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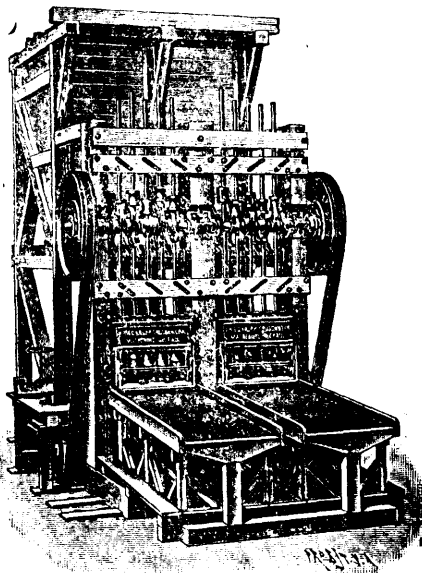
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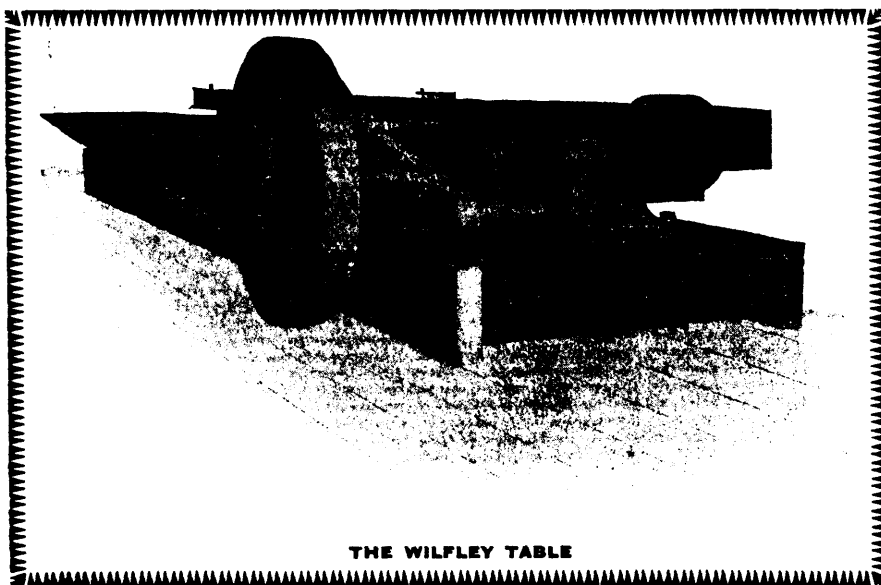
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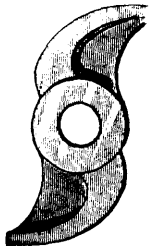
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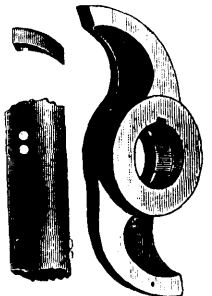
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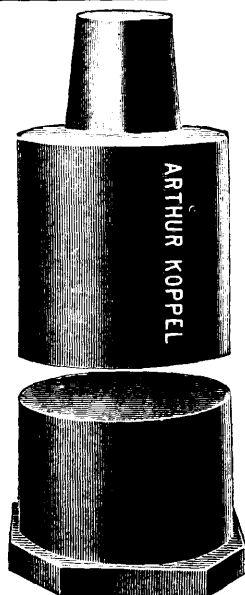
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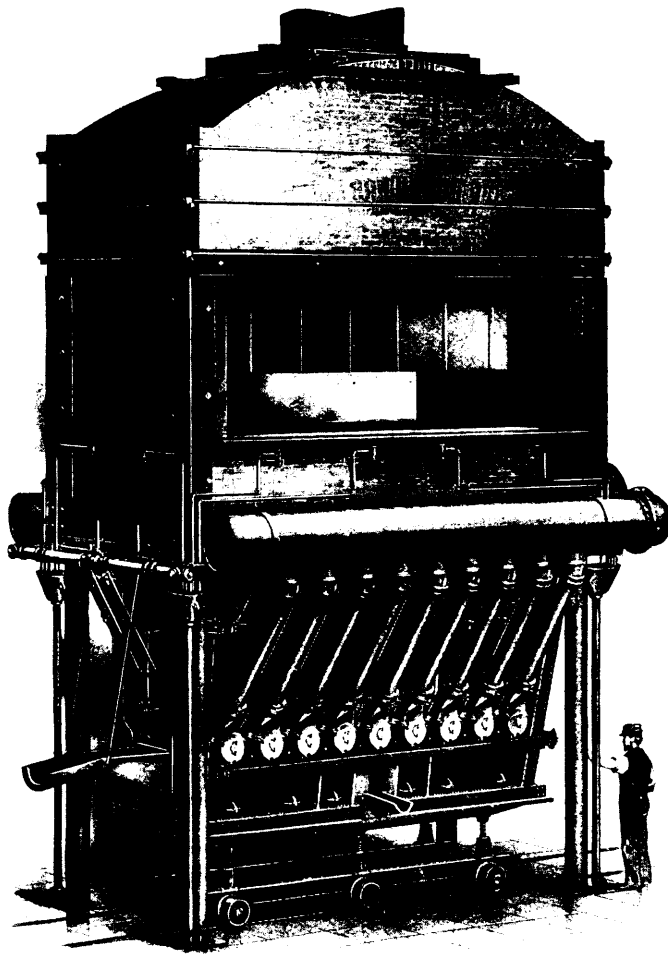
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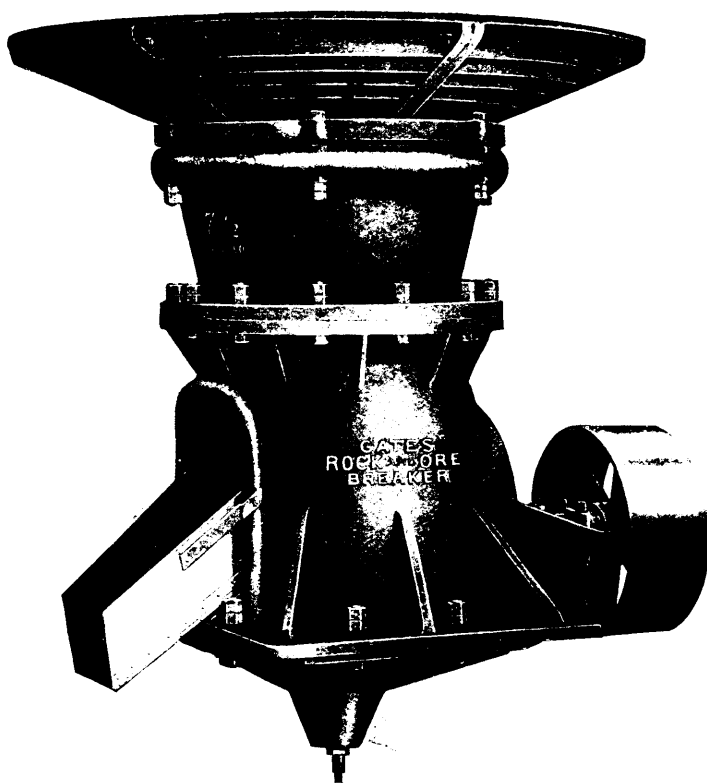
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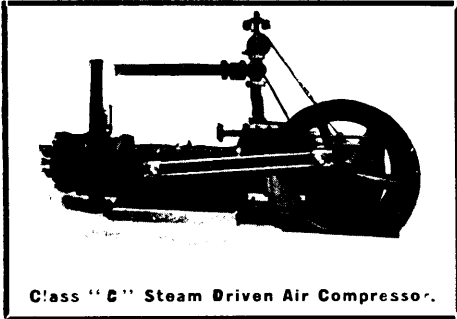
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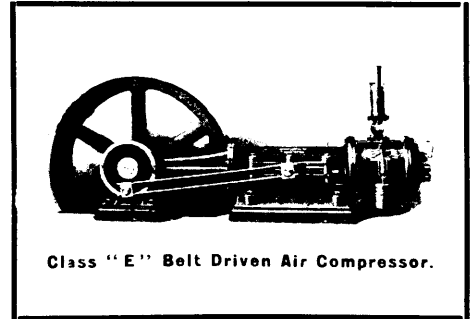
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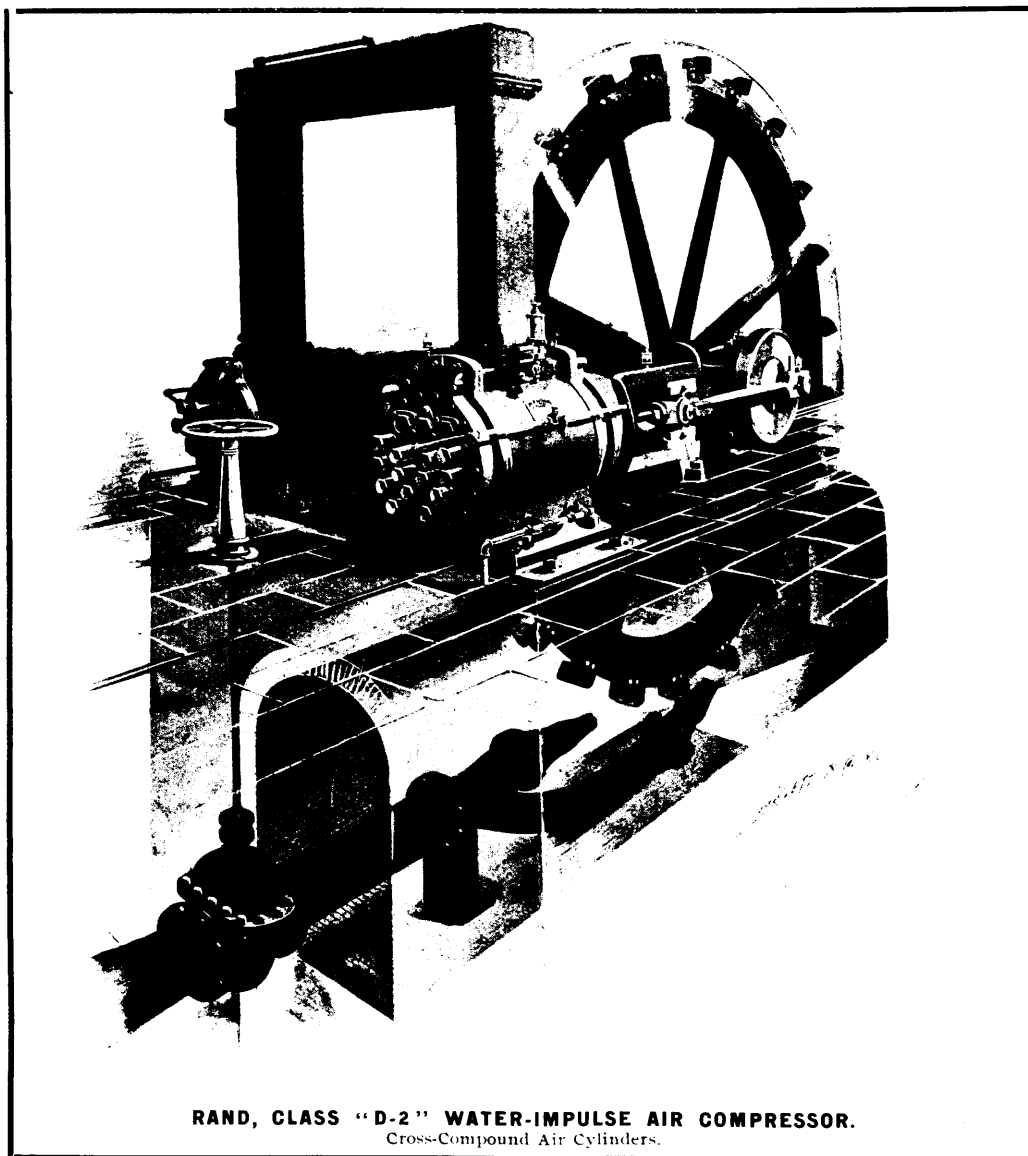
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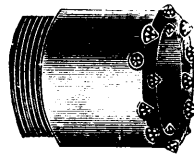
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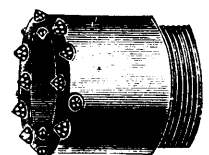
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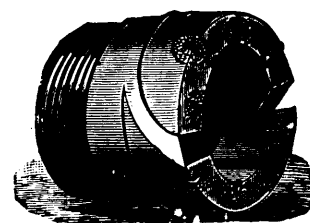
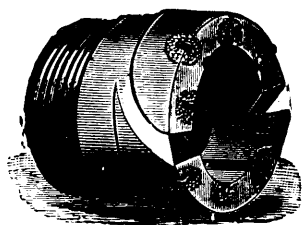
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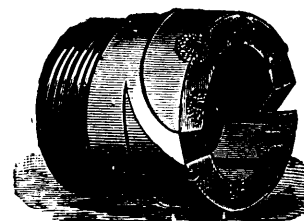
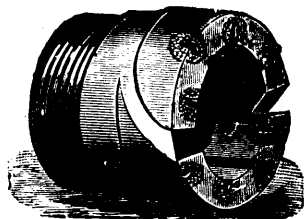
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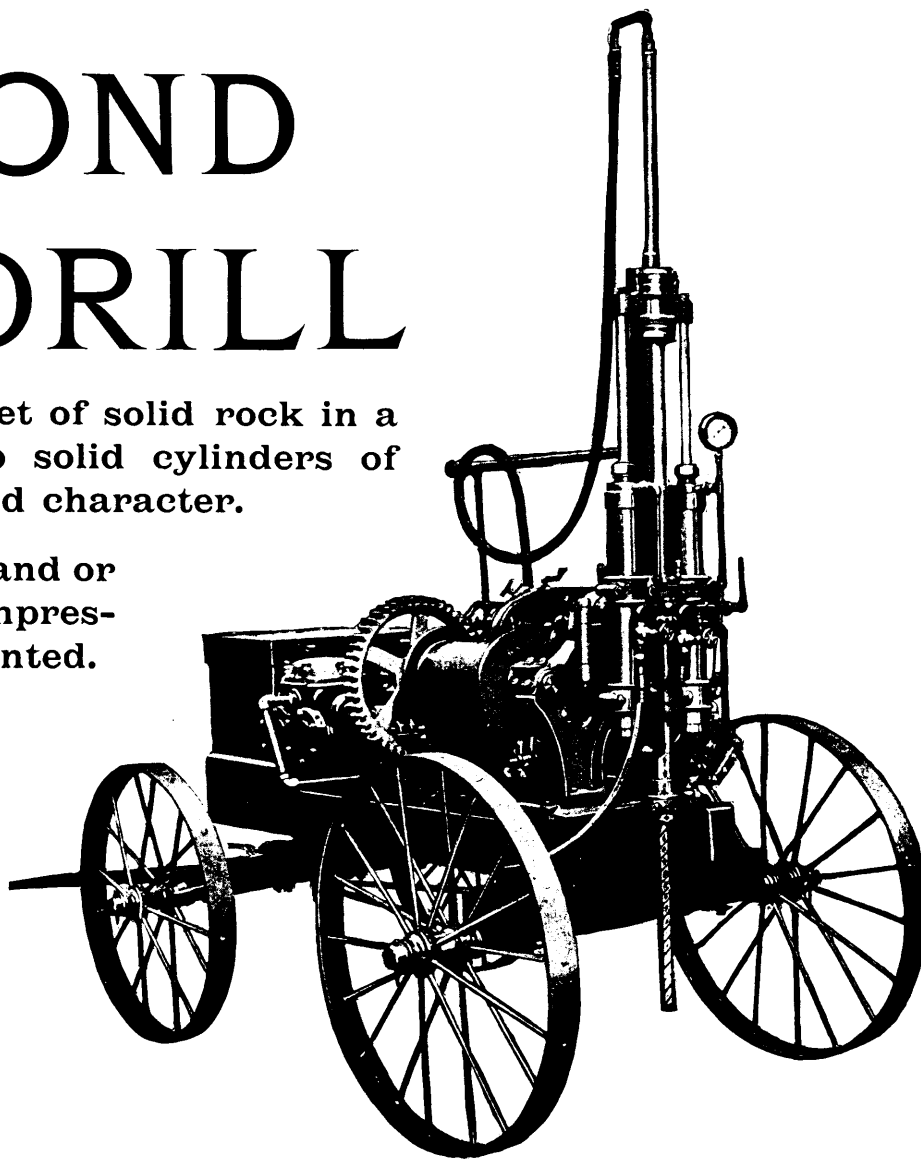
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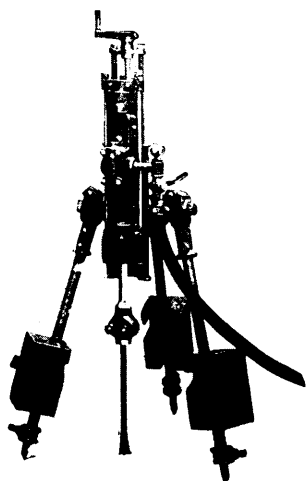
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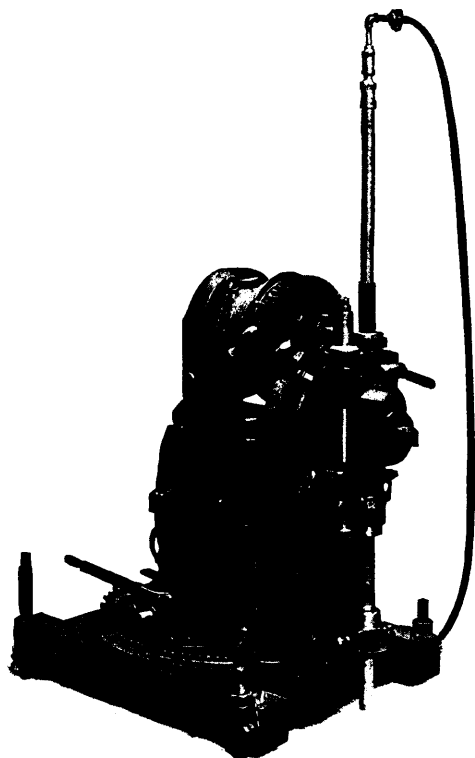
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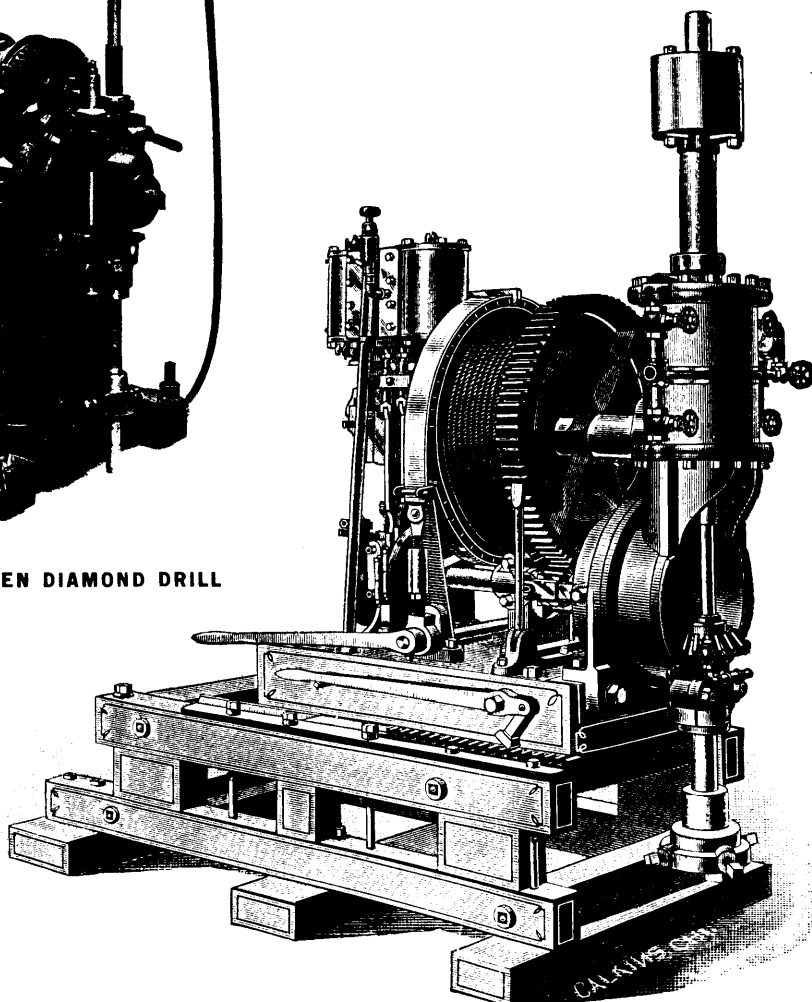
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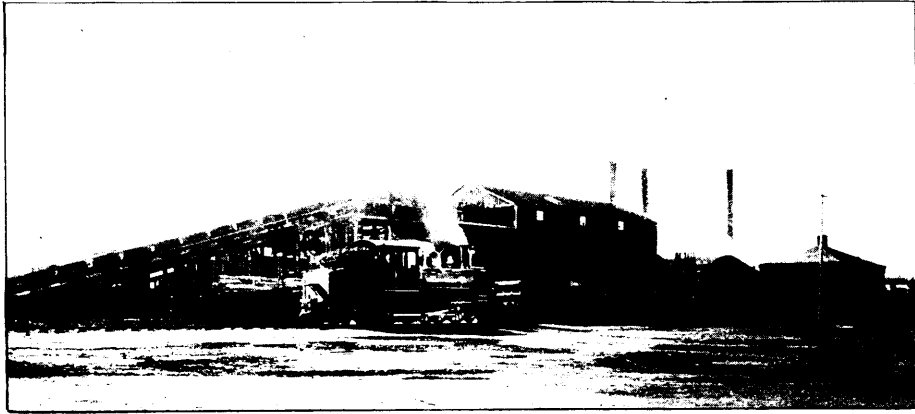
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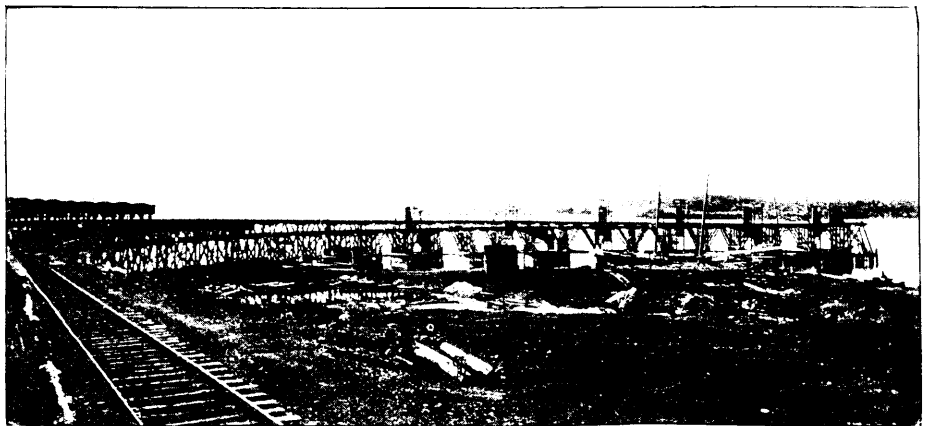
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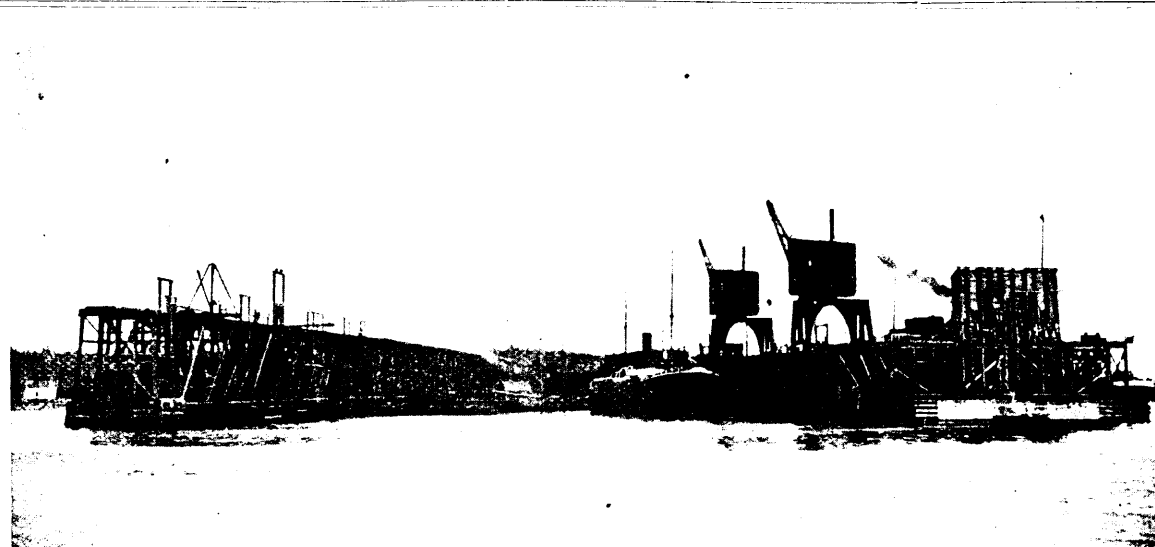
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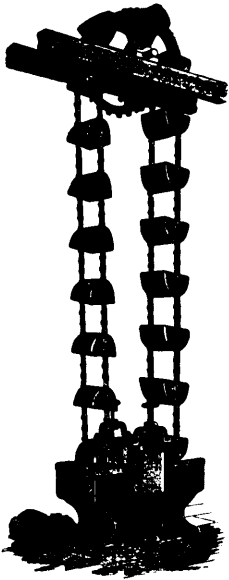
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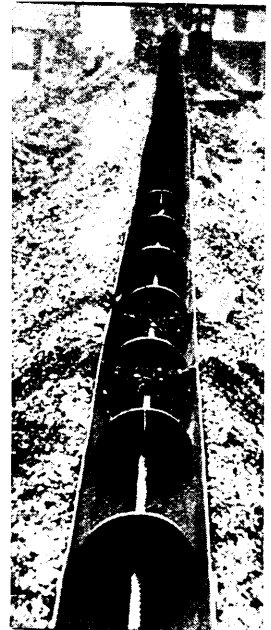


