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## MINING REVIEW

VOL. 2.—No. 9.

1884—OTTAWA, SEPTEMBER—1884

VOL. 2.—No. 9

Canadian Mining Review.  
OTTAWA.

PUBLISHED MONTHLY.

ANNUAL SUBSCRIPTION - - - \$1.00

ADVERTISING RATES—15c. per line (12 lines to 1 inch).

OFFICE:

UNION CHAMBERS, 14 Metcalfe Street.

*The CANADIAN MINING REVIEW is devoted to the opening up of the mineral wealth of the Dominion, and its publishers will be thankful for any encouragement they may receive at the hands of those who are interested in its speedy development.*

*Visitors from the mining districts as well as others interested in Canadian Mineral Lands are cordially invited to call at our office.*

*Mining news and reports of new discoveries of mineral deposits are solicited.*

*All matter for publication in the REVIEW should be received at the office not later than the 5th of the month it is to appear.*

*Address all correspondence, &c., to the Publishers of the CANADIAN MINING REVIEW, Ottawa.*

In another column we reprint an article from the Victoria, B.C., *British Colonist*, which has recently appeared in that journal under the heading "Provincial Rights to the Minerals." It would appear from the tone of this article as well as from the public notice of Mr. Vowell, the Gold Commissioner at Shuswap, that the Province of British Columbia will consider itself unfairly dealt with if the Canadian Pacific Railway Company, through the Dominion Government, does not reconvey to British Columbia all the valuable mineral deposits that may be found to occur, within the railway belt, on territory of

which the C. P. R. Co. is now the owner. In conveying to the Dominion Government these lands along the line of the railway, to be appropriated in such manner as it might deem advisable in furtherance of the construction of the railway, no reservation of the minerals was made. The C. P. R. Co. now holds the lands without any such restriction and it will be difficult to make good a claim of the Province to the mineral wealth within the belt.

Sir John Laws, and his practical chemist, Dr. Gilbert, of London, England, have brought out several new and important facts in connection with phosphate as a mineral manure which cannot fail to become a great source of revenue to Central Canada, and especially to the Province of Quebec.

The Lord Bishop of Ontario on his return home from the Rockies, expressed a high opinion as to the future of that great country, which is in itself a vast kingdom. Its agricultural, mineral and commercial prospects have impressed most favourably the large body of British Scientists, who formed the party with His Lordship. This meeting of the British Association in Canada will tend greatly to bring our country to the front in many respects, and the Bishop of Ontario is to be congratulated in being the prime mover in bringing to a successful issue this vast scientific gathering in our Dominion. Our resources, our people and our country will now be warmly discussed in the homes of our brethren across the sea, and the interest aroused will greatly advance the prospects of Canada.

The trip made by these scientific gentlemen to the Rocky Mountains was unattended by accident or casualty to cause a moment's inconvenience or discomfort, or to mar, in any

manner, their enjoyment of so extended a journey. The displacement of rock which occurred in the C. P. R. tunnel at the Rockies, when the visitors were examining it, might have proved more serious than it did. As it was, Dr. Selwyn, Director of our Geological Survey, narrowly escaped severe injuries; he, however, received nothing more than some bruises, to which he attached little importance.

Mr. J. F. Carll, State Geologist, of Pennsylvania, returned to his home during this month after having spent some weeks among the phosphate mines of Ottawa County. Mr. Carll came to Canada for the express purpose of thoroughly investigating our phosphate deposits in the interests of a party of American capitalists whose intention it is to acquire mining rights in the country, upon his favourable report, and to engage extensively in mining. Mr. Carll has carefully looked into everything connected with this mining industry, and the result of a still more careful examination of the mines in operation, as well as some undeveloped properties, has led him to express a very favourable opinion of the productiveness of the phosphate deposits of the district.

Mr. J. G. Miller, who for many years was identified with phosphate mining in Canada, was in Ottawa during the month. Mr. Miller has been engaged for the past three years in phosphate mining in the vicinity of Porto Rico. He was struck with the marvellous development of the industry in Ottawa County during the few years he had been away.

Mr. A. A. Humphrey was in Ottawa recently and gave a most interesting account of the gold mining operations which he is so successfully conducting in Beauce in Mr. W. A. Allan's interest and his own. He reports that the present prospects are more encouraging than he had dared to hope for.

The Harbert Telephone for private lines, advertised in another column, promises to be a useful instrument to miners. One has been erected at the "Little Rapids" phosphate mine and saves the manager many tedious trips between the office and the works.

## OUR PHOSPHATE TRADE.

The phosphate shipping season of 1884 is nearing its close, and when the balance of the output of the Ottawa county mines will have been forwarded across the Atlantic it will be found that the total shipments during this season of navigation will exceed, by several thousand tons, the output of any former year, and the quality of the phosphate already forwarded, and awaiting transportation, is of a much higher grade than that which our mines have ever before produced. As we showed, by a report of the mines in the last number of the REVIEW, the chief contributors to the general output this year have been the "High Rock" and the "Union Phosphate Company's" mines in Portland West, the "North Star" in Portland East, the "Emerald" in Buckingham Township and the "McLaurin and Blackburn" mine in the Township of Templeton. It is estimated that before the close of navigation these mines will have sent forward about 20,000 tons, and the probable output of the County of Ottawa will aggregate 23,000 tons. Of the mines in the du Lievre district none have developed more satisfactorily than has the "Little Rapids" mine in the First Range of Portland East. This property has been carefully and thoroughly worked into shape during the past few months for permanent mining on a mining-like system. Drifting has been started on the veins at different levels in the shafts with most encouraging results. Extensive bodies of phosphate of a superior quality have been exposed which more resemble the form of fissure veins

than anything that has been met with in the history of phosphate mining in the district. A hitherto undiscovered deposit of mineral has recently been uncovered on this property and has been partially opened up, and its further development will unquestionably add to the value of what is already a very valuable property. The "Little Rapids" mine will certainly be one of the large producers of the future. Each of the other mines above mentioned continue to yield an average daily output about as reported last month, and the superintendent of the Dominion Phosphate Company reports satisfactory progress at the company's "Washington" mine in Buckingham Township. In short nothing could be more encouraging than the reports received from the mines during the month. Mine owners have reason to be satisfied with the result of the year's operations, for, although prices have not ruled as high this season as they might have wished, the low rate for ocean freights at the opening of navigation, and for the past few weeks, has enabled shippers of phosphate to realize \$17 to \$18 per ton at Buckingham station, equivalent to one hundred per cent. profit all round on the cost of mining and transportation to that point.

