

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 there is an association of older rocks invaded by intrusives, mineralization is usually found, no matter what age the rocks may be. During the Precambrian age 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 and Quebec associated with porphyry and other granitic rocks. The gold-bearing copper ores of western Quebec, the zinc-copper ores of northern Manitoba, the pitchblende and silver deposits of Great Bear Lake are other important mineral occurrences which are being developed. In eastern Ontario and western Quebec, where granite has intruded limestone and other sediments of the Grenville series, there occur deposits of mica, graphite, feldspar, magnesite, fluorite, kaolin, molybdenite, talc, apatite, and other minerals.

The Interior Plains.—The Interior Plains division of Canada is part of a great plains region in the interior of the continent stretching from the Gulf of Mexico to the Arctic Ocean. In Canada it extends from the Canadian Shield on the east to the Cordillera on the west. At the United States border it has a width of 800 miles but in the extreme northwest at the mouth of the Mackenzie River it is less than 100 miles wide. Throughout most of the region the underlying Palæozoic, Mesozoic, and Tertiary rocks are nearly flat-lying. In the northwestern part of the area, however, the Franklin Range, which lies between Great Bear Lake and Mackenzie River, is composed of folded strata. In western Alberta, also, the rocks are folded and faulted.

Geologically the region falls into three zones. On the east a narrow plain known as the Manitoba Lowland is developed on flat-lying Palæozoic strata which range in age from Ordovician to Devonian. In Manitoba, the Ordovician beds rest on the Precambrian rocks of the Canadian Shield and commonly present a low escarpment facing the Shield. To the northwest this zone broadens to form the Mackenzie Lowland. Here over wide areas Silurian measures form the base of the Palæozoic section. In the Franklin Mountains, however, red quartzites and sandstones of the Mount Clark formation are regarded as of probable Lower Cambrian age. They are succeeded by Middle and Upper Cambrian sandstones and shales. Beds regarded as of probable Ordovician age are also known to occur at the base of Mount Kindle east of Wrigley and beneath the Silurian dolomite of the Great Slave Lake area. Over considerable areas strata of Cretaceous age also occur in the Mackenzie Lowland region, as for example on Liard River, on the western shores of Great Bear Lake, and at several places along the Mackenzie. At the mouth of Bear River is an area covered by partly consolidated Tertiary sands and clay-carrying lignite beds.

The second zone includes much of southwestern Manitoba and southern Saskatchewan and Alberta. It is a broad belt underlain by Cretaceous rocks. Its eastern border, where these strata overlap the underlying Palæozoic sediments, is an abrupt