

the paper industry of that Dominion for twenty-nine years, and during the past year also 800,000,000 cubic feet were destroyed by fire.

It is the opinion of many Canadian foresters—and the facts bear it out—that the fire losses are as serious as ever despite the refinements in control (airplane-lookout towers, telephones, tracks, &c.). The annual losses in Canada must extend over 2,000,000 acres per annum. In twenty years' time Canada will be suffering from a real timber famine. It is very obvious, however, that the people of Canada have at last come to their senses. In every province the one thing stressed above all was the forest-fire question.

It is now being realized that adequate forest-regeneration will come by allowing Nature to work in her own way. However, artificial reforestation inspired by the State is now being actively pushed by the Dominion Government, which maintains two large nursery stations, and by the Quebec and Ontario Provinces, and similar action will soon be taken by the New Brunswick Government. The aggregate distribution of trees by these Governments to local bodies and settlers amounts to fifteen million plants per annum.

Canada must very soon formulate a policy of Canada's timber for Canadians. (At the present time, in fact, a Royal Commission is considering the general question of restriction of export of pulp-wood.) An outstanding feature of forestry in Canada is the splendid progress that is being made in forest research through the operation of experiment stations, permanent sample plots, and laboratories, and in the intensive study of wood-waste problems. Canada is determined to use all of her forests to the limit, and hundreds of thousands of dollars are being expended, all with good results. The use of the hydroplane, the wireless, and the radiophone are met with everywhere, and the work in the forest office and in the field is being generally facilitated thereby.

In the application of the sustained-yield principle to the forests whereby the increment only is annually harvested, India, South Africa, and the Malay States undoubtedly lead within the Empire. In this respect New Zealand and Australia lag. However, as regards the policy of afforestation, New Zealand is well ahead comparatively, and with a few minor exceptions it ranks with the systems of Canada and elsewhere.

NOTES ON FOREST CONDITIONS IN THE UNITED STATES.

1. The American people are cutting and destroying their forest resources at least four times faster than they are being replaced by growth. According to conservative authority—i.e., Professor Kirkland of the University of Washington—the west-coast resources held in private hands will be exhausted in seventeen or eighteen years. It is very obvious, therefore, that the United States must withdraw from the export timber trade within a very few years.

2. A realization of the aforementioned position by the Federal forestry officials has brought forward a proposal to legislate an Act requiring all timber-land operators to maintain adequate fire-preventive patrol, and to keep their forest lands continuously productive.

3. The United States Forest Service has now applied permanent forest working plans to several of their national forests. Under these working-management plans the forests are so cut as to provide sustained timber crops in perpetuity. In this respect the Americans lead in North America.

4. Several important timber-manufacturing and timber-holding concerns have recently placed their private holdings under permanent forest-management. This is the most hopeful move that has taken place for many years—the Ford Motor Company and the Union Lumber Company of California are two prominent leaders in this respect.

5. Generally speaking, American forest-tree nursery and plantation practice as exposed at several stations does not compare favourably as regards technique, care, cost, or results with the standard New Zealand Government practices.

6. With regard to forest education and research, of course the United States leads the world in the facilities provided and in the results attained. In this respect much assistance was granted the writer in his investigations.

7. The tendency in the United States forestry circles, particularly in the west, is to follow the French "extensive" attitude towards forest-management, silviculture, and regulation, as opposed to the German "intensive" viewpoint—e.g., silvicultural rules—and cutting plans aim at utilizing the stored ground seed in regenerating the Douglas fir stands, whilst heavy selection cuttings are favoured in the yellow-pine areas.

CONCLUSIONS.

1. New Zealand leads in State forest dedication procedure, in afforestation practice, in timber-sale administration, in the extent of communal forestry, in forest taxation, and in the expression of the national forest consciousness.

2. New Zealand in its national forest policy lags seriously in the application of applied forestry principles, due largely to the lack of trained men to apply the principles of tree-farming. A forest school is sadly needed.

3. New Zealand (and certain other countries for that matter) is too extravagant in its woods-exploitation practice, for millions of tons of wood are being wasted every year. An experimental wood-drying kiln and properly equipped forest-products laboratory are needed now.

4. The writer is more than satisfied that New Zealand must grow her own wood-supplies or go without.

5. In view of the fact that our national producing forest capital is barely sufficient to supply our own present and reasonable future needs, and in view of the alarming decrease in the world's visible supply of standing timber, the writer unreservedly endorses the policy of restriction of timber export. Unrestricted export will only mean higher prices in the domestic market and actual timber famine in such timber as kauri.