

the Montague mine, which was one of the most interesting in the Province, and was in the neighborhood of Waverly, there were found in the foot sole of the lode masses of arsenical pyrites about the size of two fists joined together, at very short intervals, and this really amounted to a considerable portion of the lode, which was only two inches thick; but the persons working that mine were so ignorant of anything like the assaying of ores, that they were actually storing it, and proposing to send it over to Swansea, paying heavy freight, to have it smelted there. It was very probable that the pyrites would give from £80 to £120 per ton, at any rate, if the statements made were anything like correct, as it was in appearance exceedingly rich. With regard to the cost of mining, the Nova Scotia methods of working were very limited; but on the other hand, it must be remembered that unless sufficient capital were subscribed to carry on operations for a long time, it would not pay to erect good machinery and pumping gear, which would have to be abandoned in case of meeting with barren ground. It was the case in all metalliferous mines, that a large portion of barren ground had to be opened; and unless there was plenty of capital, a person might be ruined at once by setting up expensive machinery. The fact was, not a single mine in Nova Scotia had been started with anything like what would be considered in England a sufficient capital. That the lodes were in some parts exceedingly auriferous might be gathered from this fact—he had himself been down nearly 200 feet, working a lode of only four inches, which was worked a length of about 300 or 400 feet, which had necessarily required the taking away of a large part of the adjoining rock; but nevertheless the work had been successful. Not only were there these position beds, for there could be no doubt they were true beds, but also a great number of cross leads, and at some points the intersection of these cross leads was the richest part of the lode. This was a point which required a good deal of attention, because if the cross leads were struck, it might cut through two or three lodes without being cut out, and at all points of intersection it might be very rich. By striking on a length of cross lead, and through the main leads, which, as a rule, lay pretty close together, the work would be found much more productive than trying here and there in a main lode, trusting to chance to get a nest of gold.

Dr. Boycott said it appeared, after all, that what was wanted for working these mines was, not so much money as more information and skill. He should like to know whether the Chairman's opinion coincided with that of Professor Hind, as to the gold being deposited from sea-water.

Mr. Botly said society at large must be indebted to Mr. Hind for the paper he had prepared, and particularly for calling attention to the nine causes which had produced failure and collapse in so many cases. Several of them, such as the absorption of the whole of the returns to pay large dividends, the smallness of the operations, the want of labor-saving machinery, and the incompetency of so-called managers, had been fruitful sources of loss in England, particularly the last, and therefore he could well believe that no successful gold-mining operations could be carried on while they continued to exist.

The chairman said that, as an old dabbler in gold mines in various parts, he could not help feeling much interested in the paper, although Mr. Hind appeared to make good his statements as to the structure of this part of Nova Scotia, he could not help being still a little sceptical as to the fact of gold being distributed so regularly throughout a series of beds of quartz. It was true, in a later part of the paper, this statement was somewhat "hedged," and it was pointed out that there were irregularities, which one would have been scarcely induced to expect from the first account of what appeared to be regularly stratified beds. For himself, he could not help

coupling what was said about synclinal and anticlinal beds as a certain amount of theory, and bringing it to bear upon the explanation which was suggested by these facts, viz., that the gold had been deposited contemporaneously with the quartz by the sea-water. If this was so, why was not all the gold deposited at the bottom of the sediment, by reason of its greater specific gravity? But by another part of the paper it appeared that the gold ran only in streaks, and that it seemed to be accumulated near certain crossing of these beds by other lines of quartz, which looked more like true veins. At present, therefore, he could not help saying he thought there was a good deal more to be made out. He had on former occasions visited certain localities, though not in Nova Scotia, where it was said that minerals occurred regularly throughout a stratified mass, but he had usually found such a statement to be the result of deficient observation. In a certain part of the stratified looking mass there had been a dissemination of mineral matter, but very frequently this apparently stratified mass was nothing else but a mass of stratified material ground and rubbed together, and existing between two walls resembling those of a regular vein; or, again, that the mineral matter had been most decidedly intercalated at a period long subsequent to the original formation of the beds. He could not help thinking, in spite of all the excellent accounts which had been brought forward, that this would prove to be the real explanation of the occurrence of the gold in a great part of these Nova Scotia deposits. With regard to the second part of this question, it appeared quite clear there was, throughout a great part of the district, a sufficiently large proportion of gold extending throughout those quartzose deposits, whether beds or veins to pay well for mining enterprise, and the question might therefore be asked, why had it not succeeded better? For a number of years, 600 or 800 men had been engaged in this work, but only a few mines had been successful, and therefore they were much indebted to Professor Hind for the valuable statistics he had brought forward, because the question seemed to be—Given that this was really a gold containing district, was it not possible, that instead of these 600 or 800 men, to employ 6,000 or 8,000, or even more, in raising gold, to the advantage of all parties concerned? Undoubtedly it ought to be so, for there is no doubt that here there was a gold-field such as was seldom to be met with; and if the proportion laid down from the statistics furnished by the Commissioners of Mines were to be depended upon there ought to be machinery and appliances brought to bear upon these mines such as would ensure a very handsome return, to capital invested in undertakings to last over a long series of years. This was really a point of almost imperial importance, for it appeared that up to the present time, the resources of the country had been developed to a pitifully small extent; and no doubt that this was because the undertakings had been conducted by persons unprovided with money, or with that intelligent guidance which it might be presumed they would have had if the matter had been taken in hand by persons better provided with money, without a good supply of which nothing could be successfully carried on. He could not help remembering, when mention was made of the large quantities of ore which had been stamped or crushed in order to extract the gold, that it was not above two-thirds of the quantity which one single tin mine in Cornwall was in the habit of stamping by means of its efficient machinery, worked by steam or water-power, for the purpose of extracting a small modicum of tin ore, and that showed that the work had not been undertaken upon such a scale as to render any great success probable. Again, he noticed that from the larger quantities of ore raised in different places, the proportion of gold was from 1 oz. to 1 oz. 4 dwt., or even 1 oz. 16 dwt. per ton, and that in the Waverly district it was found that a portion of 7 dwt. per ton would not yield a profit. On the

