

extensive library facilities available to the Council, it is usually possible to provide any required information at very short notice. A free and constant flow of personnel and information is maintained between the Council laboratories and industrial laboratories, the aim being to have Canadian industry use the Council's laboratories just as the units of a large company use their own laboratories as a source of scientific information and assistance. The Council also undertakes for any firm, under contract, research problems that cannot be solved by private 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. Hundreds of specialists have accepted invitations from the Council to serve on committees and have brought 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 charge and their assistance is a source of great strength to the Council.

**Foundation Aspects.**—Assisted research grants have been made by the Council since its inception in 1916. These awards are given to staff members in the science and engineering departments of Canadian universities to purchase needed equipment and to employ junior helpers, often 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. In the year ended Mar. 31, 1961, more than \$6,875,000 was provided out of Council funds for basic research at Canadian universities.

Scholarships and grants-in-aid of research are awarded annually by the National Research Council. Scholarships awarded in science and engineering include Bursaries and Studentships with values of \$1,800 and \$2,200 respectively, Special Scholarships valued at \$2,200 and Postdoctorate Overseas Fellowships at \$3,500 (single) and \$4,500 (married). Graduate Dental Research Fellowships are also available. In the year ended Mar. 31, 1961, 597 of these different awards totalling more than \$1,409,000 were made.

Since 1948, the National Research Council has awarded postdoctorate Fellowships in open competition to Canadians and nationals of other countries, which are tenable in the Council's own laboratories. The diversity of training and experience brought to the laboratories by these young scientists has had such a stimulating effect on the research effort that the program has been expanded in recent years. Fellowships are also tenable in the science departments of Canadian universities, in the laboratories of Atomic Energy of Canada Limited, and in the federal Departments of Agriculture, Mines and Technical Surveys, and National Health and Welfare. More than 200 of these awards are being held at the present time (March 1961), mostly in the fields of chemistry, physics and biology.

**Applied Biology.**—This Division's program covers practical problems related to the national economy, and fundamental studies in microbiology, biochemistry and biophysics as a basis for future application in agriculture, medicine and industry.

Problems of preparing, preserving and storing food constitute a large part of the Division's work, with particular attention in recent years to food freezing, cold storage and refrigerated transport. Specific studies in 1960-61 involved changes effected in foods during freezing and frozen storage, the design and performance of refrigerated trailer-transport, aeration of fermentations, and controlled-atmosphere storage of fruit. Micro-organisms related to the preservation and preparation of food are also studied, and a national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

The Division for some years has been investigating the physiological and biochemical changes in mammals, birds and man in adapting to cold. As the most recent part of this study, an international expedition under NRC leadership was carried out in the winter of 1960 on cold adaptation in the Eskimos of Cumberland Sound. No important differences between the Eskimos and white control subjects were found, indicating that