—	3	410	Rheila.
315	—	37	14	—	—	—	—	366	Ringwood.
3	41	4	189	172	150	—	14	573	Rockingham.
1	—	67	212	—	—	14	—	294	Rosedale.
105	6	16	9	—	—	—	4	140	Rotbury.
—	—	—	—	21	—	—	—	21	Salcey.*
53	1	—	4	—	—	—	—	58	Selby.
792	—	—	—	—	—	—	23	815	Sherwood.
1,376	—	54	—	40	—	2	—	1,472	Swaffham.
—	—	56	27	—	—	—	—	83	Swanton.
—	51	—	124	—	—	—	3	178	Tarenig.
6,961	254	124	—	166	—	138	58	7,701	Thetford Chase.
66	94	77	306	1	—	19	11	574	Thornthwaite.
32	18	89	3	137	5	1	3	288	Tintern.*
40	86	15	370	—	—	—	—	511	Vaughan.
—	37	24	11	—	—	1	—	73	Walcot.
248	25	20	16	—	—	—	2	311	Wareham.
—	22	—	—	—	—	23	—	45	Westbury.
—	45	—	80	—	—	—	—	125	Wilsey Down
9	232	25	14	—	—	—	4	284	Wyre.
16,929	5,707	2,399	5,805	1,687	405	1,313	435	34,680	Total.

## Plantations. Year ended

Forest.	Area planted (acres).					
	Afforested.		Re-afforested.		Total.	
	Conifers.	Broad-leaved.	Conifers.	Broad-leaved.	Conifers.	Broad-leaved.
Achnashellach, Ross ...	63	—	30	—	93	—
Ardartan, Argyll ...	217	1	—	—	217	1
Balbair, Sutherland ...	—	—	32	—	32	—
Barcaldine, Argyll ...	204	1	—	—	204	1
Benmore, Argyll ...	381	6	—	—	381	6
Bennan, Kirkcudbright ...	71	—	—	—	71	—
Biu (The), Aberdeen ...	352	3	—	—	352	3
Blairadam, Fife and Kinross ...	—	—	61	5	61	5
Borgie, Sutherland ...	23	—	—	—	23	—
Gloseburn, Dumfries ...	180	—	—	—	180	—
Clunes, Inverness ...	103	—	—	—	103	—
Craig-nan-Eun, Inverness ...	142	—	—	—	142	—
Craig Phadrig, Inverness ...	—	—	12	1	12	1
Culbin, Elgin ...	282	—	—	—	282	—
Culloden, Inverness ...	—	—	74	—	74	—
Dalbeattie, Kirkcudbright... ..	111	—	—	—	111	—
Deer, Aberdeen ...	223	—	—	—	223	—
Dornoch, Sutherland ...	—	—	110	1	110	1
Drummond Hill, Perth ...	—	—	150	—	150	—
Drumtochty, Kincardine ...	282	3	—	—	282	3
Edeusmuir, Fife ...	—	—	34	5	34	5
Edgarhope, Midlothian ...	—	—	43	2	43	2
Eilanreach, Inverness ...	103	—	—	—	103	—
Farnoch, Argyll ...	80	—	—	—	80	—
Findon, Ross ...	—	—	143	—	143	—
Glenbranter, Argyll ...	184	5	—	—	184	5
Glenduror, Argyll ...	124	1	—	—	124	1
Gleufinart, Argyll ...	165	—	—	—	165	—
Glengarry, Inverness ...	149	—	—	—	149	—
Glenburich, Argyll ...	214	—	—	—	214	—
Glenmore, Inverness ...	279	—	—	—	279	—
Glen Righ, Inverness ...	82	—	—	—	82	—
Glenshiel, Ross ...	94	—	—	—	94	—
Glentress, Peebles ...	—	—	29	—	29	—
Glonurquhart, Inverness ...	145	—	—	—	145	—
Greskine, Dumfries ...	41	3	—	—	41	3
Inchnacardoch, Inverness ...	119	—	—	—	119	—
Inveriate, Ross ...	167	—	—	—	167	—
Inverliever, Argyll*	88	—	—	—	88	—
Kemnay, Aberdeen... ..	101	—	—	—	101	—
Kassock, Ross ...	—	—	66	2	66	2
Kirkhill, Aberdeen... ..	27	—	—	—	27	—
Lael, Ross ...	79	—	—	—	79	—
Lennox Castle, Stirling ...	62	—	—	—	62	—
Loch Ard, Perth ...	129	—	—	—	129	—
Midmar, Aberdeen ...	127	—	—	—	127	—
Monaghty, Elgin ...	183	—	—	—	183	—
Montreathmont, Forfar ...	118	—	—	—	118	—
Nevis, Inverness ...	124	—	—	—	124	—
Newcastleton, Roxburgh ...	109	—	—	—	109	—
North Strome, Ross ...	121	—	—	—	121	—
Ordiequeish, Elgin ...	40	—	—	—	40	—
Port Clair, Inverness ...	—	—	150	—	150	—
Ratahan, Inverness and Ross ...	143	—	—	—	143	—

\* Former Crown Wood.

30th September, 1929—Scotland.

Species planted, including beating up (thousands).									Forest.
Scots and Corsican Pines.	Eur. and Jap. Larches.	Douglas Fir.	Norway and Sitka Spruces.	Oak.	Ash.	Beech.	Others.	Total.	
53	26	3	99	—	—	—	13	194	Achnashellach.
54	22	10	269	—	—	1	38	394	Ardgartan.
33	—	—	11	—	—	—	19	63	Balblair.
—	4	26	306	—	—	—	26	362	Barcaldine.
88	52	64	371	—	—	—	61	636	Benmore.
24	8	—	134	—	—	—	—	166	Bennan.
68	97	—	493	—	4	12	3	677	Bin (The).
25	—	—	98	—	2	—	6	131	Blairadam.
11	—	—	66	—	—	2	28	107	Borgie.
12	28	1	261	—	—	—	—	302	Closeburn.
—	—	—	157	—	—	—	4	161	Clunes.
55	—	80	106	—	—	4	7	252	Craig-nan-Eun.
12	1	12	1	—	—	2	5	33	Craig Phadrig.
555	—	—	—	—	—	—	64	619	Culbin.
49	31	31	15	—	—	1	5	132	Culloden.
36	28	—	171	—	—	—	1	236	Dalbeattie.
118	21	—	275	—	—	36	15	465	Deer.
177	4	2	—	—	—	2	36	221	Dornoch.
135	161	5	8	—	—	—	4	313	Drummond Hill
11	159	25	240	—	6	13	26	480	Drumtochty.
119	—	—	10	—	—	4	6	139	Edensmuir.
4	—	—	88	—	—	—	3	95	Edgarhope.
—	15	59	42	—	—	—	8	124	Eilanreach.
—	—	20	100	—	—	—	3	123	Fearnoch.
161	7	12	75	—	—	3	11	269	Findon.
39	20	7	380	—	—	6	51	503	Glenbranter.
—	1	2	268	—	—	—	6	277	Glenduror.
85	25	32	159	—	—	—	28	329	Glenfinart.
—	—	—	214	—	—	—	8	222	Glengarry.
—	—	5	283	—	—	—	15	303	Glenhurich.
221	—	20	204	—	—	2	13	460	Glenmore.
—	1	5	126	—	—	—	9	141	Glen Righ.
81	—	—	80	—	—	—	5	166	Glenshiel.
16	12	18	66	—	—	—	1	113	Glentress.
5	—	43	116	—	—	5	37	206	Glenurquhart.
—	5	6	66	—	—	—	5	82	Greskine.
119	15	6	52	—	—	—	14	206	Inchnacardoch.
23	56	32	127	—	—	—	11	249	Inverinate.
—	3	21	154	—	—	—	6	184	Inverliever. <sup>2</sup>
116	23	—	75	—	—	4	1	219	Kemnay.
25	1	70	—	—	—	3	—	99	Kessoek.
33	2	13	39	—	—	1	8	96	Kirkhill.
126	—	—	8	—	—	—	40	174	Lael.
28	—	—	80	—	—	—	1	109	Lennox Castle.
43	2	57	118	—	—	—	20	240	Loch Ard.
103	25	5	108	—	—	6	6	253	Midmar.
289	46	20	98	—	—	3	1	457	Monaughty.
265	11	—	43	—	—	7	12	338	Montreatmont.
—	7	3	190	—	—	—	14	214	Nevis.
—	—	—	245	—	—	—	4	249	Newcastleton.
28	48	35	105	—	—	—	8	224	North Strome.
54	—	—	35	—	—	—	18	107	Ordiequeish.
76	8	75	95	—	—	1	8	263	Port Clair.
—	35	6	157	—	—	—	15	213	Ratagan.

