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THE CANADIAN MINER

VOL. I.

TORONTO, ONT., JANUARY 30, 1897.

No. 3.

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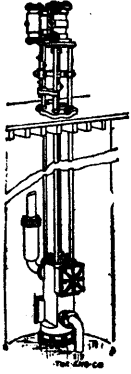
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TORONTO, May, 25th, 1894.

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The Canadian Miner.

VOL. I.

TORONTO, JANUARY 30, 1897.

No. 3.

THE FUTURE OF GOLD MINING.

BY THE EDITOR.

THE figures given, from the *Engineering and Mining Journal* of New York, in our issue of the 16th inst., of the gold product of the world, have surprised many of our readers. What causes most surprise is that Russia, with scarcely any gold mining, excepting under primitive placer methods, stands fourth in the list of gold producing countries, with an output for 1896, estimated at \$31,600,000. or only from twelve to thirteen millions short of either Australasia or the Transvaal. This has been unknown to nearly all Canadians, and naturally so, for gold mining so far as it possesses any popular interest in the great provinces on the Great Lakes and the St. Lawrence, is scarcely a thing of yesterday.

**

What the prospects are for gold production all the world over is at present an interesting question. Not that any increase likely to take place in the immediate future will greatly affect the relative value of gold, and consequently of all commodities, but that there may be an increase, which may tend in that direction, and which may, too, have some effect on the agitation for the restoration of bimetallism. A considerable increase in the production of gold compared with the production of silver, or *vice versa*, does not always bring an alteration in the relative values of the two metals. This in the statistics of gold and silver production for various periods in the past hundred years, would, at least, appear to prove. It may be an economic heresy to say or think that legislation has actually had something to do with regulating relative values, but the bald figures seem to point to that solution of a fact which would seem to contradict the general law regarding supply and demand.

A few years ago the production of silver on this continent was relatively greater than that of gold, values considered. With the large production, and partly as a consequence of the demonetization of silver in 1873, by Germany, who was followed by other countries, until finally India, that great absorbent of the white metal fell, perhaps unwillingly, so far as its people were concerned, into line, silver fell greatly in value and the value of gold was enhanced.

**

Perhaps, now, a large and relative increase in gold production may tend to lower the value of gold. If it should be so, the effect might be prejudicial to the profitable working of very deep mines, or mines not rich in quality. But, on the other hand, there are several considerations that make a decrease in the real value of gold improbable, unless a sudden and wholly unprecedented rapid increase in the production of gold should take place. The rapid strides in development that the New World, and more markedly, the Old World is making, are causing a largely increased demand for the precious metals. Then, too, the rapid improvements in mining machinery, and in applied chemistry and metallurgical processes, are tending greatly to cheapen the cost of production, so much so that mines that could not be worked at a pro-

fit even five years ago, are to-day yielding good returns. And we appear to be on the verge of further very important discoveries in the treatment of ores.

**

The yield of gold, the world over, was for 1896, 10,522,010 fine ounces, valued at \$218,499,856, against for 1895, 9,728,934 fine ounces of a value of \$201,107,895. The increased production of 1896, therefore, amounted to about \$17,500,000, or about 8 per cent.

In this increase Europe has had no part. Russia, including Siberia, is the only important producer amongst European nations, and its production has fallen a little—from \$31,781,000 to \$31,600,000. Germany has practically been at a stand still, with a production of \$2,392,000 and likewise Austria-Hungary, with \$1,829,000. The remaining countries of Europe altogether produce but little more than a million dollars of gold, and it is probable that Europe, beyond perhaps, its limits towards the Urals will never figure much as a gold producer.

**

Asia undoubtedly possesses immense wealth in the precious metals, and their development may come, but not in the early future. British India, with a production of a little over \$6,000,000, shows an increase over 1895 of nearly \$1,500,000. The total production is small, and the known gold areas are very limited. China has, no doubt, a considerable area from which gold could, under some circumstances non-existent, and not likely to exist soon, be extracted, just as she has coal fields practically unworked, although in some of the provinces back of Peking beds of immense thickness rise for thousands of feet along the canyon-like banks of the rivers. The production of Japan, Korea and the Malayan Peninsula is insignificant, and the rest of Asia outside of the countries mentioned, though, no doubt, abounding here and there in precious metals, does not produce an appreciable quantity.

