

also the Provincial and Orient Companies' mines. The Orient mill has been refitted by Mr. E. Leatham with Windsor mortars and cams, and it is now "the Mill of Wine Harbor." The Provincial mill of 8 stamps is working steadily. This company will soon erect a 15-stamp mill with a 60 h.p. engine, and combine pump and hoisting gear under one action. The Eldorado Co. are putting 10 stamps in the old English mill, the original machinery of which has been torn out to make room for them. The steam mill on the Eldorado property is a great success, but through the negligence of a workman some portions of the machinery were injured, and it is now being repaired which have to be done at Boston.

UNIACKE.—The reports from this district continue favorable. The mills are all going and we expect to have a large bullion supply in next issue. A lot of 22 tons from Mr. Burkner's wide lode, reduced at the Alpha mill, gave 12 ozs. 11 dwts. The North St. Lawrence Co. report a small but exceedingly rich lode.

INDIAN PATH.—Messrs. Waddell and Macdonald are working two lodes (one from 6 to 7 ft. the other about 8 inches wide), which show gold freely. This field is likely to prove of great importance.

ECUM SECUM.—Mr. F. S. Andrews has favored us with an interesting report of this district, and the works of the Atlantic Co. which he has gone down to manage. The prospects of this district, too, are very bright. Mr. Andrews' report will appear in next issue.

WAGAMATCOOK.—Mr. D. V. Estlin recently visited this district and speaks favorably of the future of this field for placer mining. —*Mining Gazette.*

THE SMELTING OF COPPER ORES IN CANADA.

Some facts from trustworthy sources have lately come to our knowledge in regard to the present manufacture of copper from a pyritous ore in the Province of Quebec, about eighty miles distant from the city of that name, on the Grand Trunk Railway. They are of a very cheering character, and coming to us as they do, at a time when the copper interest generally is in a very depressed condition, we feel inclined to make them the basis of a few editorial lines. They may serve to encourage those who are engaged in similar undertakings, but unfortunately not with the same success. At all events we have good testimony to the effect that even at the present unprecedentedly low rates of ingot copper in the market it is possible to utilize low grade ores, and that too at a fair rate of profit. The facts as given to us by one of the gentlemen who assisted in inaugurating the enterprise run about as follows:

Through the talcose and chloritic slates of the region of the country alluded to, cuts a vein of copper ore, having an average width of ten feet. The vein yields a low grade pyritous ore, assaying only about four per cent. of copper. The conditions of the vein are, however, such that it can be easily worked, the expense of the mining the ore amounting to some \$2.15 per ton in gold. The ores are broken, sorted, and roasted in heaps in the open air, at a cost in gold of seventy-five cents per ton. This work is done by contract; the contractor preparing the fuel necessary, a great abundance of timber being near at hand upon the lands of the company. Thus much for the mining and preparation of the ore for the following process of smelting. This is done upon the works erected near at hand, consisting of four furnaces supplied with a cold air blast, a steam engine furnishing the necessary power. We understand that the furnaces were modelled after those in use upon the works of the Revere Copper Company, at Point Shirley, near Boston,

