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THE LEGAL STATUS OF THE UNITED MINE WORKERS OF AMERICA

When the United Mine Workers of America, some five or six years ago, were carrying on the campaign of disruption that ended in the disastrous strikes of 1909 at various Nova Scotian coal mines, the coal operators were greatly laughed at because they stated their belief that the activities of the U. M. W. A. were not entirely unconnected with the desires of the American coal operators to control the markets where Nova Scotian coal came into sharp competition with coal from the United States. Later developments proved that the suspicions of the Nova Scotian coal owners were very well founded, and an interesting sidelight on the local situation is given by an important judicial decision recently handed down in east Virginia in connection with an injunction against the U. M. W. A. asked for by the Hitchman Coal & Coke Co., of Wheeling, West Virginia.

In 1909, Judge Dayton, of the District Court for the Northern District of West Virginia, granted a preliminary injunction against the U. M. W. A. restraining them from picketing the mines of the Hitchman Coal Co. After legal proceedings extending over the whole of the intervening period, Judge Dayton, in December, 1912, confirmed the injunction and made it perpetual. The reasons actuating the decision are so apposite to the conditions that existed in Nova Scotia previous to the strikes of 1909 as to be well worth quoting. Judge Dayton sums up as follows:

"I conclude, therefore, that this organization, known as the United Mine Workers of America, is an unlawful one, because in its constitutions, obligations for memberships, and rules which (1) requires its members to surrender their individual freedom of action, (2) seeks to require, in practical effect, all mine workers to become members of it whether desirous of doing so or not, (3) seeks to control, and restrict, if not to destroy, the right of the mine owner to contract with its employees independent of the organization, (4) to exclude his right to employ non-union labour if he desires, (5) to limit his right to discharge, in the absence of contract, whom he pleases, when he pleases, and for any cause or reason which to him seems proper, (6) assumes the right on its part, by and through its officers, to control the mine owners business by shutting down his mine, calling out his men on indefinite strike in obedience to their obligation to the union, whether the men desire to quit work or not, whenever the union's officers deem it for the best interest of the union, regardless of the rights and interests of the mine owner, and regardless of his direct loss

and damages and such indirect loss and damages as may be incurred by him by reason of the resulted violation of contracts by him with others.

"I further conclude that it is an unlawful organization because of its procedure and practices in that (1) it seeks to create a monopoly of mine labour such as to enable it, as an organization, to control the coal-mining business of the country, and (2) has by express contract joined in a combination and a conspiracy with a body of rival operators, resident in other states, to control, restrain, and to a certain extent destroy the coal trade of the State of West Virginia. It has spent fourteen years of time and hundreds of thousands of dollars to accomplish this unlawful purpose. The rules of law relating to the responsibility of individual members concerned in such a combination are plain and well defined."

The coal operators who are joined with the U. M. W. A. in this injunction are the unionized operators of Western Pennsylvania, Indiana, Ohio, and Illinois, known as the "contracting" States. The leaders of the U. M. W. A. have undertaken, at the request of the coal operators of these four States, to unionize West Virginia, hence the strikes at Cabin and Paint Creek that have been distinguished by the anarchy which seems to be inseparable from the methods of the U. M. W. A.

From a strategical point of view, it was no doubt very good business on the part of the U. M. W. A. leaders and the Pennsylvania operators to attempt to absorb and control the mine workers of Nova Scotia. Had these gentlemen succeeded it is beyond doubt that last year, instead of the Nova Scotian coal mines producing their record output, and thereby netting to the Provincial treasury the largest sum for royalties yet collected, they would have become caught in the maelstrom of American labour politics, and would have been laid idle by the leaders of the U. M. W. A. in "sympathy" with the strikers in Illinois and other places in the States. From their actions in the past it is evident that the thoughtful miners of Nova Scotia do not intend to sacrifice themselves to the inordinate ambition of the labour oligarchy in the United States, particularly when it is seen that the effects of the U. M. W. A. strikes smooth the path of the sales agent of the United States coal operator.

THE EIGHT HOUR ACT

The Ontario Legislature has this month passed an Act that specifically limits the time per day that any workman can spend underground. The text of the Act will be found in another column. It is brief, concise, and comprehensive. Despite the warm protests of mine managers it was most expeditiously passed through the House.

The Hon. Mr. Hearst, Minister of Mines, is the putative father of the Act. It is fitting that this should be so. It is not fitting, however, for any Minister to tamper with a principle in the manner that Mr. Hearst has. Clause 5 of the Act is specious, so specious as to rouse immediate criticism. By this clause the Lieutenant-Gov-

ernor in Council is empowered, upon the recommendation of the Minister, to suspend the operation of the Act in so far as any iron mine is concerned. Except for the general provision that "in the event of great emergency or grave economic disturbance," no other class of mine is granted immunity.

Not for a moment would we impugn the Hon. Mr. Hearst's motives. Seeing, however, that he represents an iron-mining constituency, we feel it but fair to remark that had he known the needs and disabilities of other branches of mining in Ontario as well as he knows those of iron-mining, he would never have consented to the present form of the Act.

We have pointed out several times that the miner, of all industrial employees, is probably the best paid, the most comfortably housed, and the most fairly treated. It is, therefore, not seemly that the industry of mining should be experimented upon. There are grave abuses in many trades that cry for remedy. Why not have dealt with these first?

THE CANADIAN MINING AND EXPLORATION COMPANY

The first annual report of the Canadian Mining and Exploration Company, Limited, covers the last eight months of the year 1912. During that period no less than 428 projects were submitted to the company, and considered by its officers. None was accepted. "Only a few," says Mr. Ambrose Monell, the president of the company, "proved sufficiently attractive to warrant thorough examination and report. Some of these properties were promising mines and prospects, but the terms under which there are at present available give inadequate opportunities for profitable business."

Of the total, 285 projects were of Canadian origin, 110 came from the United States, 21 from Mexico, and the remainder from Central and South Americas, the Malay States, and South Africa.

Mr. Monell does not consider this discouraging. He alludes to the fact that very much valuable information has been gained, information that will be of inestimable value in the future.

Our readers will recall that the Canadian Mining and Exploration Company is an international organization with headquarters in New York and a central Canadian office in Toronto. The shareholders include many of the most prominent Canadian and United States financiers. The capitalization of the company is \$5,000,000, of which \$2,500,000 has been subscribed. This sum is so invested as to bring the company an annual income of about \$125,000. Thus ample provision is made for the employment of a large staff of engineers.

Although many interests are represented in the company, the prime object of its existence is to develop Canadian mines. It is, therefore, a trifle surprising that not one of the many mines and prospects considered has

been purchased. This cannot be due entirely to the character of the properties themselves. Nor can it be attributed justly to uniformly prohibitory prices asked by the owners. To a large extent, the refusal of 285 Canadian mining properties must be set down to a policy of extreme caution on the part of the company. No doubt during the future this praiseworthy deliberateness, we shall not call it timidly, will be modified.

THE HOLLINGER REPORT

In the forefront of the revival of gold mining in Canada stands the Hollinger mine. The shares of Hollinger Gold Mines, Limited, are the thermometer of the mining share market. The mine itself is the centre of interest in Porcupine.

While this condition is essentially due to the character and extent of the Hollinger ore bodies, it has also been brought about by the sane attitude of the management. The public has been kept thoroughly in touch with development, and results have been regularly announced. In brief, the management has confidence in the mine, and the public has confidence in the management.

The second annual report of the company has just come to hand. It contains much interesting matter and thoroughly deserves comment. Part of the report is reprinted in this issue of the *Canadian Mining Journal*. Here we shall touch upon only the salient features.

Up to the end of 1912 the Hollinger mine paid three dividends, each of \$90,000. The total profits were \$600,664.42. Of this sum \$101,801.69 was carried forward as a balance, \$106,223.54 was written off the plant, and \$102,639.19 was written off development. The average value of all the ore treated was \$21.44. The tonnage put through the mill amounted to 45,195 tons, having a gross value of \$970,304.89. The total recovery was \$933,681.53. Mining costs were high, \$3.588 per ton. Milling costs averaged \$1.693 per ton of ore treated. The total cost per ton was \$6.744, of which \$0.508 per ton was charged to expenditure incidental to the strike. Both milling and mining costs were abnormal, and both will be lower during the present year.

The ore reserves are estimated at \$644,540 tons containing gold valued at \$11,271,400, an average of about \$17 per ton. This compares favourably with the estimate of one year ago when the value of reserves was placed at \$10,230,000.

Our readers will draw their own conclusions from the Robbins report as reprinted in this issue. No doubt it will strike most of them that it is merely a matter of time when the tenor of Hollinger ore will necessarily be somewhat reduced, and, as a natural consequence, the plant will be enlarged. But be this as it may, the fact obtrudes itself that the Hollinger mine is in a strong and healthy condition.

EDITORIAL NOTES

At the recent annual meeting of the Canadian Mining Institute, Mr. Henry Bertling, of Toronto, gave a demonstration of the Pulmoter, a device for producing artificial respiration by delivering oxygen automatically to persons rendered unconscious by gas poisoning, drowning, or electric shock. The value of this apparatus in connection with mine rescue work is unquestionable, and in recognition of its utility in this respect the device was recently awarded, by the Jury of Awards of the American Museum of Safety, the Scientific American Gold Medal, which is presented annually "for some three years, and exhibited in the Museum's collections."

From an authoritative source, we are given to understand that while the London money market is for the time being disinclined to consider proposals for the financing of Canadian industrial undertakings, however sound, there is a revival of interest in Canadian mining for which it is not difficult to secure capital. This is no doubt due to the successful results attending the operation of one or two mines in the Cobalt district and elsewhere in which British capital is invested, and also to the rehabilitation of the mining industry of Canada in general. Unfortunately advantage has already been taken of this favourable disposition by a class of mine-peddlers and promoters whose activities in the past are largely to blame for the non-success of the majority of the British-owned mining enterprises in the Dominion, and a number of very dubious "propositions" are now being offered in London. If the British capitalist would take the very obvious precaution of securing the advice of responsible engineers resident in this country before taking any final steps, the percentage of failures to successes would be very considerably reduced.

The proposal for a union of the Mining and Metallurgical Society of America and the American Institute of Mining Engineers, has been already endorsed by the Council of the former organization, and the question will be determined finally this month by letter ballot of the members. In effect, the plan as outlined is the same as that projected some few years ago in Canada, when it was suggested that there should be an association of mining engineers, distinct from the Canadian Mining Institute, but affiliated with it and requiring that membership in the Institute should constitute an essential qualification for registration in the former. In some respects it is unfortunate that this project was allowed to drop. In the United States the Mining and Metallurgical Society has served a useful purpose, which as a "section" of the American Institute it will be able to continue without restriction. The same opportunity presents itself in Canada.

In a recent bulletin issued by the United States Bureau of Mines, some astonishing figures were presented showing the enormous waste in connection with the pro-

duction of coal in that country. Thus it is stated that in 1912, in producing 500,000,000 tons of coal there was wasted or left underground in such condition that it probably will not be recovered in the future 250,000,000 tons; while there was turned into the atmosphere a quantity of natural gas larger than the total output of artificial gas during the same period in all the towns and cities of the United States. If this was the case in the United States, it is safe to assume that conditions in Canada would prove to be worse. In the Province of Alberta especially, where many small mines are "worked" by men without capital to develop their properties properly, and who are only concerned in making a few dollars quickly without regard for the future, the waste is appalling; and it is high time for legislative interference to prevent it.

Legislation in a right direction has been enacted recently in Montana for the regulation of the sale of mining securities in that State. Under the new law every company offering stock or securities for sale is obliged to file with the authorities an itemized statement showing the actual financial condition, the nature and extent of its properties, copies of all contracts, literature and advertising matter, and other particularized information. The State appoints a commissioner who is given authority to investigate the affairs of any company, and no dividends may be paid without his approval. With these restrictions "wild-cattling" in Montana, provided, of course, the law is effectively administered, should not prove a too easy undertaking.

Two of the bright spots in the mining firmament of Eastern Ontario are the Cordova gold mine and the Belmont iron mine. At the former about 100 tons of gold ore are being treated per day. At the latter, preparations are practically completed for the shipment of substantial quantities of iron ore. At both mines exceedingly cheap power is being used, and both seem to have overcome the disabilities under which they formerly laboured.

PERSONAL AND GENERAL

Mr. L. K. Armstrong, of Spokane, Washington, editor of the Northwest Mining News and secretary of the Spokane Local Section of the American Mining Institute, has been in correspondence with the secretary of the Western Branch of the Canadian Mining Institute, relative to the joint meeting of the two organizations it is intended to hold at Rossland, B.C., on May 22 and 23.

Mr. W. M. Brewer has returned to Victoria, B.C., after an absence of eight months, spent in Alaska, where, in the vicinity of Valdez, he has been prospecting a gold mining property and installing a small stamp mill.

Dr. A. E. Barlow will probably again visit Western Canada during the ensuing summer.

Mr. D. C. Botting, of Seattle, Washington, State Inspector of Coal Mines, though unable himself to attend the meeting of the Western Branch of the Canadian

Mining Institute, held at Nanaimo last month, was instrumental in inducing Mr. J. F. Menzies, of Roslyn, Wash., to go in his stead and read a paper there.

Mr. Wm. Blakemore, of Victoria, B.C., editor of "The Week," now includes in that weekly publication a mining column, which is edited by himself.

Mr. L. A. Campbell, of Rossland, B.C., general manager of the West Kootenay Power and Light Co., who represents the Rossland constituency in the British Columbia Legislative Assembly and is chairman of the Mining Committee of that body, was last month entertained at a complimentary smoker at Rossland on his return to that city after the close of the recent session.

Mr. F. Napier Denison, of the Dominion Meteorological Office, Victoria, B.C., has accepted an invitation extended to him by Prof. Andrew C. Lawson, professor of geology and mineralogy at the University of California, to deliver two addresses—one technical and the other popular—before the annual meeting of the constituted societies of the Pacific Association of Scientific Societies, in connection with the special research seismological work he has for some time been engaged in. Mr. Denison, who went West from Toronto, has on three occasions addressed meetings of the Western Branch of the Canadian Mining Institute on the subject of "Earthquakes, Strains and Stresses, in Relation to Coal Mine Disasters."

Mr. W. E. Finch, of Spokane, Washington, manager for a syndicate that is developing several mines in Sloean district, British Columbia, under option of purchase, lately spent several days in Victoria.

Mr. Francis Glover, formerly employed at the Extension colliery of the Canadian Collieries (Dunsmuir), Limited, Vancouver Island, B.C., has been appointed superintendent for the Princeton Coal and Land Co., operating a coal mine at Princeton, Similkameen, in succession to Mr. James Holden, resigned.

Prof. J. C. Gwillim, of the School of Mining, Kingston, expects to spend next summer in Alberta, on some of the coal lands of the Canadian Pacific Railway Department of Natural Resources.

Mr. W. S. Haskins, who some years ago was connected with mines in Rossland, B.C., has latterly been engaged in developing mineral claims in the Hazelton part of Skeena River district, British Columbia.

Prof. Arthur Lakes, of Denver, Colorado, a well-known contributor to various mining journals, is now resident in the vicinity of Ymir, British Columbia, with his son, who is manager of the Wilcox gold mine in Ymir camp.

Major Ainsley Megraw, of Hedley, Similkameen, B.C. (an old Ontario man), editor of the Hedley Gazette, has done good service to the mining industry of Hedley camp by exposing the discreditable career of one C. H. Brooks, who had commenced a campaign of unscrupulous advertising in the City of Vancouver with the manifest intention of obtaining money from the public, professedly for the development of a mining property near Hedley. Mr. Brooks has since left British Columbia.

Sir Richard McBride, Premier and Minister of Mines of British Columbia, on the occasion of his responding to an invitation to deliver a Charter Day address at the University of California, received the honorary degree of Doctor of Laws.

Mr. F. M. Sylvester, of Spokane, Washington, assistant to the general manager of the Granby Consolidated M. S. and P. Co., lately spent a week or two in the British Columbia coast cities of Victoria and Vancouver.

TENTH INTERNATIONAL GEOLOGICAL CONGRESS

MEXICO, 1906.*

By WILLET G. MILLER.

The Tenth International Geological Congress is not wholly unknown even to people in this country who take little or no interest in geology or mining.

The audience may recall the attention which the Canadian newspapers gave to certain features of the Mexican Congress. One morning, for instance, it was announced with startling headlines that a distinguished congressman from Montreal had been overwhelmed by a volcanic outburst on Mount Colima. Another day telegraphic despatches told in no less terror-inspiring language of a snowslide on Mount Orizaba that carried with it a Toronto congressman three thousand feet to the depths below. Happily these despatches, copies of which with brief, but appreciative obituary notices I found in my scrapbook the other day, proved to be but fabrications of press agents, and all the members of the Canadian contingent returned to their native land, a little the worse for wear, perhaps, but still in a satisfactory state of convalescence.

In describing the Mexican Congress it will be well to note briefly various features of the work of organization, the excursions, the sessions, entertainments and finally the achievements or beneficial and lasting results of the congress. A knowledge of these features should be of value in making arrangements for the Canadian Congress, and in carrying out the work. Incidentally I shall refer to the natural attractions that Mexico had in 1906 for entertaining a large body of people. If it is decided that our country, compared with Mexico, is lacking in natural attractions or in facilities for entertaining, then we should attempt to make up for these in other ways. Personally I believe that Canada, while offering a great contrast to Mexico, will prove no less attractive to our visitors, and that the achievement of the Twelfth Congress will be of much importance to science and to their country.

The following passage from Prescott, describing the march of Cortez' conquering army nearly 400 years ago, from the sea to the valley of Mexico, shows the character of the scenery:

"Nothing could be more grand than the view which met the eye from the area on the truncated summit of the pyramid. Toward the north stretched that bold barrier of porphyritic rock which nature has reared round the Valley of Mexico with the huge Popocatepetl and Iztaccihuatl standing like two colossal sentinels to guard the entrance to the enchanted region. Far away to the south was seen the conical head of Orizaba soaring high into the clouds, and nearer the barren, though beautifully shaped Sierra de Malinché, throwing its broad shadows over the plains of Tlascala. Three of these are volcanoes, higher than the highest mountain peak in Europe, and shrouded in snows that never melt under the fierce sun of the tropics. At the foot of the spectator lay the sacred city of Cholula, with its bright towers and pinnacles sparkling in the sun, reposing amidst gardens and verdant groves, which then thickly studded

the cultivated environs of the capital. Such was the magnificent prospect which met the gaze of the conquerors, and may still, with slight change, meet that of the modern traveller as from the platform of the great pyramid his eye wanders over the fairest portion of the beautiful plateau of Puebla."

For some years many geologists had expressed the hope that a meeting of the Congress would be held in Mexico at a time convenient for the government of the country and the Mexican geologists. The publications of the Geological Institute of Mexico had shown that the country offered a vast field for geological studies of all kinds. Moreover, being such a beautiful land and so interesting from other points of view, its natural features having been so well described by Humbolt and its early history in the fascinating pages of Prescott, and possessing great mineral wealth and historic mines, offers unexcelled attractions to visitors, especially to those from more northern regions.

