

REVIEW.

A Note on the Forestry Position in Denmark.

An article on "Denmark's Timber Balance" by Mogens Andersen in "Intersylva," Vol. 1, No. 2, April, 1941, contains some interesting information and figures. It is usually the custom in Eire to compare our forestry position with that of countries very different in respect of the extent of their natural forest area and in respect of their wealth, resources and economic position. Such comparisons with Sweden, for example, with its large area of natural forest, or with Great Britain, with its great industrial resources, tend to give a wrong perspective. There is a much greater similarity of Irish conditions with those in Denmark and it may be useful as well as interesting to know how forestry stands in the latter country.

Denmark's total land area amounts to 10,625,000 acres, compared with the 17,025,000 acres in Eire. The net area under forest is 889,000 acres, which is 8.2% of the whole. The passing of an act in 1805 led to the preservation of a greater area of the old natural forest than has survived here and at the present day some 518,000 acres of that area are still under forest. The remaining 371,000 acres consist of plantations or afforested areas which have been laid down in the past 150 years, for the most part on extremely poor soils and on sand dunes.

The present distribution of species in the Danish forests is illuminating. There are some 371,000 acres of broad-leaved species, comprising 252,000 acres of beech forest, 44,500 acres of oak forest and 75,500 acres of other broad-leaved trees. The 518,000 acres under conifers comprise 201,500 acres of spruce, 123,500 acres of Mountain pine, 114,000 acres of spruce and Mountain pine mixtures and 79,000 acres of other conifers. The high proportion of what, from a timber-producing point of view, can only be regarded as unproductive forest land contained in the 237,500 acres under Mountain pine pure or in mixture with spruce, is noteworthy. The remaining 280,500 acres of conifers are, however, highly productive. Under the highly skilled and intensive Danish silvicultural methods it is claimed that Denmark takes first place in respect of the annual return in material obtained from its forests. This amounts for material over 2 inches diameter with bark to 62 cubic feet Q.G. per acre per annum for all forest areas. For broad-leaved areas alone it is 89 cubic feet Q.G., and for conifer areas 45 cubic feet Q.G. per acre per annum.

It may be remarked that the total forest area of Denmark in 1875 was some 494,000 acres which means that afforestation operations since then in the past 66 years have added the remaining 395,000 acres, equivalent to a regular planting programme of some 5,100 acres per annum. It may be presumed that something like 3,000 acres of that annual programme consisted of Mountain pine either pure or in mixture.

The volume of timber and firewood produced in the year 1938 amounted to a total of 56,277,000 cubic feet Q.G., comprising 27,723,000 cubic feet Q.G. or 49% of timber and no less than 28,554,000 cubic feet Q.G. or 51% of firewood. The value of the firewood alone leaving the forest is placed as high as £936,000, taking the Danish crown at pre-war par value. It consisted of 21,624,000 cubic ft. Q.G. of broad-leaved material and 6,930,000 cubic feet Q.G. of coniferous material. The consumption of wood for fuel amounts to 8.59 cubic feet Q.G. per head of the population, which is equivalent to 30% of the total consumption of timber and timber products.

The proportions of broad-leaved and coniferous timber were 11,089,000 and 16,635,000 cubic feet Q.G., respectively. The coniferous timber is classified in three categories, as follows: 9,706,000 cubic feet Q.G. of constructional timber, saw-logs, poles, telegraph poles, etc., or 58%; 3,602,000 cubic feet Q.G. of small constructional timber, laths, fishery poles, fencing posts, etc., or 22% and 3,328,000 cubic feet Q.G.

of stacked timber, etc., or 20%. The broad-leaved timber comprised 679,400 cubic feet Q.G. of logs in long lengths or 61%; 360,300 cubic feet Q.G. of stacked timber or 33% and 69,200 cubic feet Q.G. of poles, posts, etc.

The timber imports for the year 1938 are given under five main groups, as follows: Softwoods, 26,060,000 cubic feet (true); hardwoods, 1,166,000 cubic feet; wallboards, panels and plywood, 13,170 tons; cellulose and wood-pulp, 78,200 tons and paper, cardboard and fibre panels, 98,110 tons. The total value of these imports is given at £5,269,220. Exports of timber in 1938 amounted to 988,400 cubic feet, of which some three-quarters consisted of broadleaves species, both in the round (or squared) condition and sawn, of which a considerable proportion went to Sweden, Holland, Norway and Germany. This trade would seem to be somewhat analogous to the pre-war hardwood trade from Eire to Great Britain.

