

doings, to show you that others, besides ourselves, have confidence in the value of these mines, to invest large sums of money in them. We have had miners at work on our lands since the 15th July, last year. We have sunk a shaft 7+10 feet, 67 feet deep, and have found silver, in various forms, all the way down. The rock is the same as the specimens I sent Messrs. Aldeberg & Raymond of New York, last winter; but there is a decided improvement in richness. We have taken some fine specimens of the black sulphurets of silver, with the quartz rock also. At a distance of 300 feet from the above mentioned shaft, we have sunk another 33 feet, and find the same character of rock. We have uncovered the vein between the shafts and have found metallic silver on the surface, nearly the whole distance. We have also made cross-cuts on the vein, both east and west of the shaft, the distance of 1½ miles, and found the vein carrying a uniform width of from 16 to 22 feet. Our vein was examined by Prof. Rudolph, of Ontonagon, Mich., last summer, and he pronounced it to be the champion lode of the country, and a true silver bearing lode."

GOLD MINING INTELLIGENCE.—The Anglo-Saxon Gold Mining Company's Mill, at Eldorado, is a great establishment, being as much ahead, in size and the extent of its machinery, of the Richardson Mine Mill, as that is of the late Daniels, Scott & Taylor Mill. It is, however, on that account, necessarily of wood, and outwardly, at a short distance, appears to consist principally of roof. On entering the building, which is 125 feet long by 40 broad, this roof is seen to cover an area which is divided by steps into five separate floors. Outside the main building, under an adjoining shed, the sides of which are open, to permit the free entry and exit of carts laden with ore, there is a "Blake Cracker," for breaking the stones into pieces of the size of a pullet's egg, or less, preparatory to being subjected to the action of the stamping battery.

On the first floor within stands the long battery of thirty stamps, of 650 pounds each, and striking each sixty blows a minute; capable of crushing from 30 to 50 tons in 24 hours. The pulverized stone, after leaving the stamps, passes over six tables or "strats" twelve feet long, and copper galvanized. It is thence transferred to the "Verney" grinding and amalgamating pans, 6 feet in diameter, and 20 inches deep, constructed of iron, and working on the principle of a burr stone in a grist mill. It is next conducted to the slime tanks, eight in number, four feet by five in dimension, and four feet deep. From the tanks it is taken by two short lines of railway between the three lines of Wychoff cylinders, ten in each row. After undergoing the rocking process in these cylinders, the ore is discharged into large iron settlers, nine feet in diameter and 30 inches deep, where the mercury is drawn off, and placed in the retort, which is of sufficient capacity to retort 2000 lbs of mercury at a time. The slime left in the settlers is then elevated into a large "huddle," 18 feet in diameter, which separates the sulphurets from the refuse rock—saving the sulphurets for future operations.

The driving power of the machinery is supplied by a steam engine of 75 horse power, but able to work up to 100. The steam is supplied by two locomotive boilers, 28 feet by five, with 73 returning flues in each boiler. Attached is a donkey fire engine, which forces water through 250 feet of 3-inch hose, ready to flood the whole establishment in case of fire. The capacity of the pump for supplying the water needed for various purposes in the building is 80 gallons per minute. Outside the office, there is a Fairbanks platform scale, which can weigh from two pounds up to six tons. On the premises there is also a blacksmith's shop. The engine and machinery are from the Canada Engine Works of E. E. Gilbert, Montreal. The works are now being erected under the superintendence of Mr. Dunstan, who, from the desire shown by other companies to avail themselves of his practical skill and experience, seems to be generally recognised as "the right man in the right place."

About 500 or 600 tons of quartz have already

been quarried, and there are 1,200 cords of wood piled around about the establishment.

The cost of this mill will probably amount to something like \$35,000. Such an investment certainly conveys the impression of faith in the commercial value of the ore rather than of mere speculation.

NEVADA SALT AND THE COMSTOCK LODE.

—It is well known that deposits of salt, of great number and extent, form as well an important item in the commercial resources of Nevada, as also a notable feature in the topography of the country. To those of our readers unacquainted with the character of these deposits and the method by means of which salt is obtained from them, the following extract cannot fail to have a peculiar interest. Mr. Brune's report read thus:

