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THE CANADIAN MINER

Vol. I.

TORONTO, ONT., APRIL 3, 1897.

No. 12.

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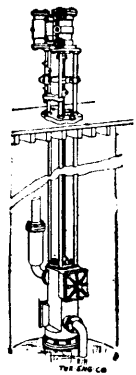
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FIRST-CLASS White Mica Property, 200 acres, in the Township of Methuen, Co. of Peterboro', for sale. This is a rare opportunity. Price moderate. Apply Box 7, Canadian Miner Office.

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The Canadian Miner.

VOL. I.

TORONTO, APRIL 3, 1897.

No. 12.

A NEW USE FOR SCRAP MICA.

(The following paper was read by H. C. Mitchell, manager of the Mica Boiler Covering Co., Ltd., at the meeting in Toronto this week of the Ontario Mining Institute.)

THE new use for scrap or waste mica which I have been asked to describe this evening, is at present confined chiefly to the manufacture of an insulator of steam heat, although it can also be applied for other insulating purposes. It will be well at the outset to define what is commonly termed scrap or waste mica.

As you are all aware mica is found in irregular shaped crystals in almost endless varieties of size and color. It is one of the most perfectly foliated of all materials, the laminae being so delicate in many specimens as to require the almost incredible number of 300,000 of them to form a thickness of one inch. The mica crystals are more or less seamed or cracked, so that often an apparently perfect crystal when split open parts and subdivides into a number of unfortunately small fragments. This unfortunate characteristic has really been the cause of much of the disaster which seems so often to have dogged the steps of mica mining in this and other countries. It is bad enough to have to deal with any material which occurs in pockets which pinch out without warning, and which leave no particular indication or lead as to where it may be found again. If all the deposits of mica which have been found in Canada had produced crystals more or less free from cracks and flaws, most miners would have been content with their finds, and would not have been so much concerned as to whether or not it was a pocket or a true fissure vein. Then again many deposits of mica disclose a large portion of crystals twisted and destroyed to such a degree as to render their cleavage almost impossible. These together with the fragments already referred to, find their way to the dump having thus far served no other purpose than to add very largely, and in some cases prohibitively to the cost of mining the merchantable article. We shall however resurrect them presently, and I trust be able to demonstrate that, instead of a loss, this hitherto costly waste may become a valuable by-product of mica mines. The proportion of waste or unmerchantable mica in every ton mined is very considerable. I do not know that the percentage of it to the ton has ever been approximated, but the evidence of a large number of miners would seem to indicate that it would average not far short of 70 per cent. of the total product. There are many instances I am aware of where the average waste per ton is considerably less, but there are also as many cases where the percentage is as much higher, so that I think I am justified in venturing that estimate. It will be readily seen then that mica miners have had to contend with a very serious problem in the matter of this abnormal amount of refuse, and they have heretofore been unable to reckon upon a return of any kind for almost three-quarters of their total output.

So far I have referred to mica in general, but now we must notice the particular groups of it in Canada. These we may determine

chiefly by the variety and color of the material. There are, as I have said, almost innumerable varieties of color and shade, from the nearly pure white to jet black, but for general purposes, we may divide them into three groups, white, amber and black. White mica appears to be very scarce in this country as compared to the quantities of amber and black, and as it is almost perfectly transparent, it has always commanded a much higher price than the other varieties. I may say, too, in speaking of white mica that there is a value for the waste or scrap of it, as when pulverized it has a beautiful lustrous appearance which leads to its being utilized for wall paper silvering and other decorative purposes. As however it does not appear to have been discovered in anything like the same quantity as amber and black in Canada, it has not as much interest to us as the commoner varieties. The great bulk of Canadian mica is included in all these shades of amber, silver, red and brown which range from cloudy or milk white to dense black, which latter as far as I know has no value whatever. I now come to this new use for waste mica. Although we can use the refuse of nearly all these varieties, excepting badly twisted crystals, it is the soft amber and light brown micas which we prefer for our purpose. This is fortunate for all concerned, as it appears to be the most abundant. We find that by taking these scraps or waste pieces and subdividing them as finely as possible, and then quilting them between galvanized wire netting, that we produce a fireproof mat, flexible and clean, and a magnificent non-conductor of heat. It will be noticed that all these flakes are ribbed or corrugated, the object being to increase the number of dead air spaces in the mat, and also to add to its bulk without increasing its weight. The finer we are able to divide these flakes, the more effective they become, as each one in itself is a splendid non-conductor, so that the greater number we are able to get into a given space, the higher the results are in checking the escape of the heat waves.

It will be seen that these mats or quilts are not only fireproof, but are flexible and elastic, which is a most valuable feature as they will expand or contract with the iron they cover without cracking or flaking off. No doubt many of you have seen boilers covered with some of the old-fashioned cements, which being put on wet and allowed to set on the material, often crack and split to make room for the expansion of the material beneath. In time it will loosen and fall off and require constant patching to keep in order. The real value however, in making these mats in sections, is that they can be removed whenever it is desirable to examine the shell of the boiler, and can be replaced easily and quickly without injury. As you will notice they are secured to the boiler by means of hooks attached to iron bands, which are passed round the boiler under the mats. Besides this covering for boilers the waste mica is made into sectional covering for all sizes of steam and hot water pipes, the only difference being that the mica is stitched between a wire core which fits the pipe, and

an outer covering of canvas. The sections are secured to the pipe by lacing round the boot hooks which are riveted up the seam at convenient distances. Covering for all sizes and shapes of fittings including elbows, tees, crosses and globe valves, are also made and secured to the iron in the same way. These have been difficult to make owing to the intractable character of the mica flakes themselves, as being very elastic it was found hard to bend them to the various shapes. We found the same difficulty in making the flakes bend round the smaller sizes of pipe, but finally succeeded by separating them into different sizes in the same way as coal is graded, the larger flakes being used on the larger sizes, and so on down to the half-inch pipe.

Perhaps I may be allowed to refer here to the not unnatural idea that using the mica in this loose dry form it would be liable to shift or sag in the wire netting or canvas case. This, however, is not the case, for the reason that the flakes being of irregular shape, with rough edges and ribbed surfaces, they catch and bind one another, matting together as hair does. As a proof of this we may say that after nearly two years in constant service on locomotives where there is probably heavier and more constant vibration than is found anywhere else, the mats have been found in perfect condition, and in the opinion of railway engineers are likely to last an indefinite number of years.

Before passing on to the probable effect of this new use for waste mica on the mining of the mineral in this country, I may be allowed to refer to some of the expert trials which have been made of the manufactured material. It is obvious that unless the results obtained from the use of this new non-conducting covering are really substantial and beyond question, that the efforts now being made to establish a new use for mica must fail. Fortunately, however there is no longer any doubt or uncertainty on this point, and I believe I am justified in asserting that we have discovered absolutely the highest non-conductor of heat in the world, which can be used commercially, and that there is no substance used in the United States or Great Britain which equals this new insulator. It is no small satisfaction to think that it has been brought into use by the enterprise and pluck of Ontario men, and that there appears no reason to doubt that the mines of Canada will be able to produce sufficient of the raw material to permit of an almost unlimited expansion of this new industry in the markets of the world. How vast this market is may be imagined, when I remind you that every locomotive in use the world over, has to be protected with some substance; that every steamer that puts to sea has boilers which require hundreds of tons of coal to feed them. (In one of the great battle ships of Great Britain lately launched, there were no less than 48 of them); and that every stationary steam plant has a boiler or a battery of boilers, which require covering to minimize the loss of steam and power by radiation. How great this loss is few manufacturers, or in-

deed engineers seem to realize. As you of course know, it is occasioned by the condensation of steam, that is, you allow the steam which you have generated often at great cost of fuel, to cool off and condense by allowing the surface of the boiler and pipes to remain exposed to an atmosphere many degrees colder than they.

With steam at 75 lbs. gauge pressure, it has been estimated that the loss of horse power on different sized pipes uncovered is about as follows :

2 inch pipe	1 Horse Power lost for every 132 feet long.
4	75
6	46
8	30
12	26

So that when you complain that you can not get power out of your engines, or that the boiler seems to small for the job, you may solace yourselves with the thought that it is very often because you don't know enough to keep your steam dry. An argument often heard amongst mining men is that as many of them use wood for firing their boilers, it is not so much consequence, if it does take a little more of it to keep up steam. Suppose that is true, it is difficult to believe that it is wiser to tie down the safety valve and pile in wood to carry steam through long runs of pipes than to remove the necessity of doing so.

FIRE PROOFING.

Another use for this waste mica is for fire proofing. Mica like everything will fuse if there is heat enough, even "the elements will melt with Fervent heat," but it will stand an almost incandescent heat without injury, and for that reason it is a very valuable substance for fire proofing. Considerable quantities of it have been already used for protecting smoke flues, kilns, etc., and in some factories, the Fire Underwriters have reduced the premiums after the flues have been insulated with mica. In this connection it is not without interest to refer to the fire risk in some mines from unprotected steam pipes. I have heard that a serious fire occurred in a mine lately in Canada, which was directly attributable to a live steam pipe which ran in close contact to a wooden sheeting or boxing, and which consequently took fire. It is very questionable whether a fire could be started from steam heat alone, but it is perfectly certain that wood may become so charred and calcined from contact with a live steam pipe, that a drop of oil or grease falling on it would quickly cause combustion. So that here again we find a use for mica. I can not refer in detail to all the other actual and possible fields and usefulness for this hitherto despised waste product of our mica mines, but I must not leave the subject without touching on its qualities for resisting the other extreme of heat, namely, frost. It is said extremes meet. They do in this instance, for the identical covering made for fire proofing give splendid results in frost proofing, and I have no doubt at all that mica will shortly be used for insulating cold storage chambers. Being free from organic matter to mold or smell, it will not taint even such susceptible commodities as butter or milk; not the least valuable of its advantages. Such are some of the uses to which we are putting waste mica.

As those interested in mines and mining, you will doubtless enquire what effect this discovery is likely to have on the mica industry in Canada? This altogether depends on the demand. If it increases as it is doing now (the sale of it advanced 98% last year) very large quantities indeed will be required. In that event we shall be able to pay better prices for it, and we shall be glad to do it. I

believe the most successful industries are those whose produce are profitable to the consumers, the manufacturers, and to those who sell the raw material. But so long as we are expected to sell as cheap as the cheapest without regard to quality or value, so long will we be forced to buy at prices which have no regard to the living wage of miners. "Buying in the cheapest, and selling in the dearest market" is a phase well enough in theory; for my part I would like to see the demand sufficiently large as to justify us in paying prices that would start every pit in Canada, and make every mine an indirect source of general revenue to the people in whose property the success of our business depends.

I do not know that we can expect quite such fortune as that, but I do believe that while this new industry may not justify mining solely for its requirements, yet every ton of waste or refuse used in it, means so much less cost of mining, and so much more profit in the year's business.

It should make a considerable difference to the expense of mining, if in the future it is known that by simply laying aside in some protected place the waste and scrap which has hitherto been consigned to the dump, a certain amount of revenue may be earned which will lessen the general expense of mining. In conclusion may I express the hope which does not emanate entirely from the selfish standpoint of the manufacturer, that the progress of this new industry may be such as will result in such an increase of the demand for waste mica as will make the discovery of this use for it profitable to the miner and manufacturer alike.

The building up of industries in Canada which use as their base raw material produced entirely in this country, must be of ultimate benefit to the general community, and I think we must all deplore the conditions which appear to result in so much of the raw material of this country being shipped out of it, to benefit the towns and villages in the countries in which it is manufactured. We must recognize the enterprise and pluck of foreigners who come to this country and develop our latent wealth, but we must also deplore the fact that it often results in the large profits of the enterprise being carried away and spent amongst other peoples. The profits of much of our Nova Scotia coal mining is not unappreciated in Boston. The great lumber mills of Michigan know something of the value of Canadian logs. The paper pulp mills of the United States are not indifferent to the wood-pulp of British America, and even distant Spokane has associated the gold mines of British Columbia with many a new brown stone front in that city. Let us hope that this new use for waste mica may conduce to the prosperity of Canadians at home.

