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17th YEAR OF PUBLICATION.

The CANADIAN MINING REVIEW

Established 1882

THE OLDEST AND ONLY OFFICIAL MINING AND ENGINEERING JOURNAL PUBLISHED IN THE DOMINION OF CANADA.

EDITED AND PUBLISHED BY

B. T. A. BELL,

Secretary of The Canadian Mining Institute,
Secretary General Mining Association of the Province of Quebec,
Hon. Secretary Mining Society of Nova Scotia,
Publisher Canadian Mining Manual.

1899

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INDEX TO VOLUME XVIII.

INDEX—Continued.

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VOL. XVIII., No. 1. JANUARY, 1899. VOL. XVIII., No. 1.

The "Sultana Mine, Ltd."

The most extraordinary document which reached our table during the last month of the year was the prospectus of the "Sultana Mine, Ltd." printed "for private circulation only," and headed by the astounding statement "£710,000 gold ore in sight." To be able to see three and a half million dollars worth of material in sight is a pleasing announcement, so we read the whole of the document through with care, to find glaring untruths and absurd misstatements woven together into a web the equal of which it would be difficult to find.

The object of the document in question is to obtain $2,500,000 with which to purchase the famous Sultana mine, near Rat Portage. In addition to the issue of £300,000 stg. in the shape of 5 per cent. bonds, there is a share capital of £200,000, the whole of which is taken by the vendors in part payment of the purchase price, so that the total amount to be paid the vendors is the enormous sum of £450,000 stg. (£250,000 in cash, £200,000 in shares) and the public are asked to find £50,000 for working capital.

This prospectus claims to support its statements with a joint report made by Messrs. G. Neustaedter and A. Grover as experts, and with extracts over the names of such men as Dr. Dawson, Director of the Geological Survey of Canada; Mr. Archibald Blue, Director of the Bureau of Mines, Ontario, and the Rev. Mr. Slaght, formerly Inspector of Mines, now deceased. In this prospectus Mr. Blue has been suddenly and rapidly promoted to the position of "Director General of the Bureau Canadian Mines," and the late Mr. Slaght is described as "The Government Inspector General of Mines"; these gentlemen are quoted as authorities for many of the untrue and perverted statements contained in the document, and the respected chief of the Geological Survey is relegated to the position of assistant to Mr. Blue. The Canadian names on the directorate are Mr. John F. Caldwell, the sole proprietor of the Sultana Mine; Mr. T. G. Blackstock, of War Eagle fame, and Mr. James Carruthers, of Toronto.

It is pertinent here to notice that the Toronto *Mail* of December 28th contains an emphatic denial from Mr. Caldwell that the mine has been sold, an emphatic denial that anyone has an option or power of attorney to sell it, or that he has seen or had anything to do with the prospectus referred to; all of which would go to show that the promoters of this remarkable scheme have been (to use the language of our Southern friends) just "a little too previous."

The basis of the prospectus is a report made by the two experts mentioned above (whose name and reputation must be confined entirely to the other side as nothing is known of them here that we can find), and some garbled quotations from the official report of the Bureau of Mines for the year 1895. The experts report that "the tonnage of average class ore above the lowest level is approximately 25,000 tons" to which they give the *gross* value of $11 per ton and the *net* value of $7 per ton making the ore *actually* in sight £35,000. They then go on to speak of the Burley Mining Co's shaft (better known around Rat Portage as the "crib") and take as data from which to figure ore in sight, the three diamond drill holes put down through the ice by Mr. J. Burley Smith in the winter of '96 and '97. From these three holes the experts assume that the ore of the Sultana mine will still continue to average 30 feet in width and $11 per ton in gross value, for at least 750 feet in length along the vein, and on these assumptions figure a net value "in sight" of £675,000, which added to the actual reserve of £35,000 make the £710,000 "in sight" which forms the headline of the prospectus. The quality of these men as experts we leave the profession to judge from this example.

Then follows an "Extract from the report of Mr. Archibald Blue, *M.E.*, Director of the Bureau of Mines, *assisted by* Dr. Geo. M. Dawson, C.M.G., F.R.S., L.L.D., dated 30th March, 1896," which is found in its original form on page 177 of the 5th Report of the Bureau of Mines, the date of which visit was August, 1895, or more than three years before the date of the prospectus. The actual sentence reads as follows:—"Tuesday and Wednesday were spent at Sultana gold mine, the first day in the company of Dr. Dawson"—which act of courtesy on the part of the distinguished Director of the Survey is thus garbled by the prospectus writer into "assisted by." The late Rev. Aaron Slaght is endowed by this writer with many titles unknown to that gentleman in his lifetime, he is made an M.E., and a "Government Inspector General of Mines," and we notice that Mr. Blue has also received at the hands of this scribbler the degree of M.E. The reports of the former Inspector of Mines are the authority quoted by the prospectus for the statement that the gross output of the Sultana gold mine for the years 1895-6-7 "averaged $3,000 per week." Now $3,000 per week for 156 weeks means a total of $468,000; the total yield of gold in the whole Province of Ontario for those three years reached the sum of only $362,000, so that Mr. Caldwell, according to this prospectus, must have taken out nearly $300,000 of which he made no return to the Mines Department for it is too well known that there *were* other producing gold mines in Ontario during those three years. That a casual statement, made at the top of p. 250, should be garbled so as to make the

Government Report responsible for the statement that the average weekly output for three years reached the sum of $3,000, implies a facility of misrepresentation characteristic only of habitual liars. A fair question to ask the promoters of this scheme is why, when their prospectus is dated November 17th, 1898, did they not avail themselves of the latest publications of the Bureau of Mines? for example p. 144, 7th Annual Report:—"It must be admitted that several of these mines are producing lower grades of ore than was anticipated"... "On the whole I am convinced that in spite of a few fairly rich veins our gold ores are in general of low grade." Again, p. 46, "At the widest known place, which is at the end of the south drift in the third level, it is 66 feet; but a portion of this, about *20 feet* near the west wall, is low grade and will probably not be treated."

As regards the experts' statement that the gross value of the Sultana ore may be taken at $11 per ton, a few figures from the provincial report will be instructive. In 1897 the yield of the whole province averaged only $6.89 per ton in spite of the returns from the Foley mine being well up to, and over, the $10 mark, and of crushings from the Mikado which were of very high grade ore; it is therefore evident that the value of the Sultana rock in 1897 could have been nowhere near $11. Likewise the average value of the 1,939 tons crushed in the first three months of 1898 was only $6.18 per ton, and for the second three months the average value of the 10,840 tons crushed was only $4.39 per ton. It is a matter of record that during the greater part of this second period there were but three mills running, viz., the Mikado, Regina and Sultana; it is equally well known that the Mikado ore is of much higher grade than either of the two others, hence it is perfectly safe to say that the Sultana in 1898 did not yield anything like $11 ore; where then do the experts get their reported gross value?

Or, to figure it out in another way, the total gross product of the Province of Ontario for 1896 was only $121,848, a weekly production of a little over $2,000; during this year besides the Sultana there were at least seven mines working (p. 47, 6th Report) and the average of the ore milled was $9.16 per ton. During this year the famous Mikado of Shoal Lake gave results as high as $49 per ton for a lot of nearly 300 tons, and fully $25,000 must be credited the Mikado for this year; the Regina produced about an equal quantity, and the Foley also was producing; subtracting the product of these three mines from the total product of $121,000 leaves barely $60,000 as the product of the Sultana and four other mines, which produced that year. This brings the weekly production of the Sultana for 1896 down to about $1,000, which, in our belief, is nearer the actual truth than any of the statements contained in the prospectus.

Further refutation of this extraordinary document is unnecessary, but the lesson should be one of value to the Ontario Bureau of Mines, as evidencing the palpable need in that Department of the services of some experienced and trained engineer on the staff. The employment of students and unprofessional men by the Bureau has often been adversely commented on by the REVIEW, and the need of less diffuse and more exact writing has also been advised. When the confidential reports made to the Bureau of Mines are distinctly in conflict with the statements of its inspector and its published reports (which too often are merely hearsay statements) the powers that be are responsible for the editing of the report and, to a degree, for any perversion of such official statements that may be made by quotations.

Special arrangements are being made with the various railways to carry members of the Canadian Mining Institute to the Montreal meetings on 1st, 2nd and 3rd March next.

The London "Economist" on British Columbia.

The London *Economist* is publishing a series of articles on "The Mines of British Columbia," by a special commissioner who has been despatched to that Province. Two of these articles, in the issues of December 17th and 24th, have been received, and, while in the main they contain the soundest criticism the Province has yet had as regards the inflated ideas of values entertained by the population, and as regards the villainous methods of promoting and financing companies which have hitherto obtained, yet there are too many misstatements of fact in the two articles published to permit them to pass unnoticed.

The writer who has apparently traversed a goodly portion of Southern British Columbia, admits that the country may fairly be included "amongst the great mineralized areas of the world," and states "that the country certainly has a great future before it as a mineral producer." Yet he queries how that future can benefit the English financial or mining world. It seems to the REVIEW that the answer to his query rests entirely with his countrymen; if they are going to act in the future, as they have hitherto done in that Province, there will be no benefit to the English public, but rather a loss; on the contrary, if they choose to believe that there are as honest and capable men in the mining business in Canada as anywhere else in the world, and if they choose to avail themselves of that experience which hitherto they have dearly bought, and refuse to pay exorbitant prices for imperfectly developed properties, and refuse also to tacitly accept the over-capitalization imposed by the greedy London promoter, and finally, are willing to accept the fact that there are some good things in the world which can not be measured and treated by the South African standards of well defined regularity, with stamp mills and cyanide, then the answer to his question is an emphatic affirmative.

But to call attention to a few of the misstatements in the article we may example the following:—"The English-floated British Columbian companies up to date are a poor selection." Inasmuch as the writer in his own article compliments the London and British Columbia Gold Fields Co., on their selection of the Whitewater, Ymir, and Ruth mines, is there not an oversight here? Moreover, the statement that the Hall Mines is now shut down is a palpable untruth, for this property has never been shut down since its flotation, some five years ago —unless the occasional blowing out of the blast-furnace is what this correspondent calls a shutting down of the mine. Again, the "Duncan Mines, Limited," have only fairly got to work, and are at present working in a very cautious and praiseworthy manner on properties which promise an adequate return on the capital spent on them. The writer rails rather bitterly against Canadians and Americans for first developing and owning the majority of claims in that Province, and from this fact draws from what seems to us an entirely unjustifiable inference, that English capital will therefore never benefit to the same extent as it would in Africa, Australia or India. If the British Columbia properties which have been floated in London are a poor selection, the *Economist's* correspondent must admit that neither Canadians, nor Americans are to blame. The most notoriously ill managed one of the lot, Lillooet, Fraser River and Cariboo Gold Fields, was promoted, vouched for and boomed by Mr. Horne Payne, of most notorious fame in British Columbia. Two other disappointing mines, the "Tangier" and "Waverley" were picked up and promoted by one Ernest Grant Govan, also an Englishman; and the "Galena Farm" disaster, though reported upon by both an American and an English Engineer, was wrecked by the high flotation profit put upon it by an English firm. Moreover neither Canadians nor Americans can be blamed for the folly and expense of bringing heavy hydraulic water pipe all the way from Liverpool to Ashcroft, over the Atlantic

MR. BERNARD MacDONALD, MONTREAL,

CONSULTING MINING ENGINEER

TO

THE MONTREAL & LONDON GOLD AND SILVER DEVELOPMENT CO. LIMITED.

Ocean and across the continent. These engineering errors and unworthy flotations can only be laid at the door of English engineers and English promoters, and it is manifestly a gross injustice to attempt to shift the burden of these errors and mistakes on the shoulders of either Canadians or Americans. Nor do we think that the *Economist's* correspondent is on sound ground when he makes the broad statement that it is "a safe axiom not to invest in hydraulic or alluvial mines of any sort in this country," unless he has in his mind the additional corollary "if managed or directed by English engineers."

The account given in the second letter of the Rossland district is sound, and in accord with the best reports which have been made on the district, including that of the Geological Survey, and we fancy the correspondent has availed himself of these sources of geological information Also most gratifying is the sound and trenchant criticism on the methods and properties of the British America Corporation, of which we speak in another article in this issue. It is worthy of note, in this connection, that the writer was of the opinion prevalent in the West that the new Le Roi Co., would "own its own smelter" which, as we have elsewhere noted, is a plum that the British America Corporation is evidently keeping for itself.

But we must confess to a suspicion that the correspondent is not familiar with metallurgical operations on this side of the Atlantic, and that his experience has been more with South African methods than with furnace work. Our reason for this is his statement that "the highly refractory nature of the ores is a serious drawback to the industry," and the metallurgical treatment of them "as yet is extremely primitive." We assert positively, without fear of successful contradiction, that the smelting of the sulphide ores of the Rossland and Nelson camps is anything but "primitive," that from the results obtained and the small losses made, the practice is as good as can be found in the British Empire, if not better; and further, that the smelting process is not "excessively costly" from a western point of view.

The writer takes strong exception to the regulations made by the different smelters, which are practically uniform, whether situated in British Columbia or the United States. To pay for only 95 per cent. of the assay value of gold and silver in the ore, and to make a deduction of $1\frac{3}{10}$ per cent. from the wet assay of copper ore, paying for the balance at the rate of only 5 cents per pound, are regulations which he calls an "unnecessary mulcting" and an "abuse." In the second article he has availed himself of the last report of the War Eagle Company and of the "indirect smelting charges" of Mr. Hastings' report, which figure out an additional charge of $3.51 per ton. Now if this correspondent had ever been in the smelting business, or even had studied the question in the country of its greatest development, (the United States), he would know that the practice is as old probably as himself, and is not anything new, nor specially gotten up to mulct Canadian mine owners. The difference between the price of $7.00 per ton *charged* the owner of the ore and the $3.50 to $4.00 which may be taken as the *actual cost* to the smelting companies, and the deduction of 5 per cent. of the precious metal values is made to cover not only losses in the slag and fumes, but to compensate for the difficulties encountered in correct sampling of large tonnages. The arbitrary deduction of $1\frac{3}{10}$ per cent. from the wet assay of copper ores is of long standing, originally growing out of the refusal of the Swansea Copper smelters to accept anything but the Cornish fire assay; and the payment of only 5 cents per pound for copper (which the writer compares with the market price of refined and pure copper) is made to cover a lot of costs which are incurred in the transportation of the matte, or blister copper to the market on the Atlantic sea-board, or in England, and also to compensate for the loss of copper incurred in the various treatment the products undergo before reaching the stage when they can command the price of refined copper. In this connection, and to refute any idea that this so-called "imposition" or "abuse" is peculiarly "Canadian or American" we beg to refer the writer to our issue for September, p. 247, where he will find a magnificent example of how an English metal buyer, on May 29th, 1886, "mulcted" a shipment of copper matte from New York.

As for the silver-lead ore of the Slocan, on which a deduction of 10 per cent. of the lead contained is made, the same argument will apply, and the duties imposed by the United States Government are trade matters outside of the ken or jurisdiction of Canadians. The writer must have noticed the many discussions on this lead smelting question which have been freely published during the last twelve months in the press of Canada, and we beg to refer him to the article on the subject in the November issue of the REVIEW. That zinc is not paid for by the smelters is because it is not saved, and that a forfeit is imposed when the ore contains more than 10 per cent. is because of the deleterious effect zinc has on the smelting of lead ores, involving high losses of both silver and lead in the slag.

We notice that the Toronto *Mail*, and the Rossland *Miner*, two of the erstwhile boom sheets of the country, have a column or so of wail and lamentation over the *Economist's* article. For ourselves we do not regret its publication, nor (like the Toronto *Mail*) do we accuse the writer of prejudice or intentional bias, but we would like to suggest to him a closer adherence to facts and a more intimate acquaintance with the smelting business in his communications to such a paper as the *Economist*, whose opinions command and direct English speaking people the world over.

The British America Corporation.

Apropos of the recent Le Roi flotation in London come many criticisms from different sources of "British America" schemes and methods.

Not the least interesting and trenchant of these is contained in *The Critic* (London) of December 10th, which, so far, is the only journal that has called attention to the fact that the prospectus of the British America Corporation, issued just about a year ago, asked subscribers to furnish funds with which to buy "the celebrated Le Roi mine and its *equipments*," and now comes forward again to ask for £950,000 more *to buy the mine alone*, without the smelter or "equipments."

The history of the negotiations by which the B. A. Corporation have taken a twelve months to obtain a property which could have been obtained a year ago for about £300,000, and which, in a mutilated shape (*i.e.* minus the smelter or "equipments") has now cost that Corporation nearly £700,000, for 480,000 out of the whole 500,000 shares, is reading which is not calculated to impress the ordinary man with the wisdom, economy, or financial ability of its chiefs.

It has been freely rumored, with a substantial basis of fact, that the B. A. Corporation, in spite of its nominal £1,000,000 stg. of working capital, has been very shy of cash; a fact which is not to be wondered at when one reads the list of properties which have been purchased, or optioned with forfeit, and learns of the various "rake-offs" on different properties. One of the late items of news is that suit has been entered in Vancouver against the Corporation for a commission of $100,000 on the sale of the Le Roi stock. £1,000,000 stg. is a large sum, but not so large as to be difficult of spending if one buys prospects at the price of mines. It is probably in reference to, and with knowledge of, the fact that the Turner faction only received $1.00 per share *in cash* and the rest of the price *in bills*, that

the *Critic* makes the remark that the "contract between the Le Roi and the Corporation is conditional upon the successful floatation" recently made.

The "profit" at which the B. A. Corporation will turn in the Le Roi to the new floatation will not be much short of £250,000 which should relieve the Rossland end of anxiety as to "cash" working capital, unless the masters of finance at the head of the Corporation find other uses for it. The public however, may not "subscribe" in which case the "profit" will disappear.

An interesting question for shareholders in the new company is "Why is the Northport smelter not included in the transfer?" and "why does the B. A. Corporation keep this smelter for itself?" especially since the cabled endorsement of Mr. Carlyle expressly says that larger shipments from the mine are conditional upon "*our* smelter enlarged to treat 1,000 tons per diem."

The metallurgists who have visited the Northport Smelter agree that the plant is one of the best on the Pacific slope—which means one of the best in the world—and to deprive the Le Roi Company of this plant is to take from the scheme one of its best dividend earning factors. Le Roi ore smelted by the British America Corporation means a loss to the Le Roi revenues and an increase in those of the B. A. Corporation.

Despite the successful (?) floatation of the "Le Roi Mining Co. Limited" and the "profit" to the Corporation, its shares in London continue at a discount, being held at New Year at 15/6.

The Dominion Coal Company in 1898.

