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# THE CANADIAN MINER

TORONTO, ONT., MAY 8, 1897.

No. 17.

Vol. I.

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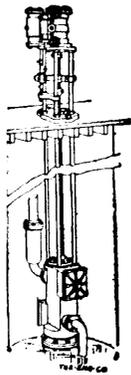
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# The Canadian Miner.

VOL. I.

TORONTO, MAY 8, 1897.

No. 17.

## HYDRAULIC MINING.

THE SAFEST KIND OF GOLD MINING — HOW IT IS CONDUCTED IN BRITISH COLUMBIA.

(Written for THE CANADIAN MINER.)

At the present time quartz mining may be said to have absorbed the interest, and practically the capital, available for investment in mining ventures on this continent. Certainly, several extensive hydraulic properties have been opened up in British Columbia during the past two years, but the capital with which this has been done was secured before the present developments throughout the Kootenays and elsewhere within that province induced the influx of men and money into the country. The success which has attended the development of the ledges of that country has, for the time, diverted attention from the placer deposits into the more fashionable and now popular channels of quartz mining, causing the hydraulic propositions of the country to be overlooked,

of interest, especially as the gravel deposits available are of wonderful extent, and are just as certain to be worked for the gold values they contain, as that they are in existence there to-day.

Men familiar with this class of mines aver they are the safest in the world, for the simple reason that they can be tested, and their value ascertained before any money need be expended in their development.

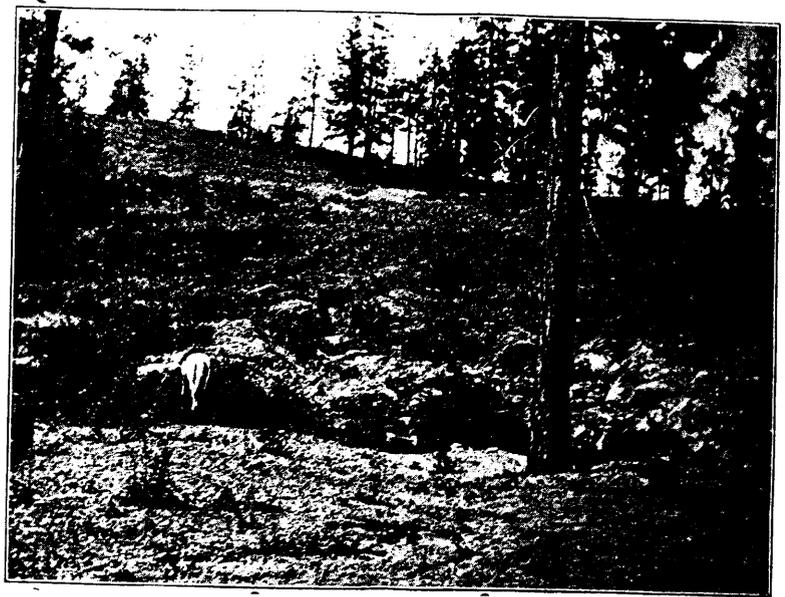
The prime necessities to ensure success in hydraulicking, is a deposit of auriferous gravel of sufficient extent and value to justify the expense of operating the property. A supply of water of sufficient volume, and which can be brought on the ground at a height that ensures the necessary hydrostatic pressure, and a dumping ground lying below the level of the bed rock upon which the deposit to be worked is situated, of sufficient extent to contain the tailings as they escape from the sluices, without danger of filling up, and thus blocking operations, as it is evident that in order to remove a bank of gravel by

cleaned up, the gold saved weighed, and when its value is known, the average value of the bank per cubic yard from surface to bed rock at the point where the shaft has been sunk, ascertained by simply dividing the number of cents' worth of gold taken in the clean-up by the number of cubic yards of gravel washed from the shaft.

In addition to this, tests are continually made of the different layers of gravel found as the shaft is being sunk, and a plan made showing these different layers, and their values, from top to bottom of the shaft, so that when the work is finished, it is not only known accurately what the value per cubic yard of the gravel is, but exactly where the values lie in the different pay streaks, whether near the surface or on bed rock. A sufficient number of these shafts are sunk to determine the value and depth of the gravel to be worked, and the position of the bed rock upon which the deposit rests, so that if this work is properly done, the exact value of any bank of gravel, suitable for



Chinese Miner at work.  
Allison Ranch Bench in the Background.



Shewing open cut, Locating Bedrock, on Claim No. 2, 100 Feet above the Tulameen River.

and allowed to lie idle, in spite of the fact that, with proper development and management, these properties will pay immensely. There is no doubt but that the attention of investors will again be turned towards the operation of hydraulic mines, as they have in the past added billions to the gold product of America, and the immense banks of alluvial gravels known to exist throughout British Columbia, and possessing the necessary natural facilities for rapid and economical working, will not long be allowed to lie idle. A return of public attention to this class of mining is all that is necessary to ensure the establishment on a permanent footing of the hydraulic mines of the Pacific Coast. It used to be California for hydraulic mines, but for this class of investment, in the future, capitalists will seek among the valleys of British Columbia, and not in vain, either.

As a rule much ignorance prevails in regard to hydraulic mining, and a short description of the method of operating may be

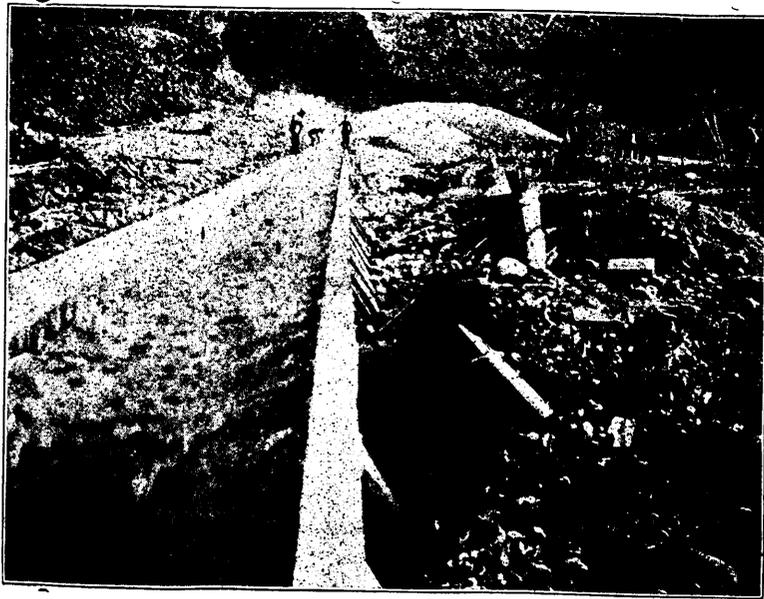
water in a quick and economical manner, it must be from the level upon which it is situated, to a lower, and if the latter is not of sufficient size, of course it will be filled up before the upper level has been worked off, and operations necessarily blocked.

The first thing, then, necessary to establish a successful hydraulic mine, is to find a suitable deposit of auriferous gravel, and the next to ascertain the extent of available dumping ground; and if this is satisfactory, it is only necessary to be assured of a constant and adequate water supply, which can be utilized on the ground, under sufficient pressure to ensure the rapid cutting and removal of the bank to be mined.

All this can be easily ascertained, and when satisfactory, justify the testing of the banks to be worked, to determine their value per cubic yard. For this purpose shafts are sunk at intervals throughout the property, from surface to bed rock, and the earth, gravel, etc., taken out, measured and carefully put through sluices, which are then

hydraulicking, is known with sufficient accuracy, when considered in connection with the water supply, and available dumping ground, to settle at once its value as a hydraulic proposition.

The position and character of the surface of the bed rock underlying the deposit of gravel it is proposed to work, will have been ascertained, when the different shafts have been sunk throughout the property. This is important, as in opening a mine of this kind it is necessary to make a cut in the bed rock, to form a race, into which the gravel falls or is washed by the water, and thence down into the sluices, which are carried out from the face of the rock, at the mouth of the race, to which they are joined, as far as necessary. In working a cut through a gravel bank of this kind, the race is kept clean and even, and of a size proportioned to the amount of water to be used, and also put in with sufficient grade to insure a rapid current capable of carrying along all the gravel and smaller boulders that may be swept into it. The



*Hydraulic Monitors with Sluice Box at work.*

bed rock on each side of the race is also kept clean and even, and boulders too large to be sent through the sluices with the gravel, are piled up, back on the space already cleared. The bed rock is washed by the stream from the monitor, and afterwards gone over by men whose business it is to clean it perfectly, which they do by picking and scraping the surface, and cleaning out crevices, which always retain a certain quantity of gold. While one side of the race is being cleared of large boulders, and bed rock cleaned up, the water is turned on the opposite side, and thus the men work without risk of wetting, or danger, always.

The sluices are a most important feature of this business, as it is in them the gold is caught the bank ahead is being worked for. They are generally about four feet wide, built on solid foundations, and having a grade of from six to nine inches to every twelve feet in length. Where lack of grade through insufficient dumping room is encountered, the grade of the boxes may be less, say four inches to each twelve feet of sluice, but at this grade the sluices cannot carry off near the amount of gravel they would with the steeper grade, and what is also of the greatest importance, the heavier matter, such as black sand and small iron rock, will settle on the riffels in the slower current, and thus prevent a large proportion of the finer gold from ever reaching the riffels, or coming in contact with the quicksilver, while the swifter current carries the stuff along, keeping the riffels clear, and the moment a color of gold strikes the bottom—where it will certainly go if the way is clear—it settles in the riffels or is caught by the quicksilver distributed there for that purpose.

Riffels, with which sluices are provided for the retention of the gold, are made, as a rule, by placing a row of blocks, each about ten inches square, on end across the bottom of the box, commencing at the head of the sluice. When the first row of blocks are in place, a nail is driven into each block, about three inches above the floor of the sluice, and on these nails a strip one by one and-a-half inches in size is laid. The next row of blocks, provided also with a nail each, which fits under the cross piece, is placed firmly against it, and so on, alternately, a row of blocks and a dividing strip of lumber, the ends of which go under cleats on the sides of the boxes, so that when finished, the bottom of the sluice boxes are paved with rows of blocks, with an inch space open

between each row—the cross piece between the blocks not coming within three inches of their top—which forms the riffel in which the gold is caught. When the run is commenced the finer stuff only is allowed to go through until the riffels become packed, and solid, by the settling of the finer gravel and sand in the spaces. This requires care for the first half day or perhaps longer according to circumstances. When the riffels have become sufficiently packed the quicksilver is then put in, and remains on top where it catches the finer particles of gold that otherwise would escape had it not been present. When the quicksilver settles out of sight in the riffels more is added, and it is absolutely necessary that in working fine gold deposits this matter receive careful attention. Well regulated sluices that are tight, and have sufficient grade to enable them to run clear, will save ninety per cent. of the gold contents of a gravel bank, while ill regulated, poorly built ones, mean heavy loss, if not ruin, to any property upon which they are run.