**

South America for centuries was famous for its silver mines and for gold. But gold, though probably to be found in abundance in some districts, is now but little sought after. There are four producing countries of some importance, viz.: the United States of Columbia, with in 1896 a yield of \$3,100,000; Brazil, with \$2,480,000; British Guiana, with \$2,385,000; and French Guiana, with \$1,876,000. The climate of South America militates much against mining, especially now that slave labor is abolished. The arduous work entailed in deep mining does not suit either the negro or the acclimatized European races. Europeans or North Americans can scarcely endure the moist, tropical heat that prevails east of the Andes, though the moderate climate of the strip bordering on the Pacific is quite comfortable. South America, for the early future, is probably not to be considered a possibly important field of gold production.

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What applies in regard to the unsuitability of much of South America for energetic mining applies to Central Africa and the Zambesi Country. The really important gold mining

part of the Dark Continent, South Africa, particularly the Transvaal, has not shown an appreciable increase in production over 1895. The figures for the Transvaal are \$43,184,000 for 1896, an increase of less than \$200,000 over the previous year. Of course, the trouble in the Transvaal disturbed gold mining, as is shown by diminished yields for several months, followed by quick recovery when the trouble and fear of its possible outcome had passed away. But it is said that the region has been well explored, and that the paying gold belt is of such small dimensions—at least, what Canadians in either Ontario or British Columbia would consider such. The Witwatersrand, the great gold field that produces nearly all the gold South Africa sends into the marts of the world, has a gold belt but thirty miles in length. Paying ore is found along this belt for only nine miles in a continuous stretch, and, beyond this short reach, in spots that make up only a mile altogether. So the field is a narrow one. Great depth—into the thousands of feet—has been attained, but with increased depth the expense of working has also increased. It is likely, now, that to secure more economical working the mines will mostly fall into the hands of a few companies. South Africa will probably remain an important, but stationary, or only slightly progressive, producer of gold in future.

**

In Australasia gold mining has, in Victoria, New South Wales, New Zealand and Tasmania, and perhaps Queensland, settled down into a comparatively stationary and regular industry. As old mines are exhausted, or have become too expensive to work, new mines will be opened, probably in sufficient number to keep up or slightly increase the yield, even though the new mines be of lesser richness than the old ones. There are yet fields, however, in Australia to be explored and developed, but it is scarcely likely that Australia on the whole will show any large increase in gold production for a long time to come, if at all.

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We revert to Siberia. That country, judging by the immense wealth of its placers and the character of its formations, undoubtedly is rich in gold. Eastern Siberia especially, and Manchuria, that great northern prolongation of China, which is likely soon to be dominated and before long annexed by Russia, are rich. But till the completion of the trans-Siberian railway, little will be attempted in unlocking the hidden treasures. When the railway is completed there may be, notwithstanding the severity of the climate, a great development of the gold fields. Russia has rapidly increased in population; her government is energetic and concentrated in action; her people are full of pristine vigor, and the crowding of European Russia, will tempt many to seek their fortunes in Siberia, especially as it is the intention of the government to issue second class tickets at a rate of less than half a cent per mile. We may count on Siberia being heard of as a progressive gold mining region before another decade has passed.

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For the immediate future we must look

to North America for most of the increase in the gold production of the world.

Mexico, so long famed for its silver mines has at last given attention to the discovery and development of its veins and beds of gold ore. The production for 1895 was \$5,600,000, and for 1896, \$6,989,000; an increase of nearly \$1,400,000. Comparatively little is yet known of the extent of the areas in which gold may be found in paying quantities, but there is no reason to think that the country should be less rich in gold than the belt to the northward, of which the Mexican tableland is a continuation. Except around the gulf of California, where it is somewhat arid and hot (but the heat is dry and therefore bearable), the greater part of the gold and silver region of Mexico is in a temperate and pleasant and healthful climate, and gold mining is therefore not unlikely to be carried on more and more extensively.

