

Character of the Ore Deposits.

Magnetite is the most common iron ore on the coast of British Columbia, and numerous outcrops of this mineral are found both on the west and east sides of Vancouver island. They are usually found on the end or flank of a ridge, following roughly the contours of the hill, and occur almost always along and adjacent to the contact of limestone and some eruptive rocks. Numerous fragments of the ore have frequently fallen down the slopes, giving an impression that the ore occupies a larger area than it actually does. The contact of the ore and the country rocks is, as a rule, well defined, but the shape and extent of the ore is very uncertain because of its extremely irregular association with the wall-rocks, and in many cases it is not safe to assume that the ore extends a foot beyond, or a few inches below the place of observation. The highly magnetic character of this magnetite can, however, in many cases be taken as a good guide. A strong, and even magnetic attraction for some distance on a claim, shows the presence of a larger ore-body, and should encourage further development to ascertain the real extent of the ore and its quality. On the other hand, walking over an outcrop of magnetite, and finding none, or very small magnetic attraction, is an indication that the conditions are not very encouraging for further work.

On Vancouver island numerous claims have been staked where the last-mentioned conditions exist, and where the few available workings show the ore to occur in stringers, blankets, and pockets. That the prospect is not very encouraging is apparent, and many property holders, instead of lulling themselves into the belief that the ore will widen out with depth, should watch the behaviour of a little dip needle over their outcrops of magnetite. By doing so they would save themselves from unnecessary hard work and expenditure of money.

There are, however, a few properties, the surface indications on which are so promising that they must, sooner or later, become objects for exploration and development, when conditions are such that profit may be derived from iron mining on the coast. Amongst these are the iron mines on Texada island, and the properties at Head bay, Klaanch river, Quinsam river, and Gordon river on Vancouver island.

The magnetites of the coast are high in iron, some masses containing over 70 per cent of iron, although the ores, as a whole, will probably not average over 55 to 60 per cent. The phosphorus content is very low, most of the samples taken showing a percentage considerably below the Bessemér limit. The sulphur content is, on the other hand, high, and local abundance of sulphides is very common. A thorough roasting of the ore might, therefore, be necessary. Until the ore deposits are further developed, any discussion of their origin must be tentative, and perhaps ought not to be attempted. Yet certain features in regard to their manner of occurrence are so significant that a few words may be of interest. The fact that nearly all magnetic exposures, if not in contact with crystalline limestone, are at least in the immediate vicinity of it, and occur where it is in close proximity to some igneous rocks, seems to indicate that the effects produced by the intrusion of these eruptive rocks into the limestone have given origin to these deposits. The suggestion is made, that the ore is a replacement of limestone, through the agency of iron solutions and vapours following the eruptive magmas.