

ficial position by the jealousy of Germany, France and other European producing countries, it would seem that the industry can be made profitable to Canadian farmers only by means of Government assistance. When the bonuses are withdrawn, the industry could live only by means of a highly protective tariff.

ORE SMELTING AT NELSON, B.C.

From time to time there have been in British Columbia newspapers references to the smelter of the Hall Mines, Limited, at Nelson. And of late, notices of its performances in turning out some 300 tons with only a 200-ton plant. We are fortunate in procuring from the present superintendent of the smelter, Mr. R. R. Hedley, who has gained some knowledge of its capabilities, a description of this plant ; under date November 5th, Mr. Hedley says :

"The blast furnace being under repairs when I took charge on the 2nd of September, we blew in on the 4th, and have worked to date sixty days. During this time, we have smelted 14,676 tons of charge, of which 1,567 tons was barren flux, chiefly limestone. This shows an average of 244.9 tons smelted daily. Under favorable circumstances, it is possible to smelt 300 tons per day, as proven by the last twenty-four hours, ending this day at 6 a.m., the actual tonnage passed through the furnace being 273.9 tons ore and 30.1 tons limestone, and again on the 30th of October, 277.2 tons of ore from the Silver King mine, and 30.8 tons limestone. The average tonnage for the last seven days is 282.5 of charge.

"In addition to this, note may be taken of the fact that 200 pounds of slag is added to every ton of charge. The percentage of coke used varies between 14½ and 16, according to the quality of coke, and amount of sulphur in the charge. Matte produced during the above period of sixty days was 1,029 tons, averaging about 49 per cent. copper, wet assay. Concentration is about 14.25 parts of charge into one of matte, but we have run successfully with a concentration of over 20 to 1. A great point in favor of this furnace is that it will handle a very large proportion of fine ore.

"The character of this ore is chalcopryite, bornite, tetrahedrite, and kindred minerals in variable gangue, which gives an average composition of silica 33 per cent., ferrous oxide 9.5 per cent., manganese oxide 8 per cent., lime 7.5 per cent., magnesia 4 per cent., alumina 15 per cent., copper 4 per cent., sulphur 3.2 per cent. Limestone, the only flux generally used, carries about 10 per cent. silica, and resultant slag has a composition of silica 43 per cent., lime 15 per cent., ferrous oxide 12 per cent., manganese oxide 9 per cent., alumina 18 per cent. Slags have averaged for two months 0.345 per cent. Cu. and 1.15 ozs. Ag. per ton.

"This furnace was designed and erected by Mr. Paul Johnson, late superintendent. Its dimensions are : area at tuyeres 144 by 44 inches, at top of jackets, which are 5 feet 6 inches high, 144 by 64 inches, and at feed floor 160 by 72 inches. Total height of column is 12 feet 6 inches, but charge is generally maintained four feet lower, varying, however, with conditions of charge, etc. Tuyeres, eight in number on each side, and reduced from 6 to 4½ inches. Centre of tuyere is 24 inches above bottom as originally constructed. The bottom is supported by a cast iron plate resting on six jack screws carried by a truck, and consists in a coil of 2-inch water pipe bedded in steep, and a course of fire brick on end. On this the furnace makes its own bottom, probably now about four inches higher.

"Provision is made for tapping on the side, but end tap only is used. Flow is practically continuous, separation being made in a large conical pot of special manufacture. A second settler is used of similar form, but smaller, and thence slag flows into a powerful stream of water."

MINING INFORMATION.

After months of patient labor, and the expenditure of thousands of dollars, says the Rossland *Miner*, J. B. Hastings, the manager of the Crown Point, has established the true course of the mine's famous lead, and has solved the mystery of the no less famous porphyry dike. Operations have now been commenced in opening up the vein itself, and the Crown Point is in a fine way to become one of the great mines of the camp.

On Saturday last the Inspector of Mines for the District of Michipicoten, Mr. Boyd, gave an interview to a Toronto paper about that part of Ontario. He says that on two or three properties work will go on all winter. The Great Northern Mining Company will keep eight men employed on the Lawlor and Lauzon claims during the cold weather. Their instructions are to sink sixty feet, and then cross-cut and drift. Mr. Thomas Johnstone will also do a little work on his property, which adjoins the Lauzon land. Lord Douglas of Howick and Henry Dreany have left three men behind, while Joshua Legge, of

Gananogue will prospect his claim until the snow interferes with surface work.