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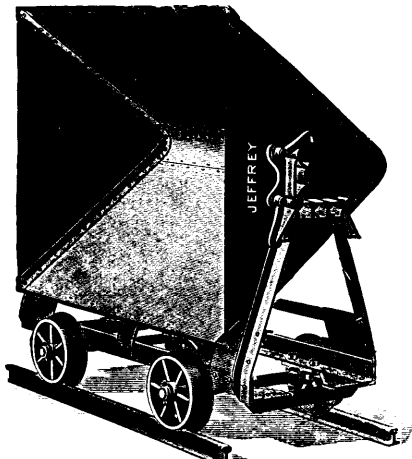


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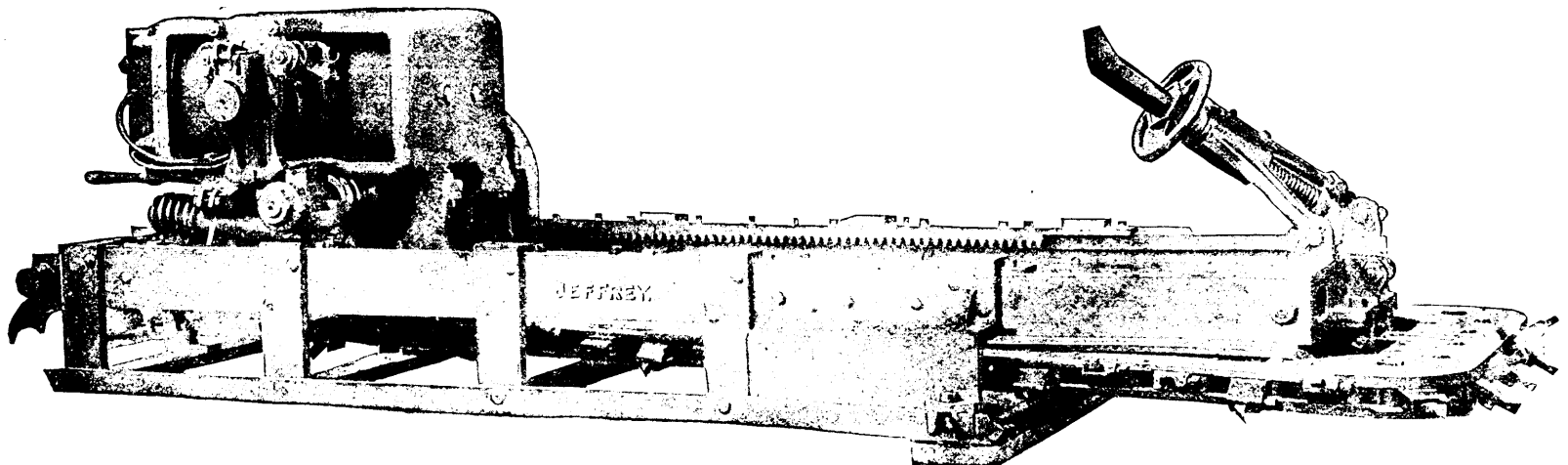


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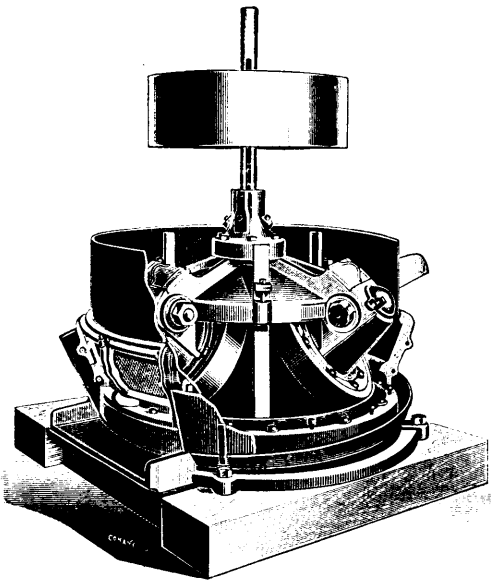
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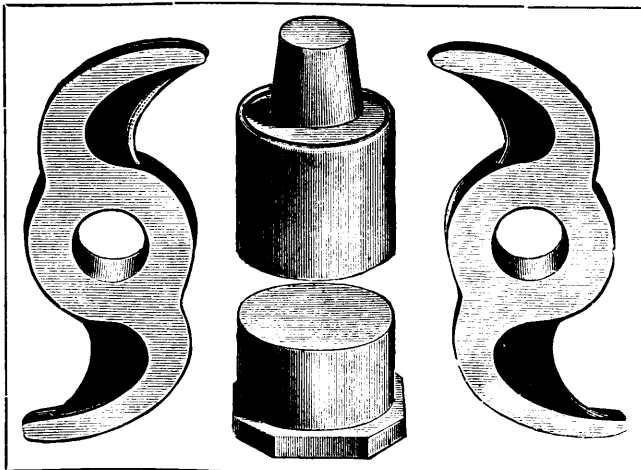
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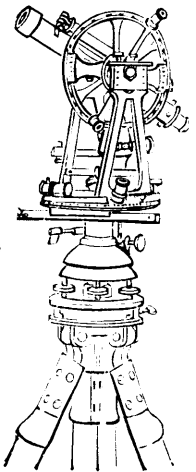
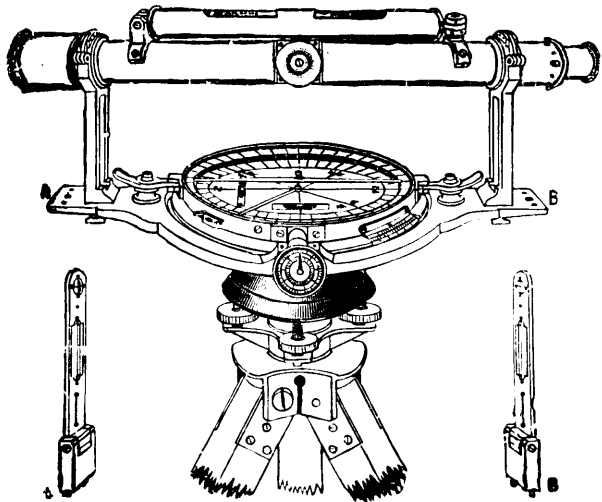
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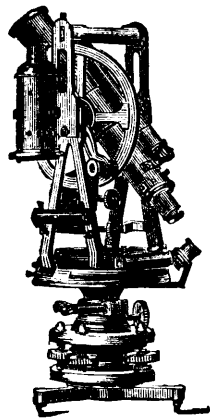
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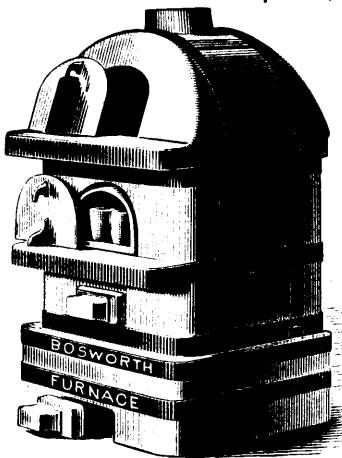
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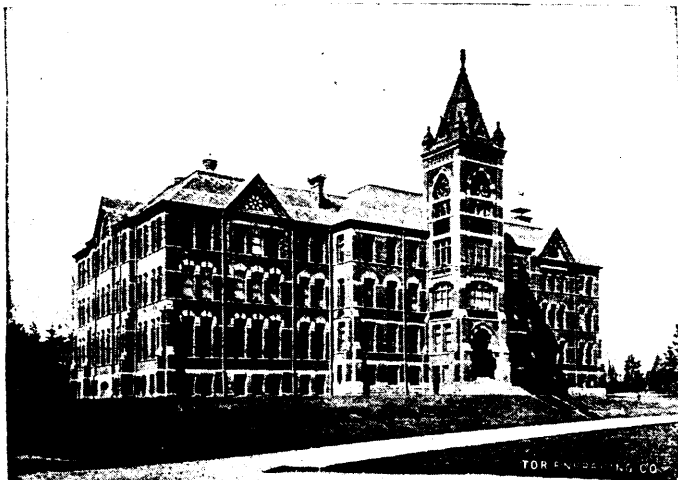
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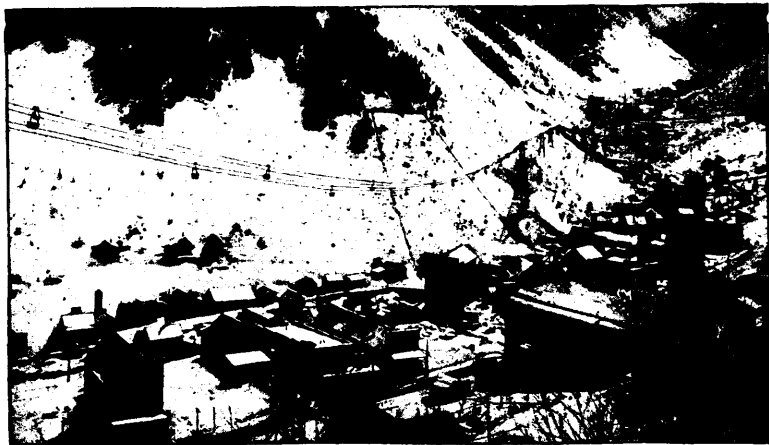
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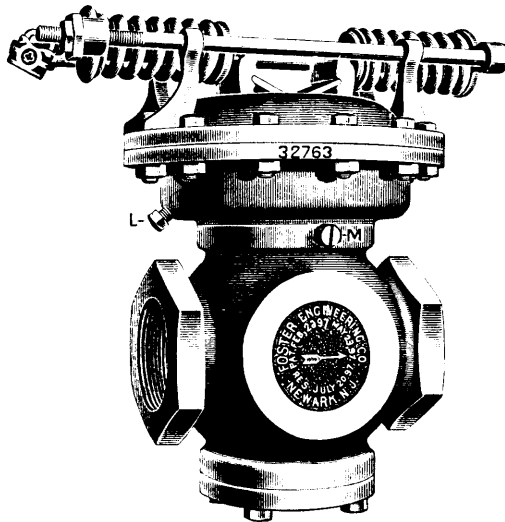
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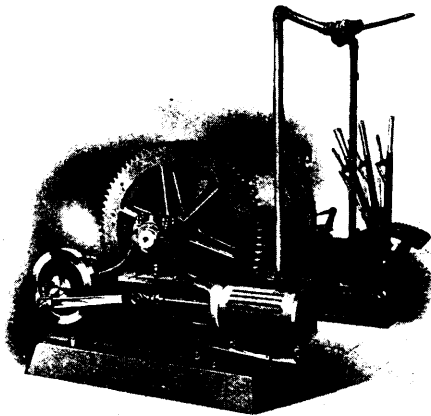
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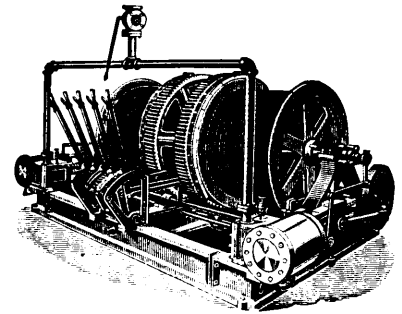
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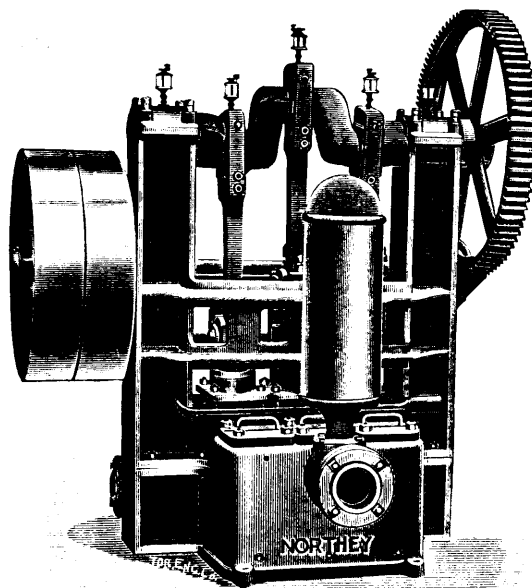
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The CANADIAN MINING REVIEW

Established 1882

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

B. T. A. BELL, Editor and Proprietor.
Secretary, Canadian Mining Institute, etc.

Published Monthly.

OFFICES {Slater Building, Ottawa;
Windsor Hotel, Montreal.

VOL. XX., No. 11.

NOVEMBER, 1901.

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Granby Consolidated.

In the REVIEW for the month of August we printed a column on the "Granby Consolidated Mining and Smelting Company," which was reproduced in October with approbation by the British Columbia *Mining Record*, and which, after an unaccountable lapse of time, appears to have provoked adverse criticism by that same journal in its November issue, and also in the columns of the *Nelson Tribune*. In our last issue we promised a reply, which we present herewith to our readers.

The article in our August issue was based upon statements communicated to us by one of our correspondents, a well-known mining engineer, at that time (and since) residing in British Columbia. Our correspondent had many means of ascertaining the facts both by inspection and by inquiry, and we published his views as being, in the main, a fair presentation of the complaints which have been repeatedly made to us by shareholders of the Granby Company, whose requests for facts have been refused by the officials of the company. Briefly, our August article commented upon a reported suggestion for the increase of the capital of the company from \$15,000,000 to \$20,000,000, and upon the dangers of over capitalization, and stated broadly that there were "certain circumstances connected with the Granby Company which were not calculated to inspire confidence, and which, in fairness to their own shareholders, should be explained." We then went on to say that no authoritative statement as to the average value of the ore treated in the furnaces had been given, although the smelter had been in operation for a year or more. We stated that applications for this information had been refused, that it was believed by those in the best position to judge that the average gross value of the ore treated did not exceed \$5.00, and we pointed out that it was culpable on the part of the directors of the Granby Company to withhold information without which it was impossible for the shareholders to appraise the value of the stock which they held.

Since the publication of the article referred to, and the attempt at reply made by a Mr Jacobs of Greenwood in the columns of the *Nelson Tribune*, our correspondent has sent in *his* reply to the *Tribune* which will be found in another place. But the REVIEW has obtained additional information from other sources than this correspondent, and, after due consideration, it sees no reason to abate any of the statements made in the August issue, unless, perhaps, the one referring to the reported assay value of the ore treated. On close inquiry we have ascertained that the gross assay value of the ore has increased since the beginning of the year, and that for the last six months of the present year it *may* have reached the figure of \$7.00 per ton. Our correspondent claims that the *average realized value* of the ore is not over

\$5.00 per ton, all values included. Since the first of April we are credibly informed that the values have appreciated, so that the average gross assay value of the ore for the last six months *may* have been \$7.00 per ton, at the same time, on the same authority, we understand that costs have been slightly increased.

The question of whether the average assay value of the ore be \$5.00 or \$7.00 per ton is entirely beside the mark, for what the REVIEW has desired to bring out, and unquestionably has brought out, is the undisputed fact that this concern with its gigantic capital is keeping its shareholders entirely in the dark as to the results which have been obtained from the working of the mine. The only shareholders who have positive information on this point are the president, general manager, and the secretary, and they have repeatedly declined, evaded, or been silent when requested by shareholders to give the information desired. The connection of one of these gentlemen with the erstwhile boom of some notorious British Columbia incorporations, such as the "Big Three" and the "California," and which were so buttered with misinformation as to cause heavy financial losses in Eastern Canada, is one of the causes of the public demand for fuller information and for square dealing, it also may reasonably cause the shareholders to regard the Granby Company with suspicion when they are refused facts which are legitimately the property of every shareholder in the enterprise.

As to whether or not the Granby Company contemplated an increase in its capital is immaterial, as to the present capitalization of \$15,000,000 being enormously in excess of the value of the property, there is no doubt in the mind of any unbiassed person, least of all in the minds of the engineers and officials in British Columbia, who are in the best position to judge. As to the attempts that were made to sell the property last spring in New York, Philadelphia, Chicago and other centres of capital, the REVIEW has never pretended that the *Directors*, as a *body*, were trying to sell, but some officials were certainly negotiating to that end. We must correct an error which our correspondent made in his August article, as to the price which was asked from the Amalgamated people, it was printed "\$2,000,000," it should have been "\$12,000,000", an inquiry of Mr. Leonard Lewisohn will corroborate this statement. There are no other portions of the *Tribune's* article which require extended notice. The quoted statement of President Miner that shareholders have been given "all the information they were entitled to," may be literally true, according to the by-laws of the company, but it is not true according to company equity, or the common law principles of joint stock companies, that the company is not offering any stock to the public is unquestionably true, and for the best of reasons, that the public does not want the stock.