At the Ninth Congress, held in Vienna in 1903, the hope of having a meeting in Mexico was realized, it being decided to hold the tenth meeting in that delightful country. Canada had also sent an invitation to Vienna, but the attractions of Mexico and the hearty invitation extended by the Government and the Geological Institute won the day for the southern country.

The invitation having been definitely accepted, a Committee of Organization was formed. This committee solicited the co-operation of all geologists residing in Mexico, and of a certain number of mining and other industrial companies and finally that of the governors and high officials of various states of the Republic whose assistance would be valuable in the conduct of the excursions.

The Executive Committee was composed for the most part of members of the National Geological Institute (or Geological Survey), the president being the director of the Institute. The committee was charged with all the preparations for the Congress, both of a scientific and of a purely administrative character.

The organization committee had over ninety members among whom were the foreign directors of several companies, e.g., Sir Weetman D. Pearson and Mr. John Hayes Hammond. The executive committee consisted of twelve members.

Local committees were organized in various states of the Republic to assist with the work of the Congress and to arrange for receptions and other entertainments. In most cases, during the excursions the Governors of the states acted as chief hosts.

Financial Assistance.

In addition to other assistance, the Mexican Government made a grant of \$164,000, or \$82,000 in gold, for the expenses of organization, the arranging of excursions, the publishing of the guide book and for other purposes.

All the railways in Mexico gave important reductions, at least fifty per cent., in the price of transportation. Half fare rates from all points east of Buffalo, Pittsburg and Atlanta to Mexico and return were

*An abstract of this paper was read at the meeting of the Organization Committee of the 12th Congress in Ottawa in March. About six-sevenths of the time devoted to the 12th Congress will be occupied with excursions, which will be of as much interest and value to mining engineers or to geologists, hence the Congress might properly be called a "Mining and Geological Congress."

given by the United States railways. The railways controlled by the Pearsons and by the Copper Queen and other companies, not only gave free transportation but they made the excursionists their guests in all respects.

The Copper Queen Company, and other companies, whose hospitality the writer had the good fortune to receive, sent a splendidly equipped train to El Paso to meet the excursionists at the border. For six days the excursionists were the guests of these companies, visiting the smelters at Douglas and the mines of Bisbee, Cananea and Nacozari.

Steamboat Fares.

European members were encouraged to visit Mexico by the government paying for a reduction of one-half of the steamboat fares on specified lines, viz., Hamburg-American and Ward, either to Vera Cruz or to New York.

The "Compana Translantica Espanola" gave a reduction of thirty-three per cent., and the Mexican Government made the reduction up to fifty per cent. by paying the difference.

The Mexican Government also assisted transportation during the excursions by furnishing saddle horses from detachments of the rural police. Horses were always available when needed. (I am sure it would be most interesting to this audience were one of the Canadian excursionists to relate his experience in riding one of these metalled rurale chargers from the railway station at San Juan to the Pyramids of the Sun and Moon, through roadways lined with stone walls and giant cacti, across the parched Aztec plain even to the slopes of the pyramids themselves. Compared with his ride, that of John Gilpin was merely a canter in a village street, and Mazeppa's steed, so well described by Byron, was not more wild and free. In his account of the excursion, however, President Aguilera speaks of it as forming a "joyous caravan," some on foot, others in carriages, but the greater number "à cheval.")

Excursions.

Preceding and following the sessions which were held in the City of Mexico from Sept. 6th to the 14th, several excursions were given under the patronage of the government. The earlier excursions consisted of one to the south lasting nine days, one to the east, three days, one to Jourallo, thirteen days, and one to San Andres and Colima, twelve days.

After the sessions there was an excursion limited to 250 persons to the north, through the great mining regions, that lasted twenty days. The excursionists occupied two trains, each person being given a section to himself. Connected with this excursion was the complimentary one to mining and smelting centres given by the Copper Queen and other companies in Arizona and Sonora.

After the excursion to the north there was another, essentially for paleontologists, beginning October 6th and lasting eight days, to the southern part of the Republic.

During the sessions four extremely interesting excursions lasting not longer than a day each were given. They were held on alternate days so as not to interfere with the sessions.

One of them was to Coyocan to see the great lava flows, which, while recent in a geological sense, are prehistoric. Human remains, fragments of pottery,

cobs of Indian corn and other materials show that the flow took place after the area was occupied by man.

The second excursion, to the historic City of Cuernavaca, was organized by the Geological Society of Mexico, and the excursionists were welcomed by the Governor of the State of Morelos and a reception committee. The park, the botanic garden, and especially the palace of Cortez, which still stands little impaired by time, are all of historic interest. At the banquet, given on this as on all other excursions, one of our Mexican hosts cheered us with the words: "Ladies and gentlemen, I drink to the glory of your countries; friends of Mexico I drink to your health."

The Minister of Public Instruction "desiring to show his profound regard for the congressionists" organized the third excursion, to visit the Pyramids of the Sun and Moon. The excursion was under the direction of the Inspector of Archeological Monuments. The pyramids proved to be most interesting, resembling those of Egypt, and the banquet of the afternoon in the grotto or huge cave was in all respects unique. It is much larger than the historic one described by Virgil, in which Dido and Aeneas sought refuge from the elements. In fact the Porfirio Diaz cave is large enough to have accommodated the entire retinue of these famed personages, so that one pair need not have been left in lonely isolation.

In his memoirs, my friend Aguilera has not tarried long in describing this cave banquet, but we recall that the Director of Public Works received us with the words, "Mexico welcomes all who have good will in their hearts and science in their brains."

The fourth of these excursions was made to the famous silver mines of Pachuca where a welcome was extended and a banquet provided by the Governor and other high officials of the State of Hidalgo and of the City of Pachuca.

Sessions.

The opening session was held at 11 o'clock on the morning of September 6th, in the great reception hall of the National School of Engineers, under the presidency of his Excellency, the President of the Republic, General of Division Don Porfirio Diaz, high protector of the Congress. There were also present the Diplomatic Corps and the Ministers of State.

I shall not say much concerning the sessions, except that like the excursions, receptions and entertainments they were a credit to the Mexican geologists, who had devoted much care and attention to securing papers on important subjects and arranging for discussions on leading themes. Most of us do not attend geological congresses in order merely to listen to the reading of papers and to discussions. While at such a gathering these are valuable and necessary, persons visiting a country as attractive as Mexico desire to learn something of its geology at first hand, and to become acquainted with fellow students of geology from other parts of the world.

Four major subjects were selected by the executive committee for discussion, and the promises of several men to lead in each subject were secured some months before the sessions began. The subjects were: Conditions of Climate in Geological Epochs, Relations Between Tectonics and Igneous Masses, Genesis of Metaliferous Deposits, and Classification and Nomenclature of Rocks. Papers were read and discussions took place on various other subjects during the session.

Receptions and Entertainments.

While these have been referred to incidentally in preceding notes it will be well to mention them more systematically in order to show what may be expected of us in Canada during the coming summer. In many ways Mexico possesses, or did possess in 1906, facilities for entertaining a larger body of people than can be equalled in but few countries. We in Canada cannot hope, I fear, to make the social side of the Twelfth Congress so enjoyable and attractive as was that of the Tenth. However, Canada's newness, a country in the making, will appeal to many.

On the evening of the 5th of September, preceding the opening session, there was a reunion of the congressionists at the restaurant in the historic wood of Chaupultepec. As Aquilera says, "the time was spent in a manner very animated," and there was a dinner with music by the artillery band.

On the evening of the following day, the members of the Geological Institute held a reception. The interior of the hall was decorated with the flags of all the nations represented at the Congress. There was band music and a "champagne supper." Three hundred persons were in attendance.

The morning of the 7th was spent in visiting public institutions of the city, carriages being furnished. Visits were made to the National Museum, the National Medical Institute, National Library, the Cathedral, and the Academy of Fine Arts. Small parties visited the National Astronomical Observatory.

In the evening of this day the Government Council of the Federal District, and the Municipal Council tendered a banquet at the Municipal Palace. Flags of various nations were again in evidence here. Those in attendance at his banquet included representatives of the Diplomatic Corps and members of the Mexican Government. At the head table presided the Vice-President of the Republic. The souvenir of the banquet took the form of a beautifully illustrated volume descriptive of the city.

A concert, with "champagne lunch" was given on the evening of Sept. 8th. On the evening of the 10th a reception was held by one of the members of the government.

President and Madame Diaz on the evening of the 12th, offered a "tea" in the beautiful chateau de Chaupultepec. The cards of invitation announced a "five o'clock tea," but in reality the presidential residence had been prepared for a soiree concert. Arriving at the chateau at five o'clock the congressionists were received by President and Madame Diaz. At this reception were the members of the Diplomatic Corps and high officials of the government.

From the high balcony of the chateau a magnificent view could be had of the distant volcanoes, Popocatepetl and Ixtaccihuatl.

At six o'clock commenced a concert in which the principal Mexican artists took part. At seven dinner was served, and at 11.30 the guests departed having been delightfully entertained for over six hours.

On the evening of the 14th a "banquet fraternal" was held.

The entertainments provided at various places during the excursion were numerous and showed the interest that the Mexican people as a whole took in the congress.

Achievements of the Congress.

Of great importance and variety were the achievements of the Mexican Congress.

For instance, in referring to the Geological Guide Book, prepared under the direction of the Executive Committee, a United States technical journal, *Economic Geology*, said:

"Mexico has during the last decade become the seat of such expensive mining operations that even the most meagre geological information is eagerly welcomed by all geologists and mining engineers, and a publication so thoroughly and carefully prepared as this geological guide must be at once recognized as having an unusual scientific and practical value. Beautifully illustrated, it gives sections and maps of all important mining districts and noteworthy geological features of the various regions covered by the excursions of the Congress. Certain of the papers on economic geology furnish the only available information on more than one district of widely recognized commercial importance.

"Mexico is to be congratulated on having placed in the hands of professional men information so long desired on mining districts whose remote and unknown geological character has in no small measure handicapped successful mining in the regions concerned."

Of the geological map of North America, prepared in co-operation by the United States, Mexico and Canada, the same journal said:

"The second publication which accompanied the guide is scarcely of less importance and value to students of geology. Nothing so comprehensive has ever appeared in the way of geological maps."

(While our guide books and maps cannot be said to deal with areas wholly undescribed, still they put the descriptions in handy form, and give a good synopsis of the literature. Will not our publications be as valuable to Canada as were those of the Tenth Congress to Mexico in making known the country's mineral resources and geology?)

The excursions were not less valuable than the publications. They gave members of the Congress exceptional opportunities for becoming acquainted with many of the large and historic mines, the geology, archaeology and numerous other features of great interest in the Republic. (Certain of the congressionists, at least, have shown their interest in the natural resources by making investments in the country and have induced others to do so.)

The published discussions on various geological themes during the sessions have a lasting value.

Not the least of the important results of the Congress was the kindly feeling engendered in the hearts of the visitors towards Mexico and her hospitable people. During the last month it was with feelings of sadness that we read of the partial destructions of that city which Diaz attempted to make, and in many respects succeeded in making, the most beautiful in North America.

We must all admire the achievements of President Diaz, one of the greatest military statesmen of his own or of any age. Weighted with years he had at last to retire. May another leader arise to bring peace and continued prosperity to the great, the beautiful, and the historic country!

THE OCCURRENCE OF PYRITES IN CANADA

Notes from the Report* of Dr. Alfred W. G. Wilson.

(Continued from last issue.)

Hastings District.

Bannockburn Pyrite Mine.—Lot 25, Concession VI., Madoc Township, Hastings County, about a mile south-east of the Village of Bannockburn. 1898, openings were made for iron ore, and Stephen Wellington, of Madoc, shipped eleven carloads of bog iron ore or limonite to the Hamilton Iron and Steel Company. This ore, which ran upwards of 38 per cent. metallic iron and low in sulphur, was merely the gossan capping of iron pyrites deposits. These were further prospected by Thomas Burnside and William Coe of Cleveland. In the summer of 1900, they transferred their lease to the American Madoc Mining Company, who abandoned operations at the Mellwraith in favour of the more accessible deposit. The gossan capping at the Bannockburn mine varied in depth from 8 to 15 feet. A pit about 80 feet in diameter and 90 feet deep was sunk, but at this stage had to be abandoned. Through the oxidation of low grade ore, large masses began to scale off the sides of the pit, necessitating either an expensive system of square set timbering or cessation of the work. In the meantime a new lens had been opened up about 500 feet south of the open pit. A shaft was sunk here, levels run every 60 feet, overhaul stoping adopted, and a skipway with guard rail provided. A battery of boilers and a five-drill, straight-line air compressor were installed, which supplied the drills, steam being used for the pumps. In later years this method of working was abandoned for the following practice. A pit or trench 8 or 10 feet in depth was sunk and this

drew it half a mile to the siding of the Central Ontario Railway.

Some shipments from the open pit graded from 46 to 48 per cent. of sulphur, and some from the south lens did not run higher than 37 per cent. A fair average of the property would be 40 per cent. of sulphur. The ore is hard and makes very little fines.

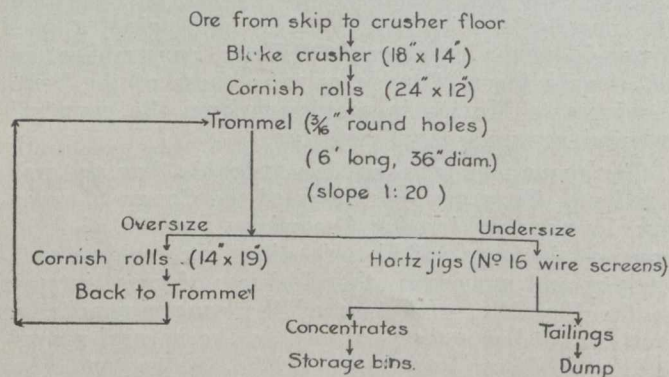
The country rock is a chlorite schist, showing talcose or micaceous alteration in the vicinity of the ore bodies. The south lens and enclosing schist strike slightly west of north until west of the open pit, when a fold of 90 degrees angle turns the strike to a little north of east. The south lens dips with the country rock to the east, and the open pit in a similar manner dips to the south. Unfortunately the surface of the schist at the apex of the fold was covered by a deposit of limestone, which was subsequently metamorphosed to a calc schist, but there is no evidence whatsoever of faulting. Folding, whether of a simple nature or a pitched anticlinal subsequently eroded, produced the lines of weakness through which the pyrite-bearing solutions seeped, the deposits being formed by replacement. The ore separates readily from the fairly good foot wall, but towards the hanging, the grade lowers, and it shades gradually into the schist. It is impossible to obtain fresh specimens of the schist. Originally it was probably horn-blendic; at present it is chloritic, due probably to surface weathering and the influence of the mineral bearing solutions from the adjacent vein. The south lens is 160 feet in length, and varies from 8 feet to 15 feet in width. The mine employed from 35 to 40 men and shipped during its six years of operation about 580 tons per month. All the ore went to the works of the General Chemical Company at Buffalo.

Although the ore fell off neither in grade nor quantity with depth, yet on account of the open pit method of mining (the south lens being stoped out to a depth of 275 feet), and the tendency of the walls to scale, mining became so hazardous that the operations were abandoned in August, 1906.

The Hungerford Fahlbund.—The Hungerford fahlband lies about 5 miles east of the Village of Tweed north of the Canadian Pacific Railway. It strikes north 65 degrees east, and is easily traceable for two miles. Level farm land to the south is underlain by garnetiferous crystalline schist cut by massive diorite. About 500 yards north of the deposits, the schists have been invaded by a pink hornblende granite that now rises above the surrounding country, forming a series of rugged hills (locally called the Bald Mountains); this granite has protected the ore bodies from erosion. The deposits are strung along the contact of the diorite and the schist, the strike of the lenses, the contact, the fahlband, and the schists being identical.

Hungerford Mine.—Lot 23, Concession XII., Hungerford Township, Hastings County. This mine was opened 30 years ago, by the American Madoc Mining Company, as a gold property, and a smelter was erected to extract gold from the barren pyrite. The present operators, the Nichols Chemical Company, re-opened the mine in June, 1903. Owing to some difficulty about the title, the mine was closed down in August, 1904, but operations were resumed in August, 1905, and have since been continuous.

FLOW SHEET, MILL OF COLE MINE, ST. LAWRENCE CO., N. Y.



was followed by underhand stoping back the full length of the lens. For convenience in mucking, the skip was replaced by a bucket; the lens pitched to the north and was penetrated by the shaft so that the operation of the skip had become impossible. The skids at the top of the rock house were inclined to the horizontal. As the loaded bucket was hoisted into this position, a chain was hooked into a ring in its bottom, the skids were pulled apart, and the bucket was dumped by lowering it slightly. The bucket was then hoisted, the chain unhooked, and it was then thrown back on the skids and lowered. The bucket loads were dumped on steel bars, placed 6 inches apart above a series of grizzlies spaced to one-half inch. The fines from the grizzlies discharged through the rock house floor and the culled lump ore was wheeled out to a loading dock, whence wagons

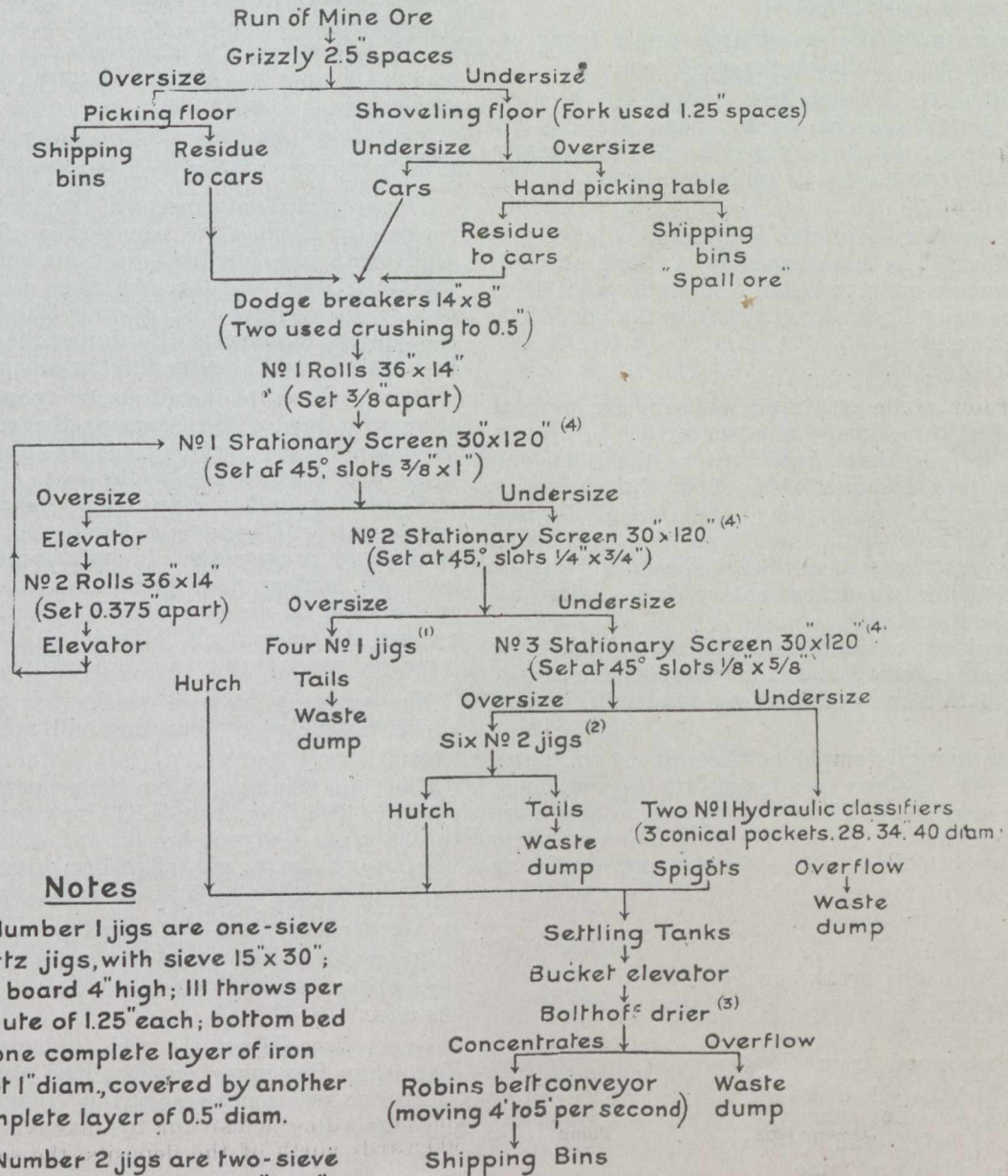
*Dressing and Uses.—By Dr. A. W. G. Wilson, Mines Branch, Ottawa.

