

FORESTRY COMMISSION.

W.D.

# FIRST ANNUAL REPORT

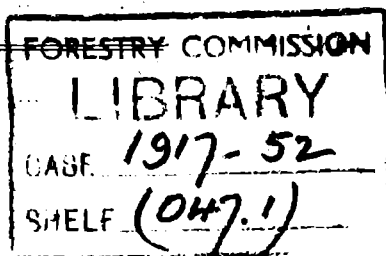
OF THE

# FORESTRY COMMISSIONERS.

Year ending September 30th, 1920.

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

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## **NOTE BY THE COMMISSIONERS.**

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We desire to express regret that our first Annual Report, has been delayed. We entered on our duties on 29th November, 1919, when the 1919-20 planting season was already well begun.

The Forest Year ending 30th September has been adopted for the period of annual report, as the financial year ending 31st March closes when planting operations are in full swing, and it is therefore difficult to get a clear view of costs at that date.

The eight months which have elapsed between the 30th September, 1920, and the publication of this Report include a whole planting season, and it may be of interest to give some indication of the progress made to date. The Commission are now in possession of 103,100 acres of land of which 68,100 acres are classified as plantable. The planting programme for 1920-21 has been successfully carried out, and the total area planted by the Commission is now approximately 8,000 acres. The stock of plants in the nurseries has been increased to meet the approved planting programme. Full details of the season's work will be given in the next annual report, which it is hoped to present early in 1922.

# FIRST ANNUAL REPORT

OF THE

## FORESTRY COMMISSIONERS,

Year ending September 30th, 1920.

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### THE EVOLUTION OF BRITISH STATE FORESTRY.

In submitting their first Annual Report to Parliament, the Forestry Commissioners have thought it advisable to give a brief sketch of the more important stages of forest history in the British Isles which led up to the passing of the Forestry Act, 1919. They have not attempted to enter into the individual forest history of England, Scotland, Ireland and Wales, but have limited their review to a general summary of the causes which have made a national forest policy as inevitable in this country as in the other countries of Europe and account for the position of British forestry to-day. State forestry is a new departure in this country, and without some introduction of this kind it would be difficult, if not impossible, to realise :—

- (a) The significance of a national forest policy.
- (b) The handicap of past indifference and the time that must elapse before British State forestry can be put on a footing comparable with that of the more enlightened countries of Europe.
- (c) The executive steps which will be necessary and the nature of the opposition—interested and otherwise—which will have to be confronted in carrying a national forest policy into effect.

For the purpose of the Report the forest history of the United Kingdom may be roughly divided into four periods :—

- (1) A *period of destruction* during which the natural forest resources were drawn upon without adequate replacement by collective or individual action.
- (2) A *period of private enterprise* during which voluntary effort, often at great individual sacrifice, attempted to re-establish the depleted forests and woodland areas.
- (3) A *period of enquiry* during which it was gradually borne in on the public mind that unaided private enterprise could no longer cope with the growing demands of an ever-increasing industrial population, and that the primeval forests of the world were not inexhaustible.
- (4) A *period of State action* during which a national forest policy was defined, and the first steps taken to bring it into being.

It is not suggested that the periods indicated above are co-terminous in England, Scotland, Ireland and Wales, or even that of necessity they synchronise in individual parts. What it is intended to show is that there has been a forward movement from a period of destruction and *laissez faire* through an intermediate period of alarm and ineffective palliatives up to a time when a decision was forced upon the nation and facts had to be faced and remedies applied.

### (1) **Period of Destruction.**

The period of destruction may be dated historically from the relaxation of the forest laws in the 13th and 14th centuries, and continued to the beginning and, in certain districts, to the middle or end of the 18th century.

Before the commencement of this period the Norman Conquerors had not only preserved but even added to those forests of Great Britain which had survived the Roman Conquest and occupation, and the ravages of the Saxons and Danes in the prosecution of their agricultural and smelting industries. The savage Norman laws dealt, for the most part, with "venison" rather than with "vert," with forests as shelter for game, grazing for cattle and pannage for swine rather than as timber-producing areas, but it is to the Norman Kings' love of hunting that we owe the preservation of our Crown woods and forests in England. This close association of forests with hunting may account, in part, for the absence of communal forests, which in so many other countries have been the precursors of an enlightened State forest policy. It is a curious fact and one which shows the strength of racial tendencies and our attitude towards forestry that Normandy and the other parts occupied by Englishmen in the wars of the Middle Ages are the only areas in France to-day where no ancient communal forests exist and where the State forests are, for the most part, either small in size or of recent creation.

In England Magna Charta, the *Charta Forestæ* and the perambulations of 1218 and 1299 both lessened the harshness of control and curtailed the area of forest. The change from severity to licence seems to have been comparatively rapid, for in little more than two centuries a people in revolt against restrictive forest legislation was once more imposing pains and penalties in the interest of timber preservation.

From 1482 (when a statute of enclosure was passed for the protection of coppice), grazing laws and restrictive legislation on utilisation of standing timber, forest surveys, as well as the reports of contemporary writers, all show that there was a growing alarm about the national timber supply. That forest denudation was proceeding apace is well-established. Clearances for agricultural development in the more populous districts, felling for smelting, at first in moveable and afterwards in fixed forges, the firing of undergrowth for grazing, and at a later date the destruction of whole forests for sheep pastures were in turn

responsible for important inroads into the all-too-small forest resources of the country.

It is easy to visualise the course of forest denudation: the haphazard breaking up of primeval natural shelter, then the inrush of the gales from the Atlantic, extending or completing the destruction begun by man. Sometimes the gales appeared to have done damage throughout the length and breadth of the country. In 1222 the legislation necessary to deal with the forest debris gave a record of woods, in some respects more complete than that of the Domesday Survey. At other times the great gales seem to have been more local in character, such as the gales of 1634 and 1703 so well described by Evelyn.

It is impossible to estimate the total area of forest in any given century, or the destruction over any given time. The place-names handed down to us, the stumps in peat bogs of recent formation, the existence of the oak forests of Ireland and the Caledonian Forest in Scotland, the record of production from glens now bare, the Domesday Survey, the Taverner survey, the contemporary writings of men like Manwood, Holinshed, Evelyn, Johnson, &c., or in more recent times the County Histories, Scott, Cox, Townley, &c., show that great areas were covered with trees which are now barren heath land or devoted to agriculture.

It is difficult to gauge how far the old forests were woods in the modern sense of the word, or by what stages they passed from mere areas assigned to sport, to natural seeding, artificial seeding and finally to plantations. That the British oak made the stoutest ships in the world, the British ash the best helms and British yew the most famous bows, that Scots fir was brought from the wilds of Morayshire by a York trading company, all go to show that these early forests could and did grow commercial timber.

## (2) Period of Private Enterprise.

It was not until the agricultural revival—towards the middle or, in certain districts, the end of the 18th century—that the growing demand for timber, notably for ship-building, accentuated by periodical interruptions of imports, made landowners turn their attention to planting on an increased scale. Planting appears generally to have followed on the heels of agricultural prosperity and to have been stimulated into special activity by fashion, the report of successful sales, the action of local societies and enthusiasts, and, in the case of certain properties, by long minorities which left the bulk of the income free for investment.

Certain facts are of more general interest. The Royal Dublin Society took an interest in afforestation at a very early date in its history. By 1786 it was paying premiums of £3 an acre towards the establishment of oak plantations, a figure which, considering the changed value of money compares favourably with Government grants offered at the present time. From 1766

onwards the same Society gave premiums for the raising of forest tree plants, and between that date and the end of the century had spent over £12,000 in assisting private planters.

In 1713 Government grants for planting were made in Scotland, and in 1753 a private association offered prizes for plantations. In 1783 the Highland Society (afterwards the Highland and Agricultural Society) was founded, and took that special interest in Scottish forestry which has continued to the present time. The extensive plantations which earned their premiums in the late 18th and early 19th centuries provided some of the best standing timber felled during the war.

In the early part of the 18th century the landowners of England appear to have turned their attention from arboriculture to silviculture. Dr. Nisbet states, "By 1730 extensive planting was general throughout the United Kingdom, some of the oldest existing woods date from that period, while the formation of large nurseries to supply young trees for planting appears to have become an established business between 1730 and 1760." From 1775 to 1781 the Society of Arts, London, offered prizes to tree planters.

For a century and a half (from 1730 to 1885) it was generally supposed that imports from abroad, supplemented by private enterprise, would always be able to meet the increasing demands for timber. There was, however, one notable exception, when Government for the first time took a real interest in timber production. Following the advice of a Commission of 1786, which proposed to devote 100,000 acres to oak forest for the supply of the navy, an active planting policy was pursued in the Crown woods during the first three decades of the 19th century. The effort was spasmodic in character, and when wooden ships of war became obsolete, it ceased almost completely. It is important to note that the Government enquiries of 1833, 1848 and 1854 were directed to the administration or mal-administration of the Crown woods and forests, some 70,000 acres in extent, not to the larger question whether a national forest policy was necessary to meet the growing wants of the nation. This fact is significant and shows that, even if individuals realised the dangers of the situation, Parliament and the general public were not sufficiently interested to face the position and look for remedies.

In reviewing this period of private forestry it must be admitted that what is striking is not so much what was left undone as what was actually accomplished, especially if it be remembered that continuity of management—so essential in forestry—was conspicuous by its absence.

There was no State organisation, little State assistance in planting and none for education or research, nor was there, as in many other European countries, help or advice in the provision of markets, or subsidised transport. The woods were not even always planted for commercial purposes, a large proportion being

created for scenic effect, sport or shelter. Until 1854 there was no Arboricultural Society,\* and until the 20th century no co-operative organisation amongst landowners for buying or selling forest produce. Except for woods in the immediate neighbourhood of commercial centres there was little or no revenue from the earlier thinnings and therefore but small prospect of the individual seeing a return from the woods he had planted.

It is not surprising that under such circumstances poor progress was made in economic forestry. There was no authoritative technical lead; in the absence of guidance in silvicultural affairs woodland owners were swayed by fashion. Methods well suited for the areas for which they were devised were misapplied to areas where the conditions were entirely different. The reported success of certain species in one part of the country led to their being planted elsewhere without regard to soil or situation. Scots pine, for example, was planted above the snow-break line and in the wet, wind-swept moorlands of the West, for which localities it is ill-adapted. Larch, with which such notable results had been achieved in the Atholl plantations, was planted in places quite outside its natural range. Insufficient knowledge of the individual requirements of forest trees led not only to mistakes in the choice of species, the formation of badly mixed plantations and methods of treatment, but also to indiscriminate close planting and other faults in the cultivation of trees.

In a word, the private owner, while conscientiously endeavouring to provide for local rural requirements (farm buildings, vehicles, fencing, &c.), for game cover and amenity, was unable from the circumstances of the case to provide against the unforeseen increase in the consumption of softwood timber which was one of the results of the enormous increase in industrialism in the United Kingdom during the 19th century.

It is easy to criticise British private forestry, but it must not be forgotten that it has at least three solid achievements to its credit which far out-weigh the minor errors which have marked some stages of its progress.

1. The trees were planted, which, during the recent war when it was a choice between importing food or timber, enabled the people of these Islands to be fed.
2. The faster-growing conifers were introduced and the way paved for planting them on a commercial scale, a step which may, if there is no unforeseen set-back, revolutionise continental ideas on length of rotation and maximum yield.
3. Experiments were made which, though not fully recorded, should, with intelligent investigation, supply much of the information required for the successful establishment of State forests.

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\* A Society called the Dublin Arboricultural Society was founded in 1830. They published *Transactions* in 1831, but no subsequent record of their activities can be traced.



### (3) Period of Enquiry.

A series of independent causes led up to the period of enquiry which extended from 1885 to 1915. The extension of railways, spread of industrialism, growth of cities and creation of new commercial centres, had increased the demand for timber to an extent previously unknown. In the ten-year period 1843-52 the average imports of hewn and sawn timber and staves averaged 1,867,000 loads per annum. By 1873-82, these imports had increased to 5,880,000 loads, and by 1903-12 to 9,596,000 loads.

On the other hand the agricultural depression in the late seventies and the fall in prices of home timber after the gales in the early eighties had checked private planting and, in many districts, brought it to an absolute standstill.

The Arboricultural Societies, founded in Scotland in 1854 and in England in 1881, by their meetings, foreign excursions, publications and propaganda helped towards focussing public attention on the unsatisfactory nature of the national timber supply and the need for action. The establishment of forestry schools, the unselfish enthusiasm of the lecturers and the reflex action of the young Indian Forest Service gradually drew attention to the shortcomings of existing practice and did much to lay the foundations of sound silviculture.

In 1885 the first definite step was taken by the State in appointing a Select Committee of the House of Commons to deal with forestry education. It took evidence, and straying as Forestry Commissions are apt to stray, outside the terms of reference called attention in August, 1887, to "the considerable social and economic advantages in an extensive system of planting in many parts of the Kingdom, especially on the West side of Ireland and in the Highlands of Scotland," and described this subject as "one of great importance and well worthy of early consideration."

From 1887 onwards, Departmental Committees and Royal Commissions followed in rapid succession. The Departmental Committee of 1902 made valuable suggestions for surveys, education, planting by Local Authorities, demonstration areas, &c. The Departmental Committee on Irish forestry advised in 1908 a national scheme of afforestation for Ireland, involving the acquisition and planting of some 200,000 acres of land and 50,000 acres of existing woods. The Committee was appointed for the purpose of devising some means of checking the disappearance of woods which was being brought about through the operation of the Irish Land Purchase Acts. Their Report may be usefully compared with the somewhat optimistic report of Professor Howitz of Denmark who, after a short sojourn in the country in 1884 at the Government's request, had decided that the hospitable shores of Lough Neagh were suitable for the creation of 100,000 acres of plantations and well adapted to the cultivation of 36 named species of conifers as well as 54 different hardwoods.

Highland  
area loc.?

In 1909, the Royal Commission on Coast Erosion and Afforestation recommended that a Forestry Board should be appointed, in whom should be vested powers to survey and determine how much land was suitable for afforestation, and subsequently to acquire it. They outlined a comprehensive scheme for the planting of 9 million acres, or alternatively 6 million acres, during a 60 or 80-year period respectively. The Report attracted much attention, but it was realised that a scheme of such magnitude could not be put into action without extensive preparation. The Commissioners appointed under the Development Act (1909) were accordingly empowered to devote attention to forestry, including education, the conducting of enquiries, experiments and research, and the purchase and planting of land found after enquiry to be suitable for the purpose. In 1911, the Development Commission laid down the following general principles which were to govern their policy :—

- (a) That the first requirement for such development is effective education in forestry at suitable centres, regulated by organised research and demonstration.
- (b) That no scheme of State afforestation on a large scale can be considered until investigation has shown where State forests might be economically and remuneratively provided (regard being had to the interests of other rural industries) and until a trained body of foresters has become available.
- (c) That for the present applications for grants for the above purposes should include provision for the creation and maintenance of such staff as may be necessary to give practical advice and assistance to those who desire to undertake afforestation or to develop existing afforested areas.

Of the remaining enquiries little need be said. The 1911 Departmental Committee on Forestry in Scotland put forward schemes for demonstration areas, education and the appointment of advisory officers. The Advisory Forestry Committee in England and Wales (1912), made recommendations which followed the same general lines.

The demands on the Development Fund were numerous and under the circumstances it was inevitable that forestry should suffer. The fact that the Commissioners had no executive powers but had to work through other Government Departments also stood in the way of rapid progress. While the Commissioners' forest policy had little effect in increasing the area under forest both the Coast Erosion Commission and the Development Commission had a useful influence upon subsequent events. The bold schemes outlined by the Coast Erosion Commission presented the wants of the country in their proper proportions and enabled the subject to be faced, when it was faced, with some understanding both of the size of the problem and the nature of the country's requirements. The Development Commission, on the other hand, out of their limited fund.

did useful pioneer work, and have to their credit the provision of advisory officers, a survey of certain typical counties, increased educational facilities, the encouragement of Local Authorities to plant their water-catchment areas, the promise of a good stock of plants for post-war afforestation operations, and a small but practical start in State forestry in Ireland.

#### (4) **Period of State Action.**

Statistics gathered during the period of enquiry had made it generally known that :—

1. Imports of timber had increased fivefold between 1850 and 1910.
2. The consumption per head in the same period had risen from  $3\frac{1}{2}$  cubic feet per annum to nearly 11 cubic feet.
3. The ratio of home to foreign timber had declined, and in 1914 amounted to barely 10 per cent. of the supply.
4. The price of imported timber had risen steadily during the thirty years before the war while the quality had declined.

That this state of things was unsatisfactory in time of peace was generally admitted. It required but one year of war to show how critical the position was in a time of national emergency.