When twelve months ago we reviewed the Cape Breton coal trade for the year then expiring, we remarked that not only was the present state of affairs a satisfactory one, but that the future was bright with the hope of expansion and development of the company's extensive resources and encouraging to all those whose lives and fortunes were bound up with the coal industry. To day we venture to think that no one will assert that we were over-sanguine in using such language. It is true that judging by a comparison of the shipments of 1898 with those of 1897, no great expansion of trade has as yet taken place, but if we have not actually realised the hopes of a year back, we can certainly and with increased confidence carry them over, as a valuable asset, into another year. It is a matter for regret that the spirit of bitterness and discontent against the company and its executive has not been altogether exorcised. Not the establishment of iron works, even if brought about by Mr Whitney and his associates, for the great boon of regular work during the winter months, would extract forgiveness in certain quarters for the closing down of one or two unprofitable collieries, or in certain other quarters for the maintenance by the company of their colliery stores. The millenium is as far off from Cape Breton as from any other corner of the earth, and it would be as well for President Whitney to expect universal content with his conduct of his company's affairs as for President McKinley to look for unanimous approval of his Imperialistic foreign policy. But while a few soreheads are still slashing away in the good old fashioned style at the company and asking the public in the agony columns of the Sydney papers whether the closing up of Victoria and Gowrie mines has made them rich, we believe that, as time goes on, the company itself is making its way surely if slowly, into the good graces of the people. This has become particularly noticeable during the past year. All that an irresponsible, unprincipled and ungrammatical local press could do to foster discontent has been done,—by raising false issues, magnifying petty grievances, and even by low pot-house abuse of Mr. Whitney himself. No doubt a lively and abusive campaign directed against men who are prominent in the public eye, amuses and is popular with a certain class of people and helps to sell a paper. But the bulk of the laboring classes are sensible enough to watch events for themselves and to draw their own inferences therefrom. Frothy nonsense, therefore, about the "iron heel of monopoly" and the "oppression of bloated capitalists," and other time-worn imagery of the professional sorehead, cannot make much headway when men see their employers preparing to mine and bank 400,000 tons of coal during the winter months.

It was easy enough to account for opposition to the Dominion Coal Company at the outset of its career. That had its origin in politics. But it is difficult to account for the survival of the old animosity into the present day, in the face of the great sums of money the company have expended in building their railway and piers and developing their mines. Mr. Whitney is a gentleman of the kindest disposition, a man of unblemished reputation, and one, moreover, by whose schemes the public generally has always largely benefited His resident manager, is a gentleman universally respected for his straightforward, upright character, and yet to judge from the philipics hurled at the company from time to time, you might imagine that these gentlemen are between them conducting a business, the object of which is to grind the workmen of Cape Breton into a state of miserable serfdom, gulling them meanwhile into a feeling of security by brilliant promises which they have no thought of redeeming.

These professional soreheads are never satisfied with things as they are, a bird in the hand always has less attraction for them than two in the bush. Let any plausible, garrulous adventurer come along with a stove-pipe hat and a glib talk about mines and minerals, and he is hailed with enthusiasm by these gentry. It is probable that in the long run he will fade away silently and mysteriously, leaving a legacy of unpaid bills behind him, but abuse of the Dominion Coal Company, who distribute hundreds of thousands of dollars annually throughout the country, will continue unabated—argument is wasted upon these grumblers. Point to the marvellous strides the coal production of their island has taken during the past decade, and they will reply to you that the work has been done by the "iron men" at the expense of the poor down trodden miner It would be idle to suggest that as good a case might be made out against a man who employs a lady typewriter at a small salary to do work that might furnish clerical employment to a couple of clerks, or against a housewife who uses a sewing-machine and thus takes the bread out of the mouths of poor seamstresses.

The year just ended has not been marked by any very special features. The shipments to date are almost identical with those of 1897, a difference of 13,000 tons only standing to the credit of 1898. The figures are as follows:—

	1897. Tons.	1898. Tons.
Shipped at International Pier.....	695,220	844,322
" Louisburg "	275,873	236,815
" Other piers.....	97,732	.....
Total.....	1,068,825	1,081,137

The Victoria pier in Sydney Harbor has been abandoned since last year as a consequence of the closing down and dismantling of the Victoria Colliery, and shipments at Sydney are now concentrated at the International Pier, where a fine new wharf, considerably higher and therefore, better adapted to bunkering purposes than the old one, was added last spring. It will be noticed that, while the Sydney shipments show a handsome increase, there has been a falling off at Louisburg, due to a decrease in exports to the United States, for which the outbreak of the Spanish-American war was mainly responsible. This need not be taken as in any sense a discouraging feature as far as Louisburg is concerned, for with the starting up of the new Gas and Coke plant at Everett, Mass., the shipments from Louisburg may be expected to rise

by leaps and bounds. It is proposed to erect there a large pocket with a capacity of several thousand tons, so that when coal is not being shipped into vessels direct from cars, it can be stored ready for immediate shipment. A feature of the season's work was the brisk demand for slack coal towards the close of the St. Lawrence trade, with the result that what used to be a drug in the market became a very scarce article. Large quantities of this class of coal, together with smaller lots of run of mine, have been sent month by month throughout the year to the Nova Scotia Steel Co's works at Ferrona and Trenton. The carriage of this coal over the I. C. R. has added very materially to the business done by that railroad and afforded employment to many men.

The shipping season last spring opened far from auspiciously for the company. Owing to the outbreak of the war with Spain, freights took a strong jump upwards and suitable steamers were hard to procure except at very high rates. The company's own fleet of colliers, with the "Turret" steamers, which were out as usual, kept things moving until the situation became less strained and, after some delay, the company were enabled to get all the tonnage they required. The protracted strike of the mines in the South Wales district had the effect of driving an unprecedented number of steamers to Cape Breton for bunker coal during the summer months, and a great deal of coal was also used in Montreal for bunkering purposes by steamers who as a rule carry enough coal out for the round trip.

At the mines, six collieries were in operation as against eight the preceding year, and most of the coal came from four out of the six, viz., Reserve, Caledonia, Dominion and Old Bridgeport The last named mine was towards the end of the year closed down and dismantled. In marked contrast with the closing down of Victoria and Gowrie, the abandonment of the Old Bridgeport excited little comment, owing doubtless to the fact that the mine is in close proximity to Dominion and Reserve, so that workmen will be but little affected by the change. This area was first worked some 60 years ago by the General Mining Association, who carried the coal they mined across the beach to their pier in Lingan Bay. The area remained untouched for some twenty or thirty years, until in or about 1882 it was leased by the G. M. A. to Mr. Henry Mitchell, who operated it with success for ten years. In 1892 the lease was acquired by purchase from the G. M. A. by the International Coal Co., and by them transferred to the Dominion Coal Co., who have raised the output from 35,000 to 160,000 tons per annum. The coal remaining unworked in this area can be won from the Reserve Colliery which immediately adjoins it.

At the Caledonia mine a new haulage way has been opened up which puts this mine in excellent shape for increased work, and a good deal has been done at all the collieries in the shape of narrow work, so that the output can be expanded to meet the increased demand that is confidently expected. At the Hub the sinking of the Deeps into the submarine area has been continued. The coal has an excellent appearance and the accumulation of water does not appear to be greater than under the land. Preparations are being actively pushed ahead all around to meet the increased demand consequent upon the starting up of the Coke and Gas works at Everett, near Boston, and it is more than likely that twelve months hence we shall be able to report upon some extensive mining developments.

The policy of the Dominion Coal Company hitherto has been to place their collieries in such shape for work that the daily outputs would furnish all the coal they required during the season of active shipping. This meant that their workmen had little or no work during four months of the year. But with the new year a new policy has been inaugurated, which practically promises 12 months work in the year. A large trestle has been erected near the Hub at Glace Bay, to which coal, after being screened at the different collieries, will be hauled in cars and there dumped, to be refilled and shipped during the summer. The slack will be taken to the washing plant at Port Morien for treatment, and subsequently shipped at Louisburg. In this way the company expect to bank out about 400,000 tons of screened coal before the active season of shipping sets in. What an inestimable boon this winter work will prove, not only to the workmen themselves, but to the business community over a large radius, can readily be imagined. Miners who could save money under the old regime can put by even more, while those who could not get through the winter months without becoming involved at the company's stores can, if they choose, live independent of assistance of this kind. The credit system has already been overcome to a large extent, and with continuous work, the company will soon be able to place the business of their stores on a strictly cash basis and do away with any semblance of what has, incorrectly and unjustly, been styled the "Truck system."

Our old acquaintance the professional sorehead is naturally to the fore with a complaint that the company has lowered the prices for winter coal cutting, but every one can call to mind that this was done even in those halcyon days of old, over which so many tears are shed. With 400,000 tons of coal already mined to start the season with, and a good prospect of sufficient demand to keep the colleries at full blast during the summer and autumn, the shipments for 1899 ought to show a marked increase over anything yet accomplished.

But it is not alone to the new coke works at Everett, Mass., that eyes are turned as the source from which increased developments of the coal industry is to spring. During the past few months much excitement has arisen in Cape Breton and Nova Scotia generally, over the reported formation of a powerful syndicate which proposes to establish an iron industry at or in the vicinity of Sydney. This is only the renewal of the excitement which sprang into existence 12 months ago, when it became known that certain New Glasgow gentlemen, acting for themselves and old country capitalists, were making close enquiry into the facilities that Cape Breton offered for the opening up of iron works. Town and county municipal bodies busied themselves with the matter, and inducements, in the shape of cash bonuses and exemption from taxation, were offered. Great disappointment was felt when it was announced that, owing to the promoters' failure to obtain from the Federal Government a guarantee of a bounty on manufactured iron, the scheme was temporarily abandoned.

But hope once more revived when a few months ago it became known that Mr. Whitney was actively interesting himself in the project, which includes the absorption of the Nova Scotia Steel Co's works and the establishment of iron works at some convenient point in Cape Breton, where ore imported from Newfoundland, as well as the native article, can be worked by Dominion coal. Surveys at the present time are being made of a site on the outskirts of the town of Sydney. Whether the belief is well founded or not we cannot say, but it is generally thought that this will be the favored spot. To consummate an undertaking of this magnitude takes time, how much is perhaps, hardly realised by an anxious public who grow impatient if they do not speedily see evidence of their hopes being realised. At the present moment it is impossible for outsiders like ourselves to speak with any degree of certainty, but our opinion is that there is a very reasonable hope of Cape Breton ere long obtaining what her people have for years past talked of and sighed for, viz., the development of her iron deposits in conjunction with her coal industry. What this would mean to the island and Nova Scotia generally, it would be difficult to say without unduly lengthening this article, but without going all lengths with those who, using the language of bombast and foolishness, claim that the iron and steel industry of the British Empire will ere long centre in Cape Breton, and that that island will boast "a vaster iron trade than has been," we believe that a few years will develop a state of affairs which should satisfy the most hopeful and ambitious.

Before closing this notice, dealing mainly with the affairs of the Dominion Coal Co., Ltd., we cannot refrain from expressing our pleasure at hearing that President H. M. Whitney has made a satisfactory recovery from the illness, which recently caused such keen anxiety to his numerous friends, and extending to him the sincere wishes of the REVIEW for health and vigor to himself and success to his undertakings.

DOMINION COAL COMPANY.

OUTPUT AND SHIPMENTS OF COLLIERIES, 1898.

	Tons Raised.	Tons Shipped.
Gowrie	.....	.....
Reserve	211,812	231.865
Old Bridgeport	158,373	151,735
Glace Bay	.....	..
Victoria	.. ...	....
Caledonia	266,332	257,691
International	93,945	82,777
Dominion	330,171	321,185
Hub	74,549	63,231
	1,135,182	1,108,484

COAL DISPOSALS, 1898.

	Tons.
Nova Scotia (including land sales)	181,768
Prince Edward Island	20,253
Newfoundland	28,732
Quebec	685,241
New Brunswick	41,612
St. Pierre	9,164
South Africa	807
United States	72,363
Steamers	69,570
Colliery consumption	36,846
Company's railways	6,121
Colliery employees	20,289
	1,172,766

RECAPITULATION.

Shipped	1,108,484
Land sales	1,026
Collieries and railways	42,967
Employees	20,289
	1,172,766

GENERAL MINING ASSOCIATION, LIMITED.

Mr. R. H. Brown, General Manager of the Company, reports the following returns for the year:—

	Tons.
Shipped	206,211
" for bunker use	25,392
Local sales	14,440
Colliery employees	8,923
Colliery consumption	17,313
Total, all grades	272,279

CAPE BRETON COLLIERY.

In addition to the following returns, the Messrs. Burchell shipped 1,700 tons of dolomite from their quarry.

	Tons.
To Quebec	2,303
" Newfoundland	702
" Nova Scotia	5,437
" P. E. Island	1,080
" New Brunswick	326
" St. Pierre	134
" Other countries	....
" Colliery consumption	1,925
" " Employees	740
Total	12,647

ACADIA COAL COMPANY.

Mr. H. S. Poole sends us the following figures:—

	Tons.
Total coal raised	203,613
" " sold	176,135
" coke made	2,909⅛⅛⅛
" " sold	2,776⅛⅛⅛

COAL DISPOSALS, 1898.

Nova Scotia		130,079
Prince Edward Island		21,262
Quebec		4,347
New Brunswick		10,372
Colliery employees		4,516
Bunker steamers		4,570
Engines and coke ovens	Engines 25,998; Coke ovens 5,505	31,503
		206,649

CUMBERLAND RAILWAY & COAL CO.

Mr. J. R. Cowans reports the following sales in 1898:—

	Tons.
Nova Scotia	107,669
Quebec	16,935
New Brunswick	172,715
United States	25,223
	322,542

CANADA COALS AND RAILWAY COMPANY.

The following figures are reported by Mr. Robert Archibald:—

	Tons.
New Brunswick	46,911
Nova Scotia	4,293
Quebec	10,432
United States	....
P. E. Island	.....
Colliery employees, engines, etc.	5,980
Total	67,616

INTERCOLONIAL COAL COMPANY.

Mr. Charles Fergie, Vice-president and General Manager, writes: "This year we have not added extensively to the equipment of our colliery plant.

A considerable expenditure has been put on the Scott Pit; the shaft has been repaired, pit-head timbers strengthened and renewed and some developments accomplished underground, preparatory to the active working of coal next season. A 200 h. p. "Heine" Patent Safety Boiler and a boiler house over it has been erected at this pit.

At the new Fan building (Nos. 1 and 2 slopes) the small air Compressor has been taken out, and a new large Compound Duplex 18 x 30 in. Air Cylinders has been substituted. It is a good machine, and overtakes all the work at present required of it easily.

In regard to output the Colliery will figure up a slightly larger quantity by the end of year than it did in 1897. Montreal took a good deal more than it did in 1897, but in other respects the distribution this year is a good deal like the year before."

COAL DISPOSALS, 1898.

Sold to	Round.	Slack.	Total.
Nova Scotia	473.09 / 48,931.14	75.07 / 34,840.07	548.16 / $3,772.01
New Brunswick	4,037.01	1,375.10	5,412.11
Prince Edward Island	4,314.10	4,151	8,465.10
Quebec	56,562.05	32,591	89,153.05
Ontario	101.09	.....	101.09
Newfoundland	.....	.....	.....
Coke ovens	73.10	7,027	7,100.10
Colliery employees	3,515 03	8.05	3,523.08
Colliery engines	4,110.19	8,002.11	12,113.10
Totals	122,120	88,071	210,191

Coke made ..... 3,541⅛⅛ tons.

LABOR.

Average number employed—

Above ground	210
Below ground	390

MONTREAL & LONDON GOLD AND SILVER DEVELOPMENT CO. LIMITED.

DUFFERIN MINE, NOVA SCOTIA.

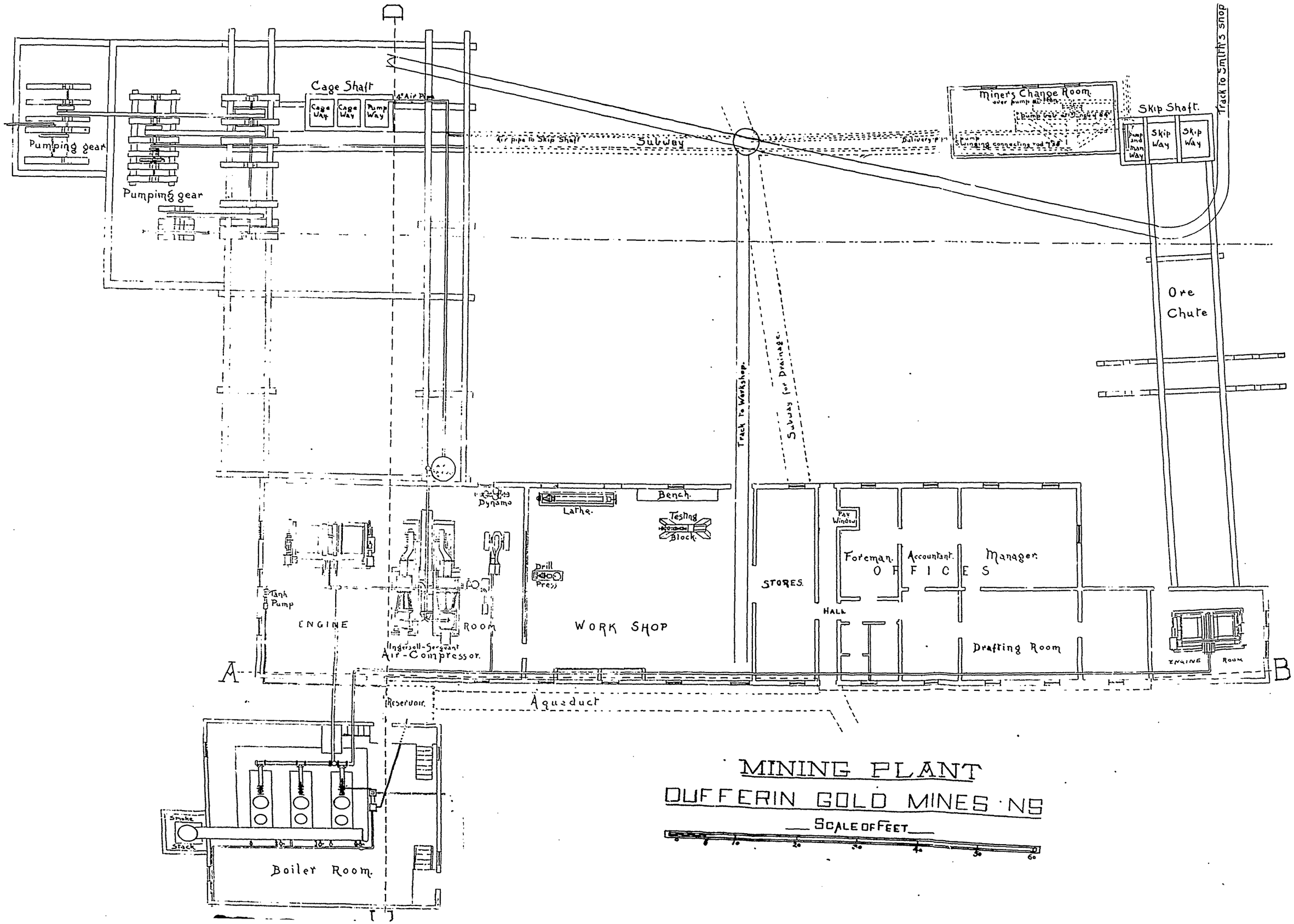
New 60-stamp Battery and Surface Works at Dufferin Mine, Salmon River, Nova Scotia.