*Plantations. Year ended*

Forest.	Area planted (acres).					
	Afforested.		Re-afforested.		Total.	
	Coni- fers	Broad- leaved.	Coni- fers.	Broad- leaved.	Coni- fers.	Broad- leaved.
Roseisle, Elgin ... ..	80	—	—	—	80	—
Salen, Argyll ... ..	82	—	—	—	82	—
Scotmore, Moray ... ..	98	—	—	—	98	—
Slattadale, Ross ... ..	52	—	—	—	52	—
South Strone, Ross ... ..	54	—	—	—	54	—
Teindland, Elgin ... ..	105	—	—	—	105	—
Tentsmuir, Fife ... ..	207	—	—	—	207	—
<b>Total</b> ... ..	<b>6,709</b>	<b>23</b>	<b>943</b>	<b>16</b>	<b>7,652</b>	<b>39</b>
By direct sowing (included above).	1	—	—	—	1	—

*Plantations. Year ended*

England and Wales ... ..	9,049	781	3,979	972	13,028	1,753
Scotland ... ..	6,709	23	943	16	7,652	39
<b>Total</b> ... ..	<b>15,758</b>	<b>804</b>	<b>4,922</b>	<b>988</b>	<b>20,680</b>	<b>1,792</b>

## 30th September, 1929—Scotland—contd.

Species planted, including beating up (thousands).									Forest.
Scots and Corsican Pines.	Eur. and Jap. Larches.	Douglas Fir.	Norway and Sitka Spruces.	Oak.	Ash.	Beech.	Others.	Total.	
137	2	—	—	—	—	2	15	156	Roseisle.
21	14	4	126	—	—	—	5	170	Salen.
34	65	—	20	—	—	5	16	140	Scotmore.
—	16	6	109	—	—	—	20	151	Slattadale.
3	14	7	52	—	—	—	2	78	South Strome.
207	—	—	10	—	—	—	33	250	Teindland.
376	—	—	27	—	—	7	43	453	Tentsmuir.
4,353	1,121	848	7,431	—	12	132	891	14,788	Total.

## 30th September, 1929—Summary.

16,929	5,707	2,399	5,805	1,687	405	1,313	435	34,680	England & Wales
4,353	1,121	848	7,431	—	12	132	891	14,788	Scotland.
21,282	6,828	3,247	13,236	1,687	417	1,445	1,326	49,468	Total.

*Cost of Planting.*—The outlay per acre on labour and material on the area planted between 1919 and 1929 was as follows :—

	£	s.	d.
England and Wales ...	8	10	0
Scotland ...	9	15	0
Great Britain	8	18	0

These figures include the cost of preparation of ground, drainage, fencing, plants, planting, replacement of failures and weeding.

*Forest Fires.*—The extraordinary weather conditions which prevailed in the early part of 1929 gave rise to the worst fire season which the Commissioners have yet experienced. The severe frosts of the winter rendered the old vegetation very dry and inflammable, while lack of rain later on retarded the growth of young grass. The fire hazard was consequently very prolonged as well as intense.

During the year 409 fires occurred affecting 4,574 acres. The damage done was estimated at £45,961, the amount for which claim has been made is £10,494. Of the total number of fires, 272 (67 per cent.) occurred in March and April. The monthly distribution is shown in the table below :—

Month.	No. of Fires.	Planted Area burnt.	Estimated Damage (including cost of extinguishing).
		Acres.	£
1928.			
October ... ..	2	2	22
1929.			
January ... ..	3	12	108
February ... ..	18	154	1,614
March ... ..	152	2,379	26,987
April ... ..	120	1,395	10,466
May ... ..	47	164	2,132
June ... ..	9	3	22
July ... ..	36	366	4,085
August ... ..	6	—	4
September ... ..	16	99	521
Total ...	409	4,574	45,961

The causes of the fires, so far as they could be ascertained, are stated in the table below; 149 fires (36 per cent.) were caused by the general public, 142 fires (35 per cent.) by sparks from railway engines and 25 fires (6 per cent.) by the Commissioners' employees.

Cause.	No. of Fires.	Percentage of Total Number.	Percentage of Total Area burnt.
General Public—			
From public roads and footpaths	100	24	8
Other ... ..	49	12	21
Railway ... ..	142	35	12
From adjoining lands... ..	28	7	24
Forestry Commission's employees ...	25	6	14
Road engines ... ..	22	5	6
Incendiarism—			
Definitely ... ..	3	3	2
Probably ... ..	10		
Miscellaneous ... ..	6	2	4
Unknown ... ..	24	6	9
<b>Total ... ..</b>	<b>409</b>	<b>100</b>	<b>100</b>

As a result of the experience of 1928-29 the Commissioners have made a careful enquiry into methods of fire protection and are revising the procedure. The problem of devising satisfactory standing instructions is difficult since an organisation which is adequate in a normal year may be quite useless in an exceptional one. During the current forest year for example the total number of fires from October to May has been 95 involving an area of 247 acres valued at £1,960. The contrast with the previous year is remarkable and while the improvement may be attributable in some measure to better methods of protection it is chiefly due to the mild winter and wet spring.

*Nurseries.*—The total area under nurseries at 30th September, 1929, was 850 acres stocked with 159 million seedlings and 110 million transplants. Comparative figures for the three years 1927-29 are given in the following table :—

*Nurseries.*

Year ending 30th Sept.	Country.	Seed Sown (lbs.).			Stock of Plants at 30th September (thousands).						Area (Acres)
		Coniferous.	Broad-leaved.	Total.	Transplants.			Seedlings.			
					Coniferous.	Broad-leaved.	Total.	Coniferous.	Broad-leaved.	Total.	
1929...	England and Wales.	3,778	90,366	94,144	70,411	4,294	74,705	32,286	11,010	93,296	570
	Scotland ...	2,092	432	2,524	34,378	764	35,142	64,955	764	65,719	280
	<b>Total ...</b>	<b>5,870</b>	<b>90,798</b>	<b>96,668</b>	<b>104,789</b>	<b>5,058</b>	<b>109,847</b>	<b>147,241</b>	<b>11,774</b>	<b>159,015</b>	<b>850</b>
1928...	England and Wales.	5,821	48,238	54,059	77,285	5,217	82,502	109,648	4,640	114,288	565
	Scotland ...	2,072	107	2,179	34,755	1,048	35,803	62,000	318	62,318	274
	<b>Total ...</b>	<b>7,893</b>	<b>48,345</b>	<b>56,238</b>	<b>112,040</b>	<b>6,265</b>	<b>118,305</b>	<b>171,648</b>	<b>4,958</b>	<b>176,606</b>	<b>839</b>
1927...	England and Wales.	8,412	52,470	60,882	68,182	3,157	71,339	141,883	6,394	148,277	495
	Scotland ...	2,397	1,413	3,810	43,183	874	44,057	64,024	776	64,800	285
	<b>Total ...</b>	<b>10,809</b>	<b>53,883</b>	<b>64,692</b>	<b>111,365</b>	<b>4,031</b>	<b>115,396</b>	<b>205,907</b>	<b>7,170</b>	<b>213,077</b>	<b>780</b>

*Seed Supply.*—The Douglas fir 1928 crop was practically a complete failure in Canada, only a very small quantity, of somewhat low germinative capacity, being available, while no seed of this species could be obtained from the United States of America. The Sitka spruce crop was reported to be very good in the United States, but only moderate in Canada. Seed of European larch, Norway spruce and Corsican pine was plentiful, but Japanese larch failed completely.