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The United States in actual increase of gold production exceeds the increase in all the rest of the world. The yield in 1895, was \$46,830,000; in 1896, \$57,000,000, an increase of over \$10,000,000, or about 20 per cent. A part of this increase comes from California, where new mines have been opened, and where old ones, owing to improved methods of mining and extracting gold, have been reopened and extended. Cripple Creek and, secondarily, Gilpin county are districts that have contributed most heavily to the great increase in Colorado production. Then the Mercur district in Utah has figured also very prominently. In fact Colorado and Utah have had the largest share in the increased production of the U.S. Montana and Idaho have done a little too, and likewise old Alaskan mines and the northern placers of the Yukon. The Leadville district has fallen behind, owing to the strike. New Mexico and South Dakota are stationary; Arizona has advanced its production a little. The cheaper processes of production have had much to do with the increased yield in the U.S. and there is reason to think that the same cause will operate in producing further increase of yield, though perhaps the percentage will not be so great as that which marked the difference between 1895 and 1896.

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Canada shows by percentage the largest increase in gold production of any country in the world, but her aggregate yield is small compared with that of the great producing countries, and she stands, for 1896, only eighth in comparative importance, being far surpassed by the United States, Australasia, the Transvaal and the Russian Empire, and slightly surpassed by Mexico, India and China. But apart from the real mining of Nova Scotia and a few isolated attempts at mining elsewhere, the Dominion knew nothing of gold mining until two or three years ago. The developments in British Columbia have been such as to turn the eyes of the world in that direction and it is generally admitted that a large increase is to be looked for in the output of that province for 1897. We think that this year the output will exceed that of either India or Mexico. Then there is the Ontario field. Here gold mining on any scale worthy of more than local notice has not existed for much more than a year. The output for 1896 compared with 1895 shows by percentage a large increase. The total figures are small however. But from the information we have, as to the progress already made in developing mines in the immense gold territory to the north, but especially the west of Lake Superior, and the work about to be pushed during the coming season, we think that the Ontario yield will for 1897 closely approach if

it does not exceed \$1,500,000, with perhaps three times that output for 1898. Ontario will figure in the world's total production very heavily within a few years, and may even surpass Russia. Mining thus far in Ontario, has been conducted mostly by individuals and partnerships, but now the method is changing to that of company management. The free milling character of the ores, the abundance of water power and of timber and fuel, the ready accessibility of most parts of the immense gold bearing area, the richness of the ore beds and veins, the salubrity of the climate, are all conditions that tend to make north-western Ontario the most inviting gold region in the world. In Nova Scotia the industry is a steady one, but not of great importance.

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To British Columbia and Ontario, we think we may look for the greatest portion of the increase of the world's gold production in the coming ten years, and the end of ten years will not improbably find Canada the leading gold producing country in the world.

COAL IN CANADA.

BY WM. HAMILTON MERRITT, F.G.S.

OUTSIDE of the actual workers in our coal fields, it is almost a matter of astonishment to find how little we in Canada know about our own coal fields. The chief reason for this is probably that the coal fields of the Dominion are separated by such "magnificent distances." In Ontario we have probably known less about our coals than in any other Province, for until lately, we have never found anything approaching coal in composition (excepting the lignite of the Moose River), and are dependent on the United States coal fields for all our fuel other than wood.

Nature provided us with one natural mineral fuel. This in Essex county has been utilized to a very slight extent, but not in the Niagara district. Whoever is at fault in enterprise in this connection, the fact is that Buffalo has drained us of this without any appreciable benefit to our own country, and the natural gas of Ontario, instead of building up local industries, has furnished the citizens of the United States with the most desirable form of fuel. Of course Buffalo was right, but Canadian enterprise might have made St. Catharines and some other Canadian towns the gainer by it.

