

also being made in the identification of species and subtypes and the classification of forest sites by the use of air photographs. Construction of suitable photogrammetric and other scientific apparatus include the forestry tri-camera method of air photography, which has been developed to provide maximum forestry information at minimum cost; the use of photo-lithographic methods for the reproduction of general forest inventory maps in full colour; and the Shadow Height Calculator, constructed to facilitate the determination of tree heights from shadows in air photographs.

Research in forest economics includes studies and analyses of forest taxation (federal and provincial) and land tenure. A study of the economics of forest management was undertaken on a pulpwood limit in Quebec with a view to the development of a technique for calculating the costs relating to the management of a forest area on a sustained-yield basis and thus provide a model for estimating the cost factors involved for similar forest areas.

Forest Products Research.—Two Forest Products Laboratories conduct forest products research, one at Ottawa, Ont., and the other at Vancouver, B.C. The purpose of this research is to supply the basic and practical knowledge required for the best possible utilization of Canada's forest resources and includes studies of the factors affecting the quality of wood and of manufactured wood products; the factors causing wood waste in logging and manufacturing; the mechanical, physical and chemical properties of wood and their relation to adaptability in use; the treatment of wood and its use in the manufacture of fibre products, alcohol, turpentine, etc.; new and more valuable uses for woods; and the application of laboratory findings to the standardization of lumber grades and the improvement of timber specifications in the building codes of Canadian cities. The Forest Products Laboratories co-operate with similar organizations in other countries, with the provinces and with industry.

The Pulp and Paper Research Institute of Canada at Montreal, Que., a corporation supported by the Federal Government, the Canadian Pulp and Paper Association and McGill University, carries out research in the field of pulps and papers. The program of work includes studies of the structure and properties of wood and bark and their chemical components; the improvement of pulping processes; studies for the improved utilization of waste products; and the improvement in the design of industrial equipment.

The Forest Insects Control Board.—The Forest Insects Control Board operates under the Federal Department of Resources and Development and is composed of nine members representing the Federal and Provincial Governments and the pulp and paper industry. Its purpose is to advise the Minister of Resources and Development concerning methods for control and destruction of insects injurious to the forests of Canada and for the prevention of loss and damage from the attacks of such insects.

Forest Biology.—The Division of Forest Biology of the Science Service, Federal Department of Agriculture, undertakes investigations dealing with the biology and control of insects affecting forest and shade trees and forest products. Ten regional laboratories are maintained at strategic points across the country. The Forest Pathology Unit operates four branch laboratories, one of which, recently established at Sault Ste. Marie, Ont., was designed particularly for fundamental research on virus, fungus and bacterial diseases of insects.