The water supply, of course, has been provided before the mine is opened up. In working the heavier gravel banks, where the hydraulic features are favorable, and where the values per cubic yard may be low, say five to seven cents per yard, a heavy volume of water, large sluices, and sufficient dumping ground are necessary to ensure success. It therefore stands to reason that if poor ground is profitable with a heavy head of water, that richer ground will yield relatively better returns when worked under the same conditions, as the whole question of profits is due to the speed with which the bank can be brought down and sent through the sluices. It will therefore be evident that it is of importance to obtain the greatest possible supply of water with which to operate these properties.

In bringing on water it is always wise that it be at as great a height as possible above the deposit to be worked, as by that means not only the greatest pressure is obtained for working at once, but other mines also may be supplied, thus adding to the ditch line itself a greater value.

At the end of the ditch line, immediately over the deposit to be worked, a pressure box is built, which is simply a large tank about six by twelve feet, and six to eight feet deep, with a partition near the centre to prevent sand and gravel that may be brought down by the ditch getting into the pipe which leads from the further end of the pres-

sure box, down the hill to the spot near the face of the bank where the monitor is placed to which it is firmly attached.

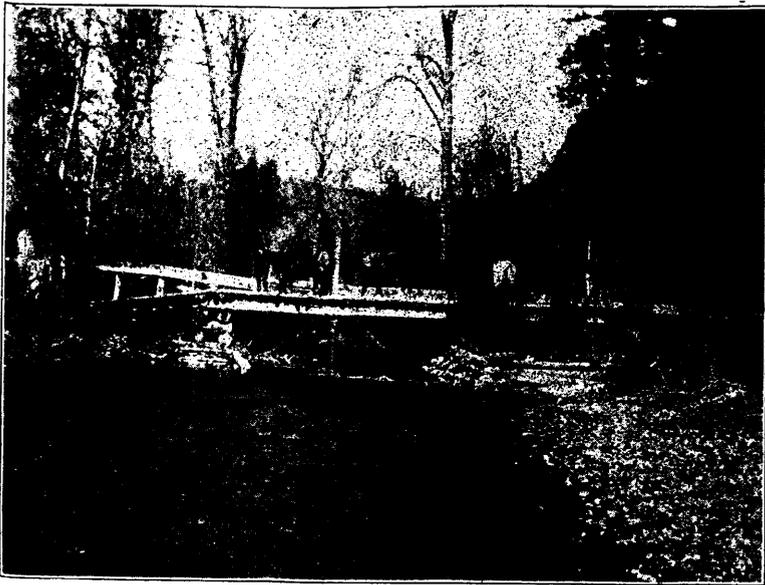
This pipe line from the pressure box down to the monitor is firmly anchored to prevent the pressure of water within it from displacing it. The monitor is simply a double jointed nozzle, capable of being moved in either a horizontal or vertical direction, and by means of which the stream of water is directed against the bank, undercutting it on the surface of the underlying bed rock, until a cave takes place, which is then washed by the direction of the stream of water from the nozzle into the bed rock race from whence it passes, as already described, down through the sluices and out on the dumping ground below. During its course through the race and sluices, the finer gravel and cemented stuff, which occurs to a greater or less extent in all heavy banks, is ground and crushed by the heavier stones and small boulders sent through the sluices, thus freeing much gold that would otherwise go into the dump and be entirely lost.

The cost of operating a hydraulic mine depends on circumstances, and varies from one and a-half to three cents per cubic yard. The addition of undercurrents, and grizzlies, are at times found necessary, and where the conditions are favorable to their introduction, it is wise to have them, the former to catch the smaller particles of fine gold that may otherwise escape, and the latter to throw out at some favorable point along the line of sluices, the larger rocks and boulders.

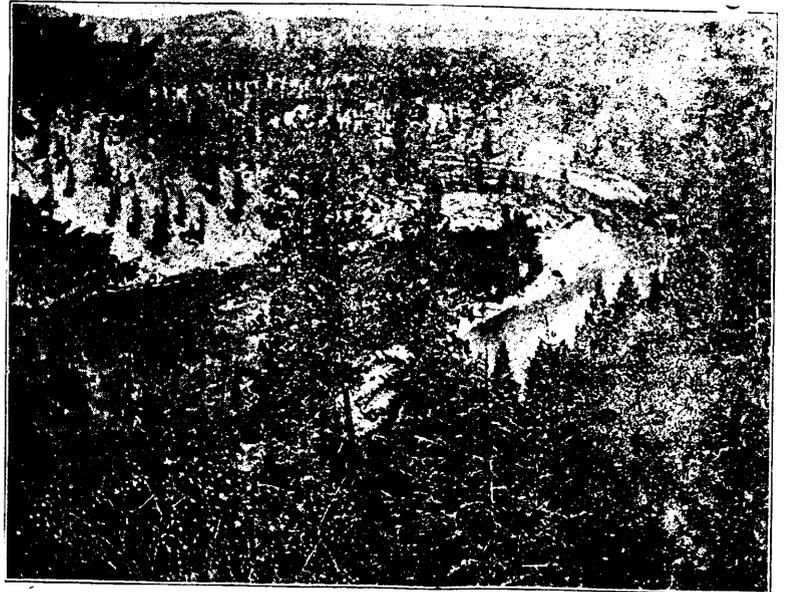
To clean up—which is done by large concerns only when necessary—the heavy head of water is turned off, the races cleaned down into the sluices, and the head block in the upper end of the first box is taken out. A light stream of water is kept running through at the same time. The blocks composing the riffels as they are taken up are each washed and placed out on the side of the sluices until the first two or three boxes have been cleared. It is usual to leave the first two or three boxes free from quicksilver, and the gold lodged there will be washed down along with the black sand and fine gravel which packed the riffels, against the first row of blocks left standing across the boxes. The coarser gravel and as much of



*Steel Pipe Line Conveying Water to Monitors.*



One Mile, or "Graveyard" Creek. From Photograph taken October 25, 1895, at end of a dry season. Creek measuring 30 Feet Wide, Average Depth One Foot.



Looking down the Tulameen River from one mile above the Allison Ranch Properties.

the sand as possible is washed on over the riffels still standing, and what is left in the bottom taken up along with the gold into gold pans, and panned out in the ordinary way.

The remainder of the riffels are then taken up as before, and as the quicksilver, containing the amalgam, collects into pools along the bottom of the sluices, it is taken up into gold pans, the sand washed from amongst it, and the quicksilver itself strained through a piece of good buckskin, retaining the gold in the form of amalgam, which is placed in an open retort over a fire, the heat driving off the quicksilver adhering to the gold, which is left behind in the bottom of the retort. The next proceeding is to clean the gold and weigh it, to ascertain its value, and when that is done and the gravel put through the sluices during the run measured, the yield per cubic yard is easily calculated and the cost of operation also arrived at, as this is the basis upon which calculations are always made by hydraulic miners.

It is safe to say that there is no class of prospect in which money can be invested with the same certainty as to future returns, as a hydraulic proposition that has been thoroughly tested, for where the prospecting work has been properly done, the value of the deposit in question must be known, and the profits available under good management estimated with a degree of accuracy almost impossible in connection with any other undertaking.

The different views accompanying this article were mostly taken on and near the property of the Allison Ranch Hydraulic Company, in the Similkameen Valley, at Princeton, and may serve to give those unacquainted with British Columbia some idea of the general appearance of one of the most beautiful of the interior valleys of that Province.

—W. C. McDOUGALL.

### CHLORINATION REVIVAL.

It seems remarkable, says *Mining Industry and Review*, of Denver, that chlorination which has been known for a good many years as a successful method of treating gold bearing ore, was so long in being introduced generally in gold mining regions. It originated about fifty years ago, at the Freiburg University, and was known for many years as the Plattner process, getting its name from its discoverer. It was ten years after its discovery before it was

introduced in America, it being then tried at Grass Valley, Cala., where it has been in use ever since. It was soon introduced in other places in that state, and has been in constant, though not general, use there. Its success should have stamped it as suitable for use under many conditions. It made its first appearance in Colorado in Gilpin county, where a Mr. Cash tried it on a small scale, but failed through not roasting the ore properly. In 1870 a mill was erected on the Ni Wot mine of Boulder county to treat tailings from the Ni Wot mill, and it treated over 300 tons, being all the tailings there were at the mill, saving 92 per cent. of the value. There the first Bruckner furnace ever erected was used for roasting, Mr. Bruckner, the inventor, starting it. After treating the tailings, the mine not producing any more, it was abandoned. In those days the old Plattner process was used. The gas was generated from common salt, and piped into vats charged with ore. These vats had false bottoms, through which the leach water was strained into vats, where the gold was precipitated with iron sulphate. This same old pro-

cess is still in use in California on a small scale. The time required to treat a two-ton charge in a vat was about 30 hours. Now the chloridizing is done in barrels, holding six to ten tons, and the chlorine gas is generated in the barrel from chloride of lime. This shortens the time and cheapens the process, though it is doubtful if the saving is much greater than by the old method, when it was perfectly conducted. Now the chlorination process is in use in nearly every mining state and territory.

It is noticeable that at the Mount Morgan mine in Queensland, where the barrel method was used, it has been discarded and vats are again used. The reason given is a better saving, though it is said that chlorine water instead of gas is used.

To day chlorination and cyanide methods are both popular and successful. There is an apparent revival of wet methods since the discovery of cyanide, though a few years ago they were apparently falling into disrepute. Chloridizing, roasting of silver ore, and leaching, which twenty-five years ago had quite a boom, is also being revived, especially in Mexico.



Looking up Stream, one mile below Allison Ranch Property.

# The Canadian Miner.

ISSUED ONCE A WEEK

AND

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## THE SITUATION IN ONTARIO.

IN Toronto and many other cities and towns in Ontario the investing public has shown of late a slight but significant feeling of exhaustion, so far as its powers of putting money into gold mines are concerned. The gold mining brokerage business is a little "flat"—in fact, we might truly say very "flat"; and some of our brokerage firms are looking for pastures new to which to extend their grazing grounds. A few mining stocks are gaining, though transactions between broker and buyer are fewer by far than a few months ago, but these stocks are almost invariably those of exceedingly promising prospects or actually developed and paying mines. Even of this latter class of properties a "slump" is in many cases noticeable. The public are getting wary, and stocks of companies with prospects however good, but little developed, or where the promoters obtain an undue proportion of the stock, have with few exceptions fallen heavily. Some of these companies are practically dead, and beyond hope of revival, on their old basis at least. The *ipse dixit* of a Board of Directors can no longer advance the price of shares without due cause shown to the investors—at least it cannot with hope of any considerable success.