but have since undergone some slight modifications, in order to adapt them more perfectly to the nature of the ore, and to bring out the most practical results. The fuel used for smelting the ore is of the very best. It is imported from New Castle on the Tyne, and costs delivered at the works thirteen dollars in gold per ton. The gangue mass in the vein is of such a nature as to render the use of a flux necessary. We have now to speak of some of the results of the practical working of these furnaces. We confess to no little surprise when our attention was called to them, and are of the opinion that copper men generally are quite as little prepared for them as we were, for, in point of successful copper smelting they really go beyond the precedent. Two furnaces running at the same time, produce nearly five tons of matt per day. Each furnace has a capacity of about twenty-three tons of ore in one day of twenty-four hours. They run, of course, day and night. The consumption of fuel is remarkably light, and the amount of concentration proportionally great. We are informed that every ten tons of ore produce one ton of matt, containing nearly forty per cent of copper. This is as it should be, when we remember that it is a four per cent. ore that is taken from the mine. As we have it in our notes, the average percentage of the matt produced in the last six months amounts to thirty-seven and nine-tenths per cent. The cost per ton of ore all told, for smelting, amounts to the sum of four and a quarter dollars in gold. This copper matt is subjected to no further treatment upon the works, but shipped to Liverpool and there sold in the market at the ruling rates. The cost of shipment, including freight, insurance, commission, etc., amounts to twelve dollars in gold. At the present market rates of copper, the matt sells in the Liverpool market for some \$130 in gold per ton. In connection with the manufacture of copper matt, there is one point of peculiar interest that we must not fail to mention, as to it the success of these works is in a great measure due. In the smelting of pyritous copper ores it is generally necessary to blow out at the expiration of a few days, or at the most, in a couple of weeks, and rebuild the interior portions of the furnaces, they having become meanwhile so eaten away and changed in form as to render it impossible to bring about the desired metallurgical results without such reconstruction. But, in this instance, by some slight modifications of the furnaces, together with a certain peculiar management, it has been possible to largely overcome this difficulty. It seems that when the fire brick lining of the furnaces is eaten away, a certain peculiar course of procedure on the part of the smelter causes a new lining to form in place, composed of the slag from the smelted ores. It is certainly a very anomalous course of procedure, but as long as it brings about the required results at the lowest rate of cost, nothing could be better. At the time of our interview with our informant, one furnace had entered upon its tenth week of work, and appeared good for two or three weeks more before it would be necessary to refit. It is evident that for the smelting of this kind of ore, under the above conditions, there has been a great improvement made—an improvement that may, perhaps, be made to serve the interest of others engaged in a similar work. If the price of copper in the market is going to remain at its present low figure, there must be a proportional decrease in the cost of its production, if not, our copper mines will have to remain unworked and our smelting mills stand still. We are only too glad amid the general stagnation that now prevails among the copper industries of the country, to be able to record what we have of an enterprise that has sprung up in our midst during the past year, and by means of a proper application of enterprise and skill been brought to such a good degree of success. We hope to obtain in the future, still further information in regard to the enterprise, that will be of general interest to our readers. —*American Jour. of Mining.*

GEOLOGICAL SURVEY OF NOVA SCOTIA.—We understand that the survey of the Province is being vigorously prosecuted. Sir W. E. Logan has been for some time at New Glasgow with his assistant, Mr. Hartley, making researches in the numerous coal mines of that vicinity. Dr. Dawson, we believe, has also been observing in the same district, as well as at Mount Uniacke and in Cape Breton. Professor How has been engaged during the summer in Digby and Annapolis Counties, and has forwarded large collections of specimens to the office of the Survey at Montreal. Dr. Honeyman has been occupied in the County of Antigonish, and is now, we understand, in Cape Breton. As no official reports can be expected for some time, the exact scenes of the labors of the officers of the Survey will not, of course, be always accurately known, and, with the results, can only be conjectured in the meantime. The survey, it will be remembered, is geological, and not merely mineralogical. We believe some very interesting additions have already been made to the large amount of paleontological material accumulated by previous observers. These and whatever discoveries of useful minerals are made will be duly announced in the official reports which will not probably be issued more frequently than once every year or two. —*Mining Gazette.*

Insurance.

INSURANCE MATTERS IN MONTREAL.

(From a Correspondent.)

MONTREAL, Oct. 6, 1868.

Incendiarism is still the order of the day in this city. Since my last we have had seven fires, six of which were in exposed stables, all purposely fired. Five of them were insured with the "Royal," the loss on which, will not, however, exceed \$1500. The only accidental fire occurred in Radway's Ready Relief medical establishment, caused by the man in charge putting the hot ashes in a box in one of the upper flats of the building. The firemen speedily got the fire under, and the loss will not exceed two hundred dollars. Messrs. Radway & Co. have presented the Brigade (which numbers only 32 men) with one hundred dollars for their exertions.

The corporation have not yet offered the \$1000 reward for the arrest of the gang or any of the gang of incendiaries, but the matter is on the orders of the day for the first meeting of the Council. Insurance Agents here are rather nettled at the remarks in my last, as to their inactivity, and yesterday they had a meeting, and it is stated that they intend offering a reward of \$1000. I have, however, no faith that such a step will be taken. There has been a meeting of the Corporation, at which the question of petitioning the Local Government to do away with the present office of Fire Marshal, was debated and finally passed by a vote of 14 to 6; this, however, will not have the effect of abolishing the office, though it may cause the removal of the present incumbents. There can be no question, that the bill is not properly worked, and it can only be done so by some party who can attend each fire on its first discovery.

I hear it rumoured that it is in contemplation to remove the present agent of the "Provincial" here and replace him by Mr. T. Hart. This will not improve the business, as it is only a few days ago, that a judgment for a few hundred dollars against the company was offered on the street here by one of our brokers. No agent can get business for a company when such facts are well known.

The Western, of England, have paid nine shillings in the £ to those who had claims in this city, and they offer 15s. in full to any claimants who may prefer that to waiting for the winding up and final dividend.