

of diorite and quartz felsite perhaps contemporaneous with the ore. To test its extension farther down the brook on the line of its apparent strike eastward a second tunnel was begun from a lower level. This tunnel cut soft sedimentary shales and breccia which extended nearly to the diorite, but were not succeeded by iron ore. A third tunnel was driven into massive diorite on the supposition that the vein would keep on the course followed in the first tunnel.

From No. 1, or the working tunnel, drifts were driven easterly and westerly along the hematite, which was stopped down to the levels, but to the westward passed into carbonate or white ore, apparently of subsequent origin and associated with pyrite, while to the eastward it became of low grade and was succeeded by an intrusive rock not rich in iron. The failure of the other tunnels to cut ore seems to show that the ore body is of limited extent; and a borehole subsequently put down to intersect the ore at a level below No. 1 tunnel also failed to find a workable mass of hematite. The mode of occurrence of this ore is in many ways like that of the siliceous hematites of other parts of Nova Scotia, that at Arisaig, Blanchard, Torbrook and elsewhere are associated with diorite, but unlike that of the contact carboniferous deposits of Newton Mills, Boisdale and other places in Cape Breton.

Leaving Ottawa on June 12, the writer accompanied Dr. Ellis down the St. Lawrence river to examine the great masses of quartzite exposed in high knobs and ridges near St. Paschal and Kamouraska among red, greenish and grey slates. They are folded and show nearly vertical dips almost in contact with the slates and flags, and they include limestone concretions and patches of banded limestone containing fossils, while graptolites are found in the dark slates. The slates somewhat resemble and may perhaps represent the *Dictyonema* slates of Gaspereau and Highbury, N.S.; the Quebec quartzites have not been recognized as distinct from the slates, but are regarded as tentatively included among them, all being assigned to the Cambrian, while a map of the outcrops of the quartzite about Whiterock, in Kings county, compiled on a scale of twenty chains to an inch, suggests rather that the quartzites there rest unconformably upon the *Dictyonema* slates.*

* (Sum. Rep. for 1906, p. 141.)