In 1913 the quantities of timber and grain imported were about equal, and headed the list of imports. They absorbed between them a quarter of the total shipping which entered British ports from over-seas. In 1916 the people were hungry, yet despite the most strenuous efforts to set more ships free for imported grain, it was found impossible to reduce by even 1 per cent. the proportion of shipping required to carry the timber essential for operations of war abroad and at home. Napoleon's maxim that an army marches on its belly had to be brought up to date. The Great War showed that the belly can only move on wood and iron, of which wood is required in far the greater bulk. Not till arrangements had been made for supplying the requirements of the army from the French forests and the home demand by ruthless felling of the old and young woods in the United Kingdom could tonnage be released for further imports of food.

In 1915 Lord Selborne, President of the Board of Agriculture and Fisheries, set up a Committee to expedite home fellings and it soon became evident that owing to the depletion of home resources a national forest policy based on considerations of public safety was inevitable after the war. At the same time such practical steps as were possible were taken towards reconstruction, pending the decision of Parliament on its course of action. The co-operation of the Development Commission, the Office of Woods and Boards of Agriculture in the three Kingdoms was secured; seed was purchased and nurseries were established with the result that plants were available for the State planting programme of 1919-20.

The second step towards the realisation of a forest policy was not long in coming. In July 1916 Mr. Asquith appointed a Sub-Committee of the Reconstruction Committee of the Cabinet under the Chairmanship of Mr. F. D. Acland "to consider and report upon the best means of conserving and developing the woodland and forestry resources of the Kingdom, having regard to the experience gained during the war." By May, 1917, Mr. Acland's Committee had signed a unanimous report laying down the broad principles on which a national forest policy should be based, the immediate objectives and the ways and means for attaining them.\* The Report was accepted by the Cabinet, an Interim Forest Authority was appointed in 1918 and charged with the duty of making preliminary arrangements for developing afforestation in the United Kingdom.

In July, 1919, a Bill was introduced into Parliament, passed through both Houses and received the Royal Assent on 19th August, 1919. On 29th November the Forestry Commissioners were appointed and at once took up their duties.

### **THE POSITION OF BRITISH STATE FORESTRY IN 1919.**

Before considering the forest policy adopted by Parliament and the steps to be taken to carry it into effect, it is necessary to turn back for a moment and look at the position of State forestry in this country in 1919.

Those accustomed to the highly-developed State forests of the Continent, with their regular succession of age classes and their ordered routine based on centuries of experience, will have difficulty in realising the conditions under which State forestry made its start in this country. Apart from the Crown woods the State forests in Great Britain in 1919 consisted of a few hundred acres of plantation recently acquired in Ireland.

As a result of the absence of State forests there was no organised higher executive staff with British experience, no forest officer personnel, no body of foresters and foremen with State forest experience or customs, and, above all, no forestry code. Surveys of plantable land were only beginning and, as will be shown later, little or no statistical information had been collected regarding privately-owned woodlands. British forestry research was as yet in its infancy. Admirable as had been the pioneer work done by individuals and by the forestry societies, it had seldom been directed to those particular points which were of importance to a forest authority initiating State forestry *ab ovo*. It is true that experiments on a considerable scale had been undertaken by private individuals, but although in the mass they presented a body of information of real importance, the results had seldom been reduced to a form available for general application.

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\* Final Report of the Forestry Sub-Committee of the Reconstruction Committee [Cd. 8881].—This Report is referred to subsequently as the Acland Report.

In embarking on a policy of State forestry a start had therefore to be made, if not from scratch, from a point very near it. A staff had to be improvised from the service of the Crown Woods, the advisory officers, and from men with Continental and Indian experience. A survey had to be undertaken at the same time that land was being acquired, planting had to proceed simultaneously with land acquisition. That mistakes have been and will be made is certain; that the cost of establishing plantations will be greater than would be the case abroad is also inevitable. For instance, planting will rarely take place on a carefully prepared "forest floor," on land where commercial timber has been dragged to the roadside, the firewood neatly piled and squared in coupes, and the débris burned. State planting in the United Kingdom will usually take place either on felled areas where the lop and top still encumber the ground, overgrown with brambles and providing a home for every forest pest, or on hillsides where draining, fencing and clearing of scrub or bracken may have to precede planting, and where considerable capital expenditure may be necessary for the provision of workmen's houses, access roads, compensation to tenants, &c. Again, in the provision of plants for the first three or four years' work it will be impossible to estimate the exact proportion of each species which will be wanted for land which has not yet been acquired. There will be surpluses and shortages and consequent waste of effort and money. It is necessary to insist on this point from the start for, efficient and painstaking as the work of the technical staff has been, there are difficulties inherent to a new enterprise which render any comparison with results and costs obtained in Continental forestry quite unreliable.

### **NATIONAL FOREST POLICY.**

The national forest policy defined by the Acland Committee, approved by the Cabinet and accepted by Parliament falls naturally under two heads:—

- (a) *The Ultimate Objective* which is the creation in Great Britain and Ireland of reserves of standing timber sufficient to meet the essential requirements of the nation over a limited period of three years in time of war or national emergency.
- (b) *The Immediate Objective* which is a ten-year scheme based on a block grant.

*The Ultimate Objective.*—The Acland Committee, after an exhaustive examination of the needs of the nation in time of war, decided that to ensure supplies of home-grown timber for a three-year period under conditions most unfavourable to this country, it would be necessary for the State to afforest 1,770,000 acres of land previously unplanted (of which 1,180,000 acres should be planted in 40 years, and the whole in 80 years); and, at the same time, to take steps to secure the continuance under timber and obtain an increased yield from the 3,000,000 acres of private forests which existed in 1914.

This policy based on national insurance has as cogent arguments in its favour in time of peace as in time of war.

1. The timber consumed in Great Britain and by the British Army in France between the years 1915-1920 cost the country at least £190,000,000 more than a similar amount of wood would have cost at 1909-13 prices. In the year 1920 the nation imported approximately one-tenth less wood and pulp than in 1914, and paid over £80,000,000 more for their purchase.

There is no reason to suppose that the average annual demands for timber for house construction, delayed repairs and industrial developments will be less in the next decade than they were during the five years immediately preceding the war. If this is the case, and the price of timber does not fall much below a figure midway between the 1913 and 1920 prices, we shall have to pay for the whole of the period 1915-1930 anything between £400,000,000 and £600,000,000 more for our timber than we should have had to pay for a similar amount at 1909-13 prices.

It is not argued that if the planting programme now adopted had been completed before the war the price of timber would not have risen. It can, however, be definitely stated that had these additional woods been in existence they would have competed with Scandinavia and Finland and tended to keep prices of softwoods at a lower level.\*

2. Labour for planting, maintenance and conversion accounts for some 80 to 90 per cent. of the cost of forestry operations. It is argued that, even with the present high cost of establishing plantations, State forestry is one of the soundest, if not the soundest method of giving rural employment, lowering adverse trade balances, and insuring that the best use shall be made of shipping facilities in time of war and national emergency.
3. Within reasonable and easily ascertainable limits timber stores itself in the woods and, unlike other commodities, increases in quantity during the period of storage.

*The Immediate Objective.*—This is covered by the provisions of the Forestry Act.<sup>(2)</sup> It is an instalment of the complete plan, and is defined in precise terms. It has been adjusted with three considerations in view: to provide the State with experience in State forestry on a large scale, to make a definite and substantial contribution towards the total planting programme, and

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\* In 1920, for instance, home-grown railway sleepers cost 3s. each less than imported sleepers. This item alone (which during State control of railways falls directly on the Treasury) represents a possible annual saving of £500,000.

to make preparations for the next instalment. The Forestry Commissioners are consequently charged with the following duties for a ten-year period :—

1. The afforestation of 150,000 acres of new land by the direct action of the State.
2. Assistance to Local Authorities and private owners for the afforestation or re-afforestation of 110,000 acres.
3. The purchase and reconstruction of hardwood areas.
4. Education of forest officers, landowners and land agents, working foresters and foremen.
5. Research and experiment.
6. Encouragement of forest industries.

For the above purposes a fund of £3,500,000 has been voted by Parliament. This fund has also to bear the establishment as well as all incidental charges of the Forestry Commission.

### **Financial Policy.**

The Acland Committee based their financial recommendations on the information available in 1916. Owing to the fact that forestry operations had practically ceased after the declaration of war, this information was derived, for the most part, from pre-war experience. From 1916 to 1918 the cost of living and consequently the cost of labour and materials rose steadily, and contrary to general expectations continued to rise at an increased rather than a diminished rate after the Armistice.

When the Interim Forest Authority began in 1919 to draft the Forestry Bill, which was to provide the statutory powers necessary to carry out the recommendations of the Acland Committee, they were faced with the fact that the estimated cost of the 10-year programme, viz., £3,425,000 was obviously too low. Mr. Acland accordingly on 13th April, 1919, drew the attention of the Treasury to these facts, pointing out that since 1916 there had been an increase in labour costs in England and Wales of 46 per cent., with corresponding increases in other parts of the Kingdom, and that the Interim Forest Authority considered that an increase of at least 30 per cent. in the total grant would be necessary to accomplish the full programme outlined in the Acland Report. A definite recommendation was made that the block grant should be increased to 4 $\frac{3}{4}$  millions. This recommendation was not accepted by the Cabinet Sub-Committee on the grounds that it was impossible to predict the trend of prices for the whole of the 1919-29 period; that the existing financial situation did not warrant an increase; and that the position might be reviewed when financial conditions were more satisfactory. It was decided that no commitments beyond the authorised figure were to be entered into by the Authority.

Actually the Forestry Act, 1919, provided for a 10-year grant of 3 $\frac{1}{2}$  millions against the Acland Report figure of £3,425,000, but it also threw on the Forestry Fund certain additional charges estimated in that Report at £267,000, *i.e.*, £3,692,000 in all.

By November 1919, when the Commissioners took up their duties, the index figure for the cost of living had risen to 125 and showed no sign of falling; personnel charges and cost of material had risen to 100 per cent., and, in certain cases, to 200 per cent. above pre-war figures. From the point of view of a newly-established Department, faced with a large and expanding programme, the position was altogether unsatisfactory. The Commissioners were therefore obliged at the outset, regardless of outside pressure and interested criticism, to concentrate on those objectives which in their opinion were essential to the successful development of a national forest policy. The decisions at which they arrived are embodied in the following paragraphs.

*Guiding Principles.*—Just as the first act of an individual interesting himself in forestry is to plant trees so that he and his descendants may be provided with timber and woods for their future profit or enjoyment, so the primary aim of a forest authority should be to create forests and maintain them under the most productive conditions. The main objective of the Commissioners is to secure a supply of timber for the country, and all expenditure on staff, education, research, assistance to private owners and corporate bodies, acquisition of land, purchase of materials, &c., are means towards that end and subordinate to it.

This conception, if carried to its logical conclusion, involves:—

- (1) Limiting the technical staff to the numbers required for State forestry, advisory work and assistance to private individuals and corporate bodies interesting themselves in planting.
- (2) State assistance for providing educational facilities at the Universities sufficient to meet the requirements both of the State and of private forestry.
- (3) The endowment of research at a limited number of centres and—without interfering with that liberty of action so necessary to scientific progress—the general direction of research to the forestry problems of immediate importance.
- (4) The acquisition of land only in such quantities and under such conditions as would meet the requirements of the State planting programme.
- (5) Assistance to private individuals and corporate bodies up to an amount which will induce them to carry out their portion of the national forest policy.
- (6) Generally, the elimination of all activities, however attractive, which do not conduce directly or in the long run to an increase in timber production.

*Programme of Work and Expenditure.*—Working on these principles, the Forestry Commissioners proceeded to divide their 10-year programme of work and expenditure into three periods. During the first or preparatory stage the work included the recruitment and organisation of staff (technical and clerical) and procedure at Headquarters and at the Assistant Commissioners' and Divisional Offices; the establishment of working



arrangements with other Government Departments interested in kindred subjects; the arrangements for assistance to the Universities in their educational work; the establishment of foresters' training schools; the endowment and organisation of research and experimental work; the settlement of terms and regulations for advisory work, grants and profit-sharing schemes with private planters and corporate bodies. It was anticipated that planting operations, though actually well up to the Acland Committee's programme, would be confined to the newly acquired areas which could be planted with suitable seedlings or transplants from the existing departmental nurseries. Expenditure was estimated at a little over half the normal rate, *i.e.*, at an average rate of £150,000 to £200,000 per annum.

It was estimated that by 1921 the second stage would begin. The technical staff would then have been appointed, organised and have gained the necessary experience, plants would be available in sufficient quantities to enable land acquisition and planting to proceed at a really effective rate, and expenditure would be incurred at the average rate, *i.e.*, at £400,000 to £420,000 per annum, including appropriations in aid. By 1925 the Commission would have acquired 260,000 acres of afforestable land, 60,000 of which would be planted, while preparations would be in hand for planting 21,000 acres in the year 1926 and 24,000 acres in 1927.

During the third stage, 1926 to 1929, State forestry operations would be divided into two parts:—

(a) The completion of the Acland Committee's 10-year programme.

(b) Preparation for the next decennial period 1929 to 1939.

The possibility of completing the Acland Committee's planting programme appeared to depend mainly on the cost of labour and material. If the general average of prices were not higher than that which obtained in November, 1919, it seemed probable that by stopping acquisition of land and keeping down plant production to the minimum required for the actual 10-year programme, the greater part, if not the whole, of the Acland programme might be carried out. It would not be possible to prepare for the next decennial programme until Parliament had decided what that programme was to be and until it had voted funds to acquire land and raise the necessary plants. In order to make timely preparations Parliament should therefore be asked to decide at latest in 1926 what is to be its forest policy for the second decennial period, 1929 to 1939. If the decision is to proceed on the scale indicated by the Acland Committee's recommendations, it will be necessary to purchase seed in 1926 sufficient to supply upwards of 90 million seedlings for the planting season of 1929, as well as to acquire some 50,000 acres of land.

*The Block Grant System.*—The institution of a block grant to meet the cost of a definitely approved programme is a novelty as regards a Government Department and, as already indicated, is not without its difficulties in uncertain times like the present.

for the Department concerned. The Commissioners are satisfied, however, that for forestry, where long views have to be taken, the principle is an excellent one, and with the improvements suggested below might be made to work smoothly. The chief difficulties encountered in beginning work on a 10-year block grant are first the slender basis on which to estimate, secondly, the unforeseeable changes in prices and values, and thirdly, absence of knowledge about the Government policy at the end of the 10-year period. Forestry is obviously not a subject which can be taken up or dropped at will without serious loss of efficiency. To meet all these difficulties the Commissioners suggest that, while adhering to the 10-year block grant system, Parliament should systematically review progress at the middle of the 10-year period and simultaneously make provision for a further 10-year programme, which in turn would be reviewed and extended after an interval of five years.

Having regard to the fact that during their first year of office the Commissioners have been engaged largely in preparatory work, they would be content to see the principle of revision and extension first applied during the year 1925-26, but they feel that it ought not to be longer delayed.

*Increases and decreases of expenditure compared with estimates.*—Emphasis has already been laid on the difficulty of keeping costs down to the Acland Report estimates. On the other hand a very considerable saving has been made in the acquisition of land. Thanks to the untiring work of the Assistant Commissioners and, in no small degree to the patriotism of individual landowners, some of the best planting land in the Kingdom has been acquired at rates well below the original estimates. The drain on the Forestry Fund has also been reduced by increasing materially the proportion of leased to purchased land.

### **Land Policy.**

In carrying out their task of establishing during the first ten years 150,000 acres of State forests the first duty of the Commissioners is to decide what considerations should govern their selection of land.

These considerations may be divided into two groups:—

1. *Forestry considerations*, including:—
  - (a) Soil quality and probable yield of timber per acre.
  - (b) Cost of acquiring land and establishing and maintaining plantations.
  - (c) Access by rail or sea and distance to markets.
  - (d) Initial capital expenditure, including housing, draining, fencing, clearing of land, &c.
  - (e) Deferred capital expenditure—roads, sidings, &c.

2. *Broader national considerations, i.e., the type of land (having due regard to relative production, assessable value, amenity, &c.) which can be taken from its present uses and afforested with the greatest advantage to the State.*

These two groups of considerations are quite distinct though they are often confused. A barren hillside carrying a few sheep or deer, employing less than one man per thousand acres and rated at a few pence per acre per annum, is from the national point of view obviously the best land to afforest. If, however, it consists of 3rd class Scots pine land capable of growing no more than 40 to 50 cubic feet per acre per annum; if in addition it requires to be fenced against rabbits and deer and entails a high capital expenditure for roads, houses, &c., and is remote from probable markets, it may, from the forestry point of view, prove an impossible proposition.