The REVIEW returns to the principles which governed it in publish-

ing any comments upon this company, viz.:—that the past record of some of the officers of the company in connection with other companies cannot but justify the suspicion with which some shareholders regard the secrecy maintained about the working of the property. Secondly, that the published statements of the mine superintendent of the individual companies, now aggregated into this incorporation, have shown such a significant variation and diminution in the average values annually reported in his official communications to the shareholders, that the assumption of \$5.00 a ton by our own correspondent is a logical deduction. Thirdly, that a property upon which one million and a half of dollars have been spent, and concerning which no information is available *even to the people who contributed that money*, does not justify a capital of ten times the amount. Until the company authorizes and publishes to its shareholders a statement respecting the value of its ore, and the returns recovered, it will not profit it to get all the backing Western boom sheets can give it. As a matter of fact, the REVIEW desires publicity and honesty. We do not mind epithets in the least. We have seen too many booms and collapses in Canada during the last twenty years to be at all disturbed by such names as “*knocker*,” whatever that may mean in Western parlance. The Granby Consolidated Mining, Smelting and Power Company has its chance to set itself right in the eyes of its shareholders and of the public before it comes forward with the flotation of the auxiliary company now under consideration; if it fails to do this, the public and the press will be perfectly justified in turning down its unsupported pretensions.

OUR CORRESPONDENT'S REPLY.

In the August REVIEW we undertook to comment upon the action of the directors of the Granby Consolidated Mining Company upon two points, the proposal to increase their capitalization from \$15,000,000 to \$20,000,000, and, as we venture to think, their indefensible conduct in withholding from their own shareholders definite information as to the value of their ore. Other matters were introduced in order to show that the company is already heavily over-capitalized, but these were the two main points at issue. The fact that the company could sit down under such damaging and authoritative statements as we were able to make, will carry to all impartial critics the conviction that we spoke not one whit too strongly or too soon. After the lapse of nearly two months, if we are to believe the Greenwood correspondent of the *Nelson Tribune*, Mr. S. C. Miner, the president of the company, has (for something like the fiftieth time) allowed himself to be interviewed on the subject of the Granby Company in general and our article in particular, and so in this roundabout way we are supposed to understand what Mr. Miner says, or rather what he does not say, and what apparently he is unable to say in reply to our criticism.

Practically only one of our contentions is denied, viz., as to the proposed increase in capitalization. On this point Mr. Miner is reported to have said, “We never even thought of raising the capital of the company above its present amount of \$15,000,000.” On this point we can only say that the fact was stated broadcast in the Canadian press both east and west at the time our correspondence was indited and in fact gave rise to it, and although we quite admit the impossibility of the president of a mining company denying every paragraph that may appear in the papers with respect to his affairs, we can hardly defend his conduct in allowing one of such importance as this to pass without contradiction. However, assuming his statement to be correct, we must accept his tardy denial, and admit that on this point the public press was misinformed and we were misled. The *Tribune* correspondent takes our charges seriatim. We need not occupy space in attempting to combat the statement that the proposition to increase the capitalization had aroused considerable interest in British Columbia, but the next statement, viz., that the present capitalization of \$15,000,000 is enormously in excess of the value of the property, is practically conceded by the correspondent who admits that the cash expenditure on the consolidated properties to date is about \$1,500,000. He says further that the shareholders of the four companies that combined were satisfied with the scheme of consolidation. It would be strange if they were not, since the stock proposed ultimately to give them something like fifteen times the amount of cash expended. Our point is, that the Granby stock is a commodity which is being dealt in by the public, and whether stock was offered to them in the first instance or not is altogether beside the question, since it is a well-known

fact that no sooner was the consolidation effected than the stock was placed upon the market, and has been quoted ever since, although at a continually diminishing figure. Whilst on the subject of cash expenditure, it may be pointed out that our statement was that, at the time of writing, not more than \$1,000,000 had actually been expended. The *Nelson Tribune* now admits that \$200,000 have been expended this summer. He also rakes in a reference to the value of the town site and other extraneous matters, so that in any case the correctness of our statement is practically admitted. The *Tribune* next states that Mr. Miner assured him that the directors had not tried to sell the property. As this is not a matter of very great importance we will content ourselves with saying that our information was received direct from the parties to whom the property was offered, and although negotiations were, as we stated, of a preliminary character, they left no doubt upon the minds of the prospective purchasers that the sum we mentioned, viz., \$12,000,000, would have been eagerly accepted, and in any case our statement is absolutely correct that the purchaser declined to give this price.

We come now to what is really the whole crux of the question, and one which it seems to us did not require nearly three columns of the *Nelson Tribune* to answer, viz., *the average value per ton of the ore treated*. We stated that it was within our knowledge; we repeat it, and are prepared, if necessary, to give the names, not to the public press, but to any director of the company, that shareholders have applied directly, both to the management and to the president for an authoritative statement as to the value of the ore, and that in every instance this information has been refused upon the ground that it was not policy to give it. This question is entirely evaded, both by Mr. Miner in the interview referred to and by the *Tribune* correspondent. The former takes refuge in the plea that “No shareholder has been refused information that he was reasonably entitled to.” We leave it to the public to judge whether a man who has invested his money in a business is or is not *entitled* to know the value of the property dealt with by the firm in which he is a partner. If not, it is well that it should be known by prospective investors in Granby stock that the directors hold somewhat peculiar ideas as to the rights of shareholders. Passing on to the question of profit or no profit, this point is also evaded by the statement that “The president had on several occasions stated to the shareholders that the ore was yielding a profit, but just what that profit was the directors are not yet prepared to make public.” Our point is, that this information is due, first of all, to any shareholder of the company, and, secondly, to the public at large when the stock of the company is on the market as the Granby stock is.

To our statement that “The gross value of the ore treated does not exceed \$5.00, and it is doubtful if operations are not carried on at a positive loss,” the only answer attempted is the remark of the President that “the new expenditure will more than double our present output and profits.” We have not stated as a positive fact that this concern was being carried on at a loss, but have stated, and venture to repeat, that the evidences all point in that direction; and again we ask, taking the words out of the President's mouth, why is a shareholder not entitled to know that actual amount of profit is being realized by his concern? Summing up his statements, the *Tribune* correspondent makes three propositions as authorized by Mr. Miner: (a) Shareholders have been given all the information they are entitled to, (b) The directors have not even thought of increasing the stock; (c) They are not offering any stock to the public.” We have canvassed all these points, and stand just where we did in every respect; (b) having been effectually met by the President's mouthpiece. [Writing under date of Nov. 18th, our correspondent adds: “There is a unanimity of opinion among western mining men that the position of the Granby Company is indefensible. Further you will be interested to know that the average realized yield of the ore treated for the past three months is not more than \$4.00. What do you say to this?”]

NELSON, B.C., 10th November, 1901.

The oil paintings of the late Dr. George M. Dawson, late director of the Geological Survey of Canada and his predecessor, Dr. A. R. C. Selwyn, which are to be presented to the Museum of the Survey by the Canadian Mining Institute, are now on exhibition in Montreal. In these portraits, Mr. F. Brownell, R.C.A., has done excellent work and they were greatly admired at the recent Council Meeting. The formal presentation of these memorial portraits to the Survey will not likely be made before the Annual Meetings.

Nova Scotia Steel Bonds.

The event of the month has been the issue, through the well known Toronto stock brokers, Messrs. Osler & Hammond, of \$2,500,000 six per cent, first mortgage, thirty year, gold bonds on behalf of the recently re-organized Nova Scotia Steel and Coal Company.

The history and progress of this excellently managed corporation are so well known to readers of the REVIEW that it is not necessary now to do more than briefly recapitulate some of the features of this issue for the benefit of those who may contemplate investing in these bonds:

- a. The value of the property upon which these bonds are secured, as per Accountant's Report, and before any of the proposed improvements are effected, is \$4,250,000 to \$4,500,000.
- b. The expenditure from the proceeds of this issue will add, in actual value, to the above, about \$1,000,000, while the earning capacity of the property will be very largely increased.
- c. The average annual profits of the Company, including bounties, for three years past, have been \$512,215, while the amount required for the sinking fund, and to pay interest on the *whole* issue of bonds is only \$200,000 per year.
- d. When the improvements and developments provided for by this bond issue are completed, it is estimated that the annual average profits will amount to \$742,500, leaving a very large surplus over the \$200,000 required for the payment of interest and redemption of bonds.
- e. Ample provision is made for an increase in the amount to be paid into the sinking fund, if the quantities of iron ore and coal sold in any one year shall exceed the quantities estimated in the prospectus.
- f. The Company, as has been pointed out, is not a new and untried concern. The companies comprised in the Nova Scotia Steel and Coal Company, Limited, have done a successful business for many years. The earning capacity of the existing plant has been fully established, and the history and growth of the companies for the past nineteen years have given a sure basis upon which to estimate future earnings.

From our personal knowledge of the high character and shrewd business ability of the directors and the unquestionably valuable assets which comprise their large property in Nova Scotia and Newfoundland, we can, unhesitatingly, recommend these bonds to our readers as a sound industrial investment.

The Dominion Government and the Crow's Nest Coal Lands.

In our Western correspondence some time ago there appeared a paragraph which implied that the Dominion Government had been somewhat tardy in protecting the public interest by exercising its first right of selection of the coal lands in Crow's Nest Pass. We are very glad to learn from an interview which we had the other day with the Hon. Mr. Sifton, that the Hon. the Minister of the Interior has been very much alive on this question and that every precaution has been exercised on behalf of the Government in the matter. Perhaps we cannot do better than state what has been done in his own words:—"Early in the spring of 1903, Mr. James McEvoy was detailed to make a thorough examination of the coal-bearing lands, which, I may say, had previously been examined with considerable care by the officers of the Geological Survey. Mr. McEvoy and his party spent the summer making an examination; they had the assistance of a staff of topographical surveyors, and a complete map of the whole district was made showing the coal measures, and this map was filed with the Department together with a report from Mr. McEvoy giving all available information in regard to the location of the coal deposits. Mr. McEvoy was taken from

our service by the Crow's Nest Coal Company, who offered him a salary with which the Government could not compete, the difficulty being, first of all, that these salaries require to be voted by Parliament, and, secondly, that it is impossible for us arbitrarily to raise the salary of any particular officer to keep him in the service, as such an action would result in causing a disparity between the officer so treated and the other technical officers of the Survey, and it would lead, as you can readily see, to complete disorganization of the staff. Upon Mr. McEvoy leaving the service, Mr. Leech was detailed with a party to spend the second or last summer in the work which Mr. McEvoy had been engaged upon during the preceding year. This work has been going on during the past summer. In addition to this examination the tract has been under examination by Mr. Wm. Pearce, D.L.S., who has had a large amount of experience in that section of country, and lastly, a gentleman whom I believe to be one of the best practical coal mining engineers in the United States, Mr. Taylor, the chief engineer of the Pittsburg Coal Company, has made an examination and report.

On the whole, I do not think that any more thorough or complete steps could be taken for the protection of the Government than have been taken in this case. No selection has yet been made. The Government, as you are aware, under the contract, has the first right of selection, and we are now in a position to exercise that right with the information which we have derived by the steps which have been taken as above indicated."

We are very pleased to give prominence to this statement by the Minister of the Interior.

Hall Mining and Smelting Co., Ltd.

The second ordinary general meeting (annual) of the Hall Mining and Smelting Company, Limited, was held in London on the 30th ultimo, Lord Ernest Hamilton, chairman, presiding. The Chairman dealt at length with the balance-sheet presented, and called attention to the fact that the accounts contained in that sheet were made up to the end of the fiscal year. June 30th, 1901. He also presented figures which clearly show the improved prospects of the company since that date, or for the period between the 30th of June and the 30th of October.

The figures of the balance-sheet pertain only to the smelting department of the company, which, up to the end of the fiscal year, had failed to show the profit expected by reason of the fall in the prices of both lead and silver during the fiscal year. The London quotations for lead show a fall of £5 6s. 5d. per ton in eight months, or from £17 11s. 11d. a ton, when smelting began in October, 1900, to £12 5s. 6d. a ton in the month of May this year, and the failure to make a profit in the smelting department is very reasonably ascribed to this fall in lead and the coincident depreciation in the price of silver. The estimated loss for the year due to this cause alone is put at £10,000. Another important factor in the unprofitable operation of the smelter was the difficulty of obtaining dry ores, due to the closing down of a great many of the lead mines which also had furnished a large proportion of the supply of dry ores used by the furnace.

In reference to the mining department, Lord Hamilton opens with words of praise for our good friend Captain J. R. Gifford—"Turning from the smelting to the mining department, here, at any rate, I do not think there is the slightest need to introduce the word 'failure' in any sense. I think you will agree with me that the work which has been done at the mine since Captain Gifford took it in hand is really quite remarkable." When Captain Gifford took charge of the mine there was practically not a single ton of ore in sight; at the date of the meeting there were 12,000 tons in sight in the stopes, in addition to the 14,543 tons which had been sent down to the smelter since January of this

year. The Chairman stated that the net profit in the mining department since the 1st of July this year approximated £18,500, and goes on to say "this is really a very excellent record, and too much credit cannot possibly be given to Captain Gifford for his masterly handling of the mine."

As to the prospects for the future, the Chairman is optimistic as to the mine, and believes that the arrangements which have been made, "both as regards the supply of dry ores and as regards the disposal of the lead bullion," will show a marked improvement over the conditions which prevailed during the last fiscal year.

We understand that arrangements have been entered into for the supply of electric power to the smelter to supersede steam power heretofore in use, and it is quite on the cards that the mining department will also equip itself with electrically driven machinery so soon as the manager is convinced of the ability of any of the different machines offered to do the work that is required of them.

The REVIEW extends its congratulations to Captain Gifford, and trusts that the future of this pioneer amongst West Kootenay corporations will be the success it now richly deserves.

Gratifying Progress in Ontario.

The output of the metalliferous mines and works of the Province of Ontario for the nine months ending 30th September, 1901, according to returns made to the Bureau of Mines, amounted in value to \$2,822,003, details being as follows:—

	Quantity.	Value.
Iron Ore, tons.....	216,614	\$ 224,546
Pig Iron, "	87,888	1,296,344
Nickel, lbs.....	6,513,191	737,214
Copper, "	5,950,428	286,376
Arsenic "	975,054	30,432
Gold, ounces	11,008	186,294
Silver, "	98,200	58,797
Zinc Ores, tons.....	400	2,000
		<u>\$2,822,003</u>

A comparison of these figures with those for the year 1900 shows that during the first nine months of the present year the aggregate value of the above products exceeded that for the whole of last year by \$280,782, or proportional increase of about 48 per cent.

The largest increase is in the iron industry. In 1900 the output of iron ore was 90,302 tons, valued at \$111,805, while during the first three-quarters of 1901 the production was 216,614 tons, worth \$224,546. The advance is due principally to the development of the Helen iron mine in the Michipicoton Mining Division, which is now being worked on a scale comparable to that of some of the larger mines in Michigan or Minnesota.

In pig iron, the increase is marked. In 1900 the output was 62,386 tons, worth \$936,066, while in the nine months of 1901 it rose to 87,888 tons, valued at \$1,296,344. In December of last year the Midland furnace of the Canada Iron Furnace Company went into blast, and has been steadily producing ever since, thus adding materially to the iron making capacity of the province. The Midland furnace, as well as that of the Hamilton Steel and Iron Company, turns out coke iron, while the Deseronto Iron Company is running on charcoal iron alone.

A feature of the iron situation is that most of the pig now being made in Ontario is from ore mined in the province. The smelter at Midland uses Helen hematite almost exclusively, and the same ore is also largely employed at Hamilton. There were 156,731 tons of iron ore smelted during the nine months, of which 93,165 tons, or 59 per cent., were from Ontario mines, the remainder being American ore.

The nickel industry, under the stimulus of active demand and higher prices, continues to expand steadily. The actual producers of matte are the Canadian Copper Company and the Mond Nickel Company. The former have now twelve furnaces in commission, turning out ordinary grade matte at the rate of about 100 tons per day, which is re-treated at the Ontario Smelting Works, and brought to a metallic content of about 80 per cent. before shipment.

The Creighton mine, which is being opened up by this company, is a very promising property, and bids fair to prove the largest deposit yet uncovered in the district. The body of nickel ore comes right to the surface, and 500 tons a day are being taken from an open cut and shipped to the roast yards at Copper Cliff.

The Mond Company's mines and works are at Victoria Mines, where a substantial and modern smelter plant has gone into operation during the present year, having a capacity of about 200 tons of ore daily. The Bessemer process is employed, the molten matte going direct to the converters, thus doing away with intermediate handling. The result is a matte containing practically nothing but nickel and copper sulphides, the iron being burned out down to about one per cent., and the metallic contents of nickel and copper being about 80 per cent.

The Clergue syndicate is opening up the Gertrude and Elsie mines not far from the Creighton, and is preparing roast beds and breaking ground for a smelter at the Gertrude.

Of nickel-copper ore, 222,133 tons were raised during the nine months, as against 216,695 in 1900; the quantity smelted being 158,194 tons, producing 20,723 tons of matte. The value (in the matte) of the nickel contents was \$737,214, and of the copper \$286,376, as against \$756,726 and \$319,681 for the whole of 1900.

The purely copper ores of the north shore of Lake Huron are receiving a good deal of attention, and 10,100 tons of these were raised during the nine months. The Rock Lake Mining Company's mine and mill are now almost in shape for making concentrates, and the new railway from Bruce Mines will be completed and running into the mine some time in December. The Stobie, Massey Station, Superior and other properties in the development stage are showing up well. The Bruce mines are still closed down, but are likely to be reopened in a short time.

Arsenic is distinctively an Ontario product as well as nickel, neither being produced elsewhere in America. The Canadian Gold-fields at Deloro is now treating the auriferous mispickel found there with great success. The output for the nine months was 975,054 lbs., valued at \$30,432, as against 606,000 lbs., worth \$22,725 in 1900.

The yield of gold shows a decrease as compared with last year, due mainly to the lessened production of the mines of Western Ontario. There were 11,008 ounces reported, having a value of \$186,294. New properties, both east and west, are being fitted up for turning out bullion, and, with prudence and skill, there seems no reason why some of the low grade ores of the Seine River and Lake of the Woods should not show good profits if worked on a large scale.

Of silver, 98,200 ounces were produced worth \$58,797, mainly from the mines of the Port Arthur region, though the old Victoria silver-lead mine near Echo Lake is again in operation and turning out concentrates.

The active mining regions of Ontario are growing in importance and output, and the present year shows high water mark for iron, nickel and copper, the three chief metals found in the province, not only in the matter of ore production, but also as regards the manipulation of the raw materials and their conversion into finished, or nearly finished, articles.

Canadian Trade in Mining Machinery.

If evidence were required of the great and rapidly growing importance of the mining and smelting industries of the Dominion to the trade and commerce of the country, it will be found in the immense volume of trade being done by our mining companies with the manufacturers and dealers in mining machinery and mining supplies. For the past couple of years this trade in Canada has aggregated several millions of dollars, and such establishments as the Cooper Manufacturing Company, the Canadian Rand Drill Company, the Jenckes Machine Company, Wm. Hamilton Manufacturing Company, and other Canadian engineering establishments, have been worked to their fullest capacity, while a very large trade has been done with other countries, most notably the United States. Some idea of this expansion may be gathered from the following figures, compiled by the REVREW, from the Trade and Navigation Returns periodically published by the Department of Customs. The following table shows the value of the mining and smelting machinery imported free of duty during the fiscal years ended 30th June 1900 and 1899:—

	1900.	1899.
Nova Scotia.....	\$320,038	\$ 24,143
British Columbia.....	192,087	88,911
Ontario.....	145,040	142,216
Quebec.....	30,661	26,621
New Brunswick.....	10,246	212
Manitoba.....	1,600	1,080
N. W. Territory.....	674	10,926
Yukon.....	33,841	5,591
	\$724,187	\$299,800

The following table shows the monthly returns of the value of the mining and smelting machinery, free and dutiable, imported into Canada from 30th June, 1900, to 30th September last:—

Month.	Free.	Dutiable.	Total.
1900			
July.....	\$59,222	\$7,570	\$66,792
August.....	129,398	2,544	131,942
September.....	151,211	2,786	153,997
October.....	170,954	175	171,129
November.....	110,393	6,801	117,194
December.....	103,794	28,724	132,518
1901			
January.....	111,134	4,196	115,330
February.....	162,030	9,689	171,719
March.....	62,185	806	62,991
April.....	52,921	517	53,438
May.....	259,309	6,180	265,489
June.....	162,674	12,269	174,943
July.....	58,919	4,267	63,186
August.....	70,979	16,428	87,407
September.....	84,479	599	85,078
Total.....	\$1,749,602	\$103,551	\$1,853,153

The following table shows the sources from which our imports of mining machinery, free and dutiable, were derived:—

Month.	From United States.		Great Britain.		Other Countries.	Total.
	Free.	Dutiable.	Free.	Dutiable.		
1900						
July.....	\$54,766	\$7,570	\$2,320	.....	\$2,136	\$66,792
August.....	125,751	2,544	3,647	.....	.....	131,942
September.....	147,351	2,786	3,860	.....	.....	153,997
October.....	162,637	175	8,278	.....	39	171,129
November.....	103,993	6,801	6,400	.....	.....	117,194
December.....	93,164	4,734	5,630	\$23,990	.....	132,518
1901						
January.....	111,129	4,196	5	.....	.....	115,330
February.....	162,030	9,689	.....	.....	.....	171,719
March.....	58,980	806	.....	.....	3,205	62,991
April.....	51,971	517	950	.....	.....	53,438
May.....	257,523	6,180	1,786	.....	.....	265,489
June.....	162,369	10,602	305	1,667	.....	174,943
July.....	58,486	4,267	433	.....	.....	63,186
August.....	70,764	16,428	215	.....	.....	87,407
September.....	84,945	518	1,534	.....	81	85,078
Total.....	\$1,708,859	\$77,813	\$35,363	\$25,657	\$5,461	\$1,853,153

EN PASSANT.

