

Sudbury region, the Doré at Michipicoten, the Ridout of the Woman River area, and others, are of disputed age being regarded by some geologists as Timiskamian and by others as belonging in the Keewatin. The period of Timiskamian sedimentation was succeeded by a mountain-building revolution which was accompanied by widespread intrusion of granite, commonly referred to as the Algomian batholiths. The time of the Algomian intrusions was a great mineral-forming epoch. Most of the gold ores of the Shield, and the copper-zinc sulphide replacement deposits, such as those of Noranda, Flin Flon, Sherritt-Gordon, and many others, were formed at this time from mineralizers given off by these intrusives. A long period of quiescence followed in which erosion reduced the region to one of low relief.

The Proterozoic or late Precambrian included the long era during which thick series of sediments were deposited on this eroded complex of Archæan rocks. These strata are best developed in the region around lake Superior and north of lake Huron. They belong to two systems, an older known as the Huronian and a younger called the Keweenawan. North of lake Huron the Huronian strata consist of an older series called the Bruce—made up of conglomerates, quartzites, and impure dolomitic limestone, totalling in thickness up to 12,000 feet—and a younger series named the Cobalt—made up of boulder conglomerate and other materials of probable glacial origin, overlain by quartzite and slightly calcareous quartzite, the whole having a thickness up to 10,000 feet. These two series are separated by an unconformity but the time interval represented was probably not great. The beds for the most part lie with only gentle dips except on the north shore of lake Huron and eastward where they stand at high angles as a result of mountain-building movements. The Huronian rocks are intruded by dykes and sills of quartz diabase extending over wide areas of northeastern Ontario. These intrusions of what is called the Nipissing diabase attracted the silver-cobalt camp of Cobalt, and subsidiary camps. Copper is associated with this diabase in the western part of the region. The Huronian rocks are cut by masses of Killarney granite intruded during the mountain-building period at the close of the Huronian to which reference has been made, and both the Huronian sediments and the Nipissing diabase are cut by small masses of a younger granite which is rich in alkalis.

At Sudbury a series of volcanic and sedimentary rocks filling the basin of the nickel irruptive is known as the Whitewater series. It has usually been referred to as Upper Huronian. The nickel-bearing irruptive was intruded at the base of this series as a saucer-shaped sill or laccolith, 37 miles long and 17 miles wide. It differentiated from norite at the base to micropegmatite at the top. This intrusive is the source of the nickel-copper ores of the region, the deposits occurring along the outer margins of the mass or in offsets where the mass injects the surrounding rocks. Cutting all these rocks are trap and olivine diabase dykes.

North of lake Superior is a group of late Precambrian rocks which has been described under the term Kaministikwan. The group includes the Animikie series of conglomerate, iron formation, and shale; the Sibley series of conglomerate, sandstone, limestone, and tuff; and the Osler series of lavas, conglomerate, sandstone, and tuff. Strata resembling the Animikie rocks of the Lake Superior region also occur in the central part of Ungava peninsula and on the Belcher islands and the east coast of Hudson bay.

In the Northwest Territories a group of Proterozoic rocks known as the Great Slave group consists of sediments and volcanics and rests on an old erosion surface crossing granitic intrusives and the upturned edges of Archæan sediments. The group consists of a lower part made up of conglomerate, sandstone, quartzite, shale,