

being produced than the entire market of the world calls for at current prices. A little branch railway off the main line of the Canadian Pacific Railway, four miles in length, leads out to the mine, which opens into the face of a crag of the brown, oxidized Laurentian rock characteristic of this region. The miners are now at work at a depth of about 300 feet below the surface. As fast as the nickel and copper bearing rock is hoisted out it is broken up and piled upon long beds or racks of pine wood to be calcined, or roasted, for the purpose of driving out the sulphur which it contains. The roasting process is of the nature of lime-kilning or charcoal burning. Each great bed of ore requires from one to two months to roast. When roasted the rock goes to the principal smelter, a powerful blast furnace, "jacketed"—in mining phrase—with running water to enable it to sustain the great heat requisite to reduce the crude, obdurate mineral to fluidity. The dross of the molten mass is first allowed to flow off and afterwards the nearly pure nickel and copper, blended together in an alloy called the "mat," or matte, is drawn off at the base of the furnace vat into barrow-pots and wheeled away, still liquid and fiery hot, to cool in the yard of the smelter. The mat contains about 70 per cent. of nickel, the remaining 30 per cent. being mainly copper. When cool the conical pot loaves of mat can easily be cracked in pieces by means of heavy hammers. The fragments are then packed in barrels and shipped to Swansea in Wales and to Germany, where the two constituent metals are separated and refined by secret processes which are jealously guarded by the manufacturers. So jealously is the secret kept that no one in America has yet been able to learn the process, although one young metallurgist spent three years at Swansea, working as a common laborer in the factories, in order to obtain it. At present there are produced daily at the Copper Cliff Mine about ninety pot loaves of mat, each weighing nearly 450 pounds, an output which yields an aggregate of more than 4,000 tons of nickel a year.

OUR GOLD MINES.—"Live and let live," is not a bad sort of thing to practice as we move along down the stream. And so we can look on and hear of the remarkable prosperity of some of the Queens Co. mines without an envious pang. It is gratifying to know after the usual ups and downs attending the opening of many properties, that the Graves mine at Whiteburn has stepped into the front rank as a gold producer, the output for last month having reached two hundred ounces from less than a hundred tons of quartz. This side by side with the Jim McGuire lead under the able generalship of "Rorie" assures the future of that district. Here just under our noses we soon expect to have another Whiteburn booming Bridgewater as Whiteburn boomed Caledonia, for that once sleepy little spot is now among the flourishing towns of the Province. Millisigate, so often abused as only a system of angulars and narrow main leads, will surely be disappointing to those who like to hold that opinion. Within the last day or two the lead has been discovered for which hundreds of feet of trenching and cross cutting have been done within the past six months. It is nearly two feet wide, and more than holds its own with its rich drift.

Further west a shaft is being sunk on a main lead over two feet in width, which is carrying gold and all the accompanying metals which go to make up the good pay ore. It is said that a company with the necessary capital is in treaty for the Owen and other properties, and the early spring will no doubt see a busy time in this valuable camp.

The rich lead at Mill Village has not yet been struck, but the owners are hopeful and are looking for an interview with it at almost any day. It is said a party of western speculators recently visited Gold river with a view to purchase, but for some reason or other went away empty handed. There are floating reports of fresh finds, but prospectors withhold information.—*Argus*.

BRITISH COLUMBIA.—There is some talk of the erection of another smelter in Kootenay, so located as to suit the mines at Golden and Donald. Mr. McCarthy of Calgary is the moving spirit.

Gold Commissioner Crimp of Cassiar, reports that the season just closed has been most satisfactory. The Bonanza on Daise Creek, has done the best, panning out from \$7,000 to \$8,000. On the Tibbet Creek the McVicar & Foster Company's Claim has also done well, while Quartz Creek has fully justified expectations. In all, Cassiar has produced between \$12,000 and \$13,000 worth more gold than last year. Had it not been for the rain and freshets which washed out the low lying claims, the returns must have been very considerable.—*Ottawa Mining Review*.

The Copper Queen Mine at Tombstone, Arizona, paid \$70,000 in dividends last year.

The Calumet and Hecla mine has paid a total of \$32,850,000 in dividends against \$1,200,000 levied in assessments.

The value of the copper product of Montana in 1888 was \$13,685,000 at the mine. The market value was \$16,600,000.

Prices for copper in 1888 averaged 15½ cents per pound for lake, 14½ cents for Arizona, and 14 cents for other districts.

The consumption of copper of all kinds continues enormous, and it is now quite impossible to place new orders for prompt shipment from the lakes.

The total Copper product in the United States in 1888 including imported ores was 231,270,622 pounds, which was 46,653,291 pounds more than the yield for 1887.

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