

includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory at Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73-inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge. A new radio telescope at Penticton, B.C., has given the Branch a valuable instrument for research in radio astronomy.

The Geographical Branch.—The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare. The work is of two kinds—the compilation of geographical material of national significance, and geographical surveys in the field. Land surface conditions, types of vegetation and the structure of towns and cities are typical subjects of investigation.

Mineral Resources Division.—The Division provides a mineral information service that is freely used by government departments, mining and allied industries and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It administers the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected with the mineral industry. The Division is widely known for its publications, among the most valuable of which are the annual reviews of production, marketing and other matters concerning 64 minerals. It issues more detailed economic studies of metals and fuels of current interest and prepares annual lists of metallurgical works, metal and industrial mineral mines, milling plants, coal mines and petroleum refineries. Also published are special monographs on mining laws, taxation and subjects of particular interest to the mineral industry.

Oceanography.—The decision of the Federal Government to expand oceanography in the Department of Mines and Technical Surveys has led to the institution of a long-range program of research to fill the great need for oceanographic data on the country's coastal waters for defence and resource development purposes. The program also includes studies of the special problems of the deep ocean.

The program comprises two major projects. (1) The establishment, in Bedford Basin near Halifax, of the Bedford Institute of Oceanography. This is a \$4,000,000 project which is expected to be fully functional by the spring of 1963. When in operation, it will have a staff of some 300 persons, including oceanographers, hydrographers, submarine geologists and other scientific personnel and will be completely equipped to meet all the requirements of a modern oceanographic institute. In addition, the new Institute will permit the long-overdue expansion of the Atlantic and sub-Arctic sections of the Canadian Hydrographic Service, and will be the headquarters of the scientific staff of the Polar Continental Shelf Project. A multi-million-dollar shipbuilding program has been undertaken to provide the necessary fleet of oceanographic vessels. Two ships are under construction, three are in the design stage, and one will be transferred from the Royal Canadian Navy. The largest of the ships, the \$7,000,000 *Hudson*, is under construction and is expected to be commissioned in 1962. (2) The Polar Continental Shelf Project, in which the Department each year sends a scientific expedition into Canada's Far Arctic regions to obtain a detailed knowledge of the waters and floor of the continental shelf in the Arctic