Statistics of production show that land capable of producing the faster-growing conifers under optimum conditions gives the best financial return, even where the cost of acquiring the site and establishing the crop is relatively high. First-class Douglas fir land, capable of growing up to 160 cubic feet per acre per annum will, given a market for pit-props, pay back the cost of planting in the course of the first 25 years. On the other hand, the poorer classes of Scots pine land, especially at high altitudes, however cheaply acquired and planted, only begin to pay back the original outlay after 40-50 years, and at the time of final felling make but a low return on the capital invested.

The Forestry Commissioners, whose duty it is to produce timber, must of necessity look at this question from the forestry standpoint in the first instance. They consider, however, that in all cases where there is any approach to an equality of conditions they are in duty bound to give full consideration to the broader national standpoint.

From the point of view of national economics generally, land suitable for planting may be divided into five classes :—

- (1) Arable land.
- (2) Derelict plantations.
- (3) Hill grazing land.
- (4) Common grazing land.
- (5) Land wholly or mainly devoted to sport.

The relative advantage to the State of afforesting land included in each of these categories must be assessed after giving consideration to the following points :—

- (a) Bulk yield.
- (b) Value of product.
- (c) Rent and rateable value of the land.
- (d) Employment.
- (e) Opportunities for establishing small holders.
- (f) Proportion of plantable to unplantable ground and uses to which the unafforested portion can be put.

(1) *Arable Land*.—Land ploughed or suitable for ploughing can, and should be, put to more important economic uses than forestry. Speaking generally, such land at present gives a larger and more valuable yield per acre, and employs as much, if not more labour than it would do under forest. Arable land will therefore only be taken :—

- (a) For nurseries.
- (b) For small holdings for forest workmen.
- (c) For mill sites, etc.—where no other suitable land is available.
- (d) To round off areas and thus avoid heavy capital expenditure in fencing, etc.

In this decision the Forestry Commissioners differ from the findings of the Coast Erosion Commission, which considered that there were 1,000,000 acres of arable land with an annual value not exceeding 10s. per acre which might be planted with advantage. Whether or not at some future date poor arable land may go out of cultivation on account of high wages, or a fall in price of cereals, does not immediately concern the Commissioners. They are aware that legislation has been passed recently granting certain minimum prices for wheat and oats for the purpose of keeping land under arable cultivation. It therefore appears to be against the declared policy of the nation to afforest such land, even if in some cases a greater net return might be obtained.

(2) *Derelict Plantations*.—It is the duty of the Forestry Commissioners to afforest 150,000 acres of new land in the first ten years, and to assist, up to the limits laid down by Statute, in the maintenance or re-afforestation of existing woodlands by private or corporate owners. Land previously planted will, therefore, only be taken for State afforestation when it is certain that the owner does not intend to replant. The Commissioners realise that to the extent to which such land is dealt with by them, they are diminishing the area to be afforested under the Acland Committee's programme. On the other hand this land is generally useless for any other purpose and should be replanted within a few years of felling. The experience of the Commissioners is that private owners are not replanting areas cleared during the war to the extent which was at one time anticipated, and they are anxiously watching this aspect of the case.

(3) *Hill Grazing Land*.—A considerable extent of hill-grazing land, down land and improved pasture must be ruled out, like arable land, as being too valuable for forestry. It has not paid in the past, and it will probably not pay in the future to afforest large tracts of land worth over 5s. per acre unless a high proportion of the land is capable of producing the faster-growing conifers.

A great deal of hill land suitable for forestry exists which, according to the reports of the Coast Erosion Commission and

Aceland Committee, produces anything from 2 lbs. to 11 lbs. of meat per acre per annum. Land of this sort is let at from 3*d.* to 3*s.* per acre, and includes black-faced-sheepwalks in the North of Scotland, carrying one sheep to four or five acres, as well as more valuable hill farms in the South carrying one sheep to an acre or acre-and-a-half.

Employment on sheep farms varies with the number of sheep per acre, the amount of fencing, and the extent of arable land under cultivation. One man may have charge of anything from 500 to 2,500 acres. The value of the produce from hill-grazing has lately been subject to very violent fluctuations. Black-faced wool is at present unsaleable, and Cheviot wool stands at about pre-war prices, but it seems probable that the produce of the hill farms described above is something between 5*s.* and 25*s.* gross per acre per annum.

(4) *Common Grazing Land.*—In this case the method of occupation, rather than the economic value of the land, must be the dominating consideration.

One of the objects of forestry is to increase the resident population in rural districts. It would be folly to touch fully-stocked improved grazings where the out-run for cattle both in the summer and winter months is essential to the small holders, and the common grazing provides, as it often does, an important portion of the annual return.

In common grazings, however, the land is often neglected, bracken-covered in the lower, and undrained on the higher slopes and gives a very small return. In some cases, by arrangement with the commoners, it may be possible to rent and afforest a portion of the grazing land, thus affording shelter to the remainder and providing a fund for draining and bracken-cutting. Prejudice and ill-defined rights are not unlikely to prove an obstacle in tackling this most difficult question. The total area of common grazings set out in the Agricultural Returns is over 2½ million acres. The question will, therefore, have to be faced if the full forestry programme is to be completed.

A single example may be taken. In South Wales 50,000 acres of common grazing are to be found in a single district. If 30 per cent. of the common grazing were planted say with Larch, Sitka spruce and Douglas fir, it is estimated that the yield would be at the rate of 65 cubic feet per acre per annum, and that the supply of pitwood to the Welsh collieries might be 30-40,000 tons per annum, while employment on the land afforested would be increased ten fold.

(5) *Land Devoted to Sport.*—Deer forests comprise the greater portion of the four to five million acres in Great Britain wholly or mainly devoted to sport. They probably extend to over 3,500,000 acres, and are mainly situated in the Highlands of Scotland.

It is calculated that deer forests contribute 1 lb. of meat per acre per annum to the nation's food supply. The Reports of the Commissions in the 19th Century show that the amount of employment is rather higher than on a corresponding acreage of Highland sheep farm. The rent runs usually from 1s. 6d. to 2s. 6d. per acre per annum, depending on sporting possibilities, amenity and accessibility, rather than on the grazing value.

The amount of arable land found in deer forests is small. According to the Highlands and Islands Commission the area in 1892 was only 2,400 acres. No return has been made since that date, but, with the extension of deer forests by one-third it is probable that the area of agricultural land has increased considerably. Whether these areas have sufficient arable land when afforested to maintain a large rural population is doubtful. A Committee on the subject is sitting at the present moment, and will, it is hoped, clear up this point. The Forestry Commission have had reports made on about 15 per cent. of the deer forest area in their first year's work.

*Economic value to the State of land under timber.*—The returns from afforested ground vary widely. In the examination of some 1,100 plots and sub-plots in different parts of Great Britain and Ireland, it has been shown that returns run from 160 cubic feet per acre per annum in the case of 1st class Douglas fir land down to 40 cubic feet or less per acre per annum for poor Scots pine land. In afforesting hill grazings, whether at present used for deer, sheep or common grazing, it will generally be found that the land varies from land suitable for the faster-growing conifers on the lower slopes to land on the upper slopes which will produce only 40 cubic feet per acre. If we take a return of only 60 cubic feet per acre per annum as an average return on the whole area and allow 30 cubic feet of grown timber to the ton, it will be seen that about 2 tons per acre per annum should be produced. Taking the gross value of timber *in situ* at from 6d. to 10d. per cubic foot, the gross annual return should be something between £1 10s. and £2 10s. per acre.

The figure generally accepted for employment in forest land is one man to every 100 acres during the planting stage, one man to every 50 acres in the productive stage, and one man to every 25 acres when forest industries have been established round the forests.

*General Conclusions.*—The afforestation of land now used for other purposes is bound to cause inconvenience and even hardship to existing owners and occupiers. The State has no unoccupied land of its own, and there is, therefore, no escape from the fact that either land must be diverted from its present occupation or the scheme of national forest insurance must be abandoned.

It is probable, in fact certain, that the cry of mutton *versus* trees will be raised to prevent land from being put to better

economic use. It is worth while enquiring for a moment what force this argument really has.

1. So long as the nation fails to produce the whole of its cereals and meat, the food of the people ultimately depends on imports from abroad. Imports in turn depend on shipping. In February, 1917, when the submarine menace was at its height, the Prime Minister stated that despite every effort timber still absorbed more shipping than any other import, and that if tonnage were to be saved (for food, etc.) the problem of supplying timber from the home woods was the first which must be attacked.
2. The Acland Committee's Report established the fact that even if the whole of the land to be afforested (1,770,000 acres) were taken from grazing lands, the reduction in the meat yield in Great Britain and Ireland would only be 0·7 per cent., or (including imports) 0·4 per cent. of the current consumption, while the full reduction would only take effect 60 or 80 years hence.
3. The reduction of the grazing area will, in the first decade, be trifling, because :—
  - (a) The surplus grazing land set free for sheep in deer forests (after the planting ground has been taken for afforestation) will, to a great extent, make good the area taken from sheep farms.
  - (b) The blocks planted each year will not as a rule exceed 1/15th of the total acreage of the sheep farms acquired.
4. Grazing land will be taken for the most part from the larger sheep farms on which considerable areas of uncultivated arable land are usually found. If an intelligent policy of land settlement is carried out in connection with planting operations even a few acres of land under potatoes will make good, in point of bulk at least, the food produced by many hundred acres under hill pasture

### **Private Forestry.**

The forest policy adopted by Parliament depends, as already pointed out, not only on the establishment of State forests, but also on the maintenance and improved management of the existing 3,000,000 acres of privately and corporately owned woodlands.

The objective for the first ten years, as part of this general scheme, is to assist landowners and corporate bodies in re-afforesting at least 50,000 acres of old woodland, as well as in planting 60,000 acres of new land, at a cost to the Forestry Fund estimated by the Acland Committee at £327,000, of which

£137,000 is allotted to proceeds-sharing schemes between private individuals or corporate bodies and the State, and the remainder to grants and loans.

Before considering the steps which the Commissioners propose to take to achieve these ends, it is necessary to review what is known about private forests and woods to-day. About 97 per cent. of the total woodland area of the United Kingdom is privately owned. A further  $2\frac{1}{2}$  per cent. belongs to the Crown, and just under  $\frac{1}{2}$  per cent. to Local and Municipal Authorities. No survey of the private woods of Great Britain exists. Though the actual area described by their owners as "woodland" is known within a degree of accuracy of from 3 per cent. to 4 per cent., it should be realised that the areas so described may vary from high forests, or regularly cultivated coppice, to oak and birch scrub, forest land from which the timber has been removed, to even open moorland. There is no reliable information extant as to areas planted or felled, the age-classes or species of the growing crops; nor is it known what proportion commercial woodlands bear to unproductive woodlands, *i.e.*, woods used for shelter, sport, or scenic effect.

The Forestry Commissioners are of opinion that:—

1. The area of productive woods had been considerably reduced before the war.
2. A large percentage of woods to-day have little or no commercial value owing to the removal at frequent intervals of the best of the standing timber.
3. The rotation of woods in Great Britain and Ireland has, as a rule, greatly exceeded the economic period.
4. The area planted before the war was seldom less than 10,000 or more than 20,000 acres a year.

This information is based on report and individual observation, and must not be regarded as a precise statement of fact.

What is certain is that from 1914 at a steadily growing rate, increasing rather than diminishing since the Armistice, the woods of Great Britain and Ireland have been felled, and little or no planting has been done. While it is impossible to state with accuracy the total area of productive forests in Great Britain, it is certain that in the immediate vicinity of the centres of population, as well as in those areas which would be of maximum utility in time of emergency, most of the trees of pit-wood size, as well as most of the mature coniferous timber, has been cut down.

The various Land Acts in Ireland have resulted in a great decrease of woods in that country. Many estates have been purchased *en bloc* by the Estate Commissioners and split up into smallholdings, in which process large numbers of small woods have been sacrificed or handed over to farmers who have disposed of the timber and hedgerow trees. A similar process has been going on in Great Britain where estates are being divided up. Places have been brought to the Commissioners' notice where five or ten year old plantations have been burnt out and used for sheep-grazing because they were of no immediate economic value.



It is of primary importance, if a forest policy is to be carried out on sound lines, that the nation should know, not only the position of its timber supplies to-day, but also the probable position from time to time in the future. The Forestry Commissioners have considered the question of at once undertaking a direct survey of the woodlands of Great Britain, but have come to the conclusion that it would cost not less than £80,000, and that this sum is more than they are justified in spending.

They have decided, after full investigation of the question, in conjunction with the Consultative Committees :—

1. To enlist the assistance of private organisations and individuals.
2. To limit the work of their staff to assisting the organisation of the survey and checking returns.
3. To spread the survey over a 3-year period.

It is hoped that by the year 1925-26—the year in which Parliament should come to a decision on its future forest policy—a survey of the woodlands in Great Britain will be completed, which will give the essential facts and figures with a sufficient degree of accuracy.

*Factors Governing Rate of Planting by Private Individuals or Corporate Bodies.*—It will be seen from the above that so far as existing information goes, the prospects of timber supply from the home woods are far from reassuring. How far landowners and corporate bodies are prepared to plant or replant depends on the following factors :—

1. There appears to be a growing tendency to split up estates, or curtail estate staffs, and to reduce expenditure on anything except essential repairs and replacements. On most estates there are big arrears of work to be overtaken, and on a heavily reduced net income it is uncertain over what period they will be spread, or whether planting will be resumed after the work has been completed.
2. The agricultural prosperity of the last six years has not, as in the past, been shared between the farmer and the landowner. A wave of planting activity following a period of high agricultural prices cannot therefore be looked for on this occasion.
3. High taxation—especially high local taxation—bears with special hardship on long-rotation crops.
4. The cost of establishing plantations has doubled, and in certain cases where the land was not cleared after felling, has trebled since 1914.
5. Railway rates have increased to an extent which makes thinnings from young plantations unprofitable, except in the immediate neighbourhood of commercial centres. The prospects of quick returns from plantations have consequently diminished. High railway rates are even beginning to affect adversely the price of mature standing timber.

6. The desire for economy may limit the activity of corporations recently occupied in the planting up of their water-catchment areas.

On the other hand :—

1. The sale of land has brought fresh capital into rural districts. It is hoped that if sufficient encouragement is given by the State, planting may be taken up by the new owners.
2. It is reasonable to suppose that some of the large sums of money which have been realised during the war by sales of standing timber will go back into re-establishing the woods and plantations which have been felled.
3. The creation of large areas of forest by the State and the general development of forestry as an industry will bring with it in the future improved methods of classification and marketing of home-grown timber, and the timber will be more likely to realise prices in accordance with its quality.

The extent to which this part of the national programme can be achieved is not dependent solely on the Forestry Commissioners since their powers of assisting private owners are strictly limited by statute, but within these limits they are taking the following steps to encourage replanting of privately and corporately owned woods :—

*Education : University and College Classes.*—Forestry education as an adjunct to other courses in connection with land management will be subsidised at six or possibly seven educational centres. It is probable that the greatly diminished returns from landed estates will compel many landowners to manage their estates themselves, or if they do not do so, to see that their woods and sawmills are run on commercial lines and efficiently supervised. There appears to be a considerable demand for forestry courses taken in conjunction with agricultural degrees and diplomas.

*Woodmen's Schools.*—The regular courses, which will extend over one or two years, will be open not only to men training for the State service, but also for private service in this country. In addition it is intended to hold at these schools during the vacations short courses for working foresters, which will give them the opportunity of linking up their practical knowledge with scientifically established facts. Short practical courses for landowners and land agents will also be held from time to time.

*Provision of Expert Advice.*—This forms part of the duty of Divisional and District Officers. The Divisional organisation in Great Britain and Ireland has been completed. The District Officers have been appointed, and will shortly be in a position to undertake their duties. Regulations and scale of charges for advisory work are in course of preparation. It is hoped to

stimulate the demand for expert assistance by keeping the scale of charges at the lowest figure that will cover out-of-pocket expenses.

*Research Work and Publications.*—Bulletins and leaflets of interest to private planters have been issued. It is proposed to continue these publications, and the advice of the Consultative Committees is being obtained as to the kind of information which is most likely to be generally helpful.

*Grants and Proceeds-sharing Schemes.*—The Forestry Commission have drawn up schemes for grants and proceeds-sharing on general lines authorised by Statute. It is probable that proceeds-sharing schemes will not be popular with landowners, as experience shows that they have to be hedged round with cumbersome rules and regulations in order to safeguard the public purse for the full period of a rotation, which may be anything up to 50 or 150 years. The experience of the Development Commissioners seems to have been that though in theory proceeds-sharing schemes are attractive, in practice they are found to be difficult to work. It is possible, however, that if Corporations again decide to plant, proceeds-sharing schemes may appeal to them more than the £2 grant scheme.

