

(E.) ESTABLISHMENT OF A FOREST PRODUCTS LABORATORY.

One of the first steps in the practice of conservation is the closer and better utilization of forest products. While our forests are still being cut many times faster than Nature replaces them, the average finished product still contains only one-sixth of the volume of wood cut in the forest. In order to prolong the life of present resources until the planted forests grow to maturity, the wood-using industries of the Dominion must use from one tree what has hitherto been used from three or more trees; and the Forest Service, through its Forest Products Branch, is the one institution working to find sound, practicable ways and means of attaining this end.

A broad survey of all wood-using industries, completed since 1921, has revealed that much of the present waste can be eliminated by the application of scientific methods to industrial processes, and by this means the Forest Products Branch will attempt during the next few years to overcome an inertia which—due largely to geographical isolation—now exists in logging, milling, and wood-manufacturing practices. For example, a more accurate timber-grading system in regard to species, qualities, and sizes will, when permanently established, not only tend to reduce importations of timber, but return larger profits to producers, and at the same time reduce consumers' prices. Applied research, however, is insecure and short-lived without a study of fundamental theory, and *pure research must of necessity be begun on an adequate scale immediately funds and personnel can be made available*. If there is to be true economy of effort, the present policy of decentralizing the work of forest-products research in co-operating institutions, with the use of ever-changing temporary personnel, must be early revised. Continuity in the conduct of research demands that the work be centralized in a well equipped forest-products laboratory, manned by a small staff of highly trained technicians drawn from the professions of forestry, engineering, and analytical chemistry. Research, pure and applied, is urgently called for into wood-preservation, air-seasoning and kiln-drying, physical and strength properties of native and exotic woods, and, most important of all, the possibilities of fully utilizing wood in the chemical industries, such as pulp and paper, wall-boards, artificial wood, and minor forest products such as resin, oils, cellulose, and others.

Not only is elimination of timber waste a most practical and economical means of relieving our impending shortage of forest-grown material, but it can be attacked with prospects of early national economic benefits. It will, moreover, help to make the growing of trees more profitable, thus encouraging local body, private, and proprietary interests to assume more of the responsibility of providing the timber-supply of the future.

The Government is earnestly recommended to authorize the establishment of a Forest Products Laboratory for the study of our native timbers, waste problem, and the discovery of practical applications for our weed trees and millions of tons of waste wood: this Forest Products Laboratory to be equipped with wood-seasoning apparatus, timber-testing equipment, and all the other necessary machinery for this work.

(F.) CONTROL OF WILD LIFE OF THE DOMINION.

The control of the wild life of the Dominion, such as deer and pigs and other vermin inhabiting forests, at the present time is regulated by many bodies. Apparently no co-ordination prevails, with the result that the deer, as a vermin, is becoming most serious. The Forest Service, as the competent authority controlling the forests of this country, is prepared to assume complete responsibility for the control and regulation of wild life. The Government is therefore recommended to place this complete control in the hands of the Forest Service by 1930.

(G.) PROPRIETARY FOREST-PLANTING COMPANIES.

Proprietary forest-planting companies have now become so active in the promotion of planting schemes that it is desirable that some form of statutory control be exercised over these activities. The Government is recommended, therefore, to take this line of action with regard to all private and public afforestation syndicates and companies organized for the purpose of producing timber crops. It is understood at least £500,000 has been invested in this form of enterprise by the public of New Zealand and Australia.

(H.) GENERAL.

Staff of the State Forest Service.—Provision should be made for twenty-five trained foresters, so essential to the proper working out and application of scientific cultural methods of the production of timber crops.

Forest-management Control.—Silvicultural and control cutting plans should be established for all the State forests by Order in Council during the next five years, and for the better management of these areas sixteen forest working circles should be established, each in charge of a forest warden.

Control of Timber Pests.—It is recommended that regulations be gazetted to prohibit the importation of all wood products infested with insect pests.

Forest Educational Propaganda.—A still much wider programme of forest educational propaganda is recommended.

Forest Experiment Station in the North Island and National Arboretum.—The establishment and operation of a forest experiment station in the North Island is strongly recommended, also the sustained operation of the national arboretum now being established at Rotorua.

The need for continuity of policy and stability of programme for the next ten years is most essential. I therefore urge the Government to stabilize this programme as far as possible.