As regards home-collected seed, in England and Wales ash and beech yielded poor crops. The chestnut seed available was insufficient to meet the Commission's requirements, but the necessary supplies of acorns were obtainable. Scots pine was of exceptionally good quality, but in Scotland there was a slight scarcity of cones. The last remark also applies to European larch in which case collections were a little short of requirements.

The quantity of seed sold during the year amounted to 4,365 lbs.

The Commissioners have to express their gratitude for gifts of seed from the forest authorities of Bulgaria, Canada, Chile, France, Portugal, Turkey and the United States of America.

**Sub-head F.—Advances for Afforestation Purposes:  
Expenditure, £15,315.**

Of the total expenditure, £2,603 was in respect of overhead and supervisory charges and £1,684 was in respect of a proceeds-sharing scheme. The remainder, viz., £11,028, was in respect of grants to private individuals and local authorities for planting and scrub clearing. The grants were as follows:—

(1) *Conifers.*—Up to £2 per acre for every acre planted and thereafter maintained as a forest crop.

(2) *Hardwoods.*—Up to £4 per acre planted with approved species and thereafter maintained as an area for the production of hardwoods.

(3) *Clearance of Scrub, &c.*—Up to £1 per acre (in exceptional cases up to £2 per acre) for every acre cleared.

Limited to selected schemes involving not less than 50 acres.

Particulars of the schemes in respect of which grants were paid during the year are given in the table below:—

—	England & Wales.	Scotland.	Total.
No. of Schemes ...	188	133	321
	Acres.	Acres.	Acres.
Planting Conifers ...	2,218	3,333	5,551
Planting Hardwoods...	761	107	868
Scrub clearing ...	126	166	292



**Sub-head G.—Education : Expenditure : Gross, £9,384 ;  
Net, £9,375.**

Details of expenditure and income are given in Table G below :—

*Table G.—Analysis of Education.*

Year ending 30th September.	Expenditure (Table IIa, Col. (6)).							Income (Table IIa, Col. (13)).			Net Expenditure.					
	Superior Supervision and Over-head Charges	Apprentices' Schools.					Grants to Institutions.	Total.	Labour of Apprentices.	Other.		Total.				
		Salaries and Expenses of Instructors.	Purchases and Rent of Land and Buildings.	Allowances to Apprentices.	Stores and Equipment.	Fuel and Light and Sundry Expenses.										
	£	£	£	£	£	£	£	£	£	£	£					
1920 ...	} 8,482	1,343	2,033	1,417	425	605	—	} 21,544	—	103	} 199	21,346				
1921 ...		3,493	2,479	2,468	982	1,625	1,242		—	96						
1922 ...		1,092	2,793	127	3,157	411	2,513		2,264	—			1,396	1,396	10,961	
1923 ...		1,617	1,614	311	4,202	163	1,287		2,598	11,792			1,258	252	1,510	10,282
1924 ...		983	1,447	421	1,440	56	843		3,053	8,243			282	42	324	7,919
1925 ...		1,245	1,150	166	1,718	127	804		4,743	9,953			33	435	468	9,485
1926 ...		1,357	1,138	235	2,359	267	1,013		4,239	10,608			12	17	29	10,579
1927 ...		1,245	769	185	2,067	133	989		4,135	9,513			39	68	107	9,406
1928 ...		1,016	803	109	2,303	58	918		4,235	9,437			—	9	9	9,428
1929 ...		1,042	851	129	2,202	56	922		4,182	9,384			—	9	9	9,375
<b>Total</b>	13,019	15,401	6,195	23,333	2,678	11,514	30,691	102,831	1,624	2,427	4,051	98,780				
<b>Per-centage</b>	12.6	15.0	6.0	22.7	2.6	11.2	29.9	100								

The figures relating to Ireland (during 1920–23) are omitted.

*Apprentices' Schools : Expenditure, £4,160.*—During the year 55 forest apprentices were undergoing courses of instruction in the schools at Parkend (Forest of Dean) and at Beaufort (Inverness-shire). At the final qualifying examination 24 men who had successfully completed the two years' course were granted certificates of proficiency. In August, the school in Scotland was transferred to Benmore, Argyllshire.

*Grants to Universities and Colleges : Expenditure, £2,182.*—The following Universities and Colleges received grants during the year :—Oxford University ; Cambridge University ; University College of North Wales, Bangor ; Armstrong College, Newcastle-on-Tyne ; Aberdeen University ; Edinburgh and East of Scotland College of Agriculture.

The number of students studying forestry at the Universities during the period under review was 169, 34 forestry degrees were granted and 8 candidates obtained diplomas.

*Imperial Forestry Institute : Expenditure, £,2000.*—The Imperial Forestry Institute, which is financed from the Forestry Fund to the extent of £2,000 per annum for a period of five years from October, 1924, was attended for the whole or part

of the academic year 1928-29 by 30 students. These included 12 post-graduate probationers (Great Britain 1, South Africa 1, Colonial Services 9, private students (U.S.A.) 1) and 18 forest officers on leave (India 4, Dominion Services 2, Colonial Services 12).

**Sub-Head H.—Research and Experiment: Expenditure:**  
Gross, £12,212; Net, £12,079

Details of expenditure are stated in Table H below: —

*Table H.—Analysis of Research and Experiment.*

Year ending 30th Sept.	Expenditure (Table IIa, Column (7)).						Income (Table IIa, Col. (15)).	Net Expenditure.
	Superior Supervision and Overhead Charges.	Salaries and Expenses.	Instruments, Stores, etc.	Labour, Seed and Sundry Expenses.	Grants to Institutions.	Total.		
	£	£	£	£	£	£	£	£
1920 ...	3,380	4,078	30	137	—	15,472	—	15,472
1921 ...		5,983	169	945	750			
1922 ...	556	4,463	75	983	569	6,646	567	6,079
1923 ...	625	2,981	168	843	508	5,125	10	5,115
1924 ...	1,789	2,981	94	1,009	1,266	7,139	9	7,130
1925 ...	1,669	3,030	93	1,019	600	6,411	43	6,368
1926 ...	1,487	3,336	68	1,878	663	7,432	110	7,322
1927 ...	1,381	3,492	233	2,479	757	8,342	93	8,249
1928 ...	1,601	3,682	176	4,582	745	10,786	93	10,693
1929 ...	1,126	4,432	184	5,065	1,405	12,212	133	12,079
Total...	13,614	38,458	1,290	18,940	7,263	79,565	1,058	78,507
Percentage	17·1	48·4	1·6	23·8	9·1	100		

Work in connection with the production of timber, nurseries and plantations and insect and fungus pests has continued steadily throughout the year.

✓ Ten new sample plots were established in standing plantations, as well as a number of experimental plantations in various parts of the country. An extensive series of nursery experiments were made with larch, and the general investigation into the raising of hardwoods extended in various directions.

A new line of work has been made possible by the installation of a refrigerating apparatus at the Imperial Forestry Institute at Oxford, the purpose being to study the relation between frost damage and disease.