The symptoms are such that our brokers and sound mining companies would do well to heed. Gold mining is here to stay, and as a large and very important and rapidly increasing industry. But the continuing of offering low-priced shares of companies not representing adequately developed prospects or giving an undue proportion of the stock and its entire control into the hands of the promoters can only retard our mineral development, hurt sound companies already established or that may be established in the near future, and lessen the business and profits of the brokers themselves. A blank refusal to handle stocks of companies whose prospects, organization and position, have not been thoroughly examined and found to

be satisfactory is the only method by which proper activity in the encouragement of mining can be maintained. Weed out; the weeds are numerous.

## WHEN YOU FIND GOLD, KEEP COOL.

PEOPLE should keep their heads cool if they find a small vein of gold on their properties. There are probably tens or even hundreds of thousands of gold veins to be found in Ontario, but only a small proportion of these are likely to be worked and a still smaller proportion likely to pay if worked. Gold discoveries are now reported from Matchedash in Simcoe county, and further west in Peterboro county than gold has hitherto been known to exist. This is only what might have been expected in the mineral belt reaching from Lanark westward through Frontenac, Addington and Hastings. It may signify much or little. The presence of even a small outcrop of gold ore justifies further prospecting in the neighborhood, for larger and possibly profitable veins may be found in the neighborhood. But it would be foolish for a farmer or business man to neglect his business or become excited over these discoveries. They are very common in gold regions. Cripple Creek afforded sad and significant evidences by the thousand of the vanity of great expectations built upon little discoveries of gold. Of the famous Witwatersrand gold belt in the Transvaal, only ten miles out of thirty are worked with profit. Ontario has hundreds of rich and large veins already discovered and awaiting money for development, and only very promising discoveries of the near future are likely to attract the necessary capital. There are a few companies that have been formed by excited people, without due regard to the facts of the case; but this fact should not encourage more ventures of the kind. Assays too, we would again warn the uninitiated, are, while useful, comparatively unimportant unless other indications are favorable to the existence of a large and continuous body of ore.

## THE PROSPECTS AT RAT PORTAGE.

A RAT PORTAGE correspondent of the *Winnipeg Free Press*, discussing the situation at Rat Portage, says there is room for many people this season around the Lake of the Woods. There is no boom yet, but much activity. Writing of the present and of the future, he says:—

Look at the magnitude and extent of the field wherein gold has so far proved to be present in paying quantities, and consider the amount of capital, representative capital, already invested here. The Foley and Ferguson mines, the Hammond-Folgerdyke, the Empress, Saw-Bill, Golden Fissure, Black Fly, H. P. 301, the Scramble, Black Sturgeon, Sultana, Regina, Master Jack, Mikado, Yum Yum, Nankapoo, Sweden, Bald Indian Boy, Trojan, La Mascot, Cornucopia. I could run off a long string of names upon which active operations will be carried on this summer. I could easily indicate a number of others which will be equipped with

outfits of costly machinery. I could point out that companies like the Mines Contract Company, the Gold Explorers of Canada, the Engledue people, Sir Roderick Cameron and any number of others are already interested in the country and furthermore draw attention to the fact that a big stamp mill and reduction works is to be built on the Dick & Banning waterpower. Now all this, and very much more than I have time or space to tell of here is coming to us. Our boom lies in the future yet. How distant or how near at hand it may be is a question of very little importance inasmuch as our prosperity is entirely independent of its absence or its presence and wholly hinges upon the enormous amount of legitimate development which will characterize the immediate future of mining operations here.

For the information of people in Britain and the United States we may add that Rat Portage has had a "reduction works" in operation for some time and that it is kept busy, so great is the demand for crushing and treatment by the new mines and rapidly developing prospects that have not yet put up stamp mills. No doubt the new reduction works to be erected this season will find ample custom.

## SUMMER OUTINGS THAT PAY MORE THAN THEIR COST.

ONTARIO, during the hot months, will this year witness a new departure in the way of taking holidays, and it will be, for many, a pleasant departure. Moreover, it may result, for not a few, in paying a hundred or a thousand times over the cost of the annual summer outing.

The gold fever and the summer heat will combine to draw many of our men away from the Lower St. Lawrence, the Thousand Isles and lake-bespangled Muskoka, to the beautiful Bay of Quinte, with its gold district within two hours' reach; to the fair reaches of Nipissing, and the golden octopus-armed Lake Wahnapietæ; to the almost indescribable glories of the north channel of Huron, with the promising mineral regions back of Thessalon and the Soo; to the waters and lakes and mountains, and the fishing of the Jack Fish Bay country, rich in gold; to the grand and beautiful Thunder Bay, comparable in beauty to the Bay of Naples, and surrounded by a territory known to be rich in silver and other minerals; to the beautiful Wabigoon and Manitou lakes further west, with wonderfully rich, but little developed golden treasures; and still further away to the mazes of beauty found in the Lake of the Woods, an ideal resort for the summer idler, and where gold mines galore abound; to the Rainy River, Rainy Lake and Seine navigation, reaching 270 miles from the foot of the Lake of the Woods through Rainy River, Rainy Lake and the Seine, and past gold-bearing rocks, fertile farms, grand forests, and past lovely lakes and bays and capes to the entrance of one of the most famous gold districts in Canada. These trips will open, to many, new scenes of surpassing beauty, and no doubt will popularize several of the localities mentioned as

summer resorts. They will furnish restful recreation, combined with the tonic that close, gold-sharpened powers of observation can afford. Thousands will take the trip, and next autumn we may expect here, in the east, a vast expansion of the geological and mineralogical ideas of our community, and perhaps, too, an increased, but more careful investment in gold prospects. The Ontario gold fields will be gainers by this exodus.

Rat Portage is preparing for an influx of travellers. After the present season it may have to prepare itself for being not only a busy gold centre and timber trading centre, but for being a very popular summer resort for thousands of people from the East.

### NOTES AND COMMENTS.

FARMERS owning their land and the minerals below, or prospectors who have made more or less promising finds and taken up locations, often injure their chances of getting their land into the market by demanding extravagant prices. At present, unless considerable development by pits has been made, capital is slow to make investments. This attitude is not likely to decrease but rather to increase as time goes on.

NOTWITHSTANDING all that is being published laudatory of the gold fields of the Yukon, prospectors and miners should not underrate the great drawbacks of the country and the hardship to be encountered by those who happen to find the very rich placers here and there on the river and its tributaries. The country is hard to reach, and is hard to get away from if ill luck is met with, as has frequently been the case. Notwithstanding claims that the climate is pleasant most of the year the fact is that over much of Yukon Valley the ground is frozen all year round only a little below the surface and the eight months of a winter averaging much below zero is experienced. These conditions and what they involve make mining too hard for most miners, though the undoubtedly rich fields that exist amply justify some in spending a few years of exile in the frozen north.

INVESTORS should pay much regard to the character of the directors, particularly the active directors, of mining companies. There have been too many cases of blocks of stock or some other pecuniary advantage being given to prominent men for the use of their names, as directors of companies, and the directors desired have accepted their positions without due investigation. Here is a sample of an offer and a reply which might well come from any man of strict integrity so approached by the promoters of either a sound or an unsound enterprise: "A gold mining company recently wrote to Sir Henri Joly asking for permission to use his name as one of the promoters. They offered him as a gift in return 20,000 shares, valued at 10 cents each. The gallant old knight replied: 'If I had the least intention of taking shares in your company, your offer would be sufficient to dissuade.'"

THE Canadian Government has not finally announced its policy with regard to railways, but what some of the lines of that policy

will be is foreshadowed in Mr. Blair's statement this week before the Railway Committee. A Railway Commission, to be an integral part of the Government, does not seem improbable, and this commission, we assume, will have power not only to regulate rates, but to see that companies properly expend the monies raised for the construction of railways, and use the power given in their charters so as to carry out their obligations to the public. The establishment of a railway commission on this basis will not likely be made during the present session. Something, however, no doubt will be done in regard to the railway through the Crow's Nest Pass. There is doubt as to the rights of the C.P.R., under their charter, to construct railways other than branch lines from the roads which it actually owns, and until this doubt is removed it is not likely that the Government will confer further powers upon railways to run through the Pass. However the road may be built, it is pleasing to have the declaration from the Minister of Railways: "We want to assure the people of this country that for the future, for all time, they are going to have unrestricted railway connection through that Pass."

### AROUND TOWN.

THE Canada Mutual Mining and Development Company, with offices at 32 Toronto street, Toronto, received on Saturday last the following telegram from their western manager, which shows a big strike on one of their properties:—"M. O. Tibbits, 32 Toronto St., Toronto: Struck twenty feet shipping ore on Little Giant. Minnie looks well. (Sgd.) G. A. POUNDER."

Mr. JAMES LAUT, 49 Canada Life Building, Toronto, is the sole agent for treasury stock in the following mining companies:—The Golden Eagle Mines, (Ltd.); the Jackson Mines, (Ltd.); and the Tam O'Shanter Mining Co., (Ltd.), further reference to which will be made in future issues. Of the Ibez of Slocan in which Mr. Laut is interested the *Monetary Times* says:—The silver and lead-bearing ores of the Slocan district of British Columbia have given that portion of the province a good name, and we believe not without deserving it. Testimony has been borne to the productive character of numerous properties there within the past twelvemonth, and while this part of Kootenay has not been boomed as Trail Creek has, there is good authority for the claim that it has quite as promising properties. The Ibez Mining and Development Company bought last year the Brennard group of claims, some ten miles from Sandon, and near a station of the Kaslo and Slocan railroad, and have spent money enough on them to make the property a steadily producing one since January last. The output is a galena ore, with some gold and copper; concentrates have shown, we are told, \$46 per ton. There is good water power on the property, sufficient to drive a concentrator, and a competent engineer is in charge of the works. We observe that the directors, of whom Major Steele, of McLeod, is president, have sensibly capitalized the company at a low figure, \$300,000, and have placed their certificates of shares, other than treasury stock, in trust with the Bank of British Columbia at Kaslo, on terms which show that they mean square dealing, and which also show that they expect to pay dividends very soon. The shares are already selling above par.

### THE MORNING GLORY.

MR JOHN THOMPSON, broker, of 870 Queen St. West, brought into our office the other day one of the richest pieces of gold ore ever seen in Canada. The quartz is of a rusty color and covered with fine lichen, and the gold is literally piled in little corners of the quartz and shines out in specks all over. The ore assays about \$200,000 to the ton. It is taken from the Sarah claim, one of the latest additions to the properties of the Morning Glory Mining Co. Ltd., of Vernon, B.C. The *Midway Advance* says regarding the location, "Vernon is in a state of suppressed excitement almost too deep for expression. Gold is the cause, and gold in such quantities that the wonderment and excitement is very pardonable. Assays of rock in every direction are being obtained that would make Cæsus' teeth water." On the Sarah, one of the Morning Glory group gold is visible to the naked eye right on the surface of the claim, and in such substantial quantities that the owners have found it necessary to put a notice in the *Vernon News* to prevent the stealing of the rock. Some of this rock assays over \$200,000." The company is incorporated under B. C. law, has a capital of only \$500,000, in shares of \$1.00. 200,000 shares are set aside for development, nonassessable. The Board of Directors include several practical prospectors and several active business men. The Board is composed as follows: A. E. Morden, President; Geo. Norris, Vice-president; Ex. Ald. W. C. Pound, Sec.-Treas.; J. E. Morden, J. N. Morden, all of Vernon; Jas. Macklem, broker, Vancouver, L. G. Gordon, merchant, Niagara Falls, and controller, R. H. Graham, of Toronto. The claims embrace the Jumbo, Daisy, Morning Glory, Evening Star, Sarah and Vancouver. The ore is free milling. On one claim on a ledge 7 feet wide and visible for 1,000 feet, a shaft 85 feet deep had been sunk when the prospectus was issued. The assays are very high, and as the properties are directly against navigable water, the profits should prove immense. We would not be surprised if the Morning Glory mines prove amongst the very richest in British Columbia.