The first shaft was sunk in the diorite footwall to a depth of 300 feet, and levels were run every 100 feet. Two other ore bodies were discovered, one from surface outcrops, the other during the progress of underground work. On each level cross cuts were made to catch

In exploitation work winzes are usually carried down in advance of shaft sinking. At present the main shaft is being sunk from the 5th to the 6th level.

The middle lode has no visible outcrop on the surface. It lies 85 feet to the north of the south lode, and

FLOW SHEET, SULPHUR MINES AND RAILROAD COMPANY,
SULPHUR MINES, VIRGINIA.



Notes

1. Number 1 jigs are one-sieve Hartz jigs, with sieve 15"x30"; tail board 4" high; III throws per minute of 1.25" each; bottom bed of one complete layer of iron shot 1" diam., covered by another complete layer of 0.5" diam.

2. Number 2 jigs are two-sieve Hartz jigs, with sieves 15"x28" and throw of 5/8", otherwise like number 1.

3. The Bolthoff drier is 6'x42' in size, with cast iron plates travelling about 2' per second.

4 Screens are run dry. Acid water would eat them out in about 48 hours.

these ore bodies, known respectively as the middle and north lodes. There are now two shafts on the property, and about 3,500 feet of drifting has been done on the ore bodies on five levels, exclusive of cross cuts, and the sixth level is now being opened up.

was found when drifting towards the north lode on the first level. Cross cuts have also been run through this lode on the 2nd and 3rd levels, and considerable exploratory work has been done upon it. It carries ore on the 1st and 3rd levels, but not on the 2nd. This lode, on

the first level, has a width of about 6 feet of high-grade ore, but on the 2nd level it contains a very large quantity of calcite.

The north lode lies 45 feet farther north. When first cut, it was 22 feet wide, 17 feet being through massive pyrite. The length of this lode, as indicated on the surface, is over 500 feet. On the 3rd level, drifts have been run along the lode 370 feet east and 250 feet west of the cross cut that runs to the south lode. The width varies between 6 and 22 feet.

The mine is fairly dry, very little water being encountered, and that chiefly on the north lode.

Much of the ore that has been hoisted has been secured during development work. Some stoping has also been done on the three upper levels. At present the bulk of the ore hoisted is obtained during the development work.

The ore is coarsely granular and makes a large percentage of fines. The main impurity of calcite, though there is also some quartz present. A small quantity of pyrrhotite occasionally occurs, mainly in the north lode next the footwall.

At the present time only fines burners are used at the works. Hence no lump ore is required. In preparing the ore for the Herreshoff burners, the lump and spalls are passed through a No. 3 McCully crusher (capacity about 150 tons per day) and a set of Buchanan rolls, 24 inches by 14 inches. The lump and spalls are dry enough to be used at once. The fines from the mine are dried in a wood fired rotary dryer before being fed to the furnaces.

In shaft sinking, two machines are used, in drifting only one—both Ingersoll and Holman drills are in use. For stoping both Rand and Hartzog hammer drills are employed.

Overhand stoping is employed throughout the mine. The main drifts are run the length of the ore body. Chutes are placed about 20 feet apart, and an 8-foot ore pillar is left above the drift. The stopes are raised to within 8 feet of the level above, just enough ore being drawn off during stoping to give working room above the broken ore in the stope.

The drifts are 5 feet wide and 6 feet 6 inches high. Both the ore and rock break hard, and usually 19 or 20 holes are required to square a cut. Most of the drifting is done on contact.

Power is obtained from the Seymour Power and Electric Company, the generating station being at Campbellford, 40 miles away. The current is received at a voltage of 44,000, and is stepped down to 240 volts for use in the plant and mine.

All the ore mined is used directly in the acid works which has been erected on the property at Sulphide station by the Nichols Chemical Company. The average percentage of run of mine ore will be about 35 per cent., the fines being much higher.

The Canadian Pacific Railway main line between Montreal and Toronto crosses the southern end of the property, a little more than a quarter of a mile from the mine.

Ontario Sulphur Mines, Limited.||—The property of this company comprises the northwest quarter and the east half of lot 21, concession XI, township of Hungerford, Hastings county, having a superficial area of 150 acres. Work on the property commenced in March, 1908, and has been carried on continuously, save for a shut-down of two months in the summer of 1910. The

pyrites deposit on which work has been done is located about half a mile east of the Hungerford mine. It appears to be a lens pitching towards the southeast.

The main shaft (14 by 7 feet) has been sunk to the 100-foot level. Below this it was narrowed to 10 by 7 feet and was carried down to 250 feet below the collar. On the 100-foot level drifts have been carried 84 feet west and 98 feet east along the lode. On the 200-foot level the west drift runs 17 feet and the east drift has been carried 170 feet from the shaft.** A cross cut has been run for 30 feet from the east drift on the 100-foot level; for 12 feet from the west drift on the 200-foot level; and for 27 feet from the east drift on the 200-foot level.

The work which is being carried on at present is largely for exploration and development.

The present plant consists of two upright boilers with a capacity of about 65 horsepower. The mine is provided with one 3-drill Clayton air compressor operating two Corkill and three hammer drills. The hoist is capable of hoisting 1,200 pounds 300 feet. The pumping equipment consists of a duplex steam pump for the boilers and one Cameron sinking pump.

It is proposed to install electric power by extending the power line of the Seymour Power Company from the plant of the Nichols Chemical Company less than three-quarters of a mile to the east. The shaft is to be straightened and a skip track installed. The new equipment will include a 2-ton electric hoist, and a 12-drill air compressor. A shaft house will be erected with ore sorting floor and bins. An aerial tramway will be run to the Canadian Pacific Railway where it crosses the company's lot about 1,800 feet from the mine and unloading bins will be provided at the siding.

The company are also considering the erection of a concentrating plant, but this will not be erected this year.††

The total shipments from the property up to the first of May, 1911, have been 4,821 long tons of ore averaging 36½ per cent. sulphur.

The Queensboro Fahlband.—This fahlband, which is near the eastern boundary of Madoc Township, strikes in a general north-of-east direction, and can be readily followed for a distance of two miles, stained, rusty and decomposed schists being discernible throughout that distance.

Queensboro Mine.—Lot 11, concession XI, Madoc Township, Hastings County. This property is located about one mile southwest of the Village of Queensboro, and one-half mile west of the Bay of Quinte Railway.

The deposit lies in a depression at the contact of a garnetiferous crystalline schist to the south, resembling that at Hungerford, and an intrusion of light grey granite to the north.

A small spring creek ran through the depression over a part of the deposit. This it was necessary to divert, and a shaft was sunk at the edge of the old creek bed, to a depth of 85 feet. At 50 feet in depth water came in to such an extent that a drift was driven to the east for 30 feet and a cistern was constructed into which the water was trapped by means of wall plates and troughs. At the bottom of the shaft, a drift has been run to the west for 25 feet, and a cross cut made 20 feet to the north. A drift was also driven to the west on the 50-foot level.

One hundred and fifty feet to the west another shaft has been sunk to a depth of 30 feet.

||Managing Director, B. A. C. Craig, National Club, Toronto; Mine Office, Tweed, Ont.

**In July, 1911.

††1911. The mine was closed near the end of this year.

About 100 feet southwest of the main shaft, a zone of highly pyritous rock was worked. Through this ran several lenses, up to 4 to 5 feet in thickness, of medium grade pyrite, shading off into leaner ore. One lens contains disseminated copper pyrites, which was worked by an open pit.

The mine was operated by the British American Development Company of Toronto.

The pyrite was hauled by teams to Queensboro Station and there shipped to the Contact Process Company at Buffalo. The first 21 cars shipped average 47 per cent. sulphur, and shipments up to the fall of 1906 amounted to 65 earloads.

The highest grade ore comes from a series of lenses close to the granite contact. That on which the main shaft is sunk has, at the shaft, a width of 15 feet and a length of about 50 feet, thinning out towards the ends. To the west is a similar lens, which shows a width, in a surface trench, of 20 feet of very high grade pyrite. The iron pyrites in these lenses is a hard, heavy, dense ore resembling a massive magnetite, the only impurity being thin veinlets of quartz. To the south is an extensive area of more or less imperfect impregnation, showing places from which a 35 per cent. sulphur ore can be quarried.

A noteworthy feature of this deposit is a small vein to the west of the workings which has a northwest strike and is about 2 feet wide. It has been opened by a trench 16 feet long and 4 feet deep. It cuts the formation at an angle of 45 degrees, and appears to possess well defined walls. The vein is composed of quartz, pyrite, copper pyrite and argentiferous jamesonite. This vein is of later age than the pyrite deposit. The jamesonite fills the interstices and is formed around crystals of pyrite. This vein possesses an interest on account of the rare occurrence of jamesonite in this country, and the present high price of antimony.

Canadian Sulphur Ore Company's Property.††—N. ½ Lot 9, Concession X., Madoc. When this property was investigated by Mr. Fraleck in 1906, a series of pits and trenches had disclosed a belt of gossan over 500 feet in length, about 200 feet in width, and about 12 feet in depth. The gossan was mainly conglomerate with iron oxide as a cementing material; certain portions were a fairly good limonite. Here and there throughout the gossan, were found pyrite boulders up to 12 feet in diameter, but the ore body had not been located.

Subsequent prospecting and development has disclosed pyrite ore in a series of lenses in a fahlband, occurring in rocks of pre-Cambrian age. The lenses vary in width up to 20 feet. The ore is high grade, very little cobbling, if any, having to be done, and cars have been shipped running 40 to 48 per cent. sulphur. The ore is free from arsenic, zinc, lead, copper and calcium. It burns very satisfactorily, and is in good demand by sulphuric acid makers. The output goes mainly to Sulphide, Ontario, and to Buffalo, N.Y.

The main shaft is now down 135 feet, and a second shaft 400 feet west is down 50 feet. The property is equipped with an 80 h.p. steam boiler, 3-drill air compressor, steam hoist, air drills, pumps, and other necessary machinery. There is a comfortable boarding house for the men, and an office building. The property is still in the early stages of development, but the company expect to ship, shortly, at the rate of 30 tons a day.

The operating company is the Canadian Sulphur Ore Company, Limited, of which Mr. A. Longwell is presi-

dent, and A. B. Willmott, secretary and treasurer. The head office is 404 Lumsden Building, Toronto, and the mine address is Queensboro, Ontario.

(To be continued.)

WANTED—AN INTELLIGENCE BUREAU

(By Our Special Correspondent.)

At a recent mining meeting a speaker directed attention to the position of Canada in nickel and silver. His reluctance to include asbestos among the "first raters" was probably due to the unpopularity of the theme. A writer to the Mineral Industry* says, in part, "A decision of the directors to default payment of the interest on their consolidated bonds came as no surprise to the public at the end of 1911. The asbestos market has been depressed, but the mines are in excellent condition." A writer to the Journal summarizes the state of affairs by affirming that the cause of the late depression was overproduction and the remedy lay in the hands of the producer.

There may be a considerable divergence of opinions regarding the reactionary causes of such a depression, but any movement tending to stimulate and maintain a healthy condition of the industry would be welcome and to this end I would suggest an Intelligence Bureau at Quebec, and including in its functions:

Publicity.—There is no doubt that the major portion of the ills of the past depression were due to lack of intelligent, unprejudiced information. Overcapitalization would otherwise not appear so reasonable, and the manipulator of spurious properties would have a less successful task.

The regular issuing of statistics relative to foreign production might serve a valuable end. There appears in the London Mining Journal notice of a movement to form a syndicate to better organize and regulate the Russian asbestos trade. Undoubtedly, Canadian asbestos stands first in quality and quantity of ore, but judicious foresight will be safe policy.

Director Brock some time ago drew attention to the need of an inventory of mineral claims. This work could well be undertaken by such a bureau, and could embrace the metal and non-metallic claims throughout the province.

Experiments.—There is at present a wide difference of opinion regarding the character of the machines necessary for milling asbestos fibre. A series of anthentic tests would assist in standardizing these machines. Tests might also be made to find new uses for asbestos. The manufacturer is probably in the best position to carry on such tests, as he is also in extending the market for new articles, but he is not as directly interested in the amount of asbestos used as the producer, i.e., it may be cement, blue or gray asbestos, so long as the sales total are satisfactory.

Local Conditions.—Bulletins issued regularly summarizing production and accumulation of stocks would be a means of regulating production. The producer is always averse to accumulating large stocks.

The labour market has been unsatisfactory during the past few years, and while the labour conditions are rather difficult, there is no doubt much could be done to improve this question to the interest of employee and employer.

††Formerly Wellington Prospect.

Co-operation has long been a debated question. It is probably unnatural to expect co-operation between prosperous companies and those which are losing money. No doubt, however, many of the future interests of the industry will depend upon whether the producers will exert their power to protect the industry or allow competitive forces to undermine their advantages. The Bureau might assist in determining and indicating what course of procedure would be most beneficial.

WORKMENS' COMPENSATION IN MICHIGAN.

By R. E. Hore.

During the past year most of the Michigan copper mining companies elected to operate under the provisions of the Employer's Liability and Workmen's Compensation Act of Michigan which became effective September 1st, 1912. The principles striven for in this Act are: Reasonable compensation at minimum cost for all accidents except the result of wilful fault, certainty of amount, certainty of payment, payment without litigation and prevention of accidents. Fixed sums are paid under the Act for any injury which incapacitates an employee for a period of not less than two weeks. Amounts of compensation to be paid in case of death of employee is determined by the extent to which his immediate relatives have been dependent for support on his earnings. If employee leaves dependents wholly dependent upon him, the compensation is a weekly payment of one-half his average weekly wages, but not more than \$10 nor less than \$4 a week for 300 weeks. For complete disability the compensation is at the same rate for 500 weeks, the total not to exceed \$4,000.

The compensation for partial disability is provided for as follows:

"While the incapacity for work resulting from the injury is partial, the employer shall pay, or cause to be paid as hereinafter provided, to the injured employee a weekly compensation equal to one-half the difference between his average weekly wages before the injury and the average weekly wages which he is able to earn thereafter, but not more than ten dollars a week; and in no case shall the period covered by such compensation be greater than three hundred weeks from the date of the injury. In cases included by the following schedule the disability in each such case shall be deemed to continue for the period specified, and the compensation so paid for such injury shall be as specified therein, to wit:

"For the loss of a thumb, fifty per centum of the average wages during sixty weeks;

"For the loss of a first finger, commonly called index finger, fifty per centum of average weekly wages during thirty-five weeks;

"For the loss of a second finger, fifty per centum of average weekly wages during thirty weeks;

"For the loss of a third finger, fifty per centum of average weekly wages during twenty weeks;

"For the loss of a fourth finger, commonly called little finger, fifty per centum of average weekly wages during fifteen weeks;

"The loss of the first phalange of the thumb, or of any finger, shall be considered to be equal to the loss of one-half of such thumb, or finger, and compensation shall be one-half the amounts above specified;

"The loss of more than one phalange shall be considered as the loss of the entire finger or thumb; Provided, however, that in no case shall the amount re-

ceived for more than one finger exceed the amount provided in this schedule for the loss of a hand;

"For the loss of a great toe, fifty per centum of average weekly wages during thirty weeks;

"For the loss of one of the toes other than a great toe, fifty per centum of average weekly wages during ten weeks;

"The loss of the first phalange of any toe shall be considered to be equal to the loss of one-half of such toe, and compensation shall be one-half of the amount above specified;

"The loss of more than one phalange shall be considered as the loss of the entire toe;

"For the loss of a hand, fifty per centum of average weekly wages during one hundred and fifty weeks;

"For the loss of an arm, fifty per centum of average weekly wages during two hundred weeks;

"For the loss of a foot, fifty per centum of average weekly wages during one hundred and twenty-five weeks;

"For the loss of a leg, fifty per centum of average weekly wages during one hundred and seventy-five weeks;

"For the loss of an eye, fifty per centum of average weekly wages during one hundred weeks;

"The loss of both hands, or both arms, or both feet, or both legs, or both eyes, or of any two thereof, shall constitute total and permanent disability."

As stated by the accident industrial board, the theory of the compensation law is based on the assumption that when a worker is injured in an industry, the loss to him was occasioned by the industry, and that the product of that industry should be charged with his losses, and should pay for them. The law should be supported to the end that injured workmen may receive justice, that employers may have fixed liabilities and escape the embarrassment and expense of damage suits, that the courts be relieved of the time of trying damage suits, that the public treasury be relieved of the expense of caring for the victims of industrial accidents, that more harmonious relations be promoted between employers and employees.

In the past those injured in Michigan copper mines have been, for the most part, taken care of by benefit associations. For the year 1910 twelve copper mining companies reported a total of 53 fatal and 4,212 non-fatal accidents. The injured received from benefit associations, \$87,133.75; directly from employers, \$4,523.45, and by settlements out of court, \$5,418.00.

THE EIGHT HOURS ACT.