The crystalline carbonaceous fuel of an anthracitic type, which has been found near Sudbury, appears to vary much in character, whether a sample is provided by some one who has some interest, or some one who has no interest in the claim or claims in question. Fuel of a very pure and high-grade character is seen on the one hand, while on the other so much rock matter or ash is mixed with the carbonaceous matter as to make it questionable whether it would bear transportation. The crystalline character and lack of bedded structure naturally makes it imperative that only such material be accepted, "in sight" as is actually proved by work. It is satisfactory to know that the government diamond drill is about to be put at work on this coal deposit for, just as in the case of natural gas, we are never sure of the bounties nature may have in store and which are not expected.

The first anthracite coal found in Canada was in Queen Charlotte Island in the Pacific. The coal appeared to have been altered into its high-grade by the action of volcanic rocks, but the formation was so disturbed that after the expenditure of a good deal of money, the enterprise was abandoned. The only anthracite that is being mined in Canada, is at Anthracite on the main line of the Canadian Pacific Rail-

way, near Banff. The fuel is a cretaceous coal, lighter in weight than that we are accustomed to see from Pennsylvania, but running over eighty per cent. in fixed carbon and exhibiting all the characteristics of a good anthracite coal in a base burner, furnace or cooking stove. It supplies a large proportion of the anthracite consumed from Vancouver to Winnipeg. This anthracite coal field is already proving a great boon to the great North-West, and the smelters in British Columbia are finding it a valuable adjunct to their coal and wood consumption. The seams of coal are numerous and vary from three to ten and even twenty feet in thickness.

With regard to the next grade of coal a practically unlimited source of supply is opened up in bituminous coals.

Nova Scotia boasts of, at least, three splendid coal fields in the Cape Breton, the Pictou and the Springhill areas. All of these furnish high grade coals, and from some of the seams an excellent quality of coke is made.

In New Brunswick explorations are being carried on at Grand Lake, but the seams so far exposed are small.

Passing west, the natural mineral fuels in Ontario, above alluded to, are the next met with. Then we have an unbroken blank, so far as bituminous coal is concerned, until we come into the foot-hills of the Rocky Mountains, where at Bow River mines, on the main line of the C.P.R., and at other seams in the same horizon to the north, and in the Crow's Nest Pass to the south, bituminous coals are again found in great quantity. Passing further west we find, in the interior of British Columbia, a bituminous coking coal in the Nicola Valley, and from there we have to jump to Vancouver Island before finding the same grade of fuel. At the Nanaimo, Wellington and Comox coal-fields on Vancouver Island the most important and prosperous collieries on the whole Pacific coast are situated; and the last mentioned one furnishes a good grade of coke.

When we consider the lowest grade fuels, it must be acknowledged that the Galt coal from Lethbridge stands head of the list, and approaches nearly the standard of a bituminous coal. The whole prairie west of Estaven to the Rocky Mountains is practically underlaid with lignite coal, improving in quality as the foot-hills are reached. Billions of tons of lignite lie under the storm-swept prairie, available for the millions of people that must some day people that sunny region. In the interior of British Columbia lignites are abundant, large beds existing at such places as Princeton, Hat Creek, etc.

It will, therefore, be seen from the above general remarks that, although we in Ontario have not hitherto enjoyed our mineral fuel, Canada at large has been bountifully blessed with every grade of fuel, and that our only regret can lie in the fact that, while the western half has mineral fuel throughout it, the eastern half has it all concentrated on the borders of the Atlantic—a statement which, of course, must be qualified by what may be developed at Sudbury or James' Bay.

Friends of The Canadian Miner would do us a kindness to mention in writing to any of our advertisers that they saw the advertisement in our Journal. There are very many men, who from temperament, occupation or otherwise do not do so. There are advertisers who only measure the value of advertising by what they actually see, and cannot see further. This is not the true way to judge the value of advertising. The quiet mention of an advertising medium never does harm to anyone, and often does good to the medium.

WEIGHTS AND MEASURES IN MINERALS.