A NEW GOLD-SAVING PROCESS.

We understand that a new process has been recently perfected by Dr. Stephen H. Emmons in the laboratory of the Argentaurum Syndicate by which gold-bearing ores of all descriptions may be treated to considerably greater advantage than at present. The yield of gold is said to be fully equal to that shown by fire assay, and the cost is less than that of any other process hitherto introduced.

The Canadian Miner will help you to make money. A showing is made of the mining industries of the country every week, and the really important mining events recorded, rather than the unimportant, or rumors circulated for selfish purposes.

TELLURIUM.

RECENT reports of new discoveries of this mineral in Canada make the following from *Mining Industry*, of Denver, of interest. That journal says:—Tellurides, or telluride ore, is the general term applied to a series of minerals, into the composition of which the element tellurium enters in considerable proportion. Tellurium, itself, presents many analogies to sulphur, and forms with many of the metals, compounds known as tellurides, strictly analogous to the sulphides. There is, however, this curious fact about tellurium—that is to say that native compounds of gold and tellurium exist, although gold is not found in nature combined with any other element. We are quite aware that certain authorities consider that gold occurs in combination with sulphur, but the evidence in favor of the existence of such a compound is far from clear. In the matter of the telluride there is, however, no doubt possible. We have, for instance, the mineral sylvanite, also known as graphic or graphic tellurium, a tin white to steel grey, brittle mineral, consisting of gold and tellurium only in its purest form, though it contains at times small or large quantities of silver and lead. The other important telluride minerals are:

Calaverite.—A yellowish grey brittle telluride of gold.

Nagyagite.—A soft blackish grey mineral, consisting chiefly of tellurium, lead and gold, and some sulphur.

Hessite.—A telluride of silver, with some gold.

Petzite.—A telluride of silver, with much gold.

There are besides other tellurides, such as Altaite, a telluride of lead, Tetradyomite, Joseite, and Wehrlite, tellurides of bismuth, and a few other minerals of less importance, such as Melonite and Krennerite. Whatever their composition, all this list of tellurium minerals is especially characterized by its persistent occurrence in connection with gold, and in gold-bearing veins. Not only do a large number of the above tellurides contain gold as an essential constituent, but nearly or quite all of them at times contain gold as an accidental constituent, so that any of them on assay would show more or less of the precious metal, but, besides this, they are almost invariably accompanied by free gold. In veins containing tellurides, those portions that show the largest amount of these minerals are almost invariably the richest in free gold, and specimens are known of such minerals as Altaite, themselves almost free from combined gold, showing well-marked plates of native gold that have been deposited between the cleavage planes of the tellurium mineral. The intimate association between tellurium and gold is too marked and obvious to be overlooked, though it would be very difficult to assign its precise genetic meaning to this phenomenon, although no one doubts that it has a very important significance, if we could only interpret it aright.

As far as we know, tellurides never occur in any quantity except in this intimate connection with gold, but it by no means follows that gold always occurs in association with tellurides, certain important gold-producing districts being quite free from these minerals. It is a far more common mineral than supposed, all over the gold mining part of the world. In Colorado it is far more abundant than elsewhere in the United States. It is found most in Boulder and El Paso and Hinsdale counties, but exists in traces in nearly all the iron pyrites of Gilpin and Lake counties, and perhaps in other parts of the

state; they occur in numerous localities along the great mother lode of California, especially on the Stanislaus and in Calaveras county; they have been found in numerous localities along the eastern gold belt, notably in Virginia and North Carolina; also, but more rarely, in Montana, and are plentiful in South Dakota and British Columbia.

The treatment of tellurides for the extraction of gold depends very much upon the proportion of these substances, and upon that of the free gold associated with them. Rich tellurides are being treated by Schemnitz, in Hungary, by means of sulphuric acid, which dissolves the tellurium, this substance being afterwards reprecipitated and collected; the gold is obtained from the residues by smelting. As tellurium has, however, no special use in the arts, and is, in fact, only a chemical curiosity, it is not in the least likely that such an expensive process will find any extended application, and the tellurium in most gold ores can only be regarded as an objectionable impurity to be got rid of as promptly as possible. The presence of tellurides appears in no wise to interfere with the amalgamation of any associated free gold; it is well known that the extraction by amalgamation of the gold ores of the California mother lode is exceedingly high, as good practice is being made there as in any part of the world, in spite of the presence of tellurides in most, if not all, of these ores. Of course, this statement applies to the free gold only; any gold in combination with tellurium is not affected by mercury, and cannot be saved by amalgamation.

Tellurides, after roasting, are well adapted to chlorination or cyanide treatment, and perhaps amalgamation. The latter point is now receiving careful testing in this city. There is no special difficulty in roasting tellurides, which are completely decomposed in the calcining furnace. According to some authorities, there are heavy losses of gold in calcining telluride ores, as much as 20 per cent. of the gold being thus lost according to one writer. That any such loss occurs in practice appears upon the whole quite unlikely, and it even seems questionable whether there is any abnormal loss at all if the roasting be skillfully done in a furnace well adapted to the ore, especially if good and sufficient dust chambers are used.

In assaying most noticeable losses are obtained, the greater part being in the cupel bottoms. In assaying rich tellurides the values absorbed by cupel bottoms range from a trace to 35 per cent., the loss apparently being dependent upon the quantity of lead used.

RHODESIAN GOLD FIELDS.

The great results promised from the gold mines of the British South Africa Company's territory—generally known as Rhodesia—have so far failed to materialize. A recent statement compiled at Salisbury, the chief town of the territory, and published by the *Rhodesian Times*, which has every reason to present the best possible showing, gives the total production from 1890, when the country was first opened, up to the end of 1896, at 7,047 crude ounces, probably about 6,000 fine ounces. The returns of ore mined and crushed are not complete, but the average result seems to have been not far from 0.67 ounces per ton.

Of course there are reasons for the slow development of the region. The difficulties with the natives, which have occurred from time to time, notably the Matabele insurrection last year, interfered much with the work.

The chief cause has been the transportation difficulty, which has prevented the introduction of machinery and has made supplies very costly. A railroad from the coast has been under construction for several years, but its progress has been extremely slow and there is still a long interval between its terminus and any of the towns or trading posts in Mashonaland and Matabeleland, while there is a still greater distance to be traversed to reach the present terminus of the railroad running northward from the Cape of Good Hope. Until some road is finished there can be little systematic working or milling of ores.

The activity in prospecting and locating claims was very great for a year or two, but more recently very little has been done in those directions. A number of companies have been organized and a good deal of capital subscribed, but it looks as if returns must be postponed for some years yet.

WEIGHTS OF ORES.

COMPILED BY A. ROY.

AVERAGE WEIGHT OF ONE CUBIC FOOT OF ROCKS AND ORES.

	In Place. Lbs.	Broken. Lbs.
Granite and Porphyry . . .	170	97
Gneiss	168	96
Limestone	168	96
Greenstone and Trap . . .	187	107
Slate	175	95
Quartz	165	94
Sandstone	151	86

ORES.

	Weight in 1 cubic ft. Lbs.	Cubic feet in 1 Ton. Lbs.
Quartz	165	12.34
Silver Glance	455	4.39
Ruby Silver	302	5.52
Light Ruby Silver	336	5.95
Stephanite	386	5.18
Horn Silver	345	5.80
Stibnite	287	6.99
Cinnabar	549	3.64
Copper Pyrites	262	7.63
Grey Copper	280	7.14
Galena	461	4.34
Sphalerite (Black)	249	8.03
Iron Pyrites	312	6.41
Limestone	168	11.50
Clay	162	12.34
13 cubic ft. ordinary gold ore equals		1 ton.
13 " " silver ore		" "
20 " broken quartz		" "
18 " gravel in bank		" "
27 " dry gravel		" "
25 " sand		" "
18 " earth in bank		" "
27 " clay		" "
27 " dry earth		" "

FROM THE UPPER YUKON.

HON. CLIFFORD SIFTON has just received from Mr. Ogilvie a most astonishing report as to the vast discoveries of gold which are made there. Mr. Ogilvie says that at Clondyke, which is some 60 miles south-east of Fort Cudahy, and further into British territory, some men are making from \$1,000 to \$12,000 per day. This is done by placer mining in the most primitive methods. The report is altogether a most remarkable one, showing gold to be found in abundance.

The Hudson's Bay are calling for tenders for a fast freight steamer for the Lake of the Woods. The boat will have a thirty-foot keel with beam in proportion, and will be especially adapted for trade between Rat Portage and the mining camps

ONTARIO MINING INSTITUTE.

THE following resolutions were adopted at a public meeting, held in the town hall, Rat Portage, on Thursday, September 10, 1896, and discussed at the meeting in Toronto this week of the Ontario Mining Institute:

1. That the Ontario Mining Institute be respectfully requested to use its power and influence with the Ontario Government to induce it to give its assistance to the district in every way in its power, feeling that in doing so it will result in vast advantage to the Province at large.

2. In view of the fact that as yet no map of the Lake of the Woods district has been issued showing the locations which have been patented or applied for as mining locations, the Government be urged with all possible speed to issue the best map possible, showing locations surveyed or taken up to date, and that the same be distributed free of charge, as the Province of British Columbia and the other Provinces are doing, both as to maps and literature respecting their resources.

3. Resolved in this connection that a sub-agency of the Crown Lands Department, having special reference to the mineral laws of this district, be established at this place (Rat Portage) where maps (corrected up to date) and all possible information can be had as to these lands; and that a cabinet of minerals be placed here in connection with said agency.

4. As to the formation of Joint Stock Companies for mining purposes, be it resolved that the Ontario Government be urged to pass an enactment whereby such companies can obtain a charter with greater speed and at a much less cost than at present.

5. That the present law as to Miners' Licenses be changed so as to define and settle the right of proprietors to hold a claim for 60 days after a discovery thereof, and that in the event of his discovery not being surveyed or paid for within that time, the location be considered as abandoned.

6. Be it resolved that the Government be urged to establish a Mining School at Rat Portage during the winter months, so that miners and those interested in the mines may be able to avail themselves more fully of its benefits.

7. So far as regards the annual rental now charged upon mining leases, be it resolved that the Government be urged to allow the same (or as much thereof as has been paid for as rent) to be applied upon the purchase money of said land when the patent is applied for, and that this rule be made to apply to all mining leases now outstanding and hereafter to be granted.

8. Resolved that the present law as to royalties upon the precious metal, while of little utility to the Government, is a serious impediment in the way of investors, and should be totally abolished.

9. Lastly, it is the unanimous opinion of this meeting, and of many competent judges, that this district, both as to its mineral resources and as to its advantageous position for mining, is second to none in the Dominion of Canada, and is fully justified in claiming some of the millions of foreign capital now going into the mines of the West, and that any assistance now given by the Government in utilizing or the setting forth its advantages will result in great benefit to the Province and to the Lake of the Woods, and will come at a most opportune time.

The Canadian Miner.

ISSUED ONCE A WEEK

AND

Devoted to the interests of Miners, and all kinds of Mining; to the popularizing of Mining as a great National Industry; and to the protection of investors in Mining Companies.

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MINING REGISTRATION.

MR. HARDY has introduced into the Legislature a bill respecting the registration of instruments in respect of unpatented lands. Instruments affecting unpatented land in Muskoka, Parry Sound, Nipissing, Thunder Bay and Rainy River, are not hereafter to be registered in a register office but a caution shall be lodged with the Local Master under the Land Titles Act. After the passing of the Act, the registration of any instrument affecting unpatented lands in any of the said districts shall cease to have any effect after two years from the passing of the Act. The Act also provides for the valuation of mining lands where compensation out of the Assurance Fund is feasible.

COMMUNICATION.