An Act to amend The Mining Act of Ontario in respect to the House of Underground Employment.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. The Mining Act of Ontario is amended by inserting therein the following section:—

159.—(1) No workman shall remain or be allowed to remain underground in any mine for more than eight hours in any consecutive twenty-four hours, where the employer obtains from the Inspector a certificate that the means and methods in use at the mine of getting to and from the place of work in the mine are proper and satisfactory, shall be reckoned from the time of arriving at such place of work until the time of leaving such place, otherwise such eight hours shall be reckoned from the time of leaving the surface until the time of return-

ing to the surface, or in such other way as the Inspector may direct; provided, however, that

- (a) Time taken for lunch, not exceeding one half hour, need not be reckoned as part of such eight hours;
- (b) A Saturday shift may work longer hours for the purpose of avoiding work on Sunday or changing shift at the end of the week or giving any of the men a part holiday.
- (c) The said limit of time shall not apply to shift bosses, pump men, or persons engaged solely in surveying or measuring, nor shall it apply in cases of emergency where life or property is in imminent danger, or in any case of repair work, or to any mine where the number of men working in a shift does not exceed six.

(2) In this section

“Workman” means any person employed underground in a mine who is not the owner or agent or an official of the mine.

“Shift” means any body of workmen whose hours for beginning and terminating work in the mine are the same or approximately the same.

(3) Where any question or dispute arises as to the meaning or application of paragraph (c) of sub-section 1, or as to the meaning of “workman,” “shift,” or “underground,”

the certificate of the Inspector shall be conclusive.

- (4) For greater certainty it is hereby declared that sections 174, 175, 179, 180 and 181 of this Act shall apply to contraventions of this section; provided, however, that a workman shall not be guilty of an offence for failure to return to the surface within the time limited by this section if he proves that without fault on his part he was prevented from returning owing to means not being available for the purpose.
- (5) In the event of great emergency or grave economic disturbance, the Lieutenant-Governor in Council may suspend the operation of this section to such extent and for such period as he deems fit; or upon the Inspector certifying as regards any iron mine that the precautions, safeguards, and arrangements for protecting the health, safety and comfort of the workmen employed therein are satisfactory and in compliance with this Act, the Lieutenant-Governor in Council may, upon the recommendation of the Minister, in like manner suspend the operation of this action in so far as such mine is concerned.
- (6) This section shall come into effect on the first day of January, 1914.

ANNUAL REPORT OF HOLLINGER GOLD MINES LIMITED

GENERAL MANAGER'S REPORT

The President and Directors,
Hollinger Gold Mines, Limited.

Dear Sirs,—

I beg to submit my second annual report, covering operations for the year 1912.

FINANCIAL.

Operations were considered to begin July 1st, when the mill went regularly into commission, and all expenditures previous to that date were charged to “Plant” and “Development.”

The sale of the balance of treasury stock (50,000 shares), at a premium of \$5.00 per share, enabled all indebtedness to be cleared, and left the Company in possession of its mine and mill, fully paid for and in a productive condition.

Profits of \$600,664.42 were earned during the last half of the year, in spite of the facts that mine and mill had to be worked up to a condition of smooth run-

ning, and that the last six weeks of the year were entirely devoted to fighting a labour strike.

As shown by the balance sheet, substantial amounts were written off from both “Plant” and “Development.” It is well to point out that while “Development” stood at \$302,639.19 there was an additional sum of \$192,333.52 which had been actually expended by the original syndicate in development and upon road building, but which sum was not chargeable upon this Company’s books. In fact, “Development,” up to July 1st, 1912, had cost \$494,972.71, so that the asset of \$180,000.00, which is carried forward to 1913, represents a very conservative valuation; this with the carrying forward of plant at \$500,000.00, after writing off \$106,223.54 for depreciation, leaves the Balance Sheet with no fictitious values ascribed to assets, and with a surplus of \$351,801.69, largely made up of cash, bullion and convertible sundries.

THE MINE.

The following work was accomplished during the year:

	Drifts.	Crosscuts.	Winzes.	Raises.	Shafts.	Stopes.
100-ft. level	1,802 ft.	401 ft.	121 ft.	60 ft.	.....	23,973 tons
200-ft. level	1,299 ft.	820 ft.	203 ft.	90 ft.	66 ft.	6,767 tons
300-ft. level	179 ft.	160 ft.	.....	.....	.....	.....
Totals	3,280 ft.	1,381 ft.	324 ft.	150 ft.	66 ft.	30,740 tons

The total advance of workings amounted to 5,201 feet. Our underground workings now total 8,918 feet, distributed as follows:

	Drifts.	Crosscuts.	Winzes.	Raises.	Shafts.
100-ft. level	3,141 ft.	1,508 ft.	224 ft.	142 ft.	362 ft.
200-ft. level	1,719 ft.	1,096 ft.	227 ft.	90 ft.	70 ft.
300-ft. level	179 ft.	160 ft.	.....	.....	.....
Totals	5,039 ft.	2,764 ft.	451 ft.	232 ft.	432 ft.

DIAMOND DRILLING.

Prospecting by means of a diamond drill has been carried on with beneficial results, the amount of drilling being as follows:

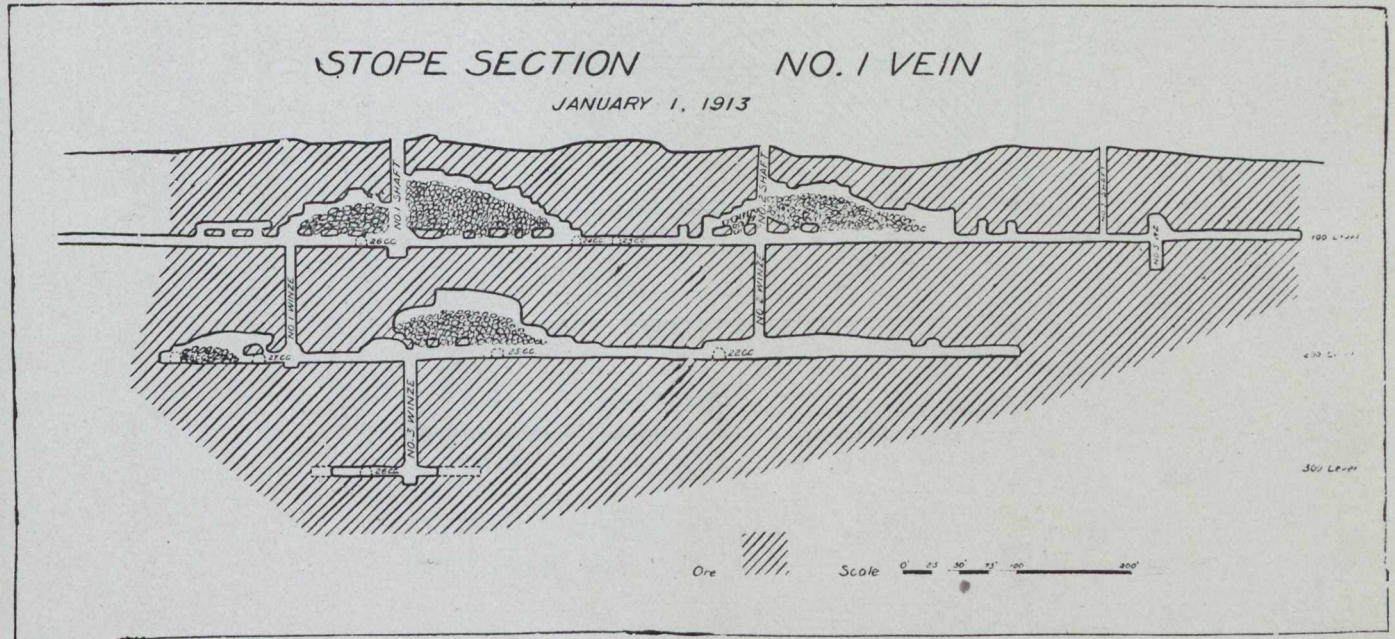
100-ft. level	588 ft.
200-ft. level	800 ft.
300-ft. level	78 ft.

Total.....1,466 ft.

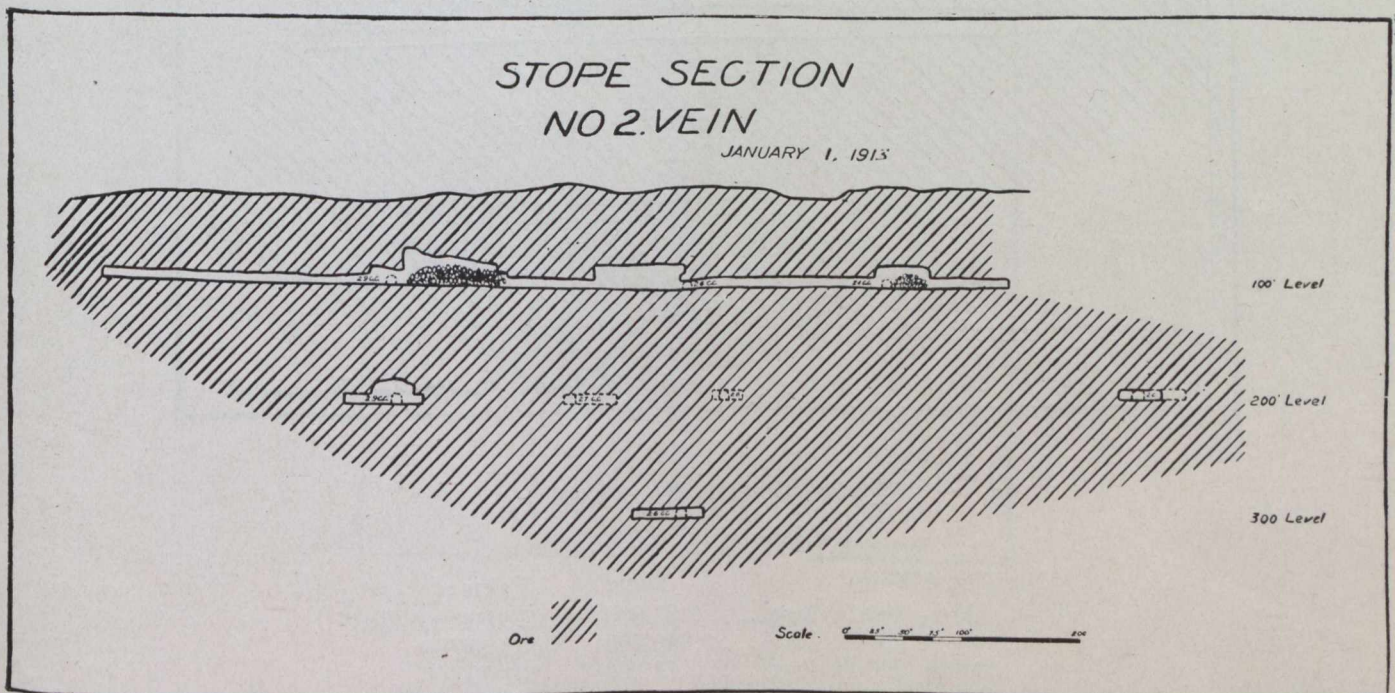
ORE RESERVES.

Estimates of ore reserves are based upon the results of development, as shown upon the accompanying "Stope Sections" and plan.

Making allowances, as shown in the stope sections, the indicated ore reserves are estimated to be:



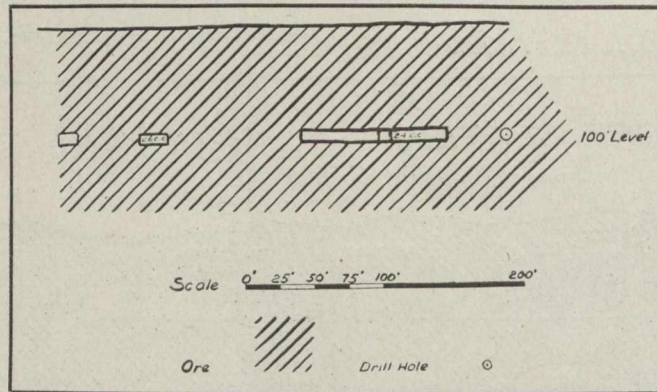
Number 1 Vein—	Tons.	Value.	Above 300-ft. level.....	75,400	1,960,400.00
Above 100-ft. level.....	42,700	\$1,229,700.00	Below 300-ft. level.....	12,000	275,200.00
Above 200-ft. level.....	78,700	2,560,800.00	Total.....	208,800	\$6,026,100.00



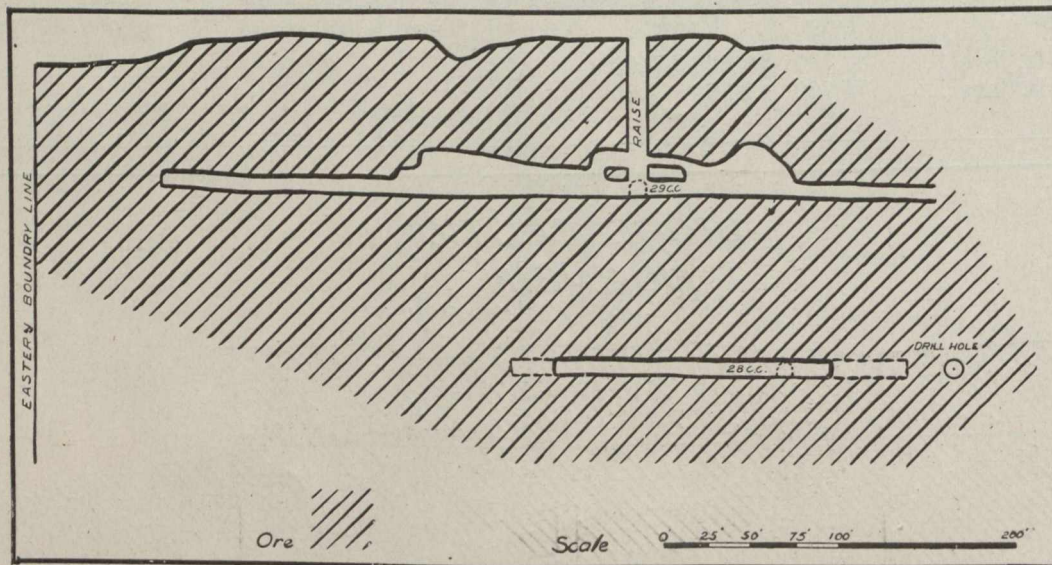
Number 2 Vein—	Tons.	Value.	Above 300-ft. level.....	65,780	829,700.00
Above 100-ft. level.....	48,560	\$ 672,480.00	Below 300-ft. level.....	10,660	120,100.00
Above 200-ft. level.....	76,800	1,025,970.00	Total.....	201,800	\$2,648,250.00

STOPE SECTION No 3 VEIN

January 1, 1913



Number 3 Vein—	Tons.	Value.
Above 100-ft. level.....	13,650	\$102,000.00
Below 100-ft. level.....	8,950	67,000.00
Total.....	22,600	\$169,000.00

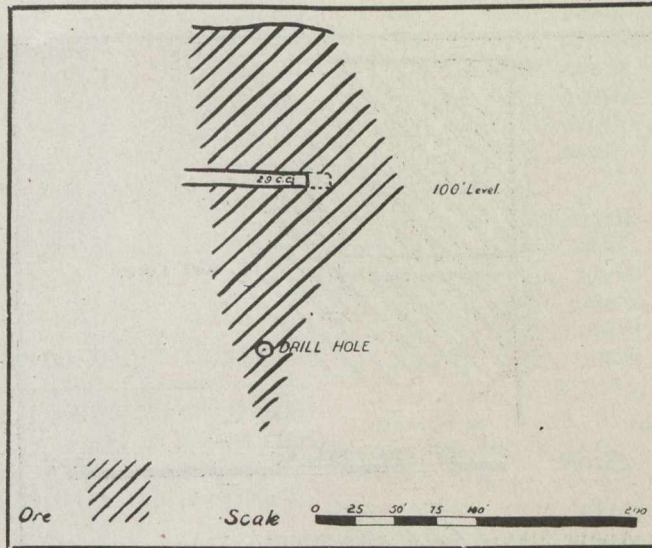


Stope Section, No. 4 Vein.

January 1, 1913.

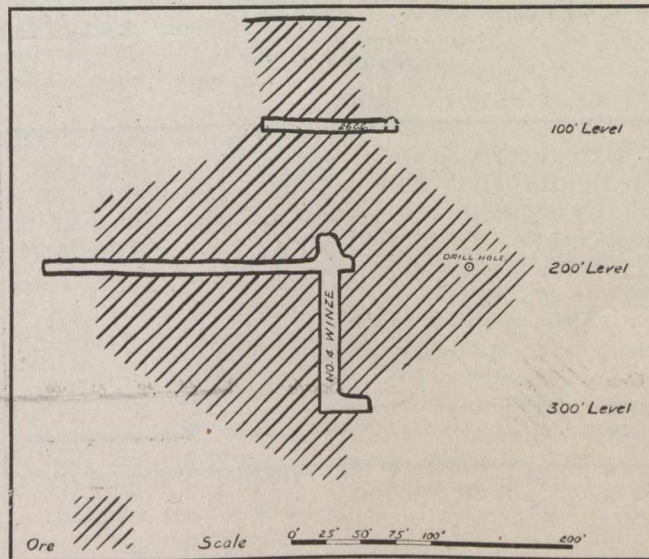
Number 4 Vein—	Tons.	Value.
Above 100-ft. level.....	31,800	\$ 378,800.00
Above 200-ft. level.....	40,700	502,200.00
Below 200-ft. level.....	11,800	131,000.00
Total.....	84,300	\$1,012,000.00

STOPE SECTION NO. 8 VEIN
January 1, 1913



Number 8 Vein—	Tons.	Value.
Above 100-ft. level.....	4,920	\$49,200.00
Below 100-ft. level.....	4,580	27,950.00
Total.....	9,500	\$77,150.00

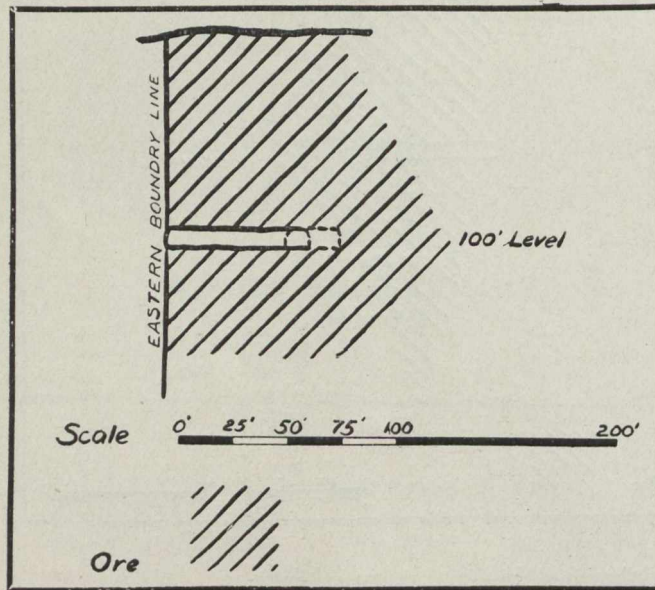
STOPE SECTION NO. 37 VEIN
January 1, 1913



Number 37 Vein—	Tons.	Value.
Above 100-ft. level.....	3,960	\$ 39,600.00
Below 100-ft. level.....	13,240	150,900.00
Above 200-ft. level.....	13,600	190,400.00
Below 200-ft. level.....	2,000	20,000.00
Total.....	32,800	\$400,900.00

STOPE SECTION No. 38 VEIN

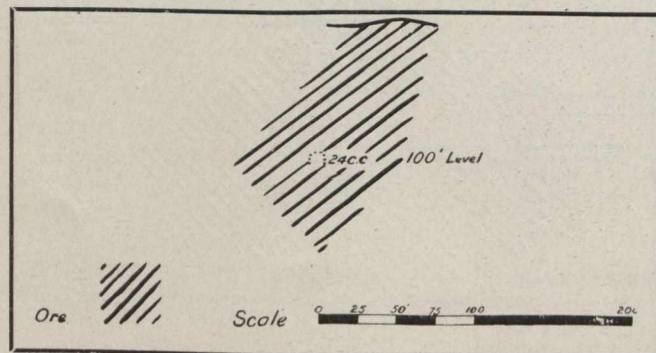
January 1, 1913



Number 38 Vein—	Tons.	Value.
Above 100-ft. level.....	5,000	\$ 77,500.00
Below 100-ft. level.....	3,100	46,500.00
Total.	8,100	\$124,000.00

STOPE SECTION No. 40 VEIN

January 1, 1913



Number 40 Vein—	Tons.	Value.
Above 100-ft. level.....	3,220	\$58,600.00
Below 100-ft. level.....	1,220	22,200.00
Total.	4,440	\$80,800.00
Number 41 Vein—		
Above 200-ft. level.....	1,100	\$16,600.00
Below 200-ft. level.....	1,000	16,600.00
Total.	2,200	\$33,200.00

RECAPITULATION OF ORE RESERVES.