other hand, in travelling through the Tyrol in Italy, a few miles from Innsbruck, there was to be found a mine at Heizenberg, at Zell in the Zillertal, worked for gold only, a mine worked to a much greater depth than any in Nova Scotia (where the richer material would probably produce 10 dwt. to the ton), but where the proportion of gold present in the bulk of the ore was not more than about 2 dwt. per ton.

Commercial.

MONTREAL MARKET.

MONTREAL, July 19.

The remarks as to the weather must be a repetition of last week; it has been uncomfortably warm, with the thermometer ranging from 85 degrees to 95 degrees. On Wednesday, the 13th inst., one of the most tremendous tornadoes ever experienced here passed over the city spreading ruin and destruction in the path which fortunately was a narrow one. It apparently took its rise in the Lake above Lachine, and came down the track of the railway. It unroofed the glass works, tore down the telegraph lines and posts, unroofed houses without number, and expended itself about the south end of St. Helen's Island—the amount of damage done to property is very great, and had it extended over the whole island, must have been ruinous both to grain and fruit crops. The accounts from country districts in this Province report grain crops as short in straw, and likely to be deficient in yield. Hay is much below an average crop. Potatoes look well and promise a fair yield, although in some places the seed was dried up after being planted, owing to the dry hot weather which prevailed at the time of setting. The exciting news from Europe has rather disturbed business. Flour is excited and greatly advanced in price. Ashes active and firm. Provisions advanced and firm. Freights dull and declining.

ASHES.—Owing to the firmness exhibited in the British market, prices have advanced here, and sales have been made considerably over last week's quotations. The warlike aspect of affairs in Europe gave a still stronger feeling to the market, and sales of first pots were made at \$5 70, \$5 75 and \$5 80, market closing firm at \$5 80 1/2 to \$6, according to tares. Seconds are \$5 10 and thirds \$4 40. *Pearls*—There were purchasers of this ash early in the week at \$7 50, a decline took place and some parcels were disposed of at \$7 25, being a decline of 75c from the highest point reached this year; market has since advanced and closed firm at \$7 25 to \$7 40; seconds \$7.

BOOTS AND SHOES.—The amount of business done this week was inconsiderable, and sales are likely to be small for three weeks or so. Prices are unchanged, but an advance is looked for when the Fall trade sets in.

COAL.—There has been very little doing during the week; an advance on some kinds has taken place. Scotch Steam is now quoted \$5 25 to \$5 75; Smith's Coal \$6 50 to \$7 00; Coke (Gausfield), \$8 50 to \$9. No change to notice on Lower Port Coal.

DRUGS AND CHEMICALS.—Demand for most articles has been light. Caustic Soda is in fair demand, with sales at 3 1/2c. to 3 3/4c., last week's rates 3 1/2c. being asked for choice samples. Sal Soda and Soda Ash are unchanged in price; Bi-Carb. unchanged, in small demand; Alum is enquired for and held at \$2 30 to \$2 40 for small lots, lower prices would, however, be taken for large packages. No change in other articles.

FISH.—Salmon in barrels is now held for higher prices, but we have heard of no sales over last week's rates. Herrings are neglected. Dry Cod is scarce and firm, \$5 50 to \$5 75 being asked for good samples.

FLOUR.—The receipts for the past week were, 25,610 barrels. Total receipts from 1st January to date, 432,940 barrels, against 402,917 barrels