How to establish communication throughout the Rainy River district is an important question. Deputations are now waiting upon the Provincial and Dominion Governments asking for assistance to railway building. These considerations, however, are deserving of attention. The amount of land in this district suitable to agriculture is small. A compact farming population can, therefore, hardly be expected for the present at any rate. The mining population which will come in will, like mining populations generally, be scattered and shifting. To establish communication to such a population throughout a rocky and broken country by railway would be an extremely difficult and costly task. A better plan is to utilize as far as possible the rivers and lakes of the region to connect Lake Superior with the Saskatchewan River, running into Rainy Lake. It is contended that the cost of connecting the head waters of the Saskatchewan with Lake Superior would not entail very great cost. A useful suggestion is made that the magnificent water power of the river might be utilized to work electric lifts instead of more costly canal locks. Light

flat-bottomed boats could thus be employed to carry in supplies and machinery. The old St. Francis lock would require a little attention, and an effective system of water highways would be established.

THE RAT PORTAGE RESOLUTIONS.

WE publish in another column a series of resolutions passed at a public meeting, held in Rat Portage in September last.

There is no doubt that the Ontario Government is disposed to give every legitimate assistance to the development of the mining industry in the Lake of the Woods country. Mining has made such rapid advances, however, that it is somewhat difficult to get that understanding of local conditions which will enable legislators to enact a good working code. The request for a sub-agency of the Crown Lands Department has, we believe, been granted. The request for a cabinet of minerals, and for a School of Mines would seem to come from the anxiety of persons, who not being expert miners, seek in this way to enable themselves to do good prospecting work.

The clause asking for greater speed in the incorporation of joint stock companies should not be granted without careful consideration. The miner's interest in rapid incorporation is deserving of attention, but the public interest in having companies properly incorporated and regulated should not give way to the anxiety for haste. We cannot afford to have the progress of the mining industry prejudiced by looking at things from only one point of view.

The 5th resolution deals with a real difficulty. Everything should be done to enable definition and maintenance of rights without doing anything which may retard enterprise.

The opposition to royalties is instructive of the unwisdom of hurrying and badgering the government too much. These royalties have not been imposed to procure revenue but in obedience to a public outcry for the purpose of restricting the enjoyment of our wealth by our neighbors. Like all restrictions of the kind they worked to prevent enterprise. These royalties should be taken off.

THE GOLD ORES OF EASTERN ONTARIO.

WE were glad to notice a copy of a report on the Craig mine, in last Saturday's issue of one of our Toronto dailies. The report was made by Mr. W. Hamilton Merritt to the directors of the Toronto Tudor Mining Co., and the general tenor of the same would seem to indicate that there is no question about the fact that free milling ore exists in the eastern part of the Province of a character which will pay handsomely. It evidently now only remains for this company to prove up what quantity of ore of this character is to be found in their property.

Like conditions, no doubt, exist in many other places in this district, and we are more than gratified to think that so near home

there are excellent chances of free-milling gold ores, as well as the refractory gold ores, which have long been recognized to exist in the above mentioned region.

With regard to the latter, we are very anxious, with the rest of the community, to learn of the success of the English company who are now testing the extraction of gold from the arsenical ores of Deloro, by means of the Bromo-cyanide process. We have little doubt about the ultimate success of their enterprise for numerous experiments are reported to have preceded the erection of the works, but if our information is quite correct we are somewhat surprised to learn that they attempted to grind their ore in one of Krupp's ball mills without previously drying it. We understand the delay in their operations has been caused by this defect, which is now being remedied by the erection of adequate drying plant, and we hope any day to hear that satisfactory extraction has resulted from their work.

Geologists have long pointed to the similarity between the Marmora belt and the ordinary Huronian series as represented in the northern and western parts of the province. As it is well-known that this formation is the most prolific carrier of gold ore which is found in Ontario, and is every day proving itself more attractive in the western portion, we therefore think that there are substantial grounds for believing that the prospects of the eastern portion of the province, geologically speaking, may be found to be equal to that of the western. The great attraction to capital of these eastern Ontario gold bearing areas lies in the fact that cheap labor and abundance of agricultural products are to be found close at hand, together with every advantage of an old settled and well developed section of the community.

THE NEW ERA OF MINING.

No known country to-day is richer in mineral wealth than British Columbia, from whose various mines have been extracted during the past thirty-seven years an immense output of gold, silver, copper, lead, coal, etc., aggregating in value \$100,000,000. As the most primitive methods only have been employed in mining the more precious ores, however, the full value of the mineral resources of the country could not even be approximately estimated, but with the recent commencement of the era of scientific mining, and the greater facilities for prospecting now enjoyed, it is assured that the coming great development will show an enormous richness hitherto past comprehension. New finds are being constantly made, and there is every indication that almost the entire province is underlaid with precious metals. The name of British Columbia has, in fact, become the synonym of mineral richness, and its treasure chests are now open to the world. In contemplating the vast resources of this north-west country, it should occasion little surprise that many are every day investing all their available capital in taking out the treasures

BRITISH COLUMBIA'S GOLD.

THE LARDEAU.

A PROMISING MINING DIVISION OF WEST KOOTENAY.

LARDEAU is in a sense perhaps the newest of West Kootenay mining divisions. Although the first claims were located on July 29, 1892—the Black Bear and Kangaroo by T. Downing and B Ramey—and were followed by other discoveries in '93, certain events then occurring conspired to keep it back till '95, when a start was again made. At the time of the early discoveries in Lardeau the whole district was being searched for mineral, but when the slump in silver came it severely hurt every silver camp in the country, shaking even the great Slocan, which on account of its forward state stood it best, and almost suspended operations everywhere. In '94, the following year, heavy storms and floods visited the district, and in Lardeau was felt so badly by blocking up and washing out what trails and bridges there were, permission was given claim holders to restake. Consequently, as before stated, little was done in Lardeau till '95, when a renewal of interest in its great ledge again began. In 1896, this interest intensified, and four times the number of claims located the previous year were staked in this, the first year when general prospecting began. All through the winter of last year and up to the present time the interest in the division has been general, and since the first of the new year no less than \$150,000 of bonds and transfers on and in properties have taken place. As nearly all the new locations will be opened, and as all the new purchasers expect to develop, and in some cases hope to ship ore, the present year will be one of tremendous activity in Lardeau and make it one of the big camps of the country. There is not a vestige of doubt but that, before the fall of 1897, this division of West Kootenay will have undergone a wonderful change and be just as well known as Trail Creek or the Slocan.

It now presents one of the grandest openings in the district for prospector or investor. It has not been prospected to one-eighth the extent of the other districts, yet sufficient has been done to show it worthy of every attention. To those who this year come into West Kootenay looking for locations and properties and who find the older camps well filled, no better field than Lardeau could be chosen. And those who want to purchase reliable properties at nominal figures can get good investments there, without paying two prices for them. Capitalists are already giving it their notice, and it will soon have a local railway which will cheaply haul its ore. A smelter, too, is talked of at a point in the division on deep water, and this with concentrators, its great ore bodies can easily supply.

The mining division of Lardeau takes in on the east all the watershed of the Fish River from Battle Creek to deep water on the North-east arm of Upper Arrow Lake. On the north it goes as far as Isaac Creek on the Arrowhead branch of the C.P.R., and running south goes to within 16 miles of Nakusp, covering both sides of the upper part of Upper Arrow Lake. In size it covers an area of 35 square miles. The main points of business are Galena Bay, where the Lilloet, Fraser River and Cariboo Gold Fields Co. will shortly have a large town. Thompson's Landing, the present entrepot of the Trout Lake district, and Lardeau, at mouth of Fish Creek, where it empties into the arm.

OVERCAPITALIZATION OF COMPANIES.

THE London, Eng., *Mining Journal* says: Although the gold mining industry has suffered so many tribulations during the past 10 years or so, it is a somewhat remarkable thing that the financial side of mining enterprise should have undergone no appreciable change. The average company promoter is not as a rule very partial to reform in his methods of doing business, and so long as he has a robust faith in his lucky star he is not disposed to be guided by any principles of industrial economy. Thus it happens too frequently that a really excellent property is conducted on lines that, if applied to an ordinary business, would speedily land the proprietor into bankruptcy. Other mining properties fail to pay at all, when, with a rigid system of economy, they might be made to return very satisfactory dividends to the shareholders. In fact, it would not exaggerate the present state of things to remark that there are very few mines in any part of the world that are giving all that they might be capable of returning to the investors, and there is no doubt that if directors as a class really knew their business, and were sincerely anxious for the welfare of the shareholders, the position of mining would be vastly more satisfactory than it is at the present moment. We do not, however, desire to condemn the directors as a body, because this would be doing an injustice to their commercial morality. What we do most strongly protest against is the system by which gentlemen, who are often entirely ignorant of mining matters, are appointed on the directorate, and who, safely entrenching themselves behind their own ignorance, leave the whole of the management in the hands of one man, or at the most, of two or three. This concentration of power into one or two hands is most certainly a danger to the interests of the main body of shareholders, as in enterprises of this description those people who confide their money to the company generally do so on the strength of the guarantee of honesty and straightforward dealing that seems to be afforded by the presence of well-known names on the board. If these gentlemen merely draw their stipend and leave the management in the hands of a professional financier, the object of the plurality of directors as a guarantee that the interests of the shareholders will be well served is entirely defeated. The only remedy for this grievance is that the directorate should be composed exclusively of gentlemen having a practical or technical knowledge of mining management, and it would pay the shareholders to be so represented even at the expense of much heavier stipends.

An adjustment of capital to a moderate estimate of the value of a mining property is of vast importance at the present moment, when the investing public is beginning to consider whether, after all, auriferous mining offers such a satisfactory opportunity of remunerative gains as it has been led to believe in the past.

For a great many years to come gold mines will continue to occupy the attention of a large section of investors, and if conducted upon proper lines, they would undoubtedly yield considerably larger profits than would be possible in any other industrial enterprise. It is very desirable, therefore, that, in the flotation of new gold mining companies the promoters should manifest less desire to secure the maximum of capital out of the public than they have done in the past, and that the shareholders should insist on the properties being developed on strictly economical and business-like lines.

hidden in the mountains and embeded in the channels of nearly every stream. When we take into consideration the fact that for the past two years gold has been the chief object of the prospector's search, and that the success following his persevering efforts has far surpassed his most sanguine expectations, it is not to be wondered at that so many who scarcely had sufficient clothes and food are now counting their riches by the thousands.

But it is must be borne in mind that this mining industry is only in its infancy, and that to still further develop this country, outside capital is required. With the above facts staring one in the face surely no better channel for investment could be recommended than this favored region. Laterly mining has received so much attention that it almost forms a branch of one's education, and the many improvements that have been added to machinery and other methods of obtaining and treating the precious metals have not only enabled them to be more easily mined, but also at a much lower cost and with less manual labor. Capital, therefore, when invested in legitimate mining business that is conducted on a practical business basis will not fail to return the investor greater profits than ordinary enterprises in proportion to the same amount of capital invested, and with proper co-operation even small sums can be made to yield proportionately satisfactory returns. There is no doubt that Rossland is the greatest gold field that has yet been disclosed to the world. Three years ago the site of Rossland was as remote from civilization as any spot on the globe. Miners have paid as high as a dollar for getting a letter in or out. Standing on the main street of Rossland to-day, and seeing the bustle and hurry of its 5,000 inhabitants, the smoking and steaming works of the mines in operation, hearing the whistle of the engine bearing carloads of gold ore to the smelter at Trail, its various fairly good hotels, its opera house and other signs of energetic and quick action, one is inclined to associate the town with some fairy tale. Standing on the main street of the town, one is surrounded by everlasting hills, and it would be a bold man who would assert which of them is the richer in precious metals.

Away from railroads, away from commercial centres, turned down by experts and capital, a mere handful of hardy, determined miners stood loyally behind their conviction that where Rossland now is great bodies of ore, rich in gold, silver and copper, would be developed, smelters would be built, railways would be constructed and a great business centre, with schools, churches and all the appointments of civilized life would be built up and many individual fortunes would be made. These hardy men have shown to the world that their convictions were correct. The humble and often hunger-bitten prospector, with pick on his shoulder, a stone bruise on his heel and rocks in saddle bags is the hero of British Columbia.

Eminent mining engineers, representing London and Paris capital, are authority for the statement that within a radius of a dozen miles of Rossland nature has deposited more golden store than in any simliar area on the globe.

ONTARIO NEWS.

Lake of the Woods.