*Advisory Committee on Forestry Research.*—At the instance of the Research Co-ordination Sub-Committee of the Committee of Civil Research, the Forestry Commissioners constituted, in December 1929, an Advisory Committee on Forestry Research. The members of the Committee are as follows:—

*Chairman* : Mr. R. L. Robinson, O.B.E. (Vice-Chairman of the Forestry Commission).

Dr. E. J. Butler, C.I.E., M.B., F.R.S. (Director, Imperial Bureau of Mycology).

Dr. A. W. Hill, C.M.G., F.R.S. (Director, Royal Botanic Gardens).

Dr. A. S. Joseph (Director, Bureau of Soils).

Sir Guy Marshall, C.M.G., F.R.S. (Director, Imperial Bureau of Entomology).

Mr. R. S. Pearson, C.I.E., F.L.S. (Director, Forest Products Research Laboratory).

Professor R. S. Troup, C.I.E., F.R.S. (Director, Imperial Forestry Institute).

Professor W. Wright Smith, M.A., F.R.S.E., F.L.S. (Director, Royal Botanic Garden, Edinburgh).

*Secretary* : Mr. W. H. Guillebaud (Chief Research Officer, Forestry Commission).

**Sub-head J.—Agency and Advisory Services :**

**Expenditure : Gross, £1,317 ; Net, £1,279.**

No direct expenditure was incurred under this head, the item £1,317 representing the time of various officers of the Commission, who have been engaged in answering enquiries and advising owners of woodlands as to the treatment of their woods.

**Sub-head K.—Special Services: Expenditure:**  
**Gross, £3,641; Net, £3,627.**

*Table K.—Analysis of Special Services.*

Year ending 30th September.	Expenditure (Table IIa, Col. (9)).						Income (Table IIa, Col. (18)).	Net Expen- diture.
	Superior Supervision and Overhead Charges.	Consulta- tive Com- mittees' Expenses.	Publi- cations.	Special Inquir- ies.	Relief of Un- employ- ment.	Total.		
	£	£	£	£	£	£	£	£
1920	3,766	37	319	218	—	5,401	—	5,401
1921		111	659	291	—			
1922	2,188	92	479	576	10,160	13,495	252	13,243
1923	1,372	65	122	669	4,599	6,827	12	6,815
1924	3,268	44	55	1,817	5,069	10,253	14	10,239
1925	3,240	50	78	4,824	—	8,192	36	8,156
1926	3,042	32	74	1,251	—	4,399	—	4,399
1927	2,750	13	43	355	—	3,161	—	3,161
1928	4,552	33	45	1,177	—	5,807	19	5,788
1929	2,284	46	121	1,190	—	3,641	14	3,627
<b>Total</b>	<b>26,462</b>	<b>523</b>	<b>1,995</b>	<b>12,368</b>	<b>19,828</b>	<b>61,176</b>	<b>347</b>	<b>60,829</b>
<i>Per- centage</i>	43·2	0·9	3·3	20·2	32·4	100		

The figures relating to Ireland (during 1920–23) are omitted.

*Publications.*—During the year under review the Commissioners issued the following publications:—

Leaflet No 19.—*The Dutch Elm Disease.*

Leaflet No. 20.—*The Watermark Disease of the Cricket Bat Willow.*

*Ninth Annual Report of the Forestry Commissioners,* being the report for the year ending 30th September, 1928.

In addition leaflets Nos. 10 (*The Oak-leaf Roller Moth*), 12 (*Income Tax and Death Duties on Woodlands*) and 13 (*The Larch Longicorn Beetle*) were revised.

*Exhibits at Agricultural Shows.*—Forestry exhibits were sent by the Commissioners to the shows of the Royal Agricultural Society at Harrogate, the Bath and West Society at Swindon, the Royal Welsh Agricultural Society at Cardiff, and the Highland and Agricultural Society at Alloa.

*Consultative Committees.*—The English Consultative Committee held four meetings during the year, and the Scottish and Welsh Committees each met twice.

Formal references were submitted by the Commissioners to the Committees for their advice and assistance on the following matters :—

- (1) The Government's forest policy announced in July, 1928.
- (2) The Industrial Transference Board's recommendations regarding forest workers' holdings.
- (3) The sufficiency of the accommodation in the Commission's schools for forest apprentices to meet the demand for trained foresters on private and municipal estates.
- (4) The question of repayment of afforestation grants in respect of areas destroyed by fire.
- (5) The question of the public in relation to the protection of woodlands from fires.

The following subjects were also discussed by the English Committee :—

- (a) Disposal by the Commission of surplus plants.
- (b) Training lads in rural wood-working industries.
- (c) Planting of hardwoods.

The Commissioners regret to report the death of Sir Robert Lorimer on the 13th September, 1929.

The undermentioned were appointed or reappointed members of the respective Committees as from the 25th March, 1929, in accordance with Section 1 (3) of the Forestry (Consultative Committees) Order, 1920 :—

ENGLAND.

*Chairman* :— Leslie S. Wood, Esq., F.S.I.

*Vice-Chairman* :—Colonel B. J. Petre.

Arthur Arnold, Esq.

E. Callaway, Esq.

J. S. Corbett, Esq.

Right Hon. Viscount Cowdray.

Sir William Cundiff, J.P.

E. C. Horton, Esq., O.B.E.

Brigadier-General H. G. J. de Lotbinière, D.S.O.

Alex. F. Luttrell, Esq., D.L., J.P.

Hugh Morrison, Esq., J.P., M.P.

Herbert E. Newsum, Esq., J.P.

Sir Douglas Newton, K.B.E., J.P., M.P.

Hon. N. A. Orde-Powlett.

H. V. Raffety, Esq., O.B.E., F.S.I.

Thomas Roberts, Esq.

Major S. Strang Steel.

Christopher H. Turnor, Esq.

J. W. Watt, Esq.

T. Williams, Esq., M.P.

*Secretary* :—F. W. Hamilton, Esq.

## SCOTLAND.

*Chairman* :—Sir Hugh Shaw-Stewart, Bart., C.B., T.D.

*Vice-Chairman* :—Brigadier-General A. Stirling, D.L.

Lieut.-Col. F. R. S. Balfour, F.L.S., D.L., J.P.

Professor A. W. Borthwick, O.B.E., D.Sc.

Gilbert Brown, Esq.

Sir James C. Calder, C.B.E.

Sir Isaac Connell, S.S.C.

Robert Galloway, Esq., S.S.C.

Sir Robert Greig, M.C., LL.D.

J. H. Milne Home, Esq.

George Leven, Esq.

Sir Robert Lorimer K.B.E., A.R.A., R.S.A. (since deceased).

H. T. Macdonald, Esq.

Sir Kenneth Mackenzie, Bart., D.L., J.P.

James Maclaren, Esq.

J. Matson, Esq., O.B.E.

Donald Munro, Esq., O.B.E.

Joseph Rennie, Esq.

Professor W. Wright Smith.

Right Hon. The Earl of Stair, D.S.O.

*Secretary* :— F. C. Handford, Esq.

## WALES.

*Chairman* :—Lieut.-Col. Sir Francis D. W. Drummond,  
K.B.E., D.L., J.P.

*Vice-Chairman* :—Right Hon. The Earl of Powis, D.L., J.P.

G. B. Bovill, Esq.

Sir George B. Bowen, K.B.E.

Lieut.-Col. J. R. Davidson, C.M.G.

Sir Michael Robert Duff-Assheton-Smith, Bart.

Captain. J. D. D. Evans.

Major John Francis, D.S.O., F.S.I.

C. Bryner Jones, Esq., C.B.E., M.Sc.

Lieut.-Col. W. N. Jones, J.P.

