

The Fuels and Stratigraphic Geology Division includes stratigraphic palæontology, the geology of fuels (oil, natural gas and coal), subsurface geology and research on coal. Its function is to establish the character, age, thickness and correlation of both exposed and concealed sedimentary formations and to map the distribution and structure of these formations with the object of determining the economic possibilities of prospective oil, gas and coal bearing areas of Canada.

The Mineralogy Division makes mineralogical, geochemical, petrological, and isotopic studies of Canadian mineral deposits and associated rocks. Laboratories provide mineral identifications for the public, supply officers of the Survey with mineralogical, geochemical and geochronological data, and permit research on the genesis of ores, fuels and rocks. Systematic mineral collections are maintained and mineral and rock collections are prepared for use by prospectors and educational institutions.

The Mineral Deposits Division conducts special field studies on the geology of mineral deposits with particular regard to economic possibilities, origin, distribution and the establishment of clues for prospecting for similar deposits. Reports and other information on the geology of Canadian mineral deposits are compiled and special reports on deposits and prospecting published. The Division acts as official agent of the Atomic Energy Control Board in conducting research on uranium deposits and in receiving and compiling reports from companies operating under exploration and mining permits from the Board, and maintains a laboratory for making radiometric assays and identifications of radioactive minerals.

The Geophysics Division gathers, compiles and interprets geophysical data relating to the geology of Canada. Fundamental research is carried out in some phases of geophysical work.

*Mines Branch.*—The Branch is concerned in the main with the technological problems of the mineral industry and maintains well equipped ore-testing, mineral-dressing, fuel research, ceramic, radioactivity, industrial minerals and physical metallurgical laboratories.

The Mineral Dressing and Process Metallurgy Division serves Canada's mineral industry through tests, investigations and research on all types of Canadian ores. The main purposes of these activities are to devise economic and efficient methods of processing ores—a service of special benefit to new mining ventures and particularly to those developing low grade or complex deposits—and to assist mine operators in solving problems encountered in mill practice.

The work of the Radioactivity Division is centred on investigations relating to treatment of radioactive and less common ores. Activities include research on ore treatment and chemical process methods, provision of chemical and radiometric assay services, development of analytical methods, mineralogical investigations, also work on application of radiometric methods and tracer techniques in the mining and metallurgical industries. Much of the work done is of direct assistance to industry.

The work of the Industrial Minerals Division consists of tests, research and investigative work on industrial minerals, including water used for industrial purposes. The Division makes field studies of deposits, examines industrial processes utilizing them and conducts research into methods of beneficiating minerals from deposits of marginal and submarginal quality to bring them to the standards demanded by modern industry.

The Fuels Division studies the properties of fossil fuels in Canada to determine the most efficient means of utilizing fuel resources. Most of the work on coal is directed to investigations on the immediate problems of the industry and to engineering studies on the most efficient use of coal in combustion applications with particular reference to thermally generated electric power. Such investigations include work on the evaluation of cleaning performance and the beneficiation of coal fines which are difficult to market, the uses of coal in the metallurgical industries and the study of stress phenomena in mining. Research in petroleum is directed mainly to problems in the refining of heavy crudes and bitumens, and to the chemical evaluation of oils and bituminous substances for classification and genetic purposes.