### LAW FOR THE PROTECTION OF MINERS.

By the Mines' Inspection Bill, now before the British Columbian Legislature, women and children are prohibited from working under ground, and in this connection an amendment was inserted, preventing the employment of Chinese or Japanese under ground, or from being in charge of any machinery for hoisting or lowering persons in a mine. It is prohibited to pay miners' wages in a place where whiskey is sold, and mine owners must, for statistical purposes, send in returns to the bureau of mines each year. Stringent regulations are made to prevent accidents and to inquire into any that do happen. Provisions, too, are made for proper ventilation, and to prevent explosives being kept at the mine, and to prohibit using iron tamping rods. Where mines have a shaft 300 feet, and miners are lowered and hoisted there must be a proper cage and guides. If a mine owner allows his men to be hoisted or lowered he must bear all the responsibility of accidents in connection therewith. There must be proper timber and ladders, and penal clauses are inserted for infraction of regulations.

The United States imports about 7,000 tons of asbestos annually from Canada. No good deposits of it have yet been found in the United States. There is a good demand for it and it is worth from \$8 to several hundred dollars per ton according to quality.

## NEWS OF THE MINES.

### SAW BILL AND HAWK BAY MINES.

#### Interesting Reports on the Work in Progress.

##### SAW BILL MINE.

THE CANADIAN MINER is in receipt of the following report of the Saw Bill from Mr. F. S. Wiley, managing director at the mine, dated April 16th, and sent in with the mail by Indian couriers. At the date of the report the canoe route was not open, but was expected to open about May 10th or 15th, when further reports will be sent:—

Things in a mining way are all O.K. here. The openings all around are showing up better than ever, in the veins and in the drifts. The winze (that is No. 2 shaft) is down about 30 feet and the vein is now over four feet wide, and looking very well.

You will no doubt be surprised that I have decided to put our mill up near the mine, thus saving the construction of our long tram-way. I have consented to this on the advice of our mill-man (Mr. Schrontz), who strongly advised it, and says there is not the slightest doubt that we will have an ample water supply in the swamp. I do not think even this would have convinced me but for the fact that we undoubtedly will strike some good ore in the reef running across our property from Hammond's, and locating our mill there will enable us to work both without any difficulty, as our supply of rails will do for that work. It will, of course, necessitate hauling wood up to the mill, but this can easily be done.

At the Hammond Dyke they are getting magnificent pannings of gold in nearly everything where it is open. At their cross-cuts it shows 50 feet wide and there seems to be no end of it as to quantity.

I intend making a good road, only a quarter of a mile, and on high ground, and pretty level, to the mill site. Now that I have settled on the mill, there will be no trouble with the immense tressling, and our rails will come in handy for under-ground, and to our reef matter, if it turns out all O. K.

I intend exploring thoroughly 313 and 314 as soon as the snow goes. The reef is likely on the side of the mountain south of our shaft, and we can probably drift into it and get a back of about 100 feet for the tram to the grizzly floor at our mill.

We have a most ideal site for a mill. It is located about 700 feet,—or probably a little less—from the shaft house, and a nice incline to the grizzly floor. The car can be shoved back by hand if necessary.

I do not anticipate any trouble for water, and will not either have any trouble about fuel. The construction of the road will be an easy matter. Mr. Schrontz says that one of our boilers can handle the mill and plenty of steam to spare. We can put the other at the mine and take the small one down to the lake to pump to the mill, if necessary. We have ample pipe for this kind of work.

I have twelve men working on the foundation of the mill now, and as soon as the saw-mill is going—which will be this week—I will start hauling up the timber.

The retaining wall and excavation for the front or lower floor of the mill, where the boilers and vanners are located, is all cleaned off, and the rock excavation for the next rise will be all out by the middle of this week, so you see, I am not letting the grass grow.

I like our mill-man very much. You can depend upon it, our mill will be out of sight,

so far as a good job is concerned. He won't skimp anything, but, the reverse, will probably have it better than the plan, and if it takes two weeks longer to build we will be sure of a practical mill, and without doubt will require it, as the mine is immensely improving. We are getting out great ore in our bottom level, in fact even the proto-gene, wherever it has a seam in it one-eighth of an inch wide, is plastered with gold and rich quartz, and when we come to stoping we will have something worth while.

Mr. Schrontz, who is a miner and millwright of great experience, being engaged on the construction of several large mills in the States from time to time, thinks we have, without doubt, a bonanza. The upper—or 60 foot—level is just as good as the lower, and the veins all around at present working show an average of from three to five feet. I am more pleased than ever with its appearance, and if the same conditions as to quantity or size of veins continue I can keep the mill going with the development work without any stoping, as we are even now, without the shaft workings, hoisting about 40 or 50 buckets of ore per day from the drifts; without counting the winze, which is also looking well, and shows free gold. The fork at the 120 foot level to take care of the water, is nearly completed, and in a couple of weeks we will start sinking the main shaft again, which, when we quit work, showed the vein to be between seven and eight feet wide. There was a horse of vein matter in this about 2½ feet wide, which all carried gold, and on the foot wall there was a foot and a half of the richest stuff we have yet encountered.

If no accident happens we will have our mill running in the time specified. It will be a credit to ourselves and the company that manufactured it, and with due provision made for adding 20 extra stamps, and machinery and steam power on hand to operate the extra 20, if necessary, and which will doubtless be next winter, particularly if we develop the continuation of the Hammond reef of our property, and it continues to show as well as Hammond's late report. I don't think I ever saw the mine looking better since she started. We are bound to have a lively camp for a long time.

##### HAWK BAY.

With regard to Hawk Bay mine, Mr. H. A. Wiley writes as follows:—

At Hawk Bay the camps are all built and the boilers placed for the compressor, and the latter with the hoist will be in position shortly. The compressor man and his staff are getting things in shape and we expect to be running sooner than was first expected. We believe we will have as complete a plant as has ever been turned out of a shop.

We have also got in the extra steam hoist to enable us to proceed with the development of No. 2 shaft, and this, together with the hoist purchased from the Canadian Rand Drill Co., for No. 1 shaft, will take care of all the ore mined for the next twelve months.

The compressor and boilers being heavy pieces to transport we had great difficulty in getting them in.

As soon, however, as the machinery is installed, and the shaft house now under construction at No. 1 completed, we will again start sinking with air drills. Both No. 1 and No. 2 shafts are timbered complete, and while the transportation and timbering of the shafts was on, sinking was, of course, very slow. It being of the utmost importance that we should get everything in the

shape of machinery and supplies in, I was compelled to pull off some of the miners to assist on this work, skidding up roads, etc., and everything was done that could be done to facilitate transportation. Had these steps not been taken we doubtless would not have met with the success that has attended our efforts.

No. 2 shaft is now down about 38 feet. It is 3½ feet wide in the bottom and looks very well.

I am sending in some of the latest quartz, but as the Indians who are taking it in are liable to travel as lightly as possible, on account of the bad and dangerous roads, they may leave it on the way.

The results of pannings and assay tests of the ore from No. 2 have been most satisfactory, giving from \$16 to \$30 per ton. The ore is becoming much more mineralized as depth is attained, and is showing up still more like Saw Bill than at any previous time. Things are looking all O.K. We have plenty of men and everything required to keep them going; also an ample supply of wood close by to steam our boilers.

### ONTARIO NEWS.

#### Lake of The Woods.

Navigation is general in the Lake of the Woods.

A considerable number of Duluth prospectors have just entered the district.

C. Markell has opened a mining broker's office at Rat Portage under charge of C. J. Verran.

J. E. Stanton of the Massachusetts Gold Prospecting Co. is in the district offering to purchase mining locations.

The Master Jack outfit of development machinery and the Scramble outfit of milling and other plant are at Rat Portage *en route* to the mines.

Mr. Forbes, prospecting in the neighborhood of the Princess and Black Sturgeon mines, reports having struck a rich vein 4 feet wide at the surface.

The *Winnipeg Free Press* says:—Messrs. Jefferson & Johnson have been offered \$5,000 for one of their mining properties. Mr. Phil L'Hereux is pushing operations on his Echo Bay property.

The *Port Arthur Journal* says:—Mr. W. Margach, of Rat Portage, says there is a boom in Rat Portage now, but it is simply a trifle to what there will be when navigation opens on the Lake of the Woods.

Messrs. A. J. Jackson, of Toronto, and Geo. Drewry, J. M. Savage, George Girard and J. W. Colcleugh, of Rat Portage, are applying for a charter for the La Reine Gold Mining Co., of Ont., (Limited) with a capital stock of \$1,000,000.

The keel for Capt. Kendall's new boat has been laid, and the steel ribs are being placed in position. The keel is 69 feet long, and when completed the boat will be 77 feet over all. She is being modelled for speed, and is to be fitted up to speed 17 miles an hour.

The advance guard of the rush, says the *Rat Portage News*, has appeared at that town and the hotels are full of guests and the puzzle as where to place them is somewhat wearing on the gentlemanly clerks. If this thing keeps on it will be a regular 13, 15, 14 puzzle.

The Bullion Mining Company, says the *Rat Portage Miner*, has received numerous enquiries from the east during the last week both as to prospects in general regarding the

mining lands of the Lake of the Woods district and also as to the properties controlled by the company.

Mr. Upham, a Duluth financier, has examined the Sawbill Lake country, and part of Seine River, and thinks highly of them. He thinks, too, that prices of locations are high rather than low. Duluth people, he says, are greatly interested in the north-western Ontario gold fields, and large numbers will visit the country this summer.

The Rat Portage *Miner* says, that the Ottawa Milling and Mining Co. will commence work on the site of the old Dick & Banning saw mill at Keewatin. The old building is to be removed and structures built capable of accommodating 50 stamps and the accompanying concentrating and gold saving plants. It is the purpose of the company to increase the capacity as business demands.