The gold medal awarded by Mr. Charles Fergie, M.E., President of the Canadian Mining Institute, for the best Student's Paper contributed to the Transactions of the Institute during the year has been awarded by the Council to Mr. E. V. Corliss (McGill) for his paper on "The Coal Mines of Fernie, B.C."

A Dominion Department of Mines will, it is understood, be established before very long at Ottawa, its administration, like that of the Survey, being directed by the Department of the Interior. Such an institution is certainly required to bring the mineral industries of the Dominion more prominently before the public and we trust the Government will see to it that no niggardly policy is pursued with respect to its maintenance and equipment. Capable officers are required and these cannot be obtained on the beggarly scale of remuneration meted out to the staff of that other excellent institution, our Geological Survey.

Arrangements for the ensuing Annual Meetings of the Canadian Mining Institute are well forwarded and a large and interesting syllabus of papers is already assured. In addition to these a new feature will be the "Topics of Discussion," which are being arranged for with the object of eliciting a livelier interest in the proceedings among our mine managers and mining engineers. Such practical topics as "Ventilation," "Air Compressing," "Haulage," "Pumping," "Power Drills," are sure to interest our mine managers, particularly, as we understand these will be introduced by some of the best posted authorities upon them. The meetings, as usual, will be held in Montreal during the first week in March.

The Mining Society of McGill, an active organization of the Mining and Science students at McGill University, has, or at all events, will very shortly be affiliated with the Student's Section of the Institute.

In a recent number the *Nelson Miner* works off a rather good and typical story concerning our old friend Hector McRae. It appears that several years ago, he and his pal, Sandy Dick, who, we are glad to see, has since reformed and gone into the more stable production of coal, had their eyes on the Ophir group on Porcupine Creek, claims which to-day are reported to be held by their owners at a very high figure. The claims at that time were in an inaccessible country and investigation not proving satisfactory they were turned down. Hector's report was to the following effect:—

The company which he proposed organizing was called the Australian-Canadian Tellurium Mining, Smelting and Development Company with a capital of \$75. Alexander Dick, W. H. Corbould and Hector McRae were the three stockholders, and Harry Hughes was selected as prospector in chief. The report tells how this fearless explorer started out and examined the property of the Lade Brothers. "A firm but friendly offer of \$50 was made for the group and refused as the the owners wanted \$119,950 more than this sum. Mr. Hughes refused to purchase the property for the reason that the claims were located 19,000 feet above the townsite of Ferguson, while the latter is situated, roughly speaking, 7,200 feet above sea level. The claims are bounded on the north, east, south and west by glaciers, and are suitable for cold-storage purposes and summer resorts. The vein matter at the bottom of the shaft will not go \$12,800 to the ton, and the ore although called a telluride more nearly resembles a free milling pyrrhotite, plumbic gasoline composition such as is found in Nel-

son, Quartz Creek, Rossland and Water Cress mining districts bearing no resemblance to Cripple Creek or Klondike rock. After failing to secure the claims at his own figure Mr Hughes made an ascent of the mountain to the Mother lode of the glacier. Here he located after many hardships and hairbreadth escapes three square, life-sized claims, upon which he had seen cropping through the ice a large, well defined true fissure quartz vein from 15 to 20 feet wide and God only knows how deep. An average sample was taken and submitted to Mr McKillop and the result was gold, no traces; copper, no trace; silver, no trace; charges, \$7 50. Timber for mining purposes would not be available as the timber line is a mile away in a vertical direction. Another drawback to profitable mining is the shortness of the summer season which only lasts from July 1st to July 4th. Of the funds entrusted to Mr. Hughes there remained for a short time \$1.65. The sum was almost immediately spent in purchasing stimulants for the resuscitation of Mr Hughes who was in a deplorably nervous condition from the hardships of his trip. From the foregoing report it is obvious in order to maintain the good name of the company, that an immediate assessment of \$2.50 per shares be levied for liquidating the bill for assaying."

—
 - Mr. Bernard MacDonald, M.E., who, since the resignation of Mr. Carlyle, has managed the properties of the British America Corporation at Rossland, has resigned, and rumour has it that he will assume the management of the Anglo-Canadian Lead Syndicate's mine at Lake Temiscamingue, Que.

—
 A trial shipment of one ton of black mica has been made from the recently opened up mica deposits worked by Messrs. Dainard & Hoar, on Ice River near Golden, B.C. The shipment was consigned to Robert Ingram of Manchester, England. By the way, during the past season the bulk of our exports of mica has found a profitable market in England.

—
 Gold dredging on the Saskatchewan and other rivers in the North West Territories still continues to attract considerable attention. The *Edmonton Bulletin* writing of the operations during the season just closing, says:—

The past season has not seen any startling strikes made in the industry, but one or two most valuable facts have been demonstrated; one is that by the process improved and adopted by Mr. Hobson, all the gold that is lifted and put through the washing process of the dredges is secured and saved. This has been the great difficulty and drawback to successful gold dredging here, the mineral is so fine and flakey in form that in washing it from the gravel in which it is found, much of the gold was lost, carried away by the water. This difficulty has been successfully overcome, and if nothing else were accomplished this alone would be recompense for the summer's work and expense. Mr. McDonald, the New Zealand mining expert, claims that they are now saving all the fine gold. He says that the gold-bearing sands and gravel of California yield a rich harvest when they run as high as 100 or 120 cubic yards, while the gravel of the Saskatchewan averages 50c. per cubic yard, an exceedingly rich proportion. The process of mining, says Mr. McDonald, has centred down to one and only one successful method, that is the ladder and endless chain of buckets. Dipper dredges have been tried and found too slow; suction dredges have had their pipes cut out and the principle has been abandoned. The ladder and endless chain system has been the only one to prove successful. The Otter, Minto, and Alberta, the three dredges which have worked here this summer, were fitted with this style of machinery, but none of them proved entirely satisfactory. The reason of this partial failure was not in the weakness of the principle but in

the weakness of the machinery. The machinery had been designed in England by supposed-to-be competent mining engineers, but was found altogether too weak in parts to do the work which it was called on to do in dredging into solid gravel banks. Thus numerous break-downs occurred during the summer, and it was always some weak link in the machinery which was found to have given way. The Minto was launched on the 4th of May, but it was not until July that the dredge could be got to work. She was run for only short intervals during the summer, the break-downs being of frequent occurrence, and at last was condemned with her machinery and laid up for complete overhauling next season. The Otter made by far the best run of the three, though even she did not run at anything like her theoretical capacity. Probably at no time during the season did she run at more than ten cubic yards per hour, bar measurement. Her results would necessarily have been much larger had she not been forced, through having no coal tender, to work on bars in the vicinity of the town which had been worked over by grizzly miners for the past thirty years. The following table shows the number of hours and yards she has worked this season: May, 49 hours, say 490 yards, June, 247 hours, say 2,470 yards; July, 362 hours, say 3,620 yards; August, 130 hours, say 1,300 yards. In speaking of the work of dredging here Mr. Hobson said: "It is now past all experimenting and is on a practical basis. The only thing now wanting is the dredge to lift the gravel, but caution should be used in the construction, and I should advise that a practical man make a thorough inspection before determining on the plans of new dredges for the Saskatchewan."

The Minto worked about 2,000 cubic yards, her machinery being very unsatisfactory, and though much of the gold was lost, through these defects, she saved at the rate of 28c. per cubic yard. With all the dredges the amount of gold washed was not so great as it might be, but the amount of gold saved for each yard of gravel washed was quite satisfactory. The machinery for moving the gravel might be deficient, but the richness of that moved was all that could be wished for.

OUR ILLUSTRATIONS.

Mining in the Atlin District, B.C.

Through the courtesy of our friend Mr. R. D. Featherstonehaugh, manager of the Atlin Mining Company, we are able to give our readers this month reproductions of several excellent photographs of the mining operations being carried on in the Atlin District of British Columbia. As far as can be said at present the gold bearing area of this district consists of a tract of country immediately east of Atlin Lake and city, some ten miles wide by fifteen to twenty miles back from the lake, the greater part of which all lies in the basin of Pine Creek and Surprise Lake, with their tributaries, Boulder, Birch, Spruce, Otter and Wright Creeks. McKee Creek runs parallel to Pine Creek and is some seven miles south of it. It has a length of about eight miles and contains some good ground. There appears to be a relation between the productive ground and the nature of the rocks in the Placer district which may be useful in defining the gold bearing areas. At the present time, however, it cannot be said that the creeks outside of the boundaries indicated have had a fair trial. In fact there are many possibilities for this district, which suffers under no disadvantage of frozen ground. Provided plenty of water is available the extent of pay gravel may be largely increased by hydraulic mining on a more economical scale than the costly methods employed by the individual miner on his 100-foot claim. The gold is usually coarse often as flat little flakes about the size of flax seed up to nuggets of half an ounce. Nuggets usually well rounded, of several ounces, are not uncommon.

As a rule the gold is not much associated with black sand or other heavy minerals, excepting on Wright Creek. Here the amount of black sand, pyrites, and bits of native copper, is large. The usual method of working is adopted to the short claims. The creeks or portions of them turned through sluice boxes which pass beside the excavations made to bed rock. Into these sluice boxes the pay dirt is shovelled while the boulders and barren stuff are thrown back on the washed out ground as the excavation proceeds. The pay gravel is commonly found at or near bed rock and some times a few inches of the softer bed rock carries gold. The whole process of getting down to this pay ground and disposing of the muck and boulders on a 100-foot claim is expensive, and it can also be seen that a single season spent on this small area often leaves it pretty well worked out. On the larger streams such as Pine and Spruce Creeks, the water is diverted by wing dams, while the bed and banks are shovelled up into the sluices as before. Water wheels work Chinese pumps and so keep the excavations from flooding. The gold is by no means confined to the present stream beds, but these afford the most accessible concentrations wherever bed rock is shallow. Good pay was said to be taken from several of the low, rocky benches adjacent to the streams by reducers and in other places drifting into the banks has exposed pay gravels probably of an earlier period.

Returns of the gold yield from this district published by the Mines Report for British Columbia show that there were produced in 1898 placer gold of a value of \$75,000; in 1899 \$800,000; and in 1900 \$450,000 in addition to 120 ounces valued at \$2,497 won from quartz mining.

Mica and Phosphate from the Blackburn Mine.

The two photos which we publish were recently taken by Mr. R. L. Blackburn and give but a small idea of the actual mining which has been done on the old Blackburn mine at Templeton, Ottawa County, Que. The Blackburn mine has been actively operated almost continuously for a period of twenty years, the original owners being McLaurin and Blackburn who mined it for phosphate and made considerable money out of the enterprise. In these early days of phosphate mining mica was of no commercial value and the output was gladly sold for anything it would bring, its use being chiefly confined to roofing purposes. To-day the conditions are entirely reversed and the then much abused black mica is now eagerly sought for and realizes a handsome profit while the phosphate once so profitable realizes a comparatively small return. The big pit of the Blackburn mine is one of the largest open cast workings in the Dominion. It is worthy of remark that the bulk of the output of mica from this mine has lately found a market in England.

Slocan Sovereign Silver-Lead Mine.

We are indebted to Mr. G. F. Ransom, Sandon, B.C., for the two views of the Slocan Sovereign Mine—one of a group of silver-lead claims in the Slocan district of British Columbia owned and operated by the Slocan Sovereign Mines Company, Limited. In a letter describing the work done on the property Mr. Ransom says.—

“Work has been carried on by five tunnels, the longest being 790 feet, giving a depth of 600 feet. Ore is showing all through the lead in bunches. There is sufficient stoping ground for some fifteen months. Running parallel with this dry-ore lead is another some 60 feet apart. This has only lately been discovered. The surface showing has four inches of clean ore running 90 oz. in silver and 75 p.c. lead. The leads run direct through the properties some 6,000 feet and several cars of ore have been taken out this spring netting good returns. The Sovereign mine, situated on Reco Mountain just below the once

famous Reco Mine, has two leads running through it, namely, the Reco vein and Goodenough. Some very high grade ore has been taken out of the latter. Most of the work has been done on the Reco vein, No. 4 tunnel being in 1,400 feet. Stopping has only been started, yet, during 1900, 150 tons were extracted. There is sufficient ground ready to keep twenty men busy for two years in No. 3 tunnel. There is two feet of solid ore showing running 108 ozs. silver, and 80 p.c. lead, also in a crosscut run a short time ago, eight inches of steel galena was struck. The mine is located two miles from Sandon. By extending the lowest level into the Reco ground we would get some 2,000 feet depth. Ore house, two blacksmith shops, two bunks and a cook house are in good repair. I trust during the coming year to see lead and silver advance. As it is now there is very little encouragement to ship your ore. We have some 2,000 tons of concentrates on the dump which would run less than 4 to 1. As soon as satisfactory arrangements can be made this will be shipped and will nett a good return. Altogether the future of the S.S.M. Co. Ltd. is a bright one and we trust as soon as everything is in working order to see dividends.”

COAL MINING AND TRADE.

At the close of a very busy shipping season, onlookers are already beginning to canvass the work done by the Dominion Coal Company during the present year. A net increase of nearly half a million tons is something substantial, and exceeds the expectations of those who thought they were best able to judge. Evidently the new management has been very energetic, and, in addition to extensive economies, has also paid special attention to the possibilities of a wider market. Shipments to the States, as well as to the home markets, have increased satisfactorily, but the interesting feature is the establishment of an export trade. Reports have already been received from the assistant manager, who is making a European trip, enclosing orders for something in excess of 20,000 tons. These are practically trial orders, and will determine the placing of considerable contracts both in England and Norway. It is satisfactory to find that these orders have been placed with so little trouble; at the same time it is well to bear in mind that the English coal is put upon the market in first-class condition, and any negligence in shipping Nova Scotian coal is sure to result in the closing of the market, in fact one of the greatest difficulties to be encountered in this export trade is the shipping of the coal across the Atlantic without too much breakage. It will certainly have to be double screened, and sent in larger sizes than is customary for the Canadian trade. The prospect of a permanent trade is, we think, good, because there are many signs and conditions showing that the average selling price of coal in the Old Country is going to rule at a higher figure than during late years. The cost of production, which was in the neighborhood of 6s. 3d. for the past twenty years, is certain to be exceeded in the next twenty. Labor unions are stronger than ever, and no doubt there will be a tendency for wages to assume a higher level. At the present moment wages are at least 50 per cent. above standard rates, and, although if there should be the usual depression in trade following a period of inflation, there will undoubtedly be some reduction in wages, it is certain that they will not fall again to the old standard, and it is necessary, in order both to secure and retain what may ultimately prove to be a far larger market than the Canadian or American, to send clean, carefully screened coal, and to be moderate in fixing the price. Obviously there is no room for high prices when transportation across the Atlantic has to be added, but upon the basis which we have frequently discussed in these columns, and which first originated the idea of transatlantic trade,

there should be no difficulty in securing remunerative prices, and so develop the most important industry of the maritime provinces.

At the end of the season it is interesting to notice what has been done in the new mines which have been developed on the Island of Cape Breton. At Port Morien, the Gowrie & Blockhouse Company have continued to develop somewhat slowly, their present capacity not exceeding 300 tons a day. It is only fair, however, to say that they have a difficult seam to work, and that it will take several years to develop to a large tonnage, if they are able to place it on the market.

At the Port Hood Colliery development is proceeding, although hampered by insufficient surface accommodation and the recent damage done to the shipping pier. At date the slope is down 800 feet, and is being carried further. The capacity of the mine is about 200 tons daily.

At Broad Cove, more substantial work has been done. A large bankhead has been erected with picking table and conveyors, modelled after the Drummond Colliery bankhead, although on a larger scale. Engine, fan and pump are being installed, miner's cottages are in course of erection, and every preparation is being made to ship a considerable tonnage next season. The quality of the coal is satisfactory but the pitch has increased somewhat, being now about 16 per cent. There is also more water than was anticipated, but the pumps are well able to deal with it. Next season will see this coal a serious competitor with the older mines.

Mr. T. J. Brown has entered upon his term of office at the Old Sydney Mines by making extensive alterations and improvements. The coal lying to the crop of the old working is being opened up so as to shorten and cheapen the cost of haulage, which for many years has been an exceptionally heavy item in this mine. The manager, however, will not have a fair show until the old mine is abandoned and a new one opened. We understand that this is now under consideration, and that next year will see practical steps taken to establish one of the largest mines on the island at some point north of the present mine and ultimately to develop an important producer of coal. At the moment of writing the prospectus of the Nova Scotia Steel and

Coal Company is before the public, and we have no doubt that it will be liberally responded to. There is no company in the Dominion possessing more genuine and valuable property, nor one which is more likely in the future to be remunerative to investors.

Reverting for a moment to the Dominion Coal Company, it is interesting to notice that during last month the output aggregated 260,000 tons. Of this the Caledonia contributed 55,000; Dominion No. 1, 65,000, and Reserve, 72,000 tons. These are large figures. The policy has been concentration, and the end of the present year will afford an admirable test of its effect. It is just announced that the International Mine is being closed down for the winter months. This will be a disappointment to those who thought the mine would be kept running, but we shall not be surprised if it is not the forerunner of the closing of the International, which for the last four years has been both troublesome and expensive in consequence of the large body of water to be dealt with. It looks as if the future of the Dominion Coal Company depends upon the Phalen seam, and that the management is looking to obtain all the tonnage required from this important measure.

Increased interest is aroused in the coal areas of New Brunswick by reason of the activity of an American company under the presidency of Mr. J. P. Geddes of New York. This company has commenced serious operations about 30 miles north of Moncton. A shaft has been sunk and is rapidly approaching a six foot seam which had been located at the outcrop. First-class machinery has been purchased, and every effort will be made to develop an active mineral property. Hitherto such attempts have not been a success in New Brunswick, owing largely to the thinness of the seams and the inferior character of the coal, and it remains to be seen whether the new discovery will be any better. In any case, if the cost of production is not too high, there would be a fair local market, such as is found throughout the Western States, where, in the absence of bituminous coal, there is a profitable demand for lignite.

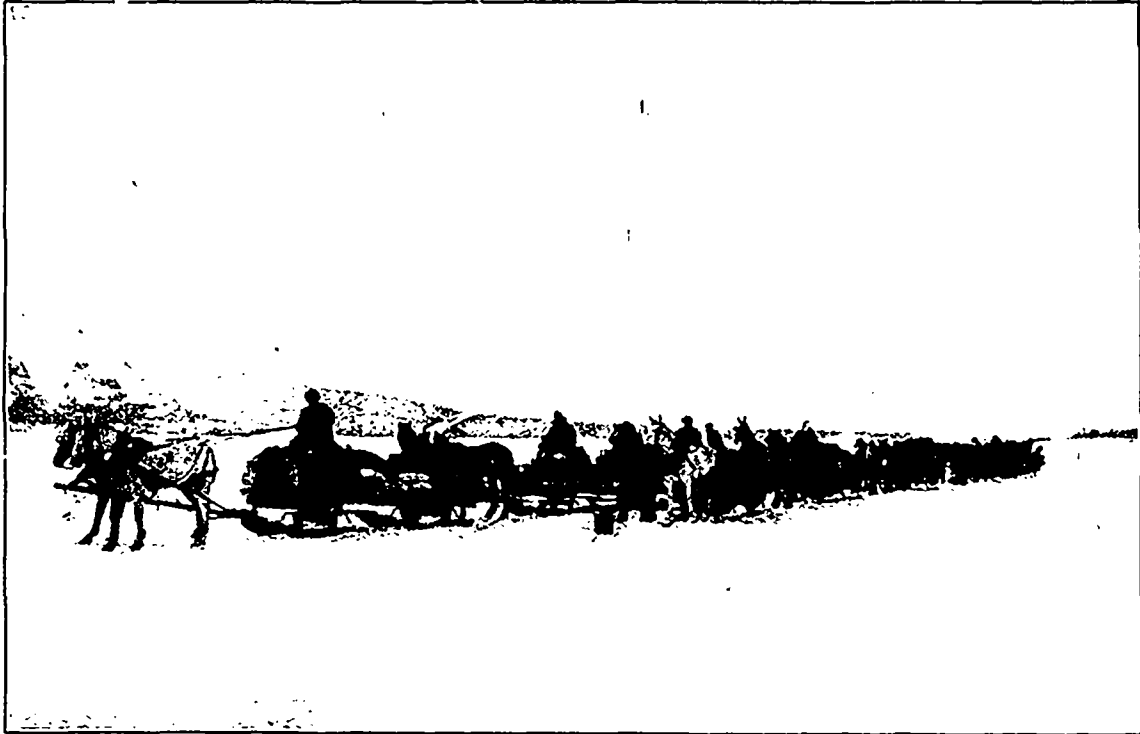
In the west the coal trade is as active as ever, although there is some falling off in the demand for coke in consequence of the Rossland strike, the laying off of the Northport smelter and the reduced production of lead ores. In consequence of this, the Crow's Nest Coal

St. Lawrence Coal Deliveries.

