

geomagnetic change. The Observatories gravity research contributes about 8,000 observations annually to its regional mapping program. Over 20 permanent first-order stations are being operated in seismic research, and a large-scale crustal refraction survey with nine recording parties was recently completed in and around Yellowknife, N.W.T. Research continues into the seismicity of Canada, surface wave dispersion, earthquake mechanisms, and equilibrium heat flow.

No mineral development is possible without accurate, large-scale topographical maps, and progress in this field by the *Surveys and Mapping Branch* continues to be gratifying. The functions and current operations of this Branch are described briefly in Chapter I, pp. 32-33.

The *Geographical Branch* studies the natural landscape of Canada and man's impact on it. Mining companies wishing to locate in the Arctic may profit from the Branch's studies of Arctic landforms, the effects of permafrost, and other environmental features.

The Branches of the Research Group also pool their functions in the Polar Continental Shelf Project, a continuing scientific study of the Queen Elizabeth Islands and the surrounding seas, which has already yielded a great deal of geophysical information.

The Mineral Development Group.—This Group conducts broad economic and mineral-commodity studies and gathers comprehensive domestic and world data on all minerals, including energy minerals, for the use of government and private industry. It also licenses and leases mineral exploration in offshore areas south of the 60th parallel and in Hudson Bay, administers the Emergency Gold Mining Assistance Act (see p. 585) and the Explosives Act, and co-ordinates the Department's foreign-aid work.

Current activities in these fields include regional studies of the Atlantic Provinces' mineral economy, including the Cape Breton coal situation; a digest of the mining laws of Canada; assessment of several mineral projects throughout Canada for which federal support has been requested; participation in international minerals work through such agencies as the United Nations Lead-Zinc Study Group, the Organizations for Economic Co-operation and Development, and the General Agreement on Tariffs and Trade. In collaboration with the External Aid Office, the Group is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs and is advising on mineral projects undertaken by Canada as an aid to developing countries. Also of considerable value to the mining industry are the Roads to Resources Program and the Development Road Program, described in Chapter XIX, Part III, Section 2.

The Water Management Group.—The role of this Group is to advise on federal water policies and to co-ordinate the work of federal agencies in water-resource management and water pollution. The task is essentially twofold: the most efficient and beneficial use of Canada's streams and lakes, and the preservation, or restoration, of their purity. An illustration of the work concerning mining companies is the monitoring of mine waste effluents in eight base-metal mining areas of New Brunswick. This study will be directed from a regional laboratory at Moncton, with the collaboration of the Department of Fisheries, the Province of New Brunswick, and the mining companies. A similar unit and program are being set up at Calgary, Alta. Personnel is also being recruited to conduct basic and applied research in the abatement of mine pollution in general.

The Energy Development Group.—This Group, still in the process of formation (December 1966), will examine Canada's total energy situation and requirements. New gas and oil discoveries and the great strides being made in the development of nuclear power make it imperative that policy-making reflect Canada's total energy picture.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to

* Revised under the direction of Hon. J. Watson MacNaught, Chairman of the Dominion Coal Board, Ottawa.