Boys and young men on horseback, says the Rat Portage *Miner*, are in the habit of racing through some of the principal streets. What with bicycle scorchers and half-trained bronchos ridden by half-grown boys the streets of Rat Portage are not the safest place in the world to the thoughtful pedestrian who is deeply considering the results of the last assay, or buried in the mental dissipation of riotously spending the money which he intends to realize from his last prospect.

Mr. J. R. Mackenzie and Capt. Williams are said to have discovered the long sought for Scramble vein on the Princess Mining Co's. location. The discovery, says the Rat Portage *Miner*, has given rise to considerable comment among mining men throughout town. The discoverers who had a gang of men at work on the property for the last few days are confident that it is settled beyond all reasonable doubt that the vein is what has been called the celebrated "Scramble Vein."

The Rat Portage *Miner* intimates that the Mining Exchange of that town has received a large number of acceptances of invitations to the Mining Convention to be held there early in June. Political matters and even the Engledue deal are tabooed, and the papers and discussions are to be confined to financial, scientific and mechanical questions. Over two hundred representative mining men, capitalists, scientists and manufacturers are expected to be present. An extensive display of specimens of gold bearing quartz is expected to be made. For the return of specimens the exhibitors wish to retain, the Stock Exchange will be responsible.

The Rat Portage *News* says the mining convention will have no little effect in hurrying the coming of the day when the gold output of Western Algoma will be watched by the financiers of the world with as much care as was that of California or Australia in the early history of these auriferous regions. No one interested in the thorough success of the crucial test to which the coming of many scores of miners and capitalists, with the experience gained where gold mining has for years been a standing industry, should neglect to provide all means possible that may show up the country as it is. A feature of importance to the practical man will be a mill test of the different kinds of ore now being treated as well as a view of the workings, shafts, tunnels, surface indications, etc.

#### THE PRINCESS.

Mr. E. Mackenzie, of Toronto, president of the Princess Gold Mining Company, returned last night from the company's pro-

perty, location D. 118, on Black Sturgeon Lake. He spent a week there in examining their property, and located their new camp and shaft. Workmen are now rushing up the necessary buildings to accommodate sufficient men to prosecute the work of developing the property as vigorously as is practicable. A *Miner* reporter met Mr. Mackenzie in Capt. Williams' office, and in an interview he exhibited some very fine specimens of ore, which he had brought in from the property. The main Scramble vein crosses the Princess location diagonally, and extends five-eighths of a mile from the south boundary northeasterly to the eastern boundary. The place for sinking the main shaft has been located on a rocky elevation, about 130 feet above the level of the Black Sturgeon Lake, and the camps are being built on the slope northward to the lake. The main vein is on the contact between the granite and the Keewatin formation. At the surface there are four feet of very fine quartz, and the vein matter which has the same schistose character shown by the Scramble vein on both sides of the Princess property, has the appearance of being forty feet in width. This vein was located and tests of ore made from it last summer and the owners being satisfied of the great prospective value of their property organized the Princess company for the purpose of developing it. The delay which has heretofore been occasioned by the long drawn out red-tapeism required to obtain a charter, prevented any work being done last fall before the snow came, which was unusually early and unusual in quantity. Not having sufficiently marked the location of the vein an attempt was made during the winter to start development work on it. Men were started to work at a spot where the vein was supposed to be, but on putting in a blast found they were in country rock. Another effort was made with a similar result, when work was suspended waiting the arrival of spring. Mr. Mackenzie is well pleased with the results of his visit and now that the shaft is properly located, sinking is in active progress, and the vein is showing up splendidly. The foreman in charge of the work is Mr. John Collins, who had years of practical experience in the Anaconda mine, Montana. Capt. Z. J. S. Williams is the company's consulting engineer. Mr. Mackenzie left his son, J. R. Mackenzie, at the camp, where he will remain for a month. President Mackenzie on his arrival in Toronto will recommend the directors of the company to push development work day and night, and this will probably be done.

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#### Wabigoon.

(Condensed from the Rat Portage *Miner*.)

Alex. Harvie, architect and builder of Toronto, has gone to Wabigoon to reside. Building operations are reported in detail as active. The two steam tugs building for W. P. Johnston of Neepawa, for use on Wabigoon and Manitou lakes are to cost \$2,000 each. J. T. Elmore of New York representing, it is said, New York capitalists, is shortly to return to Wabigoon and make it his headquarters. J. R. Lumby arrived last week with his plant for a weekly paper to be commenced on May 12th. Representatives are arriving daily from Montana, Colorado and other western mining states.

#### DRYDEN IN THE WABIGOOON.

Dryden is one of the coming centres of the good farming and gold mining region known as the Wabigoon country.

When Ontario's Minister of Agriculture,

Hon. John Dryden, first undertook to establish his pioneer farm near Lake Wabigoon, 80 miles east of Rat Portage, on the C.P.R., few would have predicted that within two years we should see three townships taken up by settlers at that point. Probably Mr. Dryden himself is as surprised as anyone that the development should have been so rapid. In this, as in everything else he has undertaken, Mr. Dryden has evinced his usual good judgment; but he has been assisted by the tide of events. It was very fortunate he undertook the opening of Wabigoon country just at the time when the wonderful mineral riches of northwestern Ontario was beginning to attract hundreds to the district. Gold mining is fast becoming a booming industry, and every foot of agricultural land has received an enhanced value, and is in great demand.

The town site of Dryden, lying opposite the Government farm, was laid out last summer. The lots in the first survey are all sold, an additional block of land is now being added, and the town promises to become a place of considerably more importance than was expected.

Confusion exists in the minds of some regarding Dryden and Wabigoon, about 13 miles distant at the eastern end of Lake Wabigoon. It should be understood that there is no connection between the two places, as the name might lead one to suppose, and in connection with the latter the Government assumes no responsibility whatever. We are informed that town lots in Dryden are sold at reasonable prices to actual settlers only, and not to speculators at "boom" prices.

Such is the desire for information regarding the locality that the following letter from the farm superintendent, a copy of which has been sent us by Mr. Dryden, will be read with interest.

"DRYDEN P. O., April 24, 1897.

"Dear Sir,—The fall wheat came through the winter in good style; apparently none of it was winter-killed. On the 18th and 19th we had some cold weather, which checked its growth badly. The clover is commencing to grow again, and I cannot find any of it killed or heaved out. There are now only two lots for sale in Dryden. Three representatives of English capital from Australia and South Africa have purchased lots, two of them, and perhaps the third, will build, and make their headquarters here this year.

"There are plenty of laboring men here—a lot too many until the summer work commences. Five cars of settlers' effects arrived here yesterday, and two more are expected to-day. The population of Dryden and vicinity is probably 300 or 350, including visitors. There are a lot waiting to buy town lots as soon as more are surveyed. The sawmill is running night and day, and cannot furnish lumber as fast as is needed. Board lumber shiplaps can be had for about \$16 50, and B. C. cedar shingles at \$2 75. Our stores are reasonable. I have sown clover on the fall wheat. The land will not be ready for about a week.

"A. E. ANNIS,  
"Superintendent."

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#### Sudbury.

[From the Sudbury *Mining News*, April 29th.]

Mr. A. McDonald has discovered gold-bearing quartz north of Chelmsford.

Dr. S. S. Murray of Wahnapietæ is in town to-day with samples of nice coal from Chelmsford.

Mr. Eden, of H. H. Vivian & Co. of Swansea, Wales, paid a visit to the Murray nickel mine last week. We are informed that a deal has been closed with Mr. Travers, representing the

Trill Mining and Mfg. Co. of Worthington, by which that firm becomes owners of all the ore in stock. This will be converted into matte the present season, and will cause the employment of about 50 hands.

Messrs. M. C. Biggar and Wm. McVittie returned from Toronto a few days ago. They have succeeded in securing a reasonable quantity of coal land for the Citizens' Gold and Coal Mining Co.

Mr. Eggert, M.E., of Toronto, for Mr. Craig of the same city, was in town Monday. He is placing a steam drill on W. D. 47. They intend operating with fairly strong force and will run night and day shifts.

Another gold find has been made in the Wahnapiatae district, four miles south of the Comstock Mine. Messrs. F. Robinson and Thos. Fraser are the lucky men. The new find shows considerable free gold. Mr. Doyle of the American Hotel is interested in the property.

The Webbwood General Mining and Development Co., Ltd., held its first annual meeting yesterday at Webbwood. The following gentlemen were elected for the current year:—Geo. Bayes, Dr. Jones, Dr. Fleming, T. J. Patten, Alex. Beck, S. Beamish, and John Robinson.

Mr. Wm. Laurie, of Montreal, Dominion Inspector of steamboats was out this week inspecting the Wahnapiatae Navigation and Transportation Company's steamer. He found everything satisfactory and issued the usual certificate. The boat will make her first trip to-day from the dock at Anderson's Bay. The new hotel at the bay will be completed this week, and has accommodation for fifty guests. This will be one of the finest summer resorts in Ontario as the location is all that can be desired, the scenery is magnificent and the lake is teeming with the finest of fish.

The Hub Gold Mining Company of Sudbury held their first annual meeting in Mr. D. O'Connor's office on Monday last. The election of officers resulted as follows:—F. Cochrane, President; R. McBride, 1st Vice-President; H. Ranger, 2nd Vice-President; C. Kettle, Secretary, D. O'Connor, Treasurer. It is unnecessary for us to say anything concerning the above officers. Everybody knows them to be among Sudbury's most progressive citizens. The property they are operating is one of the best in Wahnapiatae and no difficulty will be found in placing stock at the price quoted.

The Citizens' Gold and Coal Mining Company has had a diamond drill operating on lands withdrawn from market; the borings have been satisfactory; the Government has agreed to give the company the right for these lands; a working shaft has been sunk to a depth of 25 feet, and sinking operations will now be rushed night and day. There is no question as to the future of Sudbury; situated in the midst of an inexhaustible supply of high grade nickel ore, which is being mined by a company whose operations are a wonder to the visitor; to the west of us a few miles lies the Chelmsford plain underlaid with a bed of coal which in all probability the present generation will not see exhausted; to the east but a short distance are the Wahnapiatae gold east fields, from which gold bricks will be turned out the coming summer as regularly as a roller mill turns out flour. In addition to the rich mineral wealth we have vast quantities of pine and spruce around around us. With all these natural resources Sudbury is bound to become the "City of the North."

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#### Parry Sound.

The Ontario Gazette announces that the McGown Gold Mining Company has been incorporated under the Ontario Joint Stock Com-

pany's Letters Patent Act. The amount of stock is to be \$1,000,000 to be divided into shares of \$1.00 each. The following gentlemen compose the company:—Messrs. Thos. McGown, sr., Judge McCurry, W. R. Beatty, M.P.P., Capt. Macfarlane, Milton Pearce, D. W. Ross, T. J. McGown, Dr. J. R. Stone, Wm. McGown, James Calder, J. R. Legett, W. H. Hoppins, Frank Halliday, J. A. Johnson, Jas. Beveridge, J. R. Morrison, Parry Sound; Thos. McGown, jr., John McGown, Foley; H. N. Crossley, Toronto; Geo. Monteith, Dr. J. P. Waddy, S. Hooper, Rosseau; F. W. Ashdown, Ashdown; and Wm. Calder, Magnetawan. The Parry Sound *North Star* says: The Diamond Drill of the Ontario Government has arrived from Sudbury. The drill was left at McPhelemy's crossing, Parry Sound Road, and six teams of horses were required to draw it to the mine. This week it is being put together and it is expected that by the end of the week it will be in operation. We understand a thorough test of the Company's property will be made, and possibly some other mining locations will be tested.