We are indebted to Messrs. F. A. Routh & Company, Montreal, for the following returns of the Bituminous Coal Deliveries by Water to St. Lawrence Ports during season of navigation just closed:—

	MONTREAL.		SOREL.		THREE RIVERS.		QUEBEC.		TOTAL.	
	1900	1901	1900	1901	1900	1901	1900	1901	1900	1901
The Nova Scotia S & C. Co.....Tons	60,014	2,985	5,154	1,236	4,080	5,095	24,321	32,143	93,569	41,459
Dominion Coal Co..... "	571,223	795,630	9,889	3,448	15,636	15,750	46,659	48,805	643,407	863,633
Intercolonial Coal Co..... "	30,742	33,555		1,850		480	13,270	3,863	44,012	39,748
Gowrie and Blockhouse..... "								1,725		1,725
Port Hood..... "								150		150
Cape Breton Coal Co.. .. . "						1,200				1,200
Scotch, English & American (by Sea) "	19,444	76,928		784				3,510	19,444	81,276
	681,423	909,152	15,043	7,318	19,716	22,525	84,250	90,196	800,432	1,029,191

MINING IN THE ATLIN DISTRICT, B.C.



Hauling Hydraulic Plant for Atlin Mining Co. on Lake Atlin, April, 1901.



Flume of the Atlin Mining Co., McKee Creek.

MINING IN THE ATLIN DISTRICT, B.C.



Monitor at work on the property of the Atlin Mining Co., McKee Creek.



Atlin Mining Co., McKee Creek, B.C.

MINING IN THE ATLIN DISTRICT, B.C.



Constructing Flume on McKee Creek for the Atlin Mining Company, Atlin, B.C.



Showing Dump of the Atlin Mining Co.

MINING IN THE ATLIN DISTRICT, B.C.



Working on the Atlin Mining Company's Flume Line, on McKee Creek, Atlin, B.C.



Atlin Mining Company's Pressure Box on McKee Creek, Atlin, B.C.

MINING IN THE ATLIN DISTRICT, B.C.

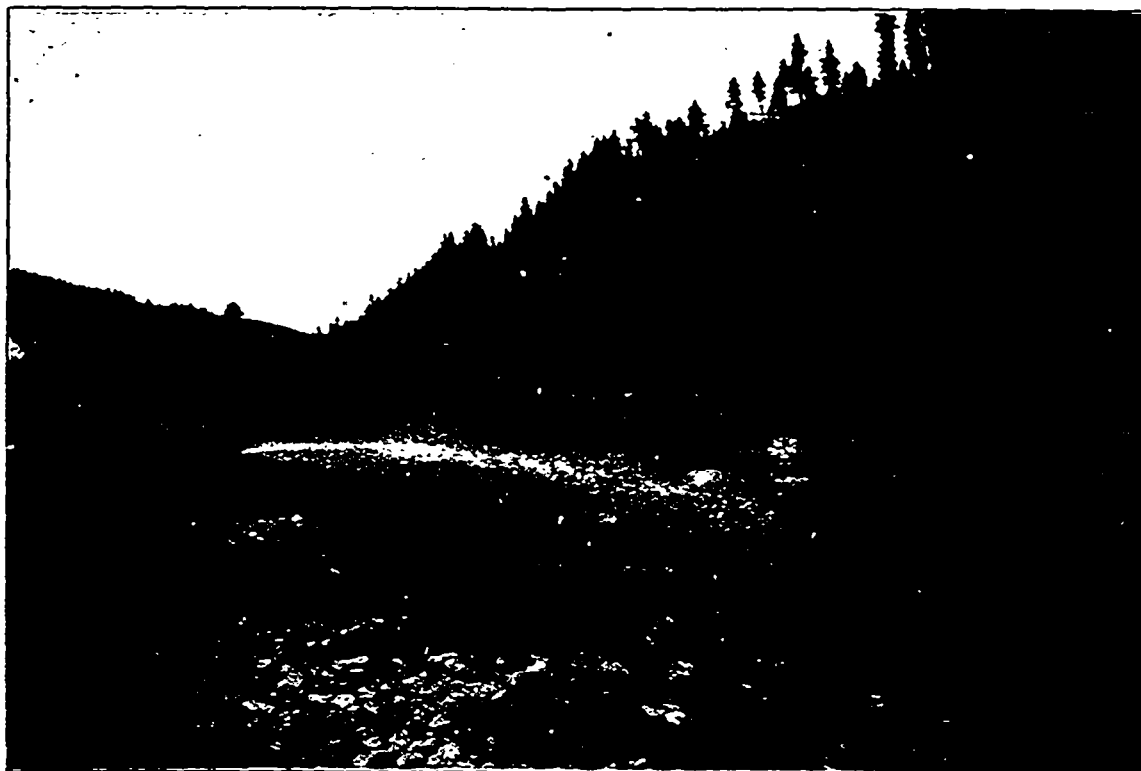


Hauling Machinery to "Race Horse" Group, Atlin, B.C.



No. 29 and 30 above, on McKee Creek, Atlin, B.C.

MINING IN THE ATLIN DISTRICT, B.C.



Monitor at work on McKee Creek, Atlin, B.C.



Atlin Mining Company's Flume on McKee Creek, B.C.

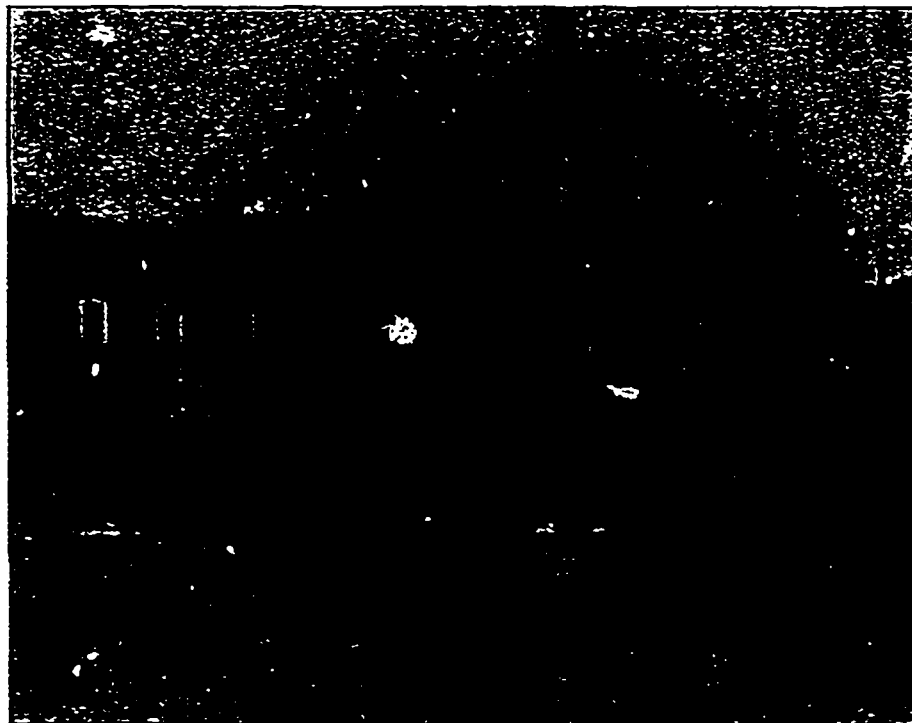
SILVER-LEAD MINING IN BRITISH COLUMBIA.



Group, at Slocan Sovereign Mine, Slocan District, B.C.



Argenta Ore House, No. 5 Tunnel, Slocan Sovereign Mine, Slocan, B.C.



Silver-Lead Ore stacked at Kaslo Sampling Works.

MINING IN QUEBEC.



Six hundred tons of Phosphate (Apatite) awaiting shipment during the winter season at the Blackburn Mine, Ottawa County, Que.



Underground Works of the celebrated Blackburn Mica and Phosphate Mine, Ottawa County, Que.

Company have "damped down" half their coke ovens, and are only shipping about 200 tons daily. At the mines, development is being pushed by the new manager, Mr. T. R. Stockett. The present output of coal averages 1200 tons daily, a very small figure after four years' development, but one which it is believed will be largely increased during the next few months. The new works of this company on the north side of the Morrissey Creek are not yet producing coal in consequence of delay in the construction of a branch railway. This, however, is expected to be completed some time in January, and shipment will then commence. By that time the capacity of the new mine should be about 500 tons a day. Mining operations on the north side of Michel have been practically discontinued in consequence of the unsatisfactory character of the coal discovered. This section of coal is evidently affected by the limestone upheaval, which is visible within three or four miles of Michel Creek on the north side. This upheaval has affected the coal both as to strength and quality, the percentage of ash running as high as 10 or 12, compared with 5 to 7 per cent. on Coal Creek. In order to utilize the extensive plant which has been erected, the company are endeavoring to locate a mine on the south side of this creek, and have just let a contract for driving a tunnel 500 feet through the strata to catch a seam of coal 14 feet in thickness, which has been uncovered in the mountain. The driving of this tunnel will take about six months, and, if successful, will lead to the opening of a good seam of coal.

At the coast, trade keeps moderately good, the falling off of the San Francisco demand being an important factor. At the annual meeting of the New Vancouver Coal Mining and Land Company, the usual vote of thanks was passed and commendatory remarks were made about the veteran manager, Mr. S. M. Robins, who has been so successful in carrying the operations of this company to the present position. The usual dividend was paid.

During next season material light will be thrown upon the extent and character of the coal discoveries recently made in the interior of the province. On the north fork of the Kettle River several parties have located seams of bituminous coal of coking character. Most of these seams are too thin to be worked profitably, but at the moment every effort is being made to discover thicker seams. In the Similkameen Valley several companies have taken up areas, and are about to commence boring. Excellent seams of lignite have been located in the neighborhood of Princeton and on the Tulameen River. At least one large seam of bituminous coal, approximately 14 feet in thickness, has been found. Less important discoveries of coal have also been made near Fairview upon the east side of the Okanagan Lake. A well-known syndicate has also taken up areas at Nicola. The object of this company is to locate a high-class coking coal in the centre of the province which would dominate the smelter trade of the Boundary country and the coast. The first company to successfully solve this problem will realize large profits. The accumulation of evidence as to the low grade quality of Boundary ores renders it absolutely imperative that the cost of production should be brought to the lowest possible point. Crow's Nest coke at nearly \$8.00 delivered is a serious item, and if a similar coke can be produced in any of the districts named, the short haul would enable it to be laid down in the Boundary district at \$5.00 a ton, a saving of at least 50 cents in the treatment. Since the latest advices go to show that the average value of Boundary ore is much lower than people have imagined, it will be seen how important it is that this question of cheap treatment should be solved.

The Dry Ores of the Slocan, B.C.

By R. C. CAMPBELL JOHNSTON, M.I.M.M., Nelson, B.C.

(To be discussed at ensuing Annual Meetings of the Canadian Mining Institute.)

In submitting a paper on this subject to the members of the Canadian Mining Institute, the author is aware of the very large scope of area in which these ores occur in Slocan, and also of the many professed and actual commercial successes in treating this character of ore used locally, in Australia for Broken Hill ores, in the United States, Mexico and South America. The object of the paper is to draw the members' attention to this existing area, to recite the experiences of those engaged in mining these ores, to relate the present attempts to treat the ore and so pay dividends to the shareholders, to suggest other treatments that may be applicable, and to gather the members' experience and ideas on the subject, so that this rich area may become another gem in Canada's diadem, and so make us all even more proud of the country we live in.

As far as the author can ascertain there is no fixed division between the terms "dry" and "wet" ores, to limit the hard line where one ends and the other commences. For the purpose of describing the ores of this district a return of 10 per cent. and less of metallic lead to the ton is spoken of as a dry ore, and over 10 per cent. as a wet ore.

All these ores are rich in silver values, some also containing gold, and some not; in fact the ores are phenomenally rich.

The area included, especially in this district under discussion, is bounded on the north by the divide between the Lardeau and Slocan, stretching from Kootenay Lake to Arrowhead Lake, bounded on the east by Kootenay Lake, on the south by Kootenay River, and on the west by the Arrowhead Lakes and the Columbia River. This division contains an area fifty (50) miles wide from east to west, and forty (40) miles long from north to south. There are other parts in the Lardeau, East Kootenay and elsewhere containing dry ores, but the scope of this paper must be limited, and so mention must be left to another time.

This Slocan area is composed of granite rocks, certainly a broad description, but sufficient till those with more leisure than the mine managers can make slices of the country rocks and classify them from a microscopic examination. The granite surrounds patches of slate as exhibited from Silverton to Whitewater, and south from Carpenter Creek to the village of Cody. There is a strip of other varieties of igneous rocks carrying copper, gold and silver along the north bank of the Kootenay River; and a strip of metamorphic rocks at Ainsworth. Outside of these isolated exceptions we may say broadly the country rock is granite. In the slate as typified by the Rambler-Cariboo mine, they have followed their vein through the slate into the granite with even enhanced values occurring. The author would especially draw the members' attention to the ores on Springer, Lemon, Ten Mile, the head of Four Mile, including Fennell, Cody, Kokanee and other Creeks. Among the many mines containing these ores are the Arlington, Hewett, Enterprise, Bondholder, Fisher Maiden, Republic, V. & M., Erin, Evening Star, No. 8, Exchange and others.

Let us first look at the characteristics of the veins carrying these ores. So far as known there are at least four series of veins. First from Twelve Mile Creek going south across Springer to Lemon Creek are six (6) parallel veins within a zone three thousand (3,000) feet wide, known by development to traverse the country for five miles. Their strike is N 20° W, S 20° E, with an easterly dip of steep pitch, and they are strong veins varying from six to thirty (6 to 30) feet wide of vein matter between walls. They generally have a pay streak of extra rich ore on both hanging and foot wall, from a few inches to two feet wide, each one, then often one or more pay streaks lie in the vein matter between the outer streaks with some values distributed throughout, so that by stoping out the whole vein from wall to wall, twelve dollars

(\$12.00) and more per ton in gold and silver alone can be averaged from the mass. These mines of this series have a future of large tonnage, and that must be treated economically to pay dividends. Typical mines of this class are the Republic, Erin, Peerless, Combination and other groups.

Then intersecting these first veins are others with strike E 5° N and W 5° S (all points of the compass are described magnetically), dipping south with wide vein-matter carrying mostly silver values, most often in streaks. Typical of this series are the Rainbow, Wavertree, Evening Star, No. 9, Wide West, and others. The Howard Fraction is reported to have the same strike with a northerly dip.

Another type the author has not examined is represented to the east of Republic Mountain by the Myrtle Group, where a vein occurs traversing also the Rainbow, I. X. L. and Morning Star on Springer Creek. The strike is reported N 10° E and S 10° W with dip west, and the ore is high grade in silver values. Farther east we come to the type of small high-grade veins represented by the Enterprise, Bondholder, Mabou, Missing Link, Premier and Evening Star No. 8. These veins traverse the country for six miles with average strike N 28° E and S 28° W, and dip east, carrying high silver values, but no gold to speak of.

This Enterprise series intersects the Republic series apparently on the Premier and Evening Star No. 8 groups, near Dayton Creek.

Intersecting the Enterprise series again is another series, viz.: the Arlington one. Here we have large veins striking N 10° E and S 10° W with dip east contrary to the Myrtle type.

This series is represented by the Arlington, Speculator, Mabou, Neepawa, Enterprise, Bondholder and others with parallel veins. These have streaks of pay ore like the Republic series, carry gold and values, represent large tonnage, and require economical treatment.

There is much more yet to be learned about the characteristics of the dry ore series in question. Though some development has been accomplished, a large amount more is still desirable, executed by skilled engineers who realise what they are accomplishing, and who form their judgment from facts before them, sifting out fact from theory. This curt account of the series, however, is given in the hope of obtaining others' ideas.

Next has to be considered the mode of occurrence and constituents of the pay ore. Where gold occurs, as a rule it is not free, but alloyed or mechanically mixed with iron pyrites, a long disputed difference. The silver is sometimes alloyed with galena, zinc-blende, copper sulphide, or antimony sulphide not in masses but dispersed through quartz gangue. At other times the silver is native, or as argentite (sulphide of silver), and in a few cases apparently chloride (horn silver). In all cases there are base metallic values with the precious metals in the gangue of the veins.

Now comes the crux of the whole matter. Nature has put the minerals in the veins with lavish hand to be extracted by the ingenuity of man.

The ores having been wrought, how are they to be treated on a commercial scale to secure an extraction of at least ninety per cent. of the values, and also bring the profits to the shareholders?

Now profits are given away to such vampires as railways and custom smelters, who suck the life blood out of the mining industry, just when expenditure of working capital promises success, by exorbitant overcharges, though bonused by the country. If possible, any transportation expenses from the mine to the railway, and so to the smelters, must be saved on an average grade of ore; therefore, what is wanted is a process to treat the ore at the mine.

At present general teaming charges are \$3.00 per ton. Freight and treatment on railway and at smelter are charged from \$8.00 to \$12.00 on dry ores (help the wet ore charges), the two vampires do not

make separate charges for each division of labor, but combine against the hapless mines. Put mining charges on to the above cost, then masses of \$12.00 ore are useless to the mine owners. Under present circumstances hand sorting is resorted to, or in other words, the eyes of the mine are picked out, leaving a lower second grade class of ore than if the mass was shipped. The owners fondly hope that in some dim future the vampires will lower their charges to allow this second grade ore to be shipped, but will they?

Another kind of sorting is introduced, viz.: Wet concentration by roll crushing and jigs with settling tanks for the silver slimes.

This reckless method, as proved in all mining districts where this class of ore occurs, may save seventy (70) per cent. of the values, hopelessly losing for all time the balance.

This is only picking out the eyes of the mine in another way, for the silver as argentite, antimonial, etc., will not settle effectually enough to permit its recovery. These facts all show that the mine to pay as its values warrant must have its ore treated in bulk by some smelting or chemical process.

Transportation charges of coke and coal and the necessary fluxes up to the mine to counteract the zinc contents, or want of sufficient lead, in most cases prohibit a smelting process.

We can only then begin where Broken Hill has left off in their costly experiments lasting over many years, having in our favour over them cheaper power from our creeks to generate electricity, abundant timber for all purposes, cheaper fuel in coal and coke, and possible fluxes in the district.

Their hope is in the Phoenix process of bessemerizing with chlorine gas, and using a cycling chemical reaction. Rumours are rife of other processes there. Magnetic separation of blende from galena will not help us where the silver is unalloyed with lead and zinc. Would this system of treatment help us, viz.: Dry crushing, dry concentration with sizers and Clarkson-Stanfield's centrifugal machines, or with pneumatic blowers, then treating the product, briquetted or sintered if necessary, by the Phoenix process?

We have to put our heads together to think out, and spend money in trying to solve successful extraction, that will add millions to the world's wealth, and many dividends to the lucky shareholders interested in these Slocan mines. Let us remember that the big tonnage of average grade ore, when effectually treated, make larger and more permanent mines than shipments only of rich picked material.

British and Canadian Lead.—The accounts of the British and Canadian Lead Company for the period ending 30th of June last have been issued. The property which this company is operating is in the Lake Temiskamingue district, in the Province of Quebec, and, as we have already pointed out in these columns, although the ore is of lower grade than that found in the majority of the Slocan mines, they have been able to ship to English and German smelters at a profit. The average value of the ore bodies per short ton is stated to be about 47 per cent. lead and 15 ozs. of silver. The ore is concentrated at the mine at a ratio of about 5 to 1, and the returns from the smelter after payment of transportation and treatment will average about £10 per ton of concentrates. The company made shipments to a New Jersey smelter, but, owing to the excessive charges and the large deductions, they found they could make better profits by shipping their ore to Europe. The report states that, at the present low price of lead, 25 tons of concentrates per week will pay all expenses including current development. As is very common with this class of ore, the concentration problem has proved somewhat difficult, as there is a tendency to lose a portion of the silver values in the slimes, but, in spite of the fall in the price of lead and the long transportation of the ores to the smelter, the mine is, we understand, working on a profitable basis.

Mikado.—It is announced that during October the yield was 254 ozs. of gold from 1,071 tons of ore, and 91 ozs. of bullion from 535 tons of tailings by cyanide.

CANADIAN MINING INSTITUTE.

Affiliation of McGill Mining Students—Many New Members Elected—Arrangements for the Annual Meeting.

On Thursday evening, 14th instant, an important meeting of the Council of the Institute was held in the Library, Windsor Hotel, Montreal, Mr. Charles Fergie, M.E., President, in the chair.

NEW MEMBERS.