DIRECTORS "GOING BELOW."

Mr. A. Dick, C. & M.E., *Superintendent.*

Hon. A. A. Thibaudeau, *Vice-President.*

Mr. Wm. Strachan, *President.*

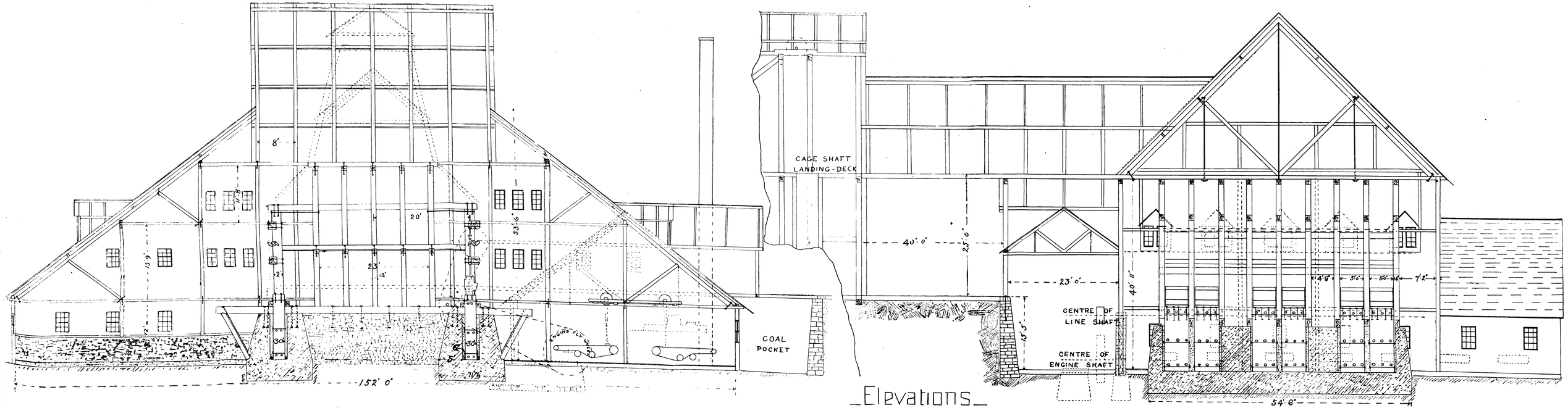


MINING PLANT
DUFFERIN GOLD MINES N.S.

SCALE OF FEET

0 10 20 30 40 50 60

SUPPLEMENT TO THE CANADIAN MINING REVIEW.



CROSS SECTION
LOOKING NORTH

SCALE OF FEET
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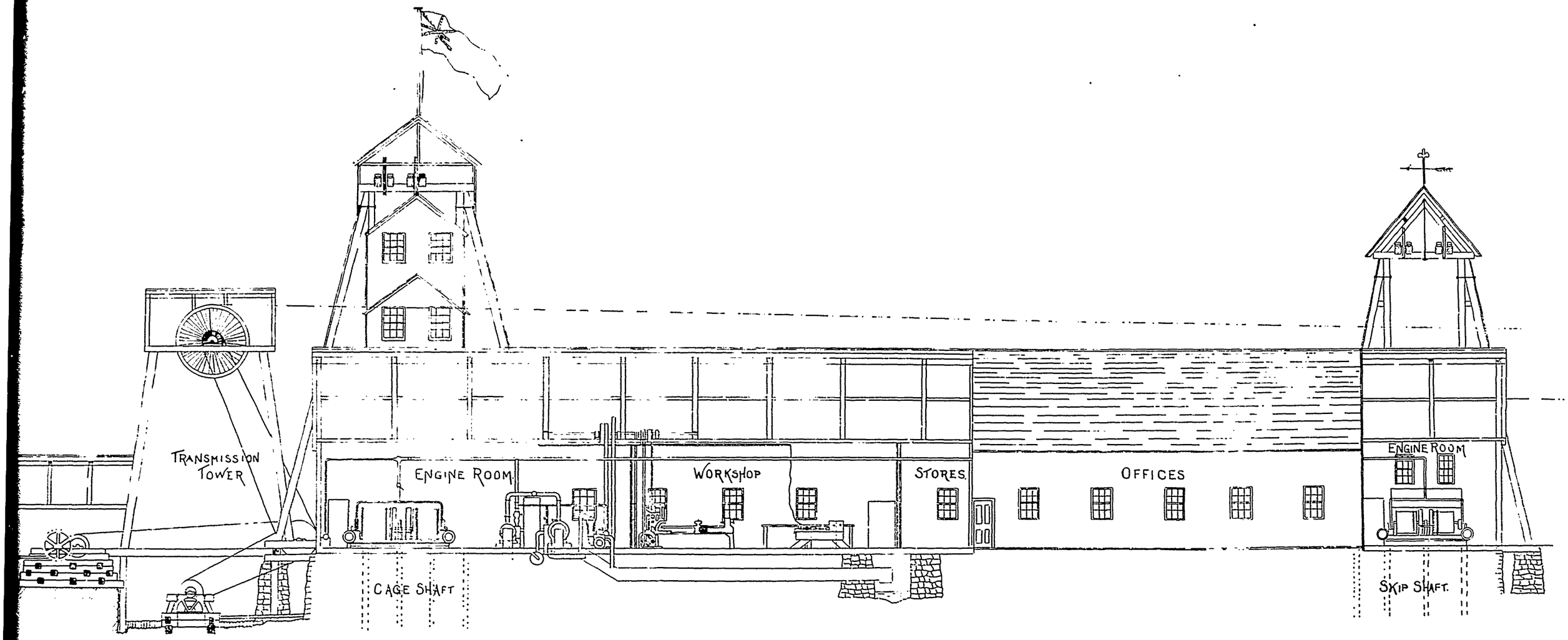
Elevations of 60 Stamp Mill for OUFFERIN GOLD MINE

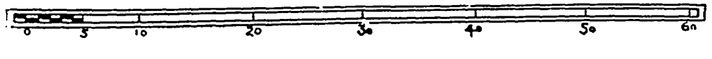
CROSS SECTION
LOOKING EAST



MINING PLANT

DUFFERIN GOLD MINES N.S.

SCALE OF FEET



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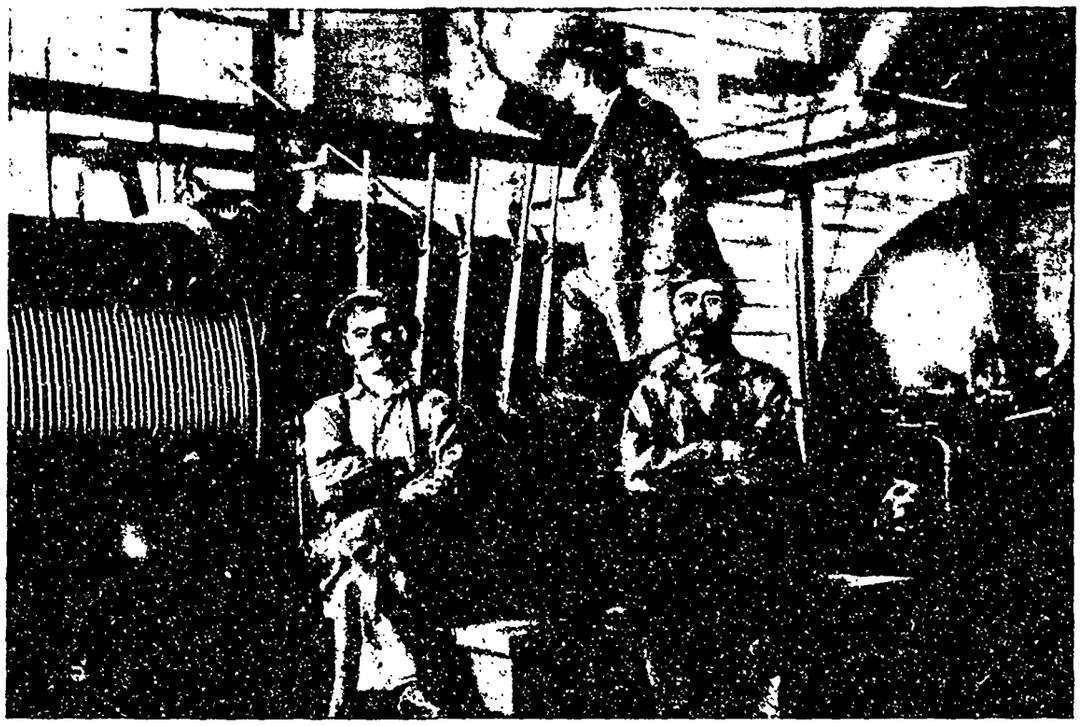
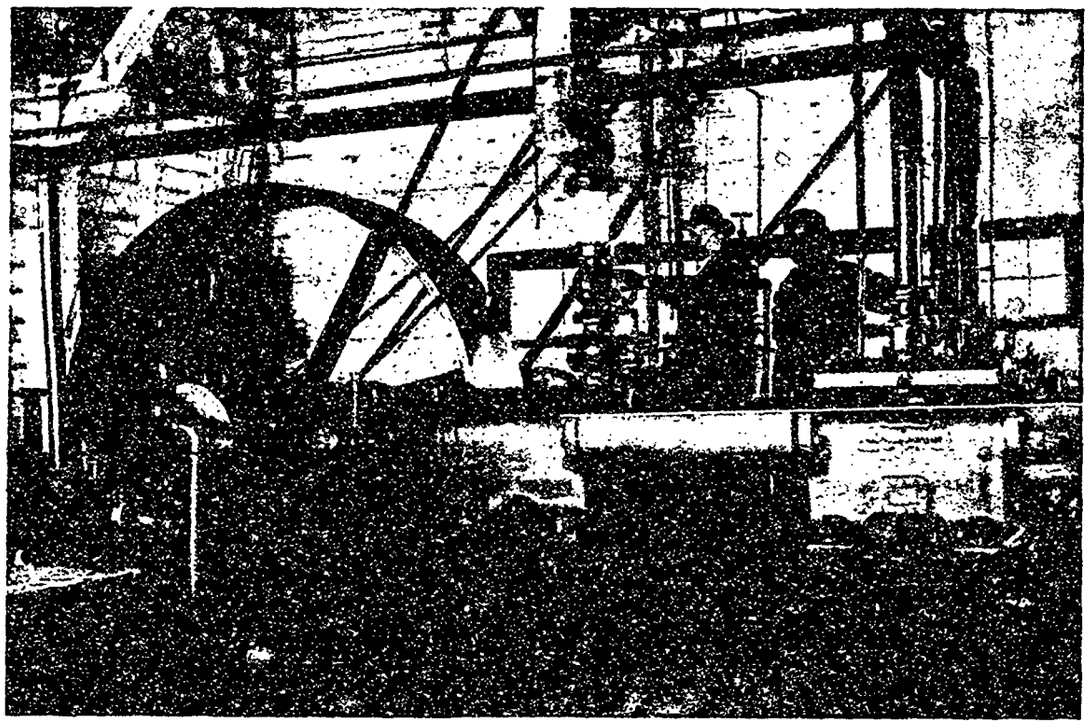
MINING PLANT
DUFFERIN GOLD MINES N.S.

MONTREAL & LONDON GOLD AND SILVER DEVELOPMENT CO. LIMITED.



Large Hoist and Compressor recently installed at the Dufferin Mine.



New Compressor Plant (High Pressure side) recently installed at the Dufferin Mine.

New Golden Twins (Ontario) Swindle.

COLLAPSE OF THE ACTION FOR LIBEL AGAINST THE "CRITIC" ARISING OUT OF THE "REVIEW'S" EXPOSE.

Just as we go to press we are advised by Messrs. Guedalla & Cross, solicitors, London, W.C., of the collapse of the libel suit instituted by the Klondyke and Columbian Goldfields, Ltd., against Mr. H. Hess, proprietor of the *Critic*. In its issue of 17th ulto., the *Critic* says:

My readers may recollect an article I published on June 18th of this year, entitled "A Document From Canada," wherein I earnestly warned them against becoming shareholders in the New Golden Twins (Ontario), Limited. I pointed out to those who might have become shareholders that there was "sufficient evidence to enable them to obtain the return of their money upon the ground of misrepresentation in the prospectus." I asserted that the New Golden Twins was the first subsidiary of the parent concern, the Klondyke and Columbian Goldfields, Limited; and I quoted both comments and affidavits concerning these ventures published in the CANADIAN MINING REVIEW, the leading technical organ of Canada.

That paper in May of this year had severely criticized the prospectus of the New Golden Twins. The very first line of this prospectus purported to be an extract from the report of a mining engineer named Brown and reads thus:—"*Capable of paying very large dividends on an equally large capital!*" The second page of the prospectus informed intending subscribers that a report on the property offered had been made by two gentlemen, one of whom was said to be a "Mr. Johnson Brown, M.E., of Wolfe River, Ont."

This alleged report goes on to state that Mr. Brown had examined the two locations 327X and 328X offered to the company; that he had taken samples and obtained assays therefrom; that he considered the property most promising; and that if the ores should improve in depth, the property would be capable of paying very large dividends on a very large capital.

To these statements the CANADIAN MINING REVIEW and the *Critic* made reply:—

1. There is no Johnson Brown, of Wolfe River, Ontario, who is a M.E.
2. There is a Johnson Brown, of Wolfe River, Ontario, who is a "half-breed Indian," who can neither read nor write, and who makes his living by hunting and trapping.
3. This Indian has never seen locations 327X and 328X, Clear Water Lake.
4. This Indian was employed in 1897 by H. A. Wiley (director of this Golden Twins Company) to do odd jobs and some prospecting round an alleged neighboring mine, belonging to the Saw Bill Company, the managing director of which latter concern is a brother of H. A. Wiley and who is the the second of the two experts whose reports adorn the prospectus.

In support of these charges I published:—

First. An affidavit by this "*half-breed Indian.*" dated April 29, 1898, sworn before Mr. J. P. Donnolly, the local Commissioner for Oaths, living in the District of Thunder Bay, Province of Ontario, and made in the presence of Mr. M. Power Morrow as witness. As this half-breed Indian could not write, he had to make a cross as his mark in the presence of these witnesses. This man, Johnson Brown, swore that he had never made the report in question; that the statements contained in it were false; that he was neither a miner nor a mining engineer; that his name had been forged, and used in a fraudulent manner in the prospectus; and that he was a half-breed Indian earning his living by hunting and trapping. He further swore that he had never put his name or mark on any paper as a mining report, and he had never heard of the New Golden Twins before he was asked to make this declaration.

Secondly. An affidavit made by a well known resident of that district, Mr. Alexander J. McCumber, stating that he knew this Johnson Brown, of Wolfe River; that he was a half-breed Chippewa Indian who made his living by hunting and fishing and acting as a guide; and that he lived among the Indians in the woods. He further stated:—"The said Johnson Brown speaks some English, but cannot read or write." McCumber's affidavit was sworn on March 4, 1898, before Mr. J. P. Donnelly.

In consequence of these facts, I had no hesitation in denouncing the Golden Twins as a worthless property, introduced by unscrupulous promoters to the public in a most scandalous manner, and I advised the shareholders to at once obtain recission of their contracts, on the ground of false statements in the prospectus. * * *

I gave inspection of the *originals* of these affidavits to the solicitors of the Klondyke Company. What is the answer of the directors of the New Golden Twins who published the false report of Johnson Brown? They have apparently sent over to America and some one has got Johnson Brown to come down from his Canadian backwoods and make a supplementary affidavit. The original, however, they do not disclose; so, I have no means of comparing the signature to this alleged supplementary affidavit with the signature to this alleged report of Johnson Brown published in the prospectus. In the *original* affidavit which I disclosed, Johnson Brown was unable to sign his name, but had to make his mark in the presence of a witness and before a Commissioner of Oaths; and a fourth gentleman, a well known local resident, swore that he had known Johnson Brown for seven years and that this half-breed Chippewa Indian *speaks some English, but could neither read nor write.* In face of these facts, it would be highly interesting to know just how Johnson Brown made a supplementary affidavit; it is not only curious but highly suspicious that, supposing he had done so, the Klondyke Company were not in a position to give my solicitors inspection of the original document.

This supplementary affidavit was made presumably for the purpose of litigation. Therefore, why is the original withheld? It purports to be signed by Johnson Brown, in the same way as the so called report, which I have stigmatised as a forgery, purports to be signed by Johnson Brown. There is no suggestion in this supplementary affidavit as to the necessity of marking with a cross in lieu of signing his name, which is what Johnson Brown had to do in his first affidavit, the contents of which I published last June.

All these matters required a very great deal of explanation, and, in my opinion, to put forward this supplementary affidavit only makes the case still worse. The supplementary affidavit bears *prima facie* traces of being as skilfully drawn up ready for swearing as the affidavit which I disclosed bears obvious traces of the contrary and of having been dictated by Johnson Brown in a natural and unbiased manner. The language of the first affidavit is what one would expect from a Chippewa Indian. Although the meaning of it is absolutely clear, the wording is obviously Johnson Brown's. Whoever the cunning and skilful scribe was who concocted this supplementary affidavit, it is quite clear that he was not sufficiently persuasive to induce Johnson Brown to recant everything said on the previous occasion.

Johnson Brown admits in this supplementary affidavit that he is a trapper and hunter, but is made to state that he is also a "*mineral prospector and explorer*," whatever this may mean in connection with a half-breed Indian who is a trapper and hunter in the Province of Ontario, a district not yet famous as an important mining centre.

It is quite clear that everyone connected with the Golden Twins prospectus has abandoned all idea of supporting the statement that Johnson Brown is a mining engineer—a "M.E.," as falsely stated in the prospectus. "Mining expert," I have heard put forward by fraudulent persons as the interpretation of the mystic letters "M.E." It is the first time, however, in the course of my long experience in exposing mining frauds, that I have heard that the public could possibly regard "M.E." as the equivalent of a "mineral prospector and explorer." Yet this half-breed is one of the two gentlemen on whose alleged report the New Golden Twins was floated for £90,000 at a purchase price of £60,000, payable in shares and cash; and on whose professional skill Morris Catton and the Wileys dare to trade!

This Johnson Brown is made to swear in this alleged supplementary affidavit that he was employed to work around the Saw Bill mine, and, at the same time, to do some exploring in the surrounding country, and to get an interest in what he should find; and that he

did make the report on the said lots 327X and 328X and signed his name to it.

I choose to believe Johnson Brown's first affidavit, especially as *I have not seen the original* of this supplementary affidavit. I still abide by my statement that the report purporting to be signed by Johnson Brown, set forth in the prospectus of the Golden Twins, is a forgery; and I shall abide by my statement and my convictions that the property acquired is a worthless one; and that the whole promotion of the concern is scandalous and requires the strictest and severest investigation.

