

Scientific societies, such as the Royal Canadian Institute, founded in 1849, and the Royal Society of Canada, founded in 1881, also promote research through the publication of papers giving the results of researches in the various departments of science, and through the distinction conferred by membership in such societies.

Various departments of the Dominion and Provincial Governments have maintained scientific laboratories. Some of these have been concerned merely with routine examination or analysis, but in many cases research was undertaken. The research activities of the Government Departments have, however, been inadequate to meet the needs of the situation. Less than five years ago, it was estimated that the amount expended annually by Government laboratories for investigations of all kinds was less than \$325,000, of which less than \$100,000 was actually expended for research in Government laboratories.

Twenty years ago the value of research was not appreciated by Canadian industries. A number of firms had routine testing or assay laboratories, but until 1905 there were none which employed research for the improvement of their manufacturing processes or of their products. The example of foreign firms has to some extent altered public opinion in Canada on this question, but the number of Canadian firms which apply research to their industrial problems is still very small. In 1917 the Research Council of Canada issued a questionnaire to the industries. Replies received from 2,400 of the leading firms in Canada showed that only 37 had laboratories for research; 83 employed as many investigators and 276 assistants, but the great majority of these were engaged only in routine examinations. Apart from salaries, the total amount expended in 1916 for research by all firms listed did not exceed \$135,000.

With the growth of Canadian wealth and of the industries of the nation, the scientific equipment of the leading Canadian universities has been greatly increased during the past decade, and scientific researches of a considerable scale are now being carried on, as a result of the research scholarships granted by the Research Council of Canada, or endowed by various wealthy benefactors in the leading universities of the country. An especially notable achievement is the discovery of insulin, a preparation which indefinitely prolongs the lives of those suffering from diabetes, by Dr. F. G. Banting and Mr. C. H. Best, working under the supervision of Prof. J. J. R. Macleod, Professor of Physiology in the University of Toronto. The Nobel prize in medicine for 1923 was awarded to Dr. Banting and Dr. Macleod for this discovery, and in the same year Parliament voted to Dr. Banting a life annuity of \$7,500, to enable him to devote himself entirely to medical research.

The importance of scientific and industrial research has been recognized in recent years by the creation of the Honorary Advisory Council for Scientific and Industrial Research, commonly known as the Research Council of Canada. Brief accounts of the work carried on by the Research Council, as well as of the more general investigations of the Royal Society of Canada and of the Royal Canadian Institute, are appended.

1.—The Honorary Advisory Council for Scientific and Industrial Research.¹

When the war broke out in 1914, the mutual inter-dependence of the great nations of the world was brought forcibly home to them through the lack of materials essential to the prosecution of the war, the scarcity of information on technical subjects which had become the specialties of individual countries, and the need of

¹Contributed by the Honorary Advisory Council for Scientific and Industrial Research.