The SECRETARY presented the following applications for membership, the nominations being approved:—

C. Shields, General Manager, Dominion Coal Company, Glace Bay, Cape Breton.

B. Bennett, Mine Manager, Messrs. King Bros., Thetford Mines, Que.
Dr. Eugene Haanel, Superintendent of Mines, Department of the Interior, Ottawa, Ont.

Chas. J. Coll, General Manager, Acadia Coal Company, Stellarton, N.S.
Thomas Cantley, Nova Scotia Steel & Coal Company, New Glasgow, N.S.
D. Forbes Angus, Intercolonial Coal Company, Montreal, Que.

P. L. Naismith, Manager, Alberta Railway & Coal Co., Lethbridge, N.W.T.
Dr. Alfred Stansfield, Professor of Metallurgy, McGill University, Montreal.
A. S. Burrows, Manager, Rock Lake Mining Co., Bruce Mines, Ont.

T. H. Crabtree, Mine Manager, Union Asbestos Mines, Black Lake, Que.
C. R. Corning, Mining Engineer, 36 Wall Street, New York, N.Y.

W. R. Wilson, Mining Engineer, 22 Burford Road, Nottingham, England.
B. Crowell, Mining Engineer, 731 Williamson Building, Cleveland, Ohio.

A. H. Bromley, A.R.S.M., Mining Engineer, 18 Eldon Street, London, E.C., England.

W. F. Best, Analytical Chemist, 28 Broad Street, Victoria, B.C.

H. E. Coll, Superintendent, Vale Colliery, Stellarton, N.S.

Robert A. Johnson, Chemist, Geological Survey, Ottawa, Ont.

Captain W. M. MacKay, Dawson, Yukon, Canada.

Walter R. Kerr, Thetford Mines, Que.

C. S. Wilcox, General Manager, Hamilton Steel & Iron Co., Hamilton, Ont.

Louis J. Abrahams, F.G.S., Mining Engineer, Bruce Mines, Ont.

AFFILIATION OF MCGILL MINING STUDENTS.

Dr. FRANK D. ADAMS submitted a letter from the Secretary of the McGill Mining Society stating that the members of that body at a recent meeting had unanimously agreed to affiliate with the Student's Branch of the Institute.

On motion of the Secretary it was resolved to recommend that the affiliation be confirmed at the ensuing Annual Meetings.

DEATH OF MR. JAMES F. LEWIS.

The SECRETARY in fitting terms referred to the great loss the Institute had sustained since they last met in the death of their old friend and fellow-councillor, Mr. James F. Lewis, of Sherbrooke, Que., and submitted the following resolution:—

Resolved, That the Members of the Council of the Institute at this, their first meeting together since the sad event, take this opportunity of expressing their grief at the lamented death of their colleague, Mr. James F. Lewis, of Sherbrooke, Que., who died in Boston on 23rd July last, and that they hereby enter in the Minutes a note recording their appreciation of his high personal character and the services he so cheerfully rendered towards promoting the welfare and success of the Institute."

Mr. HARDMAN suggested that an obituary note concerning their late friend and co-worker might fittingly be incorporated in the next volume of the Journal of the Institute, and agreed to prepare same for publication.

ELECTION OF COUNCILLOR FOR QUEBEC SECTION.

The SECRETARY moved that the vacancy created by the death of Mr. Lewis be filled until the next Annual Meeting by the appointment of Mr. George E. Drummond, of the Canada Iron Furnace Company, Montreal. The election was agreed to.

ELECTION OF A PATRON.

The SECRETARY having referred to the great interest which the Hon. the Minister of the Interior was taking in the mineral industries of the country and the likelihood that there would at no distant date be organized under the administration of his Department an efficiently equipped Department of Mines for the Dominion, moved that the Hon. Clifford Sifton M.P., Minister of the Interior, be elected a Patron of the Institute. The motion was unanimously adopted.

STUDENT'S MEDAL AWARDED.

After discussion the Council unanimously agreed to award the gold medal, presented by the President, for the best paper contributed by a mining student to the Transactions of the Institute during the year, to Mr. E. V. Corliss (McGill) for his paper on "The Coal Mines of Fernie, B.C."

NOMINATING COMMITTEE.

In terms of the Constitution and By-Laws the following were appointed a committee to nominate a slate to fill the vacancies occurring in the Council at the Annual General Meetings:—Messrs. Hardman and Dr. Adams from the Council, and Messrs. DeCourtenay, Dr. Porter and Milton L. Hersey, from the members.

NOTICE OF MOTION TO RESCIND A BY-LAW OF THE INSTITUTE.

Mr. HARDMAN gave notice that at the next meeting of the Council he would move that the By-Law providing for the recording of votes by proxy be abolished.

THE LIBRARY.

The SECRETARY submitted certain resolutions affecting the location and administration of the Library, but after some discussion decided to postpone a vote upon them until a later meeting of the Council.

ANNUAL MEETINGS.

The PRESIDENT suggested that as the weather was somewhat unsettled in March, it would be better if the date of the Annual Meetings were changed to the first Wednesday in February, and he would give notice of motion to amend the Constitution at the next Annual Meetings so that the change might be carried into effect thereafter.

Dr. ADAMS, on behalf of the Science Faculty at McGill, offered to the Institute the use of one of the lecture rooms at the University for the meetings. The President thanked Dr. Adams, on behalf of the Council, for his offer, but thought that as most of the members reside at the Windsor during the meetings, it would be more convenient, at least for this year, to hold the meetings there as formerly.

The SECRETARY announced that promises of over thirty papers had been intimated, and that in addition, and with the object of creating greater interest in the proceedings among the mine managers, a number of practical topics were being arranged for. These included "Air Compressing," "Pumping," "Power Drills," "Hoisting," "Ventilation," and "Haulage." The subjects would be introduced by some of the best authorities on these questions and it was hoped that the innovation would not only create a livelier interest in the proceedings, but be conducive to a good discussion of the subjects from those who ordinarily were not heard from at the meetings.

A sub-committee comprising the President, Dr. Adams, Mr. Hardman and the Secretary, was appointed to select and arrange for the presentation of the various papers.

Mr. HARDMAN agreed to present a "Topic for Discussion" on the subject of "Government Aid to Mining."

This being all the business, the meeting adjourned.

Queen Bess Proprietary Company.

The fourth ordinary general meeting of the Queen Bess Proprietary Co., Limited, was held this month at Winchester House, Old Broad Street, London, Mr. Edward Hart presiding.

The chairman said: I will first deal with the figures which, as you will see, only come up to the 31st March last. The revenue account shows that during the year the ore sales have realised £17,682, out of which sum part was stock in hand. The realisation of ore actually mined during the year amounted to £15,537; and as this represents only just over 1,000 tons of ore, you will gather from that how very rich the ore we mine is. The result has been a gross profit of £5,891, which is carried to the general account and against which are charged the expenditure in British Columbia, £3,162; the depreciations written off, £498; and London offices expenses, £1,088; so that it leaves a net profit of £1,471, as against that of the previous year of £726, showing a great improvement as far as that goes. After adding the balance brought forward from the previous year, it shows £1,900 to dispose of. The directors propose to write off from the development account £1,500, carrying over £400 odd the balance.

The balance sheet shows that the creditors have greatly increased on the one side, going up from £2,000, roughly, to £4,300; and on the other side the cash is considerably reduced. Mining expenditure shows a very much increased figure. These are the principal features, I think, of the balance sheet. If there are any other items the shareholders would like to have particulars of, I should be very pleased to answer any question. The fact is that during the past year we have been developing entirely, and we have been using all the money obtained from the ore for that purpose, and more than we have obtained. As to that, I shall have a little more to say presently. With regard to the output for the period under review, you will see that the average value per ton realised has been £16 9s. 6d. for galena, per ton, as against £20 5s. the previous year, and £8 5s. 3d. for carbonates, as against £8. Of course the drop in the galena is due almost entirely to the fall in the price of lead, which has been a very serious thing to us. During the period I think the price has averaged from £13, the highest, to £13, and it has since dropped to a little over £11, so that you will see that as our ore contained some 63 per cent. of lead, it means a very considerable reduction—something between £3 to £4 a ton in the value of our ore.

The cost of mining and sorting has gone up and also freight and treatment—the latter item being owing to slightly increased terms made by the smelters upon the 1st January last. The ore obtained has assayed: galena, 81 20z. of silver, and 63 per cent of lead; and the carbonate 46oz. of silver, and 29 per cent of lead. This lead question is, of course, one of the things we have had to contend with; and another was the great difficulty in getting smelting facilities. Last year all the contracts which were made per year, expired; and the American smelters would not take contracts for smelting except on impossible terms. Practically they succeeded in closing down a great many mines. We were fortunate in being able to make a contract with the Hall Mines smelter, and they have been acting as our smelters this year. The difficulties with regard to smelting, and the drop in the price of lead, has all the effect of closing nearly all the Slocan properties.

Of course the accounts deal with the past. Now with regard to the present and the future of the mine, which is the most important thing for the shareholders to consider at the present moment, you will see from the accounts that, as I have told you the creditors—consisting largely of the bankers' overdraft—have gone on increasing. The bankers' overdraft is in round figures, £4,000, and naturally we look upon this as a very critical time in the history of the company. I should like to read you some extracts from a report by Mr. Woakes, the engineer. It is too long to read in full, but I have had some extracts made which will give you a very good idea of what the present position of the mine is. The report is dated 5th October, 1901. He says:—'Unfortunately we have not yet met with the success which we hoped, and we believed, with reason, that we should meet. Two years ago it was decided to start a lower tunnel, for which there was a

good site, and which would cut the vein at a depth of 400 feet below the level of No. 5, the then lowest tunnel. At that time there was sufficient ore opened up in the mine to have paid the shareholders a small dividend, had it been decided to extract and realise it as quickly as possible. After that had been done, however, fresh capital would have to be raised for developments, or the mine would have to be abandoned. There was a good showing of ore in the sole of No. 5 tunnel, and a shaft had been sunk on it to a depth of about 70 feet, but had then lost it owing to the vein flattening out, so that the shaft was left in the footwall. The company, on my advice, decided to apply all the proceeds of the mine to the driving of the lower or main tunnel. . . . A small air compressor for the drills and hoist, and a ventilating fan, were installed, and uninterrupted progress was made with the main tunnel until it reached a length of 1,700 feet, where it was expected to cut the vein. There, however, a heavy stream of water was tapped last January, and has continued to flow ever since, so that the main tunnel, although in the immediate vicinity of the vein, as our other workings indicate, has never yet been driven into it. No. 9 level is only 60 feet above the main tunnel, and here we are now driving on the vein. In April last connection was made from the main tunnel by a raise to the bottom of the shaft sunk from No. 5 level, and cross-cuts and drifts started on the vein at four new levels, viz.: Levels No 6, 7, 8, and 9. In No. 6 level the ore shoot was found and followed north and south, and has since been stopped out, and up to No. 5 level this has yielded by far the greater proportion of the ore mined during the past year. Below No. 6 level the ore is now being taken out with the chief object of following the shoot and finding, if possible, its direction. . . . At No. 7 level the vein flattens out—a by no means unusual occurrence at Queen Bess—for a distance of about 80 feet, as far as we have gone at present, and the slate hanging wall is replaced by a dyke rock, and as far as we have gone at present no ore has been found after this change takes place. . . . Very little mining has been done so far in the Slocan district, and the Queen Bess mine is in much the same condition as most of the other larger and older mines of the district, several of which have started deep tunnels since this company commenced theirs, but none of them are in as forward a state as the Queen Bess. It is almost impossible to suppose that the ore shoots do not continue in the veins. . . . The fact that the Queen Bess vein carries ore of such a high grade, and that so much development work has been already done with a view to opening out the mine in depth would seem to warrant the continuance of these works until the character of the vein in the lower levels is fully ascertained."

I will also read a short extract from a letter received from Mr. Woakes, dated 14th October. In it he says:—"At the mine, levels No. 8 and 9 have been continued north, both being in the same class of ground, the vein being narrow and not very well defined. As these two levels are so close together, I have now stopped driving No. 8 and put the men to drive No. 7 as, should the ore shoot have dipped away to the north, this should be the first level to get into it again in that direction. We have one man following up the vein from the crosscut raise put up from the shaft, halfway between levels 6 and 7. This was the lowest point at which we found traces of ore. We are rising on vein here, and expect to come out under the station at No. 6 level. Here we had quite a nice bunch of ore, but evidently it does not extend down to any great depth. Your best prospect of finding ore appears to be to drive north on the vein, below where the last ore was found. . . . We have got in a supply of firewood and mine timbers sufficient for the winter, and all the dumps and tunnels' mouths fixed up. In case of a shut down it would entail considerable expense to get things into shape again. . . . It may interest you to know that the Idaho people have traced their vein over the hill to the place where we opened up the vein by ground slicing on the Young Dominion this summer."

That will give you a very good idea of what the position of the mine is, and what Mr. Woakes thinks of it. He is coming over here in December, and we shall be able to consult with him as to the steps necessary to be taken for the future. In the meantime, we have made temporary arrangements by which we shall receive the cash necessary to carry on the mine for another three months for the purpose of exploration only with a view to proving the ore at depth. But undoubtedly in my opinion and in the opinion of my colleagues, more capital will be required even when we do find the ore; but as to that we have, of course, nothing to put forward at present. We hope that we shall be more successful than we have been. Of course it has been a great disappointment to us not to get the ore in lower levels. I now move that the directors' report and statement of accounts be received and adopted.

MR. DRUMMOND seconded this.

The resolution was carried unanimously.

Enterprise (British Columbia) Mines.

An ordinary general meeting of the Enterprise (British Columbia) Mines, Ltd., was held on 1st instant at Cannon-street Hotel, London, E. C., Mr. Richard Popkiss, the chairman of the company, presiding.

Mr. E. R. Tasman (the secretary) having read the notice convening the meeting, and the report of the auditors.

The Chairman said: You will observe that the profit shown by the accounts amounts to £5,908 6s 10d., or nearly £6,000, which I think you will agree with me is satisfactory considering that in these accounts are charged the whole of the administration and other expenses both in British Columbia and London, for something over one and a half years, and especially so as during that period the unfortunate miners' strike did not allow of mining operations being commenced until early in March, 1900, thus reducing the working of the mine to a limit of about nine months, and even during that period shipments were reduced down to about 20 tons of ore per week immediately after it was found out that mechanical treatment of the ore would be advantageous, which small shipments you will naturally understand could do no more than help to pay the expenses. As explained in the report, this profit has been expended in the concentrating mill and other capital charges, and consequently is not available for distribution.

This property was acquired by your company from the London and British Columbia Gold Fields, Ltd., and was purchased by that company upon the advice and reports of their engineers, who were of the opinion that the ore could be hand-sorted without undue extravagance or loss. It was therefore some surprise to us to find that from actual work such was not the case. However, as soon as this was discovered no time was lost in making arrangements for the erection of a suitable concentrator which would deal with it, but to do this meant the acquisition of a new site and the designing of the most suitable machinery for the particular class of ore it would have to deal with. This naturally absorbed some little time, and the winter intervening prevented outside building work being carried on until the spring of this year, when all possible expedition was used, with the result that I am now able to inform you that the mine and mill are now working, and your directors have no reason to doubt that they will continue to do uninterruptedly from now on. A complete compressor plant, operated by water power in the same way as the concentrating mill, has been installed, which again saves labour, and whilst expediting that work will reduce the expenses of mining. All the necessary buildings for the manager, the staff and workmen have been erected. The road between the mill and the point of shipping has been put in good order, and consequently we have to-day a mine fully equipped with every necessary requisite for the most economical and continuous working. The vein runs from a few inches to 2 ft in width, which may appear to you as somewhat narrow, but I would remind you that it is of an exceptional richness. In places this argentiferous galena is mixed with quartz, and it is for the purpose as far as possible of eliminating the quartz from the galena before sending the same to the smelter that the concentrating mill is required. This ore, we were informed in August last, would be sufficient to supply the mill with 50 tons daily for nearly two years, which reduced to tons amounts to some 25,000, and as our latest report states further good ore is still being opened up, there appears to be no doubt as to the future. Therefore, gentlemen, all I can do is to suggest you following the monthly returns as they are published, and in doing this you should bear in mind that those for the first two or three months will be less than we have every reason to expect them to be from month to month after that time. I will now ask Mr. Wethered to give you any further information which may occur to him, as he has come fresh from the property, where he saw the mine and mill. A fact, all the works—and where he had the opportunity of discussing the whole question with the local administration on the spot. I will now propose the resolution: "That the directors' report and statement of accounts to December 31, 1900, now submitted to this meeting be, and the same are hereby, adopted."

Mr. Oliver Wethered seconded the motion. He said: I am going to deal with three or four of what I think are very vital points, and these are first the ore reserves. As you will see on the authority of the mine superintendent, some months ago we had sufficient ore blocked out for practically two years. Since then I am able to testify, from having seen the mines, that the developments have been on a large scale, and perhaps better, I think I may say, that at any time during the history of the mine, so that on the point of development everything is as we could wish. I do not hesitate to tell the shareholders that from to-day on we should be, and, in fact, are to-day, making profits. There is nothing rash in that statement, because we have so much ore blocked out of a payable value that profit and not loss must result. What that profit is going to be will depend very much on the facility with which it concentrates. I do feel that, although it is wise that the directors should be reticent, or be very careful of prophesying yet there is an obligation on them also, in a company like this, where the past has been so very disastrous, to tell frankly what we do think, and I therefore repeat somewhat more emphatically than I have stated in the report that I am perfectly certain that we are going to make fair profits from the very start, and that when all our machinery is adjusted, and when we know the best method of concentration, profits will be on a scale which will have earned large dividends to the shareholders. No man can see into the earth, and it may be that after we have worked up our two or three years' reserves, we should not find the same ore, but that is one of the very remote contingencies. I have never yet seen a vein which to my mind looks more like running than this one does.

The resolution was then put to the meeting, and unanimously agreed to without discussion.

Mr. Oliver Wethered proposed the re-election of Mr. Richard Popkiss as a director, which was seconded by Mr. Arthur Bell, and agreed to.

On the motion of Mr. Winna, seconded by Mr. Goring, Messrs. Monkhouse, Stoneham & Co. were appointed auditors for the ensuing year. The proceedings then terminated.

Hall Mining and Smelting.

The second ordinary general meeting of the Hall Mining and Smelting Company, Ltd., was held in London last month, Lord Ernest Hamilton (the Chairman of the Company) presiding.

The Secretary (Mr. A. E. Ashley) having read the notice calling the meeting.

The Chairman said: Gentlemen—I think it is possible that the report and balance sheet before you may to some of you who only read it superficially, convey rather a wrong impression. I think it may convey an impression that the affairs of the company are less prosperous than they really are. If this impression exists among any of you, I hope before I have done this morning to be able to dispel it.

Now, your business, as you know, is divided into two departments mining and smelting. You will remember, perhaps, that we looked to the smelter to pay the expense of developing the mine. Of course, it has been very far from doing anything of the sort. Almost from the first moment of our commencing smelting operations, we had to face a fall in the price of lead and silver which is quite without parallel in recent years. We did not practically begin to smelt until the end of October though we had to buy ores previous to that date. I take up the official returns of the price of lead in London during the six months, and I find that in October, 1900, which is when we began lead smelting, the price of lead was £17 11s. 11d. a ton; in

November it was £17 4s. 7d. a ton; in December it was £16 4s. 8d. a ton; in January, 1901, it was £15 18s. 6d. a ton; in February it was £14 13s. 4d.; in March, £13 7s. 7d.; in April, £12 8s. 5d.; and in May, £12 5s. 6d. You see there was a steady and persistent fall in the price of lead, and in the price of silver it was very much the same, and this hit us very severely in two ways, both directly and indirectly. Directly it hit us in a way you can all understand. Ore has to be bought for the smelter it is bought on the basis of the price which exists at the moment of purchase. The ore is then subjected to a certain process which covers several weeks, and at the end of the time the product is sold on the basis of the price which rules at the moment of sale. So that is apparent that if between the date of the purchase and the date of the sale you have a steady and persistent drop in the price of metal, you have not the basis for a very profitable undertaking. We estimate that in a direct way we have this year lost over £10,000. However, it is probable that indirectly this fall in the price of the metals has hit us even more severely.

You must bear in mind, in considering the situation, that the condition of things we have had to face has been quite an abnormal one, and that it is not in the least likely we shall ever be called on again to cope with such a steady and persistent fall in the price of the metals. However you must understand that this is a risk which is inseparable from the smelting of public ores; with regard to what I have called the indirect loss, that is to say, the loss arising from the shortage of the supplies of dry ores, I think we can easily safeguard ourselves against any repetition of loss in that direction. You must also bear in mind, of course, that if prices were to rise in the same way that they have fallen during the past financial year our profit would be correspondingly increased. Now as to the future. Our representatives on the other side have in view an arrangement both as regards the supply of dry ores and as regards the disposal of our lead bullion, which shows a marked improvement on the arrangements which have existed hitherto, and as we have now only one furnace running on lead, it should be a comparatively easy matter to obtain a reasonable amount of dry ore to keep that one furnace perpetually in blast whilst the smaller furnace is at work on our own copper ore. I want you to realise how very greatly the starting of copper smelting has relieved the position all round. It has not only enabled the copper-smelting department itself to make a very useful profit, but it has enabled the mine to make what I think one may fairly term something more than a useful profit.