By the admission of the directors, the company went to allotment on the report of a man who makes an unchallenged affidavit which I have published and who is afterwards induced to make this supplementary affidavit (the original of which is not disclosed) purporting to contradict some of the material statements made in the first affidavit. I have at all events done this much good to the public. Instead of Johnson Brown being a reliable professional man of business, on whose responsible statements persons are induced to subscribe to mining enterprises, it turns out, on the admission of everyone connected with the flotation of this worthless concern, that Johnson Brown is merely a half-breed Indian, a trapper and hunter.* In such ways, by men like the two Wileys and J. Morris Catton, with the connivance, or through the ignorance, of dummy directors in London, the public are induced to part with their good money and sink it in worthless mining concerns in the Province of Ontario, a district which is three thousand miles away from the region which should properly be worked by the Klondyke and Columbian Goldfields, Limited, the parent concern, if there is anything more than a pretense in the title selected for it.

EN PASSANT.

Our issue of this month is largely taken up with a sketch of the historic Dufferin Mine at Salmon River, Nova Scotia, and a description of the fine mining and milling equipment recently installed by its new owner, the Montreal-London Gold and Silver Development Company, Limited. Several years have passed since we first made acquaintance with this productive property, but we entertain a very vivid recollection of a very lively trip to Isaac's Harbor in a small coasting steamer, and a rather remarkable drive into the mine at midnight under the aegis of our rough and ready friend, big-hearted, burly Kent Archibald. Those of our readers conversant with the idiosyncrasies of our genial friend Kent will readily believe that that was a never to be forgotten experience. The mine at that time was being worked in a very haphazard kind of a way, but one had only to go over the property to realize its immense possibilities under careful and skilful administration. In common with everyone who knows anything at all about the mine—and it has been examined by many eminent mining engineers and geologists—we haven't the slightest doubt that this year's returns from the Dufferin mine will considerably augment the steadily increasing gold output of Nova Scotia, and yield a handsome return to those who have put their money into the enterprise.

His Excellency, Lord Minto, has graciously consented to become the Patron of the Canadian Mining Institute, vice Lord Aberdeen. The membership is now in excess of two hundred and embraces the best men in the mining profession of the various Provinces of the Dominion.

* When I published my article in June, the public were being induced by rigs and puffs to buy quantities of Golden Twins shares at 4s 6d and more; the promoters cannot sell them now even at 1s 3d. a share in small blocks. Klondyke and Columbian Goldfields shares were about a sovereign apiece. I warned my readers not to relieve Morris Catton of them, even at 2s 6d. their present rubbish price.

Last month the Institute issued a handsomely engraved Certificate of Membership and published a volume of some 300 pages containing the proceedings of last year's meeting of the old Federated Institute. Another volume, containing the proceedings of the Institute since its consolidation, is now in the press and will be distributed in advance of the ensuing annual meetings.

The programme for the annual meetings of the Institute, which takes place in the Windsor Hotel, Montreal, on 1st, 2nd and 3rd March next, is not yet completed, but from the character of the papers already promised for discussion, we are quite safe in predicting that it will far exceed in importance that of any similar gathering held in the Dominion. The following members are slated for papers: Mr. John Hardman, S.B., M.E., on "Mine Costs;" Dr. James Douglas, the well known copper metallurgist, and Mr. A. R. Ledoux, both of New York, subjects not announced; on "The West Kootenay Ore Deposits:" a joint paper by Messrs. R. G. *McConnell and R. W. Brock of the Geological Survey; Mr. James* Champion, C. & M.E., of Barkerville, B.C., on "Hydraulic Elevators;" Mr. O. E. S. Whiteside, Anthracite, N.W.T, on the "Mining of Steep Seams;" Mr. C. A. Meissner, Londonderry, on "The Iron Deposits of Cape Breton and Newfoundland;" "Notes on the Lillooet Gold Fields," by Mr. F Cirkel, M.E., Vancouver; on the "Concentration of Chrome Ores," by Mr. J. T. Donald, M.E., Montreal; on "The Designing and Construction of Metallurgical Machinery," by Mr. A. McCallum, Peterborough, Ont.; on "Metallurgic Standards," by Mr. F. T. Snyder, of the Wm Hamilton Manufacturing Co., Peterboro, Ont. The other contributors who have promised papers are:—Mr. Jas. D. Sword, Rossland, B.C.; Mr. Birkinbine, M.E., Philadelphia; Mr. F. Hille, Port Arthur; Mr. A. J. Colquhoun, Savonas, B. C.; Prof. W. G. Millar and Prof. DeKalb, of Kingston, Ont.; Mr. Bernard McDonald, M.E., Salmon River, N.S., Mr. R. C. Campbell Johnstone, Nelson; Mr. A. H. Holdich, Nelson, B.C.; Mr. J. Obalski, Quebec; Mr. William Blakemore, M.E., Fernie; Mr. Charles Fergie, Westville, N.S.

On Thursday evening a number of lantern projections will be shown by Dr. George M. Dawson, C.M.G., showing the prominent mines of the Dominion; by Mr. McCallum on the subject of metallurgical machinery; and by Mr. J. F. Lewis, of Chicago, who will submit a number of valuable views showing the work on the Chicago Drainage Canal.

The annual dinner of the Institute will be held in the Windsor on Friday evening.

The gold medal presented by Mr. James King, the well known asbestos mine owner of Quebec, for the best paper contributed to the proceedings of the Institute during the year has been awarded to Mr. Percy Butler, a graduate of McGill, for his paper of "The Moebins Processes of Parting Gold and Silver."

Mr. J. B. Tyrrell, M.A, having resigned his position on the staff of the Geological Survey, has left for Dawson, N.W.T., where he will in future engage in professional work on his own account.

The mineral exports from the Ottawa Valley for 1898 were: Mica, $200,000, phosphate, $8,240, galena, $35,251, graphite, $19,878; felspar, $4,031; other minerals, $985.

CORRESPONDENCE.

The New Mining Laboratory at McGill.

SIR,—On the 20th of December, with the usual accompaniments of titled individuals, social functions and general eclat, McGill University publicly opened the new Chemistry and Mining building which was finished last spring.

With that love of superlatives, which has been noted as characteristic of Canadian eloquence, some of the speakers on this occasion described the new laboratories as more thoroughly equipped "than any in the entire world.' While willing perhaps to concede this as regards the chemical laboratories, there is no hesitation in questioning it so far as the metallurgical laboratories are concerned. While it may be true that no other metallurgical laboratories have had so much money spent upon them, it is an unquestionable fact that there *are* other laboratories much better fitted to impart instruction to the student than those now existing at McGill.

By some of those who have seen and noted the excellence of some of the American laboratories, it was fondly hoped that Canada was at last to have metallurgical laboratories where the earlier mistakes made at Kingston and Toronto would not be repeated; where the physical work required would not make the students' intellect sluggish, and where the capacity of the machines for ore would not eat up the available supply before the results sought for could be obtained. But an examination of the laboratories, revealed during the festivities of the formal opening, has destroyed these fond hopes, and given an effectual denial to the oratory already quoted. By one who personally experienced the course at McGill when the equipment of the Mining Department consisted of a black-board, box of colored crayons, and three small assay furnaces in the cellar of the Arts building, the present immense change for the better is fully appreciated, and, as one who in *professional* work has experienced the need of preparation in *laboratory* work, I can also see how much better for practical work the laboratories might have been than they are

The laboratory system of instruction in engineering work is distinctively American and has had nearly 30 years of experience there. The students of those schools whose laboratories have aimed to impart experience along the most modern lines, are the students who have best succeeded in professional competition afterwards. One of the modern ideas is to dispense with labor and rehandling, and endeavor to make each process or set of processes automatic. The student who is obliged to handle and rehandle material, undergoing one metallurgical operation in a laboratory, will take away with him no permanent conception of this principle, despite lecture room precept. Again, machinery of such size as to severely tax the physical energies of the students in its manipulatior is not the machinery best adapted to acquaint the student with the principles it exemplifies. It is a well recognized adage that a tired body produces a sluggish mind, and the students who are required to handle heavy machinery, and the large quantities of ore which are required for the proper running of the same, will find their mental faculties considerably dulled by their physical exertions; to such an extent perhaps as to neutralize the instruction given them.

There is one further point of general interest to all McGill graduates:—though it is a pleasure to all of us to see our campus surrounded with magnificent buildings of carved limestone, it is not a pleasure to see many of the best professors leaving the University because of insufficient pay. The Physics department and the Railway Engineering department have had losses not easily nor readily made good. Though Sir Wm. Macdonald has now three permanent monuments to his generosity (or ambition), many of us feel that plain brick buildings would have given a larger endowment fund and have enabled the University to have adequately compensated some of the good men who have left the Science Faculty during the last four years.

ALUMNUS

Nelson, B.C., 21st January, 1899.

Successful Gold Mining in Nova Scotia.

A new era has at last dawned upon gold mining in Nova Scotia. 1898 has produced 31,105 ozs. of the precious metal from 86,331 tons of material milled The highest previous record to this was in 1867, when 37,314 ozs. was reached; thus it will be seen that 1898 exceeds all previous years by 3,791 ozs.

It may now be confidently said that gold mining in Nova Scotia has settled down to a permanent business—an industry in which very little speculation remains.

The whole system of mining and milling is undergoing a complete and entire change.

Formerly the small, rich veins alone were worked—those that would give an ounce or more per ton, and although there may have been several parallel veins within a few feet, sometimes inches, worth several dwts. to the ton, and the intervening slates auriferous as well, yet the small "gilt edged" ones alone were worked, and so soon as the yield in those declined they were abandoned. While in this day, by progressive men, the greater portion of the gold is obtained from the wide belts (some of them reaching 40 ft. and more), and it is found because of the excellent facilities, cheap labor and supplies, and the improvements in machinery, that rock yielding as low as $2.00 per ton can be made to pay a satisfactory profit over and above all working expenses and interest on capitalization The mills that are now being erected will crush from three to four tons of ore per stamp per day, while formerly less than one ton was put through; thus it will be seen that the cost of crushing alone has been reduced to one-fourth.

Some idea of the changed condition of things may be understood when it is shown that in 1867 it took 218,894 days' labor to produce 31,386 tons of ore, which yielded 27,314 ozs. of gold; whereas in 1898 it took but 180,212 days' labor to produce 86,331 tons of ore, which yielded 31,105 ozs. of gold.

The average value of Nova Scotia gold is $19.50 per oz., from which it will be seen that while $18.00 per ton was obtained in the sixties, in many cases leaving no margin of profit, in 1898 $7.00 per ton has given not only the largest output of any year in the history of mining, but what is of much greater importance, larger profits on the capital invested. Several companies have paid from 20% to 40% dividends on the year's operations and not one well equipped mine has sunk money. Now that it has been conclusively demonstrated that we have a large number of wide belts of low grade ore that will pay, and pay handsomely, when properly worked, it remains only for Nova Scotians to increase their milling capacity, which up to this time has been not only small but inferior. The majority of the mills have but five and ten stamps—a few twenty, and but one forty—the "Richardson," where they have a belt of ore yielding $2.00 per ton which is worked at a total cost of $1.60. This by way of illustration.

On the "Dufferin," which was purchased by the Montreal London Gold and Silver Development Co., Limited, about a year ago, there is being erected a sixty-stamp mill, twenty of which stamps were started up a week ago This mill will be in all respects a modern one—automatic appliances for handling the ore, breakers, self-feeders and con-

centrators, to save what has in the past been permitted to go to waste. The capacity, per stamp, of this mill, as demonstrated by the twenty stamps now in operation, is over four tons per day of twenty-four hours.

The Blue Nose mill at Goldenville has twenty stamps. Last month's run was 1,500 tons. which yielded 650 ozs of gold, valued at $12,775; total cost of production, $4,500.

This also by way of illustration.

It has been said of Nova Scotia gold mines that they are uncertain, spotty, pockety, and not to be depended upon.

Why has such an impression gone abroad? Why should Nova Scotia mines be thus condemned, more than those in other parts of the world, on this ground, when the geological structural occurrence of the ore bodies shows persistent continuity? This feature is of more than academic interest and determination. I do not mean to say that the ore bodies are absolutely homogeneous throughout their entire respective lengths and depths, because they are not, any more than they are in any other part of the world; they are not so even in the great "banket" formation in South Africa.

That there are recurring relatively rich and poor parts in all gold bearing formations, every well informed man knows, but we hear less about it in other countries than in Nova Scotia, and I have asked why? and I answer the question by stating that it is entirely due to the very limited extent, and contracted manner, in which the Nova Scotia ore bodies have been worked, and this has been due to the failure to recognize the economic importance of the geological features which make it absolutely necessary for successful operation to carry out extensive development work in advance of mill requirements, so as to develop ore reserves adequate to provide against the inevitable recurring of high and low grade zones. The Nova Scotia mines have never had the benefit of such a system. Operators have always attached too much importance to a temporary drop in the grade of the ore—the very moment the ore ceases to look like pay there is a suspension of work, and this condition of things has by no means been entirely due to want of capital, but rather to ignorance and a consequent lack of confidence. Too often those investing are expecting almost immediate returns without providing the necessary requirements to warrant such expectations.

An extraordinary instance of this kind occurred in one of our own districts not long since. A company was organized to purchase a consolidated aggregation of valuable areas that had produced in former years, by the old system of mining, something like one and three-quarter million dollars. After visiting the property several times with their engineer, and making extensive enquiries from the old operators and workmen, they concluded to purchase it, and paid $10,000 on account. There was no scarcity of capital with these gentlemen. They had controlled combines, received immense amounts from the Government for bounties and royalties, and had "ground the face of the poor"—now they were going to revolutionize gold mining forthwith. On one of the ninety odd areas in the aggregation they unwatered an old open cut pit on the lowest grade belt of ore on the property, which had been worked previously by tributors, and from this belt they took out rock left by the tributors as too poor to pay, to the amount of 140 odd tons, 100 tons of which, being by them considered the best, was sent to the mill to be crushed, from which they claim to have gotten but $2.00 per ton. They admitted that $2.00 per ton would pay, yet, because a yield equal to the best obtained by the tributors was not obtained by them, out of the ore left by the tributors because of its being low grade, and because they claimed there was not the width of "white quartz" in the belt that they had expected, but more black rock than they had expected, they were immediately filled with consternation, threw up their hands and declared they were cheated and defrauded, and at once flew to the courts for redress and the recovery of their $10,000. Some idea of the character of the evidence given by one of these gentlemen may be gleaned from the following extracts from the printed evidence before me:—

Q. "What did you expect the quartz would yield?"

A. "I expected that it would yield 3 or 4 dwts to the ton, but we did not attach much importance to the yield."

Q. "Would you estimate that rock any higher if it were 'white quartz' with the same quantity of gold in it?"

A. "I think that in buying the property I would."

This gentleman was evidently after a "white quartz" mine and not a gold mine. As a matter of fact, the balance of all the rock, or ore, these people took out and called "black rock," not quartz, and of no great value in their estimation, was gathered up and sent to the same mill they crushed in, and out of 42 tons 200 dwt. of gold was obtained. This operation by these gentlemen was called a test of the property they had purchased although they did not sink one foot in any part of the mine, but took what they did from some high ground left by tributors, and now they not only denounce this property as worthless, but they denounce gold mining in Nova Scotia, from their experience, as an unsafe business.

This also by way of illustration.

GEO. W. STUART.

Truro, Nova Scotia, Jan. 17th, '99.

ST. LAWRENCE COAL DELIVERIES, 1897-98.

The following shows the deliveries of Cape Breton and other coals to St. Lawrence ports during the season of navigation in 1898:—

	MONTREAL.		SOREL.		THREE RIVERS.		QUEBEC.		TOTAL.	
	1897.	1898.	1897.	1898.	1897.	1898.	1897.	1898.	1897.	1898.
General Mining Assn. ...	78,435	78,268	8,792	9,222	2,416	3,023	30,740	34,332	120,383	124,845
Dominion Coal Co.....	576,340	606,991	7,535	6,831	6,542	10,046	80,c92	68,132	670,666	692,000
Intercolonial Coal Co.	40,576	71,643	.....	.....	.....	.....	3,763	6,362	44,339	78,005
Cape Breton Colliery.	3,378	2,303	.....	.....	.....	.....	.....	.... .	3,378	2,303
Foreign.....	80,017	31.952	4,550	1,802	.....	.....	8,377	2,284	92,944	36,038
	778,746	791,157	20,877	17,855	8,958	13,069	122,972	111,110	931,553	933,191

THE DUFFERIN.

Nova Scotia's Famous Gold Producer Equipped with a Fine 60-Stamp Battery and Modern Mining Machinery. Will resume its Dividend Paying Record this Year.

Many years before the Le Roi, War Eagle, Sultana, Richardson New Egerton, Mikado, and other successful Canadian gold mines, now occupying a considerable share of attention in Canada, was heard of, the Dufferin mine at Salmon River, Halifax County, Nova Scotia, had established a record as a highly profitable mining investment. Having recently been thoroughly overhauled and equipped with a first class mining and milling plant a few particulars of this fine property will be of interest.

EARLY HISTORY.

In the early spring of 1880, Mr. Geo. W. Stuart, the present Mayor of Truro, who has been prominently identified with the gold industry of Nova Scotia from its beginning, had put men to prospect in the dense forests which are found surrounding the lakes from which Salmon River is fed. Much good drift and other satisfactory indications were found, but work was temporarily suspended owing to wet weather. Shortly afterwards, Mr. Stuart told Mr. Alex. Kent Archibald, of the good indications he had obtained, and the two arranged to have further prospecting done later in the season. Some little time after this interview, Mr. Archibald one day heard that an Indian, "Dandy Peter" by name, had some specimens of gold quartz, and upon interviewing the Indian, ascertained that the specimens had been obtained upon the tract which he and Mr. Stuart had arranged to prospect. As the specimens the Indian had were very fine, showing coarse gold, and many persons saw them, Mr. Archibald became alive to the fact that soon there would be a brisk competition for the acquisition of the ground, and that immediate action was necessary. Having just "blowed his bottom dollar" into another mining venture, Archibald was "strapped" as miners usually are; furthermore, his friend Stuart was away, and as good as inaccessible so far as time was of value So he borrowed twenty dollars, and with it hired "Dandy Peter" to go with him and show him the spot where the specimens came from. Other people were watching Peter, hoping to get the desired information without paying for it, so it was necessary to be cautious in starting out. Under cover of darkness Archibald and Peter, started off at midnight taking with them a lantern, which they took good care not to light until well in the woods. Peter's memory and woodcraft served them well, and long before day dawned he announced his whereabouts by saying "Sit down now, smoke pipe; daylight me show plenty quartz, plenty gold," and he kept his word.