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#### Thunder Bay.

A good many complaints, said Geo. T. Marks, mayor of Port Arthur, to one of the city papers, have been made about the influx into Algoma of men who possess neither money nor experience, and who are looking for work. The labor market is well stocked and there is not much use in men of that class going to Algoma looking for jobs. But there is plenty of room for Canadians who have or are willing to get a little experience by taking a summer's outing in the gold fields, probably with great profit to themselves.

Just now there is considerable movement along the "North shore," particularly in the neighborhood of Schreiber, where important finds were made just as the snow was coming on last fall. One of the properties then discovered, the Otisse, is to be worked at once by local people, who are putting in sufficient capital to make a mine of it. The surface samples from this property have gone all the way from \$10 to \$2,000 per ton.

A great many railway employes are taking a month or two off in order to go into the woods and prospect for themselves in the country between Chappleau and Nipegon.

The increase in the price of copper, Mr. Marks says, has resulted in bringing to notice several deposits, which have been known of for years, but which have been overlooked in the general rush for gold and silver. Some of them are looking very promising.

There is not a vacant house in the town: a great many public improvements are in view.

The promoters of the Rainy River Railway are expecting a subsidy from the Dominion Government. If they get this the construction of the road will be pushed vigorously to Sturgeon Falls and Seine River.

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#### Seine River.

MINES CENTRE.

Latest advices from Mines Centre state that navigation is just about open and regular communication between there and Rat Portage is expected to be started soon. The Assay Office of the Foley mine and outfit were burned to the ground. The cause of the fire is supposed to be green charcoal just taken fresh from the charcoal pit; in spite of this, however, the mine is continuing to work and turning out the usual number of gold bricks. The Ferguson mine has shut down completely; all hands are discharged; the stamp mill closed; stock taken, and all the stuff packed away. Mr. Vartey goes to England, and Mr. Whitly

leaves for Toronto. It is generally expected here that the work will be continued in the course of another month or two.

Golden Goblin—The shaft on this property is now down about 40 feet, and the vein is well defined, the foot wall having been exposed by the shaft. The sinking will be continued about another 10 feet when a cross cut will be made to find the other wall, which may be anything from 10 to 20 feet to the north. Tests of ore at this level show values running up over \$100 to the ton. The foot wall is mineralized over a foot into country rock. The shaft has been sunk down 10 feet along the foot wall. F. R. James is expected home with the report of the Golden Goblin in about two weeks. The shareholders in Toronto will no doubt be much pleased with the result of the work already done.

A company of which Messrs. S. H. Janes, Bristol & Cawthra are the principal stockholders, is said to have secured E. 177 and 176, near the Foley mine and it is understood they are going to develop the properties at once.

The Merritts of Duluth have secured part of the Randolph claim, and are making all arrangements to push the development work this summer.

Messrs. Wyatt & Co. have received word from the Foley Mines Company by way of Tower, that, since the last clean up on April 10th, the result of the mill runs has been as follows: April 10th to April 20th, eight days (about), equals 195 oz. 16 dwt. 19 grs., or about 196 oz. in all, which, at about \$16.50 to the ounce at the mint would mean \$3,234, and this was done with one stamp not in operation owing to something being done to the machinery during this time. This is considered a very satisfactory showing.

SAW BILL CITY.

There has been surveyed on the east side of Saw Bill Lake Gold Mining Company's property, and that of the Hammond Gold Reef Company's, a town site of over 350 lots; the name of the town is to be Saw Bill City. The town, says the *Rat Portage Miner*, was laid out by an eastern city engineer, and provision has been made for the necessary parks and driveways, and in fact for a modern up-to-date western town. It is splendidly situated on Saw Bill Lake, a beautiful sheet of water eight miles long and one and a half miles wide, and will be easy of access from the many mines in operation in that district. Several thousand acres of mining claims have been taken up surrounding the Saw Bill Lake, and it is expected that the trade of the town will be fed by a very rich district and a large population of heavy consumers. Reservations have been made for churches and schools and other necessary public buildings. The Saw Bill Lake Gold Mining Company have a lease of a portion of the town near the lake shore, upon which they are erecting their stamp mill, assay office and other buildings necessary to the camp. A suitable lot has been secured by the same company for a club house, which will be erected at some future date, when the company are turning out a plentiful supply of gold brick, and want to afford proper hospitality to the visitors to their property.

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#### Madoc.

The transfer of the Bannockburn mine to the Eastern syndicate took place on the 5th inst. \$15,000 is paid down in cash, and other equivalents bring the purchase money up to \$30,000.

A very rich vein of gold-bearing quartz has been discovered on the west half of lot 30 in

the 6th concession of Madoc township. A practical miner of large experience says it is the richest surface showing he has ever seen. Development work has been begun.

In the Hastings mining district there are at present plenty of laborers—more than enough to supply the demand for at least a month to come. Miners are plentiful and as yet command only about \$7 per week and their board. Laborers are plentiful and get only \$20 to \$25 per month, boarding themselves. Capital has splendid opportunities in Hastings, but for the laboring man without money to invest, there is no inducement there to leave the cities and towns of the Dominion.

The actinolite mines on lots 12 and 13 in the 2nd concession of Kaladar, 10 miles from Bridgewater, owned by Mr. George Pebbles, have just been sold for a good price by Mr. J. E. Harrison, through Mr. A. M. Chisholm, to Mr. Arnold Kreusler of New York city. The above deposit of "starry" actinolite was discovered a number of years ago by Mr. Harrison, who recognized it as a valuable mineral for furnace lining, roofing cement, and many purposes for which asbestos is used, being of nearly the same composition. He has endeavored to sell or have the mine worked, but being a mineral not heretofore used, he could not induce anyone to handle it, until a sample of it fell into the hands of Mr. Kreusler, who, being a professional chemist and mineralogist of an intensely practical turn, quickly saw the merits claimed for this variety of actinolite, and after careful tests purchased the mining rights of the property. He will at once, under the management of Mr. Chisholm, construct a good wagon road across the country, four miles to the Canadian Pacific Railway, near Kaladar station, and soon after erect a mill and mining plant. Mr. Kreusler has been largely engaged in the past in mining ventures in this country and the United States, and probably will soon be interested in other mining properties in North Hastings, in connection with wealthy New York friends.

#### East Algoma.

John A. Maclean of the Kingston School of Mines has been appointed assistant engineer and assayer of the Great Northern Co.

The assay office at Sault Ste. Marie of the Great Northern Mining, Exploration and Development Corporation makes assays for anybody of gold, silver, copper, lead, iron, etc.

We condense from the Sault Ste. Marie *Courier* the following news:—Mr. Wylie was out again last week to see the Northern Light claim. Mr. Johnson has made another find on the property and Mr. Wylie had the vein stripped and procured samples from it for assay in the company's laboratory here. It is said to be a pretty copper ore something like the Northern Light ore. The new find is about 300 yards from the place where the former work was done. The corporation are giving Mr. Thos. Johnson another contract and it is expected work will start within a few days. The Northern Light claim may turn out a very rich one. A sample from the same shaft went \$10 to the ton in gold and 18 per cent. pure metallic copper. And samples from the foot of the hill where the last work was done, assayed \$2.50 and \$3.00, even the country rock between the forks of the vein at the foot of the hill apparently carrying gold and one assay of it going \$2.00 to the ton.

#### Simcoe County.

The Coldwater *Planet* says: Gold has been discovered in the township of Matchedash in good paying quantities. Several samples have been sent to Toronto for inspection and to be assayed. Mr. C. W. Vanzandt sent samples of ore to be tested, and received word that the ore produced from \$10 to \$60 in gold per ton. Should the find turn out as well as expected, \$60,000 will be immediately put in to work it. A number of prospectors from Toronto were through the township the other day prospecting, but we could not learn anything definite from them.

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#### Manitou.

The "Swede Boys" of Rainy Lake City, who have been connected with a good many mining deals in Northwestern Ontario, have, it is said, sold two more properties. These are known as mining locations H.P. 305 and H. P. 258, comprising 175 acres of mineral lands, situated between the two Manitou lakes. In the company making the purchase are Hon. A. Berg, Secretary of State in Minnesota; Capt. Charles Nelson, a son of Dr. Wolfred Nelson, one time Mayor of Montreal; Judge G. W. Nelson of St. Paul, and Matt. Jensen, City Clerk of St. Paul. The properties will be speedily developed, it is understood.

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#### Chips.

Locations, with only prospectors' reports and samples, have been changing hands briskly at figures ranging from \$200 and charges up to, in one instance, for an exceptionally promising property in the Thunder Bay district, \$10,000. Locations, with pit and crosscut demonstrations, or reports by reliable mining engineers, have ranged in the Seine River country up to \$15,000 in the case of H.P. 300, and \$30,000 for a block adjacent to the Ferguson.

### BRITISH COLUMBIA.

#### Rossland.

Deer Park on May 7th was down 140 feet in good ore.

The Reco company which has paid \$10,000 in dividends announced a May dividend of \$50,000.

The Idaho divides a dividend amongst its shareholders of \$20,000. It has paid before \$175,000 in dividends.

Rossland city council wants 40 liquor licenses for 1,000 population, and one additional for each 1,000 of population, and hotel to pay \$400 license and have at least 30 rooms.

In the War Eagle the ore has been found to the east of the Winze on the 385 ft. level. If this be so, the mine has a greater reserve of ore than was supposed at the time of its sale.

Since October, 1895, the Le Roi, the chief among Rossland's mines, has paid \$375,000 in dividends. In the eighteen months that have elapsed thirteen dividends have been recorded, two of them of \$50,000 each, and the rest of \$25,000. The last one has just been declared. It was the intention of the company to pay \$50,000 this time, but the mud slides on the railroads prevented many cars of ore from reaching the smelters, and thus cut down returns. The latest dividend is \$25,000.

With the opening of spring many properties not worked during the winter will resume development work, says the *Mining Review*. Among the prominent companies to which this applies is the Canada Mutual Mining and Development Company, which is about to begin

operations on the Minnie, a promising Red Mountain prospect. This company is also about to establish camps on the Little Giant group on Lookout Mountain, and on the Beaconsfield on Deer Park Mountain. All these properties were acquired recently by this company, which is well officered.