	Tons.	Value.	Estimated at Beginning of 1912.
No. 1 Vein.....	208,800	\$6,026,100.00	\$7,560,000.00
No. 2 Vein.....	201,800	2,648,250.00	1,200,000.00
No. 3 Vein.....	22,600	169,000.00	150,000.00
No. 4 Vein.....	84,300	1,012,000.00	450,000.00
No. 8 Vein.....	9,500	77,150.00	140,000.00
No. 37 Vein.....	32,800	400,900.00	.....
No. 38 Vein.....	8,100	124,000.00	.....
No. 40 Vein.....	4,440	80,800.00	.....
No. 41 Vein.....	2,200	33,200.00	.....
Veins 5, 7, 9, 11, 12, 13, 14, 23, 33, 35, 36, 39, 42 and 43.....	70,000	700,000.00	730,000.00
Totals.....	644,540	\$11,271,400.00	\$10,230,000.00

The total value estimated in my report of a year ago was \$10,230,000.00, and during the time between reports we have milled \$970,304.89 from the previously estimated reserves.

The year has been spent in proving up previous estimates, and it will be noted that, with the exception of Number 1 Vein and Number 8 Vein, there is a general increase in the values ascribed to the various ore bodies.

The original reserves of No. 1 Vein were estimated upon the basis of a solid block of ore 300 feet in depth, while the present estimate is based upon more extensive development and does not include so large a block of ore as was included in last year's figure. Further, during 1912, approximately \$760,000.00 was removed from the estimated reserves of No. 1 Vein.

We are now assured of the prevalence of ore to a depth of 300 feet, and there is no known reason why it should not be found at considerably greater depths, but in order to become established upon a conservative basis, no allowance has been made for ore which may exist beyond a depth of 50 feet below the deepest working of any vein.

Compared with a year ago, our position in the matter of ore reserves has been greatly strengthened, for our present estimates are the result of development work, and the estimated values per ton have been substantiated by the milling of 45,195 tons of ore.

There are 34 known veins upon which no work has been done, other than sampling the surface outcrops. As in last year's report, these are included in ore reserves at arbitrary nominal figures.

Veins 37, 38, 39, 40, 41, 42 and 43 are new discoveries made during the year.

In last year's estimates, No. 8 Vein was figured to a depth of 200 feet, while this year it is figured to a depth of 150 feet, the reduction being made in accord with the policy of limiting estimates to a depth of 50 feet below the workings.

In the mine there are 24 faces which carry ore and which are available as working places. They are:

100-foot level—

- No. 2 Vein, south of 26 crosscut.
- No. 3 Vein, south face.
- No. 3 Vein, north face.
- No. 3 Vein, south of 26 crosscut.
- No. 8 Vein, south face.
- No. 38 Vein, south of 30 crosscut.

200-foot level—

- No. 1 Vein, south face.

- No. 1 Vein, north face.
- No. 2 Vein, south of 29 crosscut.
- No. 2 Vein, north of 29 crosscut.
- No. 2 Vein, south of 27 crosscut.
- No. 2 Vein, south of 26 crosscut.
- No. 2 Vein, north of 26 crosscut.
- No. 2 Vein, south of 22 crosscut.
- No. 2 Vein, north of 22 crosscut.
- No. 4 Vein, north of 28 crosscut.
- No. 4 Vein, south of 28 crosscut.
- No. 37 Vein, south of 26 crosscut.

300-foot level—

- No. 1 Vein, north face.
- No. 1A Vein, south face.
- No. 1 Vein, south face.
- No. 2 Vein, north face.
- No. 2 Vein, south face.
- No. 37 Vein, north face.

In addition to this work there is a large amount of crosscutting to do, besides the necessary raises and winzes for development.

There is also the opening up of various groups of veins which have been exposed upon the surface, but which are too far removed to be reached expeditiously from the main workings.

Altogether there is room for from 25 to 30 drills to be used upon development work alone. This, in conjunction with the drills required for stoping ore to feed the mill, creates a demand for compressed air sufficient to operate about 55 drills, and there is the further demand for air with which to operate hoists, pumps and diamond drills.

The foregoing is given by way of explaining why we have not made more headway in sinking to greater depths. The opening up of the mine upon the upper levels has at all times demanded air in excess of the capacity of our plant.

The electrical apparatus for driving our 14-drill compressor having been destroyed by fire, it was not until the middle of February that this could be replaced, and until that time we had but a small 6-drill machine in operation.

Subsequently another 15-drill compressor was placed at work and a third machine of this size has just been installed upon the adjoining Dixon claim; the surplus air from this latter compressor will be available for use in the Hollinger mine.

The temporary equipment of compressors now installed will serve for the present, and meanwhile a central air compressing plant is being planned which will be of a permanent nature and of sufficient capacity to supply future requirements.

From November 15th to the end of the year, work in the mine was at a standstill, owing to the labour troubles which unexpectedly arose, this cessation resulting in a further reduction in the amount of work accomplished during the year.

The ore hoisted during the year amounted to 36,446 tons. All of this, together with ore previously placed upon the dump, was milled, the total amounting to 45,195 tons and containing \$970,304.89, of which amount \$933,681.53 was recovered. In the total values recovered, silver amounted to \$6,546.93 and gold \$927,134.60.

The average value of all ore treated was \$21.44 per ton, including the low grade ore sent to the mill at the commencement of millin goperations, and that milled during the strike.

We have now recovered sufficiently from the effects of the strike to enable sinking operations to be resumed,

and we propose to continue No. 3 Winze to the 400-foot level at once.

The raising of the main shaft from 300 to 200-foot level will also be undertaken at once, and when this is completed the shaft will be continued down to 400 feet.

THE MILL.

The first stamps were dropped June 15th and for two weeks nothing was treated but waste rock and very low grade ore, until the usual mechanical defects, incident to a new mill, were made right.

Early in July, cyaniding was commenced and the mill was put into regular operation. Beginning with June 15th, the following tonnages were treated, the figures being for four-week periods:

	Tons Treated.	Values Recovered.
June 15—July 13.....	4,447	\$ 23,129
July 14—Aug. 10.....	6,132	152,437
Aug. 11—Sept. 7.....	7,606	171,634
Sept. 8—Oct. 5.....	7,905	197,657
Oct. 6—Nov. 2.....	8,012	189,685
Nov. 3—Nov. 30.....	6,335	122,931
Dec. 1—Dec. 31.....	4,758	76,209
Totals.....	45,195	\$933,682

It will be noted that up to November, steady progress was made toward increasing both tonnages and values of ore treated.

November and December showed a falling off due to the strike.

The mill has operated in a satisfactory manner, and experience has demonstrated that the process adopted is the correct one for the treatment of Hollinger ores.

Originally our practice was to amalgamate concentrates in pans, in order to remove the contained values, but after several months of experimenting, amalgamation was abandoned in favour of the cyanidation of the concentrates. This necessitated no change in apparatus, the substitution of potassium cyanide for mercury, in the grinding pans, being all that was required.

The agitators which were adopted at the start did not prove to be adapted to the handling of our heavy ores, and we have therefore discarded the Trent apparatus in favour of Dorr Thickeners. For the benefit of the uninitiated it may be stated that the above change merely involves the substitution of one type of stirring arms for another, in an ordinary round tank.

By the substitution of the Dorr mechanism we are enabled to practice continuous decantation, which is expected to result in an increased saving of dissolved values, and may possibly enable a considerable saving in treatment charges to be made by making it possible to do away with the comparatively expensive item of filtering.

It was intended to make these changes before the end of last year, but our plans were upset by labour troubles and it is not expected that the work will be completed before May 1st.

WORKING COSTS.

The year's work having been so badly deranged, statistical data in regard to costs would be meaningless.

It will be some months before work in the various departments will be brought up to a state of efficiency, but the costs for February, 1913, are given, as they are indicative of what may be expected, although they are inordinately high.

MINING COSTS.

Four Weeks Ending February 25th, 1913.

Account—	Labour.	Stores.	Total.	Per Ton of Ore Milled.
General Mining Charges.....	\$ 363.31	\$ 124.02	\$ 487.33	\$0.053
Superintendence.....	1,160.95	.....	1,160.95	.126
Diamond Drilling.....	162.97	87.72	250.69	.027
Crosscutting.....	145.34	255.61	400.95	.043
Drifting.....	1,868.54	1,256.84	3,125.38	.338
Raising.....	43.86	21.16	65.02	.007
Stoping.....	7,895.77	6,709.53	14,605.30	1.581
Timbering Stopes.....	1,837.06	183.73	2,020.79	.219
Track Laying.....	70.06	50.20	120.26	.013
Tramming and Mucking.....	4,042.04	6.34	4,048.38	.438
Pipe Fitting Underground.....	133.40	256.83	390.23	.042
Mine Drainage.....	130.71	335.53	466.24	.050
Hoisting.....	837.27	734.21	1,571.48	.170
Landing and Dumping.....	583.38	.....	583.38	.063
Drill Repairs.....	138.67	847.67	986.34	.107
Drill Sharpening.....	1,262.30	36.48	1,298.78	.141
Distributing Steel.....	460.03	.....	460.03	.050
Mine Sampling.....	372.33	8.60	380.93	.041
Assaying.....	72.81	80.11	152.92	.017
Change House.....	70.00	.....	70.00	.008
Mine Lighting.....	30.49	15.94	46.43	.005
Handling Explosives.....	227.90	3.87	231.77	.025
Handling Waste.....	147.75	.....	147.75	.016
Surveying.....	76.47	.....	76.47	.008
	\$22,133.41	\$11,014.39	\$33,147.80	\$3.588

MILLING COSTS.

Four Weeks Ending February 25th, 1913.

Account—	Labour.	Stores.	Total.	Per Ton of Ore Milled.
General Milling Charges	\$1,117.98	\$ 357.18	\$1,475.16	\$0.160
Superintendence.	694.94	.....	694.94	.075
Tailings Disposal .....	.....	1.72	1.72	....
Heating.	384.92	314.78	699.70	.076
Lighting.	24.50	161.63	186.13	.020
Watchman.	79.80	.....	79.80	.009
Sampling.	55.53	.40	55.93	.006
Assaying.	145.62	160.23	305.85	.033
Coarse Crushing	410.66	264.00	674.66	.073
Conveying.	221.17	92.35	313.52	.034
Stamping.	786.30	885.94	1,672.24	.181
Classification and Tube Milling*.....	491.06	2,067.91	2,558.97	.277
Concentration.	415.11	113.67	528.78	.057
Handling Concentrates	28.84	86.66	115.50	.012
Grinding Concentrates	158.83	170.87	329.70	.036
Handling Pulp	71.78	131.09	202.87	.022
Thickening.	91.03	19.35	110.38	.012
Agitation.	103.62	167.68	271.30	.029
Filtration.	908.46	448.35	1,356.81	.147
Acid Washing.	27.08	92.00	119.08	.013
Neutralizing.	109.56	100.50	210.06	.023
Clarification and Precipitation.....	107.42	576.51	683.93	.074
Smelting and Retorting	151.16	432.97	584.13	.063
Pumping Solutions.	115.14	72.01	187.15	.020
Cyanide. ....	.....	381.22	381.22	.041
Extraordinary Expenditures (alterations).....	\$6,700.51	\$7,099.02	\$13,799.53	\$1.493
	953.60	891.33	1,844.93	.200
	<u>\$7,654.11</u>	<u>\$7,990.35</u>	<u>\$15,644.46</u>	<u>\$1.693</u>

*Classification and tube milling include the cost of repairing the linings of three tube mills.

TOTAL OPERATING COSTS.

Four Weeks Ending February 25th, 1913.

Amount	Per Ton of Ore Milled	
Administration, Management, Insurance, etc.	\$ 3,763.54	\$0.407
General Charges	1,931.08	.209
Clearing Surface, Roads, etc.	137.75	.015
Mining.	33,147.80	3.588
Milling.	13,799.53	1.493
Operating Camp	2,415.96	.261
Extraordinary Expenditures ...	\$55,195.66	\$5.973
Loss on Temporary Boarding Houses.	384.70	.042
Alterations to Mill and Plant.	2,034.51	.221
Strike Expense	4,695.37	.508
	<u>\$62,310.24</u>	<u>\$6.744</u>

Mining costs are admittedly high. We are working with a force of men collected hurriedly in outside camps and brought in to replace the men who went out on strike, and this new force has not yet reached a high state of efficiency. A gradual reduction in mining costs may be expected.

Milling costs are high owing to abnormal expenditures for alterations and repairs.

General costs are greatly increased by the extraordinary expenses incurred in providing protection against

strikers, in quatering employees upon the mine, and in efficiency engendered by existing conditions.

Further, the figures given are for a period in mid-winter, when costs of heating the camp and works are a heavy item of expense.

Substantial reductions in working costs may therefore be looked for, and it is expected that with uninterrupted working, the total costs will be brought down to approximately \$5.50 per ton.

GENERAL.

The work of the year progressed satisfactorily until November 15th, upon which date the Western Federation of Miners declared a strike, and by intimidation forced about one-half of our men to go out.

There had been no dispute between the Company and its men, and the strike was entirely unexpected.

The strike was general throughout the camp and was unsuccessful.

We were forced to abandon our boarding houses in the Town of Timmins and put up temporary quarters at the mine. It was also necessary for us to bring in a number of special police to protect our men and property.

The men who remained loyal enabled us to keep the mill going, and our force was gradually built up by men coming in from outside camps.

The working conditions are better here than elsewhere in Ontario. We pay from \$3.25 to \$3.75 per day for skilled labour, and from \$2.50 to \$3.00 for unskilled. Bed and board are furnished for 60 cents per day. Nine

hours constitutes a day's work in the mine, and eight-hour shifts are worked in the mill.

The strike has gradually dwindled until there are now (March 19th) 1,200 men at work in the camp, of which number approximately 500 are employed by this Company.

Some 150 men are actively engaged in trying to interfere with those who wish to work. This small number of malcontents is largely made up of professional agitators surrounded by a following of incompetents who have availed themselves of the opportunity to put in a winter of idleness, meanwhile being supported and fed by donations received from outside labor organizations.

It is hoped that the Government will rid the district of this undesirable element.

Directly and indirectly the strike has cost the Company fully \$100,000.00, besides the intangible loss due to the disorganization of all departments.

HOSPITAL.

A comfortable hospital has been provided by Canadian Mining & Finance Co., Ltd., in the Town of Timmins, the use of which is open to employees of the Hollinger mines.

BUNK HOUSES.

Up to the present the only bunk houses available have been those provided by Canadian Mining & Finance Co., Ltd., but we are now constructing three bunk houses at the mine which will accommodate 150 men in ordinary times, and which may be used for 300 men in times of emergency. These are to have plastered rooms, two men in a room.

Ten cottages for married men have been built in the town. It is possible that we may find it necessary to increase this number.

POWER SUPPLY.

Electric power developed from hydro-electric plants upon the Mattagami River has proved entirely satisfactory. The action of the directors in disposing of their holdings in the plant at Sandy Falls, in order to bring about a consolidation with the company operating Wai-waiten Falls, has made available two independent sources of power.

The two plants being distant twenty-eight miles from one another, makes a failure in power supply practically impossible either from accident or shortage of water.

ACCIDENTS.

There is but one fatality to report as occurring during the year. A. Lahte, a miner, was instantly killed on January 9th by the blowing up of a dynamite thawing house; cause unknown.

Before closing, I wish to record my appreciation of the loyal services rendered by the Company's staff and men during the recent labour disturbances, and to thank the directors for their support during the year.

Yours truly,

P. A. ROBBINS,
General Manager.

INTERNATIONAL COAL AND COKE COMPANY

The ninth annual report of the International Coal and Coke Co., operating coal mines and coke ovens at Coleman, southwest Alberta, covers the calendar year ended Dec. 31, 1912. It shows a net profit of \$232,198 for the 12 months, of which \$132,198 was transferred to the surplus account and \$100,000 has been carried forward into the working and dividend fund for the current year. The company's liabilities were reduced \$139,318 and the assets were increased \$92,880, while the payroll amounted to \$563,906, expended during the 254 days the mines were operating, employing an average of 520 men daily. The expenditures for development, additions to plant and other necessary outlay aggregated \$61,342.

The assets of the company total \$3,987,443, segregated as follows: Coal lands, \$3,135,955; plant, dwellings, horses, etc., \$658,817; warehouse stock, \$27,890; accounts receivable, \$165,753; stocks of coal and coke, \$2,173; unexpired insurance, \$1,682; cash on hand, \$172.

At the annual meeting of the company, held in Spokane, Washington, last month, the question of paying dividends quarterly was discussed. While nothing definite was decided, the secretary informed shareholders that if nothing shall occur to interrupt coal-mining operations the payment of a regular quarterly dividend might be expected.

The officers of the company are: President, Mr. A. C. Flumerfelt, Victoria, B.C.; first vice-president, Mr. Hugh Davidson, Vancouver, B.C.; second vice-president, Mr. D. H. Kizer, Spokane; treasurer, Mr. John McKeagan, Coleman, Alberta; secretary, Mr. W. G. Graves, Spokane; managing director, Mr. P. W. Rid-dell, Coleman; manager, Mr. O. E. S. Whiteside.