A VERY common puzzle to business men, who are necessarily in our days of sub-division of interest, not acquainted closely with the kinds of measurement in vogue in metals and minerals, is how to deal with the unusual and unexpected when it turns up in their own dealings. For the purpose of helping every one dealing in minerals of all kinds, metals and non-metallic minerals, we give the weights and measurements used in the United States—and they are almost the same as those in use in Canada—of the minerals of any real importance in the industrial world. The short ton is more convenient than the long ton for nearly all purposes of calculation, but the influence of British custom in adhering to its old measurements, is yet sufficiently patent on this side of the Atlantic to almost compel the use of the long ton, as a mere matter of commercial convenience.

We recommend our readers who may have occasionally some mineral or metal to deal with outside of their own regular line to cut out and paste somewhere the following memoranda.

Short tons represent 2,000 lbs. The following metals and non-metaliferous minerals are weighed by it: Corundum and emery, garnet, grindstones, millstones, Tripoli and infusorial earths, whetstones, alum, antimony, antimony ore, asbestos, fibrous talc, talc and soapstone, asphalt, asphaltic limestone, bituminous rock, bituminous sandstone, barytes, refractory clay, kaolin, anthracite coal, bituminous coal, coke, copperas, fluorspar, amorphous graphite, gypsum, lead, magnesite, mineral wool, mineral paints, vermilion paints, white lead paints, zinc oxide paints, natural soda, limestone flux, antimony, zinc spelter.

The long ton (20 cwts. of 112 lbs. = 2240 lbs.) is used with:—bauxite, chrome ore, feldspar, iron ore, manganese ore, rock phosphate, maris, pyrites, sand, and quartz silica, sulphur and pig iron.

Natural hydraulic cement is weighed by barrels of 300 lbs; Portland cement by barrels of 400 lbs., and lime by barrels of 200 lbs.; crude petroleum is measured at 42 gallons per barrel.

Evaporated salt and rock salt are measured by barrels of 280 lbs.; gold, platinum and silver are weighed by Troy ounces.

By pounds are weighed:—Aluminum, borax, bromine, cobalt oxide, sulphate of copper, graphite, sheet and ground mica, monazite, copper.

Quicksilver is weighed by flasks of 76½ lbs. By cubic feet are measured marble and onyx.

Manufactures of slate are measured by square feet.

Roofing slate is measured by squares, i.e., 100 square feet lapped and laid.

Manufactured soda is weighed by the metric ton (2,204.6 lbs.)

We would recommend Canadians in most of the cases mentioned to specify exactly the weight or measure by regular arbitrary rules. There are rules of the thumb—so to call it—devices and changeable too, in trade, which, however familiar to some in the centres of particular businesses, are not familiar to others, and hence may lead to misunderstandings and even lawsuits.

Analytical chemists, mining engineers, practical mining men, blacksmiths, carpenters and all others useful around a mine, can by using our advertising columns, reach directly the managers of Canadian mines. Two cents per word is the cost of advertising for positions. Four consecutive figures or less are counted as one word.

TREATING TALCY ORES.

NEW PROCESS TO MAKE LOW GRADES REMUNERATIVE.