The shipments of phosphate from the Perth and Kingston districts show a slight falling off from former years, and will probably not aggregate more than 2,500 tons, of which Capt. R. C. Adams' "Otty Lake" mine, in the Township of Burgess, has contributed about 800 tons.

The prospects for next year are very bright for Canada's phosphate industry. Many valuable properties in the County of Ottawa have been prospected during the past few months and their owners are making preparations for permanent mining in which they are justified by the flattering reports forwarded to them by their prospectors. It is not improbable also that before next year's output begins to move a large amount of foreign capital will have been invested in this industry. Our phosphate deposits are attracting the attention of English, European and American capitalists and hardly a day passes that does not record the arrival of some foreigner in our phosphate district, the object of whose mission is to thoroughly investigate with a view to acquiring mining rights. Numerous letters have

been received at this office from abroad asking for information concerning our phosphate deposits, and if property owners who have not the means to engage in mining will be but reasonable in their demand, there is no reason why a very large amount of foreign capital should not be available for the more rapid development of the phosphate industry. The following extracts from a report of Major Edward Willis, of Charleston, on this industry in South Carolina, which has appeared in the *N. Y. Mining Record* will serve to give our readers some idea of the magnitude and importance it is possible for phosphate mining to attain in the hands of an enterprising people.

"The importance of the phosphate business to Charleston cannot easily be overestimated. It has grown to such proportions that it has been felt necessary by the miners to form an exchange for the better regulation of the business. As an outcome of this feeling, the Phosphate Miners' Exchange was formed in March last, all of the miners of land rock in this vicinity, with unimportant exceptions, being members, and the plan has worked very satisfactorily.

The following table shows the value of the phosphate business, the shipments and consumption in the year just closed (September 1st), as compared with the preceding year, this year's being the largest on record and representing at the rate of \$6.50 a ton, a gross sum of \$2,659,169 for 1883-84.

	1882-83	1883-84
Shipments, foreign and coastwise, from	Tons.	Tons.
Charleston, and by rail.	157,714	183,611
Shipments from Beaufort .....	158,754	127,600
Total tons.....	355,468	310,911
Consumed by local manufacturers.....	53,635	42,620
Grand total tons....	409,103	352,631
<i>Phosphate Stock.</i>		
	Bid.	Offered.
Atlanti-Phosphate Company Stock, par \$100	125.00	130.00
Stone " " "	150.00	155.00
Etiwan " " "	70.00	75.00
Edisto " " "	38.00	38.50
Wando " " "	95.00	98.00
Charleston Mining and Manufacturing Co. par \$100.....	165.00	170.00

#### Phosphate Quotations.

Latest advices quote Canadian phosphate in the English market at 1s. 1/2d. for 75 per cent. with a fifth of a penny rise. At this season of the year no advance is looked for over this price.

#### FREIGHTS.

Shippers of phosphate have secured tonnage during the past month at nominal rates. Ship owners have been offering as low as 1s. 6d. by steamer to London and Liverpool, and some contract were made at 3s. 6d. per ton to each of these ports. Unfortunately a large portion of the year's output had gone forward at much higher rates during the summer.

### A NEW INDUSTRY

#### IN CONNECTION WITH OUR PHOSPHATE TRADE

For the past year or more the feasibility and practicability of shipping the output of our phosphate mines, or a portion of it, in a ground state has been discussed, and it is apparent that this can be done to advantage from the fact that, after thorough investigation, two parties of American capitalists, who are each of them interested in phosphate mining in the du Lievre district, have simultaneously decided to engage in this new industry of grinding the phosphate rock, and for this purpose are now making the necessary preparations. The Union Phosphate Company have purchased a small mill on the du Lievre River, immediately south of the C.P.R. crossing at Buckingham, which they are fitting up with suitable machinery. Mr. G. H. Bacon, now of Ottawa, associated with some gentlemen of Boston and Charlestown, S. C., has leased some ground with the water privileges, known as the Bang's property, also to the south of the railway crossing of the du Lievre, and will engage extensively in this business. This venture, if it proves a success, should stimulate the phosphate mining industry, and doubtless it will, as it is the intention to utilize the low grade of rock for which there is at present no market in its unground state. The output of the mines situated in Templeton and Wakefield can be delivered in barges at a point near the mills.

### A MONSTER CRYSTAL.

A phosphate crystal weighing eight hundred pounds has been presented to Mr. W. A. Allan, of this city, by the owners of the famous "Emerald" mine. It is a rare specimen and is the largest phosphate crystal known to have been discovered in Canada. Mr. Allan has had it placed in our office, where it may be seen by those who take an interest in such curiosities.

The Ontario silver mine, Utah, has shipped bullion amounting in value to \$1,128,067.64 during the twelve months ending August 31st. The receipts of bullion at Salt Lake City for the first eight months of the present year have amounted to \$3,647,332.48.