MINE ACCIDENTS

Speaking before a large number of men employed in and about the coal mines of the Western Fuel Co., near Nanaimo, Vancouver island, B.C., Mr. Thomas Graham, chief inspector of mines for British Columbia, after having given some accident and mortality statistics, said:

"Legislation, however stringent, or supervision, however efficient, will not prevent this class of accidents. Here, so much depends upon the personal element that only by the co-operation of every person concerned, from the mine inspector and the manager down to the trapper boy, can it be hoped to reduce to a minimum the number of accidents from falls of roof and coal. At such a meeting as we have to-night, at which are present so many fire-bosses and shot-lighters, it is an opportune time to urge upon them the great necessity that exists for their unremitting co-operation, for they come daily into closer contact with all underground employes than do other mine officials; so that an occasional word of advice, warning or admonition from them is likely to do much toward reducing the number of fatal accidents from the causes just mentioned, as well as from haulage."

The occasion of Mr. Graham's remarks was the meeting of the Western Branch of the Canadian Mining Institute, held at Nanaimo the first week in March, and these timely observations were made immediately before Mr. J. F. Menzies, of Roslyn, Washington, general superintendent of the Coal Department of the Northwestern Improvement Co., read a paper on "Mine-Rescue and First-Aid Work."

WORK AT THE SENECA SUPERIOR MINE, PETERSON LAKE, COBALT

[Editor's Note.—Under date of April 5th, 1913, the following information was kindly provided by the management of the Seneca Superior mine. It covers in part the work done in March.]

Surface.—Work has been progressing satisfactorily in all departments. The new rock house is completed and operating. The ore treating equipment, consisting of bumping table, Harz jig and Deister concentrating table, is all installed and running.

A fire pump was ordered and work begun on pump house on the edge of our dump. The new thaw house was completed and connected with the shore by a substantial bridge. Work was also started on a new dry house in place of the building originally built for the purpose and which has been used as a carpenter shop.

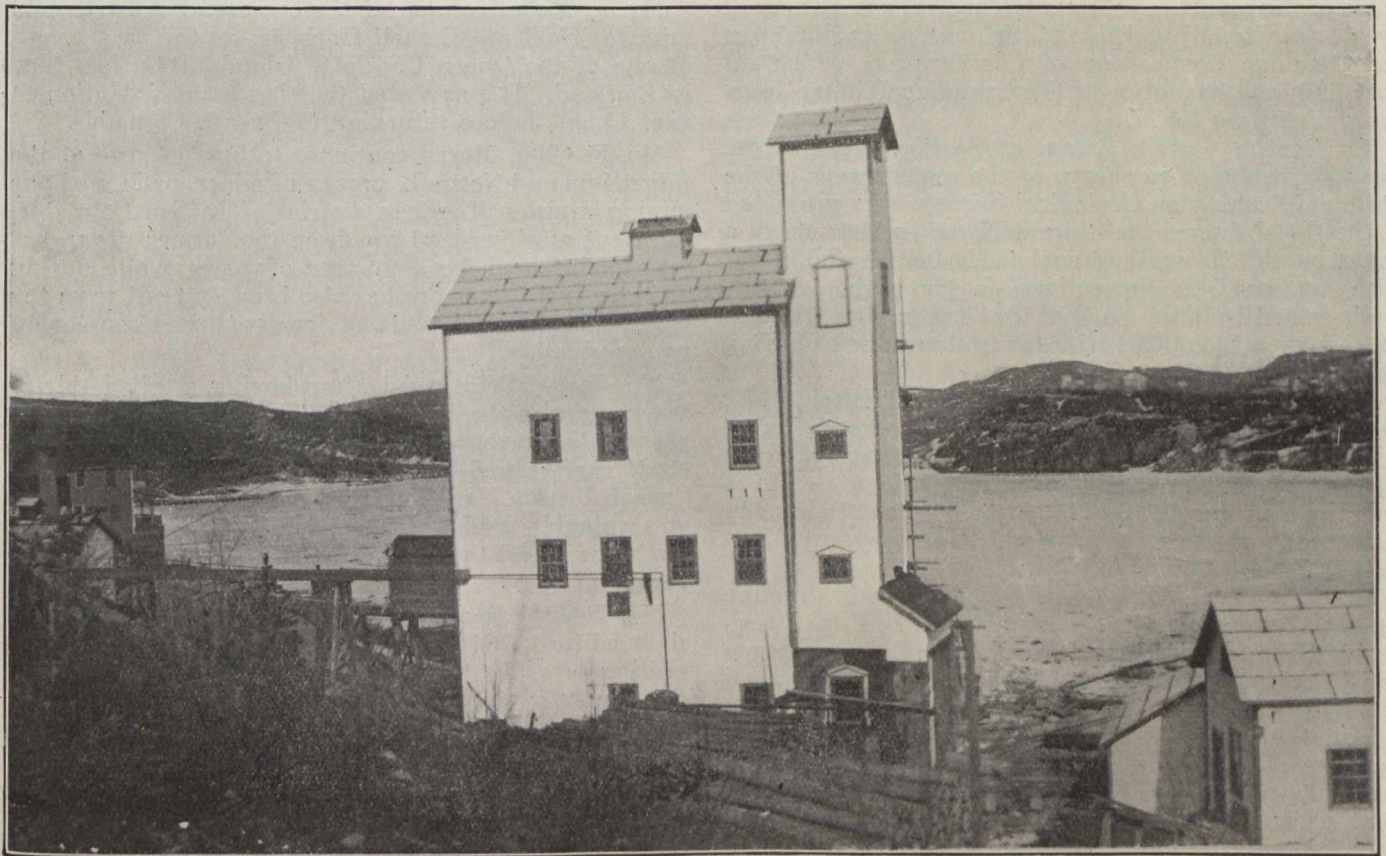
We have completed the tests on ore from the "mill

water is below the first level. We expect to have the entire mine unwatered in another week.

Underground.—Timbering the drift, east and west, has been steadily proceeding and stoping the ore overhead. We have also been back stoping the vein in the east preparatory to cutting hitches and timbering.

Owing to air conditions we stopped work late in the month on the No. 3 X cut and No. 1 Drift East, confining the work to stoping and driving No. 2 Crosscut. We have ordered ventilating pipe, to run from the shaft to the Worth vein and expect to have same installed in a few days when active work will be resumed at all points. The advances made during the month totalled 146 feet 11 inches.

At this date the air conditions are greatly improved and it is likely that our troubles on that account are



Seneca Superior Shaft House

dump," sending about sixty tons to both the Dominion Reduction Company and the Nipissing Reduction Company. The results were unsatisfactory, showing in one case an assay of 4.4 ounces to the ton, and in the other 7.7 ounces. This result bears out our previous opinion and indicates that the values of the ore, instead of being scattered in the wall rock, have been confined closely to the vein matter. Until such time as our assays indicate that the wall rock is showing better value we propose to dump same into the lake and thus save our dumping area on the surface.

Shaft No. 2.—Work was begun sinking this shaft and will be continued night and day to meet the up-raise from the 200-ft. level.

Peterson Lake.—Unwatering this property was begun on the twenty-fourth ult., and at this writing the

well over, as the snow is about gone and we are having some thawing weather.

Productions and Shipments.—

	High Grade.	Jig Concentrates.
On hand March 1st.....	31,092 lbs.	
Produced during month.....	42,534 lbs.	3,685 lbs.
	73,626 lbs.	
Add concentrates	3,685 lbs.	
	77,311 lbs.	
Shipped March 18th	60,236 lbs.	
	17,075 lbs.	
High grade on hand, March 31st	17,075 lbs.	

In addition to above we produced 41,760 lbs. screenings, but as they will be jigged and included in later concentrates, they are not included in above estimate.

Assuming the above shipping product of the month to assay 4,000 ounces to the ton, our total ounces produced, not counting the screenings and dump, amount to 46,219 lbs. x 4,000, or 92,438 ounces.

Accounting.—Expenses for the month were as follows:

Accounts payable.	\$5,350.39
Pay roll.	4,373.69
	\$9,724.08

or ten and one-half cents per ounce.

PERSONAL AND GENERAL

Mr. Wm. Fowler, well-known in the Boundary Creek district, British Columbia, where he developed the Providence, a small but rich gold-silver mine situated near Greenwood, is now in Oregon.

Mr. Archibald Dick, now retired, but formerly senior inspector of mines in British Columbia, was at the C. M. I., Western Branch, meetings in Nanaimo last month, where he heard expressed much appreciation of the value of the report on "Mine-Rescue Work in Canada," by his son, Mr. W. J. Dick, M. Sc., mining engineer for the Canadian Commission of Conservation, which report had lengthy notice in the Canadian Mining Journal of February 1st.

Mr. George Watkin Evans, of Seattle, Washington, formerly geologist in charge of the coal surveys of the State of Washington Geological Survey, who presented at the C.M.I. branch meeting at Nanaimo last month a paper on the Groundhog coal field, British Columbia, with lantern-slide illustrations, is the author of the lately-issued Bulletin No. 3 of the Washington Geological Survey, which deals with the coal measures of King County, Washington.

Mr. Leslie Hill, for years resident in Nelson, B.C., having retired from the practice of his profession of mine manager and consulting engineer, has resigned his membership in the Canadian Mining Institute. He is now living on his fertile land near Vernon, Okanagan Valley, one of the most productive fruit-growing districts in British Columbia.

Mr. A. B. W. Hodges, formerly local manager for the Granby Consolidated M. S. and P. Co., Ltd., and resident at Grand Forks, Boundary District, B.C., for eleven or twelve years, writing from Lima, Peru, to a friend in Victoria, B.C., on January 30th, gave the following information: As my three-years' contract as general manager of the Cerro de Pasco Mining Company will terminate at the end of February, I shall be leaving Peru permanently. I expect to travel in the Northwest for several months, and hope to see my friends in Victoria and Vancouver about next July or August.

Mr. James Holden has retired from the position of superintendent for the Princeton Coal and Land Company at Princeton, Similkameen, B.C., after having had charge of the development of the company's coal mine from a prospect to its present condition of being well-opened and equipped for the production and shipment of coal.

Mr. John Hopp, of Barkerville, Cariboo, was one of the several British Columbia members who attended the annual meeting of the Canadian Mining Institute at Ottawa last month. His hydraulic placer-gold mining operations are on the largest scale of all being carried on in the Cariboo district. He has been visiting some of the larger cities of the eastern United States and Canada, prior to returning west to resume hydraulic operations as soon as the season shall be far enough advanced to admit of his doing so.

Mr. Thos. R. Jackson, formerly of No. 2 mine. Extension Colliery, Vancouver Island, and since then with the Western Fuel Company, Nanaimo, has been appointed superintendent of that company's new mine, known as Reserve Shaft, situated between four and five miles south of Nanaimo.

Mr. Andrew G. Larson has returned to Vancouver, B.C., from a short holiday visit to Los Angeles, Cal.

Mr. J. McLellan, one of the owners of a small gold mine, at Gold or Mitchell Harbour, on the west coasts of one of the Queen Charlotte Islands, B.C., has been in England. It was stated that it was his intention to visit Cobalt before returning to British Columbia.

Mr. F. Chas. Merry continues to have charge of the Silver Sup and Nettie L. groups of mines, in Trout Lake mining division, Lardeau district of British Columbia. Shipment of silver-lead ore from the former group has been maintained for a number of years, while during recent months some ore has also been sent out from the latter, after several years of inactivity and consequent non-production.

Mr. James Price, who after having worked thirty-seven years in the coal mines at Nanaimo—thirty-three years as a fire boss—has decided to "get back to the land" and spend his well-earned retirement on his "ranch," near Nanaimo, was last month the recipient of a valuable gold watch, presented to him by his fellow miners and the officials of the Western Fuel Company.

Mr. Thos. T. Read, of San Francisco, California, associate editor of Mining and Scientific Press, has been visiting several parts of Arizona.

Mr. Hallett R. Robbins, who several years ago was in charge of development work at a mining property, Hedley camp, Similkameen, B.C., and recently of Atlantic, Wyoming, has been appointed assistant professor in the Department of Mining Engineering and School of Mines, State College of Washington, Pullman, Washington, in place of the late Mr. Roswell E. Sampson, who was run over and killed by a railway train last winter.

Mr. Bruce White has returned to Nelson, B.C., from a visit to Boston and the State of Maine.

Hon. Dr. H. E. Young, provincial secretary in the McBride Government, British Columbia, has gone north to personally investigate the situation in connection with recent reports of new finds of placer-gold on creeks flowing into Teslin Lake, mention of which was made in the Canadian Mining Journal on January 15th last, page 48, and in connection with which there has lately been a little excitement at Atlin and other northern settlements.

Mr. W. Fleet Robertson, Provincial Mineralogist of British Columbia, who, during his stay in the East, has been conferring with the Executive Committee of the International Geological Congress with regard to the

British Columbia excursion arrangements, leaves for Victoria towards the end of March.

Mr. A. W. Allen, secretary of the Lucky Jim Zinc Mines, Limited, is now resident in Victoria, B.C., the company's office having been removed to that city from Kaslo, Kootenay Lake. Now that the interruption to railway traffic by frequent snow slides has ceased, shipment of zinc ore from the Lucky Jim mine, Slovan District, to the United States has been resumed by the company.

Mr. J. W. Boyle, of Dawson, Yukon Territory, was in London, England, in February. Another Yukon visitor to that country was Mr. A. N. C. Treadgold, also of Dawson, managing director of the Granville Mining Company.

Mr. E. E. Campbell, one of the Granby Consolidated M. S. and P. Company's mining engineers, is in Hazelton district, Skeena River country, British Columbia, obtaining information relative to prospective ore output, etc.

Mr. Norman Carmichael, formerly manager of the Duncan United Mines, in West Kootenay, B.C., and now general manager for the Arizona Copper Company, Limited, was at Globe, Arizona, recently. Mr. John Kiddie, elder son of Mr. Thos. Kiddie, the well-known metallurgist of British Columbia, now holds a prominent and responsible position under Mr. Carmichael and has his headquarters at Morenci.

Mr. Hayman H. Claudet, representative in British Columbia of the owners of the Elmore Vacuum process, small plants of which he has from time to time installed and operated in that province, recently left Rossland on a trip to Europe.

Mr. John F. Coats, of Spokane, Washington, who some time since had charge of development work at a coal property on Tulameen river, a few miles above Princeton, Similkameen, B.C., was one of the members of the Canadian Mining Institute who attended the meeting of the Western Branch held in Nanaimo, Vancouver Island, on March 4th and 5th.

Mr. Alex. Faulds, of Vancouver, B.C., was in Los Angeles, California, a short time ago.

Prof. T. S. McCaffery, of Moscow, Idaho, professor of mining engineering, University of Idaho, in his capacity of chairman of the Spokane Local Section of the American Institute of Mining Engineers, is interesting himself in promoting the success of the joint meeting of the section with the Western Branch of the Canadian Mining Institute, to be held at Rossland, B.C., in May, proximo.

Mr. J. W. D. Moodie, of Britannia Beach, Howe sound, B.C., vice-president and general manager of the Britannia Mining and Smelting Co., is busily engaged in pushing forward the work of extensive further development and equipment of the company's copper-mining property on Britannia mountain, and concentrating plant at Britannia Beach.

Mr. W. G. Norrie, of Bear lake, Slovan, B.C., superintendent for the Lucky Jim Zinc Mines, Ltd., after a particularly hard winter's experience, owing to the frequent recurrence of snowslides, has at length succeeded in re-establishing railway communication, so that the shipment of zinc ore from the Lucky Jim mine to the United States has been resumed.

Mr. M. E. Purcell, superintendent of the Consolidated Mining and Smelting Company of Canada's Centre Star-War Eagle group of mines, returned to Rossland, B.C., on March 31. After having attended the annual meeting of the Canadian Mining Institute at Ottawa on March 5-7, as representative of the Western Branch, of which he is chairman, Mr. Purcell went to Montreal, New York, and Washington, and thence back to Can-

ada via Buffalo and Niagara Falls. After a short stay in Toronto he returned to British Columbia.

Mr. A. E. Rand, of New Westminster, B.C., has been visiting Los Angeles, where he met Mr. Thomas Kiddie, metallurgist, formerly of Vancouver, B.C. Mr. Rand is largely interested in mining properties in Nelson mining division, including a large group of claims within a few miles of the town of Nelson, and the Dundee property in Ymir camp.

Mr. Thomas Russel, for about 20 years actively connected with the management of coal mines on Vancouver island, and who last year resigned as manager of the Extension colliery of the Canadian Collieries (Dunsmuir), Limited, is now practising as a consulting coal mining engineer, with headquarters in Vancouver, B.C.

Mr. Sam Silverman, now of Spokane, Washington, who in the nineties was interested in mining properties in Kootenay district of British Columbia, and later operated a copper mine on Prince of Wales island, Alaska, recently accompanied Mr. James Cronin, manager of the Standard silver-lead mine, to that property, which is situated near Silverton, Slovan lake, B.C. The party also included two visitors from Salt Lake City, Utah.

Mr. Alex. Smith, of New Denver, Slovan lake, B.C., manager and one of the owners of the Surprise silver-lead mine, on the divide between Cody and McGuigan basin, Slovan, has been spending the latter part of the winter in Vancouver. After several years' persistent development work, the Surprise is now sufficiently opened to commence the shipment of ore to the smelter as soon as it shall be practicable to haul heavy loads to the railway at Sandon.

Mr. O. B. Smith, Jun., general mining superintendent for the Granby Consolidated Mining, Smelting and Power Co., has returned to Vancouver, B.C., from a trip to Boston, New York and other eastern cities. With him on his journey westward was Mr. R. P. Williams, western representative of the Ingersoll-Rand Co., who had also been on an eastern trip.

Mr. Wm. Fleet Robertson, of Victoria, provincial mineralogist for British Columbia, has returned to his headquarters in the capital of the province, after having attended the meetings, in Ottawa, of the International Geological Congress Organization Committee and the Canadian Mining Institute. Before returning West he also visited New York City.

Prof. Francis A. Thomson, of Pullman, Washington, head of the Department of Mining Engineering of the State College of Washington, spent the Easter vacation at Victoria, B.C.

Mr. G. B. Webster, who a short time ago returned to New Denver, B.C., from a visit to eastern Canada, has commenced to work, under lease and option of purchase, the Neepawa silver mine, in the "dry belt," Slovan City mining division.

Mr. W. E. Zwicky, of Kaslo, B.C., general manager of the Rambler-Cariboo Mines, Ltd., in McGuigan basin, Slovan, has put men back to work in the low-level tunnel being driven to open the Bayne mine at considerably greater depth than its old workings reached. For a time work had to be suspended on account of there being too strong a flow of water to allow of driving being continued at reasonable cost.