Sir Edward Naylor-Leyland, Bart., J.P.

Sackville Owen, Esq.

Alderman T. Parry.

L. R. Pym, Esq.

J. Roberts, Esq.

J. I. Storrar, Esq.

C. D. Thompson, Esq., J.P.

Thomas Thomson, Esq., M.Sc.

R. W. Treseder, Esq.

Colonel Sir Charles Venables-Llewelyn, Bart., D.L., J.P.

P. Wilkinson, Esq. (Resigned Sept., 1929).

Colonel Sir Herbert L. Watkin Williams-Wynn, Bart., C.B.

*Secretary* :—F. W. Hamilton, Esq.

**Sub-Head L.—Forest Workers' Holdings:**  
**Expenditure, £73,135: Income, £8,694.**

Details of expenditure and income are given in Table L below. The main item of expenditure is erection of new buildings, £42,776. On the income side rents amount to £8,514.

*Table L.—Analysis of Forest Workers' Holdings.*

Year ending 30th September.	Expenditure (Table IIa, Col. (10)).										Income (Table IIa, Col. (16)).			Net Expenditure.
	Superior Supervision and Overhead Charges.	Acquisition of Land, Buildings, etc., by Purchase.	Buildings.			Fencing, Drainage, etc.	Rents and Feu Duties.	Rates and Taxes, etc.	Other.	Total.	Rents.	Other.	Total.	
			New.	Adaptation, etc., of existing Buildings.	Repairs and Renewals.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
1924	£ 825	£ 5,000	—	£ 75	—	—	—	—	—	£ 5,901	—	£ 8	£ 8	£ 5,893
1926	3,684	27,173	16,069	7,415	23	620	183	17	1,354	56,538	876	381	1,257	55,281
1926	5,355	23,028	37,519	7,130	441	2,136	325	224	—338	75,820	3,266	108	3,374	72,446
1927	8,253	8,727	54,632	4,959	744	3,942	331	360	608	82,556	5,889	185	6,074	76,482
1928	8,876	30,794	41,188	7,480	1,167	4,571	600	642	659	95,976	7,716	500	8,216	87,760
1929	8,951	7,090	42,776	5,243	1,507	6,285	689	430	164	73,135	8,514	180	8,694	64,441
Total	85,944	101,812	192,184	32,302	3,882	17,554	2,128	1,673	2,447	389,926	26,261	1,362	27,623	362,303
Percentage	9.2	20.1	49.3	8.3	1.0	4.5	0.6	0.4	0.6	100				

During the year further progress was made with the formation of forest workers' holdings, as shown below:—

*Progress in Formation of Holdings.*

	At 30th Sept. 1928.	At 30th Sept. 1929.
Completed . . . . .	490	618
In course of formation	282	245
<b>Total</b>	<b>722</b>	<b>863</b>

Of the 863 holdings completed or in the course of formation 480 are or will be equipped with new buildings and 383 with reconditioned buildings.

The average cost of these holdings is as follows:—

Value of land £75; cost of buildings, drainage, water supply, etc., £483. Total cost of establishment £558.

The average area of land attached to a holding is 10 acres and the average rent paid is £14 per annum.

**Sub-Head Z.—Income, £181,333.**

The sources of income are given in Table IIa (page 34).

The details of income from forestry operations are shown below :—

	Commission's Forests.	Transferred Crown Properties.	Total from Forestry Operations.
	£	£	£
Land and buildings ... ..	6,622	600	7,222
Rents (including mining rents and royalties).	23,753	31,384	55,137
Forest produce ... ..	45,304	49,133	94,437
Other sales (including stores, live stock, rabbits, gravel, etc.).	11,043	4,606	15,649
Total ...	86,722	85,723	172,445

Rents and royalties include £18,490 from the Forest of Dean mines. Forest produce includes £62,853 from the sale of timber, £3,459 for nursery stock and seed and £28,125 transferred from insurance reserve in respect of the value of plantations destroyed by fire. Other sales include livestock £5,069 and sand and gravel £3,082.



### Employment in the Commission's Forests.

The number of persons (excluding Divisional and District Officers and office staffs) employed in the Commission's forests is stated in the table below :—

	Numbers Employed.	
	Summer (Minimum).	Winter (Maximum).
1920 ... ..	210	1920-21 ... 935
1921 ... ..	495	1921-22 ... 1,780
1922 ... ..	525	1922-23 ... 1,775
1923 ... ..	880	1923-24 ... 2,220
1924 ... ..	1,620	1924-25 ... 2,650
1925 ... ..	1,980	1925-26 ... 2,960
1926 ... ..	2,335	1926-27 ... 3,185
1927 ... ..	2,735	1927-28 ... 3,495
1928 ... ..	2,740	1928-29 ... 3,565
1929 ... ..	2,640	1929-30 ... 3,595

(Signed) J. STIRLING-MAXWELL (*Chairman*).

R. L. ROBINSON (*Vice-Chairman*).

F. D. ACLAND.

J. H. ALPASS.

G. L. COURTHOPE.

D. R. GRENFELL.

HUGH MURRAY.

W. R. SMITH.

W. STEUART-FOTHRINGHAM.

A. G. HERBERT,

*Secretary,*

22, Grosvenor Gardens,

London, S.W.

**APPENDIX I.****Imports of Timber, Wood Manufactures and Pulp of Wood.**

Total imports of unmanufactured timber in 1920 amounted to 7,320,000 loads and in 1929 to 10,241,000 loads, but meanwhile there have been wide fluctuations. In the post-war slump of 1921 the quantity fell to 4,346,000 loads but rapidly increased again to 10,273,000 loads in 1924. There was a slackening off in demand in 1926 owing to labour troubles, but the increase was resumed in the following years. In the ten-year period values have been fairly evenly maintained at about the £50,000,000 level with the exception of the years 1920 and 1921.

As the importation of softwoods amounts to approximately 95 per cent. of the total imports, the position in regard to unmanufactured softwoods was practically the same as that for total unmanufactured timber.

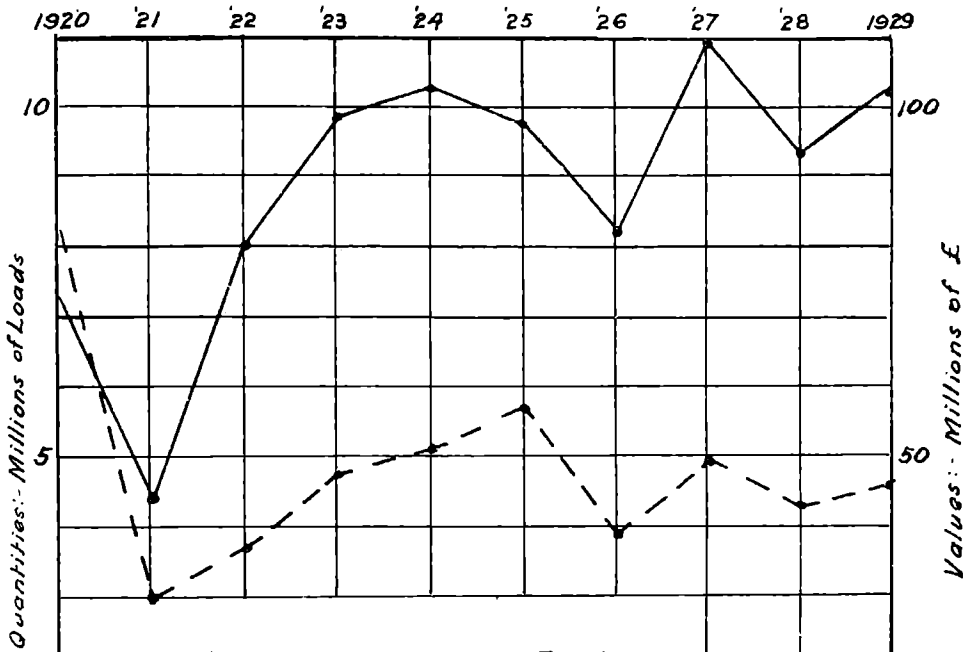
Pitwood imports have varied in quantity more or less in the same ratio as the softwoods generally. The peak year was 1923 when 3,675,000 loads were imported, but a low level was reached in 1926 owing to the coal-stoppage. On an average, the imports of this commodity have amounted to 2,500,000 loads valued at £5,450,000.

