The mineral industry is one of the more important sectors of the Canadian economy. The value of mineral production in 1972 was $6,341 million, of which metals represented 46%, fuels 37%, and industrial minerals 17%. Much was exported, mainly to the United States, Britain and Japan. Principal minerals were oil, natural gas, nickel, copper, iron ore, zinc, asbestos, cement, and sand and gravel. Other important products were lead, gold, silver, potash, sulphur, molybdenum, coal, uranium, salt, titanium, platinum and gypsum. Of the major geological regions, the Interior Platform yields, in value, about 39% of all mineral production, mainly fuels, and the Canadian Shield about 36%, mainly metals. Cordilleran Orogen accounts for 12%, Appalachian Orogen 8% and St. Lawrence Platform 5%.

1.2.1 Continental shelves

The youngest, or geologically newest, provinces are the continental shelves which, with the continental slopes and the coastal plains, form broad sedimentary prisms, the outer margins of which lie at the transition from continental to oceanic crust. They transect several older geological provinces at sharp angles, or lie subparallel with bordering and underlying orogenic belts. The shelf deposits are mainly Mesozoic and Cenozoic clastics, partly deltaic, with some Paleozoic and Proterozoic rocks. Current exploration is for oil and gas.

1.2.2 Platforms

The platformal regions are underlain by nearly flat-lying Phanerozoic strata that lie unconformably upon peneplaned Precambrian crystalline rocks. They are warped into basins, embayments and arches which reflect gentle differential subsidence or uplift and tilting of the crust; some faulting may have produced graben.

The St. Lawrence Platform is underlain by thin sandstone, carbonate, evaporite and shale, Cambrian to Devonian in age. The platform includes the southwest-plunging Algonquin Arch, remnants of several basins, and the cover on the Grenvillian deformed basement of Great Northern Inlier. The strata yield salt, gypsum, oil and gas, and structural and building materials, the latter partly from glacial deposits. Columbium is mined from one of the Cretaceous, Monteregian alkaline plugs that intrudes a basement inlier.

The Interior Platform contains several superimposed, unconformity-bounded sequences of Phanerozoic strata, the present structural features having little in common with those of earlier periods. The platform basement consists of Precambrian crystalline rocks bearing Kenoran and Hudsonian isotopic ages and, in the north, little deformed Helikian and Hadrynian platformal sediments.

Thick cycles of Cambrian carbonate and shale in Lloydminster Embayment grade eastward into sandstone. Ordovician and Silurian carbonate, shale and anhydrite form a thick, uniform plate in the northwest and the initial deposits of the weakly depressed Williston Basin. In Manitoba, the Ordovician Tyndall building stone and Silurian gypsum are utilized.

Middle Devonian evaporites, carbonates and clastics form Elk Point Basin, a broad, deep embayment bounded on the west by Alberta Arch. Potash salts are recovered by mining, and halite as a brine. Islands of Precambrian along Tathlina Arch were surrounded by carbonate banks and reefs, some now yielding oil and gas. One dolomitized reef above the continuation of the McDonald basement fault hosts the Pine Point lead-zinc orebody. Upper Devonian cyclical sequences of anhydrite, dolomite and siltstone grade into the massive carbonate banks and isolated reefs of central Alberta. These carbonates contain half the oil and a quarter of the gas reserves of the Interior Platform. The shales between the reefs intertongue northward with siltstone and sandstone, partly non-marine, derived from the Devonian Ellesmerian mountains bordering the Arctic Ocean. During the Mississippian, carbonate, anhydrite, and fine clastics reflect a regional, progressive, rhythmically interrupted, westward regression of the seas. These rocks have a tenth of the oil reserves and a fifth of the gas.

The late Paleozoic and early Mesozoic were mainly times of erosion. Some Pennsylvanian and Permian red beds, evaporites and chert occur. Triassic carbonates, evaporites, and easterly-derived clastics lie along the southwestern border. In Williston Basin are Jurassic siltstone, shale, anhydrite and carbonate.

During the Early Cretaceous there was a rapid marine incursion from the Arctic Ocean over the bevelled, west-dipping Paleozoic strata. Periodic uplifts, associated with phases of the Jura-Cretaceous Columbian Orogeny and the Tertiary Laramide Orogeny, produced the vast quantities of sandstone and shale that form Rocky Mountain Exogeosyncline. The marine