

The Cordilleran Region.—The rocks of the Cordilleran province range in age from Precambrian to Recent. The Rocky and Mackenzie mountains and the Ogilvie range of northern Yukon are made up of great thicknesses of sediments of Precambrian, Palaeozoic, and Mesozoic age. The Coast range is largely a complex batholith of post-Triassic age intruded mainly into Mesozoic sediments and volcanic rocks. The plateaux and ranges of the interior are underlain largely by late Palaeozoic, Mesozoic, and Tertiary sediments and volcanics. The pre-Tertiary beds are cut by numerous igneous rocks of deep-seated origin and in various districts Precambrian strata are exposed.

The Cordilleran region was affected by two great mountain-building revolutions since the Palaeozoic. The first took place in late Jurassic or early Cretaceous time and affected the whole region from Selkirk mountains westward. It was accompanied by igneous intrusions on a vast scale and subsequent erosion has uncovered these batholiths, exposing a broad band that extends down the Pacific coast, curving eastward near the International Boundary. This period of intrusion formed the most important metallogenetic epoch of British Columbia.

The second great mountain-building revolution was the Laramide of Eocene time. In this period the great thickness of sediments that had accumulated in the geosyncline along the site of the present Rocky mountains was folded up to form that range. Igneous intrusions probably accompanied the revolution. It is probable that the lead-zinc ores of the Monarch and Kicking Horse properties at Field are to be related to them. A period of mineralization also occurred in the Oligocene, when copper ores were deposited on the Sunloch property on Vancouver island in a shear zone in gabbro of that age. Mercury deposits in several localities throughout British Columbia are associated with lavas of late Miocene or Pliocene age which otherwise are unmineralized.

The period of the intrusion of the Coast Range batholith was the most important event in the history of the Cordilleran region from the point of view of mineral deposits, and by far the majority of the metalliferous deposits of the province are to be related to this metallogenetic epoch. As already mentioned, the Mesozoic granite batholiths form a band down the Pacific coast which, in the southern part of British Columbia, curves off to the east. Mineral deposits occur in two general zones, one on either side of this belt of granite. That on the west, following the Pacific coast, and including the island fringe, may be described as the Pacific mineral belt, and the one on the eastern side of the batholith may be referred to as the Interior belt. In the southern part of British Columbia, where the batholith trends to the east, the southern zone has been called the Boundary belt, and the northern mineralized side of the batholiths is termed the Kootenay belt. The Pacific and Boundary belts are characterized chiefly by copper deposits. The former includes such camps as Anyox, Marble Bay, Quatsino Sound, and Britannia, and the latter includes Copper Mountain, Phoenix, Deadwood, Rossland, and others. The eastern and northern borders of the batholith comprising the Interior and Kootenay mineral belts are noted particularly for their gold, silver, lead, and zinc ores. The Interior contains such deposits as the Premier, the B.C. Silver, and other deposits of Salmon River region, those of the Bear River country, and Alice Arm, Dolly Varden mine, and occurrences at Hazelton, Smithers, Ootsa lake, and Whitesail lake. The Kootenay belt includes the silver-lead-zinc deposits of Ainsworth, Slocan, and Lardeau districts and the zinc-lead ores of the Sullivan, North Star, and St. Eugene mines near Kimberley.