Since 1921 there has been an almost uninterrupted rise in the importation of pulp of wood, the amount having increased from rather less than 600,000 tons at that date to over 1,600,000 tons in 1929. On the other hand prices for pulp of wood have shown a marked decline during the period, resulting in the total value each year having remained almost stationary.

The position as regards the principal categories of imports is shown in the accompanying diagrams and the tables give the detailed figures.

Imports of timber in 1929 amounted to 10,241,000 loads valued at £45,826,000, an increase of 922,000 loads (9.9 per cent.) and £3,270,000 (7.7 per cent.) as compared with 1928. The total value of imports of wood manufactures amounted to £9,683,000, an increase of £1,259,000 (14.9 per cent.) as compared with 1928. The principal rise was in plywood, which increased from £2,093,000 to £2,994,000. Imports of pulp of wood amounted to 1,638,000 tons valued at £10,899,000, an increase of 355,000 tons (27.7 per cent.) and £2,427,000 (28.6 per cent.).

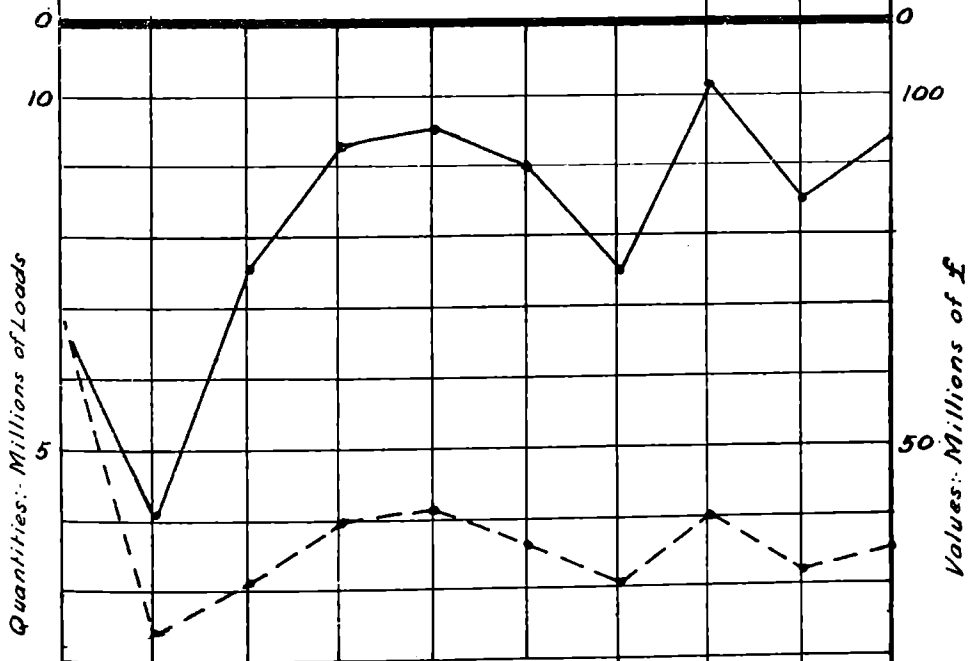
# IMPORTS



## Total Unmanufactured Timber

Quantities ———

Values - - - -



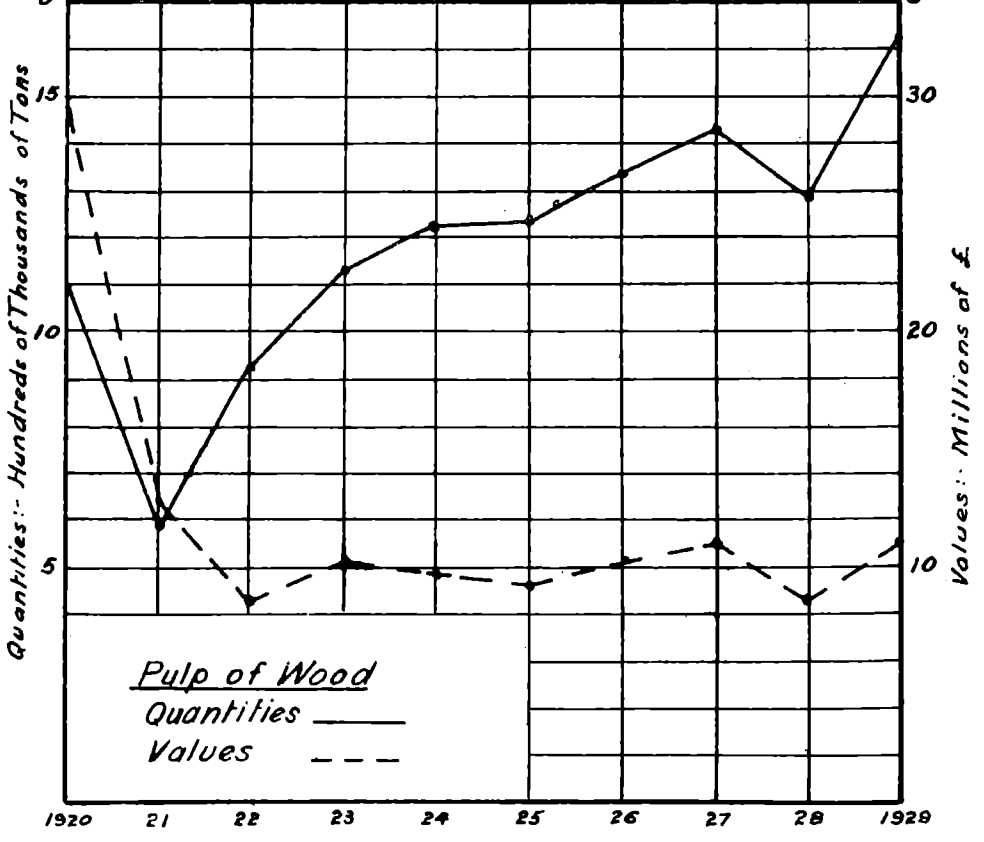
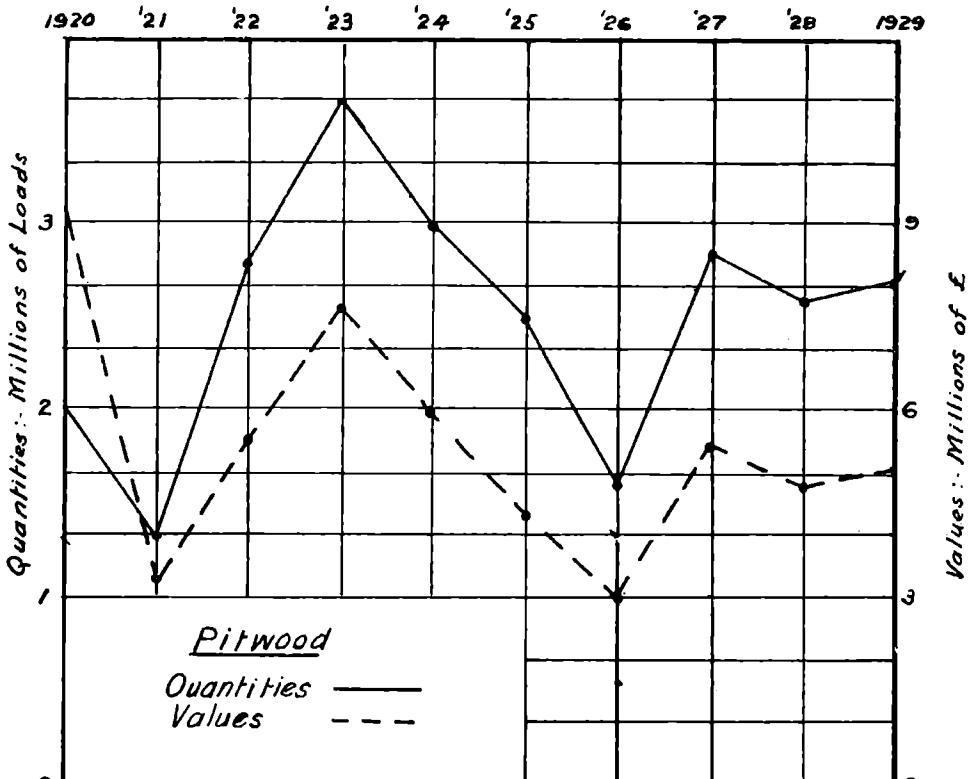
## Unmanufactured Softwoods