A paragraph of date October 30th from Nelson says that work on the new reverberatory and calcining furnaces at the Hall Mines smelter is being pushed, and they will be ready by Christmas. The large blast furnace made a run last week which broke the record, turning out 20 tons of matte in 24 hours. The management is getting in some lead ores from the Slocan to make a trial on the old 130-ton furnace, which has been converted into a lead furnace.

In a jubilant item on the subject of Rossland camp, the *Miner* announces a steady increase in output of ore. Thus : "Seven mines made shipments last week, viz. : The Le Roi, War Eagle, Iron Mask, Centre Star, Cliff, Velvet and Little Joe. Then the following mines, the Columbia and Kootenay, Lily May, Poorman, Josie, Evening Star and Iron Colt, are in a position to follow suit, as they have a large tonnage of shipping ore ready to stope. The Monte Cristo, Colonna, Sunset No. 2 and Jumbo will be ready to make consignments to the smelters in a short time." Then as to the rosy future : "The development of such fine properties as the Deer Park, Great Western, Monita, St. Elmo, West Le Roi-Josie, Coxey, Good Friday, Nickel Plate, Crown Point, Homestake consolidated, Mayflower, Commander, Abe Lincoln, and a dozen others, may bring them into the list of steady shippers at any time."

Visiting Rossland, B.C., the other day, the superintendent of the C.P.R. telegraph told the Rossland people something of his plans : "As soon as the Slocan City extension of the railway is completed Rossland will have two separate telegraphic connections with the north," said Mr. Hosmer. "In addition to the present line, reaching from Revelstoke down Arrow Lake to Nakusp, then overland to Kaslo, down Kootenay Lake to Nelson, and then to Rossland via Robson, we shall soon have a wire extending from Robson up Slocan Lake to New Denver, where it will join the main wire to Revelstoke, and from Robson to Rossland we shall have communication via the Columbia and Western wires. This connection will be increased by October of next year by the new line of telegraph wires that will extend from McLeod, N.W.T., to Rossland, via the Crow's Nest Pass."

The first brick from the Hammond Reef mine, Sawbill district, near Fort William, was sent east on Nov. 5th. Its weight is about five pounds, from 259 tons of ore, and a run of 304 hours. Preparations are being made to enlarge the stamp mill.

At the Bureau of Mines information has been received this week of a rich find of oil near Florence, seven miles north of Bothwell, Ont. Seven wells already sunk are said to produce from 40 to 100 barrels a day.

What strikes one first in the opening section of the Ontario Bureau of Mines report is the formidable list of companies, twenty-two in number, and with an aggregate nominal capital of \$12,775,000, formed during the year, according to the official Gazette, to carry on prospecting, developing, and mining in the province. Sixteen of these companies, it appears, have been organized to operate in the gold fields ; one to get lithographic stone in the Temiscaming country ; one the Algoma Coal Mining Company. Then there are besides these several companies formed under the Imperial Joint Stock Act, which have spent money in opening mines and putting up works to treat ore.

From the Belleville *Intelligencer* of Monday last we learn that Mr. Swinney, manager of the Deloro gold mines in Hastings county, Ontario, has publicly stated that his company have spent \$500,000 in buying mineral lands, and are putting in a new plant which will increase their output of gold to \$5,000 or \$6,000 per day. The mispickel they get yields \$12 per ton, or 85 per cent. of its riches. The same concern is behind the Carscallen mine, in Belmont.

HUDSON'S BAY EXPLORATION.

In the month of June last a Government expedition, per steamer "Diana," left Halifax to explore Hudson's Bay. In that month the vessel found plenty of ice in the Bay, but after 15th July was not inconvenienced in this respect, but was able freely to navigate the Strait and the Bay. There were a number of Scotch whalers found on an island near Baffin's Land. The "Diana" has returned to Nova Scotia. Commander Wakeham states that the present charts of Hudson's Bay and Hudson's Straits are most unreliable. All of them show islands which do not exist, whereas islands which do exist are not mentioned. Tides are very heavy in the Bay, the navigable season is short, and the summer days very long. As to the question whether the route is feasible for Atlantic steamers running in connection with a proposed railway from Winnipeg to Churchill, to carry Manitoba grain, which is supposed to have been one of the objects of the "Diana's" trip, no authentic information is yet given.