## Distinguished Visitors

—AT—

### OUR PHOSPHATE MINES.

Prof. W. BOYD DAWKINS, of Owens College, Manchester, England; WILLIAM TOPLEY Esq., of the Geological Survey of England, and H. BAUERMAN Esq., Royal School of Mines, both of London, England, visited the "Little Rapids" and the "Emerald" mines, and were very favourably impressed with the fine display of high grade mineral which met their eye in the bins and in the mines. These gentlemen are members of the British Association for the Advancement of Science, and it is fortunate that they were enabled to find an opportunity to examine these properties before returning to England. Prof. Dawkins has expressed himself, not only much interested by what he saw, but very much pleased, as well, to find that Canada possesses such extensive deposits of so valuable a mineral. His opinion, based chiefly on what he saw at the "Little Rapids" mine, is that mining has not yet reached a depth at which even much larger bodies of phosphate than what he saw might reasonably be looked for. Prof. Dawkins is one of England's greatest geologists and much value and importance is attached to his opinions, by the people of England, on all matters relating to geology and practical mining. That he should have formed so favourable an opinion of the prospects for the future of our phosphate mining industry is most gratifying to those engaged in it. In his trip to the mines Prof. Dawkins was accompanied by Dr. J. A. Grant and Mr. W. A. Allan, of Ottawa.

### Ottawa Colonization Railway.

#### The "Short Line" to be Built.

The construction of this railway has been, for the past two years, a subject of much interest to the phosphate mine owners in the du Lievre district, and, although the holders of the charter have repeatedly asserted that work was to be at once begun on the line, up to the present moment not a sod has been turned. It was at one time supposed that the President of the company had overcome all monetary difficulties when he induced a party of American capitalists to take up this enterprise, together with the construction of the Gati-neau Valley Railway. Shortly after this was accomplished the company started grading northward on the last mentioned road, and after a few miles had been graded operations were suspended. Since then there appears to have been a mystery hanging over the movements of those who are behind the scenes. When it was found that the coa-

struction of the Ottawa Colonization Railway from Buckingham northward was likely to be indefinitely delayed, the phosphate shippers made a request that the company should build that portion of the line which would connect Buckingham village with the Canadian Pacific Railway at Buckingham station, to enable them to forward the output of the mines direct from the landing on the du Lievre River at Buckingham village to Montreal, and thus save the expense of transshipping in waggons over three miles and a half of road, almost impassable at any season of the year, and altogether impassable during the spring and autumn months. This request having been stubbornly disregarded by the company, some of the enterprising phosphate miners offered to construct these three and a half miles of roadway under the Ottawa Colonization Railway charter, and to agree to hand over the same to the company when it should find itself in a position to reimburse them the actual cost of construction. This offer has been made by two distinct parties of mine owners and rejected. A gentleman of this city, who is deeply interested in our phosphate industry and is an extensive owner of phosphate lands in Ottawa county, and who has already invested a large amount of money in the O. C. R. made the proposition to construct this *short line* himself on equitable terms. His offer has also been disregarded. The time has

now arrived when we may ask, where lies the mystery? Judge Sypher, of Philadelphia, representing the supposed American capitalists, was in Ottawa recently. What was the object of his visit? and did he accomplish it if he had one? It is certain that he studiously avoided meeting the very men who ought to be consulted before any new movements were decided upon, and from what we can learn, some arrangement has been entered into between this company and the Canadian Pacific Railway Company. It is now a settled fact that the C. P. R. Co. are to construct the *short line* and work will be begun thereon at once. A game of bluff has been going on between the Sypher party on the one hand and Mr. Van Horne on the other, and it would appear that the latter has *drawn* most successfully. It is natural to suppose that Mr. Van Horne will build this branch line under the Occidental Railway charter, and, if such is the case, can it be that Judge Sypher and the American capitalists associated with him will have permitted this to come to pass without receiving some substantial consideration from Mr. Van Horne? And why have Mr. Mackintosh, the President of the Ottawa Colonization Railway, and Mr. Allan, the Vice-President, been kept in ignorance of this deal? That there has been intriguing at the expense of some one, there can be no doubt, but the road is to be built and phosphate shippers will be glad to know it.

city of Mexico, are as direct consequences of the production of so much gold and silver from the mines of this country since 1848, as is the existence of such a city as San Francisco upon the shores of the Pacific. Even the fact that California has at present fully 125,000 acres of lands planted in vineyards worth on an average at least \$200 per acre, and that the State possesses fully *one-tenth* of all the sheep in the United States, and produced 40,840,000 pounds of wool in 1883, may be rightly ascribed to the production previously of so much gold from its teeming placers. To the same cause, also, may be attributed such commercial results as the shipment from San Francisco during the nine months ending the 31st of March, 1883, of wheat and flour to the value of nearly \$22,000,000. But independently of these and many other as remarkable agricultural results incident to or consequences, as we maintain, of the gold and silver output of our Pacific Coast mines, the actual dividend results, which were reported in the *Mining Record* during the calendar year 1883, make a most satisfactory showing, as may be seen from the following extract of them:

	Mines.	Amount paid.
Arizona.....	4	\$1,162,500
California.....	11	1,119,976
Colorado.....	16	1,323,250
Dakota.....	3	665,900
Georgia.....	1	28,000
Idaho.....	4	85,000
Michigan.....	5	2,670,000
Montana.....	5	1,513,824
Nevada.....	8	856,000
New Mexico.....	1	500,000
Utah.....	5	1,582,900
Total.....		\$10,505,550
Sonora, Mexico.....		200,000
Nova Scotia.....		15,000
Total.....		\$10,720,550

Subtracting from the foregoing the product of the copper mines of Michigan and of the quicksilver of California, in the aggregate \$3,130,000, as also \$215,000 derived from the gold mines of Sonora and Nova Scotia, and we have \$7,375,550 as the dividend result of mining corporations, upon a total product for the year 1883, reported by Mr. J. J. Valentine, of the States west of the Mississippi and of Missouri, as follows:

Gold.....	\$27,816,640
Silver.....	42,075,101
Lead.....	\$9,163,550
Copper.....	15,683,921
Total.....	\$84,639,212

The dividends thus aggregating \$7,375,550, and constituting 8 1/2 per cent. of the whole value of the copper and lead as well as the gold and silver mined in the Western States, we repeat, were paid exclusively by incorporated mining companies, while much the larger part of that product was derived from mines not owned by corporations but by individuals or by private companies that have made no report of dividends or profits.

