Specialized work in sylvicultural research and problems connected with forest utilization are carried on by the Forest Service of the Department of Mines and Resources. On the other hand, the Department of Agriculture conducts specialized research work in the fields of forest pathology and forest entomology. Details of the programs of work under each heading follow.

Sylvicultural Research.—Research in the field of sylviculture is centred in five Dominion Forest Experimental Stations located in New Brunswick, Quebec, Ontario, Manitoba and Alberta, but supplementary studies are conducted in other areas in co-operation with the Provincial Governments and with industry. The purpose of this work is to keep all forest lands in continuous production and to obtain the highest possible volume of timber of good quality within a shorter period of time than is permitted by the unaided operations of nature, and at a cost that is economically feasible. Problems of regeneration, methods of cutting and tree breeding—by selection and developments of superior strains for artificial propagation —are dealt with.

Forest Products Research.—Research in this field is carried out by the Forest Products Laboratories of Canada operating in two centres—Ottawa and Vancouver. The Ottawa Laboratory conducts general research in lumber seasoning, timber mechanics, timber physics, timber pathology, wood preservation, wood chemistry and wood utilization. The Vancouver Laboratory is located on the campus of the University of British Columbia, and provides research facilities for the British Columbia forest industries to study problems pertaining to the industry in that section of the country.

Pulp and paper research is carried on at the Pulp and Paper Research Institute of Canada at Montreal and is organized under a co-operative agreement between the Federal Government, the Canadian Pulp and Paper Association and McGill University. The work of the Institute is under the control of a Joint Administrative Committee consisting of representatives of the three parties concerned. The program of work includes woodlands research and refers to investigations in the Division of Industrial and Cellulose Chemistry of McGill University.

Forest Pathology.*—Forest pathology is that branch of the science of botany which deals with disease in forest trees with the object of preventing or controlling such disease. It includes the study of all forms of loss in the forest except those caused by fire and insects. The study of disease in shade and ornamental trees and of decay of wood in service are branches of forest pathology.

Owing to the low value per unit area of forest growth and the long-time element necessary for the crop to mature it is not economically feasible to make large direct expenditures for the prevention or control of disease. The situation here is entirely different from that which obtains in regard to agricultural crops where the comparatively high value of the crop and the short rotation permit the economic application of direct control and cultural methods, such as spraying, dusting, irrigation, cultivation and fertilization. It is only in the case of forest nurseries and ornamental individuals of high value that such measures can be applied to trees. In practice forestry control of disease is accomplished principally by the selection of a rotation which provides for harvesting the crop before loss from decay becomes serious and by the elimination of undesirable and diseased individual trees at the time of thinning

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