Mr. A. C. Craig of Toronto is on a trip to the Wahnapiatae and Lake of the Woods districts in the interests of a Toronto syndicate. He has reported that the Wahnapiatae district is attracting much attention and that many mines there look very promising.

The C.P.R. is said to be about to erect a six-ton derrick at Rat Portage for the purpose of handling the heavy mining machinery reaching that point, but the leading mineral men think that the crane should be a ten-ton affair at least. The Sultana air compressor will weigh 8 tons, and the weight of the machinery taken in will likely increase as the development of the country progresses. In addition to the air compressor the Sultana people are bringing in a complete new outfit of machinery. The mill will be built to accommodate 50 stamps, 30 of which will go in right away, the other 20 to be added in the fall.

Not many people are aware that there are several mining locations within the municipality of Rat Portage. One of these is owned by Messrs. McCarthy & Kennedy, and it is upon this location that the Rat Portage Diamond Drill Company's plant will first demonstrate its usefulness in connection with the gold mining industry. Another proposition whose value is to be investigated this coming spring exists on Tunnel Island. Some time ago a sample of this Tunnel Island lead was taken by an expert, which yielded 12 dollars per ton. It is almost a pity, however, if this should turn out to be a workable vein, as without a question Tunnel Island is one of the most pleasant and desirable dwelling places within the municipality.

* * *

Around Madoc.

An offer of \$250,000 has been made for a controlling interest in the Legier property in the township of Barrie.

Mr. Sprague, manager of the Sovereign Mining and Development Co., has 2,000 acres of mineral land in Frontenac. Of this it is said 700 acres of silver lead property will be put into a company which is now being organized.

A few shares of promoters' stock is yet held for sale by the Sovereign Co.

Says the St. Ola correspondent of the Belleville Sun: Mr. P. P. Clarke, ex-warden, sold a property near here to Messrs. Hyman & Banks of Toronto, and they have developed on it a very fine marble quarry yielding a fine mottled red and white marble, which is said to be splendidly adapted to any ornamental or memorial work. The same firm are opening up a gold quartz vein on Salmon Lake near the village, and from prospects think they have a good thing.

Mr. A. J. Brewé, M.E., who came to Canada some weeks ago to look over Ontario and British Columbia mines, in the interests of British capitalists, has left for London, England. Among other fields he looked over Deloro, and after having a conversation with Mr. Swinney, manager of the Canada Gold Fields Co., of Deloro, he came to the conclusion that North Hastings was the place for his capitalists to operate in. He was very favorably impressed by Mr. Swinney's opinion of North Hastings as a mining country. In fact, the latter asserted that no other country offered the same inducements for profitable mining as the Hastings region, with its excellent climate, good roads, abundance of water, cheap labor and rich ores. As both Messrs. Brewé and

Swinney have had large experience in Australia and other gold fields this hasty return to England is very significant. Mr. Brewé takes with him the finest collection of specimens of ores ever taken from Canada to England. It was gathered during many years, and is fully representative of the minerals of the district, including the counties Hastings, Peterborough and Frontenac.

* * *

Around Sudbury.

(From the Sudbury News.)

We understand an expert is now at the Crystal Mine, superintending the fitting up of the stamp mill.

Messrs. Gray and Galt, of Toronto, who are interested in the Gold Cliff on Lake Koogagaming were in town this week.

For the last six days the Wahnapiatae Navigation and Transportation Company have sent out on an average four loaded teams daily.

We are informed that the Canadian Copper Company have their shaft down to the twelfth level. It is also timbered up and ready to hoist.

The Crystal Gold Mining Company's steam saw mill started cutting this week, and there is plenty of work in sight to keep it buzzing along for months.

Mr. Gunlache, of the Moose Gold Mining Co., visited their property at Lake Wahnapiatae a few days ago, and we are informed operations will commence shortly.

Mr. Allan McDonald, captain of the Crystal Gold Mining Co., returned last week from a trip to Rat Portage. He has taken a contract of development work for the Bath Island Mining Co., and left his brother in charge.

Mayor Cochrane, F. B. Chapin and C. Kettle have just returned from the Hub Gold Mine and report work progressing satisfactorily. Operations are being carried on day and night, and increased force will soon be put on.

Messrs. Price and Kilpatrick were out examining the progress on their gold property. They are building more camps and will put on stronger force when snow in the woods is entirely gone. The development work done during winter has resulted favorably enough to warrant considerable expenditure.

The Algoma Talc and Nickel Co., have started operations in their mica mine, and the C. P. R. agent at Warren telegraphed President Dreany on Monday stating that there was 1,500 pounds of mica delivered there for shipment. Mr. Dreany authorized him to ship it here, where it will be cut and prepared for market. The demand for mica is much greater than the supply, therefore it brings a high price. The Company has it rich in this mine. The first shipment is the result of about 10 days' work.

The excitement in the copper markets of the world, says the Wall Street Reporter, shows no sign of diminution. On the contrary it appears to be increasing. The enormous sales of lake copper for export astonish the trade. One sale last week was made of 4,000,000 pounds of copper wire at 11 7/8c. The sale is understood to have been for export to Germany, where the electric railways are rapidly extending. Copper for 28 electric railways in England is now being contracted for. One effect of the copper boom is the revival of interest in copper mining properties. Prospecting for new mines is active, especially in lake regions and old abandoned mines are being put in readiness for reworking if the price of copper

is maintained. The old Isle Royal mine which has been closed down for a generation, will soon resume. The Calumet & Hecla Company expects to increase its output this year by 120,000,000 pounds.

Mr. Jno. Lee, of Sault Ste. Marie, Ont., had heard something about the Wahnapiatae gold country, and out of curiosity came to Sudbury last Saturday. Yesterday he went out to Lake Wahnapiatae with a full outfit, and with the idea that there is lots of gold in that region and that he is going to remain there until he finds what will suit him. Mr. Lee has been mining in the Western States and also in British Columbia, and is satisfied that Nipissing and Algoma are the richest mineral fields on the continent to-day. He also predicts that we are going to have the biggest mining boom right here that Canada has ever seen.

Mr. Jno. T. Cryderman, who had the contract of freighting the Wahnapiatae Navigation and Transportation Company's steamer to Lake Wahnapiatae has completed his work. The boat is now in position and will be given a coat of paint and otherwise fitted up. A gang of men are busily employed building a dock, warehouses and a hotel. With a tri-weekly stage line from here to connect with the boat and a comfortable hotel, the trip to the mines can be made quickly and with comfort. Mr. O'Connor, who is the moving spirit in this scheme, should be given every credit for his energy and enterprise in placing the first boat on the lake and giving prospectors and others safe and rapid communication with the gold country.

COPPER CLIFF—Work in the Copper Cliff mine is now in full blast for the season. Operations have commenced in the new shaft which Capt. Davis expects to open up this season on the hill across from the rock-house towards the Evan's mine.

* * *

Mines Around Vernon.

(Special Correspondence.)

In these days when the attention of the Canadian public is being specially directed towards the mines of Kootenay, Slocan, Rainy River and Sudbury, other communities which show properties of much promise are overlooked.

In the vicinity of Vernon there are quite a number of desirable mineral locations now being developed and which promise well. The work of development was slow owing to the fact that for years the attention of the settlers was devoted to agricultural pursuits. The Spallmicheen and Okanagan valleys, which include the territory extending from Sicamous, on the main line of the C.P.R. to Penticton at the foot of Okanagan Lake, a distance of 125 miles, possess the most fertile agricultural lands in the Province of British Columbia. The City of Vernon is the business centre, although Enderby, Armstrong and Kelowna are promising points. Six miles from Vernon is located the Coldstream Ranch, owned by His Excellency the Governor-General. There are in the valley three flouring mills, saw mills, creameries and all necessary industries.

Since the mining industry of British Columbia has begun to develop, attention is being given to this portion of the Province, and the indications point to the fact that a mining boom is in store for this community. The location and natural advantages are in every respect superior to that of any mining locality in the Province.

Leaving the C.P.R. at Sicamous, we take the branch line for Vernon. The first place

of importance is Enderby. Here are located a number of very promising claims, on which development work is now being done. In the vicinity of Armstrong, a village of much promise, are also located a number of apparently valuable claims. Passing on to Vernon we have here five incorporated companies all carrying on the work of development. The pioneer is the Morning Glory, of which the Messrs. Morden are the original promoters. This property comprises several claims, on one of which a shaft has been sunk to a depth of over 80 feet. The ore is free milling with sulphurets. It is claimed that as soon as the necessary machinery is procured, this property will prove a valuable one.

The Silver Star Mining Company have a very valuable galena property about 12 miles to the north-east, a good road leading for one-half the distance. The ledge is 6 feet wide and along the foot wall there is a solid vein of galena 6 inches wide. The average assay shows gold \$8, silver \$53, and lead 29 per cent. The shaft has been sunk to a depth of 26 feet. Mr. C. O'Keefe, one of the pioneer settlers, is president of the company, and Mr. A. G. Fuller, merchant, of Vernon, is secretary. Work of development is in progress. At Round Lake are situated the Clara and Corinne claims. These also show galena deposits. The assays from this property show gold \$10, silver \$19. The owners are at present negotiating with a Vancouver syndicate for the sale of these claims.

Quite close to Vernon is situated the mining property of the Bon Diable Mining Company. This is a free milling proposition, is well situated and shows excellent returns. A shaft and tunnel has been sunk to a depth of over 80 feet. Assay returns show this claim to be rich in gold and silver.

It is capitalized for \$75,000, and the shares are all sold at the full par value of \$1 each. Capt. Carew is president, and C. E. Costerton is secretary. On the peninsula at the head of Okanagan Lake are situated a large number of claims. The Morning Glory property occupies the eastern portion, while the western is taken up with the claims owned by the Ruby Gold Mining and Development Company Ltd. This company although only incorporated in February 1897, has shown considerable enterprise and activity. It has acquired 8 claims, on all of which are well defined ledges, and from what work has been done the ore is undoubtedly well mineralized. Free gold exists on the rock in large quantities. The shaft on the Ruby claim has been sunk to a depth of 25 feet and work is progressing as fast as it can be done. The ore on this property is all free milling. The surface assays run from \$4.79 to \$7.72 in gold and silver. At a depth of 15 feet the average of 4 assays from an average sample of the mineralized rock, gave the excellent showing of \$53.94 in gold and \$9.86 in silver. The assayer, Mr. A. L. McKillop, of Nelson, B.C., in his letter accompanying the certificate confirms the existence of free gold. In the ore there is also a probability of the existence of tellurium. The company is composed of the following well known citizens of Vernon. The president, Mr. R. Sparling, is principal of the Public School; Mr. G. Henderson is managing director of the News Publishing Co., also a member of the City Council. The others, Messrs. J. Bond, J. Highman and D. C. Undermist, are highly respected citizens. This company is capitalized at \$400,000, in shares of \$1 each. The promoters have by non-assessable. The promoters have by agreement bound themselves not to sell any

of their stock until all the work of development is done, and a stamp mill and other necessary machinery, is on the ground. To render the further assessment of shares impossible, the company has, by its charter, declared that before any work is undertaken or contract awarded, the necessary funds to provide for the same must be on hand.

Forty-five miles from Vernon, on the west shore of Okanagan Lake, are situated the properties of the Camp Hewitt Mining and Development Company. The first work done in the district was probably done here. Towards the close of last year all parties holding claims in the neighborhood put them into the company which was duly formed. On several, the Gladstone and Lake View, considerable development work has been done. The ore contains gold, silver and a percentage of copper, thus rendering it very desirable for smelting purposes.

Returns received show this ore to be a very high grade. Test shipments have been sent to the smelters at Tacoma and Everett, Wash., also some to Nelson and Trail. It is the intention of the company to commence shipping ore at a very early date. The regular meeting of the shareholders will be held in a few days. This company starts out under very favorable auspices, and is sure to be successful.

There are in the vicinity of Vernon quite a number of other valuable claims. These are owned by the citizens. There are no "wild cats" here. The citizens are, it is true, desirous of developing the mineral resources of the district, which are very extensive, but due care has always been exercised in order that nothing but thoroughly legitimate properties will be placed on the market. For the man of small capital, the mining region around Vernon offers the most desirable opportunities. —R. S.

