

amounting to over half of the total discharge, cannot be recovered. The Commission estimates that the total yearly discharges from the heaps, smelters and refineries, is not less than 300,000 tons of sulphur discharged in the form of sulphurous acid gas, and capable of producing nearly a million tons of ordinary sulphuric acid. This is equal to about one-quarter of the total annual consumption of the United States, of which one-fourth (1 million tons) is produced from the discharged gases from smelters, and exceeds all probable requirements of Canada for many years.

In other countries the recovery of sulphur and other noxious gases has ultimately resulted in the development of important industries. Sulphurous acid gas could be utilized direct in pulp-making and other industries, but the present conditions are not favorable for such use, owing to the distance of such plants from Sudbury. Freight charges on sulphuric acid to points of consumption are considered to be too great to permit of the development of this industry at present. The most desirable method of recovering the sulphur, if feasible, would be as free sulphur, which can be easily transported and for which there is a good demand.

Precious Metals in Sudbury Ore.

The Sudbury ores contain minute quantities of the precious metals. Besides gold and silver, these include platinum, palladium and other rarer members of the platinum group. The ores cannot be profitably treated for these metals alone, but the smelting process automatically concentrates them in the matte, and thus makes it practicable to recover them.

In view of the usefulness and scarcity of platinum, the supply of which is being eked out by substituting palladium wherever the latter is suitable, every source of the metal is worthy of investigation, and every effort should be made within economic limits to obtain it.

Trade Conditions.

Prior to the war nickel was sold like any other metal to any country in which there was a market for it, and it was treated solely as an article of commerce without regard to international relations. The Commissioners found no evidence of any arrangement for dividing the markets between the great producing companies, although the International Nickel Company has the benefit of the United States duty on imports against its competitors.

The great French company, La Societe le Nickel, had a branch works in Germany at which it refined part of its New Caledonia output. The whole of the Norwegian supply of metal has been sent to Germany during the war. In the United States, where by far the greater part of the nickel refined is of Canadian origin, considerable nickel is produced from New Caledonia matte and as a by-product from the refining of crude copper, and scrap metal containing nickel is also available. Almost every great power has deposits of nickel ores which can be worked when the price of the metal is sufficiently high, and from which its requirements in time of war could largely be secured.

There has been much discussion concerning the possibility of Canadian nickel reaching enemy countries during the war. While the question is not within the jurisdiction of the Commissioners, it was referred to in the conferences with officials of the Imperial Government. For reasons of public policy the measures taken by the Government in regard to nickel, copper, rubber and other contraband materials cannot be disclosed.

BUILDING THE NICKEL REFINERY AT PORT COLBORNE, ONT.

A report on progress by the International Nickel Company on construction of the nickel refinery at Port Colborne, dated Feb. 5, 1917, contains the following information:

The site selected by The International Nickel Company of Canada, Limited, for its Canadian nickel refinery is at Port Colborne, Ontario, somewhat to the eastward of the entrance to the Welland Canal. The site consists of approximately three hundred and fifty (350) acres in extent, with a frontage on Lake Erie of approximately one (1) mile, this frontage immediately adjoining the Lake Erie frontage of the Canadian Furnace Company. Transportation facilities for the refinery will be provided by direct connection with the Grand Trunk railway, a branch line of which passes the northern boundary of the refinery site. The position of the site with respect to the Welland canal is such that recourse may also be had to transportation by water for such commodities as will be utilized in the refinery in large quantities, such as coal and coke, and where, owing to their points of origin, such water transportation may be deemed advisable.

This site was selected and options taken upon the property about the first of August last after examination of many possible sites in various parts of the Dominion. Preliminary engineering work, and surveys and testing of the suitability of the sites for foundation purposes were then proceeded with, concurrently with the examination of title, and certain necessary legalities with the local councils were arranged. Title was taken to this property early in October, and active construction on the ground immediately commenced. After the preliminary engineering work had shown the suitability of the site for the plant, a contract was entered into with The Foundation Company, Limited, of Montreal, which company has charge of the entire piece of construction. This company, in conjunction with the operating and engineering departments of The International Nickel Company, engaged actively in the preparation of the general and detailed plans of plant buildings and equipment, and by so doing, were in position by the time title to the property had been taken, to immediately commence construction and to let contracts for the more important building materials and equipment, on which delayed deliveries were expected.

The estimated cost of the completed refinery will be approximately \$4,000,000, and it is expected that the refinery will be completed and ready for operation in the autumn of 1917, provided no greater shortage of labor is experienced than that already apparent, and that the sub-contractors will be enabled to fulfil their promises of delivery.

On the construction work now in active progress, about four hundred men are being employed, and preparations have been made so that by next spring employment will be available for about one thousand men on this construction. The railroad connections, sidings and yard tracks, in which there are about 18,000 feet of track, requiring four hundred tons of rails, together with the grading, amounting to 270,000 cubic yards, are well under way. The excavating for foundations of buildings is well along, and many of the foundations of the permanent structures are already in place. This will ultimately amount to about 80,000 cubic yards.

The basis of the lay-out of the refinery provides that the buildings are so placed that various stages of