

Although the optical telescopes in Canada have not been used for extragalactic research, many of the stronger sources in the field of radio astronomy are now known to be exceedingly distant objects far beyond the stars of the earth's galaxy. Canadian radio telescopes are, and will continue to be, engaged in the observation of such sources. At the same time they are also involved in the study of clouds of gas between the stars of the earth's system and this work complements the knowledge gained from spectroscopic research with optical telescopes. The large size of the Queen Elizabeth II telescope planned for Mount Kobau will guarantee Canadian astronomers an opportunity to become active in all fields of extragalactic research and will provide essentially complete facilities for astronomical research in Canada.

## Section 5.—Other Scientific and Industrial Research Facilities

This Section outlines research facilities and activities other than those covered in Sections 1 to 4—various federal departments and agencies, provincial organizations, universities and industry. The first three types of institutions—federal, provincial and university—have, of course, an interest in problems of industrial significance. As already stated, although many Canadian industries now possess research facilities—some of them quite extensive—much of the industrial research to date has been done under government auspices.

### Subsection 1.—Federal Organizations

Research activities in the various Federal Government departments and agencies have 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 later because of increasing interest in the processing of raw materials, the necessity of meeting the needs of national defence and the developing consideration for many human and resource requirements. In addition to the activities of the National Research Council, Atomic Energy of Canada Limited and the Department of Mines and Technical Surveys dealt with in Sections 1 to 4, federal agencies involved in research include the Departments of Agriculture, Forestry, Fisheries, other Branches of the Mines and Technical Surveys, National Defence, National Health and Welfare, and Northern Affairs and National Resources.

The scientific work of the Department of Agriculture is described in Chapter XI of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XXI, the specialized work in scientific forest research in Chapter XII, scientific services concerned with Canada's mineral resources conducted by the Department of Mines and Technical Surveys in Chapters I and XIII, investigational work of the Department of Fisheries in Chapter XV, research of the Canadian Wildlife Service of the Department of Northern Affairs and National Resources in Chapter I, medical and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, and the work of the Defence Research Board in Chapter XXVI.

Late in 1963 the Department of Northern Affairs and National Resources completed the first permanent scientific research laboratory to be built north of the Arctic Circle. This laboratory, at Inuvik, N.W.T., has year-round facilities specially designed for Arctic research and serves as a base for extensive field studies in the Western Arctic. It accommodates a permanent staff of eight scientists from many disciplines and up to 16 visiting researchers. The operation of the laboratory is in charge of a Manager working under the direction of the Northern Co-ordination and Research Centre of the Department.

### Subsection 2.—Provincial Organizations

Five of Canada's provincial governments (Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta) have established research councils or foundations and two others (Ontario and British Columbia) have assisted financially in the setting up of such