

The mineralisation just described, and which forms the great bulk of visible mineralisation on the property, is admittedly very much diffused through the rock, and is consequently so low grade as to be of value only if found to be amenable to some form of concentration, and of which there seems to be a fair probability.

On the top of the mountain, in the knob shown to the left of the centre in the sketch herewith, is an area in which the mineralisation seems to be more concentrated, producing, in places, ore of a grade to stand transportation and treatment charges. This higher grade ore appears to occur along the lines of contact of alternating bands of granitic rock and limestone. The extent of the latter deposit it was found impossible to determine, as the ore was found to be covered in most places by a heavy capping of gossan, and in many places seemingly permanent snow and ice covered up the formation. While the future of the property is far from being proven, the very great extent of the mineralisation, with occasional concentrations, certainly renders the proposition worthy of most careful investigation and prospecting.

These claims are situated on the small lake in the Big Interior Basin, **Della and Glacier**, and are owned by Drinkwater and Engvik. On the claims is a small quartz vein from 2 to 3 feet wide, mineralised chiefly with arsenical iron. Assays of the straight ore gave the following result:—Gold, 5.12 oz. per ton; silver, 5.2 oz. per ton; copper, 1.0%. The vein has not yet been worked to any extent, but an attempt is being made to extract the values by roasting the ore and grinding in an arastra, which has been erected and is being run by a small water-wheel constructed on the ground. The arastra had just been completed at the time of my visit.

Formation of Ore Bodies on West Coast.

An examination of the different properties on the west coast of Vancouver Island, especially those on which extensive development work has been done, would point to the following theory as to the mode of ore deposition:—

The properties, with the exception of those in Quatsino sound and Great Central lake, present nearly identical conditions. The mineralisation occurs in or close to diabase dykes. Sometimes there is sufficient quartz in the fissure to make a quartz vein, but more often there is an entire absence of quartz, the vein-matter being the crushed material of the dyke. There appear to have been two periods of movement, the first in which the dykes were formed, when no mineralisation took place; the second period in which these dykes were shattered and twisted, when probably secondary dykes of a similar composition to the first series were injected into the fissures found by the movement. A careful examination of these deposits would lead one to the conclusion that mineralisation took place at this time, not as a secondary enrichment, but as a direct deposit by ore-bearing solutions from below. The solid mineral is seen to penetrate what were originally cavities, and to follow along old slip-walls, inside of which, as a rule, no mineral whatever is seen, as would be the case if segregation had occurred. The deposits are often of brecciated structure, the ore enclosing fragments of the original dyke-rock and only occasionally is it seen forming a part of the dyke, and then it would be accounted for as forming part of the second upheaval when the later dykes were formed. Mineralisation is found along fractured zones in these diabase dykes, and where these fractures contained cavities for the entrance of mineral-bearing solutions we now have ore-bodies, but where the ground is tight or shows only slight movement, little or no ore is found.

Chalcopyrite forms the principal mineral of value, while pyrrhotite is a common mineral, occurring both massive and mixed with pyrite and chalcopyrite, but carrying little or no value in itself. Arsenopyrite occurs in many of the properties and, as a rule, carries gold values.

While no geological map or extensive examination of this region has been made, the general country rock outside of the mineralised zones appears to be syenite, occurring often as mountains of great size and connected with a series of felspathic dykes which penetrate the older rocks.

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