

The chief mineral resources of the Lowlands are natural gas, petroleum, salt and gypsum. Limestone, dolomite, shale and other rocks are quarried for various uses. The Lowlands contain no coal, no metallic mineral deposits except for a few small lead-bearing veins and no graphite, feldspar, mica or other such non-metallic deposits. The oil production is not large but more than 200,000 bbl. were supplied from formations in Ontario in 1939, somewhat less than 3 p.c. of Canada's total. Natural gas from this Region is more important but is also restricted to Ontario and amounts to about 12,000,000 M cu. ft. a year or 34 p.c. of Canada's total production. The Ontario part of the Lowland also produces gypsum and 88 p.c. of the salt mined in Canada.

In the Lowlands, particularly in Ontario, the geological structure and succession of formations have been studied in some detail by examination of surface exposures and well samples so that the thickness or depth to the various possible productive oil, natural-gas and salt horizons is known. The Ordovician, Silurian and Devonian periods have each been divided into six to ten formations, each with its own characteristics. The chief oil horizon is in the Onondaga-Delaware limestone of the Devonian, but a little oil has been obtained from the Guelph and Medina formations of the Silurian and from the Trenton formation of the Ordovician. The main natural-gas horizon is in the Clinton-Medina formation of the Silurian but a little comes from the Trenton formation (Ordovician). The salt occurs in beds, like sedimentary rock, and is restricted to the Salina formation (Silurian). The oil and most of the natural gas have been obtained from the southern part of the Lowlands south of a line joining Hamilton and Sarnia. The salt comes from the western part of the Ontario Peninsula mainly between Goderich and Windsor.

Appalachian and Acadian Regions.—The Appalachian and Acadian Regions include that part of Canada south of the St. Lawrence River and east of a line joining Quebec city to the foot of Lake Champlain.

The rocks of the Appalachian and Acadian Regions include sediments, volcanics and intrusives, chiefly of Palæozoic age. In a few places rocks of Precambrian age are known and along the Bay of Fundy Coast are a few areas underlain by Mesozoic rocks. The lowland area of eastern New Brunswick is underlain by little-disturbed Carboniferous beds. Elsewhere, however, throughout the region, the rocks are nearly everywhere thrown into folds with axes trending in a northeast direction and are, in addition, broken by faults giving rise to a complex structure. The chief period of deformation in this part of Canada, however, was during the Devonian, whereas to the south, in the United States, the greatest disturbances took place later during the Permian at the close of the Palæozoic.

Early Precambrian rocks consisting of limestone, dolomite, quartzite and gneiss are exposed in southern New Brunswick near Saint John. These rocks are overlain by a thick succession of Late Precambrian volcanic rocks upon which rest Cambrian sedimentary strata. Precambrian rocks also occur in Cape Breton, Gaspé and perhaps also in central New Brunswick and southwestern Quebec. Some of the rocks now tentatively placed in the Precambrian may be of Palæozoic age.

In Nova Scotia an extensive series of altered sediments, known as the Gold-Bearing Series, is considered to be of late Precambrian age. This series, with its large intrusive areas of Palæozoic granite, occupies most of the mainland of the Province. Its thickness is over 35,000 feet, of which the lower half consists dominantly of quartzites and the upper of slates. The series is folded along northeast lines and also broken by northwest faults, the horizontal displacement of some