# Putting Canadian Iron Ore on the Map

By J. J. O'Connor

If Canada is to keep place with her competitors for world trade, if her great fleet of merchant ships are to be kept employed in carrying our own products to world markets, if she is to pay her debts out of her own resources, she must develope her enormous deposits of iron ore, in order to occupy that industrial independence that will enable her to compete successfully for the foreign trade that is so vitally necessary to her future.

A glance at the past shows that all that is needed to make Canada a leader in mineral production, is well directed, and sustained effort on the part of Government and people, in the exploitation of her vast store of mineral wealth. In 1886 Canada's mineral production amounted to $2.23 per capita, in 1917 it had reached $23.12 per capita. If iron ore production had made the same advance as all other minerals, if imported iron ore had been displaced by domestic ores, and if the enormous importations of iron and steel products—now in the neighbourhood of $175,000,000 annually—had been displaced to a great extent, by our own manufactured articles, as they very well might have been, our mineral production would show a vastly increased sum per capita.

That this industrial independence may be brought about, is but reasonable to suppose, in the light of what is being done in other iron fields, by our neighbours in Minnesota, where millions of tons of iron ore are being beneficiated annually, and millions of dollars are being expended in the installation of plants for the magnetic separation and concentration of low grade iron ores, similar to our own.

The province of Ontario is wholly dependent on United States ores, with the exception of the extremely small percentage of domestic ores now being charged to the furnaces of this province.

The Ontario Government is directly interested in the industrial development of its own estate. The Federal Government is equally interested in the upbuilding of an iron and steel industry in Canada, adequate to its needs, therefore, they should co-operate in demonstrating the commercial feasibility of converting our low grade ores into a desirable product for furnace use.

The Bureau of Mines, Toronto, and the Mines Branch, Ottawa, should make a joint, and thorough investigation of what the Mesabi Iron Company have done in their experimental plant, at Duluth, and what they are now doing at Babbitt, Minn., as a result of the experiments carried on at Duluth, where they produced thousands of tons of ore that met the highest furnace requirements.

Skillings' Mining Review, an outstanding authority on Minnesota iron ore, in a recent issue, says, in part: "The work of pouring concrete for the foundations for the first mill unit of the ore treating plant of the Mesabi Iron Company, at Babbitt, Minn., will be begun early next week, and the work of erecting the steel for the superstructure will be begun about August 15th. Four hundred men are employed by the company at Babbitt, and the immediate vicinity, in the extensive preparations necessary to whip this new and important iron mining enterprise into shape for production. The company will enter the shipping list with its product at the opening of navigation next spring. This initial unit has an estimated capacity for treating 3,000 tons of ore per day, but it will occasion no surprise if the over-run is considerable. The size of the new mill will be total length 1350 feet, and width 130 feet. The plant consists of five sections laid out to give continuous process. But to return to the mill that is being erected out there in the wilderness of the Eastern Mesabi. The Minneapolis Steel Machinery Co. has the contract for the steel. While people are vastly interested in the fact that the Mesabi Iron Company is spending about three million dollars on the Eastern Mesabi, the real basis of this interest lies in the fact, that the expenditure is being made to establish on a broad commercial basis, an advanced principle in magnetic separation. Magnetic separation is the principle on which this costly development is being founded, and this Company has produced separators that are expected to do their work more efficiently than any heretofore built. The modus operadi is as follows : Mine, crush, grind to powder and separate the ore from the rock, and form the concentrate into clinker by the sintering process, for blast furnace use. The final clinker will be a very high grade iron ore, free from moisture, free from all deleterious elements, such as sulphur or titanium, and dust. There are billions of tons of low grade magnetic ore, or taconite, on the Eastern Mesabi. The Mesabi Iron Company alone controls, or owns outright, many hundreds of millions of tons itself, in the 20 square miles it has taken over. It would seem that the Mesabi Iron Company had fully worked out its problems in metallurgy, when one considers the success of the first cargo of the product of the low grade magnetic ores, which was produced in the experimental plant at Duluth. As far as can be seen all problems of the future were met in the production of the first cargo. Assuming that to be the case, the Company seems destined to become one of the chief factors in the future of the iron ore industry of Lake Superior. It has brought into being an enormous mass of iron bearing material that gives every promise of lengthening for a very great many years, the life of the iron, mining industry of Minnesota. W. G. Swart, general manager, in charge at Babbitt, Dwight E. Woodbridge, of Duluth is in charge of the company lands."

With this experience before us, and the success it has met with, it would seem idle to not take advantage of the opportunity of investigating this great enterprise, and determining its adaptability to our own ores. Both Governments have the necessary machinery at hand, for making such an investigation. Added to this, is the highly satisfactory results in magnetic separation, obtained by Prof. Stansfield, of McGill University, recently. It is to be hoped that this matter may not be longer deferred, and that immediate action may be taken. The Tarriff Commission would do well to look into the question of the vast tonnage of iron ore, and iron and steel products imported annually, and its effect on the commerce of the country.

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Pottery products in the United States during 1919 are reported to have reached a value in excess of any previous year. The value of manufactures in 1919 is estimated at $76,140,000 comparing with $63,911,793 in 1918. The increase over 1918 is of course largely made up of higher values as measured by cost, but no figures are available regarding quantities.