

The *Economic Geology Division* carries out special studies and research on the character, origin, extent, and geological relationships of various metallic and non-metallic mineral deposits and coal beds.

The *Oil and Natural Gas Division* conducts investigations that will assist in interpreting the subsurface geology of a region and in determining its oil and gas potentialities. It collects, prepares for examination, studies and correlates samples of drill cuttings or other records of wells bored for oil and natural gas.

The *Radioactivity and Mineralogy Division* engages in research on the mode of occurrence, association, properties and possible economic value of Canadian minerals; maintains an inventory of Canadian uranium occurrences; prepares and distributes mineral and rock collections for use of prospectors and educational institutions; and organizes and maintains a systematic collection of minerals for reference and exchange.

The *Division of Regional Geology* engages much of the work of the field staff, whose duty it is to map and report on the rock formations and associated ores and other economic materials in the various areas selected for geological study from year to year.

The three other Divisions are: *Palæontology; Ground-Water Supply and Glacial and Engineering Geology; and Geophysics.*

Mines Branch.—The *Mineral Dressing and Process Metallurgy Division* of the Mines Branch assists new mining ventures by work on determining the most efficient method of recovering metal contained in ore; assists mine operators in solving problems in milling practice; and develops new procedures to extend the use of mineral resources.

Its laboratory facilities are utilized at various times by mining companies for working out some particular process, employing their own staff with the co-operation and guidance of the Division's staff.

The *Physical Metallurgy Division* aids in the growth of the metal industries through the development of new alloys, new manufacturing techniques, and new applications; in the improvement of present practices in metal fabrication industries; and in the more effective use of metallic products by the consumer. Close co-operation is maintained with the National Research Council, particularly in the metallurgical work associated with the development of the atomic energy project at Chalk River, Ont.

The laboratories are, in reality, a collection of many laboratories, each equipped for a special purpose. The industrial laboratory is equipped to melt metals and produce ingots; and forging, rolling, extruding, die casting, welding, and heat treatment can be effected as in industrial plants. In the mechanical laboratory, metals are subjected to vibration, torsion, impact, compression and tension, and their reaction to all kinds of mechanical strain is observed, and in the physics laboratory their fundamental properties are studied through the use of X-ray and electron diffraction equipment, dilatometer, radioactive tracers, and gas analysis. In other laboratories the required instruments are available for the purpose of probing into other properties of metals and of making various studies as, for example, on the prevention of corrosion. Metallographic and spectrographic equipment is available in the Mines Branch for use of the Division, and chemical laboratories are equipped for any type of analysis.