Home-grown timber takes first place in the saw-milling industry. About 350 industrial concerns, employing a total of 5,000 workers, are devoted exclusively or mainly to the conversion of Danish timber, whereas 150 concerns, employing some 2,000 workers, deal specially with imported timber. The above figures do not include furniture factories. About 79% of the home-grown timber used in the country goes to three main uses—to the building industry—40% for packing boxes—26% and for agricultural, horticultural and fishery purposes—13%.

As regards imported timber, by far the greater part of this, amounting to 19,190,000 cubic feet, is used in the building industry. Three-fourths of the timber used for building is imported, and the quantities imported are largely influenced by the activity of the building trade. The box-making business absorbs 2,825,000 cubic feet of imported timber.

From tables given it would appear that Denmark's total timber and firewood requirements in 1938, leaving exported material out of account, were met by the use or conversion of 110,650,000 cubic feet Q.G. of round timber, 56,230,000 cubic feet Q.G. of which was grown in Denmark and 54,420,000 cubic feet Q.G. grown abroad. The last-named figure contains 10,960,000 cubic feet Q.G. in respect of paper, cardboard and fibre panels and 6,204,000 cubic feet Q.G. in respect of wood-pulp and cellulose, none of which so far seems to be produced from home-grown timber.

In 1924 the population of Denmark was 3,386,274 inhabitants compared with the figure of 2,968,420 for Eire in 1936. The above figures and statistics should therefore be of considerable interest in view of the strong similarity between the two countries in many ways, especially in arriving at what area of productive forest should be aimed at to meet the country's needs, making due allowance for the great difference in firewood consumption between the two countries. The calculation may be left to those interested, if they are prepared to accept the figures furnished, which the writer admits may be disputed.

These figures refer to the position before the outbreak of war in 1939. It has been radically changed by the present situation. The disappearance of the main Danish export trade and, as a result, of the possibility of acquiring foreign currency, has greatly restricted the opportunity of making purchases abroad. This together with the loss of a large proportion of the coal, coke, petrol and oil which was formerly imported, has placed an exceptionally heavy burden upon Denmark's forests. It has been found necessary, as in Eire, to make maximum prices orders to control timber prices which soon reached twice or even three times normal; to arrange for supplementary fellings to supply the increased demands, especially of firewood and of wood for producer-gas units, and to impose restrictions in many directions. The Danes are experiencing some difficulty in securing the extra forest produce required because of the intensity of the thinnings which has been the normal practice in Denmark for some decades.

In connection with the extensive waste land afforestation in Denmark mentioned above, some additional information is furnished in an article by A. Howard Gron on "Heath-Afforestation in Jutland" in Vol. II., No. 1, January, 1942, of "Intersylva." The economic results of this work are dealt with in some detail. When this work was started during 1870 to 1880 by a number of wealthy people it was repeatedly claimed that it would finally pay a return of 4% per annum on the capital invested. This has not been realised, even although the cost of labour was then very low. From the point of view of private enterprise this afforestation has indeed been very unsatisfactory. With a large number of the plantations it is expected that it will now be possible to obtain a surplus of current receipts over current expenses and that they can thus be regarded as economic, but only by ignoring altogether the costs of establishment and the interest due thereon. In the case of the unsatisfactory plantations, however, it is doubtful whether their maintenance under "forest" can be justified. Looked at from the national point of view, however, it is considered that there have been advantages. Small amelioration in climate is claimed and what is called an advantageous distribution of home purchasing power has been achieved from the fact that the money involved came from the wealthy and was spent not on luxury articles from abroad but on the production of capital goods at home. It is said that no one has increased his fortune by these plantations on heath and moorland, but Denmark has grown richer. If one may be permitted to comment on such an observation, it would be to suggest that Denmark might have grown richer still if such money had been spent on less unproductive enterprises. The lesson we have to learn from these heath plantations is, I think, to hasten slowly—as we are doing—and to concentrate our afforestation work in these, its early stages, on areas which we are reasonably certain will be productive. It would be unfortunate if any large proportion of our plantations were to resemble one, a picture of which accompanies the article mentioned. This shows a 55 year old stand of Mountain pine ready for its first thinning with a height of 39½ feet and a volume of 1,900 cubic feet Q.G. per acre, and apparently not typical of the worst conditions. As we know, that risk exists and it is a very real danger.

Until the timber census now in progress is completed, it will not be possible accurately to compare the position of forestry in Eire with that in Denmark, but it would appear that Denmark has progressed some considerable distance further along the road to forest self-sufficiency than has Eire. She is still, however, so far as conifers are concerned in the position of having the younger age-classes markedly predominant, so that full production of softwood timber has not yet been reached. On the other hand, her distribution of broad-leaved age-classes is very uniform, a very different picture to what we have here. The restoration and improvement of a great deal of the existing woodland in Eire remains one of our first tasks, which will be assisted by the greater demand for fuel wood to be expected in the future.

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