THE introduction of a successful and cheap method of reducing low grade refractory ores means much for British Columbia and other mining countries. The application of the Pelatan-Clerici electric process to the De Larnor Idaho mine has proven successful. The theory of the treatment is the solution of the bullion in pulp by the use of cyanide, and then recovering the values by electricity, much after the manner in which ordinary electroplating is done. It has been found that the familiar cyanide process, in which the values are recovered by leaching through zinc shaving, could not be employed on talcy ores of this and many other camps, because the solution could not be drawn from the slimy pulp. The electric process extracts the value from the solution while still mixed with the pulp. The plant consists of two circular wooden tanks, or vats, with copper bottoms, each with a four-armed sweep, or stirrer, rotating horizontally a few inches from the bottom. The lower side of the sweep arms is attached to plates of boiler iron, in which are wooden pins to keep the pulp and solution thoroughly in motion. Through these iron plates an electric current is carried from a dynamo, the plates serving as the anode of the electric bath. In the bottom of the tank a heavy layer of quicksilver is placed, which is connected with the negative pole of the current and serves as the cathode of the battery, in which the bullion carried in the solution is deposited. A charge of two and one-half tons of pulp is put in the tank and treated with the cyanide and is kept in constant motion for 11 hours, with the current of electricity constantly passing through it taking up the bullion in the solution and depositing it in the quicksilver cathode in the bottom of the tank. It is found that 11 hours is sufficient time to practically dissolve all the values in the pulp, and to extract and deposit them in the quicksilver cathode. It is only the work of a few minutes to draw off the exhausted pulp and recharge the tank, repeating the operation every 12 hours, or treating 5 tons per day in each tank, the bullion remaining in the quicksilver being left there until the weekly or monthly clean-up. The ore is crushed in a Huntington mill, and the pulp deposited in reservoir tanks, where it is constantly agitated in order to keep it in condition to be drawn into the treatment tanks as required. The official test made consisted of 100 tons of the same big mill, and, second, of 85 tons of ore of lower grade. In the first test the percentage saved, as shown by careful assays of pulp and tailings, was 87; but the bullion recovered was 3 per cent. less, the discrepancy being accounted for by the amount remaining upon the new copper plates. The test of the low grade ore showed practically a saving of 83 per cent. These are considerably higher percentages than are made on these ores on the excellently equipped big pan amalgamation process mill. The loss of quicksilver in the 100 ton test was 15 pounds; in the 85 ton test it was 13 pounds. Eight more tanks will now be added to the plant, making its capacity, as per original agreement, 50 tons per day.

In regard to the cost of treatment by this process, the following demonstrates that it will be comparatively small: (1) A 25-horse power engine is required to run the dynamo and agitators for the 50-ton plant; (2) one man on each shift can run it; (3) one man one shift in 24 hours can run the Huntington mills to crush the 50 tons of ore—practically requiring only three men to run the plant; (4) no grinding is done with mullers, as in the pan process, and there are no shoes and dies to wear out

and be replaced; (5) the power required, as compared with the amalgamation process, is comparatively small, which, with the cost of fuel here, is an important saving; (6) the loss of quicksilver is comparatively slight.

THE CYANIDE PROCESS.

A PAPER, by Geo. A. Packard, read at the Colorado meeting of the American Institute of Mining Engineers, gives interesting tables showing the character of the ore treated by cyanide at a number of mills in the United States, and the details of the treatment. The paper is worthy of the careful study of those in Canada who use or contemplate using either the cyanide or chlorination process. It says that the process has been applied on a large scale only to rather low-grade, highly siliceous ores, containing but a small percentage of base metals and having their value principally in gold. It gives one instance in which cyanide competed successfully with the smelters on ore carrying as high as 4 oz. in gold, the ore being one in which the value was easily extracted to a high percentage. In the Cripple Creek District where an extraction of 90% is obtained in from four to six days, where the smelting-charges were from \$5 to \$7 per ton, ore running as high as \$40 was in 1895 bought by the cyanide mills. With silver-ores, while some very good results have been obtained, the length of time required for treatment has usually been too long, and the consumption of cyanide too high to give economical results. There are, however, several plants in the vicinity of Tombstone, Ariz., working on silver ores. In the case of ores containing from 1 to 10 oz. of silver, in addition to a commercial gold value, the process has been advantageously employed. Thus the Golden Reward Company, in South Dakota, having certain ores containing from 1 to 5 oz. of silver, which was lost in chlorination, has built an addition to the plant in which such ores are treated with cyanide.