In this connection you may notice in the report that during the three months ending 30th September the profit from smelting is estimated at £4,000, which is considerably better than anything we did during the past financial year. I turn from the smelting to the mining department, and here, at any rate, I do not think there is the slightest need to introduce the word "failure" in any sense. I think you will agree with me that the work which has been done at the mine since Captain Gifford took it in hand is really quite remarkable. At the time we took the mine in hand there was practically not a single ton of ore in sight. Active work was not begun at the mine before the installation of the new machinery, in January of this year, but since that time up to the 30th of September he has sent down 14,543 tons. Now, since the 30th of June, you will see from the report, that 9,300 tons of ore have been smelted, and that the net proceeds from these amount to nearly £102,000, and we estimate that after deducting working expenses at the mine the net profit to the whole concern on that figure is £12,500. We have since received a cable that for the five weeks ending the 25th of October the output has been 3,864 tons, of an average value of 27.32 ozs. of silver per ton and 6.5 per cent. of copper. These two periods overlap one another to the extent of a fortnight, but we calculate that by this recent cable from the mine manager we may add £6,000 net profit to the £12,500, which you see appearing in the director's report, making the net profit on mining up to date £18,500 since the 1st of July. Of course, you must take these figures simply as an estimate.

The amount spent on development during the year is £24,728. The amount of ore developed during the year is 25,143 tons, of which 5,243 tons were extracted and sent down. The way we arrived at the adjustment of the proper proportion of the amount spent on development to profit and loss and to development account is as follows:—As 5,243 tons, which is the amount extracted, is to the total amount developed, 25,143 tons, so is the amount which we charge to profit and loss account to the entire amount spent on development during the year. I hope I have made that clear. That, we think, is as fair and proper a way of arriving at an adjustment as we could find, and it is a method which we propose to follow in each subsequent year. I have nothing further to say, except to move the adoption of the report and balance-sheet.

Mr. George Freeman seconded the resolution, which, in the absence of any questions, was put and carried unanimously.

A vote of thanks to the Chairman closed the proceedings.

Coal and Iron in Cape Breton.

As a matter of interest to those concerned in Canadian development, we publish the notes of a well-known British iron-master, Sir Christopher Furness, on the Dominion Iron and Steel Company's plant in Cape Breton. We find these in a letter published in the London *Colliery Guardian* of November 8, the substance of which is given below:—

"In Cape Breton I have visited the whole of the works and collieries, and was struck with the magnitude of the undertaking, also the comprehensive and thorough manner in which everything is being carried on. There are two separate companies, one owning the collieries, about 50 miles of railway, and the port facilities; the other company owning the steel plant and the large number of coke ovens of the Otto-Hoffman type, very different from our old-fashioned, out-of-date beehives. The site chosen by the company is, in my opinion, unparalleled. They have an extensive frontage to the harbor, and for a considerable distance beyond the site of the steelworks is a natural inner harbor. At the piers they have built, the depth of water is 35 to 40 feet, and on these piers they have erected most up-to-date steam and electrically driven machinery and contrivances for rapid loading and discharg-

ing. The ore is brought from Wabana, where it exists in enormous quantities, and where vessels of 6,600 tons are loaded in 7 to 8 hours, making the return voyage in 30 hours, and the discharge is then effected in 7 to 8 hours, all of which figures I have verified by the logs of a captain of a 6,600 steamer discharging here. After discharge, the ore is carried from the discharging wharf to a heap and pockets about a quarter of a mile distant, opposite the blast furnaces, from which it is run on a belt and carried up. The steelworks are not yet complete, but they already employ in the present condition of affairs 3,500 men and cover about 250 acres. The coke ovens (of which there are 400) and blast furnaces are working, but I find with regard to the by-products, such as tar and sulphate of ammonia, they have yet to find a satisfactory market for the whole of these. The rolling, rail and plate mills are still in course of construction, and some little time must elapse before they are able to make a full quantity of steel plates and rails. Pig iron they are shipping in steamers carrying about 4,500 tons to Glasgow at a freight of about \$2 per ton, and at a lower price than Cleveland is shipping to that market.

"The details of the coal production will undoubtedly prove more interesting. They possess 160 square miles of coal-producing land, and computed roughly to contain 5,500,000,000 tons of coal. At present five pits are being worked, in addition to which they have nearly completed two more shafts, one at a depth of 860 feet, and the other 840 feet, which will produce over 6,000 tons per day, one 3,500 per day, the other about 3,000, making a grand total when all the pits are working of 16,000 tons per day. The men work every day except Sunday. The supply appears to be without limit, and the difficulty I foresee for them is to find an outlet for their total production, so as to keep the pits fully running. Up to the present practically their entire production has been sold to Canada and the United States, but they must now find other outlets, and will be bound to enter into competition with our north and south country coal in the Mediterranean markets, and in this they are being assisted by the policy of the present Government at home in taxing our exports. They employ about 5,500 men and boys, using machinery upon which I do not see they could improve, so that what many miners in Durham and Northumberland do on their backs, they do by machinery. In the first pit we visited, they employ 850 men and boys underground, who raise 3,000 tons per day. The shaft is sunk to a depth of about 200 feet. The coal is loaded below into trucks of 2 tons, which are hoisted to the surface, where, on arrival, they automatically tip on to a broad moving belt, on either side of which are two men. The coal slides on the screen, then on to what is termed the 'pickers' plate,' and from that down to the railway trucks. These trucks carry from 30 to 50 tons, and are taken along to the harbor, where they are shipped to the ports of Sydney and Louisburg, on their own railway. The average distance from either harbor to the pits is about 15 to 20 miles. In the second pit, the working is somewhat different, as the seam comes up very close to the surface. The car is loaded on to trucks carrying about 2½ to 2¾ tons, which are drawn up by an endless wire rope, and again tip automatically as described above on to a belt below, the truck, when empty, passing over the opening down a short incline on to a siding, where it starts on the return journey. The other pits are worked in one of these two ways, a difference being, however, projected at the new shaft, where the coal will be brought to the surface in trucks of 6 tons, the shafts being unusually wide. About 10 per cent. of the coal raised is gas coal, and the quality of their production is, they maintain, equal to any American coal except 'Pocahontas.' In conclusion, I may mention that the workmen, while they earn good wages, are able to turn out of the pits much more coal per man than we are able to do from any pit either in Durham or Northumberland. You will therefore see that with the advantages they possess of having acquired the land so cheaply (a large part cost nothing); with two splendid harbors; and no high railway rates for carriage to the water, also with an unlimited supply of coal, they are in a position to produce and deliver it f. o. b. at a figure quite out of the question for any of our collieries to compete with.

"Our railway companies in England will have to alter their methods if England is to hold her own in the industrial world. When I consider what the Northeastern Railway Company do, and compare their methods with those I see here, I realize our difficulties and deficiencies. Just fancy seeing 30 wagons carrying 50 tons each drawn by one engine, and then compare that with what is done on any of our Durham or Northumberland lines.

"I omitted to state that the seams vary from 7 to 10 feet, and the company can deliver the coal f. o. b. at less than \$1 per ton. The steel company will be able to make pig at less than \$6 per ton, steel blooms less than \$10 per ton, and steel rails at about \$12, so that you will see what we shall have to contend with. The ore runs about 50 to 52 per cent., and can be put into the works at about \$1.16 per ton. Ore is being sent abroad from Bell Island containing the above percentage.

COMPANY NOTES.

Le Roi No. II.—The manager cables 5th November:—"Monthly shipment of ore 4,456 tons. Contents 2,151 ozs. gold, 5,500 ozs. silver, 100 tons copper. Gross approximate value \$79,000. Estimated profit \$29,000."

Bosun Mines.—Telegram from the manager reports returns from smelter for 60 tons of galena shipped during the month of October, \$1,946.

B.C. Exploring.—Under date, 9th inst., Captain J. Argall states:—"Kamloops—The large lode, 40ft. wide, to the hanging wall shows up very fine and will average fully 6 per cent. copper throughout, with fair values in gold and silver. We have sold up to date approximately \$2,000 worth of ore. Frederick arm—We have encountered the ore body in the rise over No. 4 tunnel at 92 ft. This shows the ore to come down below No. 3 a distance of 77 ft., and then dip quite flat north-west into the mountain. We hope to connect this rise with the winz sinking below No. 3 within the next few days when we will be better able to decide the nature of the lode and where it may again be encountered in No. 4; at present, to say the least, it looks distinctly encouraging."

Ymir.—"During last month 80 stamps ran 704 hours (29 days 8 hours). Estimated profit on operating is \$25,900 (£5,340)."

Hall Mining and Smelting.—Output of Smelting ore from the "Silver King" for four-weekly period ending 21st October, 3026 tons, averaging 27.78 ozs. silver per ton and 6.50 per cent. copper. Approximate gross value of contents £19,150.

Whitewater—Cablegram from Kalso, British Columbia:—"During last month 4,900 tons have been milled, producing 483 tons of concentrates. Returns from smelter amount to \$9,250. The working loss is \$45 this will include fire insurance for the last half of this year, also taxes on ore extracted since the month of December. At present the ore production is increasing; the quality is improving."

The London and British Columbia Goldfields.—Cablegrams received from the Chairman, Mr. Oliver Wethered:—

"*Eza Group (Lanseau District).*—Present prospects do not justify any further expenditure whatever.

"*Enterprise.*—Everything gives me the greatest satisfaction. Fowler's opinion is, never looked as well as at present. Hope to start Concentration Works Compressor in about 20 days.

"*Whitewater Mine.*—Is looking well. I cannot estimate what is the margin of profit until three months' steady working.

"*Ruth.*—Prospects are undoubtedly good."

Velvet (Rosslund)—The general manager cables:—"Have cut vein adit level. The main shaft has been sunk to a depth of 406 feet. Have obtained ore high grade at No. 5 station along the footwall. Am not able to cut right through lode until completion of station."

Granby Consolidated.—It is expected now that the work of enlarging the Granby smelter to the capacity of 1,300 tons per day will not be completed before January 15th. The first instalment of two new furnaces, whose construction was delayed owing to machinists' strike in Chicago, reached here today. The balance of the sampler machinery has also arrived and is being put up. The new plant for the power house will be available as soon as the intake pipes are connected with the water flume. The task will not occupy more than a few days.

British Columbia Copper.—The company's mine is producing from 350 to 400 tons of ore daily. More stopes were opened at the 200-ft. level in October, and at the 300-ft. level the new plan of working by the pillar and stope system is now well advanced. The north drift, at the 300, is now about 490 ft. from the shaft. Three quarries in ore are worked from the surface. A machine shop has lately been put in equipped with planer, drill press, lathe, steam hammer, emery grinder. A Farrel rock crusher, with a capacity of about 800 tons, crushed to a maximum size of 6 in. in ten hours, has been ordered for the mine and a 90-h.p. Jenckes Machine Company's engine.

Consolidated Lake Superior Co.—At the adjourned annual meeting in New Haven, Conn., on November 18, the president reported that over 90 per cent of the stock of the Ontario-Lake Superior Company had been exchanged for the stock of the Consolidated since October 6, in accordance with the terms authorized by the stockholders. Directors were chosen, as follows: Edward J. Berwind, William L. Bull, and Charles E. Orvis, New York; H. A. Berwind, James Butterworth, W. P. Douglas, F. V. Douglas, John S. Freeman, Edward C. Lee, F. S. Lewis, John Pitcairn, S. M. Provost, Samuel Rea, T. C. Search, and James S. Swartz, of Philadelphia; F. H. Clergue, of Sault Ste. Marie, Ont., and Lynde Harrison, of New Haven. More than 590,000 shares of stock were represented at the meeting by proxy and 65,36 shares by stockholders present.

Baltimore & Nova Scotia Mining Co.—This company, successor to the Guffey-Jennings, late owners of the Lake Lode Mine, Cariboo district, has the vertical shaft down 650 ft. The company will probably not tap the lode again, until 750 ft. A winze has been sunk on the slope 300 ft. west of the shaft on the 500-ft. level to a depth of 90 ft. The vein here maintains its width and values. A large amount of other development work has been done.

Another vein apparently equally as valuable as the Lake lode, has been opened 700 ft. south, and is tapped by shallow shafts in 6 places, proving continuity for 1,100 ft.

The company will have in operation in some 6 or 8 weeks a 40-stamp mill, with all modern improvements, and will probably cyanide the tailings. The cost of the mill will be about \$60,000. A 14-drill compressor is being installed at the head works. The principal owners are Baltimore Md., men. The general manager is L. W. Getchell, and the secretary-treasurer is A. S. Dunham, of Boston.

Miocene Gravel Co.—Up to date over \$200,000 have been spent by the company in exploiting auriferous gravels in the old river beds at Harpers' Camp, Cariboo B.C. The bed-rock has proved to be deeper than was anticipated, and it has required a shaft 550 feet deep to reach it. It has now been reached, however, and but for the quantity of water to be handled, drifting would have been carried on during the past year. Mr. R. H. Campbell, who is in charge of the work, has been able, however, to test the ground and he has now assurance that in richness it will come up to his expectations, and yield ample reward to those who have provided the capital for the Company's operations. Mr. Campbell will complete the plant during the ensuing winter, and before many months elapse he expects to be bringing up gravel. He states that he will be able to handle about 500 tons a day, and at a very moderate estimate of gold to the ton of gravel, the result to the Company will be a very handsome profit.

Jewel Gold Mines, Limited.—Sinking the new shaft of the old workings is being pushed on, as is the running of cross-cuts at the 230-ft. level. Ore bins are being constructed, and ore is being hauled 4 miles to the railway, whence it is shipped to the smelters of B. C. Copper Company at Greenwood, and the Granby Company, at Grand Forks.

B.C. Chartered Company.—The ore shipments from the B.C. Mine to the British Columbia Copper Company's smelter, at Greenwood, during October totaled 3,750 tons. Prospecting from the lower levels of the mine with the diamond drill proceeded.

St. Eugene Consolidated.—There has been no change in the working force during the past week. There are 50 men engaged in development, 15 on the lull and 35 in the lower tunnel and shaft. The deep shaft is down 150 feet and in a few days cross drifting will commence.

Ymir.—Mr. Oliver Wethered, of the London & B.C. Goldfields, in a letter to the board of the Ymir Gold Mines, Ltd., gives a very gratifying statement of his opinion of the great value of the Ymir mine. The long tunnel, he states is in a distance of 1,500 feet out of a total of 2,100 feet and progress is being made at the rate of 150 a month. The shaft is down 700 feet and at 1,000 feet will intersect the long adit tunnel. As to the value of the ores the monthly remittances speak for themselves, and stoping has been done only down to the third level. All these results have been obtained from but a small portion of the property so a crosscut is being run from the shaft to intersect the vein on the Mugwump claim. The 80-stamp mill is doing excellent work and when the cyanide plant is completed, which will be about the end of the year, a greater quantity of ore can be put through as the coarser screens can be used. He advises the installation of more water power which has already been recorded.

Le Roi.—Returns for October:—"9,737 tons of ore shipped to Northport Smelter, containing 3,341 ozs. gold, 6,023 ozs. silver, and 131 tons copper. In addition 5,925 tons of ore from the dump were treated at the Trail Smelter, yielding a profit of \$24,603."

The British Columbia (Rosslund and Slocan) Syndicate.—In anticipation of the fourth ordinary general meeting, the report and accounts for the year ending December 31 last have been issued. The whole of the expenditure having been out of capital no profit and loss account has been prepared, but the company is now well equipped with funds. Of the nominal capital (£100,000) 47,423 shares are fully paid, and 33,721 shown are 12s. 6d. paid up. During the year under review the syndicate's energies have been principally devoted to the development of the Snowshoe Mine, and the work has progressed with most gratifying results. One additional claim, the "Pheasant," and two fractions, the "Fairplay" and "Alma," were purchased, and, together with the "Snowshoe," comprise an area of about 120 acres. The Snowshoe Group has been sold, however, and floated as a separate company. The St. Elmo Mining Company, in which the syndicate owns 1,000 shares, reports satisfactory progress, though it was somewhat retarded by the late Rosslund strike of miners. In the substantial block of freehold building land in Rosslund, the syndicate possesses a good property, but the directors decided not to deal with it in any way on account of the progress of the city of Rosslund being somewhat thrown back by the labor troubles, now over. The Goat River group of claims, which were under option to the syndicate, have been purchased, and the work necessary for Crown granting proceeded with. It was again decided this year to postpone the payment of the directors' fees. Regarding the syndicate's interests in the Yukon District, the principal work has been confined to the Whitman Gulch claims, which are favorably reported upon, as well as with regard to an hydraulic mining location, three miles in extent, on Uplands Creek, for which the syndicate has made formal application to the Government at Ottawa. Captain A. J. Corse Scott has resigned his position as a director, and the Board have elected Mr. Charles F. M. Scarisbrick, a large shareholder, to fill the vacancy.

Golden Crown Mines, Limited.—At a recent meeting, held a few days ago at Brandon, Man., it was decided to reopen the property, located 5 miles from Phoenix, adjoining the Winnipeg. The following directors were elected:—Judge Cumberland, president; G. R. Caldwell, vice-president; Senator Kirchoffer, Andrew Kelly, Frederick Nation and J. B. Curran, of Brandon; William L. Parrish, of Winnipeg; C. E. L. Jarvis, of St. John, N.B., and W. A. Fuller, of Spokane. The Golden Crown has not been working for about a year, pending reorganization. It has about 2,500 ft. of underground work done, has shipped in the neighborhood of 2,500 tons of ore, and is equipped with compressor and other machinery.

Granby Consolidated Mining and Smelting Company.—In a recent interview S. H. C. Miner, president of the company, in a recent visit stated that the company is adopting the "caving" system, which hitherto has not been applied to copper mining except in Utah. By means of large open cuts the company can break down the ore and load it upon the car with steam shovels, thereby obviating all timbering and pumping, and reducing to a minimum the costs. It is stated that the present capacity of the plant is to be increased to 2,000 tons daily. Two additional furnaces are to be built at Grand Forks, and also a converter.

London & Richelieu Mining and Smelting Company.—B. C. Riblet, of Nelson, who has the contract for the tramway for the 10,000-ft. tramway, has 25 men busy and expects to have the tramway finished by December 15th. The wagon road, extending about 9 miles up from Crawford Bay toward the mines, is a good one, and when the tramway is completed the ore will be conveyed to the end of the road, whence it will be hauled in sleighs to the landing. It is expected that an average output of 50 tons per day can be maintained. On the last ore shipped a smelter rate of almost \$14 had to be paid, but the company has just closed a contract with the Trail Smelter to treat 15,000 tons at \$7 per ton for freight and treatment on the ore landed at Crawford Bay.

Cordova Exploration.—This gold mine, near Madoc, is shipping bullion regularly. An immense air compressor will be installed at the dam and compressed air will be conveyed to the mine in iron pipes. This will furnish abundant power for all operations in connection with the mine and mill, and will certainly make the Belmont a unique mine in Canada for working on a large scale most economically in every detail. One of the consulting engineers of the company from London, England, is here giving his assistance in the matter.

British-Ontario Gold.—This company has been floated in London, England, by Col. J. S. Hillyer, formerly of Duluth, Minn., and has leased the Alice A. Mine for 99 years. The company agrees to mine 200 tons of ore daily. The directors are: Edward Coventry, London; Capt. R. B. Needham, Sussex; Col. W. S. Engledue, Tunbridge Wells; Col. F. McDonald, Surrey. The capital is £300,000.

Canadian Gold Fields—This company continues to ship regularly gold bullion and arsenic from its plant near Deloro. It is reported that the company has acquired a lease of the celebrated Dufferin Mine in Nova Scotia.

The Manitoba Union Mining Co.—This company, which was expected to work the gold mines in the New Klondike district of New Ontario, has been directing its energies to the development of cement and gypsum deposits, the former near Miami, Man., the latter on the shores of Lake Manitoba.

Bosun Mines.—Secretary reports, under date 4th November, 60 tons galena shipped in October, value \$1,946.

Fraser River Gold Dredging Company.—This company's dredge at Lytton is ready. Manager H. Graham had hoped to start it sooner, but owing to the delay in the arrival of machinery could not. Some new buckets have replaced old. The gold-saving tables and washing appliances have undergone extensive changes and repairs. Mr. Graham has with him one or two experienced New Zealand dredger men.

NEW COMPANIES.

BRITISH COLUMBIA.

Pontiac Copper Mines, Limited.—Incorporated 24th October, 1901. Authorized capital, \$1,500,000; in shares of \$1.00. Formed to acquire and work the "Pontiac," "Lady May," and "Kenilworth" mineral claims, situate on Red Mountain, in Yale District, British Columbia.

Atlin and Canadian Development Co., Limited.—Incorporated 30th October, 1901. Authorized capital, \$1,000,000; in shares of \$1.00 each.

ONTARIO.

Peat Industries, Limited.—Incorporated 16th October, 1901. Authorized capital, \$500,000; in shares of \$1.00 each. Head office: Toronto, Ont.

Log Cabin Gold and Copper Co., Limited.—Incorporated 23rd October, 1901. Authorized capital, \$3,000,000, in shares of \$1.00 each. Head office: Toronto, Ont.

Westerfield Mining Investment Co., Limited.—Licensed 23rd October, 1901. Authorized capital, \$100,000. Head office: Geo. H. Draper, barrister, Rat Portage, Ont.