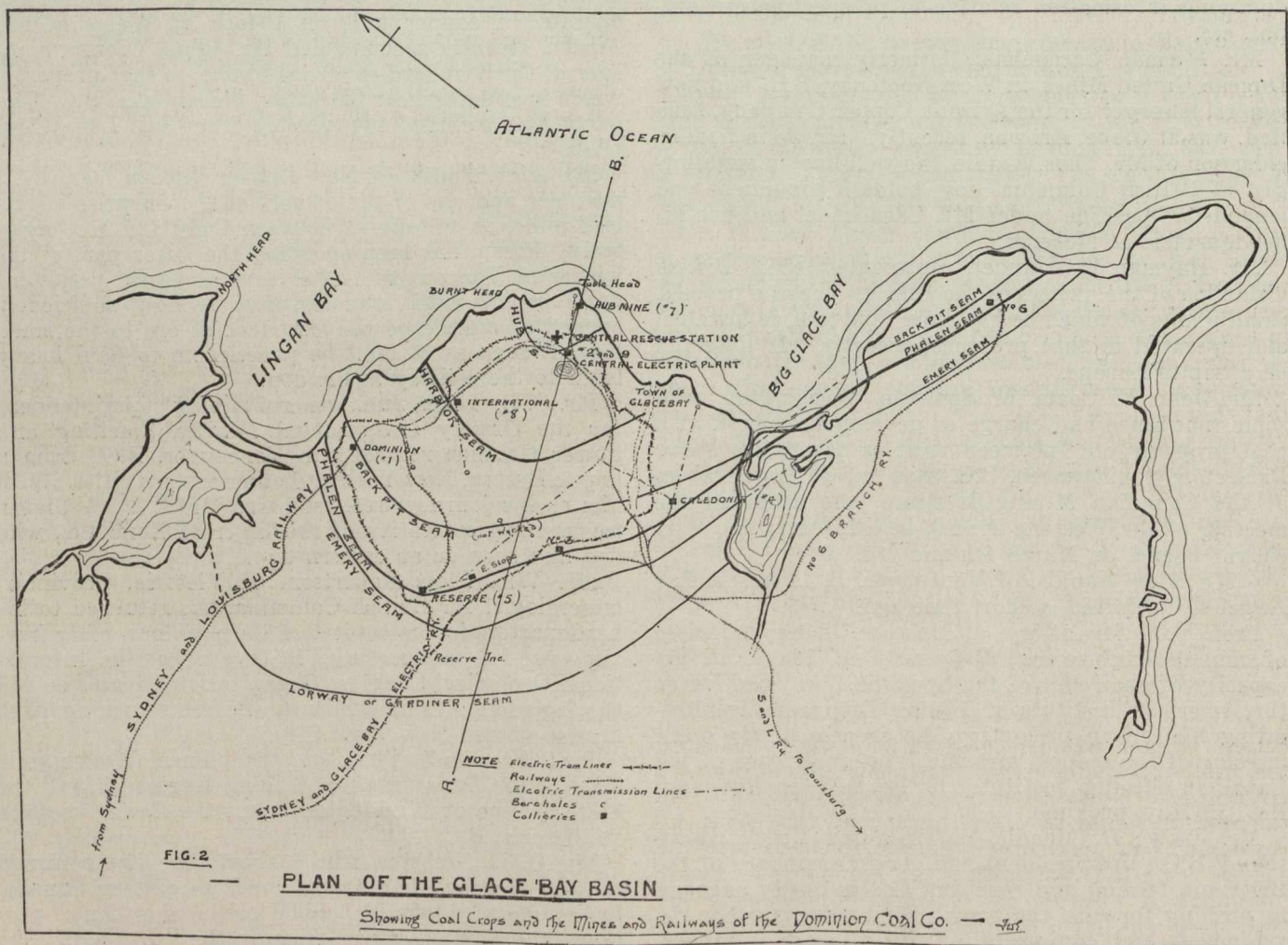
Mr. G. J. MacKay, a graduate of the School of Mining, Kingston, who, in 1910, was nominated by the Canadian Mining Institute for a post-graduate course provided by the Institution of Mining and Metallurgy, has just been appointed to an important position as metallurgist for the Machavie Gold Mining Co., at Potchefstroom, Transvaal. Previous to this appointment he was assistant metallurgist at the Angelo Deep.

SPECIAL CORRESPONDENCE

NOVA SCOTIA.

At the next annual meeting of the Nova Scotia Mining Society a proposal will be brought up to move the headquarters of the society to Sydney, and no doubt an animated discussion will take place. There is, however, a great deal to be said in favour of that, with the single exception of coal, the mineral production of appreciable output of tungsten ore, and a little barytes, but the gold mined is the lowest for many years, and iron ore seems to have disappeared altogether. Coal shows a good increase, but, practically, the entire increase comes from Cape Breton, and from the Sydney coal field at that. The two large companies of the

the Nova Scotia Technical College would have been better placed in Sydney than in Halifax, but it is an undoubted fact, so far as the engineering branches of technical training are concerned. The mining schools and other educational opportunities afforded to those who have left the elementary schools and commenced work are doing and have done extremely good work, but it is quite impossible to furnish these schools with the elaborate equipment of philosophical apparatus that is necessary for the adequate demonstration of such phenomena as that connected with mine gases, for example. The presence of a properly fitted technical college, primarily intended for day students, would make it possible to use the same equipment for evening



Sydney coal field, namely, the Nova Scotia Steel and Coal Co., and the Dominion Coal Company, mined 84 per cent. of the provincial output, and contributed the not inconsiderable quantity of 40 per cent. of the entire output of Canada. Correspondingly, the major portion of the revenue of Nova Scotia, came from the coal royalties earned in the neighbourhood of Sydney. For these and many other reasons the persons who urge the removal of the Nova Scotia Mining Society's headquarters to Sydney consider that it would be a more suitable place for the consideration of mining problems than Halifax.

Sydney and the vicinity is very poorly provided with educational facilities. It is now too late to urge that

schools, and such an institution at Sydney would make an admirable centre for the workers of Sydney mines and Glace Bay, in addition to the students from Sydney itself. Instruction at the ordinary mining school, supplemented as it so often is by correspondence courses, and by actual work during the day, has produced the great majority of the men in charge of the technical operations of the mines and steel works of Cape Breton, but education obtained in this way requires years of hard grinding, and imposes cruel limitations on hard-working men. It is one thing to read about certain phenomena actually demonstrated before one's eyes, and it adds a variety and a zest to study that is very welcome after the steady plodding that pure reading

involves. The man who hears the ascending and descending scale of detonations caused by graded admixtures of "gas" and air, and who watches the effect of a handful of coal-dust in an explosive mixture of gas and air, has a much more vivid and permanent knowledge than if he can only learn from books, or the words of a lecturer.

Some time ago the Technical Education Commission visited Cape Breton, and the result of their labours is anxiously awaited. It is quite certain that the members of this commission did not visit a coal and steel centre in Europe of similar importance to Sydney that did not have a properly equipped technical school within reach of the workers. And if rumor is true there are towns in the Canadian West with far less natural wealth than Sydney, where the value of technical education is appreciated. The question of technical education in Nova Scotia has been put to a political use, but indeed it would be difficult to name anything in Nova Scotia that has not. The present presentation of the case has, however, not the remotest connection with party use of the question, but is a claim that a population of between 40,000 and 50,000 persons dependent on coal-mining and steel-making should have access to a technical school or college properly and adequately provided with the needful apparatus.

Port Hood Mine.—Inverness Co.—The report of the Inspector of Mines for Nova Scotia and the "Appraisers as to Cause of Accident, etc.," on the flooding of the Port Hood Colliery, has been laid before the Nova Scotia Legislature. The opinion of these gentlemen as to the cause of the accident is given as follows:—

"Our conclusion is that the mine is flooded by the water of the ocean, and we are more inclined to believe that it was through a fissure in the rock more nearly vertical in direction, than that the water followed the strata a long distance finally making its appearance in the mine at the point above described.

"We recommend that it is not advisable to undertake the unwatering of the Port Hood Mine for some time to come, for the reason that the connection with the sea as far as can be ascertained is not closed, and that the water having risen as high in the mine as it is likely to, the conditions against the fissure closing are in a great measure removed."

The report as issued is but preliminary, and does not contain certain data referred to, nor the evidence given before the commission. This wall no doubt be issued to the public at a later date. The report also contains a reference to the flooded mine at Mabou. Comment on this matter would be out of place until the complete report, with the evidence, is published.

ONTARIO

Porcupine and Swastika.—The Strike Aftermath.—Of the first importance to the mining industry are the decisions rendered by Judge Kehoe on appeal from the convictions of Magistrate Torrance, under the Lemieux Act. It will be remembered that the Hollinger Mines induced the Crown to take action against 302 of their men for going out on strike without notice, and also to prosecute William Holowaska, Peter Cleary and Croft for inciting. Holowaska and Cleary were each fined \$500 each and cost or three months in jail. Croft was fined \$50 or 60 days. All the men refused to pay fines, and went to jail. As the result of the application of their counsel to the Minister of Labour and the Minister

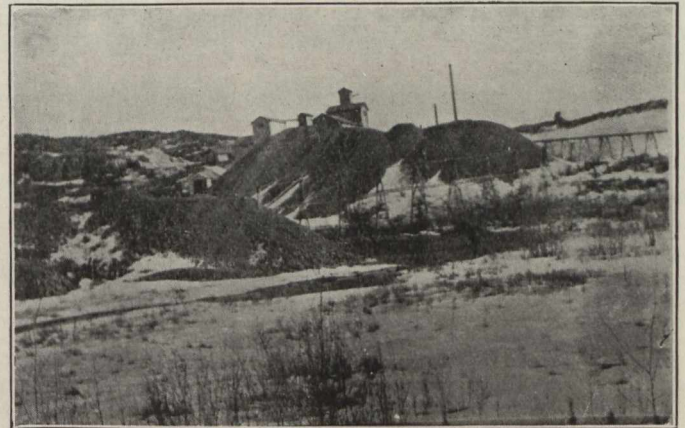
of Justice the three men were paroled and released under the ticket of leave act after they had served twenty days of their sentences. Appeals were then made and all three cases were retired before Judge Kehoe in Porcupine on March 26th. As a result he reversed Magistrate Torrance's decision in the cases of Holowaska and Croft and confirms it in the case of Cleary.

The following is Judge Kehoe's decision in full:—
Rex vs. William Holowaska.

A. G. Slaght for appellant,

T. C. Robinette, K.C., and Mr. John Godfery, for respondent.

"This is an appeal from the conviction made by Mr. Thomas Torrance, Police Magistrate, on the 21st January, 1913, under which the defendant was convicted under section 60 of the Industrial Dispute Investigation Act, 1907, and being chapter 20 of 6-7 Edward VII., for inciting to strike contrary to the provision of the Act. By this is meant, according to section 56, a strike which is unlawful by reason of an employe going on strike "on account of any dispute prior to or during a reference of such dispute to a Board of Conciliation and Investigation under the provisions of this Act." There is a lengthy clause, section 2, sub-sec. (c) which defines the meaning of the word "dispute," the effect of which is that it means "any dispute of difference between an employer and one or more of his employes" as to cer-



Dumps at Savage Mine. Enough to run ten stamps at McKinley Mill for three years

tain things therein generally stated, or as to any other things therein, specifically mentioned, such as wages, hours of employment, material supplied and alleged to be bad, unfit or unsuitable, established customs or usage, interpretation of agreement, and other matter.

"It was not proved before me, nor was it necessary to prove that there was any reference to a Board of Conciliation or that there was any request for the same.

"The evidence shows that the first sign of dispute was the strike itself, or rather the inciting by the defendant of the strikers. The strike followed this inciting. As the prosecutor stated, the strike came to him with so much surprise that it was like a thunderclap. It appears that there was no demand for increased wages, shorter hours of labour or anything of any kind until the defendant called upon the men to strike. This call was the very beginning of the dispute. There cannot be a dispute or difference unless there are two parties who dispute or differ with one another. It may be, and without doubt must have been the case here, that the strike was pre-concerted among the men, though there is no evidence that this is so. But stating

it as strongly for the prosecution as possible, and allowing that the strike was the result of a previous understanding between the men, still matters did not reach a stage where there was a demand by the men for better terms and a refusal by the employer, the Hollinger Mines Company, of what the men asked. When such a demand and a refusal were not made, can it be said that there was any dispute until the strike itself created the dispute? If the answer be that there was no dispute until the strike itself then will come the necessity of answering another question. Did the men go on strike "on account of any dispute," to quote the words of section 56?

"In my opinion the defendant is not brought within the Act as an offender under sections 56 and 61 for the reason that the strike was not on account of any dispute. To hold otherwise would be to eliminate the words "on account of any dispute" from section 56. If these five words were not in the section, then it would be clear that the defendant by his inciting was guilty of an offense.

"The Act when framed might have been so framed with or without these words. One cannot assume that they were placed in the section without it being intended that they were to have a meaning and, perhaps, were intended for a purpose. Possibly it was considered that when a strike comes like a bolt out of the blue instead of like a storm of which there is premonition there is not the danger to the peace of the community that would be engendered by the antecedent mutterings.

"Another consideration is that penal statutes must receive a strict construction.

"The conviction is quashed with costs to be paid by the prosecutor to the defendant, which costs I fix at \$50."

Rex vs. Croft:—

"The same decision was reached in this case as in the case of Holowaska."

Rex vs. Peter Cleary:—

"There is a difference in the circumstances of this case from those in the Holowaska case; the inciting was done after the strike had started. I confirm the conviction. The costs of the appeal, which I fix at \$50, are to be paid by the defendant to the prosecutor."

Kirkland Lake.—There is no doubt of the growing of the Kirkland Lake section of the Swastika Camp. The Tough claims occupy the centre of the stage and the narrow but very rich ore body has now been proven to a depth of 70 feet. It is stated to be the intention of the management to sink right at once to the 200-foot level. Another carload of ore will be shipped before this is in print, after which it will be crushed in the little five stamp mill, which has already reached the property, but which has not been set up yet. Among reliable engineers there is now much optimism expressed of the future of the camp. While the ore bodies are not large they are well defined and easy to follow, thus obviating the heavy development costs of Poreupine, where the veins are much faulted and the most careful exploitation work is necessary. The Foster Tough has of course more than paid its way from the very start. The Hughes claim, which has now been taken over by the Great Northern Mines, is regarded as being second in importance in the new district. It is on the southwest shore of Kirkland Lake, and, unlike the Foster, is entirely in the porphyry. The high-grade streak is no more than eight inches wide, and, while being rich, it is not as rich as the Foster. The Crown Reserve Mining Company had an option on this prop-

erty at a big figure with quick payments. On that basis they turned it down. The Great Northern obtained it on much easier terms. The vein has been traced and stripped in places for 300 feet. Recently an engineer took channel samples for two and a half feet on either side of the vein for a distance of 150 feet, and the results showed good milling ore for the entire width of five feet. A small plant will be installed and work proceed on an economical scale.

For the mining of these small, high-grade veins it has been demonstrated that the equipment needed is inexpensive and the initial outlay inconsiderable. Though they may not enjoy long life, returns from some of them will certainly be quicker than the average quartz gold mine.

So far, mining has proceeded along workmanlike lines, and little has been spent on frills. The Government is going to build a good road from Swastika to the Kirkland Lake, so that it is most unlikely that the settlement will be split up into two or three sections, as at Poreupine.

Swastika.—The Swastika mill is now running and paying current expenses. The slime table has not yet been installed, and not a very high recovery is being made, as so far only one sand table is being used. About twenty tons a day are being treated, the ore coming from the 100-foot level. Development is proceeding both ways on the 300-foot level, and occasional patches of ore of good grade are discovered.

A Buffalo syndicate has taken a working option on the Foley-O'Brien. The shaft has been pumped out, and it is understood that the mine will be running again shortly.

The new mill at the McIntyre mine is now running to capacity. One hundred and fifty tons are being treated daily and the management states its satisfaction with the extraction obtained.

At the McEaeny mine an order has already been given for five more stamps.

Results have already been obtained by the diamond drilling on the Schumacher syndicate. At a vertical depth of 400 and 800 feet two gold ore bodies from which gold is visible in the cores have been cut. Up to March 28th no less than a thousand feet of drilling had been done within the month, and the contract, which called for 1,050 feet, was completed in March.

It is now announced that the shaft at the Pearl Lake will be put down to the thousand-foot level without delay. It is now seventy feet below the 600-foot. No official statement has as yet been made as to values.

Cobalt, South Lorrain and Gowganda.—The draining of both Kerr and Cobalt lakes will undoubtedly be proceeded with once the mining companies principally concerned are allowed to do so.

Last spring an amendment was inserted in the Ontario mining law giving mining companies the power to drain lakes "where required for the proper working of a mine" after the Mining Commissioner had heard the parties interested and given his permission. The section under which it was proposed to act reads: "The lake, pond, river or stream or watercourse, or any of the water, notwithstanding that the same or part of the water, notwithstanding that the same or part thereof may be on the lands of or owned by any other person or that any other person may have rights or interests in or to such water or the use thereof."

By such draining of Kerr Lake, a good many million ounces of silver could be mined on the properties of the Kerr Lake and the Crown Reserve which is now held intact and, in addition, it would give opportunity for the freer prosecuting of considerable valuable ter-

ritory not now accessible. Some time before the case should have come before the Mining Commissioner action was taken in the courts to prevent any further progress.

At Cobalt Lake, which it is also proposed to drain, it is known that considerable bodies of high-grade ore could be mined if the water could be pumped out. This would affect not only the Cobalt Lake property, but in a minor degree the McKinley-Darragh and the Right of Way.

Peace at the Beaver.—The strike of seventy miners at the Beaver mine has been satisfactorily settled. The cause of the dispute was the dismissal of one of the men to which the miners objected. They stated they would walk out unless he was reinstated and, upon the management refusing to do this, they left work. The mine was closed down for nine days and the mill eight. During that time the management made no attempt to fill the places of the old employees, but at the end of a week issued a manifesto to the effect that unless the men returned to work by April 3rd they would be compelled to conclude that they did not want to come back and they would fill their places. A meeting of the union was held, and it was decided to return to work, and the mine and mill are now running again.

Lawson Prospers.—The Lawson of the La Rose Consolidated is now getting some very high-grade ore on the 88-foot level of the No. 8 vein. When struck it appeared to be but a branch of the main vein, but it has now developed into a very rich ore body, which will raise the production from the Lawson to considerably above its normal level for the first quarter of the year.

Eight-Hour Bill.—The eight-hour bill for underground miners has naturally aroused considerable discussion in the camp. A deputation from the Cobalt Board of Trade waited upon the Hon. W. H. Hearst, Minister of Lands, Forests and Mines, and explained some clauses in the bill which appeared to them to be ambiguous and to be likely to cause considerable trouble in the future. The Hon. W. H. Hearst promised that their recommendations should be taken into consideration when the bill was read a second time.

Montreal River and Lorrain.—There is promise of further activity, both in the Montreal river district and South Lorrain this year. In South Lorrain the Pittsburg-Lorrain Silver Mining Company, which is working the Currie, have their shaft down to the 300-foot level, and are running their own plant. It is understood that there is also a prospect of a company taking over the Trout Lake Mining Company, the Beaver Lake and some other good prospects, and developing them, this summer. At Gowganda the Mann has just shipped its second carload of high-grade. At Elk Lake the completion of the railroad has enabled a number of shareholders who have seen the mines they were interested in to take a look at their properties, and there have been some private cars on the sidings during the past two weeks.

