

## Section 2.—Government Aid to the Mineral Industry

### Subsection 1.—Federal Government Aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, topographical, geodetic, geographical and marine data which are of basic importance to the discovery and development of the mineral resources of Canada; the provision, through metallurgical research, of technical information relating to the processing of ores, industrial minerals and fuels on a commercial scale; financial and technical assistance to the ailing coal industry; assistance to the gold mining industry under the Emergency Gold Mining Assistance Act, and certain tax incentives (see Chapter XXIII, Section 2 on Taxation in Canada).

**The Department of Mines and Technical Surveys.\***—The federal Department of Mines and Technical Surveys came into being in January 1950 in the reorganization of the former Department of Mines and Resources. The Department has six branches—Surveys and Mapping Branch, Geological Survey of Canada, Marine Sciences, Mines Branch, Observatories Branch, and Geographical Branch—and its functions include the administration of the Emergency Gold Mining Assistance Act, the Explosives Act and the Canada Lands Act.

The *Surveys and Mapping Branch* provides the base maps required for use in the development of Canada's natural resources, is responsible for legal surveys of federal lands and provides a national system of levelling and precision surveys for use as geodetic control by federal, provincial and private agencies. The functions and current operations of the Branch are covered in Chapter I, Section 3 on Federal Government Surveying and Mapping (pp. 17–19). The compilation and printing of maps and charts of all types for which data are secured by departmental surveying and research operations is conducted by the Map Compilation and Reproduction Division of this Branch.

The *Geological Survey of Canada Branch* aims, through systematic research in the geology of Canada, to provide knowledge basic to mineral inventories as well as to the development of mineral and other resources and to increase the fundamental knowledge of geological processes and events. In its field activities, it gives priority to the reconnaissance coverage of the country delimiting those areas of economic and scientific significance for subsequent detailed investigations, such as the unravelling of structures, stratigraphic successions and geological history in areas of highly deformed sedimentary rocks and the search for the fundamental causes of localization of orebodies.

Its laboratory activities vary from the provision of fundamental chemical and physical data on the rocks and other materials, collected by the field parties, to the development of new analytical techniques, the determination of new or unknown minerals, the investigation of physical properties of certain rocks and minerals and the design of electronic equipment for use in its geophysical and geochemical programs.

Probably one of the greatest contributions made to geology by the Geological Survey in recent years has been in age determination. In 1954 the Survey set up an age-determination laboratory and has produced more than 1,000 potassium-argon ages. The method was developed in the late 1940's for dating rocks formed during the five sixths (3,600,000,000 years) of the earth's history known as the Precambrian era. Previously, age determination was limited to the use of fossils, a method applicable only to sediments and rocks deposited since the start of the Cambrian Period nearly 600,000,000 years ago. The result has been a radically changed picture of the geological subdivisions of the Canadian Shield. The Survey is also dating geological phenomena in the other geological provinces and is incorporating the results on a tectonic map of Canada as Canada's contribution to a world tectonic map, scheduled for publication by the next International Geological Congress.

\* Revised, under the direction of the Deputy Minister, in the Editorial and Information Division, Department of Mines and Technical Surveys, Ottawa.