After paying the Indian his $20.00 and making his boundaries for the location of a large area of ground, Archibald returned to Salmon River settlement, got a horse and waggon and started for Halifax, some ninety miles away, to secure rights from the Mines Office. Just after starting he learned that the mail coach, which had preceded him, had on board a man bound on the same errand. Now the mail coach stopped for the night at Tangier, but Archibald, after eating his supper and having a quiet smoke, slipped out of the inn, hitched up his horse, and driving all night, arrived in Halifax early in the morning and many hours ahead of Her Majesty's Mail. But here he met the same difficulty as in dealing with "Dandy Peter." Stuart, who had funds, and whom Archibald felt in honour bound to associate with himself, was absent in a distant part of the Province There was no time, however, to be lost, so Archibald went to Charles F. Mott, of Halifax, and stated the facts. Moss refused to recognize Stuart in any way, but hastened to the Mines Office with Archibald, and a large block of areas was taken out. Shortly thereafter the lode itself was found and work begun. As soon as the lode was found, suits were begun by other parties, claiming the ground on one pretext or another, and for nine years this valuable mining property could not show a clear title. At one time suits were so numerous and claimants so vigorous that Archibald and the other owners erected a tight board fence, sixteen feet high, enclosing their works and openings, and had sentinels posted all around the stockade and at various points along the road to Salmon River village, a distance of five miles. At the death of Capt. Archibald, an owner, the property was sold at public auction to settle the estate, Capt Archibald having died intestate. The sale took place March 14th, 1889, and was bid in by the former owners with the exception of Mr. C. F. Mott, who was left out in the cold. The price obtained was $141,000, but was no index to the value of the property.

OUTPUT AND DIVIDENDS.

The mine was worked by a small syndicate of Nova Scotia people, who reorganized and incorporated in 1890, as the Dufferin Gold Mining Company, the principals being Gardner Clish of Truro, John McNab of Halifax, A. Kent Archibald of Truro, and Silas Tupper of Truro. After paying $150,000 in costs for litigation, which lasted continuously for more than nine years, and which finally ended before the Privy Council, and paying for all lands, machinery, construction works, equipment, and all expenses, including labor and management, the owners had received up to 1887 in profits over $300,000.

An official statement from the Mines Department, Halifax, shows the production of the mine to have been 39,373 ounces, 7 dwts. 18 grs. gold won from 95,601 tons rock milled. The following returns of ten years' crushings have been officially reported by the Department to the REVIEW.

1881	Tons crushed	1,640,	yielding gold	1,785 oz.	16 dwt.	
1882	"	3,460	"	"	4,315 "	16 "
1883	"	7,479	"	"	3,635 "	15 "
1884	"	9,799	"	"	3,397 "	. "
1885	"	10,880	"	"	4,924 "	. "
1886	"	10,557	"	"	6,509 "	.. "
1887	"	10,702	"	"	3,258 "	.. "
1888	"	9,935	"	"	3,354 "	10 "
1889	"	7,740	"	"	1,961 "	10 "
1890	"	6,415	"	"	2,070 "	.. "
1891	"	4,710	"	"	1,131 "	.. "

INCOMPETENT MANAGEMENT

Work was discontinued in the summer of 1894, chiefly owing to incompetent management and disagreement among the owners Several experts who visited the mine at various times reported, without exception, that there was an absolute lack of system in every branch of the management, and that it could not be called mining at all. As an example of this it may be stated that at one time there were a number of men working who were paid by the day, and at the same time some parties were mining quartz at so much per ton. The quartz rock produced by both gangs came up by the same shaft, and the contractor was paid his price per ton for all that was raised, although a substantial proportion was produced by the men under daily pay. There was also a great lack of discipline amongst the workmen No books were ever kept beyond the men's time, and no one connected with the property ever knew what it cost to run it. There was also a lack of proper machinery, and a total absence of provision for the future necessities of the property, the total output being distributed without any allowance for maintenance of plant, repairs, &c In this way the company gradually fell into debt and was unable to continue its operations.

ACQUIRED BY THE MONTREAL AND LONDON.

Last year the property, having been reported upon most favorably, —among others, by Mr. John Hardman, S.B., M.E., Montreal; Mr. R. G. Edwards Leckie, B.Sc., C.E., now of Rossland, B.C.; Mr. E. R. Faribault, of the Geological Survey, and by Mr. Bernard MacDonald,

M.E., of Butte, Montana, the company's consulting engineer, under whose direction the fine new plant illustrated in this issue of the REVIEW has been installed, passed into the hands of the Montreal and London Gold and Silver Development Co, Limited. The officers of this company are: Wm. Strachan, *President;* Hon. A. A. Thibaudeau, *Vice-President;* L. H Ewing, *Treasurer*, and Clarence J. McCuaig, *Manager*. The directors are: David Morrice, R. Wilson Smith, W. J. Withall, Dr. Roddick, M P., and R. Bickerdike, of Montreal, and Robert Jaffrey, of Toronto. Ample capital has been provided and no expense spared in equipping the property with a thoroughly up to-date 60-stamp battery and modern mining machinery.

VEINS IDENTICAL IN CHARACTER WITH THE WELL KNOWN REEFS OF BENDIGO, AUSTRALIA.

The Dufferin property acquired by the company comprises some 356 gold areas, each 250 by 160 ft., and covers a length of a mile and five-eighths on the strike of the lode. Mr. E. R. Faribault, of the Geological Survey, a very high authority on the nature and occurrence of the gold measures of Nova Scotia, who has spent many years in a thoroughly, careful and minute investigation of the various gold mining districts of the Province, describes the quartz veins worked at the Dufferin as being "situated on the apex of a very sharp anticlinal fold. At the main shaft the apex has a westerly and easterly pitch, which has caused a sliding and an uplift of the strata, developing large auriferous quartz veins on the crown of the saddle. These latter occur one under another in the same manner as some of those in Victoria, Australia." The similarity of these veins to the well-known Bendigo reefs has also been emphasized by Dr. Selwyn, the late director, and Dr. Geo. M. Dawson, the present head of the Geological Survey. Dr. Dawson says, "They are found to follow the lines of anticlinal folds in precisely the same manner with the well known reefs of Bendigo, but the flexures are broader and further apart in Nova Scotia and the veins themselves appear to be more permanent in depth. The knowledge now gained of these veins renders it practicable and desirable that they should be worked in a larger way, combining series parallel and adjacent deposits under a single management, and opening them up by means of one or two principal shafts Much would be gained by this in economy and in the perfection of milling and concentrating machinery."

GREAT VALUE OF THE DUFFERIN.

Another eminent authority, Mr. John Hardman, S.B., President of the Canadian Mining Institute, and for twelve years successfully engaged in gold mining in the Province, writes: "The great value of the Dufferin mine, in my judgment, does not lie in the north and south veins already worked, but in the absolute certainty that there exists an indefinite number of parallel veins on either side of those already worked which could be worked from the main shaft to great advantage and profit. Bearing in mind that only 2,000 ft. in length out of 8,550 ft. possessed has been worked upon the two veins already known there need exist no doubt as to the quantity of matter available for milling, and upwards of 200 to 300 tons per day from this property, when properly opened and developed, can be maintained for many years."

LOW COST OF PRODUCTION.

Mr. R. G. Edwards Leckie, C.E., B.Sc., an engineer in whom the REVIEW has the greatest confidence as a conservative and safe authority on Nova Scotia gold mining, publishes some well known facts respecting low working costs in that Province which are well worthy of reproduction. He says: –

"The Richardson mine in Guysboro' County, operated by steam power, is mining, milling and amalgamating for $1.60 to $1.65 per ton. ton. The belt of slate and quartz worked is from 12 to 15 ft wide, of which two-thirds are sent to mill and yields $2.40 per ton of free gold. On this low yield a profit of $1,500 was made last month and the manager estimates that over $3,000 gold passed out in the tailings. The Lake Lode Mine at Caribou, Halifax County, is worked under similar conditions at a total cost of $2.00 per ton, but this includes sinking and development work. The Alaska-Treadwell Mine. in 1894, paid over $300,000 in dividends from ore which yielded only $3.20 per ton including the gold obtained from sulphides in tailings. The cost of mining, milling, amalgamating and concentration of tailings, including extraction of gold in the latter by chlorination process was only $1.35 per ton. In the year 1895, the same amount was paid in dividends, the net profit having been $309,535. The ore yielded in free gold by amalgamation $1.70 and 95 cents from tailings, or a total of $2.65 per ton. The cost of working was $1.37 per ton, leaving a net profit of $1.28 per ton. The Alaska-Mexican Mine, a more recent enterprise, is paying dividends on an ore averaging $2.77 per ton, the cost of production being $2.06

Under the exceptionally favorable conditions which exist at the Dufferin mine, the total cost for mining and treatment of ore should not exceed $1.50 per ton, say mining and delivering at mill 85 cents; milling, amalgamating and concentrating 30 cents; chlorination of sulphurets 15 cents; repairs, etc., 10 cents; general expenses 15 cents.

The average yield of free gold as already shown by the Government records is $8.00 per ton and the lowest $4.75, but the gold hitherto lost in tailings has averaged, according to numerous assays made by Ricketts & Banks, New York; F. H. Mason, F.C.S, Halifax, and others, from $2.50 to $6.00 per ton. In concentrating about 8 per cent. would be lost in slimes and 25 per cent. of the gold in concentrates should be recovered by chlorination. Basing calculations upon the minimum assays, about $1 90 of the gold should be recovered from tailings, but the sulphurets vary in quantity and richness in the different veins and in different parts of vein. It would therefore appear to be safe to assume a yield of $1.50 gold per ton of ore from tailings, and accepting the minimum yield of free gold as $4.75, the total yield per ton should be $6.25. There is therefore a wide margin here between cost and yield of the precious metal."

Mining Plant of the Dufferin Gold Mine.

(Written for the CANADIAN MINING REVIEW by BERNARD MACDONALD, M.E.)

The Montreal-London Gold and Silver Development Company, Limited, have been engaged for the past year in the equipment of the Dufferin gold mines of Nova Scotia with up-to-date plants of mining and milling machinery.

These mines were discovered in 1880 and worked until 1893 under the ownership of the Dufferin Gold Mining Company. During this period the mines produced, according to the Mines Office in Halifax, $800,000 gold bullion from 95,000 tons of quartz, and it is stated that the company disbursed among its shareholders $300,000 of the gross production as dividends.

The mining and milling operations were done by primitive methods and antiquated machinery which became more and more inadequate to cope with the mining problems that were becoming more complex as depth was attained, until finally at the greatest depth of 300 ft., attained at one place on the veins, the company was obliged to suspend operations because it could no longer keep the mines dry and open up ore reserves which had been practically exhausted down to the water level.

From 1893 to 1898 the mines were closed down. In 1897 they were brought to the attention of the Montreal-London Company, who had them examined by the company's engineer, and after due consideration of the estimates of the cost of the proper re-opening and equipment, the directors purchased all the property of the old Dufferin Mining Company, and in February, 1898, began the work of development and equipment which has just recently been completed. The accompanying

plans and photos of the complete plant will show some of the details of the construction and help to convey an idea of the magnitude of the work, while the following brief description of the principal materials consumed will still further assist to this end.

Grading and Excavations.—The site now occupied by the plant was covered for the most part in February, 1898, by the waste dumps of former operations, to the height of 25 ft. This had to be removed before the excavations for the foundations could be commenced. The excavation work aggregated a total of 8,400 yards, most of which came from the mill foundations, as the vanner or ground floor of the mill is 16 ft lower than the ground floor of the mining buildings, and 42 ft. lower than the landing deck of the vertical shaft. This depression of the mill building gives it a somewhat squatty appearance in the photo, but appearances were disregarded when in conflict with utility

Foundations.—The masonry upon which stands the frame-work of the buildings and that for the setting of the machinery and stamp batteries, contains in round numbers 144,000 cubic ft., nearly all of which have been laid in lime and cement mortars. The extent of this masonry will be more readily understood when it is considered that this stone work would build a wall 6 ft. high, 1½ ft. wide, and about 3 miles in length.

Lumber.—The lumber used in the construction of the buildings, the frame work to carry the mill machinery, and the store and miners' cottages, amounted to over 2,000,000 ft.

Bolts.—In anchoring the foundation frame-work of the buildings and the machinery to the masonry foundations, and in bolting the frames of the buildings and those for carrying the machinery together 40,000 lbs. of iron bars of various dimensions were used.

Shingles—In Nova Scotia the sides as well as the roofs of buildings are shingled the better to withstand the climatic changes, and all the buildings of this plant are so constructed, and for this purpose over 1,000,000 shingles were required.

Windows—To properly light the buildings 260 windows of 12 lights 10 × 12 and 12 × 14 each were required.

Painting and Whitewashing.—The exterior of all the roofs and sides of the buildings having an area of 125,000 square feet is painted with brown mineral paint mixed in boiled linseed oil, while the interior having the same superficial area is white-washed, thus, to a considerable extent, fireproofing the buildings and preventing the wear and decay incidental to weathering.

Water Supply. The water required for the domestic purposes of the company and the mechanical purposes of the mining and milling plant is supplied from Salmon River and pumped to the works through a 6 inch pipe, a distance of 4,300 ft This pipe line is laid in a trench dug 4 ft. deep which is carefully refilled with the excavated earth, thus sufficiently protecting it against the penetration of frost in the severest seasons.

The pumping plant for supplying the water consists of a Gould's triplex power pump, having the capacity for delivering 400 gals of water per minute against a head of 100 feet. The power required for this pump is generated by a 36 in. turbine wheel, the pump and power being arranged to run automatically and the service is most satisfactory.

Fire Protection.—The natural flow of water in the supply system carries it to a height of 30 feet over the ground floor of the Mine buildings, and to 46 feet over the ground floor of the Mill buildings. But in the event of fire, steam can be turned to a fire pump located at a station 185 feet from the buildings. This pump can be made to intercept the natural flow of water in the main and by pumping forces it throughout the fire pipe system laid through the buildings, at any pressure desired up to 200 lbs. per square inch. To this pipe system at strategic points are fixed stationery fire hose which can play against the fire streams of water under the pressure in the pipe.

New Wagon Road.—Connecting the buildings of the plant with the chain of lakes in which rises the Salmon River, and at which is located the power and pumping plant above referred to, a wagon road nearly a mile in length has been built. This lake system constitutes the reservoir flowage of the company's water power in dry seasons, and extends northwards for a distance of 15 miles, winding around hills covered with a thick growth of hardwood in sufficient quantity to supply the underground mining timbers for many years, almost indefinitely. These water ways and the wagon road mentioned, make this timber easily accessible in summer, or winter.

Mine Workings.—These have been extended to the vertical depth 300 feet or 100 feet deeper, that the deepest point attained by the old working, some new and very important discoveries have been made within the past year and large quantities of ore are blocked out ready for stoping.

These workings are all tracked with steel rails and piped throughout for the transmission of compressed air. They are connected with the surface with two three Compartment Shafts, one vertical and the other on the dip of the vein, each of which is over 300 feet in depth and furnished with working and pump stations for convenience of operation.

Store and Cottages for Employees.—For the convenience of the company's employees a General Store has been built where all the necessaries and most of the luxuries of civilization can be purchased at Halifax prices.

And for rent to the employees with families, the company has built 12 modern cottages of five rooms, each hard finished and furnished with electric light and water In addition to these the company owns and rents to its employees, six cottages without light or water privileges.

There is also in addition to this three buildings used as boarding houses.

60 STAMP MILL.

This when completed is to be a 60 stamp mill. At present but 30 stamps are in operation, but the building is completed and prepared for the 60 stamps, and the other 30 may be added as soon as it is found desirable to complete the plant The mill is of the standard California back to back type, with Homestake mortars and stamps weighing 1000 lbs., arranged to drop 6 inches 100 times per minute. With these conditions and adjustment the mill has a crushing capacity through a 30 mesh screen of 4 tons per stamp per twenty-four hours. It contains all the modern automatic devices for minimizing labor, and aside from the ordinary devices used in a mill of this character, it contains certain modifications designed to effect greater capacity in crushing and a more complete amalgamation of the fine gold, a more perfect concentration of the ores.

The machinery was built by the Jenckes Machine Company of Sherbrooke, Que., according to designs and specifications furnished by the writer.

In operation the ore is hoisted from the mines through the three compartment vertical shaft in mine cars of 17 cubic feet capacity direct to the landing deck in the hoist building From here the "deckman" runs the loaded cars and dumps them into the receiving bin of the Rock House (24 feet distant from the shaft) and then returns the empty cars to the shaft to be lowered again into the mine. From the receiving bin the ore gravitates over a grizzley—a bar screen—the bars set with 1¼-inch spaces. Such of the ore as comes from the mill fine enough to pass through this screen falls to an under chute, in which is fixed another grizzley with bars set ¾-inch apart, as the ore slides automatically over the grizzley the portion of it fine enough to pass through the ¾-inch spaces drops into the storage bin underneath properly prepared for the stamp batteries.

The portion of the ore that had been too coarse to pass through the 1½-inch spaces of the grizzley first above mentioned, gravitates into the jaws of a 10 x 20 inch Blake crusher, where it is reduced to fragments, the largest of which would pass through a 1½-inch ring. The ore thus reduced falls to the under chute above mentioned, where that portion fine enough to pass through the ¾-inch grizzley falls into the storage bin beneath, and the portion too large for this purpose gravitates into a cam feeder, which feeds it in regular uniform quantities to a set of 14 x 36 inch belt driven Cornish rolls, which reduce it to desired fineness (to pass through a ¾-inch ring), when it drops it into the storage bin underneath, in which all the ore is now prepared for the stamp batteries and is ready to be transferred thereto. This completes the first stage of the milling operation, viz., *the preparation of the ore for the stamp batteries.*

The capacity of the department just described, being 12 tons per hour, or double that of the stamp batteries for the same time, it prepares while running during the day shift all the ore required by the stamps during the 24 hours.

From the Rock House storage bin the prepared ore is then transferred to the storage bins behind the stamp batteries in the following manner: An employee called the skipman allows it to spout through a gate which he controls into a self-dumping skip, which when full he hoists by means of a friction winding drum up an incline track to a point over the battery storeage bins, where it dumps and spouts to the bin behind either battery desired.

From the storage bins behind the batteries the ore gravitates through gates into improved challenge feeders, six in number, which in turn feed it automatically to the batteries as required.

In the batteries the ore is stamped to a degree of fineness determined by experiment to be sufficient to liberate the fine particles of gold from the enclosing quartz matrix. While undergoing this stamping process, a sufficient amount of water is admitted to the batteries to make the pulverized ore into a thin easy flowing pulp. In this condition the ore issues from the batteries flowing through a steel wire cloth screen, having 900 meshes to the square inch.

Amalgamation of the now liberated gold particles is effected in the usual way, on copper plates placed inside and outside the mortars. The quicksilver being fed inside the mortars. Here a few words may be said on the process of amalgamation. The fullness of the opportunity given the now liberated gold particles to amalgamate with the quicksilver fed into the mortar will be understood, when it is considered that in each mortar measuring 54 x 11 inches in plan at the point of discharge and filled to the depth of 7 inches with thin flowing pulp, there is continually falling five 1,000 lb. stamps, six inches each, 100 times per minute.