BRITISH COLUMBIA

Information concerning reported finds of placer-gold on creeks south of Teslin lake, in Atlin mining division, Northern British Columbia, has been attracting some attention, though as yet particulars are meagre. Most published accounts lack definite details as to whether or not gold has been obtained in any quantity above a few dollars' worth, but one press despatch from Skagway, Alaska, dated March 22, stated that one man

had arrived in Atlin "with several thousand dollars' worth of washed gold, the first brought out from the scene of the new strike." A communication from Mr. W. Scott Simpson, Indian agent in the Stikine River district, which lies south of Atlin mining division, dated March 2 and addressed to Mr. A. M. Tyson, inspector of Indian agencies for Northern British Columbia, has been published. It is to the effect that at present there are but few of the older Indians on the reserve at Tahitan village, the majority of the men being now in the vicinity of Silver creek, a tributary of Teslin river, which joins that river about 35 miles south of Teslin lake, into which latter the river flows. Mr. Simpson reports that on February 5 a deputation of Indians waited on him and produced a letter which had been sent to them by Atlin Indians, stating that they had found new placer diggings on Silver creek. The Indians requested him to accompany them on a claim-staking expedition and to see that their record papers and lay-over permits were properly made out. Thinking it might lead to the ultimate prosperity of the Indians, he accompanied the party, which on February 7, left Telegraph creek, a settlement on Stikine river, and on March 2 returned to that place, after turned from a visit to Atlin, after having made many enquiries, has concluded that the best way will be for the Government to open a trail from O'Donnell river, in Atlin camp (on which river new placer-gold finds were made late last autumn), to the new diggings, which, he is informed, can be reached in 90 miles from Atlin. He sent in a party of men by the longer old trail, and instructed them to return by the proposed shorter route to Atlin via O'Donnell river. On receipt of their report he will, if it be favorable, recommend the Government to at once proceed to open the proposed new trail. Meanwhile, it will be well for those who shall think of going to the reported new placer diggings to await publication of authentic information from known reliable sources, for there is likely to be the customary exaggeration on the part of those interested chiefly in inducing men to spend money in travelling and outfitting, regardless of whether or not there shall be a fair prospect of the reported new diggings proving sufficiently productive to warrant the outlay necessary to reach the locality.

Britannia Mining and Smelting Co.—The Britannia Mining and Smelting Co., operating a copper mine on having staked claims on three creeks. The Atlin Indians produced an ounce and a half of gold they had obtained there last fall. The Atlin Indians had obtained free miners' certificates and staked claims last November on the best-looking parts of the creeks. Various Indian tribes have staked claims to an estimated number of about 300, and white men have about as many. Under existing conditions of snow and frozen ground, it is difficult to say whether or not the new diggings will prove payable to any considerable number of miners; it is probable many of the claims will prove hard to work. Three routes to the new field have been mentioned in newspaper notices. One is via Whitehorse (in Southern Yukon Territory) up the Hootalinqua river to Teslin lake, and then down the lake to its southern end, which is about 35 miles from the locality of the new find. Another is via Skagway to Carcross (Caribou Crossing) by railway, thence to Atlin and from that camp by trail east to the creeks under notice. The third is by Wrangel, in Southeastern Alaska, and Stikine river to Telegraph Creek, and thence by trail. Hon. Dr. H. E. Young, provincial secretary in the Government of British Columbia, who, late in March, re-Britannia mountain, Howe sound, within 30 miles by

water of Vancouver City, does not appear to be finding any serious difficulty in continuing its development mining, concentrating, and construction operations, for about Easter time it had approximately 600 men at work, all told, and operations were in progress in all of these several departments above-mentioned. Miners' Union officials have caused to be published in provincial newspapers statements to the effect that 700 men had struck work; as a matter of fact, less than half that number went out at the call of the Union, leaving rather more than half remaining at work. When the property was visited at Easter time by the writer of these notes, it was found that mining and extraction of ore were being carried on up at the mine, although the mine crew was 30 to 40 men short of the full number for which there is work; the long aerial tramway from the mine down to the concentrating mill at Britannia Beach was being used for the conveyance of ore, some 500 tons of which was being sent over it daily; the work of driving the long, low-level adit—now in more than 3,600 feet, and with 1,400 feet more to be driven before the 1,200-foot raise to the 1,050-foot level of the mine workings above will be commenced—was being continued with two shifts of men; three-roomed houses for the accommodation of married men were being built near the portal of the tunnel, where the new central camp is being established, with a dozen houses already erected and ground cleared for more; large new bunk and boarding houses at this camp were occupied, and power house and machine shop were being equipped with much machinery and plant; grading for the railway from the tunnel to the top of a long incline to be made for transportation between tunnel and mill was well advanced; construction of new power house at Britannia Beach was nearly completed, and the erection of the building for the Minerals Separation process plant was well forward; erection of new houses for married employes was being vigorously proceeded with; a large new store-basement, ground-floor, and three storeys, was about finished; dock, bunker and other shipping facilities were being added to; railway connections from mill to shipping docks were being improved; concentration mill was treating 500 tons of ore daily and provision was being made for an increase to 600 tons, and, generally operations were being carried on with comparatively little inconvenience, and with good prospects of shortly having full working forces in all departments, for every day a few more men were arriving as it became generally known that the Miners' Union's efforts to prevent a continuance of operations had proved quite ineffectual. The company has stated most positively it will not recognize the Union, but will do in the future, as it has done in the past, pay good workmen the best wages obtainable at similar work elsewhere on the Coast; will give them good food and accommodation, with all reasonable provision for their health, comfort and recreation, and will provide permanent employment for all its employes so long as they shall do a fair day's work for their pay and otherwise conform to the rules under which they accept employment here.

Want Report Suppressed.—The Nelson Board of Trade, at a meeting of about 20 of its members, not one of these being a mining engineer or metallurgist, recently appointed a committee of three "to act with the secretary in writing to the Minister of Mines calling attention to the damage being done to the mining industry of Nelson district by such statements as have recently appeared." The statements referred to were included in a published report of the Provincial Mineralogist, a man quite disinterested, of unquestioned

integrity and, withal, a metallurgist of considerable operating experience. The report gave the results of that official's investigations in connection with A. Gordon French's claims to have discovered metals of the platinum group in ores and dike matter occurring within a few miles of Nelson, identical sets of samples of which had been sent to eight chemists for determination and reported on by seven as not containing even a trace of the platinum metals. No mine manager was present at the meeting, and the chairman, who most strongly denounced the Provincial Mineralogist, is an ex-grocer, now a "mining broker" and real estate agent. The committee of three consists of a lawyer, a mechanical engineer and a jeweller. Several mine managers have intimated to the Provincial Department that they entirely disapprove of the action in this connection of the Nelson Board of Trade.

Dividends from Metal Mining Companies.—The total amount of dividends paid by metalliferous mining companies operating in British Columbia, of which public announcement has been made, during the quarter ended March 31, is \$523,734. Four companies contributed to this total, in the following proportions: British Columbia Copper Co., \$88,756; Granby Consolidated M. S. and P. Co., \$224,978; Hedley Gold Mining Co., \$60,000, and Standard Silver-Lead Mining Co., \$150,000. The last-mentioned company, which owns and operated the Standard mine and concentrating mill, near Silverton, Slokan lake, has paid \$575,000 in twelve months, having made its first dividend distribution, of \$25,000, in April, 1912, and since then a monthly distribution of \$50,000.

COMPANY NOTES

KERR LAKE DIVIDEND.

The Kerr Lake has declared a quarterly dividend of 25 cents a share, payable on June 16th.

INTERNATIONAL COAL.

Profits of International Coal and Coke Company for 1912 were \$232,198, compared with \$56,073.38 in 1911, during which latter period, however, the mines were closed for nearly eight months on account of the general mining strike in Southern Alberta.

LA ROSE PROFITS IN MARCH.

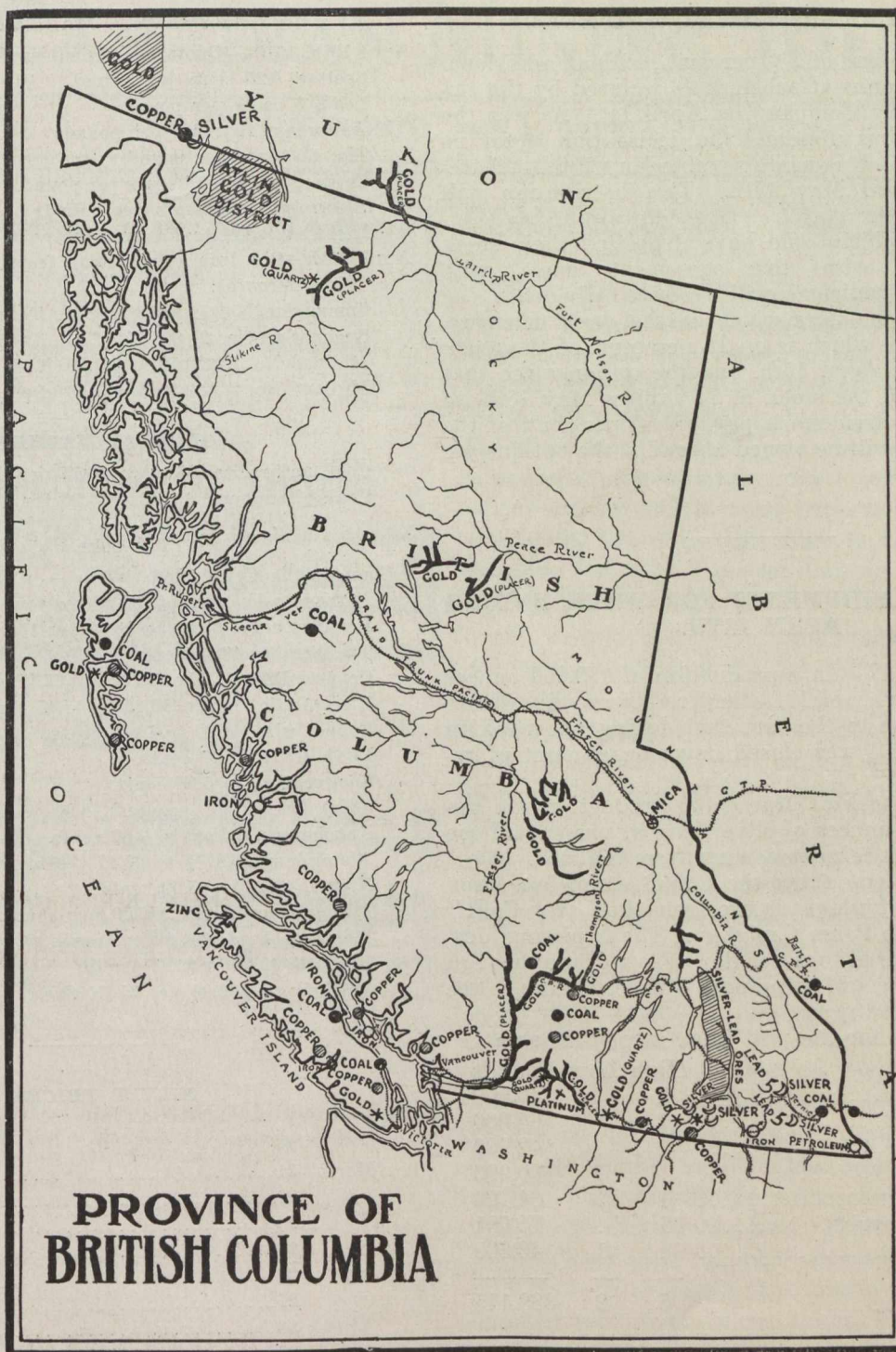
La Rose's March production of silver was 239,934 ounces to a value of \$128,733, which, with sundry income of \$3,253, brings that for the month up to \$131,986.

Marketing expenses, concentration and other charges amounted to \$57,882, leaving the profit for March \$74,104.

The cash statement to March 31st is as follows:

Cash surplus	\$1,473,509
Outstanding shipments and ore at mine ready for shipment	293,302
Total	\$1,766,811

Prof. E. Dulieux, of L'Ecole Polytechnique, Montreal, leaves on May 4th to serve a month with the French army, in which he holds the rank of lieutenant.



GRANBY RETURNS.

During the last ten days of March the Granby smelter treated 34,525 tons of ore from the company's own properties at Phoenix, as well as 460 tons of customs ore, making a total treatment for the period of 35,005 tons. During the ten days the blister copper shipments were 717,000 lbs., giving a total for the month of March of 2,020,000 lbs.

For the first three months of the current year the smelter has treated 305,783 tons of ore from its own mines, and 3,094 tons of custom ores, or a total treatment of 308,077 tons. The blister copper shipments for the same period aggregated 5,588,245 lbs. The figures for the three months are as follows:

Granby ore treated: January, 100,881 tons; February, 96,971 tons; March, 107,931 tons.

Foreign ores treated: January, 1,268 tons; February, 886 tons; March, 107,931 tons.

Total ore treatment: January, 102,149 tons; February, 97,857 tons; March, 108,871 tons.

Copper shipments: January, 1,828,245 lbs.; February, 1,740,000 lbs.; March, 2,020,000 lbs.

The recovery of 5,588,245 lbs. of copper from 308,077 tons of ore smelted would give the Granby practically 18 1-7 lbs. per ton for the first three months of the current year. On a 15 cent copper market the Granby should realize from copper recovery alone the sum of \$837,969 from the first quarter of the year's operations. At the same rate of production for the remainder of 1913—and there is every reason to believe this will be maintained, if not increased, as the March shipments were 191,755 lbs. in excess of those of January, although the two months were of the same number of days, and February was a short month—the copper recovery for the year should be in the neighbourhood of 22,353,000 lbs., or \$3,352,950.

COBALT LAKE DIVIDEND AND BONUS.

A second dividend of 2½ per cent., with an additional half per cent. bonus attached, was declared by the Cobalt Lake Mining Company on April 1st. As was the case with the first dividend the declaration is for no specified period. It is made payable May 20th to shareholders of record May 17th. The distribution will amount to \$90,000.

Those shareholders who have deposited their stock in accordance with the agreement made with the English syndicate will receive dividends on that portion of the stock which has not been taken up. The next option, which is on 15 per cent. of the stock at 66¾, expires April 15th, and the option after that on 5 per cent. of the stock at 73 expires May 15th, so by the time the dividend is payable 55 per cent. of the stock deposited will be owned abroad if the options are taken up.

COBALT ORE SHIPMENTS FOR WEEK ENDING APRIL 12TH.

Cobalt, April 12.—In a production of 150,000 ounces for the first quarter of 1913 the Trethewey mine shows a falling off, due to the fact that during one week in February the mill was closed down on account of repairs.

During the month of March the production ran upwards of 60,000 ounces of silver, and at present all the production of the mine is coming from the mill.

The ore shipments from the Cobalt camp last week include a car of high-grade ore from the Casey Cobalt and one from the Penn. Canadian. The Nipissing, despite its two hundred tons per day of low-grade through the new mill, is still shipping a little crude ore to the smelters.

The shipments for the past week in pounds are:

	High	Low	Pounds
Casey Cobalt	1	.	40,500
Cobalt Lake	1	.	65,200
Crown Reserve	1	.	42,700
Nipissing .....	.	1	60,900
Penn. Canadian	1	.	64,124
McKinley-Darragh	1	.	75,691
Silver Bar .....	.	1	40,000
	5	2	389,115

Three mines shipped bullion from Cobalt this week for the London, England, market. In all they sent out 172 bars valued at \$116,001.12.

	Bars.	Ounces.	Value.
Nipissing	87	105,866.30	\$62,461.12
Buffalo	57	57,588.70	34,000.00
Crown Reserve	28	33,700.00	19,540.00
	172	197,154.00	\$116,001.12

SCOTIA'S MARCH OUTPUT.

The March output of Nova Scotia Steel & Coal Company was as follows: Coal mined, 64,000 tons; ore mined, 52,625 tons; pig iron made, 7,200 tons; steel ingots made, 7,300 tons.

TORONTO MARKETS.

April 12th, 1913—(Quotations from Canada Metal Co., Toronto).

- Spelter, 6.25 cents per pound.
- Lead, 5 cents per pound.
- Antimony, 10 cents per pound.
- Tin, 52 cents per pound.
- Copper, casting, 16 cents per pound.
- Electrolytic, 16 cents per pound.
- Ingot brass, 11 to 15 cents per pound.

April 12th—Pig Iron (Quotations from Drummond, McCall & Co., Toronto).

- Summerlee No. 1, \$26.00 (f.o.b. Toronto).
- Summerlee No. 2, \$25.00 (f.o.b. Toronto).
- Midland No. 1, \$20.50 to \$21.00 (f.o.b. Toronto).
- Midland No. 2, \$20.50 to \$21.50 (f.o.b. Toronto).

GENERAL MARKETS.

- Coal, anthracite, \$5.50 to \$6.75 per ton.
- Coal, bituminous, \$3.50 to \$4.50 for 1¼-inch lump.

Coke.

- Connellsville Coke (f.o.b. ovens)—
- Furnace coke, prompt, \$2.25 per ton.
- Foundry coke, \$3.00 to \$3.50 per ton.
- Tin, Straits, 48.50 cents.
- Copper, Prime Lake, 15.45 to 15.55 cents.
- Electrolytic copper, 15.35 to 15.45 cents.
- Copper wire, 16.25 to 16.50 cents.
- Lead, 4.35 to 4.40 cents.
- Spelter, 5.85 to 5.95 cents.
- Sheet zinc (f.o.b. smelter), 8.00 cents.
- Antimony, Cookson's, 9.00 cents.
- Aluminium, 26.87½ to 27.12½ cents.
- Nickel, 40.00 to 45.00 cents.
- Platinum, ordinary, \$46.00 per ounce.
- Platinum, hard, \$51.00 per ounce.
- Bismuth, \$2.00 to \$2.25 per lb.
- Quicksilver, \$39.00 per 75-lb. flask.

SILVER PRICES.

		New York	London.
		Cents.	Pence.
March	21.....	56⅞	....
"	22.....	56¾	26⅞
"	24.....	56¾	....
"	25.....	56⅝	26⅞
"	26.....	57	26¾
"	27.....	57¼	26⅞
"	28.....	57¾	26⅞
"	29.....	58¼	26⅞
"	31.....	57⅝	26½
April	1.....	57⅝	26½
"	2.....	57⅝	26⅞
"	3.....	58¼	26¾
"	4.....	58	26⅞
"	5.....	58¼	26⅞
"	7.....	59	27⅞
"	8.....	59	27⅞
"	9.....	59	27⅞

We regret to learn that Mr. W. Dixon Craig, who for so many years has been a member of the technical staff of Messrs. Drummond, McCall & Co., is about to abandon the profession of metallurgy to engage in the practice of law in the Province of Alberta.