UNIVERSITY OF TORONTO MONTHLY

139

Research Council of Canada. There are about a dozen lines of industry in which what are to be called Trade Guilds for Research may be formed, and amongst them may be mentioned the Tanning, the Textile, the Pulp and Paper, the Fisheries, the Furniture, the Rubber, the Iron and Steel, and the Clay Products Industries. These all are important to the industrial development of Canada, and if the firms in each of these could be brought to co-operate for research on their special problems. the result would be greatly to their advantage in their struggle to win against Unfortunately the number of firms in any particular inoutside competition. dustry are fewer and, with some exceptions, of smaller capital and output than those in Great Britain, and consequently the funds which they may pool for research cannot be of a magnitude to compare with the funds at the disposal of the British Trade Associations. It must also be recognized that public opinion is not yet such as to sanction direct public aid to supplement the funds of a Guild as is the case in some of the British Trade Associations. The latter are, in the majority of cases at least, to provide and maintain their own laboratories. If the Guilds for Research could be given free accommodation, light and heat and, where necessary, motive power, in some Central Research Institute, their funds could therefore be expended for their research problems alone, not by any means a small advantage. If, further, all the Guilds having problems more or less related were similarly aided, their association in a Central Research Institute would promote the success of such Guilds and they would have the advantage of the supervision of the staff of the Institute composed, as it ought to be, of a number of very highly expert specialists in research in the various fields of pure and applied science.

The formation and the successful working of such Guilds in Canadian industries, therefore, depends on the establishment of a National Research Institute. Through such Guilds only can the Canadian industries as a whole be assisted to meet the needs in scientific research which the conditions of to-day impose on them. The question therefore of founding a National Research Institute is from this point of view an urgent one, and it is so regarded by the Research Council which has recommended the establishment of such an Institute.

There are other reasons also which have contributed to this action by the Council. There ought to be a central organization amply equipped to undertake research on general problems affecting the utilization of our natural resources and on general problems affecting the industries generally. The need for such is recognized elsewhere and in some cases it has been met by the foundation of lustitutes whose work has been of immense service to industry. Germany has two of such, one for physical standards and research at Charlottenburg, the other for chemical research at Dahlem. For Great Britain there is the National Physical Laboratory at Teddington which concerns itself with researches along all technical lines, except the chemical. The Bureau of Standards at Washington, as its name implies, deals with standards of all sorts: physical, chemical, electrical, metallurgical and even industrial, but it also undertakes research problems for the industries. It has in the seventeen years of its existence given splendid service in these lines to the nation.

A National Research Institute is now being established in Japan, and already a fund of \$2,600,000 has been collected for it, more dan half of which has been