In the agitation thus produced in the pulp the quicksilver fed into the mortar becomes atomized into infinitessimal globules. Each of these being endowed with a natural affinity to attach itself to every particle of gold it comes in contact with and by its high sp. gr. to drag it down and anchor it to the amalgamating plates such gold as escapes through the battery screens without being thus caught; falls on and becomes attached to the apron plates. While the pulp now robbed of all its free gold flows on out of the mill. This briefly is the story of the mechanics of amalgamation. To return to point of operation where the digression was made, the pulp on issuing from the mortars through the wire cloth screen, having 900 meshes to the square inch, falls on the lip plates, thence flowing over these falls on the apron plates. These for each mortar are divided into three steps with a 1½ inches of fall between each. The apron plates were thus designed, because it is believed by the writer, that these steps over which the flowing pulp is continually falling aid to complete the amalgamation of the gold, as by the slight fall (1½ inches) the pulp impinges against the plates and the light particles of gold brought into direct contact with them, thereby offering the fullest opportunity for amalgamation. Passing the apron plates the pulp is discharged into a dead box, which serves as a quicksilver trap.

This completes the second stage of the milling process, viz., *the reduction of the ore to pulp and the amalgamation of the liberated free gold.*

The milling would now be complete, but the ores of the Dufferin carry from 2½ to 3 per cent. of arsenical pyrites which is rich in gold, and these pyrites when reduced to a pulp do not liberate their gold contents in a form favorable for amalgamation. Such gold would therefore be lost if the milling stopped here. To recover these auriferous pyrites concentration is necessary, and for this purpose the mill is equipped with three sets of hydrometric sizers and fifteen six foot frue vanners, the latter divided into three sets of five each to correspond with the sets of sizers. With these the concentration of the pyrites from the pulp is effected as follows: The pulp flowing from the dead box enters the set of sizers and is made into five classifications therein—the coarser sands going into the first classification, and the finest slimes going into the fifth classification, while the three intermediate classifications are graded between the two extremes mentioned. Each classification then flows through a 2-inch iron pipe to a vanner especially adjusted for its concentration. The efficiency of the vanner is greatly increased when it has to deal with only one classification of pulp. After the concentration of the auriferous pyrites from the pulp it then being worthless is allowed to flow to waste outside the building. This ends the third and last stage of the milling process *the concentration* of the auriferous pyrites from the pulp. The concentrates are now stored pending the determination of the best way of realizing their values.

Power.—The mill is operated by steam power. For this purpose a plant consisting of two 14' x 54" horizontal tubular boilers, a feed water heater and a 16 x 42 in. Corliss engine has been installed.

Heating.—The mill and a portion of the mine buildings is heated by a Sturtevant fan heater. This is a most economical and satisfactory system of heating buildings of large area, it being effected by the exhaust steam from the feed water heater in the following manner:—The steam on being exhausted from the heater is conducted into a series of coils of one inch pipe radiating from a hollow cast iron base plate having an internal diaphram, which serves as a trap to carry off condensed water. The pipe constituting these coils is set about ½-inch apart and in sufficient number, so that their aggregate area will be so large that little or no back pressure will result against the steam exhausting from the feed water heater. These coils are enclosed in a sheet steel casing, inside of which and through and around the pipe the fan draws the air, which it afterwards forces throughout the building. The fan is 6 feet in diameter, with 18 inch blades, and makes 350 revolutions per minute. The steam pipe coils yield their heat very rapidly to this immense volume of air flowing around and between them to the fan box, so much so that the steam is practically condensed leaving the coils as a small stream of hot water. The adjustments of this system place it under perfect control for a wide range of capacity.

Lighting.—The mill, hoist and all the surface buildings, including the assay office and melting room, store offices, residences and cottages above mentioned are lit by electricity. For this purpose a 240 16 candle power dynamo run from counter shafting from the Corliss engine is used. As supplementary in case of accident another 120 16-candle power dynamo is ready to be started up in the hoist building, where it is connected to the high speed engine used to operate the machinery in the machine shop.

Probable Cost of Milling.—It is estimated after careful thought that the entire cost of milling will not exceed 35 cents per ton, with the plant at present in operation, and this cost will be considerably reduced when the mill is completed and its capacity doubled.

DEVELOPMENT OF THE MINE.

In former operations the veins were worked to a length of 2,000 feet along their apex (or more properly speaking along the strike of the anticlinal and to depths ranging from 25 to 300 feet below the surface—this latter depth was only attained in one shaft and the stoping did not extend to this depth. The stoped out portion having only an average depth of 120 feet on the veins.

The new workings consist of two three compartment shafts, one vertical sunk in the neighborhood of the anticlinal axis to a depth of 325 feet. Stations are cut from this shaft at the depths of 200 and 300 feet from these stations and crosscuts run from these stations through the vein system. Where these crosscuts intersect the veins, drifts run along underneath them at the depths of 100 to 200 feet below the bottom of the old workings. In these deeper workings the veins maintain their commercial value, showing in many instances increased widths and quite frequently carrying a liberal sprinkling of visible gold in streaks of the vein matter.

The vertical shaft above mentioned is to be the main working shaft of the the mine. To it all the workings will be tributary and at the various levels from it working and pump stations for handling the mine traffic and draining the workings will be cut. The incline shaft is used for prospecting, ventilation and an additional way of entry or exit from the mine in case of accident at the vertical shaft. It is the company's intention to vigorously prosecute the development of the vein system by the most modern methods and comprehending this purpose the plant and working plans are designed.

THE MINING PLANT.

The machinery of this plant was furnished by the James Cooper Manufacturing Co., of Montreal, and consists of the following:

Two Lidgerwood hoisting engines, each with double drums and reversible link motions; one having a lifting capacity of 5,000 lbs. 400 feet per minute, the other of 3,000 lbs. 350 feet per minute. The larger one is set at the vertical shaft and lifts the loaded mine cars from the various levels on platform safety cages to the landing deck at the surface from whence they go to the rock breaker. The smaller hoist is set at the incline or skip shaft through which it hoists the skip loads of ore and waste over double tracks of steel rails, dumping them automatically into separate bins at the surface as desired. Furnishing air for the machine drills in the mine is a cross-compound condensing Ingersoll air compressor of the piston inlet type with capacity to deliver 1,000 cubic feet of free air per minute. The machine drill equipment consists of eight Ingersoll Sergeant and five Rand drills. In connection with the storage and distribution system of the compressed air to the various mine workings, three receivers are used. One at the surface and two at the mine workings. These are connected by piping having a larger sectional area than the discharge from the compressing cylinders—to favor the condensation in the receivers of the moisture contained in the compressed air.

Adjoining the engine room, containing the machinery described (except the smaller hoist) is the machinery room in which are installed a lathe, drill press, emery wheels, drill testing block and the various special tools required to take care of the repair work necessary in the operation of such a plant. These machines are run by a 20 h.p. high speed Leonard-Ball engine, which is also used for running the dynamo, used as an auxiliary in case of accident to large dynamo at the mill.

The steam power for this machinery and for the pumps in the mine is generated by a battery of three 14′ x 54″ horizontal tubular boilers, built to carry a working pressure of 120 lbs. per square inch. The mine offices, engine, and machine rooms are heated by steam.

The foregoing description of the operations of the "Montreal-London Co." on the Dufferin mines—their Nova Scotia property, during the past year, is brief and general, and many interesting features of the work are not touched upon at all, yet enough is mentioned to indicate the results obtained. For the greater part of the year the writer was engaged exclusively in planning and supervising this work in which Mr. Alexander Dick, of Halifax, filling the position of superintendent, ably assisted.

COMPANY NOTES.

Regina (Canada) Gold Mine, Limited.—The third ordinary general meeting of shareholders was held last month in London.

The Secretary (Mr. J. L. Middleton) read the notice convening the meeting.

The Chairman, in moving the adoption of the report and accounts, said: Gentlemen—I should like to inform you at the outset that since our meeting last year we have had the benefit of Colonel R. T. Maillard's services on the board of this company. When General Sir Henry Wilkinson thought he would probably be in Canada most of the year, it was thought necessary to have an additional director on the board, and I need only tell you that we were very pleased, indeed, to welcome Colonel Maillard, who has been with us ever since. The directors' reports and statement of accounts having been in your hands for the past week, I will, with your permission, take them as read. Before formally putting the motion for their adoption I should like to say a few words as to our present position. First of all, on behalf of my co-directors and myself, I must apologise for our having postponed the meeting until so late in the year. Our reason was that up to within a short time ago we quite expected our Chairman, Sir Henry Wilkinson, to have been home by Christmas, when he would have presided at our annual meeting. He, however, decided that he would be best able to serve the interests of the shareholders by remaining at the mine during the winter. You will remember that when we last met the 20,000 priority shares were in the course of being issued. Of these, 18,419 have actually been allotted, leaving about 1,580 still on hand. This is somewhat a disappointment to the board, as in their estimate they calculated on obtaining the full amount. Our Chairman in his speech last year reported to you the existence of several gold-bearing veins on our property to the west, and also to the east of our No. 3 vein, the latter being, as you are aware, the only one on which any work has been done so far. Little or no development has been done this last year on any of these veins, it having been thought advisable to concentrate all our energies on the No. 3 vein in order to ensure the increased amount of ore that would be required for the new plant. However, since our new machinery has been started satisfactorily, steps have been taken to test some of these other veins. A diamond drill is now boring in the 6 level north, or 360 feet level, with the object of striking the Magazine vein at that depth, about 225 feet east of No. 3 vein, and in the last letter from the Chairman he reports the drill to have bored 170 feet of this distance. We are, therefore, expecting to hear the result of this important work very shortly. With reference to the other vein I do not think I can do better than read you part of a long and interesting letter recently received from our Chairman, who says: "The Fox vein has recently yielded such extraordinary samples of rich ore, and it and the No. 4 are such promising-looking veins, situated so conveniently near our own mill, that I, therefore, purpose, if I can get the money, to drive an adit tunnel in the Lake Bank on the Fox vein at a point about 10 feet above high water mark. This tunnel, when 95 feet in, will be immediately under the opencut on the hill where we have obtained some of these surprisingly rich pannings, and we may reasonably hope from the surface indication that we shall find the vein considerably larger at that depth; and, if rich, the ore can be easily conveyed over the ice to the mill. From this point—95 feet into the bank—I purpose driving a crosscut to the No. 4 vein, 100 feet distant, and when doing so I expect to cut at least one other vein that is in places just visible on the surface. The whole of this end of our property appears to be full of veins. All of them afford rich pannings, and most of them good specimens of visible gold. To do jnstice to our possessions and to give our undertaking a fair and full chance of success, it is obviously necessury to do this work in addition to the regular work in the mine. But, in the position in which I find our affairs, this cannot be done out of revenue. I beg, therefore, that, at or before the general meeting of the company you will explain the position to the shareholders and get them to subscribe for the unissued balance of our priority shares, or at any rate for £500 worth, which is the least that will enable me to fully carry out the above and other vitally necessary works." It is with regret we have to inform you that a dyke of intrusive rock, or what is known amongst miners as a "horse," has been encountered south of the main shaft, and until this has been cut through the value on that side must be adversely effected. This, we anticipate, is only a temporary difficulty, and one of those freaks of nature which miners are constantly having to contend with. Although we think it advisable to be prepared for this intrusion adversely affecting the value of the quartz, we may state that although the vein is much broken up and sometimes cousiderably altered in its course, yet quartz very much richer than the average of the vein is often found in the vicinity. The chairman in his speech last year, said that with 40 stamps at work we calculated 3¾ dwts. per ton would pay. It is very gratifying for us to be able to report that, judging from the first three months' work with the new machinery, this estimate has proved on the right side, as we find that the cost of extracting and milling our ore is only averaging 3½ dwts. per ton. I can, moreover, assure you that if this cost can be still further reduced it will be, as it is receiving constant attention both from the board and the management out in Canada. Our new plant consists of a compound double cylinder air-compressing engine, capable of driving 10 rock drills. This, is needless to say, is a very large and costly engine, and certainly one of the most powerful and efficient installations at present working in Canada. Our reduction plant consists of a battery of eight Tremaine steam stamp mills, equal to 40 head of gravity stamps. It was only after great discussion and anxiety on the point that your board decided on adopting the Tremaine mills, and they are glad to report to you that they are working most satisfactorily. You will have noticed in the report that the Chairman hopes to be able to sink the main shaft another 66 feet with our present hoisting engine, thus making a total depth of 500 feet. This is most important, as it will give us another level and very considerably increase the stoping area. Whilst on this subject I may remind you that ours is the deepest gold mine in Canada, even at the depth we have at present obtained; and what is more, we still have our vein

showing well at that depth. I am sorry to have to inform you that our late manager, Mr. Pringle, has left us. We are indebted to Mr. Pringle for many things, and more especially for the very efficient way in which he arranged the erection of our present plant. He left entirely on personal reasons, and in the most friendly manner. He has assured us that we have a most competent staff, and he speaks most highly of the mine captain. I think we can hardly separate to-day without paying some tribute to Sir Henry Wilkinson for all he has done and is now doing for our interests. He left here last April and has been at the mine more or less ever since keenly looking after our interests. Since our late manager left I know he has been at his post entirely. The winter in Canada is most healthy, but still a temperature of between 20 and 30° below zero to a man who has lived all his life out in India must be trying, and I am sure a vote of thanks from this meeting for his services would afford him very great pleasure, particularly if it came from the body of the meeting.

Col. R. T. Maillard seconded the motion, which was carried unanimously.

The London and British Columbia Gold Fields, Limited.—The second annual general meeting of this company was held last month in London, the Chairman (Mr. Oliver Wethered) presiding.

The Secretary (Mr. E. R. Tasman) having read the notice convening the meeting, the Chairman said: The directors' report, which you have all received, was intentionally made so full that, under ordinary circumstances, I should not trouble you with any observations, except of a brief kind, this morning; but I myself and my colleagues wish that you should have a little more accurate idea than is possible in a report of some of the properties owned by this company, or in which the company is interested. The principal of these or the most developed properties are the Ymir and the Whitewater; and thanks to the kindness of the managing director (Mr. Richard Popkiss), who is an engineer as well as our managing director, I am able to show you to-day a plan and sections of both the Ymir and the Whitewater properties. After the meeting we shall be very glad to more fully explain to any of the shareholders any further information they should desire. I will now deal with the Ymir. From circulars which you have received from time to time, and from the report, you have some general idea of what this property is. But I will briefly give you information which may be of interest to you, and also most satisfactory. This company purchased the Ymir group of mines in November, 1896. Since that date work has been carried on with a consequence that we have now in it a developed gold mine of very considerable value, and it bids fair to develop into possibly a Le Roi. This section shows the tunnelling, and you will notice that the pay chute is sketched in blue, and varies in width from 5 ft. to 35 ft. Mr. Kendall reported in July that 93,000 tons of ore, of a value of £232,000, were then actually blocked out. Since that date the lowest level (No. 3) has been reached, proving the mine at a much further depth, and how much further this huge pay-streak will go on is more than I can say. The ore of this mine varies a good deal in milling, and this mine, therefore, must not be considered of high grade. When you consider the huge size of the roof, I shall not be very much surprised if this does not turn out to be a very large and very important property. The whole of the ore from this mine can be filled into waggons and run into tunnels by tramways straight to the mill, and I understand that, although we are now down to the No. 3 level, the contour of the country is such that we shall get a good many more levels yet. The mill which is going to be erected, and, we hope, running, by the 20th January next, will consist of 40 stamps, with special appliances for treating this ore. The power will be the very best—that is, water power, which is the best and cheapest—and everything points again to the cheapest possible work, for we shall require no fuel. We yesterday received a cable that the mill will be working by January 20th. There has been some delay owing to the difficulty in getting the machinery from the United States, owing to their late difficulties with Spain. Now, with regard to the profit, I myself would not venture to express an opinion upon that, but I will draw your attention to what Mr. Kendall, who represents Messrs. Bewick, Moreing & Co. in British Columbia, states. He says $5.55 to 8 5 cents per ton. Our stamps can deal with 100 tons per day, or say, 30,000 tons annually. Taking this at $6 a ton, we shall get £36,000 a year. In a circular dated September 2nd you were informed that arrangements had been completed for the sale of a portion of this mine—a quarter interest in it. We, therefore, at present hold a three-quarter interest, subject to an option which is very favorable to the company. We sold a quarter interest at a price which gave us back practically the whole of our money expended for purchasing and equipping it with a 40-stamp mill. If we sell another portion we shall have made £25,000 approximately. We shall have half interest, less the shares which we are distributing. Speaking roughly, we shall have made something like £100,000 on that one transaction. I may mention that one shareholder wrote to ask who were the purchasers. I may say that the purchasers were the West Australian Goldfields, and I think it will be an extremely good arrangement for them. It was not offered to the public because we had no opportunity of floating anything with success, and the money we should have spent in advertisements would have been wasted. I now come to the Whitewater. This mine consisted originally of claims, of which it was, I believe, the most important one, and extended across the Irene and Myrtle R. claims. The London and British Columbia purchased the whole lot, and combined them into one company, which was put on the market in February of this year. Two small sections have been since acquired. Our engineers decided that a very large saving would be ensured by working the whole of the ore in its entirety and at one time, and this, gentlemen, has been the reason of the delay in making large shipments to date. From latest information received we have already shipped some 600 tons of clean ore, which has been extracted in the ordinary development work of the mine. I am sure that you will be pleased to know that the concentrator commenced to run on the 30th November last, and in a very few days we ought to know the results. This has been worked entirely from tunnels and not from the shaft, and thence by a tunnel to the mill, which is economical working. Since Whitewater Mine was purchased nearly 2,000 ft. of upraised work have been done, and to-day there is probably twice as much ore ready as when the company took over the property. We have practically doubled our reserves of ore. The westernmost points of the workings are equally as good as those on the eastern side, and, further, a new tunnel, No. 5, has been driven, which has also proved the existence of a good vein at a lower level. There is no reason why we should not get in several more levels presently. The manager of the property, who was at one time the manager of the Le Roi, asserts that it is undeniably the fact that this Whitewater vein extends east to west of this group of properties. Mr. Rathbone visited the Whitewater Mine and also the Whitewater Deep Mine, and says that the Whitewater vein continues in depth as it does in length, and to the southern boundary. This being so, we have not over-estimated the life of this mine, which Mr. Rathbone puts at from fifteen to twenty years. I must ask you before putting a value to this ore to wait until the concentrators prove it. We hope to get 40 per cent. on the capital of the company. This mine was capitalized at £125,000, which was an extremely low capitalization. This, you must understand, is only an estimate. Our interest in this mine is a very large one, and must increase in value in the future. The shares are worth ¼ premium now, and there is no doubt they must very largely increase in value in the future. I now come to our first large investment, and that was a considerable interest in the Ruth Mine. The report of the Ruth mine has just been issued, since ours. In case you have not seen it, I may say that the profit for the year ending June 30th was £27,733 19s. 6d., and a further dividend has just been foreshadowed in the report of 1s. 6d. per share, and this will make for the year 4s. 6d. As we have a large holding, somewhere about a third of the shares, this will be very gratifying to you. The concentrating plant is being erected, and shortly a good quantity will be put in and must yield a large profit. This property consists of no less than 210 acres, and there are other ledges known to exist, and sample very, very high. Mr. F. Foster is the chairman of the Ruth Mine, and as he has just come back from British Columbia he will tell you about it later. I have now come to the Yukon Goldfields, in which a good many of you are also interested, and which was a subsidiary company of the London and British Columbia Company, and most of the directors, if not all, are on the board of that company. We are satisfied from our talk with our manager there that we have a thoroughly competent and conscientious representative, and with the working capital we have for developing these and acquiring others we are satisfied we shall have good results. With regard to the Pyramid Copper Syndicate, our attention was drawn to it, and we therefore made certain inquiries and investigations, and as the result we decided to take up the development of this property; and, so far as they have gone, it is very hopeful indeed. The next is the Alma group of claims. These adjoin the Ymir mines. The first of them is the Gibraltar. We were able to secure these at a very small cost. We shall vigorously continue the small amount of development work commenced, and before we meet again I hope to be able to tell you that they have turned out to be of very good value. In the event of successful development we hope to form one or two subsidiary companies. The next item is the Norfolk claims. Comparatively little work has been done on these, but our manager assures us that we have reason to hope we have good results in view in that district. The acreage is about 100 acres. The Washington and Slocan Boy mines are properties which are less than a quarter of a mile from the celebrated Poorman Mine. By working them together the cost of extracting the ore will be very much reduced, and will greatly enhance their value. The option on these properties, judging from the report of the engineer, are likely to prove a valuable acquisition. If any shareholder has time and will call at the office it would be interesting for him to see the special plans we have of these properties and the amount of development work that has been done. There is one other matter, and that is the Toronto group of mines, about which we have no more information than that contained in the report. I trust, however, I have said enough to convince you that our interest in the various properties is very valuable. They are selected from some hundreds of properties submitted to us in British Columbia. In London we also had hundreds of properties placed before us, but it is useless to look into properties on this side, we must look into them on the other side and be guided by what our staff tells us. I may remind you that when we made up our accounts on the 30th September, 1897, the Ymir property only stood at £9000, but is now likely to give us £100,000 profit. We have adopted a very conservative mode of dealing with these properties, and some day I think we could sell them for a very large sum. Now kindly turn to the balance sheet, about which you will probably like some information. Our authorized capital was £200,000, of which you will see £99,950 Ordinary shares and 2,500 Deferred were issued. You will see that at the date of making up accounts there was £6,286 15s. calls in arrear. By the end of the year this will be entirely wiped up. Then, on the other side of the account, with regard to the Ymir and Whitewater shares, valued on our conservative lines at the market price of to-day, there is an appreciation of £50,000 on the valuation we have put on them, and that means £50,000 additional profit. If you will kindly turn to Profit and Loss, there is an item of £1,434, which I should explain, is with regard to moneys which we have expended on properties we have investigated into, but have not considered them to be worth taking up, and we have therefore charged them to profit and loss account. In London the expenses have been £2,744, which include directors' fees and managing director's salary. I think the best evidence as to whether we have earned that or not is in the results we have been able to show to-day. With regard to the expenditure in cables, I may say that our staff are working 5,000 miles away, and I am strongly in favor of keeping in weekly and almost daily touch with what is going on there. £2,416 includes the manager's salary and the salary of Mr. Fowler, our resident engineer—a man who has done so much for the success of this company. The next, £3,150, for reporting and consulting engineer's fees (British Columbia and London), may appear somewhat high, and is a large sum; but we have to exercise extreme caution, and the board have received very excellent help from Mr. Kendall, and the results justify this view. Our dividends on investments have been entirely received from dividends on the Ruth mines. Fees and commissions amount to £849—that is, by the services of our engineer to other companies, and for flotation of the Ymir and Whitewater companies. I think I have now covered all items on which any information might be required, but I shall be pleased to answer any questions shareholders may put to me; and, in conclusion, I may congratulate the shareholders on the extremely satisfactory condition of the company's affairs. The only issue we have attempted to make was the Whitewater, and everyone who has put one shilling into that mine must be extremely comfortable to-day. I think we may say we have had more luck or more success than any of the other British Columbian companies I don't know of any company that has done quite so well as this. This, gentlemen, is very largely due to the excellent staff we have in British Columbia. On all hands we hear that Mr. Fowler, our resident engineer, is one of the very best men in British Columbia, and Mr. Kendall has been of the utmost value to us, and Mr. Robertson has been very zealous. On this side I may give Mr. Popkiss great praise—in fact, all the praise—for the results we have been able to show. We could never have kept the matter in right good trim but for the organization there is both here and in British Columbia. I can myself personally testify to this. As before mentioned, Mr. Johnstone Douglas has had to resign on account of pressure of other business, and my colleagues have been good enough to select me to fill the vacancy, and that accounts for my presiding to-day. Without troubling you any further I will now move the adoption of the report and the accounts submitted to this meeting, and I ask Mr. Forster to second that.