To sum up, we may state that for the six years ending December 31, 1883, the dividends reported by those incorporated companies, and the product of the Pacific Coast mines annually, have been about as understated:

	Amount of reported dividends.	Product.
1878.....	\$21,100,000	\$ 78,277,000
1879.....	9,200,000	72,689,000
1880.....	9,500,000	77,233,000
1881.....	12,675,000	81,299,000
1882.....	10,950,000	89,208,000
1883.....	10,690,000	84,640,000
Total.....	\$75,115,000	\$483,246,000

That is to say, the shareholders in incorporated companies have received as much as 15 1/2 per cent. of the amount won from the mines for the period in question. And in the face of such facts and figures, there should be less gabble about the alleged precariousness and unprofitableness of the business of mining for the precious metals.

\*This does not include the dividends which were paid to the extent probably of \$200,000, we are very sure, by the Grand Central of Tombstone.

†Does not include dividends probably paid by the E. E. Lee mine of Leadville during 1883.

‡Does not include dividends paid by several important properties at Butte of which we could elicit no report.

§This lead was derived from silver bearing ores.

¶This does not embrace copper from the mines of Michigan.

## The Dividend Results of the Mining Industry for 1883.

(N.Y. Mining Record.)

The industrial and economic importance to the country of its mines, of the money metals and of copper and lead, and in fact of coal and iron, is by no means to be measured by the mere sum total of dividends or profits that have accrued to their owners year by year from their exploitation. Far from it. The production of gold from the mines of California to the amount of say, \$1,175,000,000 between 1848 and 1883 is in nowise to be gauged in its economic consequences to the people of the country by the actual share of it that went into the pockets of those who either by their labour or capital extracted it from the earth. Nor is the product of the Comstock lode, variously estimated at from three hundred to three hundred and fifteen millions of dollars, to be considered from the point of view of the profits which accrued to the shareholders of various corporations. The consequences of our production of the money metals since 1848 reach immeasurably beyond any totality of actual profit derived by individuals or corporations engaged directly in the industry of their extraction and to an extent not approached, even approximately, by the product of any other industry whatsoever.

Imagine the commercial and industrial condition of our country, and indeed of the world at large, at the present writing, without having had during the last thirty-five years the steady stimulus of the immense amount of gold furnished in the aggregate from the placers of the Pacific Coast States and Territories together with that of the mines of Australia, the discovery of which, unquestionably, was a direct consequence of the finding of gold in California in 1848. These discoveries, be it remembered, happening as they did, at a time of world-wide industrial and commercial adversity and indeed of a *money famine*, immediately served to restore life and health in every workshop of Europe and America. It opened new homes for the starving people of Europe and new regions for human intelligence and energies to develop with a profitable scope and reach hitherto wholly unknown in the history of the earth. The three or four railways which to-day stretch across our national territory from the Atlantic to the Pacific, with another extending from our southern border to the

## LAKE SUPERIOR MINES.

## The Huronian Takes the Lead,

AND MAKES ANOTHER SHIPMENT OF BULLION.

## A ZINC MINE

—AND—

OTHER VALUABLE MINERAL DEPOSITS.

## MORE IMPORTANT DISCOVERIES.

During the past month we have been able to collect some reliable information relative to the mining industries on the north shore of Lake Superior and the present condition of the mines that are now being developed. From what we have learned there can be no question that the developments, up to date, at the famous "Huronian" have placed it far in advance of all the mines in the district, and have established its reputation as a gold and silver producer. A ten stamp mill is in operation on the company's property, which turns out a ton of concentrates daily, besides the metal which is saved in the amalgamated copper plates. The ore is partly free milling, and what is not caught in the plates is concentrated over a Freu Vanner. It has been decided to treat the concentrates at the mine by the chlorination process, and for this purpose works will be at once erected. The main shaft is down 100 ft., and 100 ft. of drifts have been run on the vein, which is 6 ft. to 8 ft. in width, and has been prospected for 2,000 ft. in extent. It is a true fissure vein, drifting to the north-west at an angle of about 70°, and carrying gold and silver in large quantity. The average surface ore has yielded \$36.30 in gold and \$13.00 in silver, while an assay of some of the high grade ore returned \$5,971.60 per ton, of which \$4,652.03 was gold and \$1,219.57 silver. The vein occurs in a formation of semi-crystalline, greenish slate, in the Huronian series. Specimens of the quartz from the vein have been forwarded to this office, in which free gold can be seen with the naked eye to be well distributed. The company does not look for profit from the very high grade ore so much as from the entire vein-stone, every pound of which yields gold and silver in paying quantities. This vein carries sylvanite, a compound of gold, silver and tellurium, a mineral never before met with in any mine in the Dominion. In addition to other plant, the company has a separate hoisting engine at the main shaft and a tramway from the shaft to the mill; also a saw-mill attachment for cutting lumber, etc. The mine, which is situated about 100 miles from Port Arthur and 50 miles from Savanne, a station on the C. P. R., was visited recently by Messrs. Hiram Robinson and W. A. Allan, of Ottawa, stockholders in the company, and Mr. Alexander Fraser, one of the Directors. These gentlemen returned to Ottawa very much pleased with what they had seen, and bringing with them a handsome bar of gold, weighing about 20 ounces. As soon as the heavy expenditure necessary to equip the mine ceases the Huronian company will unquestionably pay large dividends. Several shipments of bullion have already been made, and one of concentrates. The last bullion shipment was forwarded from the mine at the beginning of the present month. The company is a strong Canadian organization, as the following names of the Directors will show: James Maclaren, President Bank of Ottawa, President; Thomas A. Keefer, Esq., Port Arthur, Vice-President; Charles T. Bate, Mayor of Ottawa, Secretary-Treasurer; Hugh McKay, Esq., Montreal; Alexander Fraser, Esq., Westmeath; Peter McKellar, Esq., Manager at the mine; Robert Blackburn, Esq., New Edinburgh, Francis Clemow, Esq., Ottawa, and Alexander Johnston, Esq., Strathroy. Adjoining the "Huronian" property is the "Highland" location, on which some development work was done during the past summer. This mine, as well as the "Huronian," was visited by Professor Selwyn in 1883, and, as the following letters will testify, his observations lead him to form a very high opinion of the value of these properties.