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Seine River.

The stamp mill for the Preston mine is said to be scattered all along the road from Tower to Bell City, and it is not likely that they will get it all in before the roads become passable.

The Fergussons have got their three-stamp mill erected, and it is expected that there will be some startling returns soon made from this property.

Work on the Golden Goblin has been progressing steadily. They are now down 22 feet on this property and the vein looks better than ever, there being at least three times the quantity of quartz at the bottom of the shaft that there is at the top. The last shot that was put in threw up at least a dozen specimens, all showing little pieces of free gold. The property has a first-class reputation in the neighborhood and every fresh foot of sinking only adds to the opinion held of it by the miners in the vicinity. It is expected within a few weeks to be able to make a practical mill test of several tons of ore.

AROUND TOWN.

We are informed to the effect that a block of stock of the famous Sweden mine is about to be placed on the Toronto market. The property consists of 179 acres, situated seven miles east of Rat Portage and within about one-half mile of the C.P.R.

The Red Eagle mine, Deer Park mountain, which created such a sensation last fall by yielding remarkably high surface assays, gives promise of keeping up the pace and eventually turning out a record-breaker. Machinery has been installed in the mine and a large amount of work is being done by a day and night shift.

BRITISH COLUMBIA.

Around Rossland.

The Black Bear compressor started pumping air into the mine and worked very satisfactorily, says the *Rossland Miner*. Nine drills were put on in various workings of the Le Roi property, and these will be kept going until the hoisting engine over the main shaft of the Le Roi is up, when the number of drills will be increased.

Col. Ridpath, one of the directors of the Le Roi, is responsible for the statement that a smelter is shortly to be erected to handle the output of the Le Roi, and that it will certainly be put up at Northport. The plant is to have a capacity of 350 tons per day, which will make it large enough to handle all the Le Roi ore.

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Slocan.

The weight and value of the ore shipped from Kaslo in the Slocan during the eight months preceding March 1st last may be estimated thus:

Month.	Pounds.	Values.
July, 1896.....	2,002,064	\$ 86,257
Aug., 1896.....	3,004,511	128,954
Sept., 1896.....	1,587,182	63,454
Oct., 1896.....	1,286,993	54,572
Nov., 1896.....	1,117,130	59,903
Dec., 1896.....	3,966,500	202,925
Jan., 1897.....	4,341,845	207,650
Feb., 1897.....	4,885,960	225,852

This makes the enormous total of 22,192,185 pounds, or slightly over 11,096 tons, or a gross value of \$1,029,567, as stated in the clearances. When it is remembered that this has gone from Kaslo alone, some idea may be had of the production of the Slocan, although yet in its infancy. From the above statement of quantities and values it will be gathered that the highest rate per ton of ore shipped was in November last, when it amounted to \$107.24, the lowest was in September, when it amounted only to \$80 per ton. The average of the entire quantity was \$92.78 per ton.

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Pannings.

(Special Correspondence.)

A double shift is now working in the IbeX of Rossland, and the tunnel is in over 110 feet.

The machinery, lately put in the Silver Bell, is now in full working order, and a large force of men are working on the property. A rich galena vein is being opened up, the ore of which is of the very finest quality.

The Idaho mine, in the Slocan, has paid another dividend of \$20,000. This makes a total of \$152,000, of which \$120,000 has been paid during the last six months. Dividends of a similar amount will now be paid monthly.

The Cromwell Mining and Development Company are negotiating for the purchase of a promising property in the Slocan, which, with the "Trail Hunter" and "Cromwell," will increase the company's holdings to three properties.

It is reported that the Inter-Ocean Mining and Prospecting Co., of which Mr. John R. Barber, of the Toronto Paper Company, is president, have acquired some valuable properties in the Rainy River and Wahnapiatae Districts. This company already own and have under development the "Vernie," a property two claims distant from the Crown Point mine, Rossland.

If the Crow's Nest road, says the *Spokane Chronicle*, is constructed along the route favored by the surveyors and engineers, who have gone over the ground, it will not touch either Lethbridge, McLeod, Pincher Creek or Fort Steele.

It would leave the Lethbridge branch at Woodpecker, cross the Calgary and Edmonton Railway at Leavings, pass close to the Porcupine Hills, and then make straight for the Crow's Nest Pass. West of the mountains it would turn north along the river, and before reaching Fort Steele would bend straight west, and then follow south again along the Moyea Lakes and down the river to Nelson.

An example of the success that can be attained by a properly managed company is exemplified by the Rossland and Trail Creek Mining Company. This corporation is probably one of the strongest mining companies doing business in British Columbia, having six full properties under development, and through which nine leads can be distinctly traced. While the stock of this company has only recently been put on the market the company has been in working condition for the past six months, but before offering any stock to the public the incorporators determined to prove that they had mines by actual work. For this purpose money was supplied personally by the incorporators, and together with development already done both on their properties and on adjoining shipping mines, the company are able to offer an investment, not a mere prospect.

The Goodenough Mines Company have prepared a statement of the shipments from the Goodenough, which presents a record that is somewhat remarkable. From January 14, 1895, to March 12, 1897, inclusive, there have been shipped, from this property, very nearly 304 tons of ore, in exact figures 303 tons, 1,807 pounds, of an aggregate value, according to smelter returns, of \$61,591.76, which is at the rate of \$203.12 per ton of crude ore. The highest assay in silver to the ton of any single shipment was 817.6 ounces, and in lead 70.5 per cent., while the quotations of silver ranged from 59 5-8 cents to 68 3-8 cents, which was the highest price received, while lead has fluctuated between \$2.50 and \$3.27. These figures challenge attention because of the high average value per ton of crude ore, which would be hard to surpass anywhere. They attest eloquently to the value of many of the Slocan producers, for the Goodenough does not stand alone in its remarkable record.

THE BIG BEND REGION.

AN OLD PLACER MINING DISTRICT.

OF the Big Bend country, which was in the old days a great placer mining region, and which now bids fair to hold its own both as a hydraulic and a quartz mining district, the *Kootenay Mail* says:

The Big Bend mining district properly speaking comprises all that portion of East and West Kootenay lying north of the C. P. R. main line between the stations of Golden on the east and Revelstoke on the west. It acquires its name from the course of the Columbia River, which, flowing north from Donald for about 100 miles, turns suddenly southward and is crossed again by the C. P. R. line at Revelstoke 75 miles further west. This immense triangular area is mineralized throughout, but as settlement, or more properly discovery, came from the west and south the little that is known of its resources is confined to its western portion reached from the town of Revelstoke which is its natural and only supply point. At this place daily train connection is to be had to the east, west and south and all supplies for the district can be obtained. Starting from Revelstoke a good pack trail follows the Columbia to Goldstream, a distance of 62 miles. The river is now being opened up to navigation

and some new trails are to be added to those already existing. The principal stopping places along the trail are Carnes Creek, 28 miles; Boyd's, 39 miles; Downie Creek, 44 miles, and Goldstream, Laforme's ranch, 64 miles. Above Goldstream there are at present no camps, but every prospect of several this year.

ALASKAN GOLD FIELDS.

SAYS the *Rainy Lake Journal*:—John Gilman, who was one of the first prospectors to invade the rich Manitou region and who made some rich finds up there, became discouraged at the slow development, and left here for Mexico, meanwhile maintaining a partnership interest in an expedition to Alaska. Neither expedition "panned" anything and he returned satisfied that there is nothing in Mexico to approach this country in richness of ores, their free-milling character, to say nothing about the advantages in point of wood and water, and ease and cheapness of prospecting over that country. The Alaska contingent are also very much dissatisfied with things up there, which are terribly exaggerated and overrated, and will be here shortly, satisfied to remain. Mr. Gilman, whom his many friends are glad to welcome back, is more enthusiastic than ever over this region since his tour in other lands. He says the Merritts have spent thousands of dollars in Mexico, and have nothing to show for it, while, on the other hand, had they invested the same money here, within a stone's throw of Duluth, they would to-day have retrieved their lost millions. He also says that George W. Davis, who found the Little American, is now in Mexico, trying hard to get enough money to get back to the Rainy Lake gold fields, and that he is sorry he ever left this region, being more confident now from travels in other regions that we have here the richest and most extensive gold fields on earth. And so say they all who have had a chance to make comparisons, and who are versed in mineral lore.

MINING vs. STOCK SPECULATION.

IN one respect there is promise of compensation for the long continued dullness of the mining stock market. There are signs that an era of mining rather than of stock speculation is at hand. The extensively advertised stocks of every grade and character have proved delusive pitfalls to a vast number of people, and the present apathy, not to say hostility, with which the most glowing stock propositions are received is the natural harvest of the wind-sowing, so largely indulged in of late years. But while the lesson has been a severe one, people all over the country certainly know more about mining and its possible profits than they did before the epidemic of gilt stock certificates spread over the land. The day for floating fake companies has passed. Those now before the public are rapidly finding their level through the discriminating action of investors, and will soon be lost to sight. They have done their work in feathering the nests of a few promoters, and have also done much to bring stock dealings into disrepute. There is now no temptation to incorporate even the most legitimate proposition, as the public appetite for that kind of pabulum is completely satiated. The blackboards of the Exchange have a supply of stocks of solid value sufficient to satisfy the speculative demand for years to come, and these will absorb attention as the others disappear. But with the widespread interest in mining, apart from stock speculation, and the check that has been

placed upon the inundation of paper shares the present active demand for entire properties as an investment, is easily accounted for. The great majority of investors—people of moderate means—can still secure individual interests in good mines through the stock market, but capital in bulk is looking for larger and more exclusive holdings. There has not during the last 25 years been so much inquiry for good mines and prospects as at present. Until lately properties, however meritorious, went begging for buyers, or even for money needed for the work development. In order to interest capital it was found necessary to divide a property up into many thousand shares, which could be offered at a nominal price. The mining stock exchanges were formed to make a market for these shares, and it can not be denied that they have done a great work in rising the funds which have developed many a prospect to a dividend paying condition. But the necessity of this almost infinitesimal subdivision has in a great measure passed away. The difficulty now is not to find a market for good property but to find a good property at such a price that it may be safely recommended to ready buyers. Cripple Creek has the lead so far as stock interests are concerned, most of the companies before the public being formed on properties in that district. But among buyers of entire properties there is an evident partiality for older sections, such as Boulder, Gilpin and Clear Creek counties, where the formation is granite, the veins well defined and of proved value at great depth, and where boom prices do not prevail. It is worthy of note that most inquiry comes for properties which are just emerging from the prospect stage, having already a showing of ore which gives assurance of early profits. Such mines can often be bought at \$5,000 to \$20,000, and are certainly more attractive than an uncertain prospect or than a mine whose resources have been largely depleted in making a record of shipments. It is a mystery why people will pay for a mine a price proportioned to what has been taken away from its ore bodies, and yet such things have been done. These medium priced developed prospects present an equal certainty of relative value with far less possibility of disastrous result. It is to be hoped that this increasing tendency of capital towards the mines will not develop into anything like a South African craze or the California race of the days of '49. If it should do so the way will be open for the peddler of "gold mines" on pocket samples, and a new cycle of speculation in cheap and gaudy shares will be upon us. The tendency to this state of things can at least be checked by a conservative course on the part of buyers. For instance, it would be wise for an individual not to be too anxious to monopolize all the prospective advantages of a mining purchase. In the multitude of counsel there is wisdom. If the property is already paying a profit let your friends and neighbors have a chance to share in the venture, thus availing yourself of their united business judgment. If it is still a prospect, touch it not single handed. It is too much of a risk for any man of moderate means to take alone. Divide the burden with others. If the enterprise fails the loss to each is not heavy, and if it succeeds there will be enough profit to make everybody happy.—*Wall Street Reporter*.

Send \$2.00 for a year of the *Canadian Miner*, published weekly, or send proportionately for a shorter term, not less than six months.

THE COPPER REVIVAL.