Mr. W. H. Forster: I have great pleasure in seconding that. I do not know that I can add anything of importance to the very lucid explanations just given; but, as I have just returned from British Columbia, I will make a few observations. While there I visited all the important properties of this company, and I went thoroughly through all the working on each of those properties—the Ymir, the Whitewater and the Ruth mines. I can but epitomise the impressions left on my mind by saying that I was firmly pursuaded before my visit of the future success of these properties, and I am now more than ever convinced of their great value. Since the company became possessed of the Ymir, and since it became possessed of the interest in the Whitewater, the work has been entirely confined to development,

and money has been going out and none coming in, but the consequence is that in both these properties there have been opened up bodies of ore sufficient to keep the mills which are being erected going for several years to come. Now, I believe that it is a fact that of no property in British Columbia other than the Ymir and the Whitewater can that be said. I believe that we have more ore, greater reserves of ore, in both these mines than exist in any other mine in the Province. From the Ruth we have received 3s. dividend, and 1s. 6d. to come, which makes a total of 4s. 6d., or 22½ per cent. Our ore shoot was cut off in one place by a series of slips in the formation. We have been driving ahead, and we have now got through this broken and barren formation and have got into ground which looks extremely promising. We only want to continue the tunnel until we have got into ground where it is safe to cross-cut without going to the expense of timbering, and our last account from the mine is that the ground is extremely favorable. We now hope that we shall very soon get our vein again. It is the opinion that there is no doubt we shall recover our lost ore sooner or later. The other properties I did not visit; time did not permit me to do so; but I talked over the prospects of them with Mr. Fowler and Mr. Robertson, and they both entertain great hopes of the success of them. The net result of all this is that we occupy the strongest position of any company operating in British Columbia, and I think evidence of this fact is to be found in the price of our shares to-day. Your directors cannot force a man to buy your shares, but it is none the less satisfactory to find, that in spite of the quiet times which undoubtedly exist, the price of our shares are gradually rising, and I hope will continue to rise. Even if they remain stationary, then we have an investment which yields us 30 per cent. I will only add one word with reference to the local staff. In a company like yours nearly everything depends upon the mining engineer, upon whose reports properties are either accepted or rejected, and I am happy to think we possess in Mr. Fowler an engineer of the highest standard, a man of the most sterling integrity, and to whom the present position of this company bears the most excellent testimony. To the remainder of the staff we owe a debt of gratitude for their zeal in looking after the company's affairs.

The Chairman proposed that a further cash dividend be paid on the Ordinary shares of the company, making, with the interim dividend already paid, a total cash dividend at the rate of 20 per cent. per annum for the year to the 30th September, 1898, on amounts paid upon the Ordinary shares, and that the 20,000 shares, fully paid, in the Yimir Gold Mines, Limited, be distributed, by way of a further dividend, in two moieties, one to the Ordinary and one to the Deferred shareholders. I might ask Mr. Popkiss to second that resolution, and then the warrants for the cash dividend and transfers for the script dividend will be passed to-morrow.

Mr. R. Popkiss: I beg to second that resolutlon.

Carried unanimously.

The proceedings terminated with a vote of thanks to the chairman and directors.

The Ruth Mines, Limited.—The directors' report for the year ended 30th June lust, states that in the circular to the shareholders, dated the 18th February last, reference was made to the ore having been cut off in two of the levels by a "slip" in the formation. Subsequent working proved that the "slip" extended nearly to the surface, and thus cut off the ore in all three of the upper levels. It is probable that it also extends downwards, and that it will be again encountered in No. 4, when that tunnel has been driven sufficiently far. In the same circular it was announced that there had been discovered beyond this "slip" a strong vein carrying both clean galena and concentrating ore. This vein was, however, cut off in its turn by another "slip," and tunnel No. 2 was driven ahead in the direction of the main strike of the vein, so as to pass through the broken or faulted ground as quickly as possible. The tunnel has now got into settled formation, and cross-cut are being run at right angles to its course. The latest news shows that the ground looks very favorable, and the directors hope that the vein will be recovered before very long. Development work is now being actively pushed in other parts of the mine, but it was, unfortunately, brought to a standstill for two months through the irruptions of a large volume of water in tunnel No. 2. This water, with a flow of some 75 or 80 cubic feet per minute, poured down through all the workings, and all energy was concentrated upon the work of getting the water out of the mine. As there appeared to be a prospect of securing a supply of water which would furnish power as well as the quantity required for concentrating purposes, it was decided to postpone the erection of a plant for a few months. A grant of this water has now been obtained, and the concentrator will be erected as soon as possible to treat the large quantity of concentrating ore which is already mined, and which will yield a large profit. It has been decided to suspend the extraction of ore from the mine pending the erection of the concentrating plant, as the profits per ton of ore taken from the mine will be increased thereby. In the event, however, of the development work opening up large bodies of clean galena, which could be cheaply mined and sent to the smelters, prior to the erection of the concentrator, ore shipments will be resumed. A new ledge has been discovered on the Aurora claim, and ore taken therefrom assayed 288 oz. of silver to the ton. Development work is being vigorously pushed on this claim, and the results will be awaited with interest. It will be remembered that the property owned by this company comprises no less than 210 acres, and only a fraction of the area has been explored. The chairman has recently returned from British Columbia, where he paid several visits to the company's property, and reports that everything is working smoothly and well, and at the meeting he will be glad to furnish information on any point. During the twelve months under review 6074 tons of ore, carrying both silver and lead, were shipped to the smelters, and the operations of the company have resulted in a net profit of £27,934. An intrim dividend of 3s. per share was paid in February last, and the directors now recommend the payment of a final dividend of 1s. 6d., making a total dividend of 4s. 6d per share for the year. This will absorb £23,120, and leave a balance of £4814 to be carried forward.

British Columbia Development Association, Limited.—The annual ordinary general meeting of the British Columbia Development Association, Limited, was held last month in London, Mr. R. Bryon Johnson presiding.

The Secretary (Mr. Walter Townsend) having read the notice convening the meeting.

The Chairman said: You have all had before you the accounts of the company for the nine months ended September 30th last, and the report of your directors. You have also, I regret to say, in common with ourselves, been troubled during the Christmas holidays with a vast mass of circulars and correspondence; so I may take it that you are all fairly acquainted with the circumstances upon which I have to address you. Under our articles of association we are obliged to hold an ordinary general meeting in each year, and at that meeting the accounts, made up to a date not more than four months before the meeting, have to be presented and the officers for the ensuing year elected. The meeting held in March last, being an adjourned one, did not count as an ordinary general meeting for this year. It was evidently impossible at any meeting held during the present year to submit accounts from America audited up to the 31st inst. We therefore, had to give them to you brought up to the latest date possible, viz., September 30th. We had hoped that the shareholders of all classes would have been satisfied to take the accounts up to September 30th, and thenceforth have had yearly accounts to that date to deal with. As, however, that does not appear to be the case, we freely concede that, if even one shareholder so requires, the accounts for the entire year must be taken; and it is, moreover, quite clear that in the present position no final division of profits as between Preference and Founders' shareholder can be taken, except at the end of a full year's accounts. This is also the advice of the company's solicitors. It will, therefore, be necessary to complete the accounts to December 31st, and adjourn this meeting in order to confirm them after they have been received from the other side and audited. Such being the case, it is not necessary to ask you to-day to pass the partial accounts to September 30th, which have been submitted to you as required by the articles. Certain shareholders are complaining that we do not declare a further dividend for 1898; but you will all see, from what I have just stated, that we could not, in any event, before the adjourned general meeting, declare anything but a further interim dividend. There is no desire upon the part of the board to conceal anything from the shareholders, and they are perfectly willing to answer every question as to the company's property and finances. The report sent with the balance-sheet, in fact, contains a full statement of the company's properties, with the exception of their interests at Skagway. Litigation is still pending in regard to the land (not the wharf), and, as previously explained to and accepted by the shareholders, it is unadvisable to enter publicly into details on this head. Any shareholder may, however, have full information by applying at any time to the general manager, who has lately returned from Skagway. I will now state as concisely and nearly as I can the the present financial position of the company. We have in hand and unrealised the following property: (1) £10,000 six per cent. debentures in the White Pass and Yukon Railway; (2) 53,000 shares in that company, which Messrs. Close Brothers and Co. have the option to redeem up to July 31st next for £26,500, and interest at 5 per cent.; (3) our interests in the land and wharf at Skagway; (4) £33,000 shares of the Incorporated Exploration Company of British Columbia. On the other side of the account we have our capital of £20,000 (which I presume every one wishes to keep intact), and we owe our bankers and other creditors on the balance-sheet about £2,500. The amount due to our bankers has been borrowed upon the personal security of the directors, who have not hesitated to go out of their way to give this guarantee for the benefit of the company, in order to supply the funds necessary for the completion and improvement of the wharf at Skagway. This, at any rate, can hardly be stigmatized as an ultra-conservative policy or as adverse to the shareholders. As stated in the report, a provisional agreement in regard to the wharf has been made with the railway company. This should give the practical monopoly of the whole wharf trade at Skagway into the hands of ourselves and our co-owner, Captain Moore; and when the spring traffic sets in we hope to receive large returns from this property. For some months in the spring of this year large receipts took place, but these were devoted by Captain Moore to extensions and improvements. Now, from the foregoing you will see that the cash balance against us being about £2,500, we have no funds in hand out of which to pay a further dividend until some of our assets can be realised; and we desire it to be understood that both now and in the future this board absolutely refuses to sanction the policy, which some of the shareholders would apparently like to see adopted, of paying dividends out of capital or borrowing money in order to pay dividends. We put our foot down firmly, and say that so long as we remain on the board we will not sanction that policy. Let that be understood once and for all. Your directors are large shareholders. Among them they own about a fourth of the entire share capital of both classes of the company, and they would be quite as glad as any other shareholders to receive large dividends. At present no income is derivable, except the interest we are receiving upon the £10,000 debentures and on the £26,500 not yet paid by Messrs. Close Brothers and Co.

We received an offer a few days ago to purchase the £10,000 debentures at par, on the directors undertaking to apply the £10,000 in payment of further dividends for 1898. We stated our willingness to sell the debentures at the price offered and apply £7,000 as further interim dividends for this year, paying off the company's indebtedness out of the remaining £3,000, and leaving a few hundreds in hand for current expenses. This was refused; but if the makers of the offer like to reconsider the matter, and the £10,000 is paid to the company before the 31st inst., it would come into this year's accounts. If the debentures are not paid for before the 31st it is clear that the purchase-money can only be brought into account for next year. Your board believe that if Skagway and the Yukon district prosper, as they bid fair to do, our assets are of very great value indeed, and likely to yield a very high rate of interest upon our small capital; but we must have patience, and administer our valuable property upon sound business principles, without being led away by mere speculative clamour. For instance, in one of the circulars I have alluded to, the board is twitted with looking upon the Yukon country as "a howling wilderness." I recognise the phrase, and adopt it without shame as my own child of some two years since, before the discovery of the Klondyke. I then protested, using those very words, against the company, with its small capital, itself embarking in the speculation of making a railway from Skagway into the "howling wilderness," stating my opinion that a waggon-road would meet all then requirements, and that the Government ought to make it. Of course the unexpected discovery of Klondyke and the steady rush which is now taking place—a rush unparalleled since the Fraser River excitement of 1858, which was the cause of the development of British Columbia—has changed all this. A railway is now an absolute necessity, and likely to be a highly remunerative investment. The Klondyke discovery and, still later, the finding of the apparently rich Atlin district (from which we are told great things are expected), are pieces of the greatest good fortune for us; by their aid we shall now probably realise within months, instead of years, the harvest which I fully believe will be ours. After all, I cannot see anything upon which the shareholders have grounds for anything but congratulation. (Hear, hear.) As regards our properties, they stand to-day in a much stronger and more satisfactory position than they did at our last general meeting, when the report and accounts were unanimously approved and passed by you, and our friend, Mr. Eve, was kind enough to second the vote of thanks to the directors. I cannot close this address without alluding with great satisfaction to the services rendered to us by Mr. Townsend, our secretary and general manager, who, in the face of great difficulties, has, during his recent visit to the Pacific, immensely strengthened our position at Skagway and in British Columbia, and to whose exertions and great experience in such matters the making of the recent provisional agreement with the railway company is chiefly due. I now pass to the business which is to be conducted at to-day's meeting—viz., the election of officers. Our late auditors having stated their intention not to offer themselves for re-election, the board appointed temporarily Messrs. Robinson and Leslie to fill their place. Messrs. Robinson and Leslie are a firm of large experience, and are engaged as auditors of

many important undertakings. I have much pleasure in proposing that they be elected our auditors for the ensuing year at a remuneration of thirty guineas per annum.

Mr. Eve said that in announcing that the directors would recommend the adjournment of the meeting, in order that the accounts should be presented up to December 31st, the chairman had taken from him the ground for a good deal that he had intended to say. He hoped, however, that the directors would present detailed accounts, which they had certainly not done on the present occasion. The accounts submitted were of the most meagre description. (Hear, hear.) The shareholders wanted enlightenment with regard to the assets and their value. True, the chairman had told them about the debentures in the White Pass and Yukon Railway, and in this connection he would say he considered the directors might have divided these so that the shareholders had £1 for every four shares held by them.

The Chairman: But they are redeemable by Messrs. Close Brothers. How could you divide redeemable shares?

Mr Eve said that if the directors had only shown them they had considered the matter that would have been something. He did not want the directors to pay a dividend out of capital, but he did ask them to divide among the shareholders any assets which they reasonably could distribute when the interests of the shareholders were properly apportioned. He proposed to submit the following motion: "That this meeting do stand adjourned until this day two months, for the purpose of making up the accounts for twelve months to December 31st, with instructions that the details of the accounts be specified, and with a proper profit and loss account for the twelve months as required by the memorandum and articles of association for defining the respective rights of the Preference and Founders' shares."

A Shareholder said that in the last report the directors announced that the association was to recover a certain sum in several payments from the Yukon Railway Company, and out of the first payment they declared the last interim dividend. He asked what had become of the rest.

