

The production of isotopes at Chalk River ceased while the NRX reactor was being reconstructed. However, a supply of certain long-lived fission products had accumulated and these continued to be sold. The United States Atomic Energy Commission assisted the Division by making available certain processed isotopes. From all sources of supply, the Commercial Products Division made more than 1,000 shipments during 1953-54. Moreover, sufficient radioactive cobalt-60—the source of gamma rays in the Cobalt Beam Therapy Units used in the treatment of cancer—was recovered from the NRX reactor to allow the installation of several complete therapy units at various hospitals and the manufacture of the units that contain the cobalt-60 sources was continued at the Division's shops in Ottawa. Immediately after the reactor went back into operation in February 1954, the manufacture of the irradiated cobalt was resumed.

Section 3.—Other Scientific and Industrial Research Facilities

Aside from the work of the National Research Council and Atomic Energy of Canada Limited, Canadian research is carried on by various federal agencies, provincial organizations, universities and industries.

Several provinces in Canada have established Provincial Research Councils to stimulate and support research on problems having special provincial significance.

The universities, of course, form an extremely important part of the Canadian pattern of research, much of it along fundamental lines; however, practical problems are not neglected, especially those of regional interest.

All three types of institutions—federal, provincial and university organizations—have an interest in problems of industrial significance: this is part of the current Canadian pattern of research. Though many Canadian industries now possess research facilities—some of them quite extensive—the main bulk of industrial research to date has been done under government auspices.

Thus the unique problems of the country, particularly its large area coupled with a small population, have led to a typically Canadian organization of research, of which a very strong associate committee system is perhaps the most distinctive feature.

Federal Institutions.—Although research by industrial concerns has been slow to develop in Canada, government research has expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's export trade, and secondly because of the more recent interest in the processing of these raw materials and because of the necessity to meet the needs of national defence. Federal institutions involved in research include the Departments of Agriculture, Fisheries, Mines and Technical Surveys, National Defence, National Health and Welfare, Northern Affairs and National Resources, and Trade and Commerce; the National Research Council; and Crown corporations such as Atomic Energy of Canada Limited. A system of committees, with nation-wide representation, eliminates unnecessary duplication of work from these national research organizations.

The scientific work of the Department of Agriculture is described at pp. 377-378 of this volume, the work of the Defence Research Board in Chapter XXVIII (*see Index*), specialized work in scientific forest research at pp. 453-461, scientific services concerned with Canada's mineral resources conducted by the Department of Mines