

timber trees, both individually and in forest stands, to permit calculation of possible quantity of reproduction. This work would include the construction of volume tables.

In discussing these recommendations, it should be pointed out that some of this work has been done, both in Canada and elsewhere. For example, the Commission of Conservation has completed valuable investigations on the timber of British Columbia and Nova Scotia. The study of the rate of reproduction etc., of trees in Europe has also been undertaken, and in the United States certain investigations have been made on similar topics for American trees. As regards the species that are common to the United States and Canada, the results obtained by American study would, of course, be partly applicable; but it must be remembered that climatic and soil conditions of Canada, owing to its higher latitude, are factors that render rather uncertain information derived from investigations carried on abroad.

In consequence of the recommendations made by the advisory board of the Department of the Interior, the director of the Forestry Branch brought the matter to the attention of the Research Council. It was proposed that these investigations be made on the Petawawa Military Reserve, a part of which, only 25 square miles in extent, is used for military purposes, the remaining 80 square miles being therefore available for forestry studies. This is part of an old cut-over timber district, on which a second forest has begun to develop, and the timber on it at a stage of growth that renders it suitable for the proposed study. Recognizing the importance of the subject, the research council recommended that a grant should be given to carry out the investigation during the summers in 1917 and the following years. Consequently, in August, 1917, a preliminary survey was made on the reserve by a forest survey party and valuable results were obtained. In May, 1918, the work was recommenced and is now proceeding satisfactorily.

Canada and the "Idea of Science"

"This question is one of paramount importance to Canada in view of the intensified application of science to industry which elsewhere will be fostered after the war by the State, and also through private enterprise. It has been ascertained that not two per cent. of Canadian industrial concerns have research laboratories and only about ten per cent. have routing laboratories, chiefly for the elementary testing of materials.

"The provision for research, either in pure science or in science applied to industry, has been and is utterly inadequate to our needs, and unless vigorous action be taken, and soon, to reorganize our industries on scientific lines, wherever possible, Canada will face a very serious industrial crisis in the years following the war.

The annual budget of the Massachusetts Institute of Technology exceeds the total of the annual expenditure of all the Faculties of Applied Science in Canada."—*Dr. A. B. Macallum, Chairman Honorary Advisory Council of Scientific and Industrial Research.*

PULP AND PAPER ON TOP.

Canada now has a total of 90 pulp and paper mills, many of which are large and of modern design. The export figures for the calendar year 1916 show that pulpwood, wood pulp and paper have increased to nearly half of the total export value (approximately \$100,000,000) of all forest products with the exception of the small proportion of specially manufactured articles.