

Winnipeg to the British Columbia boundary. In the Railway Belt practically all of the Coast District and the Dry Belt has also been examined by Dominion foresters.

Approximately three million trees were distributed in 1913 by Dominion Forestry Nursery Station at Indian Head, making a total of twenty-four million trees furnished by it to the settlers on the western prairies. The trees chiefly planted are green ash, Manitoba maple, cottonwood, willow and Russian poplar; and of the conifers, spruce, larch and pine. In 1901 only four acres were devoted to tree-culture at Indian Head. Sixty-seven acres are now required, and there has been such an increase in the demands for trees that a branch nursery was established in 1913 at Saskatoon, which will take a share in the distribution of tree seedlings this coming spring. Smaller nurseries have also been developed on some of the reserves to provide trees for reforestation. The Spruce Woods nursery now contains over 200,000 seedlings and transplants. Conifers are preferred for planting on reserves, and to secure seed for this purpose the rangers, last summer, collected over 100 bushels of cones.

But although the development of field forestry has been rapid, other branches of the work have not been neglected. The administrative and office staff at the Branch headquarters in Ottawa now numbers forty, of whom eight are technically trained foresters. These latter are engaged in administrative work, in the accumulating of statistics concerning the lumber and allied industries, in the draughting of forest maps from field reports, and in the preparation and editing of Branch Bulletins, circulars and newspaper articles designed to stimulate public interest in practical forestry. The head office library now contains 1,300 books on Forestry and allied subjects, and in America is second only to the library of the United States Forest Service. Forty-five periodicals are subscribed for, not including forestry publications received in exchange from all over the globe. There are also 5,000 good negatives now on file in the library, which are available to public speakers and journalists for illustration of lectures, or press articles on forestry topics. Statistical information for similar use is also furnished free. Not the least important branch of head-office work is the keeping of a cost record of improvement work. This, in the words of Mr. Dwight, who is in charge of the Administration Office, 'is now a valuable source of information in regard to the expenditures of money and rangers' services, and the progress of the actual work on the various projects under construction.' This is sound business tactics, which many disparagers of forestry practice would do

well to emulate.

The scientific side of forestry is also being developed at the Forest Products Laboratories recently established by the Forestry Branch at McGill University. Mr. A. G. McIntyre, the Superintendent, has already found employment for two assistants in the work of investigating the physical properties and possible new uses of Canadian woods. The results obtained will be extremely valuable to pulp and paper manufacturers, and to contractors and builders who seek cheaper native substitutes for expensive imported woods.

The tendency is for government forestry to become more and more self-supporting as time progresses. It has long been so in British India, where forestry practice is highly developed; it is rapidly becoming so in the United States in spite of an annual expenditure of over 4½ million dollars for forestry purposes, it will soon 'be so in Canada in spite of the fact that the revenue from Dominion Forest Reserves for the fiscal year ending March 31, 1913, barely exceeded \$23,000, derived principally from the disposal of small amounts of timber to settlers and miners. But since the passage, in 1913, of the new Forest Reserve Regulations, permitting the grazing of stock to the full capacity of these reserves, a very important new source of revenue has been provided. The revenue from grazing on the National Forests of the United States last year amounted to over one million dollars. On Dominion Forest Reserves four million cattle, at the minimum charge of twenty-five cents a head, would produce a similar annual revenue, and the forest reserves should ultimately provide range for the number.

The present revenue from Dominion timber lands under licence now approximates one-half million dollars, but although a considerable portion of these timber limits are within forest reserves, the revenue is at present handled by another branch of the Department of the Interior.

Other natural resources are exhaustible; the forests can be rendered permanently productive; other resources are valuable for themselves alone; on the maintenance of the forests depends the perpetuation of Canadian game, and also all industries relying for their existence on a continuous water supply, which the forests alone can adequately regulate.

G. E. B.

Authorities agree that at least 60 per cent. of the tree as it stands in the forest is wasted in converting it into lumber, and that 25 per cent. of the trees remain in the forests to rot or be destroyed in forest fires.