Department of the Interior (No. 95),

Geological and Natural History Survey,

OTTAWA, Feb. 22, 1884.

Thos. A. Keefer, Esq., Port Arthur, Lake Superior:

MY DEAR SIR,—I have pleasure in transmitting you herewith Mr. Hoffman's analysis of the samples of quartz which I collected from the openings made on the extension of the Jackfish (Huronian) vein. The

average result gives 6.497 oz. of gold and 26.129 oz. of silver to the ton of 2,000 lbs. This must be regarded as an exceedingly satisfactory showing, and fully justifies further judicious expenditure in opening up the vein and having a practical test made of larger parcels of the quartz.

I am, my dear sir,

Yours faithfully,

(Signed) ALFRED R. C. SELWYN.

OTTAWA, April 29, 1884.

Thos. A. Keefer, Esq.

MY DEAR SIR,—I am in receipt of your letter of the 20th inst. I am sorry I have no time to write you a report on the Highland mining location, which I visited and examined last summer. I can, however, state that it is, I consider, the continuation of the vein which traverses the adjoining Huronian, or old Jackfish, property, already proved to be exceedingly rich in sylvanite and gold. Both these properties are exceedingly favourably situated for working. From the five small openings made on the vein in the Highland property I took samples which appeared to represent the average character of the vein through a length of 300 yards. These were carefully assayed in the geological survey laboratory, with the very promising result given you in my letter of 22nd February last. There can be no doubt that this is as rich a gold-bearing vein, indeed the richest and most promising gold-bearing vein I have yet seen, in the Huronian rocks, and the country rock, a rather soft chloritic schist, will greatly diminish the cost of extracting the vein. The greatest difficulty I should apprehend is in the separation and the saving of the whole of the gold contained in the ore, and very great care will have to be exercised in this respect.

I am, my dear sir,

Yours faithfully,

(Signed) ALFRED R. C. SELWYN.

The "Rabbit Mountain" silver mine has produced some very rich ore, some of which, taken from the vein within ten feet of the surface, has yielded as high as \$852.50 per ton. Up to the present time the owners have done very little actual mining but the services of Captain John Tretheway, the late Superintendent at Silver Islet, have been secured, and he will undertake the management of the company's operations in the future, and will no doubt do justice to the property. The owners of this mine are to be incorporated the "Rabbit Mountain Mining Company of Ontario," with the following gentlemen as the first directors: Maurice Auerbach, Esq., Hagbarth Shalgaard, Esq., J. H. Burwell, Esq., D. H. Moon, Esq., G. V. Bacon, Esq., of St. Paul, Minn., Marcus Johnson, Esq., of Atwater, Minn., and Gen. E. A. Wild, Oliver Daunais and Thomas A. Keefer of Port Arthur. The capital stock is to be \$2,000,000.

A zinc blende mine, situated about fourteen miles inland, north east from Neepigon Bay, promises to become an important feature in the mineral development of the Lake Superior district, and it is to be hoped that the very flattering report on the deposit made by Mr. E. Hindman, who is connected with the Matthiessen and Hegeler Zinc Company, of LaSalle, Illinois, may be borne out as mining proceeds.

The Artic Mining Company is opening up a vein of argentiferous galena on the north shore of Black Bay with gratifying results, it is said.

On the main shore, about three miles inland, the "Gold Lake" mine has been partially opened. It produces copper pyrites ore carrying from 4 to 13 per cent. in copper and \$35 in gold and silver to the ton. A shipment of the ore, it is stated, has been tested at Swausea and yielded \$33 per ton, with the market price of copper very low.

Several new discoveries have been made during the past summer of mineral deposits in the Lake Superior region that are not unlikely to prove very valuable. Oliver Daunais, the discoverer of the "Rabbit Mountain" mine, came upon another silver deposit which is said to be of equal importance, and Mr. E. Emmons, an explorer of long experience in the district, is reported to have discovered a rich deposit of native silver among the same black silver slates in which the "Rabbit Mountain" vein occurs.

Now that the fact has been established that the mining industries on the north shore of Lake Superior will play an important part in the future development of that portion of the Province of Ontario, the time has arrived when the Provincial Government should adopt active measures towards building colonization roads to facilitate access to the several townships that have been surveyed. Up to the present time the mine owners have been obliged to open roads at a very heavy expense, and the Government should now come to their assistance in this respect.

**GOLD MINING IN BEAUCE.**

The Gilbert River Gold Mining Company, operating on the Gilbert River in St. Francois, Beauce, has had a successful season and has washed more gold than in any former year. The reports that have reached us from the district are, however, of a general character and do not mention the value of the gold that has been mined. Other less important operators in the district, it is said, have washed gold in sufficient quantity to pay a handsome profit on their expenditure, notwithstanding that their operations have been conducted on very primitive principles. During the past month a fair amount of work has been accomplished at the Allan and Humphrey mine on Slate Creek, in St. George Concession. A temporary suspension of work has, however, been occasioned at this mine in consequence of a flow of water coming into the shaft when the gravel was reached close to bed-rock. The water came in so rapidly, carrying with it sand in such quantity as to impede the working of the pumps. Resumption of mining in the shaft will be delayed until some work has been completed that will effectually prevent any inconvenience in the future that might be occasioned by water. Within a short distance from the shaft Messrs. Allan and Humphrey are boring by means of an eighteen inch auger, worked by steam power, which will be driven down to bed-rock. As the auger descends, files, manufactured for the purpose, will be let down, forming a pipe, through which the water will be continuously pumped, thus keeping the shaft perfectly dry. This delay in their operations is very annoying to the owners of the mine, happening, as it has, just at a time when their most sanguine expectations were about to be realized. The sand and gravel raised from the shaft, for some days before the water made its appearance, was richer in gold than any ground that has ever before been met with in the district. The sluices are now about completed and it will not be long before we will receive a report of the first wash-up. The opinion of men of long experience in the placer mines in Australia and California, who have visited this mine during the past few months, predict that the result of the washing will be a surprise to many who are now skeptical, and the opinion of such practical men can be relied on.