A *World* special says:—Monte Cristo now has magnificent ore. The workings are 20 feet into the ore body to-night and not yet through. . . . St. Paul tunnel is in 212 feet. The showing is good and work is progressing favorably. . . . The tunnel in the Juliet is now in 136 feet, with fine ore in the breast. . . . The Le Roi Company will probably locate a smelter on Little Sheep Creek, at the eastern base of Sophia Mountain, four miles from Rossland. Le Roi's new skips, now running to the 500 foot level, each carries a ton of ore, the capacity of the hoisting plant now being 200 tons a day. . . . Development of the Iron Colt will be resumed immediately. The company has \$20,000 in the treasury. . . . The Josie shaft is down 215 feet, with \$50 ore in the bottom. The machinery on the Hattie started to-day. . . . Sophie Mountain trail is still impassable and all work will be stopped for several weeks. . . . Trains are overloaded, and the town is rapidly becoming crowded. The weather is warm and favorable to prospecting. A thousand prospectors are now on the hills.

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#### Slocan.

The Cariboo district of the Slocan mining division is destined to receive a great deal of attention this summer. Little has been heard on the outside about this country, but there has been considerable prospecting done. Over 525 claims are recorded in the mining recorder's office at Nakusp. Nine companies have been incorporated and stocked by Rossland and Sandon parties. Good assays have been got from a number of claims in different parts of the district, and some prospects sold at good figures.

The Alma, in the Arlington basin, says the New Denver, B.C., *Ledge*, is under bond to Tom Dunn and W. Farrell of Victoria. Chas. Wilson, Vancouver, has purchased the B. Fraction. John A. Finch has bought a three-fourths interest in the Cultus. Solomon Cohen, Spokane, has taken a half interest in the Tallahassie. Vancouver parties have bonded the Hyderabad, Ten-Mile, for \$18,000. Michael McAndrews has secured control of the Linnet and Gypsy Queen. David Sutherland has taken the valuable Ten-Mile property, the Silver Bell. Blair Carter and Ed. Dunn have bonded the Heather and Heather Fraction to J. A. Yerex for \$10,000, 10 per cent. cash. The Bachelor group on Twelve-Mile has been bonded to the Rossland G. & D. Co., of Toronto. Properties in the vicinity of the Galena Farm are in demand. R. B. Punnett of Victoria bought the Stormont and Colorado Beetle, and deals are on for other claims adjoining. G. A. Farini, of London, Eng., is bonding Twelve-Mile properties, this week the Get There Eli group at \$12,000 and the Bachelor at \$12,500. A company with A. G. Ferguson at the head has bonded the Prescott group, Four-Mile, and will work the properties. J. H. Chapman, of Victoria has taken hold of the Joint Hye, Granite Flat and Summit 5, Springer Creek. E. Curzon Clarkson of Toronto has taken over the Palmita, adjoining the Queen Bess, Carpenter Creek, at \$20,000.

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#### Vernon.

We gather the following items from the *Vernon News*:

The Sunbeam claim, adjoining the Sarah fraction, and owned by the Ruby Gold Co., is

showing up in splendid shape. In all, eight ledges have been discovered on this claim, all of which are very rich in gold-bearing quartz.

Norris and Mohr on the Summit claim, a mile north-west of Vernon, have struck a four foot ledge that looks promising. An assay from the Bon Diable Mining Co.'s new ledge goes \$24 in gold and \$93 in silver. The claim is being steadily worked.

The Morning Glory Mining Company have recently been at work uncovering the ledge on the Sarah mineral claim. They have on view in their office several splendid looking samples of rock from this ledge, containing free gold in large quantities. We have been shown a copy of an assay recently made by Thos. Heys, of Toronto, from quartz taken from the Sarah which went \$31,318.25 in gold and \$93.85 in silver per ton. This company last week ordered a 2-stamp mill from Chicago, which will be on the ground in a few weeks, and with rocks such as they have been showing they should be able to declare a dividend at an early date.

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#### East Kootenay.

Weaver creek looms up. Mr. Wheeler has brought into Fort Steele \$60 and \$18 nuggets, besides smaller finds made in deep digging last winter, and he thinks the property can be hydraulicked.

Fort Steele petitions for a gold commissioner to act also as government agent and stipendiary magistrate. It also petitions for a land record office. At present all business in land is transacted away north at Donald.

### ADVANTAGES OF ONTARIO.

#### COMPARISON OF COST OF MINING IN ONTARIO AND THE TRANSVAAL.

In an article in the *Globe* by a Rat Portage correspondent, a most interesting comparison is made of the relative cost and opportunities afforded by north-western Ontario and the Transvaal for the economical production of gold. The article says:

In a conversation I had the other day with Mr. Purchase of Johannesburg, a comparison instituted between the initial condition of mining there and here suggested rather strikingly the advantages possessed by this country if the assumption that there is gold here in paying quantities is justified by events.

The first difference appears at the very first stage, the cost of prospecting. Here the practice has been for two, three or four persons to combine forces and one of the number to go searching for prospects. As a usual thing the others foot the bills. The prospector takes his canoe, which costs from \$30 to \$50, a companion and food enough to last a month or two, which can be obtained for another \$30 to \$50. The prospector's outfit—mortar, pan, picks and cooking apparatus—may cost \$20 more. A prospector who knows anything of the business usually has these accessories as part of his personal capital. The cost of food is therefore the main charge, say, \$25 a month, which will buy bacon, potatoes, flour, apples and some variety of vegetables. When the vein is found, in most of these cases the prospector becomes a part owner. If the prospector is an Indian, and it is said all the Indians are now prospectors and several of them good ones, he does not ask any interest in the location. He gets money, \$50 to \$200. In the Transvaal when prospectors are sent out a syndicate of £1,000 more or less is formed, the services of the prospector securing to him an interest in the syndicate. After that £50 or \$250 a month is thought to be a modest expense charge. The journeys there are long overland trips, often in districts where malaria is supreme. Then

comes the securing of the location. Here the limit is forty acres, there it is a little more than one, 100 claims making about 112 acres. In the Transvaal the cost of taking up these 112 acres would be £40 for the survey and £25 for the first month's license, say \$325. The tax of five shillings a claim does not, however, cease with the first month by any means. It goes on without change month by month until the time comes when the Government inspector is at liberty to say that from the condition of these or adjoining properties these are no longer prospector's claims but digger's claims, when the license fee at once jumps to £1 a claim, £100 a month for the block we are considering. If the prospector has the good fortune to be not disturbed in this way for a year his 112 acres will have cost him in fees to surveyor and Government £340, say \$1,700, and each year thereafter \$1,500 so long as they were still prospector's claims, or \$15,000 a year if they become digger's claims. Never by any means can the holders secure a title to the property. If they fail to make the monthly payment they get fourteen days' grace. Up to the thirtieth day they may protect themselves by paying a fine for each day the license is over due. After that their possession ceases and all reverts to the Government, which disposes of it by public auction. It costs money to keep things going, a fact which gives the Government and the large monied interests opportunity to "freeze out" the less wealthy. In this way, Mr. Purchase says, he was himself several years ago "frozen out" of some claims which within two years sold for half a million dollars. Here, on the contrary, it is not uncommon for 320 acres to be taken up. Prospecting may have cost \$100, the survey can be made for \$160 more at the most, and the title costs \$2 an acre, or \$640; in all, \$900 for thrice the territory held by the other process in the Transvaal.

Then come considerations of cost of working. Men receive in the Transvaal from \$3.50 to \$5.00 a day. Sinking costs more than double what it does here. Food-stuffs are very high, meat costing twice the Ontario price, potatoes four or five times as much, and the flour, Mr. Purchase thinks, is not improbably in large measure brought through Australian houses from the Keewatin mills, three miles from here. Rents are about five times as high as here. One cause of these high charges for living expenses is a railway monopoly, by the side of which the C.P.R. policy is as a blessing from heaven. Mr. Purchase cites a concrete instance. To give steadiness and evenness of working to a large stamp mill it was found necessary to import some Portland cement. In London this cost £82 10 shillings. It cost £310 freight to bring it to the Transvaal border. Then it was hauled 52 miles over a railway controlled by the Netherlands Company, who modestly collected £150 more. In this Netherlands monopoly the Transvaal Government hold an interest of 88 per cent. And then the Government in its public capacity collected £250 duty, thus causing what in England cost £82 to reach the total of £792 delivered.

In the item of explosives, too, necessarily a large one in mining camps, there is a grievance. Dynamite costs here about 16 cents a pound. In the Transvaal it costs 44 cents. About six cents of this difference is accounted for by geographical position, the rest by monopoly. It appears that the sturdy Boers, to encourage home industry in the production of dynamite, gave a monopoly of native manufacture to a company and then put on a duty that would protect the company. The company imported the necessary raw materials free of duty, and manufactured the article of commerce themselves. Before long the "raw material" came to be dynamite in quantity, and the "manufac-

ture" to consist of adding paper coatings to each pound or half pound. This fraud produced a vigorous protest, so vigorous, indeed, that the Government withdrew the monopoly from the company, assumed it itself and appointed the heads of the old company Government inspectors, but with no material reduction in the cost of explosives.

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SIR,—I am one of the few that have for some years taken a deep interest in the mining industry of this country, and am happy to say that I have got a mine or two. We never had the benefit of a newspaper devoted exclusively to mining, until the advent of THE CANADIAN MINER, and I was glad when I saw the first copy of your paper. I fully expected that the mercantile and manufacturing element—those engaged in the making and sale of miners' supplies—would have availed themselves of the columns of THE CANADIAN MINER to let us know where we could get what we wanted, but alas! No! One will look in vain to find the advertisements of miners' supplies; at all events they are meagre.

We read in the daily papers that some manufacturers are declaring that the new tariff on mining machinery will drive them out of the business. I wonder what mining machinery they manufacture. I know we had to go to Chicago for our mill. I have never seen or heard of a Canadian stamp mill worth one cent. If there is any built in Canada, why don't the builders let us know, and let us know where they have one in operation, so that we could go and see it.

Some few weeks ago I wanted some miners' picks. None could be found in Toronto that were worth five cents a piece. I wanted some miners' wheel-barrow: they could not be found in any of the stores, and I had to get them made. Another mining man wanted a mortar—he could not get one, and had to wait to get one made. A few days ago we wanted a blacksmith's portable forge, but not one could be found in Toronto. Another mining man wanted a set of ore-crushing rolls; he could not get them in Canada. If such things are made, surely it will pay to let the public know.

I am glad that such a paper as the CANADIAN MINER has taken up the mining interest, and I hope the mining community will give it a generous support, as I am confident mining will soon be the greatest industry in Canada—and Canada the greatest mining country in the world; and this can only be made known through the press.

Wishing you every success in your undertaking, I am yours truly,

M. J. PATERSON,

JACKFISH, ONT.

May 1st, 1897.