Canada Iron Furnace Co., Limited.—Licensed 31st October, 1901. Head office: John J. Drummond, Midland, Ont.

Algoma Queen Mining Co.—Licensed 7th November, 1901, as an Extra Provincial Company, to carry on the operations of a mining, milling, reduction and development company in Ontario. Head office: J. E. O'Connor, barrister, Windsor, Ont.

GREAT BRITAIN.

The Tye Copper Company, Limited.—This company was formed in April, 1900, for the purpose of acquiring certain copper gold mineral claims on Mount Sicker, Vancouver Island, British Columbia, and known as the "Tye," "Herbert" and "Magic Fraction" claims. These properties have been since, the present prospectus informs us, duly vested in the company, the consideration paid to the vendors, a development company, being 80,000 £1 shares. In April of last year a prospectus sought subscriptions for 20,000 shares. These have been allotted and are fully paid. The company claims to have spent nearly £20,000 in further development and machinery, &c. It is now proposed to purchase a site for a smelter at \$20 an acre, with the right to take water from an adjacent lake, and to acquire certain contiguous claims. The purchase price, which is disclosed as well as the names of the owners and the moneys they are each to receive, appears reasonable. Subscription is now sought to an issue of 80,000 £1 shares, upon each of which a commission of 40 per cent. is to be paid. Inasmuch as it is stated that the company's consulting engineer has made a calculation, from which a profit of 30 per cent. per annum should be made on the total capital of £180,000, and that a sufficient body of ore has been proved to keep the smelter employed for two years, those who are fortunate to get in on the ground floor should not do amiss.

Dominion Development Syndicate, Ltd.—Registered 17th October. Capital £1,000, in £1 shares. Objects: To acquire any lands, etc., in Canada or elsewhere, and to carry on the business of financiers, contractors for public and other works and conveniences, company promoters, miners, ship-builders, railway and tramway owners, wharfingers, farmers, cattle dealers, etc. No initial public issue. Registered office, 11, Queen Victoria Street, E.C.

MISCELLANEOUS

CANADA'S UNDEVELOPED ESTATES.—In view of the activity of American capitalists in Europe and the boundless ambition which appears to animate the industrial and financial giants of the States, the question of how far the capitalist of the States should be permitted to absorb the comparatively embryonic industrial life of Canada is becoming a more practical Imperial problem every day. It was gratifying to hear the other day says "Financier," that a group of British financiers were endeavouring to acquire certain industrial interests in the United States as a measure of self-defence. Meantime, it should not be for an instant forgotten that the "undeveloped estate" of Canada is far and away the most precious asset of the British Empire.—*Science and Art of Mining.*

NICKEL MINING IN NEW CALEDONIA.—For the first six months of the year the mineral exports have amounted to 60,599,223 kilos of nickel, 3,767,691 kilos of chrome, and 2,272,656 kilos of cobalt. A rough idea of their destination is obtained from the figures for the seventh month. Of six

million kilos (approximately) of nickel one and three-quarter million kilos went to France, and the balance to America. Two and a-half million kilos of chrome were disposed of to Holland and Australia in the proportion of about a hundred thousand kilos to the latter and the remainder to the former. In the matter of cobalt, France took about two-thirds, and Australia one-third of a consignment of 126,000 kilos.

MINERS' PICK-BLADE CARRIERS.—Two or more blades are laid in the box in layers of two—the vertical key or plate is inserted in the slot on top and pushed down until its lower extremity rests upon the pick-blade, the swinging plate or locking bolt is pulled round so that it enters the slot in the key plate now standing opposite to it, thus forcing the key plate back against the side of the box and into the groove or guide provided the padlock or other fastener is passed through the hole in the bent-up end of the locking plate and through the hole in the handle plate or boss, thus securing the key plate and so the pick-blades.—*Colliery Guardian.*

FOR SALE.

Valuable Mining Property

AT NORTH BEND, B. C.

TENDERS will be received by the OTTAWA HYDRAULIC MINING AND MILLING COMPANY, LIMITED LIABILITY, addressed to the undersigned, up to Monday the 6th day of January, 1902, for the purchase of their mining property and water rights at North Bend in British Columbia and which may be known as that piece of ground situate at Boston Bar on the east side of the Fraser River and formerly known as mining ground leased to John Webb, containing sixty-four acres, more or less, and the grant of water right to use five hundred inches of water out of Four Mile Creek, opposite Lyons Ranch, near North Bend, together with a flume about four miles long, extending from Four Mile Creek to the mines of the Company.

There is situate upon the mining land a portable sawmill, two monitors, a large quantity of iron piping, and also mining tools and supplies which will be sold with the mine property.

The Vendors are not to be bound to accept the highest or any tender.

For particulars apply to WILLIAM C. MCGILLIVRAY, New Westminster, B.C., or to the undersigned.

PERKINS, FRASER & BURBIDGE.

64 Sparks St., Ottawa.

Solicitors for the Vendors.

Position Wanted.

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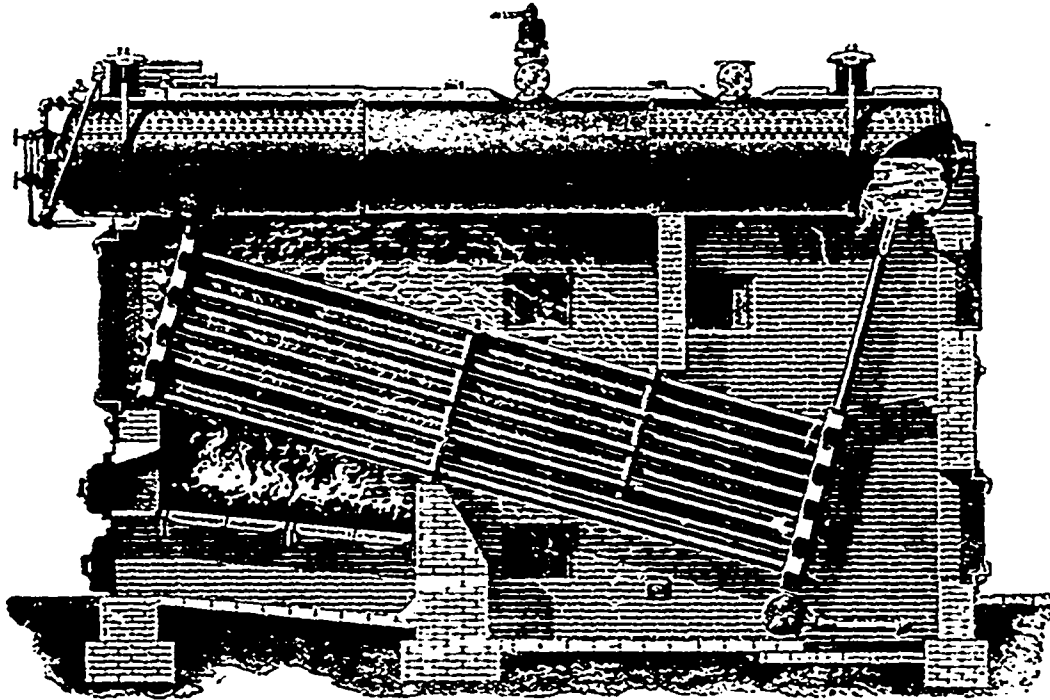
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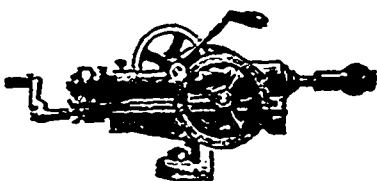
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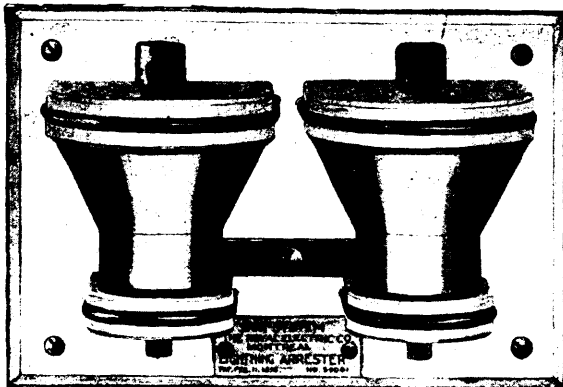
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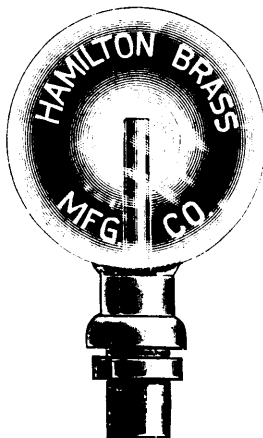
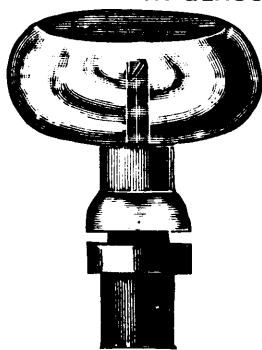
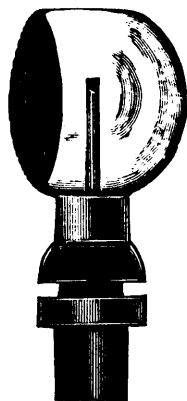
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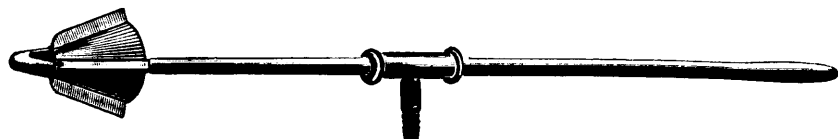
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Iron in large bodies of magnetite and hematite : copper in sulphide and native form ; gold, mostly in free milling quartz ; silver, native and sulphides ; zincblende, galena, pyrites, mica, graphite, talc, marl, brick clay, building stones of all kinds and other useful minerals have been found in many places, and are being worked at the present time.

In the famous Sudbury region Ontario possesses one of the two sources of the world's supply of nickel, and the known deposits of this metal are very large. Recent discoveries of corundum in Eastern Ontario are believed to be the most extensive in existence.

The output of iron, copper and nickel in 1900 was much beyond that of any previous year, and large developments in these industries are now going on.

In the older parts of the Province salt, petroleum and natural gas are important products.

The mining laws of Ontario are liberal, and the prices of mineral lands low. Title by freehold or lease, on working conditions for seven years. There are no royalties.

The climate is unsurpassed, wood and water are plentiful, and in the summer season the prospector can go almost anywhere in a canoe. The Canadian Pacific Railway runs through the entire mineral belt.

For reports of the Bureau of Mines, maps, mining laws, etc., apply to

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Commissioner of Crown Lands,

or

THOS. W. GIBSON,

Director Bureau of Mines,

Toronto, Ontario.



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—AND—
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GOLD AND SILVER.

Under the provisions of Chap. 1, Acts of 1892, of Mines and Minerals, Licenses are issued for prospecting Gold and Silver for a term of twelve months. Mines of Gold and Silver are laid off in areas of 150 by 250 feet, any number of which up to one hundred can be included in one License, provided that the length of the block does not exceed twice its width. The cost is 50 cents per area. Leases of any number of areas are granted for a term of 40 years at \$2.00 per area. These leases are forfeitable if not worked, but advantage can be taken of a recent Act by which on payment of 50 cents annually for each area contained in the lease it becomes non-forfeitable if the labor be not performed.

Licenses are issued to owners of quartz crushing mills who are required

to pay Royalty on all the Gold they extract at the rate of two per cent. on smelted Gold valued at \$19 an ounce, and on smelted Gold valued at \$18 an ounce.

Applications for Licenses or Leases are receivable at the office of the Commissioner of Public Works and Mines each week day from 10 a.m. to 4 p.m., except Saturday, when the hours are from 10 to 1. Licenses are issued in the order of application according to priority. If a person discovers Gold in any part of the Province, he may stake out the boundaries of the areas he desires to obtain, and this gives him one week and twenty-four hours for every 15 miles from Halifax in which to make application at the Department for his ground.

MINES OTHER THAN GOLD AND SILVER.

Licenses to search for eighteen months are issued, at a cost of thirty dollars, for minerals other than Gold and Silver, out of which areas can be selected for mining under lease. These leases are for four renewable terms of twenty years each. The cost for the first year is fifty dollars, and an annual rental of thirty dollars secures each lease from liability to forfeiture for non-working.

All rentals are refunded if afterwards the areas are worked and pay royalties. All titles, transfers, etc., of minerals are registered by the Mines Department for a nominal fee, and provision is made for lessees and licensees whereby they can acquire promptly either by arrangement with the owner or by arbitration all land required for their mining works.

The Government as a security for the payment of royalties, makes the royalties first lien on the plant and fixtures of the mine.

The unusually generous conditions under which the Government of Nova Scotia grants its minerals have introduced many outside capitalists, who have always stated that the Mining laws of the Province were the best they had had experience of.

The royalties on the remaining minerals are: Copper, four cents on every unit; Lead, two cents upon every unit; Iron, five cents on every ton; Tin and Precious Stones, five per cent.; Coal, 10 cents on every ton sold.

The Gold district of the Province extends along its entire Atlantic coast, and varies in width from 10 to 40 miles, and embraces an area of over three thousand miles, and is traversed by good roads and accessible at all points by water. Coal is known in the Counties of Cumberland, Colchester, Pictou and Antigonish, and at numerous points in the Island of Cape Breton. The ores of Iron, Copper, etc., are met at numerous points, and are being rapidly secured by miners and investors.

Copies of the Mining Law and any information can be had on application to

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Mining concessions are divided into three classes:—

1. In unsurveyed territory (*a*) the first class contains 400 acres, (*b*) the second, 200 acres, and (*c*) the third, 100 acres.

2. In surveyed townships the three classes respectively comprise one, two and four lots.

All lands supposed to contain mines or ores belonging to the Crown may be acquired from the Commissioner of Colonization and Mines (*a*) as a mining concession by purchase, or (*b*) be occupied and worked under a mining license.

No sale of mining concessions containing more than 400 acres in superficies can be made by the Commissioner to the same person. The Governor-in-Council may, however, grant a larger extent of territory up to 1,000 acres under special circumstances.

The rates charged and to be paid in full at the time of the purchase are \$5 and \$10 per acre for mining lands containing the superior metals* ; the first named price being for lands situated more than 12 miles and the last named for lands situated less than 12 miles from the railway.

If containing the inferior metal, \$2 and \$4 according to distance from railway.

Unless stipulated to the contrary in the letters patent in concessions for the mining of superior metals, the purchaser has the right to mine for all metals found therein ; in concessions for the mining of the inferior metals, those only may be mined for.

*The superior metals include the ores of gold, silver, lead, copper, nickel, graphite, asbestos, mica, and phosphate of lime. The words inferior metals include all other minerals and ores.

Mining lands are sold on the express condition that the purchaser shall commence *bona fide* to mine within two years from the date of purchase, and shall not spend less than \$500 if mining for the superior metals ; and not less than \$200 if for inferior metals. In default, cancellation of sale of mining lands.

(*b*) Licenses may be obtained from the Commissioner on the following terms:—Application for an exploration and prospecting license, if the mine is on private land, \$2 for every 100 acres or fraction of 100 ; if the mine is on Crown lands (1) in unsurveyed territory, \$5 for every 100 acres, and (2) in unsurveyed territory, \$5 for each square mile, the license to be valid for three months and renewable. The holder of such license may afterwards purchase the mine, paying the prices mentioned.

Licenses for mining are of two kinds : Private lands licenses where the mining rights belong to the Crown, and public lands licenses. These licenses are granted on payment of a fee of \$5 and an annual rental of \$1 per acre. Each license is granted for 200 acres or less but not for more ; is valid for one year, and is renewable on the same terms as those on which it was originally granted. The Governor-in-Council may at any time require the payment of the royalty in lieu of fees for a mining license and the annual rental—such royalties unless otherwise determined by letters patent or other title from the Crown, being fixed at a rate not to exceed three per cent. of the value at the mine of the mineral extracted after deducting the cost of mining it.

The fullest information will be cheerfully given on application to

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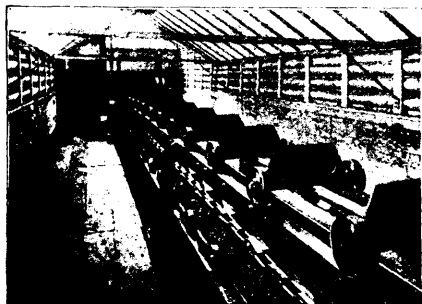
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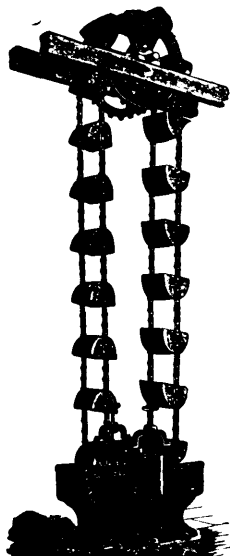
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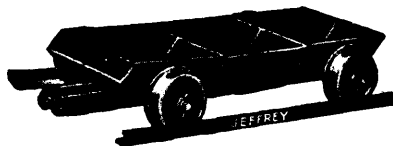


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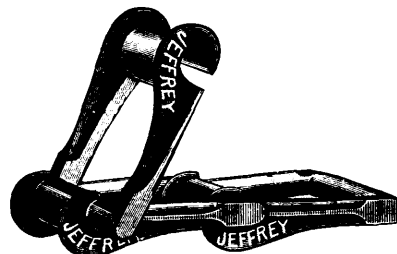
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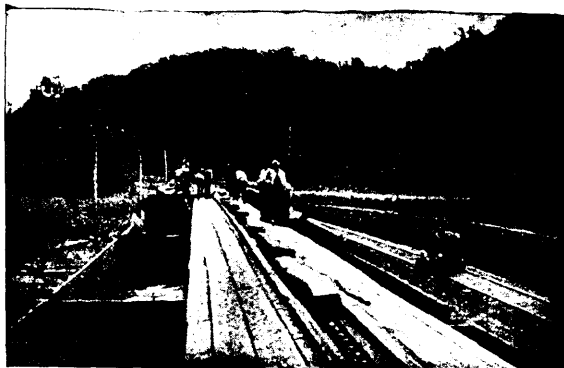
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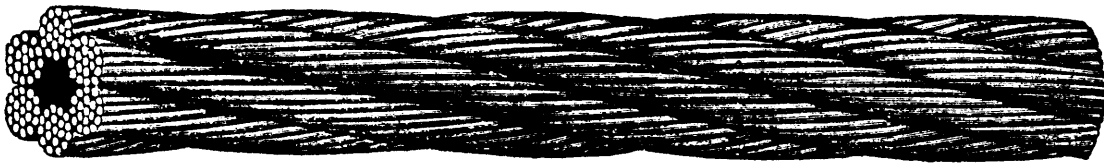
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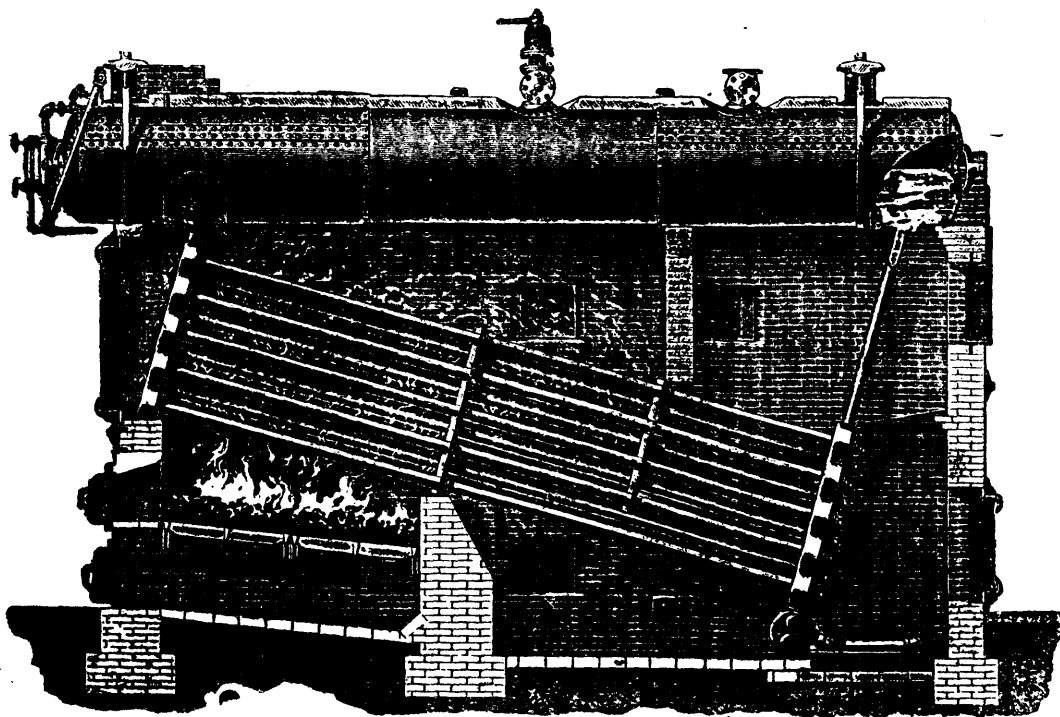
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