"Like the alkali flats and mud lakes they are confined to the valleys and plains, in which they cover the points of greatest depression, the most of them being adjacent to or encompassed by a belt of alkali lands. They are doubtless of lacustrine origin, what were formerly the basins of inland seas and salt lakes, their deposition being affected through the evaporation of these bodies of water. Besides the extensive beds of this mineral occurring in Churchill, Esmeralda, and Lincoln counties, there are several deposits, as well as a number of saliferous springs, elsewhere in the State, all of which may become of local value on account of their proximity to supposed valuable mines. The most productive bed at present is that of the Sand Spring Salt Mining Company, 75 miles east of Virginia. The claim of this company, consisting of 1,600 acres, occupies a depression of the southeastern corner of an extensive alkali flat, the centre of which for a space of several hundred acres is damp and marshy, and some portion of it covered with a few inches of water. This damp surface is coated to a depth of two or three inches with a crystallized incrustation of salt formed by sublimation of the particles of this mineral with which the clayey strata below are charged. On removing this coating of salt a thin body of fine white clay is exposed, overlying a stratum of soft black clay, which in turn, rests upon another seam of soft and black clay, containing coarse globules of salt. Beneath this seam occurs a deposit of crystallized salt, hard and massive but of an unascertained thickness. In collecting the salt at this place, a tract embracing a score of acres or more is selected, and divided into strips, from each of which in regular order, it is scraped into large heaps with a broad wooden hoe. These heaps, after being exposed for a few days to drain and dry, are conveyed in wheelbarrows or cars running on wooden tracks laid down for the purpose of facilitating transportation over the soft ground and thrown upon platforms or dumps, when the salt is ready for packing and shipment to market. After one of these surface sections has been stripped of salt, the incrustation immediately begins to reform, and so rapidly do the secretions from the saliferous clays below proceed that a few weeks, and sometimes less, is sufficient to fully replace it, admitting of the gathering of a fresh crop at least every month. As masses of the crystallized salt underlying these clayey strata are probably inexhaustible, it would seem as if this process of replenishment might go on forever. These clays are not the primary sources of supply, though no doubt serving a useful purpose in promoting by their heat the sublimation of the saline particles as well, perhaps, as in aiding their condensation upon the surface."

In speaking of the reduction of ores from the Comstock Lode under the head of "Percentage of Yield and Loss," we are told some facts that show the great importance of the cost of labor and fuel in regard to the employment of different metallurgical processes. It has been shown, by experience, that the mills now working the ores of the Comstock lode, extract only about 65 per cent. of their assay value. It seems that the percentage of gold lost, is, comparatively speaking, smaller than that of silver. This is owing to the fact that the gold is present in a freer silver mostly in a combined state. We see that there is an annual loss of about 35 per cent. of the assay value of

the Comstock ores. But we will quote this interesting paragraph in full, as it is suggestive in its character:

"The yield of bullion last year was in round numbers, say \$15,000,000, which would show the loss to have been about \$8,000,000. The enormous extent of this loss is well understood but so far no feasible means of lessening it without diminishing the net profits on the result have been suggested, or at least shown to be practicable. Exceptional lots of ore will work nearer to the assay value, but only in rare instances. The great difficulty to contend with lies in the cost of labor and fuel. The average yield of all ores worked at the present time, does not probably exceed \$35 per ton, equivalent to a loss of \$18.90 per ton, supposing \$35 to represent 65 per cent. of the assay value of the ores. If by using the Freiberg process we saved 80 per cent., the average yield per ton would be \$43.12, or an advance of \$8.12, which would not cover the additional cost of labor and fuel. The price charged for treatment by the Freiberg process in the district is \$45 per ton, with a guarantee of only \$30 per cent. Its non-applicability to low grade ores is at once apparent, the cost of reduction being greater than the average yield of the ores. To make it available, it is evident that the additional 15 per cent. of the assay value saved must cover the increased cost of reduction, which is, say, \$31, so that it will prove valuable only when the ores are worth \$200 per ton and upwards. In practice a lower grade than that may be adopted, it being found by experience that the percentage of loss in working ores by the wet process, increases with the greater value of the mineral. Under these circumstances we must look rather to improvements on the present modes of treating the "tailings" from the mill by concentration or otherwise."—*Journal of Mining.*

NOVA SCOTIA GOLD MINES.—The Halifax *Mining Gazette* thus refers to the gold mining operations in the Uniacke district. A large claim of 248 acres in blocks 11 and 12, belonging to a Montreal firm is now under systematic exploration, and the best results are confidently expected. The Westlake Co.'s mill is making satisfactory progress. The Queen Co. have just passed a batch of ore giving a steady yield of 2 oz; the Union and Central show better and better as they descend; and the Uniacke (McClure), and Montreal Companies are still lifting capital pay rock. Under the efficient management of Mr. J. G. McKenzie the Alpha mine is now being explored, and the mill receiving prompt and thorough repairs. The district will give some astonishing returns when the works of the several organized companies are once more resumed.

A NEW COMPANY.—The London *Canadian News* states that a new Company has been formed under the title of "The Canadian North West Land and Mining Company." It will purchase lands, minerals, &c., on this part of the continent, for trading or working purposes.

Financial.

COINS.—Gold and silver coins are the standards by which we express the value of other commodities, and experience plainly teaches that they are the only reliable basis for the currency of a commercial country. The mints of Great Britain and the United States have issued gold and silver coins, to the value of two thousand million dollars within the present century.

To the philosophical and speculative, the subject opens a wide field, but leaving aside all details about ancient and rare coins, the processes and machines used in coining, counterfeits, changes in prices caused by redundant or deficient coinage, and where the coins go, it is proposed to deal only with variations in the British and American standards of weight and fineness, and the value of coin as metal.

Copper coins need only be considered as tokens, being over-valued from 25 to 50 per cent. The standard fineness for British gold coins is 91½ per cent. of pure gold to 8½ per cent. alloy, and has so continued since 13rd