

frequently with the quartz and hornblende, that it may be easily detected by the naked eye and occasionally even cut and tested with a knife. Several years ago about two or three miles down the river from this locality miners discovered and washed from the gravel beds on the river banks great quantities of coarse gold, but they were obliged to cease their operations because they were not able to obtain water sufficient for the process of washing. This discovery on Fort George Canyon is undoubtedly one of the main sources of the coarse placer gold of the Fraser River.

The beginning of the hard winter has rendered further investigation impossible for the present time. My discoveries of the red hematite ore was made on the eastern bank of the Fraser River about two miles and a-half south of Fort George Canyon. Here in the bluff at an elevation of a hundred feet above the stream a stratum of red hematite measuring from footwall to hanging wall more than five hundred feet across is standing out almost perpendicularly from the cliff attracting the eye by its bluish-red colour. This stratum is all iron ore, without any interstratification of rocks of any kind whatever. A number of test holes and blasts sufficiently convinced me that the showing is not the result of surface oxidation only. From the footwall upward to the centre is the muchly sought red hematite, which from this point gradually changes to micaceous iron ore crowned with the common red hematite ore. The part forming the hanging wall is unknown yet, because covered by drift (gravel). Probably the diameter of this gigantic occurrence is even more than 500 feet. We tried to measure the diameter by using a tape line in canoes on the river—the only way to accomplish this work—but the current of the river was too strong and we almost perished in the attempt. I am, however, fully convinced that the stratum measures not less than 500 feet. And it is a regular stratum with a well defined footwall and a well defined stratification. It contains, however, numerous traces of native gold, especially near the few small bands of quartz which cross it in spots. Its footwall consists of quartzose hornblendic slates, shows also numerous traces of native gold, fine iron pyrites and the combinations of manganese. These combinations of manganese are very frequent in this part of the province.

Another occurrence of red hematite may be seen directly on the Fraser River above Fort George Canyon, and within a distance of about 1,500 feet from footwall to hanging wall, a series of black slates are interlaminated, intersected and impregnated by red hematite ore in huge, irregular masses. They also contain considerable traces of native gold and form the overlaying strata of twenty feet of coarse gold-bearing stratum of conglomerates referred to above. There is no doubt in my mind that these slates contain a great number of workable deposits of red hematite, though my investigations are as yet incomplete.

These deposits of red hematite in paying quantities, are, as far as I know, the first discovered on the Pacific Slope. They mean the industrial and national economic development, the industrial independence of British Columbia and a new era of prosperity and welfare for her people. It means that at no distant time British Columbia will furnish steel rails for the railways to all the countries bordering on the Pacific ocean, especially to Eastern Asia. It means a revolution in this branch of the iron and steel trade. The discovery of the source of the placer gold of the Fraser River, valuable and important as it may be, is insignificant

when compared with the discovery of these gigantic beds of soft red hematite, directly on the banks of a navigable river, easy of access of railroads, in a country abounding in the best timber, and having magnificent water powers, a congenial climate and the best of coals.

The occurrence of the gold-bearing conglomerates seem to be similar, if not identical, to that of the Transvaal, Southern Africa, but fortunately here there are no Boers.

The red hematite strongly resembles, if it is not identical with that of the Lake Superior region, with which locality I am personally familiar. I take full responsibility for every word this communication contains. It is a matter of self-understanding that all these discoveries have been legally secured. These discoveries offer great opportunities, but only for those with plenty of capital, assisted by technical, mercantile and financial ability. It were of no use at all starting small concerns, trying to open and work the same successfully. It takes organizational talent and millions of capital to open this region, to agitate and to provide for roads, railways, telegraphs, corrections of the river, establishing connections with the outer world, etc., etc. At present this part of British Columbia is nothing else but a wilderness, empty of man and of any indication of civilization.

K. LUDLOFF.

Quesnelle, B.C.

[Mr. K. Ludloff is, we understand, a German geologist, at present engaged by a syndicate of Baltic noblemen, to obtain seeds of the conifers of British Columbia with the object of replenishing depleted forests in Livonia.—Ed.]

PRODUCING MINES.

NELSON.

The mine exports from the port of Nelson for December were as follows:

Coke	\$ 8,037 00
Copper matte	41,695 00
Lead bullion	10,849 00
Gold bullion	26,164 00

Total \$86,745 00

The result of the Hall Mines smelting operations for the four weeks ending December 29th, 1899, were as follows:

Ore smelted 3,132 tons
Containing (approximately)

Copper 69 tons
Silver 40,080 ozs.

The returns from the Athabasca mill for December, comprising a run of 29 days and 16 hours, during which time 344 tons of ore were crushed, are as follows:

Value of bullion recovered \$ 7,852 66
Value of concentrates 2,553 89

Total values recovered \$10,406 55

Value of bullion recovered per ton of ore crushed \$ 22 83

Value of concentrates recovered per ton of ore crushed 7 42

Total values recovered per ton of ore crushed \$ 30 25