Quantities ———

Values - - - -

1920 '21 '22 '23 '24 '25 '26 '27 '28 1929

# IMPORTS





## Imports of Timber, Wood

Quantities

Description.	Average 1909-13.	Average 1914-18.	1919.	1920.	1921.	1922.
<b>TIMBER.</b>						
Hewn-Hard—	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.
Mahogany... ..	—	—	—	52	38	48
Walnut ... ..	—	—	—	2	1	1
Oak... ..	—	—	—	20	3	15
Teak ... ..	—	—	—	6	6	7
Other sorts ... ..	—	—	—	34	26	19
Hewn-Soft (fir, pine, spruce, etc.).	542	129	69	229	131	155
Sawn-Hard—						
Mahogany ... ..	—	—	—	16	6	21
Walnut ... ..	—	—	—	4	4	5
Oak ... ..	—	—	—	65	57	93
Teak ... ..	—	—	—	51	11	13
Other sorts ... ..	—	—	—	147	95	151
Sawn-Soft—						
Deal and planks ... ..	—	—	—	2,725	1,404	2,578
Boards ... ..	—	—	—	791	435	930
Other sorts ... ..	—	—	—	413	219	492
Planed or Dressed—						
Floorings ... ..	—	—	—	285	172	278
Matchings ... ..	—	—	—	41	39	67
Other sorts ... ..	—	—	—	56	25	36
Other Descriptions—						
Pitprops ... ..	2,944	1,673	1,452	2,004	1,297	2,812
Staves ... ..	161	71	85	156	51	75
Sleepers ... ..	—	130	171	218	323	212
Veneers and panel wood. Not elsewhere specified	6,557*	3,550*	5,089*	4	2	1
<b>Total unmanufactured timber.</b>	<b>10,204</b>	<b>5,553</b>	<b>6,866</b>	<b>7,320</b>	<b>4,346</b>	<b>8,010</b>
<b>WOOD MANUFACTURES.</b>						
Furniture and cabinet ware.	—	—	—	—	—	—
Builders' woodwork (win- dow frames, doors, etc.).	—	—	—	—	—	—
Plywood ... ..	—	—	—	—	—	—
Chip boxes ... ..	—	—	—	—	—	—
Tool handles ... ..	—	—	—	—	—	—
Domestic woodwork (bread platters, trays, etc.).	—	—	—	—	—	—
Not elsewhere specified.	—	—	—	—	—	—
<b>Total manufactured timber.</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>PULP OF WOOD. ... ..</b>	<b>Tons. 859</b>	<b>Tons. 682</b>	<b>Tons. 938</b>	<b>Tons 1,094</b>	<b>Tons. 590</b>	<b>Tons. 925</b>

\* These figures apply mainly to sawn softwoods. It is not possible to differentiate Board of Trade classification

## Manufactures and Pulp of Wood.

(thousands).

1923.	1924.	1925.	1926.	1927.	1928.	1929.	Description.
Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Hewn-Hard—
48	57	65	51	46	49	45	Mahogany.
1	1	2	1	2	5		Walnut.
18	27	18	16	22	24	} 95 {	Oak.
6	3	1	1	1	3		Teak.
32	61	68	54	54	62		Other sorts.
244	378	457	281	319	386	427	Hewn-Soft (fir, pine spruce, etc.).
							Sawn-Hard—
26	30	38	34	34	30	30	Mahogany.
8	10	13	11	8	9		Walnut.
147	174	186	181	233	239	} 607 {	Oak.
25	39	39	42	37	42		Teak.
203	261	296	228	285	311		Other sorts.
							Sawn-Soft—
2,926	2,195	1,794	1,483	3,640	2,741	} 5,221 {	Deal and planks.
1,098	1,153	1,281	1,296	1,518	1,149		Boards.
655	1,788	1,918	1,992	868	715		Other sorts.
							Planed or Dressed—
307	349	414	451	463	392	} 621 {	Floorings.
79	75	80	75	77	70		Matchings.
39	80	69	80	149	128		Other sorts.
							Other Descriptions—
3,675	3,004	2,503	1,582	2,864	2,597	2,695	Pitprops.
84	129	116	106	104	101	126	Staves.
294	453	451	223	248	262	369	Sleepers.
2	2	2	3	4	4	5	Veneers and panel wood.
2	4	3	3	3	—	—	Not elsewhere specified.
9,919	10,273	9,814	8,194	10,979	9,319	10,241	Total unmanufactured timber.
—	—	—	—	—	—	—	Furniture and cabinet ware.
—	—	—	—	—	—	—	Builders' woodwork (window frames, doors, etc.).
—	—	—	—	—	—	—	Plywood.
—	—	—	—	—	—	—	Chip boxes.
—	—	—	—	—	—	—	Tool handles.
—	—	—	—	—	—	—	Domestic woodwork (bread platters, trays, etc.).
—	—	—	—	—	—	—	Not elsewhere specified.
—	—	—	—	—	—	—	Total manufactured timber.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Pulp of Wood.
1,133	1,228	1,235	1,331	1,431	1,283	1,633	

according to the various categories enumerated above owing to a change in the from 1920 onwards.

