

In the second subdivision the sedimentary succession begins with sandstone of Upper Cambrian or Lower Ordovician age and includes Lower, Middle, and Upper Ordovician strata, with a thickness of about 6,000 feet. The rocks are locally broken by faults.

In southern Quebec eight masses of alkalic intrusive rocks form the Monteregian Hills, the most westerly of which is Mount Royal at Montreal. Five of these lie in this second subdivision of the St. Lawrence Lowlands; the other three are east of the Logan Fault in the Appalachian Region. These intrusions are post-Lower Devonian in age and may be as young as late Tertiary.

The rocks on Anticosti Island in the third subdivision are of Upper Ordovician and Silurian age, all apparently conformable. Those on the Mingan Islands near the north shore of the St. Lawrence were deposited in the Beekmantown and Chazy sub-epochs of the Ordovician period.

The entire region of St. Lawrence Lowlands was overrun by Pleistocene ice-sheets, and much of the bedrock is covered by debris left by these glaciers. At Toronto, stratified deposits carrying plant and animal remains lie between deposits of glacial material. These layers show that the region was covered at least three times by ice-sheets from the central part of northern Quebec, and that between these advances the region had a climate considerably milder than it has at present. In late Pleistocene time the region was depressed and an arm of the sea extended up the St. Lawrence Valley as far as Brockville and up the Ottawa River Valley beyond the city of Ottawa. In this sea, to which the name Champlain is given, layers of clay were deposited and along its shores deposits of sand accumulated.

The chief mineral occurrences of the St. Lawrence Lowlands include petroleum and natural gas which are produced in southwestern Ontario mainly from Devonian beds but also in minor quantities from those of the Silurian and Ordovician; salt from the Silurian Salina formation in the counties bordering Lakes Huron and St. Clair; and gypsum from different horizons of the Salina in the Grand River Valley. Other materials available at many places are limestone and dolomite used in chemical and metallurgical industries, rock for construction purposes, and clay for the manufacture of brick, tile and cement.

The Hudson Bay Lowland.—The Hudson Bay Lowland bordering the west side of Hudson Bay has a length in a northwest direction of 800 miles, a width of 100 to 200 miles, and an area of 120,000 square miles. It rises from sea-level with a scarcely perceptible gradient to a height of about 400 feet. It is underlain by flat-lying rocks most of which are of Palæozoic age ranging from Ordovician to Devonian. An area of Mesozoic beds, Lower Cretaceous or Upper Jurassic, carrying lignite occurs in the Moose River Basin.

Smaller Palæozoic outliers on Lake St. John, Lake Nipissing, and Lake Timiskaming are mere remnants that have survived erosion in Mesozoic and Tertiary times.

The Cordilleran Region.—The Cordilleran Region comprises an Eastern System of mountain areas, and a Western Belt consisting of an interior system of plateaux and mountains flanked on the west by the Coast Mountains. The rocks of the Eastern System consist almost entirely of sedimentary formations of Proterozoic, Palæozoic and Mesozoic age, that succeed each other without pronounced angular discordance. Evidently basins of deposition persisted here throughout most of these eras. Intrusive rocks are known only in limited areas in the south, and sills and volcanic flows are locally of some importance as horizon markers.