The grant of £2 per acre, which follows the lines laid down by the Acland Committee, will, it is hoped, induce owners both to replant felled areas and to extend the area of their operations. The Statutory regulations under which these grants have to be made are onerous, and may defeat, to a certain extent, the object for which they are intended. At the present cost of planting, a £2 grant offers but a small inducement to the average landowner. The burden of keeping accounts necessitated by the regulations under which the grant is made, is especially felt by the small landowner—the individual whom the State would wish to assist in the first instance. It is therefore impossible to say at present whether the encouragement offered to private and corporate planters will or will not be sufficient to secure the re-afforestation of half-stocked woods and areas felled before or during the war; or whether it will succeed indirectly in promoting the protection of young and middle-aged plantations. The nation is directly interested in these questions, for the following reasons:—

1. The forests now being planted by the State cannot begin to give a return even from thinnings much before 20 years; until then home-grown timber means timber from existing private plantations.
2. Even when the State forests are established to the full extent indicated by the Acland Committee's Report, at least 50 per cent. of the home-grown timber of Great Britain will still be produced from private and corporately-owned woodlands.

3. If the three million acres of private woods postulated by the Acland Committee are not maintained, either the State will have to increase its area of woodlands—which in a case of total failure of private effort would mean an increased expenditure of 25 to 35 million pounds spread over a 40-year period—or it will have to abandon its policy of insurance against a timber famine in case of war or national emergency.

It is therefore essential that the methods of assistance which the Forestry Commissioners are allowed to give private planters should become really effective, as this will in any case be the cheapest method of accomplishing the task of re-forestation.

### **Forestry Education.**

One of the most difficult questions that the Forestry Commissioners have had to deal with has been the question of education, especially at the Universities and Agricultural Colleges, whose claims to endowments from the State are based on a variety of grounds, such as individual expenditure on courses already in existence, nationality, proximity to forests, and grants and promises of grants by various Government Departments.

At a very early stage of the Commission's investigation it became evident that the Commissioners could not meet the demands of the Universities and Agricultural Colleges and still carry out the authorised forestry programme.

The Commissioners, therefore, decided to limit their subsidies to such forestry educational work as was of direct value to British State or private forestry. In other words, they regard forestry teaching as a means to an end, and not as an end in itself.

To give practical effect to this view the Commissioners accordingly proceeded:—

- (a) To lay down what educational facilities were required for the promotion of forestry in the British Isles.
- (b) To investigate the proposals and demands for assistance of the Universities and Colleges.
- (c) To see how far these proposals and demands were justified and could be met out of the 3½ million block grant.

*The Educational requirements for British forestry.*—These can be defined as follows:—

1. Courses of the highest possible standard for men who wish to take up forestry as a career in the British Isles.

It should be noted that the number of openings for men of the forest officer type in Britain in the next 10 years will probably be not less than three, and certainly not more than five in the average year.

2. Courses in the theory and practice of woodland management, for owners and managers of private woodlands who wish to study forestry as a part of agricultural or estate management courses.

3. Courses in practical forestry for foresters and foremen who intend to practise forestry in this country in the service of the State or private owners.

*The Proposals and Demands of the Universities.*—Some six Universities submitted proposals for providing courses for forest officers and their requirements, as sent in to the Forestry Commission, amounted in all to £140,000 of capital expenditure, and £26,458 of annual expenditure. This represents, for the 10-year period over which the block grant extends, a total expenditure of approximately £400,000. It was not definitely stated by the majority of Universities how much of this money they were prepared to find from University funds, and how much they expected the State, that is to say the Forestry Commission, to find. If the pound for pound principle is taken it will be seen that the demands on the Forestry funds would amount to £200,000 for the 10-year period, or at the rate of £20,000 a year. This expenditure, it is understood, would meet also the cost of providing courses for landowners and land-agents.

*The Commissioners' Policy.*—After visits to each of the Universities and conferences held in London it became evident that it was quite impossible adequately to endow higher forestry education at the six Universities which desired to carry out the work. The Forestry Commissioners accordingly decided to limit their assistance to :—

1. The establishment of the machinery for a complete course of higher forestry education at one of the Universities or educational centres in the British Isles.
2. The payment of a lecturer in forestry in certain Universities and Colleges where adequate agricultural and estate management courses exist at present.

In order to give practical, as well as theoretical training, the Commissioners will endeavour to acquire woodlands in the immediate neighbourhood of the Universities selected, and, subject to general conditions laid down by the Commissioners, to hand over such woodlands to the Universities for management, planting and exploitation.

3. The establishment (in State forests where possible) of a sufficient number of woodmen's schools to train the foresters and foremen required for State and private forestry and for private estates.
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## OPERATIONS—FOREST YEAR 1919-20.

### General Programme.

The Commissioners have to plant 150,000 acres during the 10-year period, and have consequently given careful consideration to the rate at which planting should proceed year by year. The Acland Report recommended a planting programme which, beginning with no planting at all in the first year of the Commission's existence, grew annually by 3,300 acres to a total of 30,000 acres in the tenth year. The reason for adopting a programme of this kind was that time was required for organisation, for land acquisition and for raising a supply of plants. The interval between the presentation of the Report and the establishment of the Forestry Commission; however, was utilised in raising plants and in making enquiries about land with the result that the Commissioners found in their first year that it was possible to make quicker progress than was anticipated. They were also impressed with the fact that to plant 30,000 acres in the 10th year was a very heavy undertaking, and that the more planting which could be done in the earlier years, the less heavy would be the burden in the later. They have also thought it advisable to distribute the planting among as many centres as possible in order that the individual officers should as soon as possible gain practical experience in actual afforestation operations. The modifications which have been made in the Acland Committee's programme as a result of these considerations are stated below :—

Year.	Acland Committee's programme.	Commission's revised programme.	
	Acres.	Acres.	
1st ... 1919-20	Nil.	1,600	
2nd ... 1920-21	3,300	5,700	
3rd ... 1921-22	6,700	8,100	
4th ... 1922-23	10,000	11,500	
5th ... 1923-24	13,300	14,800	
6th ... 1924-25	16,700	—	
7th ... 1925-26	20,000	—	
8th ... 1926-27	23,300	—	
9th ... 1927-28	26,700	—	
10th ... 1928-29	30,000	—	
Total ... ..	150,000		

### Expenditure and Receipts.

*The Forestry Fund.*—The expenses of the Commission are defrayed from the Forestry Fund. Section 8 (2) of the Forestry Act, 1919, enacts that "There shall be paid into the Forestry Fund—

(a) during the ten years immediately succeeding the first day of April, nineteen hundred and nineteen, the

- “ sum of three million five hundred thousand pounds  
 “ in such annual amounts as Parliament may from  
 “ time to time determine; and  
 “ (b) all sums received by the Commissioners in respect of  
 “ the sale of any land or timber or otherwise received  
 “ by the Commissioners in respect of any transactions  
 “ carried out by them in the exercise of their powers  
 “ and duties under this Act.”

The position of the Forestry Fund at the 30th September, 1920, is shown in the following Table:—

*Table I.—Payments into and out of the Forestry Fund.*

Year ending September 30th.	Balance from Preceding Year.	Receipts.			Expenditure (Table II, Heads A to K).	Balance remaining in the Fund, 30th September.
		Parlia- mentary Votes.	Other (Table II, Head L).	Total.		
	(1)	(2)	(3)	(4)	(5)	(6)
1920 ...	Nil	£ 478,000	£ 12,347	£ 490,347	£ 107,786	£ 382,561

The receipts include £99,000 voted by Parliament in the financial year 1919/20, and £379,000 in 1920/21. “ Other receipts ” include £2,458 received as interest on investments and £9,889 from sales of timber and other forest products. Since these receipts are also available for forestry purposes the net amount of the block grant remaining to be spent at 30th September, 1920, was £3,404,561.

*Expenditure.*—The expenditure according to the heads under which the estimates are now presented to Parliament is given in Table II. below. The form is slightly different from that in which the first estimates were prepared.

*Table II.—Expenditure and Receipts by Parliamentary Heads of Accounts.*

Year ending September 30th.	A. Salaries, Wages and Allowances.	B. Headquarter Charges.	C. Assistant Com- missioners' 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. Receipts.
1920	£ 25,150		£ 7,399		£ 69,091	£ —	£ 4,317	£ 1,538	£ —	£ 291	£ 12,347

The form in which these estimates have to be presented is not altogether satisfactory from the point of view of forestry accounting. For Parliamentary purposes it is necessary, for example, to segregate under sub-head A all salaries, wages and

allowances; but in order to get a clear view of the true cost of the effective services on which expenditure has been incurred an allocation of the expenditure under sub-heads A, B, C and D has to be made to the remaining sub-heads. The system of accounts has been devised to render this course possible, and in subsequent annual reports, where figures for more than one year will be available for comparative purposes, direct and allocated costs will be presented in tabular form.

### General Organisation.

The Commissioners were appointed on the 29th November, 1919, and their organisation, which was not finally completed in the year ending 30th September, 1920, is on the following lines:—The purely executive work, as required by the Forestry Act, 1919, is in the charge of three Assistant Commissioners—Mr. Hugh Murray, C.I.E., C.B.E., for England and Wales, Mr. John Sutherland, C.B.E., for Scotland, and Mr. A. C. Forbes, O.B.E., for Ireland. Mr. H. A. Pritchard, O.B.E., acts as Chief Technical Assistant to Mr. Murray, and Dr. A. W. Borthwick to Mr. Sutherland. Under the Assistant Commissioners are Divisional Officers (three in England, two in Wales,\* four in Scotland and two in Ireland) each with a definite territorial charge so arranged that the divisions in the aggregate cover the whole of the United Kingdom. The Divisional Officers are experienced forest officers and have as assistants one or more junior forest officers (District Officers) who are or will all be ultimately academically-trained men. The Divisional Officer is responsible for all State forestry work in his division as well as for advice to private owners. The District Officer is his assistant for surveys, reporting on land for acquisition, preparation of working plans and similar technical matters. As the work develops it is anticipated that each District Officer will have charge of a group of forests for the working of which he will be responsible to his Divisional Officer. The supervision of planting operations and similar routine work are placed in charge of foresters.

The Commissioners, according to Statute, have reserved to themselves the general control of policy, finance, education, research and publications while their general business is conducted by the Secretary.

For the control of the reserved subjects there are attached to the Headquarters of the Commission a Finance Officer, an Education and Publications Officer, a Research Officer, an Entomologist, and a Co-ordination Officer, the duty of the last being to secure co-ordination in technical procedure throughout the different parts of the United Kingdom. The Finance Officer is directly responsible to one of the paid Commissioners; the

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\* Certain English counties are for the moment included in each of the Welsh Divisions. It is intended in the near future to make the two Welsh Divisions (including Monmouth) self-contained.



accounts of local officers are passed to the former through their immediate superiors. The preparation of accounts and costing statements is to be done in the office of the Divisional Officer who will be provided with an accountant for the purpose. The executive work with regard to the Foresters' Schools is devolved on the respective Assistant Commissioners.

At September 30th, 1920, all the Divisional Officers, the Headquarters technical staff and 25 District Officers had been appointed definitely or on probation. In order to gain an intimate knowledge of the work some of the District Officers were employed temporarily as foresters. A number of clerical and accountants' posts, however, had not been filled because the volume of work did not yet justify that step.

### Forestry Operations.

Under this head are included all operations connected with the development of the State planting programme. The total expenditure as shown in Table II. p. 31 is £69,091, details of which are given below :—

#### *Forestry Operations: Direct Expenditure—Year ended 30th September, 1920.*

Country.	Surveys and Working Plans.	Acquisitions of land, buildings and standing timber.	Local supervision.	Cultural operations.	Roads and buildings.	Preparation and sale of produce.	Transport.	Stores and miscellaneous payments.	Total.
	£	£	£	£	£	£	£	£	£
Headquarters ...	—	—	—	436	—	—	—	51	487
England and Wales	—	40,307	415	9,778	705	241	764	233	62,433
Scotland ...	10	179	954	9,232	767	96	1,189	1,363	13,790
Ireland ...	—	—	6	493	—	—	68	61	628
Ireland—Development Fund account.	—	—	177	1,351	—	—	99	126	1,753
	10	40,486	1,552	21,290	1,472	337	2,110	1,834	69,091

#### *Surveys and Working Plans.*

Independently of the areas which have been acquired for planting, good progress has been made with flying surveys of uncultivated land. In England and Wales 260,000 acres and in Scotland 385,000 acres were surveyed during the year. The total area which has now been reported on during the last few years is not far short of 2,000,000 acres. This information is proving of great value to the Commissioners in the regulation of their policy.

The work in connection with working plans has been restricted to the collection of data.

*Acquisition of Land, Buildings and Standing Timber.*

The actual area which had been completely acquired, that is to say, for which the deeds had been executed, amounted to 11,454 acres. In addition, however, negotiations were sufficiently advanced to permit the Commissioners to have entry and commence operations on a further 36,888 acres. They were consequently at the 30th September, 1920, in occupation of a total area of 48,342 acres.

Details for the different parts of the United Kingdom are given in the table below, which also shows the areas of "plantable" and "other land," *i.e.*, land which is either too poor to plant or is required for other purposes. The table omits land previously acquired in Ireland by the Department of Agriculture and Technical Instruction:—

*Acquisition of Land.—Year ended 30th September, 1920.*

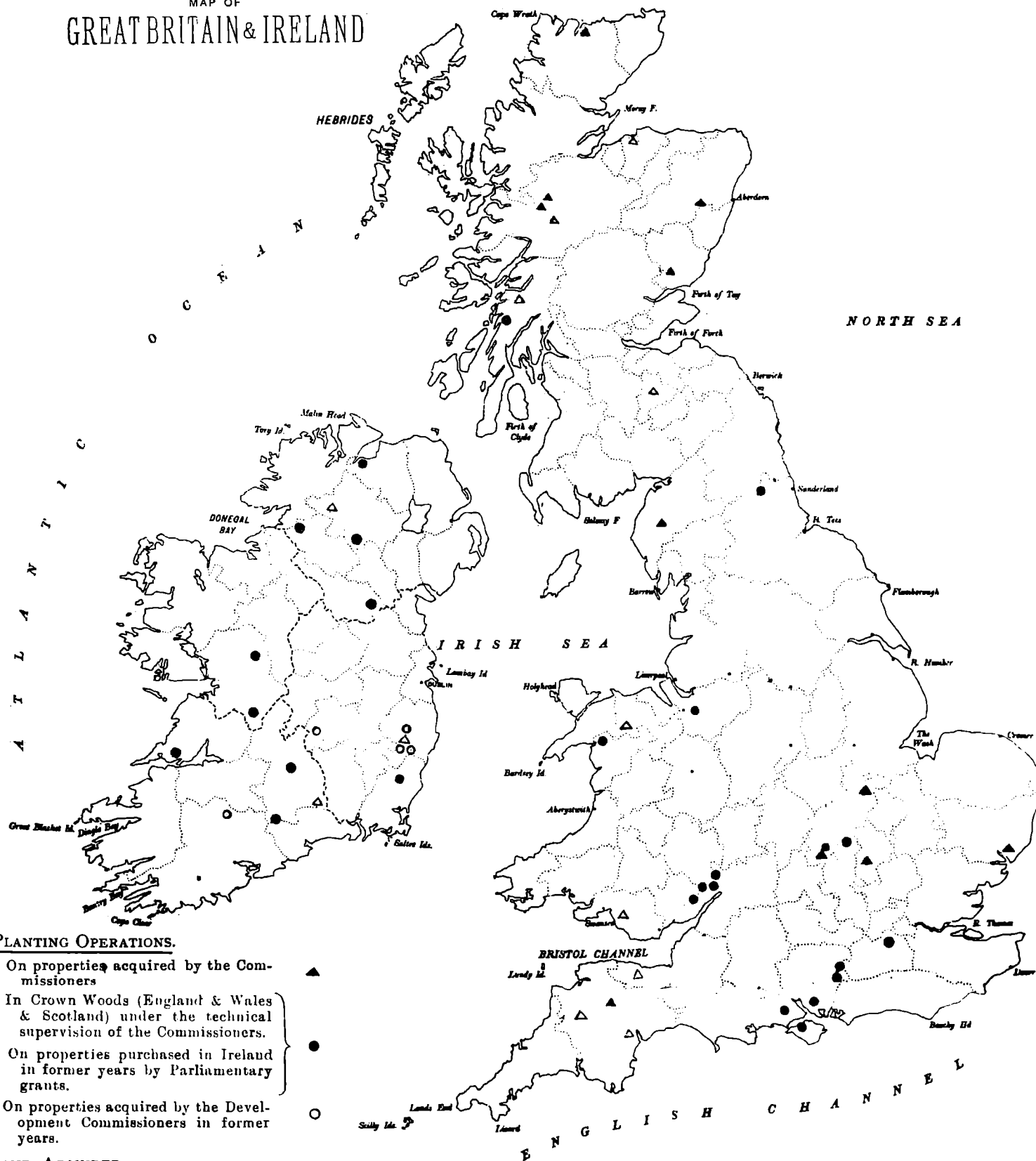
Country.	By lease or feu.			By purchase.			Total by lease or feu and purchase.
	Plantable (including planted).	Other land.	Total.	Plantable (including planted).	Other land.	Total.	
<i>England and Wales.</i>	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Finally completed ...	2,648	87	2,735	3,071	123	3,194	5,929
Entry secured... ..	7,288	750	8,038	793	59	852	8,890
Total ... ..	9,936	837	10,773	3,864	182	4,046	14,819
<i>Scotland.</i>							
Finally completed ...	2,920	2,605	5,525	—	—	—	5,525
Entry secured... ..	11,920	7,608	19,528	2,570	2,730	5,300	24,828
Total ... ..	14,840	10,213	25,053	2,570	2,730	5,300	30,353
<i>Ireland.</i>							
Finally completed ...	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
Entry secured... ..	2,168	532	2,700	250	220	470	3,170
Total ... ..	2,168	532	2,700	250	220	470	3,170
<b>GRAND TOTAL ...</b> (United Kingdom.)	<b>26,944</b>	<b>11,582</b>	<b>38,526</b>	<b>6,684</b>	<b>3,132</b>	<b>9,816</b>	<b>48,342</b>

*Local Supervision.*

This item includes the wages of foresters in charge of planting operations.

