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The Coast District of British Columbia

SPECIAL CORRESPONDENCE

An interesting report, recently issued¹ by the Geological Survey of Canada, covers that portion of the coast of British Columbia lying between the international boundary and the mouth of the Powell river on Malaspina strait, including Burrard inlet, Howe sound, Jervis inlet and the adjacent islands. The greater part of this region had not been previously examined geologically. The present report is of a preliminary character, exploration being conducted only when the formations were of economic importance. The rocks of this region are largely of igneous origin, representing a great range from acid to basic in composition, and from volcanic surface flows to deep-seated plutonics—rocks of aqueous origin having a comparatively small distribution. The principal areas of economic importance are those occupied by the Paleozoic rocks, the mineral deposits occurring in them or along their contacts. The prospector has to contend with many difficulties in this coastal belt, the whole country being extremely rugged and difficult of access, while rock slides, a luxuriant forest growth and dense underbrush below the 4000-ft. level conceal the contacts and mineral outcrops. In most cases the discovered mineral deposits of value are so situated that economic methods in mining and transportation are feasible. Surface or aerial tramways may connect the mines with tide-water, and from there transportation is afforded to the smelters. The principal metallic ores are those of copper and iron.

MINERAL AREAS OF THE COAST DISTRICT

The report gives a detailed description of the known mineral areas grouped with reference to the inlets and islands. Lynn Creek camp, Burrard inlet, is about eight miles north of North Vancouver, and comprises an area of about five square miles, in which about 35 claims have been staked. The ores consist of zinc-blende, chalcopryite, pyrite, pyrrhotite, molybdenite and magnetite, which occur as irregular bodies along shear and fracture zones in the schists. The preliminary work done on these claims consists of stripping, small open cuts and tunnels, but in no case has sufficient work been done on any location to prove its value. On the Kemptville claims two veins of almost pure zinc-blende 2 ft. and 3 ft. wide, respectively, have been discovered, and on Angel claim No. 3 small bodies of yellow

low copper have been opened up. While some of the orebodies may prove of sufficient size to make them commercially important, in any case, owing to the cost of mining and transportation, it will be necessary to amalgamate the several interests to insure successful results.

BRITANNIA MINERAL ZONE

The Britannia mineral zone is situated on the east side of Howe sound, 23 miles from the entrance. The associated rocks belong to the Britannia group, consisting of conglomerates, quartzites, carbonaceous slates and quartz-sericite schists, with intercalated sills and masses of hornblende porphyrites and quartz-syenite porphyries. They have a width along shore of 1½ miles and extend inland for more than 8 miles. The mineralized zone lies almost wholly in the quartz-sericite series. Iron and copper sulphides were deposited simultaneously with the development of the schist, during the eruptive after-action produced by the intrusion of the granite. A concentration took place in parts of the zone and lenses of massive chalcopryite with quartz were formed in parallel arrangement along the strike of the schist. These lenses range from an inch to several feet in width and are the source of nearly all the clean ore. About 70 claims have been staked along this zone and adjacent to it. The principal groups are controlled by the Britannia Copper Syndicate, Ltd., the Empress Mining Company, and the Goldsmith Copper Company. The Britannia Copper Company had mined and shipped up to Jan. 1, 1907, a total of 168,396 tons, of which 42,552 tons were shipping ore, and 65,844 tons concentrating ore, producing 12,612 tons of concentrates. The ore is essentially low grade and about 60 per cent. has to be concentrated before shipment for smelting. The company has an extensive plant, well equipped for the economical handling of the ore. At the mine the rock is first crushed at the head of the tramway and passed on a conveyor, where clean ore and waste are picked off. The Riblet automatic aerial tramway, 16,800 ft. long, connects the mine with the concentrator and shipping dock at the beach. The Britannia West Copper Company, whose claims also produce a low-grade ore said to carry appreciable values in gold and silver, were also installing a concentrating plant and building a tramway to the shore.

BOWEN ISLAND AND SEECHELT

The Bonanza mine on the southwest slope of Mount Gardiner, Bowen island, where a tunnel has been driven in for 300 ft., yields ore composed of pyrite, zinc-blende and galena, which carries also gold, silver and lead. On Jervis inlet deposits of pyrrhotite, chalcopryite and arsenopyrite, were found in several places, and some claims had been staked. Assays gave no traces of gold or silver.

On Seechelt inlet, about three miles inland from the east side of the head of Salmon arm, at an elevation of 4500 ft. above the sea, the Granite Mountain Copper Company has 18 locations. The country rock is granite and the ore occurs in fissure veins which are nine in number varying in width on the surface from 3 to 25 in. The ore is massive bornite with a little chalcocite and cuprite in quartz gangue. An assay of massive ore gave 0.4 oz. gold, 35 oz. silver and 53 per cent. (wet) of copper. Should development prove the orebodies to be extensive, an aerial tram could be built to Salmon arm for the transportation of ore.

TEXADA ISLAND

On Texada island, which lies in the Strait of Georgia, its southeast end being 80 miles north of Victoria and 47 miles from Vancouver, copper has been mined for over a decade and the output has been characterized by a high percentage of copper with good gold and silver contents. The magnetite deposits have been known since the early sixties, but development work has been desultory and comparatively little ore has been shipped. The island is 30 miles in length and its maximum width is 6½ miles. The western half of the island is more or less mineralized throughout, and has been nearly all staked at one time or another. The ore deposits occur in the Texada group and along the contact of that group with the Marble Bay limestone formation. In the Texada group the ores are found along shear and fracture zones in the basic eruptive rocks, and comprise galena, zinc-blende, chalcopryite and pyrite, carrying, as a rule, small amounts of gold and silver. The veins are from 2 to 4 ft. wide, in one case 12 ft., and from 20 ft. to over 300 ft. long. Of the contact deposits the most considerable are the occurrences of magnetite and copper on the property of the Puget Sound Iron Company, and those of copper at Van Anda. The former, situated on the southwest side of the island, outcrop along the southern flanks of a ridge parallel to the shore, occurring over an area of one mile in length by half a mile wide. About 15 distinct bodies are exposed along the contact of limestone with granite and the greenstone. The most important deposits are known as the Texada, Paxton and Lake mines. The ore of the Texada, where considerable development work has been done, is a coarse crystalline magnetite, which is locally impure from impregnations of copper and iron pyrites, some of the ore having carried as high as 3 per cent. copper.

A tunnel over 300 ft. long passed through 74 ft. of magnetite. At the Paxton the orebody is 320 ft. long, with a width of 240 ft., and a height of 92 ft. The Lake mine, one mile east of the Texada, has an orebody nearly 200 ft. long, 50 ft. wide and 70 ft. high in one locality. Little has been done in exploiting other de-

¹Preliminary Report on a Portion of the Main Coast of British Columbia and Adjacent Islands Included in New Westminster and Nanaimo Districts. By O. E. Leroy, pp. 50, illustrated; paper, 9½ x 6½ in. Geological Survey of Canada, Ottawa, 1908. King's Printer.