The pool of Lake Superior copper producers, of which the Calumet and Hecla is the chief constituents, has sold to New York brokers, for American manufacture, 20,000,000 pounds of ingot copper, to be delivered by the 5th of January, 1885. The contract price is 13 cents.

**Asbestos Mining in Canada.**

In the Township of Thetford, asbestos mining has become an industry of much importance to that section of the Province of Quebec. This mineral has been found to occur in nearly all of the Provinces of the Dominion, but as yet no mining has been done outside of the eastern townships. In the Townships of Thetford, Broughton, Coleraine and at Wolfstown and Danville, mines have been opened and a large quantity of mineral has been taken from them. The Thetford mines are, however, the principal producers, and their output is rapidly gaining favour in the American and European markets, so excellent is the quality of the asbestos mined. The Boston Asbestos Packing Co. are carrying on extensive mining operations on their property in Thetford, and employ 80 miners and workmen, the monthly output averaging about 75 tons. King Brothers employ 40 hands at their mine in the same township and produce about 35 tons monthly. The Johnson's Company's mines, in Thetford, are yielding a very superior quality of asbestos and in fair quantity. The force employed does not exceed 60 hands, and the output averages two tons daily. The veins of asbestos on this company's property are of a most superior quality, and a large proportion of the product of its mines is shipped throughout the year to all parts of the globe, especially to the European market where the demand is beginning to overrun the supply. One of the firms in Europe who have been using this company's asbestos, has secured the contract for supplying Her Majesty's navy with asbestos goods, and has further obtained orders from the Indian State Railways, and from many of the most important railway companies in Europe; the leading European Iron and Steel Manufacturers, Engineers and Steamship Companies are also supplied with asbestos goods by the firm referred to. The mill-board, manufactured from the Johnson's Company's asbestos, has been tested, both in England and Scotland, before government officials and managers of public works, by steam, boiling water and blowpipe, and has, in every instance, withstood the tests most satisfactorily.

It is not unlikely that many new mines will be opened, and that a greatly increased quantity of asbestos will be produced in Canada during the next few years.

During the fiscal year ending 30th April, 1884, the Calumet and Hecla mine produced no less than 35,414,007 pounds of ingot copper.

The Horn silver mine of Utah shipped for the week ending September 3rd, bullion to the value of \$57,000, making the total shipments for the year to that date \$1,669,000.

**THE MICA MINES.**

A fine quantity of excellent mica is being produced at the mines in operation. In Villeneuve the crystals are increasing in size as depth is reached, and are, if possible, improving in quality. This mine is developing most satisfactorily and will supply a large proportion of the demand in Canada. The Sydenham mine has produced abundantly during the past summer and continues to be very productive; the quality of the mica is, however, much inferior to that from Villeneuve and is amber in colour. The output of the mine has been shipped largely to the United States. Several other deposits in Eastern Ontario have been partially developed and promise to yield a good quality of mica in large quantity. We have received from the Villeneuve mine, during the past month, slabs of crystals that have cut into perfect sheets, without a speck or flaw, measuring 6 x 9, and the quality is equal to the North Carolina mica.

**St. Onge Gold Mining Company to be Incorporated.**

Notice has been given in the *Canada Gazette* that application will be made to His Excellency the Governor General in Council, for a charter of incorporation by letters patent under "The Canada Joint Stock Companies Act, 1877," incorporating the applicants and such other persons as may hereafter become shareholders in the said company, a body politic and corporate for the purposes following, that is to say:—

1. The proposed name of the company is the "St. Onge Gold Mining Company (limited)."

2. The purposes for which incorporation is sought are as follows:

(1) To carry on the business of exploring for, mining and gathering gold, silver and other precious metals, minerals and ores in such form as the same may be found in the Province of Quebec and elsewhere throughout the Provinces and Territories of the Dominion of Canada.

(2) To crush, smelt, reduce and manufacture such metals, minerals and ores, and forward, ship or sell the same, either in crude or other form throughout the Dominion of Canada and elsewhere, and for such purposes to establish works, wharves, factories, warehouses, and acquire real estate for the purpose of erecting and establishing the same thereon.

(3) To purchase, take on lease or exchange, take, acquire, own and hold under any legal title either in the name of the company, or as trustee or trustees therefor, for them, their successors and assigns any real or personal property, and such lands, premises, easements,

claims and mining locations, limits and rights as shall be necessary or desirable for the workings and purposes of the company, with power to pay for any of such, in whole or part, by the issue of shares of capital stock of the company and to declare such shares fully pay up and unassessable; to sell, lease assign and transfer the same, in whole or part, and to work and develop such mines and mineral deposits as may exist thereon.

(4) And generally to do all such other things as are conducive or incidental to the attainment of all or any of the objects aforesaid.

4. The chief place of business of the said company is to be at the City of Quebec, in the Province of Quebec.

4. The intended amount of the capital stock of the said company is ninety thousand dollars, divided into nine hundred shares of one hundred dollars each.

5. The names in full, addresses and callings of the said applicants are as follows:—

Louis St. Onge, of the Parish of St. George, in the County of Beauce and Province of Quebec, miner; Antoine St. Onge and Noel St. Onge, both of the same place and occupation; Albert Alexander Humphrey, of the same place, Esquire, and William Anderson Allan, of the City of Ottawa, contractor, the first one and last two persons named to be the first of provisional directors of the company.

