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Mines.

OFFICIAL REPORT ON THE MADOC REGION.—

We are not aware that the following report by Mr. Michel, of the Provincial Geological Survey, ever appeared in the newspaper press. We find it in the Official Report of the Commissioner of Crown Lands for 1866. It is rather old, but we find that Mr. Michel's anticipations have been established by more recent tests:—

Montreal, Jan. 20, 1867.

Sir,—I had the honor, some time since, to report to you the results of an excursion which I made to Madoc, at your request, about the middle of November last. In then submitting to you the observations which I had been able to make, and the information which I had gathered regarding the so-called Richardson gold mine I stated to you that I was not allowed to descend into the excavation for the purpose of examining the auriferous deposit, whose extraordinary richness was spoken of in the journals of Upper Canada. Later, on the 16th December, you desired me to revisit the County of Hastings, not to make explorations, which the season of the year would have rendered difficult and costly, but because you hoped that Mr. Richardson and his associates would permit me to visit their mine, and because, moreover, you desired to obtain some certain information relative to various other discoveries of gold, said to have been made in the county. I therefore left Montreal again, on the 18th December, and spent three weeks in excursions in the Townships of Hungerford, Elzevir, Madoc, and Marmora; and now, after having submitted to Dr. T. Starry Hunt the various specimens of rocks and earthy matter collected by me in the different localities visited, I have the honor to lay before you the facts ascertained with regard to the Richardson mine, and other discoveries of gold in that region.

In order to give you an idea of the difficulties attending my examination, I shall mention certain details of which I should not otherwise have spoken. Thus, when I first went to the mine, on the 22nd December, those of the proprietors then present would not allow me to go down into it, alleging as a reason, the absence of Mr. Richardson. Through the new purchasers of the mine, however, some days later, I was permitted to descend, but the number of persons at the same time in the pit, the darkness, and moreover the irregularity of the working, were all unfavourable to my examination. The excavation at the Richardson mine, on the eighteenth lot of the fifth concession of Madoc, is round in form, six or seven feet in diameter, and about eighteen feet deep; the rock in which it is sunk appears to be a chloritic gneiss, more or less mixed with crystalline quartz and orthoclase feldspar, with which crystalline quartz and orthoclase feldspar are also apparent, forming what seems to be a veinstone. The excavation appears to have terminated in a steatitic rock. In the western side of the excavation is seen the gold-bearing crevice, which appears to be an earthy decomposed vein, irregular and twisted, with two expansions or pockets in its course, the one about four feet below the surface of the ground, the other beginning at the bottom of the pit, and extending downwards in the steatite. From the decomposition of the veinstone, there remains now little more than an earthy reddish oxyd of iron, associated with a black carbonaceous matter, in both of which, but especially in the latter, the gold is imbedded. Specimens of a veinstone of ferruginous bitter-spar, with

crystalline hornblende, rich in gold, were shown me, and others of steatite penetrated by gold, but I saw none of these in place, nor was I permitted to make, or cause to be made, the requisite examinations.

One of the new purchasers of the mine, who undertook to show it to me, lying upon his back at the bottom of the pit, and introducing part of his body into the crevice, was able by stretching out his arm, to extract with difficulty, three small pinches of the black matter, which he gave me. This weighing 282 grains, yielded me nineteen grains of gold, worth 76 cents. I was also permitted to gather from the bottom of the pit about two pounds of earthy material, mixed with debris of the rocks. Of this matter, which showed none of the black carbonaceous substance, and traces only of the earthy oxyd of iron, one-and-a-half pounds, gave me, by pulverizing and washing, twenty-four grains weight of gold, worth 96c. Having taken care to examine the little fragments of rock, before pulverizing, I found among them several morsels of bitter-spar, associated with hornblende, and rich in visible gold. I moreover caused to be broken from the gneissic rock, of the excavation, about a dozen pounds, taken from three different places. One of these, weighing about twenty-eight ounces, and supposed to have been taken from near the crevices gave me one grain weight of gold, by a mechanical assay, but the remaining eight pounds did not yield a trace. The most striking peculiarity in this deposit is the association with the earthy oxyd of iron, of a carbonaceous matter, in both of which the gold is disseminated. For the rest, the occurrence of gold in earth oxyd of iron is a fact frequently observed in South America, and elsewhere, as I have myself observed, and as is described by Burat, who refers these oxyds to the decomposition of pyrites, from which they are, no doubt, often derived. In the present case, however, the oxyd would seem to come from the decomposition of the ferriferous spar, as in the case signalized by Dr. Hunt in his Report of last year on the gold-bearing veins of the Chaudiere. To shew the richness of the Richardson mine, it is sufficient to say that the ochreous and carbonaceous matters extracted from the crevice have yielded from fifteen to twenty dollars of gold to the pound. Sixty pounds or more of this material were carried to the United States, by the first purchasers of the mine, and I met numbers of persons in the County of Hastings, having more or less of the gold from this mine in their possession, so that the quantity already abstracted must be considerable.