The Chairman, in reply, said there was paid to the company in actual cash £7,500; the balance had been paid to the extent of £10,000 in debentures and 53,000 shares as security for the balance of £26,500 cash. The only cash they had received from any source, except a small amount of interest on debentures, &c., was that £7,500. With that they paid off the debts of the company and a 10 per cent. dividend to the Preference shareholders. As to the accounts, the fullest details were submitted to the auditors, and would be given to any shareholder who cared to ask the secretary for them. The board's only wish was to do the best for all parties. It now devolved upon them to elect auditors.

After some further discussion, the Chairman withdrew his motion for the appointment of auditors, and upon his proposition, seconded by Mr. Eve, it was resolved: "That this meeting do stand adjourned until April 10th next for the purpose of making up the accounts for the twelve months, viz., to December 31st, with instructions that the details of the accounts be specified, and with a profit and loss account for the twelve months as required by the memorandum and articles of association, and for the transaction of the other ordinary business."

A cordial vote of thanks to the chairman and directors having been passed, the meeting stood adjourned.

North-West Mining Syndicate.—The first ordinary general meeting of the shareholders of the North-West Mining Syndicate, Limited, was held on December 21st, at London, Mr. E. L. Heatley (chairman of the company) presiding.

The Secretary (Mr. George F. W. Pipe) having read the usual notice.

The Chairman said: Our nominal capital is £20,000. At the date of the balance-sheet, September 30th, 5100 shares were fully-paid and 5335 shares were 10s. paid, making altogether a total issue capital of 10,435 shares. At that time the unpaid calls amounted to £695, but these arrears have since been removed. Of course, on the 5335 shares, which formed our second issue of capital, there was still a liability of 10s., but this has since been called up. The bills payable on September 30th amounted to £1315, and these have since been paid. The cost of properties, options, and development work is put down at £6324; and, in connection with this item, our auditors state—and they do so with the sanction of the board—that the title to the Bosun Mine is apparently clear, and that the property is vested in the company. I can tell you now that the Bosun Mine is absolutely in our possession, and that the title is entirely clear. With regard to the other options, some of the titles were in the names of individuals at the time the accounts were made up; but they have all since been properly transferred. I may state that I have been out to British Columbia and have incurred considerable expenses in travelling about the country, but I have not charged these. (Hear, hear.) The agent's salary we have paid in one hundred fully paid shares. It was arranged when the company was formed that there should be a certain number of shares at the disposal of the directors to be given to people who represented us, in order that they should be remunerated in a manner that would give them an interest in the welfare of the concern. Beyond £153 nothing has been paid for the management of the business in London, which has been conducted by my firm, Messrs. Heatley & Co. This arrangement was made in order not to burden you with any heavy expenses until there was something to represent them in the results. The value of the ore shipped from the Bosun Mine up to September 30th was £1642. This property was originally called the Harris Mine, but it has been renamed the Bosun by our manager, Mr. Sandiford. In justice to him I do no think it would be proper to consider that it was merely by chance that we secured it. While in British Columbia certain properties were placed before me, and on my return I discussed the apparent merits of them with my colleagues. One of these properties was known as the Fidelity, which, so far as it had been opened up, had a very good showing. I told my colleagues that I must confirm the statement which had been made to us that British Columbia was full of opportunities, but that the most important matter undoubtedly was to have the right person to represent us in the Province. I told them that we wanted a person of large mining experience, and in whose integrity we could absolutely rely. They concurred with me in the opinion, and when we had the opportunity of obtaining Mr. W. H. Sandiford, I considdred that we were fortunate in securing his services. In due course he inspected the Fidelity Mine, but he reported that he could not advise us to take the property up. He said it was a very promising mine, but he considered that the price asked for it was excessive. He stated that he always believed that the ore body found in the Fidelity Mine was bending downwards into an adjoining property. He had been quietly examining this property with the view of discovering whether the same lode that was being worked in the Fidelity existed in this ground as well, and considered the Harris property, now called the Bosun property, would be found to be the key to the two properties above it—the Fidelity and the Frisco. He also stated that the Bosun property was most admirably situated for mining operations, as it abutted absolutely on to the lake, and therefore the transport of the ore would cost a very small sum; while, in addition, shipments of ore could be made all the year round. Mr. Sandiford proceeded to continue the work of sinking upon the lode, and on August 1st he reported that he had 2 ft. of strong ore in the shaft; while on September 1st he advised us that he was sinking in 4 ft. of strong galena. He then commenced to run two tunnels from the surface, at right angles, of course, to the shaft. One of these is 76 ft. below the top of the shaft, and the second is another 75 ft. below that point. I have the satisfaction of informing you to day that the first tunnel has been driven into the rich ore shoot which Mr. Sandiford found in sinking the shaft. It looks very likely that there are other ore shoots to be found, as has been shown by the ore that he has discovered in driving the No. 2 tunnel. The ore is exceedingly valuable—probably the most valuable ore that is found in any part of the world. We have obtained from 300 tons of ore which have been shipped to the smelters $20,577, or about a net return of £13 10s. per ton. The cost of transporting the ore to the lake is extremely moderate, about $1 per ton, I think, and no doubt that amount will be further reduced. We are now spending about £600 per month, and we have been obtaining 100 to 120 tons of ore in the same period, worth from £1300 to £1600. Wages are, of course, high in the district. As to the prospect of earning dividends, I can inform you that Mr Sandiford has financed his operations during October and November out of proceeds of ore from the Bosun, besides having remitted £2000 to this side, and I believe that on the 120 tons of ore that we shipped in November we shall make a net profit of over £1000, while there is every prospect that we are going to continue to obtain good ore. We have about £5500 of our capital still unexpended, besides our properties. No remuneration has been received so far by the directors.

The report and balance sheet were carried unanimously.

Mr. John Waite: I think, from the clear statement made by our chairman, that our directors are fully in touch with the business they have in hand, and as this is of great importance to us, I propose that the sum of £300 be voted as their remuneration for the period to September 30th last.

Mr. F. Butler seconded the motion, which was carried. After a few other remarks the proceedings terminated.

Canada Lead Co., Limited.—Registered December 17, by Linklater & Co., 2 Bond Court, Wallorook, with a capital of £275,000, in £1 shares. Object, to adopt and carry into effect an agreement dated Dec. 8, 1898, and expressed to be made between the London and Dublin Finance Corporation, Limited, of the one part, and E. S. Elney of the other part, for the acquisition of the Wright Galena Mine, situate in the Township of Duhamel, Province of Quebec, and to develop and work the same; and further to acquire any other mines, mineral grants, gravel deposits, alluvial grounds, mining claims, rights and privileges, ores, minerals, water rights and concessions, and other properties; to dress and prepare for market any ores, metals, minerals, or precious stones; to carry on all kinds of financial or banking business and in particular to negotiate loans and advances; to construct and maintain furnaces, mills, hydraulic works, electrical works, rolling stock, etc.; to promote immigration, and the establishment of towns, villages and settlements, and to acquire and turn to account any patents, patent rights and inventions.

ENGLISH LETTER.

LONDON, E.C., January 11th, 1899.

The past month has not been a particularly busy one in so far as Canadian mining business in the Stock Exchange is concerned, and prices have continued to droop, as may be gathered from the following representative and comparative list of Canadian mining securities:

	Highest price recorded to date.	Price Jan. 10.
	£	
Athabasca		1/8
Alaska Goldfields	2 1/8	1 3/8
B.A.C.	1 3/8	14/9
Dawson City Trading	1 1/8	5/- nom.
Fairview	1 1/16	5/-
Goldfields of B. C.		2/6
Hall Mines	3 1/4	7/6
Klondyke and Col. Goldfields	1 1/2	5 - nom.
Lillooet and Fraser River	1 1/8	5/- nom.
Le Roi	1 prem.	1/8 prem.
London and B. C. Goldfields	1 1/8	1 1/2
New Goldfields of B. C.	1 1/8	1
Waverley	1 3/4	7/6 nom.
Whitewater	1 3/8	1 1/4
Vmir	1	7/8

The section is dull and weak, the flatness of the Globe, B.A.C., Whitaker, Wright group not helping other B. C. shares. L. & B. C. Goldfields are a strong exception, but Hall Mines, Fraser Rivers, the Turner-Pooley, Morris Catton companies all continue to remain at very reduced quotations, the latter being to a large extent purely nominal.

There have been two new issues that call for a little attention, namely, the British Canadian Goldfields, which was formed to undertake an exploring business in the Yukon, and Klondyke and North-West Territories generally; to acquire and develop or re-sell properties, establish trading and transport associations throughout these districts, and also inaugurate a general finance and agency business in British Columbia with branches in the North-West Territories and the Yukon. Capital £275,000 in £1 shares, £250,000 of which are ordinary, and £25,000 deferred.

This is the company which trotted out Mr. Ogilvie as its own particular guardian and friend, and drew upon its head a letter from Mr. Colmer, the Secretary to the High Commissioner for Canada, stating that it was against the policy of the Canadian Government for any of its officials to be connected with mining enterprise. The company replied through its secretary to Mr. Colmer in the London *Times*, and I must admit that to all intents and purposes the company scored off the London agents of the Canadian Government, because while Mr. Colmer simply described the attitude the government adopts in such matters, the former stated in specific terms that it possessed certain documents which practically amounted to an acknowledgement on the part of Mr. Ogilvie.

First, that he knew of the intention of the promoters to bring out this company.

Secondly, that he had seen a draft prospectus which he is said to have endorsed.

Thirdly, that he had promised to help this company both by giving it advice and rendering it assistance in the selection of likely areas for its operations.

I need not tell you that we were all very much surprised to find that Mr. Ogilvie had descended from the unapproachable pedestal of reserve upon which it was understood he had decided to place himself in regard to all purely financial matters. It is regrettable in the extreme, because it is much to be desired that men in his position *should not be associated in any way whatever with any groups of financiers*, even if they were as strong as the Bank of England, and like Caesar's wife above suspicion. It is the principle of the thing that is at stake, and I hope that Mr. Ogilvie will see that it is his duty to himself and the Dominion generally, to make the necessary explanations that I am sure he can put forward in justification of the attitude he has taken up in this matter.

Another important concern whose approaching nativity I heralded last month, which has been introduced to the public on this side is the Canadian, British Columbian and Dawson City Telegraph Co. Share capital £300,000, in £5 shares, and £225,000 in 5 per cent. first mortgage debentures (the latter alone being offered to the public at 95 per cent.) It is proposed to construct and work, as provided by its memorandum of association certain telegraph lines to be built by the Dawson City and Victoria Telegraph Co., Limited, incorporated by special Act of Parliament of the Dominion of Canada, June, 1898. This concern is chiefly noticeable for the fact that its directorate includes the following ;—

Sir James Grant, K.C.M.G., Ottawa, Canada ; Sir Adolphe Caron, K.C.M.G., M.P., ex-Postmaster-General, Ottawa, Canada ; J. H. Turner, M.P.P., ex-Premier of British Columbia, Victoria, B C. ; Alderman John Hyde, J.P., Mayor of Banbury ; W. P. J. Fawcies, M.I.C.E., M.I.E.E., Dartmouth House Queen Ann's Gate, S.W.

The solicitors to this concern are Messrs. Spencer, Cridland & Co., who have acted in a similar capacity to the rest of the Morris-Catton-Turner companies, and in this connection it is well to point out that the company was brought out by the individuals who promoted the Klondyke and Columbian Goldfields, and their not particularly prosperous offspring. The concern was severely criticised by several of our leading financial journals, and perhaps appropriately. Mr. Hess in the *Critic* turned a strong light on to the methods of this particular group.

You will remember that last year Mr. Hess reproduced your scathing article on the promotion of the New Golden Twins, and proceedings were commenced against him. He has this month published certain correspondence in connection with the case which seems to have collapsed. I am not in a position to say how strong a case Mr. Hess possessed, but I can confidently state that his advisers considered that if his opponents went into court they would be able to present a very powerful defense, and as Mr. Hess has the happy knack of generally coming out on top, I am not surprised that the group which has introduced such a number of speculative ventures connected with British Columbia, the Klondyke and Canada generally, to the attention of the English public, should have thought discretion the better part of valor and abandon a case, the promotion of which to a conclusion might have been costly and even a verdict dearly bought.

The month has been chiefly noticeable for the large number of meetings which have been held, and although it is of course impossible for you to publish the various reports in full, short accounts of the most important gatherings may be of interest to your readers.

Most interesting, because most satisfactory, from a shareholder's point of view was the meeting of the London and B. C. Goldfields Co. A cash dividend at the rate of 20 per cent. for the past year and one Ymir share for every ten held in the L. & B. C. Goldfields was the portion of the happy shareholders in this promising pioneer company. The statements made by the management were promising in the extreme, and evidence of the favor in which the company is regarded on the London market is furnished by the fact that whilst Dawson City Trading Co.'s shares are probably unsaleable in anything like quantity at ⅝ apiece, London and B. C. Goldfield's shares ex their interest and rights are priced in the market at 30/-.

Another equally important, but less satisfactory meeting was that of the Hall Mines Co., held on December 15th. At this gathering Sir Joseph Trutch had to admit that the Board had undoubtedly been unwise in allowing production to get so far ahead of development wotk. Mr Croasdaile, who was in London for the meeting, made a very hopeful speech, and gave it as his opinion that the future of the company was bright and promising, and that the new properties would turn out satisfactory. With the object of enabling the company to get ahead with its development work, the directors propose an issue of £50,000 in debentures, and although several of the shareholders expressed their dissatisfaction at the state of affairs—quite naturally in the circumstances—on the whole the meeting passed off quietly, but the market price of the shares remain at the low figure to which it recently fell, viz., 7/6. When one bears in mind that it is only a couple of years ago that the shares stood at over £3, it is not surprising perhaps to find that many people believe that a purchase at the present price might be worth considering.

A Leeds concern (New British Columbian Development Corporation) held its second ordinary general meeting on December 9th. Very little has been heard of the doings of this concern, but it has been apparently pushing quietly along, and in view of the development necessary in connection with its properties, proposed to increase increase its capital from its present figure of £10,000 to £20,000. The people interested in this concern chiefly hail from Bradford and Leeds, but I believe that there are a few London capitalists in it.

One of the decidedly unsatisfactory features of the year has been the collapse of the Vancouver Syndicate group, and the statements made at the meeting held on 14th ulto., of both the Vancouver and B. C. Exploration Co., and the Galena Mines were the reverse of encouraging. Indeed, at the latter the concern was reported to be in such an unsatisfactory condition that it was decided to liquidate forthwith.

The Vancouver Syndicate seems to have reasonable prospects of transforming its "Read" and "Tenderfoot" prospects into mines, but, of course, its ill-success in the past has withdrawn public support from it altogether. In all the circumstances, while admitting that the group has been singularly unfortunate in the choice

of its officers, and also in the fate of its first offspring, the Galena Mines, it must be admitted that the fault does not seem to entirely lie with the local management. In my opinion, in capitalising the Galena Mines at the enormous figure of £550,000, the directors of the Syndicate betrayed a lamentable absence of foresight.

The Klondike Bonanza which was somewhat severely critised by me when it was introduced a year ago has had a bad time and if all Mr. Hess has to say of it in the *Critic* be true, it is about time for the Board to make a public explanation. This they do not do adequately at a recent meeting. The promotion of the concern was not a particularly creditable performance. In the speeches at the meeting there was little or no reference to Mr Ironmonger Sola, who appears to have led this company such a merry dance, but "if all goes well" a dividend may be possible when the accounts are made Up. In Mr. Macfarlane the company seems to have a good man, but taken all in all I cannot say much for this precious Klondyke Bonanza, especially as it now finds it necessary to raise another 10,000 shares "for the acquisition of our new properties."

We heard a great deal about the White Pass and Yukon Railway Co., Skagway, the Yukon as "a howling wilderness," the Atlin district, directors and auditors and their relations, Mr. Townsend and his wonderful trip to B. C. at the meeting—rather breezy meeting of the B. C. Development Association, Limited, on the 29th of December. Mr. R. Byron Johnson presided and took up rather an attitude of defence. Indeed Mr. Eves and fellow shareholders determined to have "detailed accounts' presented and compel the board to defend their position. Mr. Byron Johnson acted with considerable tact, but I should certainly have liked to know a little more about the trouble betweed the board and the auditors, and why the latter had stated their intention of not offering themselver for re-election." However, the meeting has bees adjourned and we may hear more about the little points at issue at the next meeting.

Two other important meetings were those of the Klondkye Mining, Trading and Transportation Co., and the Alaska Goldfields. At the former gathering on the 29th ulto., I felt quite sorry for Sir Charles Tupper in his efforts to explain the blunders of the company—innocently enough seems to have committed in the matter of choice of route. The Stikine River venture of this company has cost them a pretty penny, but they seem to be pulling round, and may yet justify the bold promises made in the prospectus At the Alaska Goldfields Mr. Simon Simons told us much that was new about this company, based on knowledge derived from his trip to San Francisco. He spoke very kindly of the late Mr. Herman Liebes, the founder of the company. He led one to the conclusion that this company has prospects of benefiting very largely from the development of the Klondyke. I understood that this company had made good profits, but as it was not possible to present accounts at the meeting, it is impossible to say how far the gossips were justified in their expectations.

I have repeatedly pointed out that several of the leading Westralian groups have been casting covetous eyes upon B. C., and the following extracts from a circular letter issued by Mr. A. H. P. Stoneham, the managing director of the West Australian Goldfields—one of the first of the Westralian Finance Co.'s of repute—amply bear out my statements. With West Australian and South African magnates turning their attention to Canadian mining developments, Canadians can well afford to congratulate themselves upon their improving prospects as a mining colony.

Among other things Mr. Stoneham says:—

"The directors have just completed the purchase on very favorable terms of a

one fourth interest in the Ymir gold mines, situate in British Columbia. The Ymir mine was purchased and developed by the London and British Columbia Goldfields, Limited, and is stated to be one of the best properties in British Columbia. As far back as July last Mr. Kendall, the consulting engineer of the London and British Columbia Goldfields, Limited, reported that the ore blocked out amounted to 93,600 tons, and was of the value of £232,000, and since that date the property has been vigorously developed. Conservative estimates place the profits from the 40-stamp mill at £36,000 a year, and as developments are carried out, further increases will be made to the mill. The London and British Columbia Goldfields, Limited, has, in addition to its 20 per cent. cash dividend distributed 20,000 Ymir shares by way of further dividend, but notwithstanding this the shares are firm in the market at about 17/6 and on this basis the purchase of the first quarter interest already shows a large profit to the West Australian Goldfields, Limited, and the option on the second quarter interest is necessarily very valuable. The directors think it only right to say that the thanks of the shareholders are due to Mr. Oliver Wethered for having secured this interest in the Ymir mines, and also for having secured an interest in the Whitewater mine on which investment also this company has a very substantial profit.

I have just heard that the Sultana is to be launched in a few days by a London group with a share capital of £350,000. It is said that the prospectus is already printed, and the promoters are only apparently waiting for a favorable moment to come out.

The Mikado has been attracting some attention this month owing to the contradictory reports in circulation regarding recent developments. One rumor was to the effect that a rich strike had taken place, but this was afterwards officially contradicted, although I see in the latest issue of your journal just to hand you give credence to the rumor which has excited so much attention here.