

consulting and testing laboratories and, in return, obtains assistance from many companies. The Council has long-standing and intimate contacts of this co-operative kind with many Canadian industries in various fields.

Associate committees were established by the National Research Council early in its history and have been continued to date. Throughout the years, hundreds of specialists have accepted invitations from the Council to serve on committees and have brought the wealth of their knowledge and experience to bear on the solution of research problems put before them. Members of committees give their time and effort to these special studies without fee or recompense, and their assistance is a source of great strength to the Council.

Assisted research grants have been made by the Council since its inception in 1916. These awards are given to heads of university science departments for the purchase of needed equipment and the employment of junior helpers, usually students. Aid of this kind has been of considerable assistance in enabling the universities to put into operation the excellent graduate schools that now exist in Canada.

Scholarships and grants in aid of research are awarded annually by the National Research Council. Scholarships awarded in science and engineering include Bursaries, Studentships and Fellowships which have values of \$600, \$900 and \$1,200, respectively, for the academic year, to which a summer supplement of \$500 may be added. In addition, Special Scholarships valued at \$1,500 per year and Post-doctorate Overseas Fellowships at \$2,500 are offered. The Council also awards two classes of Graduate Medical Research Fellowships, which have values of \$1,800 to \$3,000 for awards involving graduate training, and up to \$5,000 for senior awards in advanced research. Graduate Dental Research Fellowships of similar value are also made. More than 275 of these different awards were made for 1952-53, totalling in value over \$310,000.

In recent years (since 1948), the National Research Council has opened its doors to a limited number of post-doctorate fellows who have been carefully selected on the basis of merit from the universities of the world. There are now some 76 of these keen young scientists working in the laboratories, most of them in chemistry or physics. They are appointed for one year only but may be retained for a second year if conditions warrant. This flow of young men through the laboratories has a most stimulating effect; it creates a sort of university atmosphere that is both fresh and invigorating and keeps the Council young.

Principal Activities, 1952-53.—Development by industry of applied research laboratories in Canada has made it possible for the National Research Council to broaden its field of work so as to include fundamental studies, especially those having a bearing on problems related to industrial research projects. For example, the Division of Chemistry has been reorganized to form two separate units—Pure Chemistry and Applied Chemistry. A similar arrangement has been made in the Physics Division.

The Division of Pure Chemistry is chiefly concerned with fundamental scientific research, trying to find the reasons for certain chemical reactions. In this work, research extends over a wide range, from the nature and structure of alkaloids found in certain Canadian wild plants, to a study of the infra-red spectra of complex organic compounds including cortisone and other steroid hormones.