# FORESTRY COMMISSION

MAP OF  
GREAT BRITAIN & IRELAND



## PLANTING OPERATIONS.

On properties acquired by the Commissioners ▲

In Crown Woods (England & Wales & Scotland) under the technical supervision of the Commissioners. ●

On properties purchased in Ireland in former years by Parliamentary grants. ○

On properties acquired by the Development Commissioners in former years. △

## LAND ACQUIRED.

By the Commissioners, but on which no planting was done during the year. △

Scale 75 Miles m l inch  
Miles 0 25 50 75 100

*Cultural Operations.*

This head includes two main groups, namely, plantations and nurseries, on which the total expenditure amounted to £21,290.

*Plantations.*—As the Forestry Commissioners were not appointed until the planting season for the year had begun and the Interim Forest Authority had no powers to hold land, the Commissioners had very little time to acquire land and carry on planting operations.

The total area planted amounted to 1,595 acres, of which 1,474 acres were placed under coniferous and 121 acres under broad-leaved species. The total addition to the woodland area of the United Kingdom was 1,034½ acres, the remaining plantations being on the sites of felled woodlands. The number of plants used in making these plantations was 3,433,000, of which 36 per cent. were Scots and Corsican pines and 37 per cent. Norway and Sitka spruces. Details of the individual areas and the kinds of trees planted are given in the following table :—

Plantations—Year ended 30th September, 1920.

Forest.	Area planted (acres).				Species planted (thousands).											
	Afforested.		Re-afforested.		Total.		Scots and Corsican Pine.	Eur. Larch.	Douglas Fir.	Norway and Sitka Spruce.	Oak.	Ash.	Beech.	Others.	Total.	
	Broad-leaved.	Conifers.	Broad-leaved.	Conifers.	Broad-leaved.	Conifers.										
<b>ENGLAND AND WALES.</b>																
Apthorpe, <i>Northants</i> ...	—	80	—	—	—	80	80·0	95·0	—	—	36·0	20·0	17·0	—	—	254·0
Readlesham, <i>Suffolk</i> ...	240	—	—	240	—	240	720·0	—	—	—	—	—	—	—	—	720·0
Thornthwaite, <i>Cumberland</i> ...	—	—	200	200	—	200	39·2	50·7	120·0	311·3	—	—	—	—	—	522·1
Eggesford, <i>Devon</i> ...	—	—	45	45	36	81	—	10·0	7·6	29·0	—	—	20·0	4·3	—	73·4
Brackley, <i>Northants</i> ...	—	—	77	77	—	77	30·0	26·0	—	37·0	—	7·0	8·0	—	—	108·0
Amphill, <i>Beds.</i> ...	—	—	172	172	—	172	5·0	20·0	15·0	90·0	—	—	20·0	—	—	167·0
Total, England and Wales ...	240	80	494	734	116	850	874·2	201·7	142·6	503·3	27·0	65·0	4·3	—	—	1844·8
<b>SCOTLAND.</b>																
Borgie, <i>Suberland</i> ...	210	—	—	210	—	210	256·0	—	3·0	336·0	—	—	—	—	—	595·0
Port Clair, <i>Inverness</i> ...	33	—	—	33	—	33	—	—	—	100·0	—	—	—	—	—	100·0
Inchnacardoch, <i>Inverness</i> ...	87	—	—	87	—	87	—	36·0	2·0	129·0	—	—	—	—	—	167·0
South Laggan, <i>Inverness</i> ...	35	—	—	35	—	35	—	45·0	—	43·0	—	—	—	—	—	88·0
Craigmyle, <i>Aberdeen</i> ...	76	—	—	76	—	76	—	—	—	—	—	—	—	—	—	123·2
Gagie, <i>Foyar</i> ...	102	—	—	102	—	102	67·6	16·2	—	75·0	—	—	—	—	—	158·8
Total, Scotland ...	543	—	—	543	—	543	323·6	217·2	5·0	686·2	—	—	—	—	—	1232·0
<b>IRELAND.</b>																
Baunreagh, <i>Queens</i> ...	40	—	—	40	—	40	18·8	—	30·9	7·9	—	—	—	4·5	—	65·9
Camolin, <i>Wexford</i> ...	22	—	—	22	—	22	—	2·2	23·5	1·3	—	—	—	—	—	31·2
Dundrum, <i>Tipperary</i> ...	14½	—	20½	35	—	35	—	11·8	8·8	24·0	—	2·1	—	—	—	56·0
Kilrush, <i>Clare</i> ...	9	—	—	9	—	9	—	—	—	15·0	—	—	—	—	—	17·8
Ballyhoura, <i>Cork</i> ...	17	—	—	17	—	17	—	—	—	—	—	—	—	—	—	46·0
Aghrane, <i>Roscommon</i> ...	19	—	—	19	—	19	—	5·8	16·5	8·1	—	—	—	0·5	—	39·4
Bailieboro', <i>Canan</i> ...	20	—	—	20	—	20	—	1·5	19·5	5·8	—	—	2·9	8·5	—	36·3
Castlecardwell, <i>Fermanagh</i> ...	16	—	—	16	—	16	7·3	3·5	15·7	15·7	—	—	—	3·1	—	29·0
Knockmany, <i>Tyrone</i> ...	14	—	5	19	—	19	3·0	—	25·0	4·5	—	—	—	1·7	—	35·0
Total, Ireland ...	171½	—	25½	197	5	202	29·1	24·8	124·2	82·3	—	5·0	15·2	75·6	—	356·2
Grand total, United Kingdom ...	954½	80	519½	1,474	121	1,595½	1,226·9	443·7	271·8	1,271·8	27·0	70·0	19·5	102·3	—	3,438·0

*Plantations.—Crown Woods under the Technical Supervision of the Forestry Commissioners—Year ended 30th September, 1920.*

Forest.	Areas planted (acres).				Areas beaten up (acres).			Species planted (thousands).											
	Afforested.		Replanted.		Total.		Broad-leaved.	Conifer.	Broad-leaved.	Total.	Scots and Corsican Pine.	Euro-pean and Japanese Larch.	Douglas Fir.	Sitka and Norway Spruce	Oak.	Ash.	Beech.	Others.	Totals.
	Conifer.	Broad-leaved.	Conifer.	Broad-leaved.	Conifer.	Broad-leaved.													
Dean Forest	—	186	50	186	50	—	24½	—	24½	13·8	80·8	70·3	73·9	12·7	13·3	·77·2	33·4	375·4	
New Forest	—	369	—	369	—	—	—	—	—	172·0	116·0	237·0	39·0	—	—	—	5·0	569·0	
Bere	—	6	—	6	—	—	—	—	—	19·0	—	—	—	—	—	—	—	19·0	
Parkhurst	—	7	—	7	—	—	—	—	—	16·5	8·3	5·5	—	—	—	—	—	34·5	
Alice Holt	—	10½	4	10½	4	18	10½	—	28½	—	80·4	0·3	—	—	—	4·2	—	30·7	
Woolmer	—	25½	—	25½	—	—	—	—	—	5·2	15·3	14·2	27·3	—	13·6	—	—	75·6	
Tintern	—	26½	8	26½	8	53	10	—	53	—	10·8	87·7	43·1	—	—	—	—	94·9	
Trelleck	60	—	9	10½	9	10	—	—	10	—	9·0	9·0	6·0	—	14·0	—	—	39·0	
Dymock	—	93	3	95½	3	23	—	—	23	307·7	10·2	—	4·5	—	—	0·5	—	324·8	
Delamere	23	5	6	9½	6	—	—	—	—	14·5	2·0	—	—	11·6	—	—	—	34·3	
Salcey	—	1½	½	1½	½	—	—	—	—	—	1·2	—	2·4	—	0·1	—	—	4·9	
Hazelborough	—	—	42	42	42	—	—	1½	1½	—	—	—	—	1·2	—	—	—	4·9	
Esher	—	23	12	23	12	5	—	4	9	18·0	6·0	4·0	5·0	—	21·2	—	8·1	29·3	
Chopwell	—	—	—	—	—	31	—	2	33	—	0·5	—	107·5	—	—	10·0	1·0	44·0	
Inverliever	84	—	—	84	—	—	—	—	—	—	0·5	—	—	—	—	2·0	7·0	117·0	
Total	146½	762½	132½	909½	132½	164½	18	182½	182½	566·7	274·1	408·1	309·0	25·5	62·2	98·2	62·6	1806·4	

The areas and trees given in the table on page 36 are exclusive of 1,042 acres planted in the Crown woods which come under the technical supervision of the Commissioners and are shown separately on page 37, but they include 76 acres planted at Craigmyle in Scotland under a proceeds-sharing scheme arranged by the Development Commissioners with Lord Shaw and 102 acres planted at Gagie on behalf of the Board of Agriculture for Scotland.

The total expenditure on plantations was £12,776 distributed as shown in the table below:—

*Direct Expenditure on Plantations—Year ended 30th September, 1920.*

Country.	Preparation of Ground.	Drainage.	Fencing.	Planting.	Weeding.	Other.	Total.
	£	£	£	£	£	£	£
England and Wales.	2,246	382	2,216	2,272	665	259	8,040
Scotland ...	939	411	883	1,089	—	63	3,385
Ireland—Development Fund Account.	—	—	—	—	—	—	1,351
							12,776

*Nurseries.*—The total area under nurseries at 30th September was 343·2 acres, in which were growing nearly 27 million transplants and 169 million seedlings. Nearly 4½ tons of coniferous seed and 3 tons of broadleaved were sown during the year. Comparative figures for the three years 1918 to 1920 are given in the table below:—

#### NURSERIES.

Year ending September 30th.	Country.	Seed Sown (lbs.).			Stock of Plants at 30th September (thousands).						Area.
					Transplants.			Seedlings.			
		Coniferous.	Broad-leaved.	Total.	Coniferous.	Broad-leaved.	Total.	Coniferous.	Broad-leaved.	Total.	Acres.
1920	England and Wales ...	4,892	6,320	11,212	17,172	2,827	19,999	62,438	1,332	63,770	232·0
	Scotland ...	3,593	—	3,593	4,365	1	4,366	76,610	—	76,610	90·2
	Ireland ...	1,433	203	1,636	2,516	35	2,551	28,550	323	28,873	21·0
	<b>Total United Kingdom</b>	<b>9,918</b>	<b>6,523</b>	<b>16,441</b>	<b>24,053</b>	<b>2,863</b>	<b>26,916</b>	<b>167,598</b>	<b>1,655</b>	<b>169,253</b>	<b>343·2</b>
1919	England and Wales ...	3,465	2,000	5,465	16,660	890	17,550	35,200	2,800	38,000	217·0
	Scotland ...	4,214	—	4,214	2,357	—	2,357	50,500	—	50,500	34·6
	Ireland ...	498	12	510	1,431	51	1,482	17,070	—	17,070	20·0
	<b>Total United Kingdom</b>	<b>8,177</b>	<b>2,012</b>	<b>10,189</b>	<b>20,448</b>	<b>941</b>	<b>21,389</b>	<b>102,770</b>	<b>2,800</b>	<b>105,570</b>	<b>271·6</b>
1918	England and Wales ...	1,882	1,956	3,838	14,028	919	14,947	28,336	319	28,655	190·0
	Scotland ...	845	—	845	563	—	563	4,518	—	4,518	7·6
	Ireland ...	497	—	497	1,596	95	1,691	4,401	—	4,401	20·0
	<b>Total United Kingdom</b>	<b>3,224</b>	<b>1,956</b>	<b>5,180</b>	<b>16,187</b>	<b>1,014</b>	<b>17,201</b>	<b>37,255</b>	<b>319</b>	<b>37,574</b>	<b>217·6</b>

A word of explanation regarding these nurseries may be of interest: The first steps to provide a supply of plants for re-forestation purposes were taken in 1915 by the Office of Woods when the existing Crown nurseries, then extending to some 30 or 40 acres, were enlarged and "emergency seed sowing" commenced. The work was continued by the Board of Agriculture and Fisheries and Office of Woods in 1916 and subsequent years, and the scale of operations increased. The Board of Agriculture in Scotland also made a beginning in 1916 when half an acre was sown with seed, and in 1917 the Department of Agriculture and Technical Instruction increased its nursery programme in Ireland. The cost of the bulk of this work was met by means of grants from the Development Commission. In 1918-19 the Interim Forest Authority took over the general supervision of the work. The plants thus produced, less those which have been used in replanting the Crown woods, have made it possible for the Forestry Commissioners to begin planting operations in the first year of their appointment, instead of having to wait three to four years.

The total expenditure on nursery operations was £8,513 distributed as shown in the table below:—

*Direct Expenditure on Nurseries—Year ended 30th September, 1920.*

Country.	Seed.	Plants.	Labour.	Materials.	Other Expenses.	Total.
	£	£	£	£	£	£
England and Wales...	16	—	1,630	62	29	1,737
Scotland ... ..	633	50	3,488	321	1,355	5,847
Ireland ... ..	72	—	300	121	—	493
Headquarters ...	436	—	—	—	—	436
<b>Total ...</b>	<b>1,157</b>	<b>50</b>	<b>5,418</b>	<b>504</b>	<b>1,384</b>	<b>8,513</b>

The item "Other Expenses" includes the cost of collecting cones £287, ploughing by contract £998, fencing by contract £77 and superannuation charges £22.

A considerable item of expenditure in connection with planting operations was the cost of transporting plants from the nurseries to the plantations, as the existing nurseries were situated for the most part in the Crown woods in the South of England. New nurseries are gradually being established at the planting centres and by restricting the movement of plants as far as possible to small seedlings it is hoped in future to effect a considerable reduction in the cost of transport.

*Supply of Seed.*—Owing to the unsettled conditions after the war difficulty arose in securing a satisfactory supply of Larch seed from Austria; the Douglas fir crop was a partial, and the



Japanese larch crop an entire failure. Fortunately small quantities of these seeds were in hand from the previous year, and the deficit was to some extent made good. Corsican pine seed was also short and very little Beech and no Oak were available. Representatives of the Commission visited both Austria and Corsica during the year in order to make better arrangements for securing supplies of Larch and Corsican pine seed. The problem of regulating the supply of plants is in any case a difficult one owing to the fact that seed has to be sown 3-4 years before plants are required, and with an expanding planting programme the character of land which is to be planted cannot always be foretold so far ahead. In order to guard against shortage of seed of species such as Douglas fir, Japanese larch and Sitka spruce the seed years of which are markedly irregular, steps are being taken to maintain a store of seed against lean years. Investigations are proceeding as to the best method of storing.

It will be observed that in order to be on the safe side the Commissioners have to produce more seedlings of any one kind than they will probably require, and the problem of disposing of the surplus to the best advantage is one which has caused them considerable thought. It is realised that the nursery trade has done good work for forestry in the past, and that it would be unfair of the Commissioners to compete with it on unfavourable terms.

The Commissioners desire to place on record their thanks for the help which the Canadian Forestry Branch has given in securing Douglas fir and Sitka spruce seed. An opportunity arose at the British Empire Forestry Conference of discussing the matter in detail and the Commissioners have been able to make with the Dominion Forestry Branch an arrangement which they anticipate will prove very helpful.

The Commissioners have also to express their hearty thanks to the American Forestry Association for the gift of 360 lbs. of seed which included 163 lbs. of Douglas fir and 80 lbs. of *Quercus rubra* acorns.

#### **Advances for Afforestation Purposes.**

No expenditure was incurred under this head, but draft schemes for grants and proceeds-sharing were submitted to the Consultative Committees.

