

As is well known, the main idea governing the Commissioners' work so far has been the acquisition of land and the formation thereon of coniferous plantations, the original programme being to plant 150,000 acres in the ten-year period. For reasons detailed in previous reports, there was a check in the work. The area planted during the year under review amounted to 21,963 acres of conifers. It is estimated that 135,000 acres will have been afforested with conifers by the end of the ten years, of which 90,156 acres had been planted by the end of the eighth year, with, in addition, 4130 acres of broad-leaved species (hard woods); or a total of 94,289 acres. The report adds that a total area of approximately 117,300 acres had been completed by May 1928. It was proposed in the original programme that assistance should be given, by way of grants, to local authorities and private owners to afforest areas under their control, an area of 110,000 acres being prescribed for the ten years. About 62,000 acres have been more or less dealt with, and it is hoped to achieve a total acreage of 75,000 by the end of the ten years. The work on the provision of forest worker's holdings has proceeded. The systematic formation of these holdings was commenced in the summer of 1924. Up to September 1927, 357 holdings had been completed (171 in the year under review), and 219 were in process of formation.

The cost of planting still remains very high. The report says that the outlay per acre on labour and material on the area planted between 1919 and 1927 was as follows: England and Wales, £8:9:9; Scotland, £9:10:3; Great Britain, £8:16:4. These figures include the cost of preparation of the ground, drainage, fencing, plants, planting, replacement of failures, and weeding. It is noticeable that during 1927 the expenditure on replacing failures (beating up) was something over 25 per cent of the cost of original planting, a decrease on 1926, when it was nearly 50 per cent; the figure is, however, excessive, and few private owners could undertake afforestation if they had to face so high a proportion of failures.

The Commissioners have scarcely faced the question of undertaking a part of their work by direct sowing, of which few adequate experiments have yet been made; and yet it would appear that it is in this direction that the true solution of the afforestation question is to be sought. With high planting charges and nurseries costing as much as half the total expenditure entailed on the cultural operations (£351,046 as compared with £675,889 for the eight years), it is difficult to foresee how an adequate area of forests will be obtainable with the amount of money which the tax payer is likely to be able to devote to this forestry work, necessary as it is to the future welfare of Great Britain.

Moray Firth Fisheries.

THE Fishery Board for Scotland has recently issued two important papers dealing with commercial fishing in the Moray Firth. The first is a review of the cod-net fishing,¹ and the second is an account of the Danish seine-net fishery.² Prepared by so able an authority as Dr. Alexander Bowman, these two papers contain much interesting and valuable practical information. Read together, they demonstrate very clearly the great extent to which the prosecution of both cod-net fishing and Danish seine-netting has been influenced by the prevailing economic conditions of the great Scottish herring fisheries.

Between herring seasons, other work must be found for the steamers and motor craft, which need to be kept in almost constant commission to meet expenses; they cannot be laid up with the same facility as the older sail boats. Thus cod-net fishing, begun in the Moray Firth in the year 1906, attracted little attention until two or three years later, when the fact had become more generally realised that remunerative results were being obtained at a time of year when there is a general lull in herring fishing. Even then, one disastrous season in 1911 so weakened the confidence of the crews of the steamers that, in the following year, fewer steamers were fitted out for the fishery, although cod entered the area in considerable numbers. Moreover, the fact that their subsequent return to the fishery has been slow, seems

¹ "Review of the Cod-net Fishing in the Moray Firth." *Fisheries, Scotland, Sci. Invest.*, No. 1, 1928.

² "Danish Seine-net Fishing in the Moray Firth." *Fisheries, Scotland, Sci. Invest.*, II, 1928.

to suggest that, as yet, confidence in the method has not been fully regained.

The method of fishing by means of the Danish seine was first introduced into Scottish waters in the autumn of 1921. In that year, during the coal strike, a large number of Danish motor boats using the seine landed good catches at English ports, and even after bunkers again became available to trawlers, these small vessels proved able to compete successfully in the market. The Danish net was therefore rapidly adopted, at first by English vessels and almost immediately thereafter by a number of Scottish steam-drifters and motor boats. The vessels normally employed in the Scottish drift-net fishery being especially suitable for the use of the light Danish seine and easily convertible at comparatively small expense, both steam and motor drifters from Moray Firth were rapidly equipped with the new gear, and fishing was soon being carried on energetically in local waters. The adoption of the method was accelerated by the acute depression prevailing in the herring-fishing industry at the time. The intensity of fishing which characterised the early operations was, however, not maintained, and, in 1923, the total number of landings fell short of that of the previous year, but in the following years there was no sign of further decline. With the large number of power vessels adopting the Danish seine, it became a question of some interest whether or not the new method would supplant the older one of cod-net fishing. The innovation is of too recent a date, however, to permit a definite answer to be given at present.

Liverpool Observatory and Tidal Institute.

AN agreement has just been made between the Mersey Docks and Harbour Board and the University of Liverpool for the administration as a single institution of the Board's Observatory at Bidston and the Tidal Institute of the University. The combined institution is to bear the name of "The Liverpool Observatory and Tidal Institute" and will

be governed by a joint committee of the Dock Board and the University.

The Liverpool Observatory was founded in 1845, and since 1867 it has been situated on Bidston Hill, near Birkenhead. The work carried on has always been intimately associated with the activities of the port, much attention being given to time-measurement