THERE can be no longer any reasonable doubt, says the London, Eng., *Mining World*, that the turn has been reached in the long lane of depression through which the metal market has been passing for the past couple of years, nor do we think that there can be any real question of the continuance of the upward movement in the price of copper which has been going on during the past few months. With regard to copper, the statistical position is clearly satisfactory. A year ago the stocks of the metal in England and France and afloat thereto amounted to 46,128 tons, having gradually fallen from 58,182 tons at the end of June, 1895. At the close of last month, however, the stocks had declined to 32,307 tons, which is the lowest point reached since the historic "boom" engineered by the Societe des Metaux, showing a decrease for the month of 2,602 tons. It is true that the falling off during the month was attributable to the smaller receipts of copper; but the deliveries were unusually large for the first month in the year, and in the interval which has since elapsed there can be no doubt that the deliveries have considerably exceeded the new supplies, for the trade demand is active and is steadily increasing, especially in connection with the ship-building industry. The supplies from the United States have lately been upon a very large scale, amounting in the twelve months ended Jan. 31st last to 128,550 tons, as compared with 66,247 tons in the preceding twelve months, the supplies from other quarters of the globe having shown only moderate variations. But with trade reviving in the United States, it is certain that American producers will have less copper to export in the near future, so that there is every prospect that the statistical position of the metal will further improve. Even as it is, the visible supply in Europe is equal to less than two months' consumption. Indeed, it is estimated by competent authorities that the actual amount of copper available for purchasers does not much exceed 25,000 tons, while it is notorious that "bear" operations have been entered into upon a large scale. Under these circumstances the gradual advance in the price of G.M.B. copper from about £40 a ton two years ago, and under £44 a ton a year ago to about £51 10s. a ton at the present time,

is certainly not surprising. It is probable, in fact, that the price will rise much more rapidly than it has done in the past few months. The outlook for copper is, therefore, distinctly satisfactory, and the steady improvement in the market valuations of the shares of the principal copper-producing companies is not to be wondered at, for it is obvious that the undertakings are making substantially larger profits than they were at this time last year, and it follows, as a matter of course, that larger dividends will be distributed. Even on the basis of the last dividend distributions, copper shares give generally satisfactory yields; but investors purchasing at present prices have the practical assurance that the next series of dividend announcements will show a considerable augmentation.

HOW TO INVEST IN GOLD MINES.

MINING INVESTMENTS AND CAPITALIZATION OF MINING COMPANIES.

THE point of low capitalization can not be too strongly impressed upon purchasers of mining stock who look for large dividends from their investments. So little attention is given to the matter that anything in the shape of stock at from 5 to 20 cents on the dollar appears to be cheap and catches the unthinking investor, who, as a rule, totally disregards the capitalization of a company in which he is about to become a shareholder.

If a mine be capitalized at a million dollars and the stock sold at 20 cents a share, it is practically equal to paying \$2 per share for the stock of the same company capitalized at \$100,000. The dividends being computed on the capital stock of the company, they would be 10 times greater on the low capitalization.

Suppose a mine capitalized at \$1,000,000 earns \$200,000 net per annum, the dividend would be 20 per cent., whereas the same mine capitalized at \$200,000 would declare in dividends 100 per cent. High capitalization, therefore, means low dividends. To those expecting big returns from their investments this is a matter of careful consideration.

An exorbitant "rake-off" by the projectors and middlemen is generally the result of over capitalization, who, not content with

a fair remuneration, look for the big profits in the sale of stock, rather than dividends from the earnings of the mine.

The wealthiest and most successful mining men in Colorado make handsome dividends on properties judiciously capitalized. A letter to the London Eng., *Mining Journal* gives a reason for the disappointments realized in mining investment—"over capitalization."

Many mining enterprises have proved financial failures to the shareholders by reason of the exaggerated sums for which they are floated, whereas the properties would have paid handsomely if capitalized on a reasonable basis.—*Wall Street Reporter*.

FAKE MINING STOCKS.

THE fake mining stock subject is one which every newspaper man delights to take hold of. It allows him an opportunity to draw on his imagination and enlarge on the wickedness of the world at large and mining stock brokers in particular. Much has been written and more said during the last two years regarding fake mining stocks, as floated by irresponsible parties in this and other States, and yet nothing has been said compared to the amount of real injury that has been afflicted on the State, and the investing public in general, by unscrupulous parties floating fake mining schemes. These parties secure claims in, or near well-known mining districts, and then proceed to boom the stock with splendid inducements of prospective dividends and unpaid for advertising. It seems to be a fact that every newspaper and advertising man is as gullible on the fake mining scheme as the general public, for it is undoubtedly so that the promoter of fake mining schemes can secure more advertising in the most reputable journals of the country than any other class of advertisers, and the public is largely to blame for buying stocks in such companies without any investigation. The fake never endeavors to list or trade in his stock on any reputable exchange. He never endeavors to promote it in the country where located. He simply makes one or two representations on paper, incorporates his company, which would cost him \$100 or so, issues a fine stock certificate and starts East. The first newspaper man he meets he offers a thousand shares of stock for one-half page ad, and our friend proceeds to help him out by thoroughly indorsing the scheme in his editorial columns, or if not this, the fake has a paid write-up, depicting in glowing terms the ultimate success and brilliant future that lies before the company he has in hand. He is willing to dispose of a few thousand shares at the remarkably low price of 25 cents a share, letting his investors in on the ground floor, as it were, and the public begins to snap up the shares greedily. The end comes in about this fashion: "The Secretary of Mining Exchange, Dear Sir: I purchased from so and so, about six months ago, 1,000 shares of the Fake Mining Stock at 25 cents a share. Will you kindly advise me concerning it? What can I secure for it at the present time? I am unable to get any reply to letters addressed to Mr. So and So." And the Secretary of the Exchange, which has been addressed as above, after considerable trouble and vain effort, writes the party that he is very sorry, but he is unable to discover anything regarding the stock he mentions, that it is not listed on any Exchange and has never been traded in on any Exchange, that he has never heard of such stock before. He goes to the Secretary of State's office and finds the date of incorpor-

DIVIDENDS PAID BY AMERICAN COPPER MINING COMPANIES.

Company.	Capital Stock.	Par Value of Shares.	Total Paid.	Dividends Date and Amount of Last.	Stock Quotations.
Atlantic Copper.. Mich.	\$1,000,000	\$25	\$740,000	Feb., 1897 \$1.00	\$24 at Boston, Mass.
Anaconda Copper.. Mont.	30,000,000	25	2,250,000	Nov., 1896 1.25	£6 16s. 9d. at London, E.
Calumet & Hecla.. Mich.	2,500,000	25	48,350,000	Feb., 1897 15.00	\$360 at Boston.
Central	500,000	25	1,970,000	Feb., 1891 1.00	
Franklin	1,000,000	25	1,240,000	Jan., 1894 2.00	\$11.50 at Boston.
Kearsage	1,000,000	25	120,000	Dec., 1895 1.00	\$19.25 at Boston.
Oscoda	1,250,000	25	2,122,500	Feb., 1897 1.00	\$33.50 at Boston.
Parrot	2,300,000	10	1,622,215	June, 1894 .05	
Quincy	1,250,000	25	9,070,000	Feb., 1897 8.00	\$117 at Boston.
Tamarack	1,250,000	25	4,770,000	Dec., 1896 3.00	\$119.75 at Boston.

DIVIDENDS PAID BY FOREIGN COPPER MINING COMPANIES.

Company.	Country.	Capital Stock.	Par Value.	Last Dividend Amount.	Date.	Quotations.
			£ s d	£ s d		£ s d
Cape Copper.....	S. Africa....	£600,000	2 0 0	0 3 0	Dec., 1896	2 15 0 at London.
Copiapo.....	Chili.....	200,000	2 0 0	0 1 6	Dec., 1896	2 7 6 "
Mason & Barry.....	Portugal.....	1,050,000	4 0 0	1 0 0	Dec., 1896	2 10 0 "
Rio Tinto.....	Spain.....	3,250,000	10 0 0	0 18 0	Nov., 1896	27 10 0 "
Tharsis.....	".....	1,250,000	2 0 0	0 4 0	Apr., 1896	6 17 6 "
Bolco.....	Lower Cal.	500 Francs	65 Francs	For 1896		1,525 Francs at Paris

ation; that none of the incorporators are known in mining circles, and that apparently they have no standing in the community. The secretary then feels it his duty to advise eastern men, for it is generally an eastern man, that in future he should confine himself to stocks that are regularly known and listed on some Exchange. Or, in other words, that he should deal with brokers who have a known standing in the community and not one who has jumped from the lightning rod business into the arena of the fake mining scheme.

There is no question but what stocks that are regularly listed often do not turn out as well as their promoters expected them to do, but it should always be remembered that the party buying stocks that are regularly listed or traded in on any reputable Exchange, does so with the guarantee that the Exchange has carefully looked into the incorporation, location and general character of the parties putting forth the stock and feels that there is a reasonable and good chance that the stock is put on the market for the public to make a turn. All mining shares are more or less of a venture. No one can see into the ground, but providing a claim is well located and all the requirements have been complied with, as required by our present Exchanges, the chances are at least equal that it will turn out to be a good thing for the investor. There seems to be no way of guarding against this fake mining scheme. They are the bane and bugbear of the mining stock business. Our reputable Exchanges and the State in general have received more condemnation from these than in any other way, and yet it is a known fact that the Colorado Mining Stock Exchange just one year ago published in all the leading dailies in the United States a paid ad. which read as follows:—

Whereas, It is a known fact that certain unscrupulous persons, principally non-residents of Colorado, are offering for sale valueless mining stocks, and,

Whereas, It has been the policy of this Exchange since its organization in 1889, to expose such frauds when possible and to offer full protection to the patrons of its members, now therefore be it,

Resolved, That the directors of the Colorado Mining Stock Exchange of Denver hereby advise the public to be cautious in the purchase of mining stocks unless the mines and their management are known, or the stocks listed on this or some other reputable or long-established Exchange with strict listing rules, and be it further,

Resolved, That copies of these resolutions be furnished to the press of the country and its publication is requested.

These resolutions passed far and wide through all the eastern papers and certainly did a great deal of good in establishing the prestige of this Exchange among eastern investors in general, and this is the first action of this kind ever taken in this city. The secretary of that Exchange has done everything in his power to advise eastern investors regarding mining stocks and investments in general through the press. Every state has its thieves and bunco steerers, and every mining State seems to have its dealers in fake mining stocks, which are to be classed in the same category.—Wall Street Reporter.

J. F. McLaughlin has bonded some Slocan and also some Toad mountain property.

The lower tunnel in the Monte Cristo is now in ore. An immense amount of dead work has been done to reach the vein on this level.

IN THE ILLECILLEWAET.

THOSE in a position to know from experience claim that no portion of the province offers so many inducements to the prospector or capitalist as does Albert Canyon. The existing mines have already been proved to be extremely rich, while those which are mere locations and prospects are considered by eminent experts to have every indication of great promise and richness. The claims already staked are but a small proportion to those which will be located during the coming summer, and from the formation of the country it is surmised that just as rich prospects will yet be found as are now recorded. A better field, therefore, says *The Kootenay Mail*, for either muscle or money it would be hard to find.

Albert Canyon is situated on the main line of the Canadian Pacific Railway between Revelstoke and Illecillewaet, being 21 miles east of the former and seven miles west of the latter. It is within the mining division of Illecillewaet. About half-a-mile north of station flows the Illecillewaet River, which runs almost parallel with the line of railway. Tributaries to this river are three creeks, the most easterly being the North Fork Creek, which runs in a southerly direction from a distance of about 24 miles. The mountains on each side of this creek have so far been the most explored and it is here the chief mines are located.

Running northward from a distance of about eight miles, past the railway station, is the Moose Creek; and about two miles west of Albert Canyon, the Silver Creek forms a junction with the Illecillewaet, having traversed about 10 miles from the north.

SPOKANE STOCK EXCHANGE.

Two years ago Spokane was more dead than alive, and at the present time it would be difficult to find a city which is more prosperous and attracting more attention from the outside world. This era of prosperity is due to its being the centre of the many well-known mining districts, including Trail Creek, the Slocan, Boundary, Colville, Indian Reservation and many more too numerous to mention, and to reach many of these camps you have to go from Spokane.

