

The geological history of the Canadian Cordilleran Region may be briefly summarized as follows: In Precambrian time sediments which now are in the form of limestones, gneisses, and schists were deposited in the interior belt. In Yukon these strata are known as the Yukon group and in central British Columbia as the Shuswap group. These have been altered by intrusive rocks and included with them may be metamorphosed phases not only of Precambrian rocks but also of much later rocks. In late Precambrian time a thick series of argillites and related sediments accumulated on the site of the southern Rockies and farther west in the region now occupied by the Purcell Mountains. The Purcell series, consisting dominantly of quartzites, has a thickness of over 20,000 feet.

From the Cambrian to the Carboniferous, sedimentation progressed in the Rocky Mountain and Purcell region. Cambrian strata are best known in the Bow and Kicking Horse Valleys along the main line of the Canadian Pacific Railway, where a total thickness of more than 18,000 feet of Cambrian beds are exposed. Another thick section can be seen in the Mount Robson district along the Canadian National Railway. In both these areas the Cambrian beds are succeeded by Ordovician strata. Silurian limestone occurs south of Kicking Horse River, in Yukon, and in the western part of Mackenzie Mountains. In Devonian time the whole eastern Cordilleran Region was submerged and calcareous beds, in places several thousand feet thick, were deposited. In the western part of the Rocky Mountains they in places succeed Silurian beds, but in the south and at various places in the eastern part of the Rockies they rest on late Precambrian or Cambrian strata. Carboniferous beds succeed the Devonian strata at many places in the Rockies. Around Banff they include a thickness of 5,000 feet. In the interior belt around Kootenay Lake, Carboniferous beds rest directly on Precambrian rocks.

During the Triassic and Jurassic, sedimentation and volcanism on a vast scale occurred in the region from the Rocky Mountains westward to the Pacific Ocean, and on the site of what are now Vancouver Island and the Queen Charlotte Islands. In late Jurassic and early Cretaceous times this whole region was deformed. The Selkirk and Coast Ranges were produced and the Coast Range batholith was intruded. In later Cretaceous time, sediments were deposited on both sides of these Jurassic Ranges.

Long-continued erosion in late Cretaceous time reduced the mountains to a peneplain and unroofed their granite cores. During the Eocene occurred the great Laramide revolution which produced the Rocky Mountains. The rocks of this belt were folded and faulted and in places great blocks of older rocks were thrust over younger beds. Local intrusions of igneous rock accompanied the deformation. In the Oligocene, local movements accompanied by igneous intrusions again took place. During the Miocene period great fissure eruptions took place while during the succeeding Pliocene period there was further volcanism with general uplift and subsequent valley cutting. In the Pleistocene or Glacial period most of the Cordilleran Region with the exception of some of the higher ridge tops was covered by what is known as the Cordilleran ice sheet. The whole region was depressed at this time but in post-glacial time there has been uplift ranging from 450 to 1,000 feet.

The Cordilleran Region is a great mineral area. Most of the deposits are related to the Coast Range batholith. They occur principally along the borders of the batholith and in the older rocks surrounded by the intrusives and were produced by mineralizing solutions given off from the igneous masses. Some of the more important deposits are the copper ores of Hidden Creek, Britannia, and Allenby