#### **Education.**

The general principles upon which the Commissioners are conducting their educational work are explained on pp. 28-29.

Pending the settlement of their scheme for training forest officers, the Commissioners agree to continue the grants to Universities on the basis of those previously paid by the Agricultural Departments, but in the year ending September 30th, 1920, no payments out of the Forestry Fund were made to Universities and Colleges for higher education in forestry, the cost of which will fall into the following year.

There was an expenditure of £4,317 for that period on the erecting, equipping and maintaining of woodmen's schools and in providing instruction at two schools for disabled men.

*Diploma and Degree Courses.*—Degree courses in forestry were provided at the Universities of Oxford, Cambridge, Wales (Bangor), Edinburgh and Aberdeen. Diploma courses in forestry were also provided at each of the above Universities, and, in addition, at Armstrong College (Newcastle) and the Royal College of Science, Dublin. The total number of students availing themselves of the above facilities in forestry education amounted to approximately 300, of whom 50 per cent. were Agricultural students taking forestry as a subsidiary subject.

Financial assistance was afforded by the Ministry of Labour to 63 ex-service officers and men of suitable educational promise, special consideration having been given to candidates disabled on war service. The total amount of the grants to students of forestry assessed by the Ministry of Labour in the period under review amounted to approximately £10,250, the actual sum in each case being awarded according to the circumstances of the individual student.

Up to September 30th, 1920, schools for forest apprentices had been established at the Forest of Dean, New Forest, Chopwell (County Durham), Beaufort (Inverness-shire) and Avondale (Co. Wicklow), and 41 students were receiving instruction. Two of the schools (New Forest and Beaufort) were established and opened during the year, while the Dean Forest and Chopwell Schools had been in existence for some considerable time, but having been closed down in the later stages of the war were re-opened. The Avondale school remained closed during 1915-20 owing to conditions brought about by the war, and the buildings have since been occupied by the military.

The courses at these foresters' schools extend over two years and are designed to enable youths to become working foresters and foremen. In the forest the apprentices perform the ordinary work of woodmen, and in the class-room they are taught the principles of silviculture and elementary science.

*Disabled Soldiers.*—Training in forestry was started in 1918 at Birnam (Perthshire), by the Board of Agriculture for Scotland, and the school was taken over by the Commissioners. A school was also in course of erection at Brockenhurst (New Forest), but had not been opened by September 30th, 1920. The course of instruction aims at enabling the trainees to earn a livelihood as woodmen, the Forestry Commissioners co-operating in the scheme with the Ministry of Labour, which pays the necessary training grants.

*Special Courses.*—A course for working foresters who had had considerable practical experience but who lacked technical and scientific training, was held at Aberdeen University from January to September, 1920.

A course of three weeks' duration for the benefit of landowners was provided in the Forest of Dean in the early part of 1920.

### Research and Experimental Work.

The first problems which the Commissioners have to face and to which their immediate research and experimental work has accordingly been directed are those arising out of the acquisition of land and the establishment of new plantations both on the site of woods felled during the war and on land which has not hitherto been under timber. The fundamental problem is undoubtedly the accurate estimation of the probable production of timber under any given set of conditions, and this involves assessment not only of the rate at which different species will grow, but also of the risks to which they will be exposed before arriving at maturity. The next problem is to establish successful plantations by the cheapest means, and this calls for the maximum efficiency in nursery work, planting organisation, preparation of the ground, fencing, planting and protection against weeds, insects, fungi and other forms of damage. Of more remote interest from the point of view of the Commissioners' work, but of immediate importance as regards the existing plantations of private owners is the question of treatment and particularly of thinning plantations. Experimental work on this subject takes a long time to mature, and it is anticipated that the Commissioners will be thinning the woods which they are now planting long before any experimental work which is begun at the present time has yielded precise and final results.

*Production.*—The Commissioners have continued the survey of the rate of growth of conifers which was begun under the Board of Agriculture and Fisheries in 1917 and by the Timber Supplies Department in Scotland on identical lines in 1918. This survey has already afforded a great deal of very useful information as to the productivity of different species under varying conditions, and has enabled the Commission to proceed with their work with a precision which would not otherwise have been possible.

A summary of the results of the survey was published during the year as Bulletin No. 3\*, which gave the results obtained from the measurement of 1,100 plots and sub-plots in various parts of the United Kingdom. The total number of plots and sub-plots which had been measured to the 30th September, 1920, was 1,212 of which 241 (89 in England and Wales and 152 in Scotland) were dealt with during the year.

For the most part the plots were of a temporary character, that is to say they were measured and then abandoned. At the same time, as opportunity arises, interesting plantations are being selected by arrangement with the owners, for the establishment of permanent plots in which the results of definite methods of treatment such as thinning and underplanting may be kept under careful observation. Permanent plots were established in England before the war and have now been thinned two and three times. The total number of permanent plots under observation at the 30th September, 1920, was 45 of which 22 (8 in England and Wales and 14 in Scotland) were established during the year.

\* *Rate of Growth of Conifers in the British Isles. Published by H.M. Stationery Office, 1920. Price 3s.*

*Nursery and Plantation Work.*—Experiments bearing on the production of seedlings and transplants were carried out in nurseries in the Forest of Dean, Oxshott and Delamere in England and at Birnam, Craibstone and Beaully in Scotland. The experiments which were mostly in duplicate were as follows:—

- (1) Comparison of production of seedlings in the nursery with germination capacity as ascertained in the Testing Station.
- (2) Effect of treatment of seed by soaking for various periods before sowing.
- (3) Influence of cold storage upon the germination capacity of seeds.
- (4) Method of sowing: broad-cast, drills and bands and quantity of seed sown per unit area of ground.
- (5) Protection of seedlings against frost, drought and birds by different methods.
- (6) Experiments designed to avoid transplanting (wrenching and undercutting).
- (7) Experiments on root-pruning.

Sundry experiments were also carried out with green and artificial manuring on nursery land. It has become apparent from examination of the production records of the existing State nurseries that there is room for considerable economy in producing seedlings and transplants. Much of the work in the existing nurseries was done under the stress of war conditions when labour was scarce and losses of plants owing to transport difficulties were excessive.

As regards plantation work, investigations were conducted on the effect of delay in transport on the growth of Corsican pine and other conifers. Experiments were made in the direct sowing of pine and spruce seed, in the planting distance of spruce, and on the effect of planting at different seasons of the year. Owing to the late start in planting it was not possible to carry out all the plantation experiments intended.

A comprehensive set of experiments in nursery and plantation work has been worked out and will be taken up systematically. The individual experiments are necessary for numerous reasons. Many of them have probably been carried out before by private individuals, but as a rule, no accurate records have been kept of the results achieved. An effort is being made to get together information of this type. Meanwhile, it is impossible to carry out in any one year, without employing a large staff, all the experiments which have been designed, and consequently attention has been paid in the first year to those of most pressing importance.

*Insect and Fungus Pests.*—In addition to inspection and advisory work the Commissioners' Entomologist has carried on experiments in comparing and improving preventive and control measures against our more destructive forest insects. The most prevalent at the present time are the Pine Shoot beetle (*Mycolophilus piniperda* L.) and the Pine weevil

(*Hylobius abietis* L.) both of which increased enormously in consequence of the heavy war fellings and the difficulty of clearing up débris. A large-scale experiment with trap trees in the New Forest gave good results with the beetle and in consequence of systematic trapping the insect is greatly reduced in numbers and the recovery of woods which have been badly attacked is already apparent. Experiments on the control of the Pine weevil were conducted at six centres (two in England, three in Scotland and one in Ireland). It has been found that bark-trapping is much more efficient than hand-picking from plants, that billet traps to be successful must be prepared at regular definite periods and that painting plants with a mixture of milk of lime and linseed oil is effective up to a certain point but not a complete protection. Experiments conducted at Ampthill, Beds., showed that spraying plants with lead arsenate has no value against the weevil. In consequence of attacks by surface caterpillars (larvæ of Noctuid moths) at Ampthill nursery, experiments with carbon bisulphide and traps were carried out. The former proved much too costly and of doubtful value. Good results were obtained by using cabbage leaves as bait traps and collecting the caterpillars under them and also by spraying the cabbage leaves with lead arsenate.

Research work in entomology was confined to the Douglas fir seed fly (*Megastigmus spermotrophus*). Examination of seed samples collected in many localities showed that the insect is very widely distributed and that seed was affected to such an extent that it was not worth while proceeding on a large scale with the collection of home-grown cones. There are still a number of points which require clearing up in connection with the life history of the insect and the research is being continued.

Mr. Hiley has continued at Oxford his work on the fungi of forest trees, and has published an account of the diseases of the Larch.\*

*Timber Research.*—By arrangement with the Department of Scientific and Industrial Research the Commissioners supplied further samples of home-grown timber to Professor Percy Groom of the Royal College of Science and Technology for testing purposes and also to Professor Hudson Beare of the Engineering Department of Edinburgh University, while pit props were sent to Professor Dalby for tests.

### Agency and Advisory Services.

Apart from the technical supervision of certain of the Crown Woods, which is referred to in more detail on p. 38 and p. 48, the Commissioners have not yet undertaken any agency services. A considerable amount of work has been done by their local officers in advising woodland owners on technical matters. Numerous enquiries on insect pests have also been answered by the Entomologist.

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\* *The Fungal Diseases of the Common Larch* by W. E. Hiley, Clarendon Press, Oxford, 1919.

### SPECIAL SERVICES.

Under the head Special Services are included the expenses of the Consultative Committees (*sec p. 54*), publications and any unusual business such as the British Empire Forestry Conference (*sec pp. 49-50*) which the Commissioners may have to undertake.

*Publications.*—Publication work has been placed under the charge of Mr. Fraser Story, who also acts as Education Officer.

The Commissioners' scheme of publication includes the issue of :—

- (a) Leaflets.
- (b) Bulletins.
- (c) Monographs.

The leaflets are to be short, concise statements written as far as possible in non-technical language on subjects which are of every-day interest. They are designed for the use of owners of woodland and their foresters and are issued free of charge on application to the Secretary of the Commission. It is intended in due course to deal in leaflet form with all the more important insect and fungus enemies of trees, and also with the tending and formation (including nursery work) of plantations.

The bulletins will deal more fully with the various subjects and will give the results of special investigations. As they are more expensive to produce than the leaflets, the Commissioners find themselves unable to provide readers with free copies, which may, however, be purchased from H.M. Stationery Office or any bookseller.

The monographs will be elaborate publications, each dealing exhaustively with a single subject. It is intended to devote a monograph to each of the important tree species, *e.g.*, Larch, Scots pine, Douglas fir, &c., and to collect together all useful knowledge on the botanical characteristics, distribution, timber, cultivation, rate of growth, &c., of the species. No monographs have yet been issued, but some progress has been made in outlining their scope and making preliminary arrangements for securing the desired information.

The publications issued by the Commissioners during the year ended September 30th, 1920, were as follows :—

*Bulletin No. 1.*—Collection of Data as to the Rate of Growth of Timber.

*Bulletin No. 2.*—Survey of Forest Insect Conditions in the British Isles.

*Bulletin No. 3.*—Rate of Growth of Conifers in the British Isles.

*Leaflet No. 1.*—Pine Weevils.

*Forestry in the United Kingdom.*—Statement prepared for the British Empire Forestry Conference.

*Programme of the British Empire Forestry Conference :* including descriptive notes on the forests visited by the members of the Conference.

In addition a number of Statements regarding forestry in the Colonies were printed on behalf of the various Governments for presentation to the British Empire Forestry Conference

### THE INTERIM FOREST AUTHORITY.

The Report of the Acland Committee which was signed in May, 1917, was accepted by the Cabinet in the latter part of 1918 after further enquiry by a Committee consisting of Lord Curzon, Mr. Barnes and Lord Milner. The work of supervising the inauguration of the scheme was entrusted to Mr. F. D. Acland, who called together an informal Committee which subsequently was expanded and received an official status under the name of the Interim Forest Authority. The Cabinet minute setting up the Interim Forest Authority was as follows:—

“ The War Cabinet decided:—

- (a) To approve the setting up of an interim afforestation authority to make certain preliminary arrangements for developing afforestation in the United Kingdom.
- (b) That until legislation had been passed the interim authority should work in close touch with the departments concerned who, in the event of difference of opinion, would have a right to appeal to the Cabinet.”

The Authority was provided with a grant of £100,000 in November, 1918, of which only £3,215 was expended in the financial year ending 31st March, 1919, and with a further grant of £100,000 for the financial year 1919-20. Of the latter sum £18,015 was expended, the cost of forestry operations after the 28th November, 1919, falling on the newly-created Forestry Fund.

The work of the Interim Forest Authority was necessarily of a preparatory character. It had no powers to hold land and was consequently unable to undertake any planting operations. Steps were taken to secure seed and nursery ground, to ensure that an adequate supply of plants should be available when planting became possible; efforts were made to co-ordinate the training of prospective forest officers, of whom considerable numbers had been placed at the Universities by Departments interested in ex-officers; the supply of foresters was examined, the Forest of Dean and Chopwell Schools for woodmen were re-opened, and sites secured for new schools; the survey of the rate of growth of conifers in Great Britain was continued and extended to Ireland; methods of surveying waste land for afforestation purposes were co-ordinated and surveys begun on a large scale; surveys of woodland areas in Scotland and England by the Timber Supply Department were taken over; an enquiry into insect conditions was set on foot; the collection of timber specimens for testing purposes was continued, and generally the Interim Authority proceeded to exercise, so far as their powers would permit, the functions of a regularly constituted Forestry Department.

In order to carry on the above work it was necessary gradually to get together a staff and to work out the best system of organisation. The work of the Interim Forest Authority proved subsequently of the utmost value to the Commission.

The main work of the Authority was the drafting and introduction into Parliament of the Forestry Bill, and, in connection with this a large number of meetings were held with the various Departments and Societies interested in forestry. Visits were also paid to Scotland and Ireland.

Details of the expenditure incurred by the Interim Forest Authority are as follows:—

	£
Salaries, wages and allowances ...	9,660
Travelling and subsistence	4,190
Miscellaneous ...	7,380
	<hr/>
Total ...	£21,230

The expenditure under "Miscellaneous" comprised the following:—

	£
Refund to Timber Supply Department (expenditure on Scottish surveys) ...	2,900
Forestry materials (barbed wire, huts, tools, etc.) ... ..	4,480

The Interim Forest Authority held 31 meetings in all. The names of the members were Mr. F. D. Acland, M.P. (Chairman), Lord Lovat, Lord Clinton, Major David Davies, M.P., Mr. A. MacCallum Scott, M.P., Mr. T. B. Ponsonby, Mr. R. L. Robinson and Colonel W. Stewart-Fotheringham.

### **RELATIONS WITH OTHER DEPARTMENTS.**

The Forestry Act, 1919, provided for the transfer of the functions in respect of forestry of the Board of Agriculture and Fisheries, the Board of Agriculture for Scotland and the Department of Agriculture and Technical Instruction for Ireland to the Commission, while the powers of the Development Commissioners in respect of forestry were limited to the continuation of grants which had received Treasury sanction before 1st September, 1919. Provision was also made in the Act for the Commission to undertake the management of the Crown woods and the woods belonging to other Government Departments. The most important areas under consideration are those belonging to the Crown which extend to nearly 70,000 acres and include the New Forest, Windsor Woods, Dean Forest, a number of small properties in England and Wales and the Inverliever Estate in Scotland. These woods form part of the corpus of the Crown estates, and, assuming that it is desirable they should be brought under the management of the Commission, there were three ways in which that change might be effected, namely—

- (1) by transferring the woods and forests from the Commissioners of Woods to the Forestry Commissioners by legislation;



- (2) for the Forestry Commissioners to act in respect of the Crown woods and forests as agents for the Office of Woods ;
- (3) by the appointment of a member of the Forestry Commission as a third Commissioner of Woods (unpaid).

Meetings were held with representatives of the Office of Woods and the Treasury to discuss these suggestions and it was ultimately concluded that the first would prove the most satisfactory method in practice, provided that the Forestry Commissioners were furnished with additional funds sufficient to reconstitute the Crown woods after the severe depletion which the areas had suffered during the war. As regards the second method, the Forestry Commissioners were not disposed to accept the proposal that they should act as agents for another Department which is in fact itself an agent for Government, while the Commissioners of Woods were opposed to the appointment of a third Commissioner. A Bill was accordingly prepared for presentation to Parliament but owing to pressure of business had not been introduced at the end of the year under review. In the meantime the Commissioners' officers are exercising supervision over technical work in all the important forests with the exception of Windsor Woods.