## Imports of Timber, Wood

Value

Description.	Average 1909-13.	Average 1914-18.	1919.	1920.	1921	1922.
<b>TIMBER.</b>						
<b>Hewn-Hard—</b>	£	£	£	£	£	£
Mahogany ... ..	—	—	—	1,639	795	688
Walnut ... ..	—	—	—	47	30	23
Oak ... ..	—	—	—	488	60	184
Teak ... ..	—	—	—	308	200	211
Other sorts ... ..	—	—	—	793	498	270
Hewn-Soft (fir, pine, spruce, etc.).	1,353	583	879	2,745	1,019	849
<b>Sawn-Hard—</b>						
Mahogany ... ..	—	—	—	687	168	409
Walnut ... ..	—	—	—	113	110	126
Oak ... ..	—	—	—	2,016	1,370	1,404
Teak ... ..	—	—	—	2,770	456	343
Other sorts ... ..	—	—	—	3,631	1,744	1,858
<b>Sawn-Soft—</b>						
Deal and planks ... ..	—	—	—	31,481	9,039	13,004
Boards ... ..	—	—	—	9,643	2,973	5,063
Other sorts ... ..	—	—	—	4,773	1,545	2,882
<b>Planed or Dressed—</b>						
Floorings ... ..	—	—	—	4,021	1,489	1,889
Matchings ... ..	—	—	—	588	296	419
Other sorts ... ..	—	—	—	891	269	284
<b>Other Descriptions—</b>						
Pitprops... ..	3,510	4,425	7,308	9,369	3,224	5,486
Staves ... ..	795	618	1,363	3,641	1,411	738
Sleepers... ..	—	602	1,660	2,345	3,252	1,114
Veneers and panel wood.	—	—	—	86	50	53
Not elsewhere speci- fied.	21,903*	24,362*	61,096*	70	24	24
<b>Total unmanufactured timber.</b>	<b>27,561</b>	<b>30,620</b>	<b>72,306</b>	<b>82,145</b>	<b>30,022</b>	<b>37,321</b>
<b>WOOD MANUFACTURES.</b>						
Furniture and cabinet ware.	416	115	218	926	441	476
Builders' woodwork (win- dow frames, doors, etc.).	180	62	219	291	405	235
Plywood ... ..	—	—	—	—	—	—
Chip boxes ... ..	—	—	—	11	5	4
Tool handles ... ..	—	—	—	340	201	133
Domestic woodwork (bread platters, trays, etc.).	—	—	—	321	135	236
Not elsewhere specified.	2,099	1,821	3,873	6,739	3,735	2,725
<b>Total manufactured timber.</b>	<b>2,695</b>	<b>1,998</b>	<b>4,310</b>	<b>8,631</b>	<b>4,922</b>	<b>3,809</b>
<b>PULP OF WOOD ... ..</b>	<b>4,058</b>	<b>7,915</b>	<b>15,394</b>	<b>29,501</b>	<b>12,619</b>	<b>8,539</b>

\* \* \* These figures apply mainly to sawn softwoods. It is not possible to differentiate of Trade classification from 1920 onwards.



*Manufactures and Pulp of Wood—contd.*

(thousands).

1923.	1924.	1925.	1926.	1927.	1928.	1929.	Description.
£	£	£	£	£	£	£	
698	887	851	626	596	600	574	Hewn-Hard—
9	15	18	9	24	65		Mahogany.
188	272	182	152	199	240	943	Walnut.
137	85	19	25	36	63		Oak.
408	602	630	513	449	535		Teak.
1,129	1,796	1,865	1,042	1,237	1,379	1,221	Other sorts.
							Hewn-Soft (fir, pine, spruce, etc.).
528	587	698	633	609	547	527	Sawn-Hard—
177	260	334	309	206	245		Mahogany.
2,048	2,444	2,419	2,301	2,810	2,876	7,547	Walnut.
623	863	875	1,045	951	1,138		Oak.
2,387	2,933	3,029	2,333	2,887	3,123		Teak.
							Other sorts.
16,835	12,406	9,079	7,262	17,035	12,790	23,765	Sawn-Soft—
6,448	6,370	6,466	6,077	7,282	5,436		Deal and planks.
3,368	8,681	8,747	8,576	3,922	3,209		Boards.
							Other sorts.
2,195	2,347	2,481	2,554	2,668	2,219	3,405	Planed or Dressed—
557	515	487	432	465	421		Floorings.
314	575	451	479	905	754		Matchings.
							Other sorts.
7,680	5,912	4,595	2,988	5,458	4,779	5,034	Other Descriptions—
564	1,117	918	864	740	678	787	Pitprops.
1,340	2,276	2,207	887	963	1,174	1,676	Staves.
90	85	119	131	206	285	347	Sleepers.
							Veneers and panel wood.
23	42	26	21	17	—	—	Not elsewhere specified.
47,746	51,070	46,496	39,259	49,665	42,556	45,826	Total unmanufactured timber.
539	599	669	724	859	1,035	989	Furniture and cabinet ware.
377	706	1,087	1,430	1,592	1,108	1,355	Builders' woodwork (window frames, doors, etc.).
—	—	1,447	1,603	1,582	2,093	2,994	Plywood.
5	6	—	8	5	3	4,345	Chip Boxes.
260	282	230	215	254	199		Tool Handles.
251	221	253	240	287	326		Domestic woodwork (bread platters, trays, etc.)
3,153	3,557	2,541	2,580	2,736	3,660		Not elsewhere specified.
4,585	5,371	6,227	6,800	7,315	8,424	9,683	Total manufactured timber.
10,128	9,766	9,312	10,171	10,988	8,472	10,899	Pulp of Wood.

according to the various categories enumerated above owing to a change in the Board

## APPENDIX II.

## Publications of the Forestry Commission.

	<i>Price.</i>		<i>Post free.</i>	
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
BRITISH EMPIRE FORESTRY CONFERENCE, 1920 ...	7	6	7	10½
BRITISH YIELD TABLES (Reprinted from Bull. No. 10) ...	1	0	1	1
REPORT ON CENSUS OF WOODLANDS AND CENSUS OF PRODUCTION OF HOME-GROWN TIMBER, 1924	1	9	1	10

## BULLETINS :—

1. Collection of Data as to the Rate of Growth of Timber ...	0	4	0	5
2. Survey of Forest Insect Conditions ...	<i>Out of Print.</i>			
3. Rate of Growth of Conifers in the British Isles ...	<i>Out of Print.</i>			
4. The Douglas Fir Chermes (Chermes Cooleyi)...	2	0	2	1
5. Poplars ...	1	6	1	7
6. The Phomopsis Disease of Conifers ...	1	6	1	7
7. The Silver Fir Chermes ...	1	6	1	7
8. British Bark-Beetles ...	2	6	2	7
9. Beetles Injurious to Timber ...	1	3	1	4
10. Growth and Yield of Conifers in Great Britain ...	4	0	4	3
11. Nursery Investigations ...	3	6	3	9

## ANNUAL REPORTS OF THE FORESTRY COMMISSIONERS :—

## Year ending September 30th—

		<i>Post Price free.</i>				<i>Post Price free.</i>			
		<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>		
1920—H.C. 128	<i>Out of Print</i>			1925—H.C. 89	0	9	0	10	
1921—H.C. 108	1	0	1	1	1926—H.C. 72	1	0	1	1
1922—H.C. 50	1	0	1	1	1927—H.C. 85	0	9	0	10
1923—H.C. 93	1	0	1	1	1928—H.C. 5	0	9	0	10
1924—H.C. 107	1	0	1	1	1929—H.C.				

Copies of the above publications may be purchased directly from H.M. Stationery Office, Adastral House, Kingsway, London, W.C.2, or through any Bookseller. They cannot be obtained from the Forestry Commission.

## LEAFLETS.

- |   |  |
|---|--|
| 1. Pine Weevils.                                | 13. The Larch Longicorn Beetle.                      |
| 2. Chermes Cooleyi.                             | 14. The Phomopsis Disease of Conifers.               |
| 3. The Pine Shoot Beetle.                       | 15. The Felted Beech Coccus.                         |
| 4. The Black Pine Beetle.                       | 16. Larch Canker.                                    |
| 5. Conifer Heart Rot.                           | 17. Chafer Beetles.                                  |
| 6. Honey Fungus.                                | 18. Douglas Fir Leaf-cast Disease.                   |
| 7. Chermes attacking Spruce and other Conifers. | 19. The Dutch Elm Disease.                           |
| 8. Douglas Fir Seed Fly.                        | 20. The Watermark Disease of the Cricket Bat Willow. |
| 9. Forest Fires.                                |  |
| 10. The Oak-Leaf Roller Moth.                   |  |
| 11. Larch-shoot Moths.                          |  |
| 12. Income Tax and Death Duties on Woodlands.   |  |

Copies of the leaflets may be obtained free of charge on application to the Secretary, Forestry Commission, 22, Grosvenor Gardens, London, S.W.1.