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For THE CANADIAN ENGINEER.

NEWFOUNDLAND AS A FIELD FOR MINING INVESTMENT.

BY ALEXANDER DICK, C.E., M.E., HALIFAX.

Newfoundland has long been known to be wealthy in many kinds of minerals, but it is only very recently that the colony has been opened up in a manner suitable for the proper examination of its resources from an economic point of view. From 1854, at which date the records begin, to the end of 1891, the value of all ores and products of ores exported from the island was as follows:

Copper	\$9,193,790
Iron pyrites	247,087
Lead	119,804
Nickel	29,604
Sundry minerals	6,540
Total	\$9,596,825

COPPER AND PYRITES.

The mining of these has been entirely confined to the shores of the great bay of Notre Dame, on the north-east coast. At this place there are large deposits of sulphurets, yielding an average of 12 per cent. of copper, and since 1864 work on these has gone forward with greater or less vigor, as the price of the metal rose and fell, at the various mines in Tilt Cove, Betts' Cove, and Little Bay. Associated with these copper ores are large bodies of magnetite and iron pyrites. Considerable quantities of the latter have been worked at the fore-

going mines; and at Pilley's Island, in the same district, a large lode containing over 60 per cent. of sulphur has been extensively mined, and shipments have been made to the United States. Since 1891 there have been exported of these minerals:

Copper, 100,926 tons, valued at	\$1,337,034
Pyrites, 113,647 " " "	829,392

IRON.

The foregoing figures represent the entire mining industry of Newfoundland up to the end of 1894. In that year, the attention of capitalists was directed to the brown hematite iron ores of Great Bell Island, Conception Bay, and in September, 1895, the writer was instructed to make an examination and report for an American syndicate. Prior to that visit, however, several mining areas on the western end of the island had been secured by the Nova Scotia Steel Co., and these are being extensively worked by them at the present time. As a result of this report, the balance of the island is now secured and will soon be operated. The geological formation of the island is so simple, it seems amazing that the value of these deposits was not sooner appreciated. The island, containing about 11 square miles, is made up of a series of sandstones, slates and iron beds perfectly and regularly stratified, dipping at an easy inclination towards the north. The ore beds vary from two to fourteen feet in thickness, and the mineral is easily separated from the over and underlying strata. The ore has a perfect cleavage, both on "butt" and "cleat," and breaks readily into cubical blocks of a size convenient for handling. Its structure is of a fine granular nature, showing a steely lustre on being freshly fractured, and the easy grade of dip (not over 8°) enables large quantities to be mined "opencast" along the line of outcrop. The cost of production is low, and the ore should be easily put on board ship at a figure that would enable it to compete with any ore entering the eastern markets of the American continent.

The Nova Scotia Steel Co, operating the eastern end of the island, has shipped about 40,000 tons since they began operations in the fall of 1895. A considerable portion of this quantity was shipped to Baltimore, U.S.A., under contract, and the balance to the company's own works at Ferrona, Nova Scotia. The ore is mined opencast, a rock cover of about 4 feet in thickness, overlaid by a foot of soil, having to be removed to lay bare the ore. It is loaded into cars carrying each about one ton of mineral, and these are conveyed by endless haulage about 1½ miles to the shipping pier. The cars dump the ore into hoppers on the pier from which the ship is loaded. Twenty-four feet of water is obtained at the pier, and a steamer carrying 2,000 tons can be loaded and dispatched within a few hours.

The following are some analyses of the ore, the first being an average of a number of samples taken from the east end of the island, owned by the Nova Scotia Steel Co., and the other from a sample from the west end of the island.