As regards the Development Commission the position arose that certain schemes such as those for afforestation in Ireland where land had been already secured but grants for planting had not been sanctioned prior to the 1st September, 1919, could not proceed. In order to enable planting to go on the Forestry Commissioners undertook to pay the cost of planting on such areas. Similar action has been taken in the case of Craigmyle Estate in Scotland pending the adjustment of details with the Board of Agriculture. Owing to the provision in the Development Funds Act that returns from operations shall be repaid into the Development Fund and a corresponding clause in the Forestry Act, this procedure is open to objection, and it was agreed between the Development Commissioners and the Forestry Commissioners that when the legislation transferring the Crown woods to the Forestry Commissioners was brought forward a clause should be introduced whereby the Forestry Commission should take over both the assets and the liabilities of the Development Commission in respect of forestry as from the 1st April, 1920. This course would entail, for example, the transfer of the Development Commission's interest in plants raised by means of grants from the Development Fund, and in certain proceeds-sharing schemes and in afforestation schemes in Ireland, and, on the other hand, the acceptance by the Forestry Commissioners of the obligations which the continuance of these schemes entails.

As regards the Irish Department of Agriculture and Technical Instruction, problems arose in connection with the operations of the Development Commission and the management of woodlands which the Department had otherwise acquired. The Irish

Department were in possession of three types of woodlands, namely, those purchased by the Department out of their Endowment Fund, those purchased by means of an Annual Vote of £6,000 from the Exchequer, and those financed by the Development Commission.

Soon after the Forestry Commissioners were appointed, meetings were held with representatives of the Irish Department, and it was agreed in view of the experience which that Department had obtained in forestry matters in Ireland that they should act as the agents of the Commission, a staff appointed by the Commissioners to be seconded to them for that purpose. The Commissioners would thus be in a position to control policy as between the individual parts of the United Kingdom while taking advantage of local experience.

As regards the Agricultural Departments, arrangements were made for easy reference in respect of matters on which the Commissioners have to consult them, *e.g.*, on acquisitions of land for forestry purposes. In the case of Scotland arrangements were made with the Board of Agriculture for taking over part of the Borgia Estate for afforestation purposes.

### **BRITISH EMPIRE FORESTRY CONFERENCE.**

It had been represented to the Interim Forest Authority from various parts of the Empire during the course of 1919 that the time was ripe for holding an Empire Conference on Forestry, and the Authority was also apprised that the Department of Overseas Trade was organising a British Empire Timber Exhibition in July, 1920. A clause was therefore inserted in the Forestry Act enabling the Forestry Commissioners "to make or aid in making such enquiries as they 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." On the Forestry Commissioners taking up their duties invitations were accordingly issued to the various Governments of the Empire to send Delegates to a Conference in London, and to prepare for that Conference statements on uniform lines as to the condition of the forests and forestry in the individual parts of the Empire for which each was responsible. The Conference was duly held in July, 1920, and was attended by 43 Delegates including representatives of the United Kingdom; the Indian Empire; the Dominion of Canada and the Provinces of British Columbia and Quebec; the Commonwealth of Australia and the States of South Australia, Victoria, Queensland, Western Australia and Tasmania; the Dominions of Newfoundland and New Zealand; the Union of South Africa; the Colonial Office; Ceylon; East African Protectorate; Federated Malay States; Gold Coast; Nigeria; Nyasaland; Sierra Leone; Tanganyika Territory; Trinidad; Uganda; and Egypt and the Sudan.

In all, 33 Statements on Forestry in different parts of the Empire, were presented to the Conference. It is believed that the information which they contain afford the most comprehensive account which has yet been got together.

The programme included a series of discussions on the following subjects :—

Responsibility of the State for Forest Policy.

The Forest Authority.

Methods and Problems of Technical Forestry.

Education and Research.

Empire Forest Resources and Consumption of Timber.

Scope for Imperial Development.

Imperial Forestry Bureau.

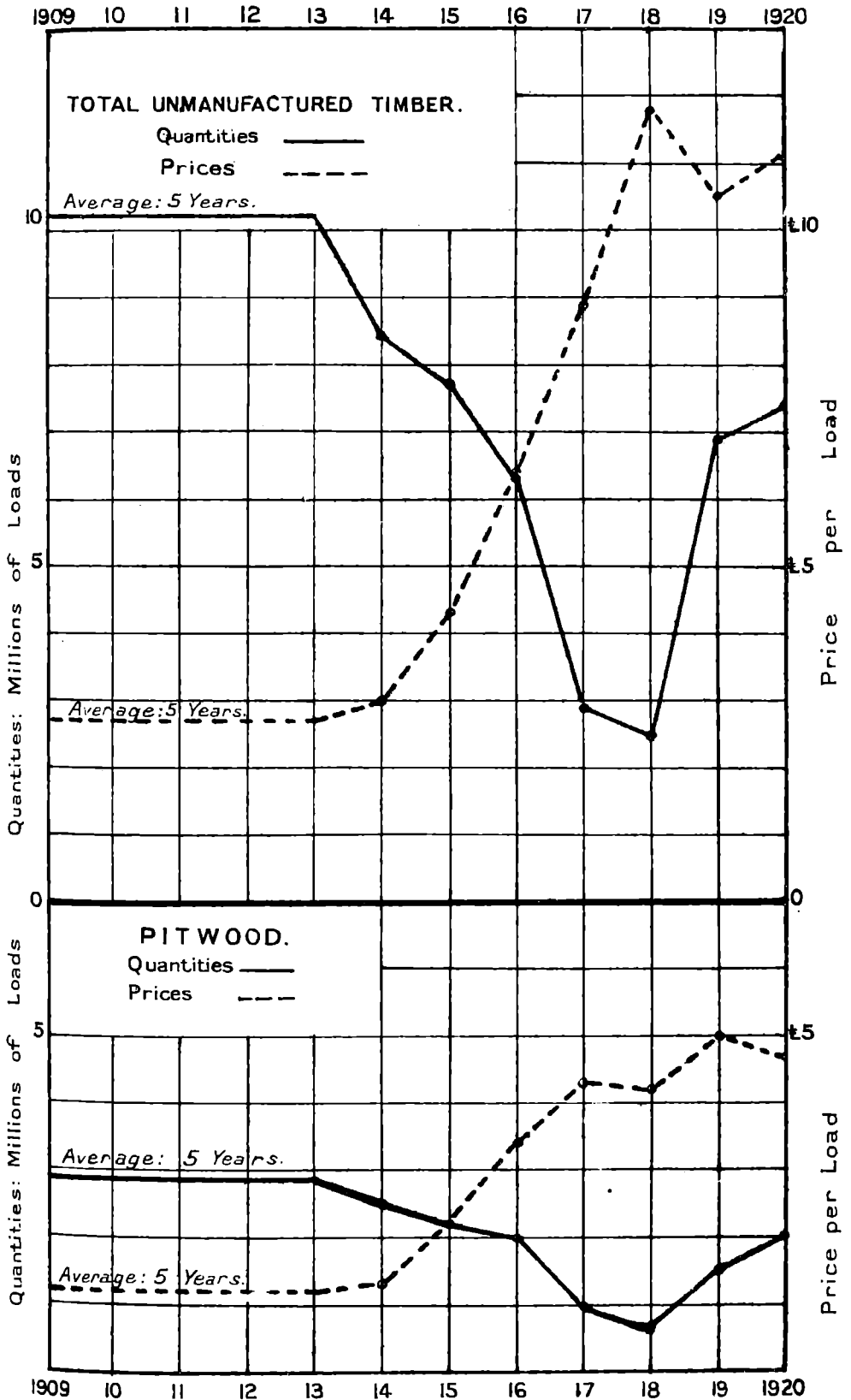
Visits were also paid by the delegates to the following woodlands : in England the Forest of Dean, Tintern and Highmeadow Woods and Windsor Forest, and in Scotland Murthly, Grantown-on-Spey, Beaufort, and Novar.

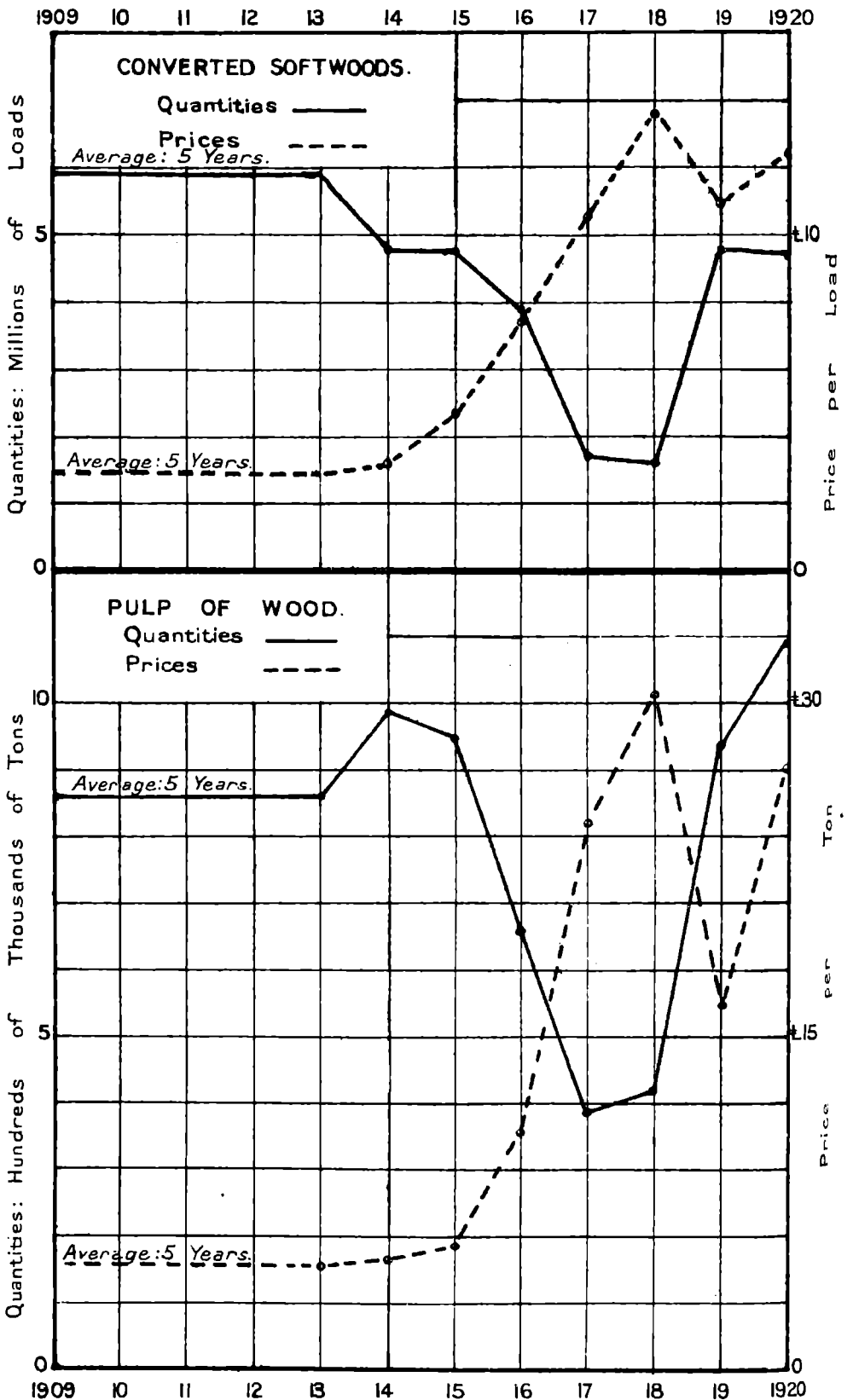
The Resolutions of the Conference and the Reports of the Committees have already been issued as a separate publication,\* and it is unnecessary to refer to them here except to mention those on education and on the Imperial Forestry Bureau. The discussions on education brought out very clearly the desire on the part of practising foresters to see established in the United Kingdom an educational institution which would do credit to the forests of the Empire and ultimately enable their great potential wealth to be developed; while discussions on the Forestry Bureau emphasised the importance at the present time, when the economic value of forests is receiving more and more public attention, of having a central organisation which would be in a position to serve as a clearing house for information.

The Commissioners desire to express their thanks to the Rhodes Trustees and the numerous private individuals who were good enough to contribute towards a Guarantee Fund and thus assist in entertaining the Overseas Delegates during their visit to this country. They believe that the Conference has served a very useful purpose in drawing closer together the foresters of the Empire and in emphasising the possibility and need of increasing the production of timber from the twelve hundred million acres of forest which His Majesty's Dominions contain.

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\* *British Empire Forestry Conference*, London, 1920. *Proceedings and Summary of Statements*. Printed by H.M. Stationery Office, 1921. Price 7s. 6d.





## IMPORTS OF TIMBER, WOOD MANUFACTURES AND PULP OF WOOD.

Emphasis has been laid in a previous section of this Report on forestry as a form of insurance against national emergency. It may be of interest therefore to indicate on broad lines the course of imports and prices before, during and immediately after the war. As a datum line the averages for the five pre-war years, 1909-13, inclusive, may be taken. The total imports then amounted to 10,204,000 loads of wood and timber, and 859,000 tons of pulp of wood. In 1914 wood and timber imports declined by about 20 per cent., but the quantity of pulp of wood increased to 990,000 tons, and did not decline below pre-war level until 1916. Apart from this the reduction of imports which began in 1914 was continued at a slightly less rate in 1915, and at an increasing rate in 1916 and 1917, to reach bottom in 1918. In the last-mentioned year the total imports of wood and timber amounted to 2,479,000 loads, or roughly 25 per cent. of the pre-war figure. It was in order to make up so much as possible of the heavy deficit in 1916-18 that the home woods were exploited to the utmost. On the other hand the recovery in imports has been even more rapid than the decline. Wood and timber were imported to the amount of 6,866,000 loads in 1919, and 7,418,000 loads in 1920. Pulp of wood imports were already above pre-war level in 1919, and increased in 1920 to 1,094,000 tons which is the maximum yet recorded.

As regards prices, it will be seen that there was a progressive rise as imports declined. The average price of all imports of unmanufactured timber during 1909-13 was £2·7 per load, in 1916 £6·4 per load, and in 1918 £11·8 per load. The price fell to £10·5 in 1919, to rise to £11·08 per load in 1920. The rise in the price of pulp of wood is even more striking—from £4·7 per ton in 1909-13 to £10·7 per ton in 1916 and £30·4 in 1918.

It will be seen from the table on pp. 52-53 that although the quantity of pulp of wood imported was only 27 per cent. above, and that of unmanufactured timber was 27 per cent. below the average pre-war level, the total cost of the two in 1920 was £111,695,000 against £31,618,000, or three and a half times as much. If wood manufactures be included, the total value of the imports in 1920 was £120,326,000 against £34,314,000 on the average of the five years 1909-13.

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

(Quantities and Values in Thousands.)

