

COPPER AND NICKEL IN WARTIME

Canadian Producers Were Busy Supplying Demands—
Prices and Markets

Canada's copper output in 1915 was the highest recorded. The production in smelters, together with the estimated recoveries, or amounts paid for in ores exported, amounted to 102,612,486 pounds, which, at the average New York value of refined copper, would be worth \$17,726,307. The highest previous production was in 1912, when an output of 77,832,127 pounds was reached. Compared with the production of 1914, which was 75,735,960 pounds, valued at \$10,301,606, an increase of 26,876,526 pounds, or 35 per cent., and in total value of \$7,424,701, or 72 per cent.

Of the total 1915 production, 42,050,347 pounds were contained in blister copper, 44,230,052 in copper and copper nickel matte, and 16,332,087 recovered from ores exported.

The production in Quebec from pyrites ores was 6,082,003 pounds as against 4,201,497 pounds in 1914.

The Ontario production is derived chiefly from the nickel-copper ores of the Sudbury district and of the Alexo mine, although there is a small amount of copper contained in the silver ores shipped from Cobalt, some of which is paid for. There was also a small shipment from the old Massey mine, which was re-opened during the year.

The production in 1915 is reported as 39,303,279 pounds as against 28,948,211 pounds in 1914, an increase of 10,355,068 pounds, or 35.7 per cent. Further detail respecting production will be found in the remarks on nickel.

Increased Output on Pacific Coast.

British Columbia also shows a largely increased production in 1915, the total being 56,692,988 pounds as against 41,219,202 pounds in 1914, an increase of 15,473,786 pounds, or 37.5 per cent. The 1915 production in this province included 47,064,234 pounds recovered in blister and matte, etc., and 9,628,754 recovered from ores shipped to smelters outside of Canada. The coast mines, including the Britannia, Texada Island and Anyox mines, etc., are credited with 33,980,508 pounds and the Trail Creek and Boundary mines with 22,712,480 pounds.

The Yukon production is reported as 534,216 pounds as against 1,367,050 pounds in 1914. These are the department of mines preliminary figures as prepared by Mr. J. McLeish, B.A.

Market Rise and Fall.

The New York price of electrolytic copper rose from a minimum of 13 cents per pound in January to 20 cents in June, falling again to 16 cents in August, then rising steadily to the end of the year, reaching a maximum of 22 cents at the end of December. The average monthly price for the year was 17.275 cents, as compared with an average of 13.602 cents in 1914, an increase of 3.673 cents, or 27 per cent. This is the highest average monthly price since 1907, when 20.004 cents per pound was reached.

Exports of copper, according to customs records, were: copper fine in ore, etc., and copper in pigs, 102,729,579 pounds, valued at \$12,460,356. There were also exports of old and scrap copper amounting to 4,161,600 pounds, valued at \$616,553.

The total value of the imports of copper in 1915 are recorded as \$3,467,586 as against \$4,256,901 in 1914. The imports in 1915 included 16,818,116 pounds of copper in pigs, ingots and manufactures, valued at \$3,104,382; other manufactures valued at \$263,922, and copper sulphate, 1,854,850 pounds, valued at \$99,282.

The imports in 1914 included 26,280,815 pounds crude and manufactured copper, valued at \$3,983,322; copper sulphate, 1,143,039 pounds, valued at \$53,802, and other manufactures of copper valued at \$219,777.

Nickel from Refineries.

Refined metallic nickel is now being recovered in Canadian refineries, but only in small quantities, and as a by-product in the smelting and refining of the silver-cobalt ores of the Cobalt district, nickel oxide having been recovered in these smelters for several years. The nickel-copper ores of the Sudbury district, supplemented by a small tonnage of similar ores from the Alexo mine in Timiskaming, north of Cobalt, are the main sources of nickel production, which, in 1915, increased nearly 50 per cent. as compared with 1914,

and is greater than the production in 1913, the largest previous record, by over 37 per cent.

The nickel-copper ore, derived from twelve separate mines, is reduced in smelters and converters to a Bessemer matte containing from 77 to 82 per cent. of the combined metals and shipped in that form to Great Britain and the United States for refining, the product of the Canadian Copper Company going to New Jersey and that of the Mond Nickel Company to Wales. A portion of the matte produced by the Canadian Copper Company is used without the intermediate refining of either metal for the direct production of Monel metal, an alloy of nickel and copper.

Ten Millions to Producers.

The total production of matte in 1915 was 67,703 tons, containing 39,216,165 pounds of copper and 68,077,823 pounds of nickel, and valued by the producers at \$10,352,344. The tonnage of ore smelted (part being previously roasted) was 1,272,283. The production in 1914 was 46,396 tons of matte, containing 28,896,825 pounds of copper and 45,517,937 pounds of nickel, and valued at \$7,189,031.

The reported recovery of nickel from the ores of the Cobalt district was 55,325 pounds of metals and 200,032 pounds of nickel oxide. The recovery in 1914 was 392,512 pounds of nickel oxide.

The exports of nickel are reported by the customs department as 66,410,400 pounds, valued at \$7,394,446, or an average of 11.13 cents per pound. Since about 80 per cent. of the Canadian nickel production is exported to the United States, it may be of interest to add to the Canadian statistics a record of the imports (eleven months only in 1915) of nickel into and the exports from the United States.

United Kingdom's Share.

The exports of nickel from the United States during the eleven months ending November were 24,503,585 pounds, valued at \$9,299,234, or an average of 37.95 cents per pound. More than 50 per cent. of these exports went to the United Kingdom. The value of the United States exports in 1914 ranged from 31 to 39 cents per pound and averaged about 34 cents.

It will be noted that a larger quantity of nickel finds its way to the United Kingdom through United States refineries than is exported directly from Canada.

The price of refined nickel in New York remained fairly constant during the first seven months of the year, quotations published by the Engineering and Mining Journal being 40 to 45 cents per pound for ordinary forms, with five cents per pound more asked for electrolytic nickel. During the last five months of the year prices ranged between 45 and 50 cents for ordinary forms.

RAILWAY EARNINGS

The following are the railway earnings for the first week in March:—

Canadian Pacific Railway.			
	1916.	1915.	
March 7	\$2,198,000	\$1,667,000	+ \$531,000
Grand Trunk Railway.			
March 7	\$ 992,026	\$ 852,151	+ \$139,875
Canadian Northern Railway.			
March 7	\$ 540,200	\$ 428,700	+ \$111,500

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