

area of 31,000,000 acres included in the State forests, only a little more than two-fifths consists of productive forest land, which is even less than the proportion of productive forest lands in the National Forests of the United States. The bulk of the State forests are in the northern part of Finland and consist largely of protection forests interspersed with extensive areas of barren land. In the very northernmost part of the country nearly 8,000,000 acres have been set apart as protection forest, of which only 3 per cent. is private land. Since the management of this protection forest must be particularly careful and financial returns correspondingly low, this district is left out of consideration in calculations of future incomes from the State forests.

The State forests consist mainly of land which has always belonged to the government, or in earlier times to the Crown. The policy of increasing this area by purchase was, however, adopted in 1874, and considerable areas were secured up to 1895, when the policy was abandoned. In 1906 purchases by the State were resumed, and from then to 1912, 39,809 acres were purchased for \$204,025 (\$5.13 per acre). During recent years an annual appropriation of about \$39,600 has been made for this purpose. While these purchases are small in comparison with the total area of the State forests, they are nevertheless significant as an indication of the well-established policy of Finland not only to retain forest lands already in the possession of the State, but to add to these as circumstances make it possible.

A Land of Small Trees

As would naturally be expected in a country lying as far north as Finland, the individual trees are comparatively small and slow-growing, with only a few large trees per acre. Reconnaissance estimates show that on the State forests there are approximately 141,000,000 trees of merchantable size, divided into two classes:

10 to 12 inches d.b.h., 82,629,004 trees
Over 12 inches d.b.h., 58,781,445 trees

The fact that this apparently large

number of trees does not indicate a heavy stand is evident, when it is remembered that these represent only 10.6 trees per acre of productive forest land, or 4.8 trees per acre of total forest-bearing land. The stand per acre of productive forest land varies from 486 cubic feet in parts of the extreme north to 2,002 cubic feet in the south. In general, the stand averages about 715 cubic feet per acre in northern Finland and twice as much, or 1,430 cubic feet per acre, in southern Finland. It is interesting to note that in some cases the stand on dry forest land is considerably more than on unreclaimable swamp land. This is particularly the case with Norway spruce, and is due to the fact that large areas of spruce swamp still remain untouched as a result of poor markets for the smaller-sized material.

The timber-sale business in the Finnish State forests is well developed. In 1911 forest products to the value of \$2,495,200 were sold, of which 85 per cent. was saw timber. This is a marked increase over the timber-sale receipts of \$1,401,000 in 1905, which at that time was reported to be the maximum ever received in one year. The total amount of the cut in 1912 was 86,202,000 cubic feet, or 6.43 cubic feet per acre of productive forest land. This is believed to be considerably less than the annual growth. The highest cut was, as might be expected, in the southern part of the country, where on one forest it averaged 64.35 cubic feet per acre. In comparison with the United States, it is interesting to note that the amount cut under timber sales on the National Forests in this country for the same year amounted to 431,492,000 board feet (possibly 86,300,000 cubic feet) and yielded \$942,819. It should be remembered, however, that in the United States these figures refer to stumpage value only, while in Finland most of the timber is cut by the government and sold in the form of logs.

Sale by Auction

The bulk of the sales are carried on by general auctions, at which the timber is disposed of to the highest