Description.	Average	1914.	1915.	1916.	1917.	1918.	1919.	1920.*	Average	1914.	1915.	1916.	1917.	1918.	1919.	1920.*
	5 years, 1909-13.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	5 years, 1909-13.	£	£	£	£	£	£	£
<b>WOOD AND TIMBER.</b>																
<i>Heav.</i> :-																
Pitwood	2,944	2,477	2,169	2,021	996	708	1,452	2,004	3,510	3,259	4,786	6,878	4,255	2,948	7,808	9,369
Fir, pine and spruce other than pit-props or pit-wood.	542	364	128	116	28	14	69	229	1,353	993	575	885	203	168	879	2,748
Oak	203	181	124	48	7	13	137	—	1,316	1,246	956	511	163	383	2,848	—
Teak	49	41	42	28	10	9	38	—	828	763	730	610	301	359	1,795	—
Unenumerated	66	63	33	21	8	14	9	—	248	268	226	234	116	183	134	—
Total Heavn	3,804	3,126	2,491	2,234	1,049	753	1,705	—	7,255	6,529	7,333	9,118	5,128	4,041	12,964	—
<i>Converted</i> :-																
Sawn or split fir, pine and spruce.		4,050	4,135	3,324	1,504	1,373	4,297	3,928		12,686	19,192	24,872	15,649	18,560	46,181	45,906
Planned or dressed fir, pine and spruce.		459	402	282	155	165	272	—		1,786	2,061	2,206	1,771	2,216	3,201	—
Sawn or split planned or dressed unenumerated.		116	110	77	39	37	89	—	17,365	481	698	664	459	675	1,314	—
Sleepers of all kinds		216	181	229	21	5	171	218		629	707	1,324	178	50	1,660	2,345
Staves	161	93	109	82	33	36	85	156	795	596	708	865	493	680	1,363	3,641
Total Converted	6,100	4,934	4,937	3,994	1,762	1,616	4,914	—	18,160	16,168	23,456	29,871	18,550	22,181	54,019	—

Furniture woods, hardwoods and veneers :—	Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.				
	106	143	18	16	43	66	85	885	1,137	386	193	476	766	1,130	2,326	1,261	1,509	1,613	982	1,492	2,169	4,193	
Mahogany	106	143	18	16	43	66	85	885	1,137	386	193	476	766	1,130	2,326	1,261	1,509	1,613	982	1,492	2,169	4,193	
Unenumerated (not ash, beech, birch, elm, oak, or wainscot).	194	227	77	56	67	181	—	1,261	1,509	1,613	982	1,492	2,169	4,193	—	—	—	—	—	—	—	—	
Total Furniture woods	300	370	90	72	110	247	—	2,148	2,646	1,999	1,175	1,968	2,095	5,323	—	—	—	—	—	—	—	—	
Not included above	—	—	—	—	—	—	798	—	—	—	—	—	—	—	15,880	—	—	—	—	—	—	—	
Total Unmanufactured Timber.	10,204	8,430	6,318	2,873	2,479	6,866	7,418	27,561	25,343	32,788	40,164	25,646	29,157	72,306	82,165	—	—	—	—	—	—	—	—
WOOD MANUFACTURES.																							
Furniture and Cabinet Ware	—	—	—	—	—	—	—	416	310	154	84	11	8	218	928	—	—	—	—	—	—	—	—
House frames, fittings and joiners work	—	—	—	—	—	—	—	180	158	89	33	30	4	219	292	—	—	—	—	—	—	—	—
Unenumerated	—	—	—	—	—	—	—	2,099	1,874	2,072	1,810	1,285	2,065	3,873	7,411	—	—	—	—	—	—	—	—
Total Manufactured Timber.	—	—	—	—	—	—	—	2,695	2,337	2,325	1,927	1,326	2,077	4,310	8,631	—	—	—	—	—	—	—	—
Pulp of wood	859	990	658	387	420	938	1,094	4,058	4,888	5,314	7,070	9,520	12,783	15,394	29,330	—	—	—	—	—	—	—	—

\* The classification for 1920 is different from preceding years. The category "Not included above" (798,000 loads valued at £15,880,000) is made up as follows:— All bevn hardwoods other than mahogany, 77,900 loads (£1,632,000); all sawn hardwoods other than mahogany, 333,000 loads (£8,533,000); planed or dressed, 382,000 loads (£5,509,000); veneers and panel wood, 2,000 loads (£86,000); and "Not elsewhere specified," 4,000 loads (£70,000).



### CONSULTATIVE COMMITTEES.

In accordance with Section 6 of the Forestry Act, 1919, His Majesty The King established Consultative Committees for England, Scotland, Ireland and Wales respectively by Order in Council on the 25th March, 1920.

The Forestry (Consultative Committees) Order, 1920, and a list of the Members of the Committees on 30th September last appear in the Appendix to this Report.

During the first six months of their existence the Committees held quarterly meetings and also a number of Sub-Committee meetings, the first business having been the appointment of Sub-Committees to deal with the various questions likely to arise. The Sub-Committees are as follows :—

Private Enterprise	...	...	} England.
Taxation	...	...	
Transport	...	...	
Parliamentary	...	...	
Commercial Utilisation	...	...	
Acquisition	...	...	
Research and Education	...	...	} Scotland
Schemes	...	...	
Education and Research	...	...	
Utilisation and Labour	...	...	
Transport and Taxation	...	...	
Parliamentary	...	...	
Supplies	...	...	} Ireland.
Taxation	...	...	
Railway Rates	...	...	
Schemes of Afforestation Grants	...	...	
General Purposes	...	...	} Wales.
Private Enterprise, Transport and Utilisation	...	...	
Taxation	...	...	
Acquisition	...	...	
Parliamentary	...	...	
Education	...	...	

The Chairman of the Commission and other Commissioners attended early meetings of the four Committees and outlined the Commission's organisation and policy within the limits of the funds at their disposal.

In the first six months questions on the following matters were formally referred by the Commission to the Committees for their advice and assistance :—

1. Afforestation grants and proceeds-sharing schemes, under Section 3 of the Forestry Act.
2. Provision of seeds and plants.
3. Taxation of woodlands.

Members of the Committees have been in frequent communication with the Assistant Commissioners regarding areas suitable for planting schemes and on other matters, while the following additional subjects were considered by some of the Committees and notes forwarded to the Commission :—

Seed Testing.  
 Publicity.  
 Exportation of Home Tree Seed.  
 Railway Rates.  
 Higher Education.

In May representatives of the Committees attended a Conference with the Commissioners regarding income tax on woodlands in special reference to the recommendations of the Royal Commission on that subject.

The majority of the Members of the Committees attended the British Empire Forestry Conference held in July, and many of them contributed to the discussions.

#### **CHARTER OF INCORPORATION.**

To simplify procedure with regard to holding and dealing with land, the Forestry Commissioners by Royal Charter, dated 27th April, 1920, were created a Body Corporate with a perpetual succession.

(Signed)      LOVAT (*Chairman*).  
                   F. D. ACLAND.  
                   CLINTON.  
                   L. FORESTIER-WALKER.  
                   T. B. PONSONBY.  
                   R. L. ROBINSON.  
                   W. STEUART-FOTHRINGHAM.  
                   J. STIRLING-MAXWELL.

A. G. HERBERT (*Acting Secretary*),  
 22, Grosvenor Gardens, S.W.

1st June, 1921.

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## APPENDIX.

### STATUTORY RULES AND ORDERS.

1920, No. 647.

#### FORESTRY COMMISSION.

THE FORESTRY (CONSULTATIVE COMMITTEES) ORDER, 1920.

At the Court at Buckingham Palace, the 25th day of March, 1920.

PRESENT,

The King's Most Excellent Majesty in Council.

Whereas by section six of the Forestry Act, 1919,\* it is enacted as follows:—

“(1) It shall be lawful for His Majesty, by Order in Council, to establish consultative committees for England, Scotland, Ireland, and Wales, respectively, for giving to the Commissioners in accordance with the provisions of the Order advice and assistance with respect to the exercise and performance by the Commissioners of their powers and duties under this Act.

“(2) The constitution of each consultative committee shall be such as may be determined by the Order, so, however, that the Order shall provide for the inclusion among the members of the committee of—

(a) a representative, in the case of the English Committee and the Welsh Committee, respectively, of the Board of Agriculture and Fisheries, in the case of the Scottish Committee, of the Board of Agriculture for Scotland, and in the case of the Irish Committee, of the Department of Agriculture and Technical Instruction for Ireland;

(b) persons having practical experience of matters relating to forestry, woodcraft, and woodland industries;

(c) representatives of labour;

(d) representatives of county councils and any other local bodies interested in forestry;

(e) representatives of societies existing for the promotion of afforestation;

(f) representatives of woodland owners;”

And whereas by virtue of section one of the Ministry of Agriculture and Fisheries Act, 1919,† it is provided that the above recited (amongst other) sections is to have effect as though a reference to the Minister of Agriculture and Fisheries were substituted for a reference to the Board of Agriculture and Fisheries:

Now, therefore, His Majesty, by and with the advice of His Privy Council, in pursuance of the Act, and of all other powers enabling Him in that behalf, is pleased to order, and it is hereby ordered, as follows:—

1.—(1) There shall be established for the purposes set out in the above recited section of the Forestry Act, 1919, a consultative committee for England, a consultative committee for Wales, a consultative committee for Scotland, and a consultative committee for Ireland.

(2) Each committee shall consist of such number of members, not exceeding thirty, as the Commissioners may determine.

(3) The members of each committee shall be appointed by the Commissioners, and shall hold office for three years:

\* 9-10 G. 5. c. 58.

† 9-10 G. 5. c. 91.

Provided that—

- (a) on a casual vacancy occurring in a committee the person appointed to fill the vacancy shall hold office until the time when the person in whose place he is appointed would regularly cease to act; and
  - (b) a member of committee may be reappointed on the expiration of his term of office;
- (4) There shall be included among the members of the consultative committee for England and of the consultative committee for Wales, respectively, a representative of the Minister of Agriculture and Fisheries, among the members of the consultative committee for Scotland a representative of the Board of Agriculture for Scotland, and among the members of the consultative committee for Ireland a representative of the Department of Agriculture and Technical Instruction for Ireland; which representative shall in each case be appointed after consultation with the Minister or other head of the Department.

There shall also be included among the members of each committee—

- Persons having practical experience of matters relating to forestry, woodcraft, and woodland industries;
- Representatives of labour;
- Representatives of county councils and any other local bodies interested in forestry;
- Representatives of societies existing for the promotion of afforestation; and
- Representatives of woodland owners.

(5) The decision of the Commissioners shall be final if any question arises as to whether any person appointed under this Order may properly be regarded as fulfilling any of the conditions aforesaid.

2. The following provisions shall have effect with respect to each committee established under this Order:—

- (1) The Commissioners shall appoint a chairman, and, after consultation with the chairman, a vice-chairman of the committee:
- (2) The chairman or, in his absence, the vice-chairman, or, in the absence of both, one of the members of the committee, to be elected by the members present, shall preside:
- (3) The Commissioners shall appoint a secretary of the committee who shall hold office during the pleasure of the Commissioners:
- (4) The committee shall meet at such times, and at such places, and notice of meetings shall be given in such manner as the chairman may, with the approval of the Commissioners, determine:

Provided that the committee shall meet at least once in each quarter:

- (5) At a meeting of the committee eight shall be a quorum:
- (6) No act or proceeding of the committee shall be questioned on account of any vacancy in their body:
- (7) The committee may for special purposes, approved by the Commissioners, appoint sub-committees of their members, and, within the limits approved by the Commissioners, may call into consultation, for the purpose of giving expert advice, such persons as the chairman may think fit, so, however, that no expenditure shall be involved:
- (8) If a member of the committee is absent from the meetings of the committee for six months consecutively, except for some reason approved by the Commissioners, his office shall become vacant:
- (9) The committee shall report to the Commissioners from time to time on matters upon which they have been consulted by the Commissioners:

- (10) The committee shall furnish to the Commissioners, but shall not publish, an annual report of the proceedings of the committee:
- (11) Any Commissioner may attend meetings of the committee at the request of the chairman of the committee:
- (12) Subject to the provisions contained in this Order, the committee may regulate their own procedure.

3. A sum not exceeding £300 per annum will be allocated to each committee for the payment of travelling expenses to and from meetings, but not of subsistence, of members attending the meetings of the committee, such payments to be vouched for by the chairman or secretary of the committee.

4.—(1) The Interpretation Act, 1889,\* applies for the purpose of the interpretation of this Order as it applies for the purpose of the interpretation of an Act of Parliament.

(2) This Order may be cited as the Forestry (Consultative Committees) Order, 1920.

*Almeric FitzRoy.*

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CONSULTATIVE COMMITTEES ESTABLISHED UNDER THE FORESTRY (CONSULTATIVE COMMITTEES) ORDER, 1920, DATED THE 25TH MARCH, 1920, IN PURSUANCE OF SECTION 6, OF THE FORESTRY ACT, 1919.

ENGLAND.

<i>Member.</i>	<i>Date of Appointment.</i>
Lieut.-Col. G. L. Courthope, M.C. M.P. (Chairman)	25th March, 1920.
Col. M. J. Wilson, M.P. (Vice-Chairman)	...
Sir James Ball (since deceased)	...
Lord Henry C. Bentinck, M.P.	...
E. Callaway, Esq.	...
Rt. Hon. The Earl of Chichester, O.B.E.	...
M. C. Duchesne, Esq.	...
J. H. Green, Esq.	...
W. A. Haviland, Esq.	...
Sir Edward Holt, Bart., C.B.E.	...
E. C. Horton, Esq., O.B.E.	...
A. Luttrell, Esq.	...
W. Peacock, Esq., C.V.O.	...
Major The Hon. Harold Pearson	...
Col. B. J. Petre	...
Thos. Roberts, Esq.	...
Sir William Schlich, F.R.S., K.C.I.E.	...
W. R. Smith, Esq., M.P.	...
Charles Stewart, Esq.	...
Col. J. W. Weston, M.P.	...
Leslie S. Wood, Esq.	...
Sir Lawrence Weaver, K.B.E.	...

H. A. Pritchard, Esq., O.B.E., Secretary.

## SCOTLAND.

<i>Member.</i>	<i>Date of Appointment.</i>
Sir Hugh Shaw-Stewart, Bart., C.B. (Chairman)...	25th March, 1920.
General Stirling of Keir (Vice-Chairman) ... ..	"
Rt. Hon. William Adamson, M.P. ... ..	"
Sir Isaac Bayley Balfour, K.B.E. ... ..	"
F. R. S. Balfour, Esq., D.L. ... ..	"
Wm. Black, Esq. ... ..	"
Gilbert Brown, Esq. ... ..	"
J. C. Calder, Esq., C.B.E. ... ..	"
Sir Isaac Connell, S.S.C. ... ..	"
James A. Duthie, Esq. ... ..	"
George Fraser, Esq. ... ..	"
Robert Galloway, Esq., S.S.C. ... ..	"
Sydney J. Gammell, Esq. ... ..	"
Sir Robert Greig, M.C., LL.D. ... ..	"
J. H. Milne Home, Esq. ... ..	"
George Leven, Esq. ... ..	"
Sir Robert Lorimer ... ..	"
H. L. Macdonald, Esq. ... ..	"
Sir Kenneth J. Mackenzie, Bart. ... ..	"
J. T. McLaren, Esq. ... ..	"
J. Matson, Esq., O.B.E. ... ..	"
Donald Munro, Esq. ... ..	"
Major William Murray, M.P. ... ..	"
James Scott, Esq., S.S.C. ... ..	"
James Wight, Esq. ... ..	"

G. R. Ditchburn, Esq., Secretary.

## IRELAND.

<i>Member.</i>	<i>Date of Appointment.</i>
T. B. Ponsonby, Esq., D.L. (Chairman) ... ..	25th March, 1920.
H. de F. Montgomery, Esq., D.L. (Vice-Chairman)	"
E. M. Archdale, Esq., D.L., M.P. ... ..	"
John Bagwell, Esq. ... ..	"
Lord Osborne Beauclerk ... ..	"
R. Bell, Esq. ... ..	"
R. Bradley, Esq. ... ..	"
Stephen Brown, Esq., J.P. ... ..	"
J. R. Campbell, Esq., B.Sc. ... ..	"
St. Clair M. Dobbs, Esq., J.P. ... ..	"
Sir Henry Doran, J.P. ... ..	"
James Everett, Esq. ... ..	30th March, 1920.
V. C. Le Fanu, Esq., J.P. ... ..	25th March, 1920
Wm. Field, Esq. ... ..	"
A. C. Forbes, Esq. O.B.E. ... ..	"
John Galvin, Esq. ... ..	"
Rt. Hon. The Earl of Granard, K.P., G.C.V.O. ...	"
Prof. Augustine Henry, M.A. ... ..	"
Wm. Kirkpatrick, Esq. ... ..	"
A. E. Moeran, Esq. ... ..	"
Rt. Hon. Viscount Powerscourt, K.P., M.V.O. ...	"
Rt. Hon. Viscount de Vesci, J.P. ... ..	"
A. Vincent, Esq. ... ..	"
Capt. R. H. Prior Wandesforde ... ..	"
Rt. Hon. F. S. Wrench, D.L. ... ..	"

G. D. Allt, Esq., Secretary.

## WALES.

<i>Member.</i>	<i>Date of Appointment.</i>
Rt. Hon. Lord Kenyon, K.C.V.O. (Chairman) ...	25th March, 1920.
Col. F. D. W. Drummond, C.B.E., D.L. (Vice-Chairman) ... ..	”
G. B. Bovill, Esq. ... ..	”
T. W. David, Esq. ....	”
Lieut.-Col. J. R. Davidson, C.M.G. ... ..	”
Major David Davies, M.P. ... ..	”
Capt. J. D. D. Evans ... ..	”
Col. W. Forrest, D.S.O. ... ..	”
Vernon Hartshorn, Esq., M.P. ... ..	”
G. A. Humphreys, Esq. ... ..	”
G. Bryner Jones, Esq., C.B.E. ... ..	”
John Jones, Esq. ... ..	”
Lieut.-Col. W. N. Jones, J.P. ... ..	”
Col. Charles Venables Llewellyn ... ..	”
F. J. Matthews, Esq. ... ..	”
Rt. Hon. The Earl of Powis, D.L., J.P. ... ..	”
L. R. Pym, Esq. ... ..	”
D. C. Roberts, Esq. ... ..	”
J. Roberts, Esq. ... ..	”
Maj.-Gen. A. E. Sandbach, C.B., D.S.O. ... ..	”
J. I. Storrar, Esq. ... ..	”
Rt. Hon. Lord Tredegar ... ..	”
H. C. Vincent, Esq. ... ..	”
Col. Sir H. L. Watkin Williams-Wynn, Bart., C.B.	”
Percy Wilkinson, Esq. ... ..	”
H. A. Pritchard, Esq., O.B.E., Secretary.	

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