

iron formation, limestone, tuff, agglomerate, andesite, and dolomite, and an upper part of dolomite, shale, limestone, sandstone, and lavas with interbeds of argillite. Still farther north in the Bathurst Inlet region of the Arctic coast are Proterozoic strata. Resting on granite is the Epworth dolomite which has a thin basal conglomerate and grades up through arkose into a cherty dolomite. Above this is the Kanuyak formation, made up of fine-grained calcareous tuffs and tuff-conglomerates, which at one place shows a structural unconformity with the Epworth beds. A still younger formation is the Goulburn quartzite which contains rounded fragments apparently of the Epworth and Kanuyak. The next younger rocks are those of the Coppermine River series to which reference will be made later.

The Keweenaw, the later division of the Proterozoic, saw the accumulation of great thicknesses of clastic deposits, in places accompanied by volcanic rocks, over various parts of the Shield. The type area is on the south side of lake Superior where thousands of feet of sediments and lavas are exposed. On the Canadian side several smaller areas occur on the east coast of lake Superior.

In the northwestern part of Canada are wide areas underlain by flat-lying or only gently dipping beds which are regarded as late Precambrian in age and are commonly correlated with the Keweenaw. The beds consist for the most part of sandstone and arkose with some conglomerate and shale. South of lake Athabaska is a broad area of these rocks to which the term Athabaska series has been applied. Smaller patches also occur north of the lake and to the northeast is another considerable area along the Dubawnt river. Interbedded basaltic flows and diabase dykes occur in places with these rocks. On Great Slave lake the Et-then series of clastic sediments is considered to be of equivalent age, while farther north on the Coppermine river and at Bathurst inlet a series of interbedded sediments and volcanics is known as the Coppermine River series. It carries notable copper deposits. Trap dykes, commonly considered as Keweenaw in age, are of wide occurrence over the entire Shield and are the youngest of the Precambrian rocks.

During the Pleistocene or Glacial period, the Shield was heavily glaciated by huge glaciers of continental extent. One of these sheets had its gathering ground west of Hudson bay and another in the heart of Labrador. From these centres the ice moved out in all directions. In its advance it scoured off the residual soil, smoothed down the topography, polished and striated the rock surface, and by scattering debris irregularly over the surface completely disorganized the drainage. The result was the formation of the numerous lakes which are everywhere so characteristic a feature of the region. On the retreat of the glaciers, large temporary lakes stood in places in front of ice and in these accumulated clay and other fine stratified deposits forming what are known as clay belts.

The Canadian Shield is a great store-house of mineral wealth and hence offers an attractive field to the prospector. It is not because its rocks are of Precambrian age that such is the case. It is rather because parts of it offer geological conditions favourable for the occurrence of minerals. Ore deposits the world over have, for the most part, resulted from mineralizing solutions given off from masses of igneous rocks during the late stages of their intrusion and cooling, and where we have an association of older rocks invaded by intrusives we may expect to find mineralization, no matter what age the rocks may be. During the Precambrian the rocks of the Shield, as has already been mentioned, were extensively invaded from time to time by intrusive masses of composition varying from acid to basic. Reference has been made to the nickel-copper deposits associated with the Sudbury irruptive, the silver-cobalt ores occurring with the Nipissing diabase, the gold deposits of Ontario