Chlorination is the only process in the field of which the cyanide method is seriously invading. For mines located at a considerable distance from a railroad the cost of transportation of the chemicals used in chlorination has been hitherto high, and at least until the use of liquid chlorine becomes a practical success, cyanide has the advantage in this respect. At the Golden Reward plant in South Dakota, early in 1895, they were using for chlorination about 35 lbs. of chemicals per ton of ore, while only 2 1-2 lbs. were necessary for treating one ton with cyanide. If there is silver present, the cyanide has the advantage that part of the silver is recovered; but the gold extraction is usually higher by chlorination than by cyanide. With amalgamation, cyanide enters into competition only in the case of very finely divided gold, which is saved more or less successfully in pans. The cost of cyaniding varies largely with the character of the ore. There are a number of mills which crush and cyanide ore for less than \$2 a ton, exclusive of royalty paid to the company owning the patents. The lowest cost reported is 85c. a ton at the Mercur. No company has yet been able to reduce the cost of treating tailings to the minimum reached in South Africa, 59c. per ton; but one plant operating under exceptionally favorable conditions is working at a cost of 69c. a ton. In general, the tailing plants working in the United States do not obtain a high extraction. There are a large number of tailing-plants in the United States, especially in the south-west, where the hot, dry climate renders expensive buildings and drying machinery unnecessary. Including the output of these mills, Mr. Packard finds that nearly 200,000 tons of ore and tailings were treated by cyanide in 1895, producing over \$1,000,000 in bullion value.

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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A PREGNANT SITUATION.

THE position taken by us in our issue of the 16th inst., in regard to the mining policy of Ontario has thus far met with no adverse criticism. The article setting forth our suggestions as to royalties has been copied in full, and we assume that either some of our contemporaries under whose notice it has come are non-committal, being uncertain of what the Ontario Government may be prepared to do in view of the possibly most tremendous development the Province has ever known in wealth, or find the suggestions too novel and apparently unobjectionable to say much about them off-hand. The matter, however, should not be made a party one. In the face of the opportunities now rising before us, the interests of the party in power and the party out should not be, to any true Ontarion, of any moment, so far as our mining policy is concerned. The Opposition have had no policy on the subject, and the Government has had to shape legislation as best it could from the laws of other lands, and without experience in the matter. We do not think the Opposition can make any capital out of the Government's future course on mining, unless the Government makes very serious mistakes, and the Government is by no means a slow Government, and is, we believe, quite as anxious as the Opposition, indeed, more so, to secure legislation that will encourage the new giant of industry growing up to colossal stature amid our "hills, rock-ribbed and ancient as the sun." Just how to feed the awful boy is their puzzle. He is moody and determined. Candy won't do for him, and apron strings snap like paper cords. He has the blood of many a city and town and village in his veins, and healthy blood too, with a dash of foreign strain mixed with it. He is likely to take in considerably more of the foreign by way of inoculation, in a measure the like of which Ontario has never seen before. That is, if he doesn't get discouraged, and lie down and wilt a little by his northern streams.

Feed him; feed him; feed him substantially. If there are narrow cranks amongst the other boys, give them candy, they are not in need of more; they are not hurt, and cannot, be by the growls of the new giant youngster; in fact he will put heaps of money in their pockets before he has reached his teens. Justice he stickles for, and, by the way, he would work harder for a little loan now and then to keep up his muscular development. His growth should not be impeded either by blind partyism, or contracted views as to his clothing and diet or what in the future he is to be. He is a genuine giant—not a mere ten foot one—and can digest anything from bank notes to quartz, but is very squeamish when his temper is "riled," and liable, in consequence thereof, to spells of prolonged sickness and to what doctors know as "arrested development." He will get out of these infantile troubles when a little older; the boy hasn't his teeth yet, except a fang or two, with which he can bite.

But to leave metaphor, however plain and easily understood, the mining industry requires:

Laws granting as speedy and cheap incorporation of companies as public interest can admit of.

Laws that will give the simplest and most inexpensive methods of staking claims.

Laws that will tend to keep wealthy individuals or big syndicates or companies from controlling mineral lands and holding them on speculation against the development others might make.

The abolition of the present royalty, and in its place the substitution of a tax on the income of all mines, beyond cost of producing refined metal, wear and tear of machinery and a reasonable dividend—say 10 per cent.—on the actual capital or its equivalent invested in such mines. Beyond this encouraging exemption, which is much needed at present, as our fields are new—a tax of a tenth or more on each 1 per cent. would return a revenue to the Province without burdening mines that pay inadequately.