Spokane has now a mining stock exchange and has lately moved into elegant and roomy quarters, finding their former quarters rapidly becoming too small to transact business. The exchange has had a wonderful power in giving life and activity to stocks, and has also induced and encouraged owners of promising claims to develop their properties so that they can be listed on 'Change.

Properties that were scarcely heard of through being listed have come into notice, and in many instances are eagerly sought after. The exchange has also had the effect of regulating the price of stocks, so that a buyer knows he is purchasing only at present market price, and as all properties that are listed are carefully examined by a listing committee composed of reliable and practical mining men, one is relieved from any doubt that he may have of buying into a worthless property. This has done much to give confidence, and to day there is more stock changing hands than ever heretofore, and it will only be a few months before their present quarters may be found inadequate for stock exchange requirements as the attendance by the public and increase in membership is growing.

LATE ITEMS FROM ROSSLAND.

Good gold values are now being got from the White Bear mine.

Tin, it is claimed, exists on the Salmon river. The average mining newspaper man's back aches with reporting discoveries of tin in Western America.

Three carloads of ore from the Giant will be shipped this week to Tacoma as a test. This ore comes from the north and south vein, which is smaller than the main vein, but carries good gold values.

The options on the Jumbo, Commander and Gertrude have been recorded. It is a far cry from recording an option to buying a property, but it is more than likely that one or other of the properties will be taken, possibly them all.

One of the greatest surface showings in Trail Creek camp was on the Gold Star, on Stoney creek. Development work has been proceeding all winter, and at a depth of 70 feet there is a showing of rich ore which guarantees another shipper this year.

The tunnel on the 200-foot level of the Jumbo is reported in ore. Another 100 feet of southward drifting should catch the pay values on this level. The Jumbo has quit shipping until the option now on the property either expires or is taken up.

The machinery for the Palo Alto arrived three days ago, and is being installed. On its present showing the Palo Alto should make a shipping mine within three months.—*Rosslan Miner*.

BOOK NOTICES.

"GOLD AND SILVER ORES."—What is Their Value? Simple Field Tests for Prospectors With an Inexpensive Outfit. By Wm. Hamilton Merritt, F.G.S. Price, 15 cents.

This valuable little text book describes in detail, field testing of gold and silver ores. The apparatus advocated is of the simplest and cheapest character.

The chief point and recommendation of this pocket manual is, that it describes in detail a process of obtaining the yield of ores and the precious metals with a cheaper and simpler outfit that we are aware has been previously systematically applied.

Advantage is taken of the fact that any prospector must have a pan, a pestal and mortar and a sieve to prospect for gold ore.

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In the little manual it is pointed out that the former outfit, viz., the \$13.00 part is all that the great majority of prospectors or others interested in the testing of gold will need, but that the mining engineer and advanced student can make a complete and exact estimation with the whole outfit which they could not obtain under ordinary assaying methods with an outfit costing less than some \$250.00.

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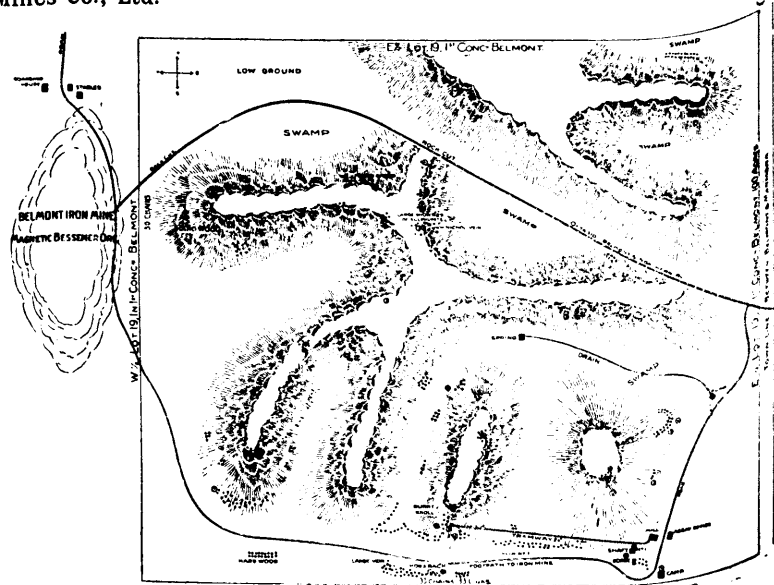
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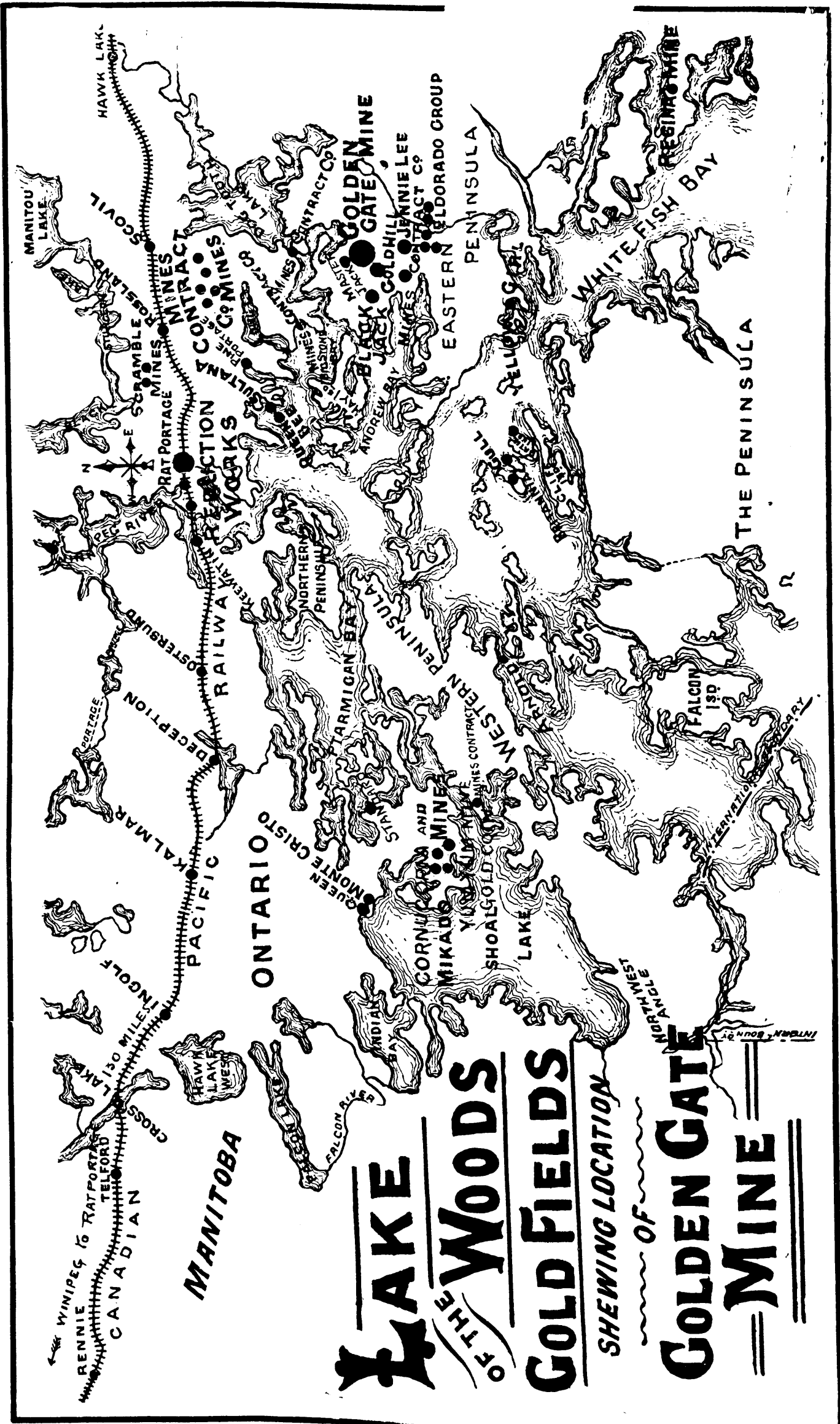
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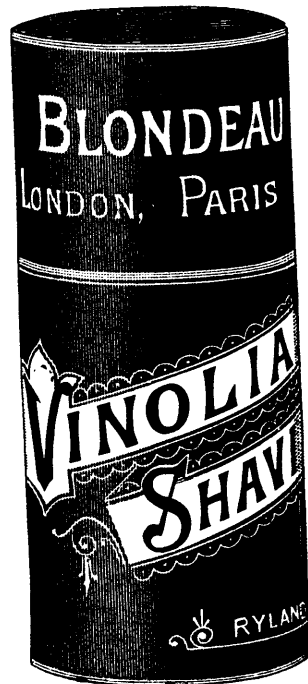
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While the management of this Company feel assured that pay ore will be reached within a few months, they do not overlook the fact that during the first few years of development the expense of procuring the most improved machinery and appliances, sinking shafts and other incidental work may prevent a company from paying dividends with regularity. The present shareholders have therefore made arrangements with THE TORONTO FINANCIAL CORPORATION (with whom securities have been deposited), whereby that Corporation has guaranteed the payment of dividends or interest at the rate of TEN PER CENT. per annum for the first five years on the allotted price of this special issue of preferred stock, the script for which has the guarantee endorsed thereon. The issue of stock is offered for sale by tender in the view of expediting development, and work will be pushed forward as rapidly as possible consistent with judicious and expert management, thus assuring to the purchasers of this stock that the savings of the mines will enable the management to continue paying permanent dividends. Tenders are hereby called and will be received by The Toronto Financial Corporation, at its Head Office, 86 King Street East, Toronto, Canada, up to 3 o'clock p.m., Tuesday, the 20th day of April, 1897, the minimum price being 75 CENTS PER SHARE.

Application forms, prospectus and maps can be obtained at the office of this paper and at the offices of

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And Columbia Avenue, Rossland, B.C.

Preferred Stock Dividends Guaranteed.

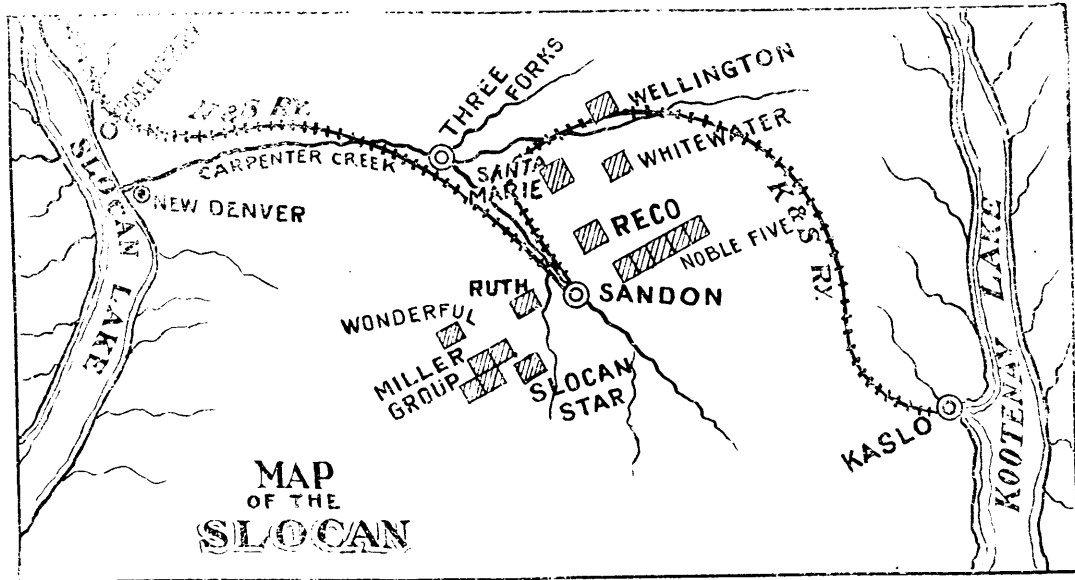
Preferred Stock Dividends Guaranteed.