**The Gold Mining Association of Canada.**

Reports have been published in the Canadian press during the present month, relative to the industrial condition of the above named corporation, the truth of which we have been unable to substantiate. The Company's Managing Director was in Ottawa since the circulation of the reports referred to, and assured us that mining operations are yet being carried on, and that the result of last year's work was most satisfactory, gold having been washed in sufficient quantity to defray expenses, and a great deal of work was done exclusive of actual mining. This Company's property is situated on the DuLoup River, in the County of Beauce, and the ground carries gold in paying quantity. A system of hydraulic mining has been adopted, in preparing for which the expenditure of a vast amount of capital has been necessary. The future success of the Company's operations will only be secured by a strict observance of economy in the management by the superintendent. The prospects of the mine have warranted the outlay, as last year's operations proved, and as it was the intention of the company, from the outset, to mine on an extensive scale, the expenditure, thus far, has been one of necessity. It has been stated that the Marquis of Lorne was among the most liberal

subscribers to the capital stock of the Gold Mining Association of Canada, but this has been emphatically denied.

The mines in Beauce, now being so successfully operated by Messrs. Allan & Humphrey are situated many miles from this company's property, and are in no way connected with it. We mention this so as to correct an erroneous impression that these properties and their owners are closely allied.

### Provincial Rights to the Minerals.

Some disquietude has for a long time existed among British Columbians from the fact that a large portion of the mineral deposits in that Province comes within the railway belt, and it has been feared that the Canadian Pacific Railway Company would gobble it up. In commenting on the subject the *Victoria British Colonist* remarks:—

"The public may rest secure in the assurance that the rights of the province to the minerals within the railway belt will be conserved by the Government. It is now no secret that the Dominion Government have laid claim to the rich deposits of future wealth and greatness comprised within the belt. By the 109th section of the British North America Act, all lands, mines, minerals and royalties belonging to the several provinces are secured to them in the following terms:

"109. All lands, mines, minerals and royalties, belonging to the several Provinces of Canada, Nova Scotia and New Brunswick at the Union, and all sums then due or payable for such lands, mines, minerals or royalties, shall belong to the several provinces of Ontario, Quebec, Nova Scotia and New Brunswick, in which the same are situate or arise, subject to any trusts existing in respect thereof, and to any interest other than that of the province in the same.

"And section 11 of the terms of union the province agrees 'to convey to the Government, in trust, to be appropriated in such manner as the Dominion Government may deem advisable in furtherance of the construction of the said railway, a similar extent of public lands along the line of railway \* \* \* as may be appropriated for the same purpose by the Dominion Government from the public lands in the North-West Territories and the Province of Manitoba.' There is nothing in the extract quoted conveying the mines and minerals which by section 109 of the B. N. A. Act are specially reserved for the use and enjoyment of the several provinces. To our mind the title of the province seems clear, and the Government would fail in their duty should they neglect to enforce the rights of the province."

In connection with this difficulty

the Gold Commissioner at Shuswap, B.C., has published the following:

"Public notice is hereby given that the Provincial Government of British Columbia have not recognized the claims advanced by the Dominion Government of Canada to the precious metals within the 20 mile belt on each side of the line of the Canadian Pacific Railway through British Columbia. The provision of the mining laws now in force through the Province of British Columbia, will be enforced within the railway belt, as well as in all other places in this district, by the undersigned until such time as official instructions are received to the contrary. All persons interested must govern themselves accordingly.

(Sd) A. W. VOWELL,  
Stipendiary Magistrate  
and Gold Comm'r.  
Shuswap, B.C., Sept. '84."

### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The great event of the year 1884 in the Dominion of Canada has been the 54th annual meeting, held in Montreal, of the British Association for the Advancement of Science, at which 1,500 members, home and foreign, were in attendance. The sessions were devoted to the reading of papers on scientific subjects and to discussions amongst the scientists present. The meeting was divided into sections as follows:

- A—Mathematical and physical science.
- B—Chemical science.
- C—Geology.
- D—Biology.
- E—Geography.
- F—Economic science and statistics.
- G—Mechanical science.
- H—Anthropology.

As Professor C. D. Wilber, who was present at the meeting, has stated, "these are convenient divisions of the whole field of human investigation. The practical intent of the British Association is simply to 'post the books' of the toilers in these fruitful fields during the past year, and with auguries and divinations cast the horoscope of discovery and invention for the coming year."

The importance to Canada of this meeting of the British Association for the Advancement of Science cannot be overestimated when it has been the means of bringing to the country a thousand scientists, among whom were numbered many of England's most learned men. Since the close of the meeting in Montreal the members of the association have been travelling in detachments over the length and breadth of the Dominion, and will return to their respective homes more familiar with Canada and possessed of more reliable information as to her natural resources than they could have gathered in

years through any other channel than personal observation. A very large number of the visitors have been to the Rocky Mountains, and the unanimous opinion they have formed of the North-West Territories is a most flattering one, and will doubtless be the means of advertising the country as a suitable and attractive home for British and European emigrants. Of our mineral resources time did not admit of such a thorough investigation as could have been wished; nevertheless many of the scientists attached to the geological section found an opportunity to visit some of our mines in operation, and in the vicinity of Ottawa the phosphate mines appeared to possess an especial interest for those who examined them. At the meeting in Montreal, in the course of a review of our numerous rich mineral indications, a serious defect was brought to light by one of the leading geologists and mining authorities in England—namely, that Canada, of all the colonies, is the most destitute of information concerning mineral reports and statistics available for reference. The fact was brought out in the discussion that followed Mr. W. Hamilton Merritt's paper on the "Occurrence, locations and output of the economic minerals of Canada." In the course of the paper the lack of reliable statistics on the above was alluded to, as there exists no department for the collection of reports and statistics on mining under the Dominion Government. In the discussion following, the president of the section spoke very strongly on the necessity of mining encouragement and successful development by the existence of some such department. Mr. Clement Le Neve Foster, F.G.S., of Wales, stated that it was first at a meeting of the British Association and in this section, that the collection of mining statistics in England was suggested, and that he considered the visit of the Association to Canada would not be thrown away if it had for its outcome no other result than the establishment in Canada of some system for collecting reports and statistics relating to mining and mineral development. Mr. Foster considered the Government would do well to take some steps in the matter, and suggested the English system as a basis. The same gentleman also brought before the section the unpleasant fact that the Committee of Inspectors of Mines, in preparing last year for the Home Office, a report of the mineral statistics of the British colonies, when they came to Canada, experienced great difficulty in securing information. All sorts of sources had to be resorted to, and the result was very imperfect and unsatisfactory. This being the state of things, it would appear that, in the interest of what should be one of our greatest natural sources of wealth, the advisability of taking some steps in the matter cannot be questioned.

