

up the Salmon River, to Loch Lomond; and bounded on the north by the felsites of East Bay, and on the south by the felsites of the Mira Hills. At several points the Lower Carboniferous marine limestone formation crops out beneath the millstone grit, and occurs as isolated patches resting directly on the felsites, and there are patches of the basal carboniferous conglomerates brought up by faults through the millstone grit.

The locality in which these deposits have been discovered is on the Salmon River Road, about two miles east of Loch Lomond, near the line dividing Cape Breton and Richmond Counties.

The felsites formed a shore along which we now find limestones, conglomerates, shales and grits exposed as they were accumulated under the varying conditions of current, depth of water, and of the prevailing winds of the period under consideration. At some points the limestones rest on the felsites, at other points conglomerates and shales intervene. The discoveries of manganese ores, more particularly the subject of my paper, were made in one of these bays, where the felsites are succeeded by shales, grits, conglomerates, and finally by limestones, the latter extending apparently from point to point of the ancient Bay.

The manganese ores are found at the Western, or McCuish Mine, in irregular bedded layers in a soft arenaceous shale, which is in places calcareous, and coated with manganese oxide. The layers vary in thickness up to 18 inches, and are sometimes connected by vertical stringers of ore. The shales when weathered present nodules of ore, and large quantities are present as films on the cleavage planes of the shale.

At the Eastern, or Morrison mine, the ore at the time of my visit was mined from a bed underlying a thin layer of black mangiferous limestone, with red and greenish shales and sandstones and conglomerate. The thickness of the ore and of the limestone varied from 2 to 8 inches. The average thickness of the two layers being 8 inches.

The ore was found at several other points in the vicinity as lenticular masses and irregular nests in conglomerate, etc., and