THE CANADIAN MINER.

AUTHORIZED STOCK BULLETIN.

Name of Stock.	Authorized Capital.	Par Value.	Market Price.	Name of Stock.	Authorized Capital.	Par Value.	Market Price.
Alberta.....	\$1,000,000	\$1 00	\$0 15	Kelley Creek.....	1,000,000	\$1 00	\$0 13
Arlington Con.....	1,000,000	1 00	0 10	Kootenay (London).....	1,000,000	1 00	0 12
Bannockburn.....	500,000	1 00	0 20	Lake Harold.....	1,000,000	1 00	0 15
Big Three.....	3,000,000	1 00	0 10	Ledyard	1,000,000	10 00	2 50
Bondholder.....	1,000,000	1 00	0 14	LeRoi.....	2,500,000	5 00	7 50
British-Canadian Gold Fields.....	2,500,000	1 00	0 16	Lily May.....	1,000,000	1 00	0 20
Butte.....	1,000,000	1 00	0 04	Lloyd Gold Mining and Dev. Co.....	1,000,000	1 00	0 06
Caledonia Con.....	1,000,000	1 00	0 10	London Hill Dev. Co.....	150,000	0 25	0 10
California.....	2,500,000	1 00	0 15	Mabel.....	1,000,000	1 00	0 15
Canada Mutual.....	2,500,000	1 00	0 15	May Flower.....	1,000,000	1 00	0 13
Cariboo M. C. C.....	800,000	1 00	0 53	Mikado.....	.....	£1	7 50
Colorado.....	1,000,000	1 00	0 26	Miller Group (Slocan).....	1,000,000	1 00	0 07½
Colorado.....	1,000,000	1 00	0 10	Mines Dev. Co.....	2,500,000	1 00	0 10
Columbia and Ontario.....	750,000	1 00	0 10	Minnehaha	1,000,000	1 00	0 15
Commander.....	500,000	1 00	0 19	Monarch.....	1,000,000	1 00	0 10
Consolidated Sable Creek.....	1,000,000	1 00	0 10	Monita.....	750,000	1 00	0 22
Confederation Mines Dev. Co	2,500,000	1 00	0 10	Monte Cristo.....	1,000,000	1 00	0 16
Cornucopia.....	.....	£1	7 50	Morning Star.....	1,000,000	1 00	0 12½
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 52	Novelty.....	1,000,000	1 00	0 10
Deer Park	1,000,000	1 00	0 21	O.K.....	1,000,000	1 00	0 31
Dellie.....	750,000	1 00	0 15	Old Ironsides.....	1,000,000	1 00	0 15
Eagle Nest.....	.....	25 00	25 00	Ontario Gold Fields.....	1,000,000	1 00	0 08½
Eastern Mining Syndicate.....	1,000,000	1 00	0 10	Ottawa and Ivanhoe.....	250,000	1 00	0 12½
Eldon.....	1,000,000	1 00	0 10	Orphan Boy.....	700,000	1 00	0 09
Elsie.....	1,000,000	1 00	0 08	Phoenix.....	500,000	1 00	0 15
Empress.....	500,000	1 00	0 21	Pug.....	1,000,000	1 00	0 09
Enterprise.....	1,000,000	1 00	0 20	Princess.....	500,000	1 00	0 25
Ethel Group (Preferred).....	1,500,000	1 00	0 75	Poor Man.....	500,000	1 00	0 06
Eureka Con.....	500,000	1 00	0 10	Red Eagle.....	1,200,000	1 00	0 08
Evening Star.....	1,000,000	1 00	0 15	R. E. Lee.....	1,000,000	1 00	0 10
Exchequer.....	1,000,000	1 00	0 10	Rossland Gold Mining and Dev. Co.....	2,500,000	1 00	0 13
Foley.....	1,000,000	10 00	3 50	Rossland Red Mountain.....	1,000,000	1 00	0 25
Germania.....	1,000,000	1 00	0 10	Royal Five.....	1,500,000	1 00	0 10
Gertrude.....	500,000	1 00	0 15	Santa Marie (Slocan).....	1,000,000	1 00	0 06
Gold Exploration Co.....	1,000,000	£1	5 00	Saw Bill.....	.....	.....	2 85
Gold Hills.....	1,000,000	\$1 00	0 11	Silver Bell.....	1,000,000	1 00	0 07
Gold Quartz.....	1,000,000	1 00	0 10	Silverine.....	500,000	1 00	0 10
Gold and Silver Mines Dev. Co.....	1,000,000	1 00	0 20	Slocan-Cariboo	1,000,000	0 10	0 10
Golden Gate	300,000	1 00	1 50	Slocan Star.....	1,000,000	0 50	2 63
Good Hope.....	500,000	1 00	0 10	Smuggler.....	1,000,000	1 00	0 19
Great Western.....	1,000,000	1 00	.....	Spokane-Kaslo	900,000	1 00	0 10
Hansard	1,000,000	1 00	0 10	St. Elmo.....	1,000,000	1 00	0 11
Heather Bell	1,000,000	1 00	0 20	St. Paul	1,000,000	1 00	0 12½
High Ore.....	500,000	1 00	0 07	Sweden.....	500,000	1 00	0 25
Homestake.....	1,000,000	1 00	0 17	Two Friends.....	1,000,000	1 00	0 33
Index	1,000,000	1 00	0 03½	Victory-Triumph.....	1,000,000	1 00	0 11
Index of Slocan	300,000	0 25	0 30	Virginia.....	500,000	1 00	0 13
Investors Prospecting G. and M. Co (Cripple Creek)	1,250,000	1 00	0 10	Waneta.....	1,000,000	1 00	0 10
Iron Colt	1,000,000	1 00	0 20	War Eagle (Con.).....	1,000,000	1 00	1 04
Iron Mask.....	500,000	1 00	0 15	Washington.....	1,000,000	1 00	0 26
Iron Queen.....	1,000,000	1 00	0 04	West LeRoi and Josie.....	500,000	1 00	0 27
Josie.....	700,000	1 00	0 55	White Bear.....	2,000,000	1 00	0 16
Josie Mack.....	1,000,000	1 00	0 12½	Winnipeg and Eureka.....	1,000,000	1 00	0 10
Jumbo.....	500,000	1 00	0 09	Yale.....	1,000,000	1 00	0 02
				Zilor	1,000,000	1 00	0 15

(OVER)



Miller Creek Mining Company

DIRECTORS.

A. J. ROSS, Vice-President Exchange National Bank. C. H. THOMPSON, Vice-Pres. "Wonderful Group" Mining Co.
 J. M. ARMSTRONG, Treasurer LeRoi Mining Co. H. C. BELL, Secretary "Wonderful Group" Mining Co.
 W. C. JONES, Member of Congress. E. J. FIELD, Manager "Wonderful Group" Mining Co.
 F. A. DAVIS, Superintendent Summit Mining Co.

OFFICERS.

President, C. H. THOMPSON. Treasurer, A. J. ROSS.
 Vice-President, J. M. ARMSTRONG. Secretary, H. C. BELL.

CAPITALIZATION.

Capitalization at 1,000,000 Shares of \$1.00 Each, with 400,000 SHARES Appropriated for Treasury Stock.
 Shares fully Paid-Up and Non-Assessable.

THE PROPERTY.

It owns in fee the three claims known as the "New Springfield," "Sampson," and "Wonderful Fraction," comprising in all about 130 acres of mineral land, directly adjoining the famous Wonderful Group Mining Company's property in Slocan Mining District, West Kootenay, B.C., only one and one-half miles from the town of Sandon, in the very heart of the Slocan country, which stands without a rival in mining history; and so far every prospect which has been systematically developed has proven a mine. Among the most noted of which are the "Slocan Star" with its record of \$300,000 paid in dividends, and its shares with a par of 50 cents, are eagerly sought for at \$2.00. The "Reco" with its \$150,000 paid to shareholders during the past year. The "Idaho and Alamo" with their \$135,000 to shareholders; the "Goodenough," "Noble Five," "Payne Group," "Ruth," "Wonderful Group," "Reed and Robinson," the "Whitewater," "Wellington," and a host of others.

SITUATION.

On the mountain lying south of Carpenter creek and close to the town of Sandon is the "Slocan Star," next west is the "Ruth," next west is the "Wonderful," and adjoining this on the west is the "Miller Creek" properties. The Wonderful has extracted a large amount of ore from surface workings by hydraulic mining, and in prosecuting this work their tail race down the steep mountain side has cut a large strong vein (see Field's Report) which courses directly through the entire length of the Miller Creek property, and should it continue that far would give us over 3,000 feet of this heretofore unknown vein, and in that distance several ore chutes ought to be discovered, and one means a fortune.

This vein, and that exposed by the work on Miller Creek, make this group of claims have great prospective value.

Title to the property is perfect and lies absolutely in the Company. It was passed upon by W. C. Jones, Attorney-General of the State of Washington. Application will be made for a Crown Grant, and as there are no adverse claimants, the Crown Grant will unquestionably be issued during the summer of 1897.

Adjoining as it does directly on to the Wonderful on the north and east, it ought to have the same veins and character of ore and in order to show what that is, it may not be amiss to here quote from the smelter returns received by the Wonderful from the first five carloads of ore shipped by them (since which time they have shipped many additional cars of like ore).

SMELTER RETURNS.

DATE.	TO WHOM SHIPPED.	TONS.	NET PER TON.	NET PER CAR.
1896				
July 28	Tacoma S. & R. Co.	18.127	\$ 87.67	\$1,392.95
August 4	" "	21.211	99.47	1,871.28
" 1	Puget Sound R. Co.	15.897	95.98	1,346.52
" 8	" "	16.165	99.30	1,420.66
" 10	" "	15.952	102.14	1,419.92

TRANSPORTATION.

The Canadian Pacific Railway track is within one-fourth of a mile of the Miller Creek Company's property; down hill, easily reached by a gravity tram. Kaslo and Slocan Railway at Sandon, one and one-half miles distant. A good trail is now built to the property from the wagon road on Carpenter Creek, and can be easily and cheaply converted into a wagon road.

DEVELOPMENT.

There is about one hundred feet of work done where Miller Creek crosses the vein and a few prospect holes. Where Miller creek crosses the property it has made a deep gorge, and exposed the vein at the point described by Mr. Field; it is here the company propose doing the first work, and they will be enabled to drive both east and west on the vein and gain considerable depth from Miller Creek without sinking any shaft or requiring pumps or machinery, except an air compressor and drills which if supplied will enable the work to be done in one-half the time required by hand.

While the company does not claim to have a developed mine, they do believe they have a very valuable property and one which on proper development will take rank with the best of them. And as they own their property in fee, and are absolutely out of debt, and with the assurance that all money received from the sale of treasury stock will be honestly and judiciously expended in developing the property, they offer their shares to the investing public with the fullest confidence that they will be readily taken up by investors, and those who buy this stock now and hold it until the property can be developed, will undoubtedly find themselves shareholders in one of the big mines of the famous Slocan.

Following is a letter from Richard Shea, Esq., superintendent of the Rambler-Cariboo property, giving his opinion of the property of the Miller Creek Mining Company:

H. C. BELL, Esq., Sec'y Wonderful Group Mining Co.,
 311-312 Hyde Block, Spokane, Wash.

RAMBLER MINE, MCGUIGAN SIDING, B.C.
 February 21, 1897.

DEAR SIR:—Yours of February 12th at hand. You must excuse my delay in answering as I was away when it came. I beg to report as follows on the New Springfield, Sampson and Wonderful Fraction:—There are two (2) ledges running across the Springfield, namely, the Queen Bess and Palmetto to which I sold the other day. My opinion of the property is that it is as good a prospect as there is in this country. Hoping to hear from you soon, I remain, yours respectfully,

RICHARD SHEA, Supt. Rambler-Cariboo.

A limited number of Treasury Shares are now offered at 7½c. per share.

Apply to COULTHARD & CO., Mining Brokers, 28 VICTORIA STREET, TORONTO.