

In Gowganda three mines—Miller Lake, O'Brien, Millerett and Mann—produced in all 549,976 ounces, and in South Lorrain one—Wettlaufer-Lorrain—834,119 ounces. The T. & N. O. railway branch line from Earlton to Elk Lake is now in operation.

As in previous years, the larger proportion of the high-grade ore and concentrates produced at Cobalt was treated in refineries situated in Ontario, the principal works being those at Copper Cliff, Deloro, Thorold and Orillia. At Deloro and Thorold, also at a small refinery opened during the year at North Bay, the oxides of cobalt and nickel are produced and large shipments made, both of refined cobalt oxide and of the mixed oxides and of the mixed oxides of cobalt and nickel, to the United States and European markets. Another by-product turned out by the refineries is white arsenic, of which nearly four million pounds were made during the year.

There was paid out in dividends by silver mining companies in the Cobalt camp over seven million dollars in 1912. The total distribution of profits since the beginning of the camp has been close upon 41 millions of dollars on a gross aggregate return for sales of silver of \$81,777,260.

New and important silver-bearing veins were found at La Rose, Cart Lake (Seneca Superior), Casey Cobalt, etc. The last named mine is significant of the possibilities of the conglomerate, situated as it is, on an outlier of this formation some 14 or 15 miles distant from Cobalt proper. The finding of good ore by the Beaver mine in the diabase underlying the Keewatin, and the reemergence of the Cobalt Townsite mine were other features of the year.

Platinum and Palladium.—It is well known that platinum is associated in small quantities with the chalcopyrite in the nickel-copper ores of the Sudbury district. Accompanying the platinum is palladium, a silvery-white metal of the same group, which finds its chief uses in the manufacture of astronomical instruments, watch-making and dental work. There were recovered by the Orford Copper Works, New Jersey, in refining the nickel-copper mattes produced at Copper Cliff during the six years 1907 to 1912 inclusive, 2,864 ounces of platinum and 4,896 ounces of palladium, together with 15,675 ounces of gold and 459,250 ounces of silver. It cannot be specifically stated that this entire production was from the nickel-copper ores, since certain residues from other mines are treated along with the matte in the process of refining. Doubtless, however, a large proportion is traceable to the nickel and copper-carrying pyrrhotite. The value of the production was about \$817,030.

Nickel.—Leaving out of account the nickel constituents of the ores raised from the silver mines of Cobalt, the production of nickel in 1912 amounted to 22,421 tons, being 5,372 tons, or 31.5 per cent., in excess of the production of 1911. There were 725,065 tons of ore smelted, the matte produced aggregating 41,925 tons. The mines operated by the Canadian Copper Company were Creighton, Crean Hill, and No. 2, and by the Mond Nickel Company, Victoria No. 1 and Garson. About 2,000 tons of ore were treated by the latter company from the Alexo mine, a new deposit in the township of Dundonald on the Temiskaming and Northern Railway, now being opened up.

Systematic and extensive operations with the diamond drill by the several companies in the Sudbury region have proven the existence of very large reserves

of nickel ore. At the Murray mine, the Dominion Nickel Copper Company discovered a large body of ore some distance away from the outcropping of the former workings; at the Frood mine, the property of the Canadian Copper Company, the drill revealed what is believed to be the most extensive body yet discovered; and the Mond Company have located an extension of the Frood on their side of the boundary line. The Dominion Company, which had large holdings on the Northern Nickel range, including the Whistle mine, after acquiring the Murray mine, formerly owned by the Vivians, and the Gertrude and Elsie mines, which belonged to the Lake Superior Corporation, have sold out to a new company, said to represent the Rothschild interests. The prospects are for a large expansion in nickel mining in the near future.

Copper.—Copper was produced to the extent of 11,116 tons, almost wholly from the Sudbury district, where it occurs associated with nickel. The output for 1911 was 8,966 tons, the increase for the year being about 24 per cent.

Iron Ore and Pig Iron.—The quantity of iron ore mined in Ontario in 1912 was less than in 1911 by 58,274 tons. Shipments were from the Moose Mountain, Helen and Bessemer mines. The Grondal concentration plant at Moose Mountain and the roasting equipment at the Magpie mine (Lake Superior Corporation) are now both nearly completed, and if successful in practice will inaugurate the utilization of the low-grade iron ore deposits of the Province.

Of Pig Iron the output was 589,593 tons, as against 526,610 tons in 1911. The number of blast furnaces in operation was eight, as follows: Algoma Steel Company, Sault Ste. Marie, 3; Canada Iron Corporation, Midland, 2; Steel Company of Canada, Hamilton, 2; Standard Iron Company, Deseronto, 1.

Non-Metals.

Building Materials.—The building trade was brisk in the cities and towns of Ontario, and there was an increased output of construction materials as compared with 1911, notably in brick and stone, also a small increase in Portland cement. Lime showed a falling off. The beautiful marbles afforded by the quarries at Bancroft are coming into use for decorative purposes, especially in public buildings. Trap rock is also quarried in Hastings county and used in the making of good roads near Toronto and elsewhere. The whole production of building materials amounted in value to \$8,641,369.

Petroleum, and Natural Gas.—The yield of petroleum again shows a decline, the quantity raised from the wells of Lambton and Kent counties being 8,432,730 Imperial gallons as against 10,102,081 gallons in 1911. Natural gas shows an increase, the output in 1912 having a value of \$2,267,897 as compared with \$2,186,762 the previous year.

Minor Products.—There is a long list of mineral substances produced in Ontario, none of them of prime importance, yet contributing to the aggregate output, and constituting the basis of considerable industries. Among these are corundum, which shows an increased production in 1912 of \$86,504; graphite, increase \$28,711; iron pyrites, decrease \$47,763; mica, decrease \$6,424; pottery, increase \$1,945; quartz, increase \$115,171; 584; feldspar, decrease \$27,194; gypsum, increase \$11, salt, increase \$19,416, and talc, increase \$5,393. In most cases the raw material is abundant and could easily respond to a much larger demand.