The gold from the mine, in its native state, is not at all like the alluvial gold of Lower Canada, but is dull reddish in colour, and in thin scales or plates, sometimes dendritic, or more often in fine dust. The abundance of the precious metal would be sufficient to forbid any suspicion of an artificial enriching of the mine, and the peculiar character of the gold, as well as its unusual associations, are so many more proofs, to my mind, of the genuineness of the discovery. Nevertheless, I should have been glad to support my conviction by still farther facts, and I therefore, earnestly begged to be allowed to make, at the cost of the Geological Survey, and in the presence of the proprietors of the mine, some farther trials, which might have easily been made, but I was refused. I was finally informed at Belleville, on the 30th December, that Mr. Richardson and his friends had at last consented, and I at once returned to Madoc, but only to be disappointed, for I learned on my arrival there, that the proprietors had already again changed their minds, and had

filled up the pit with logs of wood and stones, so that, as they said, no one should go down into the mine until they had been paid for it.

It appears evident that Mr. Richardson and his associates, guided probably by the counsels of persons of more experience than themselves, entertain doubts as to the continued richness of the crevice, a question which must rest in doubt until farther explorations shall have been made. Burat remarks, with regard to veins, that they are subject to a great many accidents and variations of form; they swell out, contract, and are sometimes entirely cut off, for a time. It often happens, moreover, that veins, earthy or decayed in parts, are found in other portions of their course, less decomposed, or altogether unchanged. These considerations appear sufficient to show the uncertainty which exists as to the continuity in depth of the vein in question.

I have also visited, in accordance with your instructions, various lots in the Townships of Hungerford, Elzevir, Madoc, and Marmora, where the presence of gold had been mentioned in the Belleville journals. With but few exceptions, the examinations which had been made had been very superficial and slight. On the eighteenth lot of the seventh concession of Madoc, and the seventeenth of the tenth of Marmora, the matters which had been examined for gold consist of a fine, somewhat reddish, silicious sand. Those from the tenth lot of the ninth concession of Hungerford, and the sixteenth of the seventh of Madoc, are of a coarse silicious sand, with a reddish ochreous admixture; while fragments of mica-slate and of gneiss are mingled with the silicious earthy soil which I collected on the fifth lot of the second concession of Elzevir, the fifteenth of the fourth, the sixteenth of the sixth, and the seventh of the fifth of Madoc.

I found traces of gold:

1st. In the ochreous matters adjoining quartz, in the fifteenth lot of the second concession of Elzevir, where I remarked in an excavation ten feet by five, and four feet deep, a band of quartz, whose outcrop is also visible about one hundred feet to the east, its course being east and west. The Hon. Billa Flint showed me a little button of gold, which he had obtained, by amalgamation, from a small portion of ochreous matter from the same excavation. He also, during my stay in the county, found traces of gold in several other localities in Elzevir.

2nd. In an ochreous quartz, which occurs imbedded in blueish and reddish-white limestones, on the eighteenth lot of the seventh concession of Madoc. Two contiguous excavations have been made, one four feet square, and four feet deep, the other eight by ten, and fifteen feet deep.

3rd. In an ochreous matter, and also in a cavernous quartz, holding orthoclase feldspar, both from an excavation about eight feet by ten, and fourteen feet deep, on the shore of Mud Lake, on lot sixteen of the sixth concession of Madoc.

4th. In a ferruginous earth, associated with fragments of white quartz and black tourmaline, from a depth of two or three feet, on the fifteenth lot of the fourth concession of Madoc.

During my stay in the County of Hastings, numerous specimens, rich in visible gold, were shown to me as having come from different localities, more or less remote from the Richardson mine. A person gave me two portions of rock coarsely pulverized, which he assured me he had collected on the nineteenth lot of the fifth, and the eighteenth lot of the seventh concession of Madoc. The first of these gave me, by a mechanical assay, for 1310 grains of rock, not less