Much is done for agriculture and

forestry, and it is evident that in our country, so full of valuable mineral indications, from Nova Scotia to British Columbia, more attention should be given to mining.

### MINERAL GEMS.

Mr. Willimott, a member of the Geological Survey, has had a most successful season in his researches through Central Canada for mineral specimens. He has succeeded in adding to the collection in the Museum many gems in the form of crystals, sphenes and zircons, and some of the garnets he has recently collected excel in beauty anything ever before found in Canada. Mr. Willimott is a painstaking and efficient officer, and is to be congratulated on the present appearance of the Museum. The classification and arrangement of the specimens have had his personal supervision, and the result is evidence of his skill in such work.

### Ancient Method of Washing Gold.

The gypsies of the Bannat, in Austro-Hungary, in washing the gold from the sands of the rivers and plains, still use a very antiquated system, out of which, no doubt, the modern systems have grown. It is practised now by the gypsies, as it was by the Romans in the same country. It consists in nothing more than pouring the sand, mixed with water, over an inclined plane, the heavier particles of the gold remaining upon the surface, while the light impurities are washed away. Sometimes the inclined plane is covered with woollen cloth, to which the gold adheres; wanting the cloth, the Gypsies now and then use for the same purpose the more ancient substitute of a fleece. The manner of collecting gold dust on sheep's fleeces, upon inclined planes, is represented in the curious old works of Agricola.

In the rivers of Colchis the custom is still retained of placing sheep skins in the beds of the Phasa and other auriferous streams to collect particles of gold; hence, the dedication of such fleeces to the gods, and the fabulous history of the Argonauts, as far as it related to the Golden Fleece.

The more common manipulation among the gypsies of Bannat, as far as the gold washing is concerned, is performed by means of a plank of lime tree, six feet long and an inch and a half thick. At the upper extremity is a small trough, and across the board are about a dozen grooves or furrows cut in the wood. The plank is set at an angle of forty-five degrees. The sand is put into the trough at the upper end, and thence, by plenty of water, washed down the sloping board. The gold dust falls into the grooves, whence it is scraped or brushed off. It might be supposed that a great

deal of gold is lost by the careless method, but long experience has made the gypsies very expert; they know how to distinguish the rich and poor sand, and a careful examination of the tailings proves that hardly a particle of gold escapes them during the operation. The gold is in the form of a fine dust; the sand containing it is mixed with black particles of highly magnetic iron, garnets and mica.

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SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Post Office, &c., Orangeville, Ont." will be received until Thursday, the 23rd day of October next, inclusive, for the erection of

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AT

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Plans and specifications can be seen at the Department of Public Works, Ottawa, and at the Post Office, Orangeville, on and after Monday, the 6th day of October next.

Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied and signed with their actual signatures.

Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honorable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party declines to enter into a contract when called upon to do so, or if he fail to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.  
By order,  
F. H. ENNIS,  
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Department of Public Works,  
Ottawa, Sept. 8th, 1884.

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SEALED SEPARATE TENDERS (including plans and specifications), addressed to the undersigned and endorsed respectively: (1) Tender for Heating Apparatus, Three Rivers, P.Q., Post Office; (2) Tender for Heating Apparatus, Sherbrooke, P.Q., Post Office; and (3) Tender for Heating Apparatus, Cornwall, Ont., Post Office, will be received at this office until FRIDAY, the 10th October next, for the completion of the above works.

Copies of plans of the buildings proposed to be heated and a memorandum of requirements will be furnished to those desiring to tender, who will be required to indicate the arrangement, &c., of their apparatus and furnish a fully detailed specification.

Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied and signed with their actual signatures.

Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honorable the Minister of Public Works, equal to 5 per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so, or, if he fail to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.

By order,  
F. H. ENNIS,  
Secretary.  
Department of Public Works,  
Ottawa, 8th Sept., 1884.

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**BRITISH COLUMBIA.**

SEALED TENDERS, addressed to the undersigned, and endorsed "Tender for Graving Dock, B. C.," will be received at this office, until SATURDAY, the 20th day of September, 1884, inclusive, for the construction and completion of the partly finished **Graving Dock at Esquimalt Harbor, British Columbia.**

According to plans and specifications to be seen on after Monday, the 1st September next, at the Department of Public Works, Ottawa, and on application to the Hon. J. W. Trutch, Victoria, B. C.

Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied and prices affixed to the WHOLE of the items stated therein, and signed with their actual signatures.

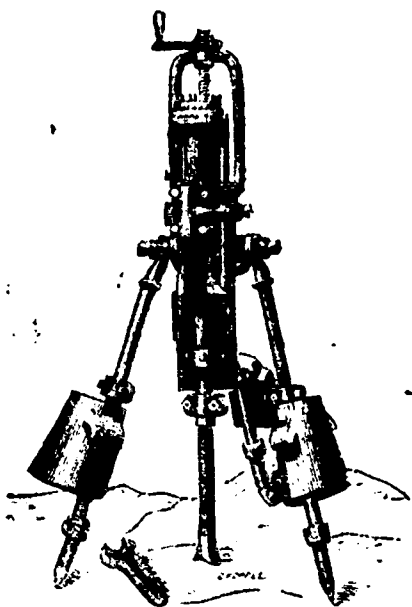
Each tender must be accompanied by an accepted bank cheque for the sum of \$7,500, made payable to the order of the Honorable the Minister of Public Works, which will be forfeited if the party decline to enter into a contract when called upon to do so, or, if he fail to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.

By order,  
F. H. ENNIS,  
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Ottawa, 8th Aug., 1884.



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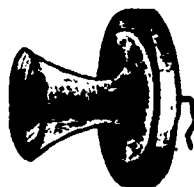
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