Mr. Paterson's letter makes prominent an evil from which miners and mining men have suffered much since the mining industry began in earnest. Manufacturers and dealers in mining supplies should heed the complaint. We are glad to say that of late a few of our manufacturing firms are attempting to meet the large demand for certain classes of mining machinery hitherto imported and are advertising in the CANADIAN MINER.—EDITOR.

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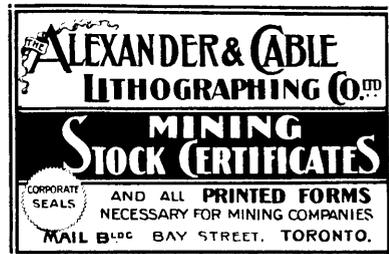
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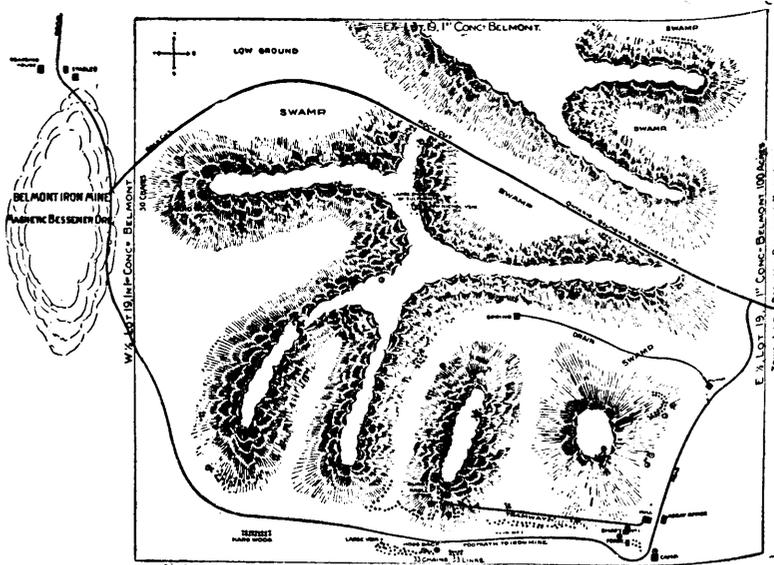
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| Bannockburn  | 500,000             | 1 00       | 0 20          | LeRoi                                     | 2,500,000           | 5 00       | 7 50          |
| Big Three  | 3,000,000           | 1 00       | 0 10          | Lily May                                  | 1,000,000           | 1 00       | 0 20          |
| Bondholder   | 1,000,000           | 1 00       | 0 14          | Lloyd Gold Mining and Dev. Co.            | 1,000,000           | 1 00       | 0 08          |
| British-Canadian Gold Fields                       | 2,500,000           | 1 00       | 0 13          | <b>London Hill Min. &amp; Dev. Co.</b>    | 150,000             | 0 25       | 0 25          |
| Butte  | 1,000,000           | 1 00       | 0 08          | Mabel                                     | 1,000,000           | 1 00       | 0 15          |
| Caledonia Con.                                     | 1,000,000           | 1 00       | 0 04          | May Flower                                | 1,000,000           | 1 00       | 0 14          |
| California   | 2,500,000           | 1 00       | 0 10          | Mikado                                    | £250,000            | £1         | 7 50          |
| Canada Mutual                                      | 2,500,000           | 1 00       | 0 15          | <b>Miller Creek (Slocan)</b>              | \$1,000,000         | 1 00       | 0 07½         |
| Cariboo M. C. C.                                   | 800,000             | 1 00       | 0 50          | Mines Dev. Co.                            | 2,500,000           | 1 00       | 0 10          |
| Colonna  | 1,000,000           | 1 00       | 0 25          | <b>Minnehaha</b>                          | 1,000,000           | 1 00       | 0 15          |
| Colorado   | 1,000,000           | 1 00       | 0 10          | Monarch                                   | 1,000,000           | 1 00       | 0 10          |
| Columbia and Ontario                               | 750,000             | 1 00       | 0 15          | Monita                                    | 750,000             | 1 00       | 0 16½         |
| Commander  | 500,000             | 1 00       | 0 20          | Monte Cristo                              | 1,000,000           | 1 00       | 0 12          |
| Consolidated Sable Creek                           | 1,000,000           | 1 00       | 0 10          | <b>Montezuma</b>                          | 1,000,000           | 1 00       | 0 07½         |
| <b>Confederation Mines Dev. Co</b>                 | 2,500,000           | 1 00       | 0 10          | Morning Star                              | 1,000,000           | 1 00       | 0 07½         |
| Cornucopia   | £100,000            | £1         | 7 50          | North American Mining Co                  | 2,500,000           | 1 00       | 0 20          |
| Cracker Jack                                       | \$1,000,000         | \$1 00     | 0 09          | Norway                                    | 1,000,000           | 1 00       | 0 10          |
| Crown Point  | 1,000,000           | 1 00       | 0 48          | Novelty                                   | 1,000,000           | 1 00       | 0 10          |
| <b>Deer Park</b>                                   | 1,000,000           | 1 00       | 0 18          | <b>Old Flag</b>                           | 1,500,000           | 1 00       | 0 10          |
| Dellie   | 750,000             | 1 00       | 0 15          | O.K.                                      | 1,000,000           | 1 00       | 0 24          |
| Eagle Nest   |                     | 25 00      | 25 00         | Old Ironsides                             | 1,000,000           | 1 00       | 0 09          |
| Eastern Mining Syndicate                           | 1,000,000           | 1 00       | 0 09½         | Ontario Gold Fields                       | 1,000,000           | 1 00       | 0 08          |
| Eldon  | 1,000,000           | 1 00       | 0 10          | Ottawa and Ivanhoe                        | 250,000             | 1 00       | 0 12½         |
| Elsie  | 1,000,000           | 1 00       | 0 08          | Phœnix                                    | 500,000             | 1 00       | 0 15          |
| Empress  | 500,000             | 1 00       | 0 21          | Pug                                       | 1,000,000           | 1 00       | 0 15          |
| Enterprise   | 1,000,000           | 1 00       | 0 20          | <b>Princess</b>                           | 500,000             | 1 00       | 0 25          |
| <b>Ethei Group (Preferred)</b>                     | 1,500,000           | 1 00       | 0 75          | Poor Man                                  | 500,000             | 1 00       | 0 06½         |
| Eureka Con.  | 500,000             | 1 00       | 0 10          | <b>Rathmullen Con. M. &amp; Dev. Co</b>   | 2,500,000           | 1 00       | 0 12½         |
| Evening Star                                       | 1,000,000           | 1 00       | 0 15          | Red Eagle                                 | 1,200,000           | 1 00       | 0 08½         |
| Exchequer  | 1,000,000           | 1 00       | 0 10          | R. E. Lee                                 | 1,000,000           | 1 00       | 0 10          |
| Foley  | 1,000,000           | 5 00       | 3 50          | Rossland Gold Mining and Dev. Co.         | 2,500,000           | 1 00       | 0 11½         |
| <b>Germania</b>                                    | 1,000,000           | 1 00       | 0 20          | Rossland Red Mountain                     | 1,000,000           | 1 00       | 0 26          |
| Gertrude   | 500,000             | 1 00       | 0 12          | Royal Five                                | 1,500,000           | 1 00       | 0 10          |
| <b>Gold Bar</b>                                    | 2,500,000           | 1 00       | 0 07          | <b>Santa Marie (Slocan)</b>               | 1,000,000           | 1 00       | 0 06          |
| Gold Exploration Co                                | 1,000,000           | £1         | 5 00          | <b>Saw Bill</b>                           |                     |            | 2 50          |
| Gold Hills   | 1,000,000           | \$1 00     | 0 10½         | Silver Bell                               | 1,000,000           | 1 00       | 0 05          |
| Gold Quartz  | 2,000,000           | 1 00       | 0 10          | Silverine                                 | 500,000             | 1 00       | 0 10          |
| Gold and Silver Mines Dev. Co.                     | 1,000,000           | 1 00       | 0 20          | <b>Slocan-Cariboo</b>                     | 1,000,000           | 0 10       | 0 10          |
| <b>Golden Cache</b>                                | 500,000             | 1 00       | 1 75          | Slocan Star                               | 1,000,000           | 0 50       | 2 63          |
| Golden Gate Mining and Dev. Co.                    | 300,000             | 1 00       | 1 00          | <b>Smuggler</b>                           | 1,000,000           | 1 00       | 0 21          |
| Good Hope  | 500,000             | 1 00       | 0 10          | <b>Spokane-Kaslo</b>                      | 900,000             | 1 00       | 0 10          |
| Great Western                                      | 1,000,000           | 1 00       | 0 16½         | St. Elmo                                  | 1,000,000           | 1 00       | 0 09          |
| Great Western Mutual                               | 2,500,000           | 1 00       | 0 15          | <b>St. Paul</b>                           | 1,000,000           | 1 00       | 0 12½         |
| <b>Hansard</b>                                     | 1,000,000           | 1 00       | 0 10          | Sweden                                    | 500,000             | 1 00       | 0 25          |
| Heather Bell                                       | 1,000,000           | 1 00       | 0 20          | The Industrial Mining and Dev. Co.        | 250,000             | 1 00       | 1 00          |
| High Ore   | 500,000             | 1 00       | 0 04          | Two Friends                               | 240,000             | 0 30       | 0 28          |
| Homestake  | 1,000,000           | 1 00       | 0 17          | Victory-Triumph                           | 1,000,000           | 1 00       | 0 10          |
| Ibex   | 1,000,000           | 1 00       | 0 03½         | Virginia and Trail Creek                  | 500,000             | 1 00       | 0 13          |
| <b>Ibex of Slocan</b>                              | 300,000             | 0 25       | 0 30          | Waneta                                    | 1,000,000           | 1 00       | 0 10          |
| Investors Prospecting G. and M. Co (Cripple Creek) | 1,250,000           | 1 00       | 0 10          | War Eagle (Con.)                          | 1,000,000           | 1 00       | 1 02          |
| <b>Iron Colt</b>                                   | 1,000,000           | 1 00       | 0 20          | Washington                                | 1,000,000           | 1 00       | 0 28          |
| Iron Mask  | 500,000             | 1 00       | 0 45          | West LeRoi and Josie                      | 500,000             | 1 00       | 0 25          |
| Iron Queen   | 1,000,000           | 1 00       | 0 04          | White Bear                                | 2,000,000           | 1 00       | 0 12          |
| Josie  | 700,000             | 1 00       | 0 46          | Winnipeg and Eureka                       | 1,000,000           | 1 00       | 0 10          |
| Josie Mack   | 1,000,000           | 1 00       | 0 12½         | Yale                                      | 1,000,000           | 1 00       | 0 02½         |
| Jumbo  | 500,000             | 1 00       | 0 60          | Zilor                                     | 1,000,000           | 1 00       | 0 15          |
| Kelley Creek                                       | 1,000,000           | 1 00       | 0 15          |   |                     |            |               |