Reports to the Government from all mines on product, working expenses, capital paid up, etc., and the right of inspection of the books of such mines, whether they are those of an individual, a syndicate or a company.

Simpler laws and better ones as to the regulation of mines with a view to the protection of life, limb and health, and some change in laws regarding inspectorships which would not leave a mine company at the mercy of an inspector who is both prosecutor and judge, and whose whim, or individual or political interest, may make him incompetent to deal impartially in administering mining laws.

These are some of the most important points connected with our mining laws, and they require the consideration of the Legislature and of the public at large. We hope that our politicians, regardless of their views on other matters, will grasp the chance to do patriotic work in furthering the new industry so unexpectedly opened to Ontarions, and so full of immense promise to the prosperity of the country.

DEVICES IN SELLING STOCKS.

THE putting of the price of mining stocks up without a cause which will bear inspection and approval by investors and by the general public is a dubious proceeding. Sometimes the earliest value put upon the stock may be due to a mistake on the part of a company's directors. They may have underestimated the value of their property—which it is hardly likely that many directors do—or they may have misjudged the investing public. But a good deal of the advancing of stocks without good reason given to the public, to which these companies appeal for subscriptions, savors much of mere financial exploitation, not of legitimate mining business.

If stock offered at 10 cents on the dollar is advanced to 15 cents without demonstration of actual work having been done and results shown that prove the stock worth more than the original price, there is occasion for much caution on the part of the investing public. There should be, at least, something that has increased the assets of the mining company before a "raise" in the value of stock is announced, that is, unless a blunder has been made by undervaluation in the first place. We suspect that blunder to have been made in a few cases in stocks offered. We more than suspect mere exploitation in other cases—just a little of that humbug which, as Barnum has said, is "the greatest source of satisfaction to the greatest number of American people." But we are surprised to see respectable business men, men supposed to be of the highest integrity and of thorough acquaintance with sound business methods, apparently endorsing some of the schemes that thus mislead the public. Men who have not the least practical knowledge of mining matters cannot be too careful when asking the general public, which also is unacquainted with mining, to invest its money. Ignorance cannot, when shrewd business men are concerned, be accepted as an excuse for morally illegitimate appeals, for good business men ought to be able to gauge their ignorance as well as they do their knowledge.

We are investigating some cases of the kind we refer to, and suspect some of the apparent inconsistencies to be quite innocent, however inadvisable they may be. But others have a less innocent look. We may have something to say more about the matter later on, but shall take care not to injure legitimate concerns, even if slight mistakes have been made, in our wish to benefit the investing public. In the meantime we have this to say: the raising of stocks without due cause announced to the public is not a good policy, either in a new or an old mining country.

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We think that many, perhaps an overwhelming majority, of the mining companies incorporated in Canada are, in intention, bona fide concerns, having, or believing they have, properties sufficiently rich and of sufficient continuity to yield good returns from paying out. We do not think that development has been made sufficiently in perhaps the majority of cases to really estimate the value of them.

mines. The country is yet "green" in mining. Many of the properties not tested will prove rich in returns to the investor. But in such cases he is taking his chances much as does a gambler at euchre, poker, *rouge et noir*, whist and other speculations of which he knows little. Some of the companies floated and some, too, that have good properties so far as can be judged, try to float their stock, with a jingle, a flourish of a trumpets, and a terrific dust. They count on the excitement of gold fever to help them along, and sometimes they are, or have been, or will yet be right. But it should be remembered that the home capital to be drawn upon for the immense mineral developments the Dominion is fortunately about to enter upon, is very limited—not sufficient to do the work the magnificent heritage we have requires. Our people, with their small capital, are timid, and many are over-cautious. They must be treated frankly and above board, and without too much flourish. They want the same kind of treatment that experienced mining centres, commercially speaking, like London, New York, or St. Louis require.

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Investors in mining companies cannot be too careful about looking to the proportion the treasury stock devoted to development work bears to the total capitalization of a mining company, and when satisfied on that point, then in seeing that the treasury stock is actually applied to real work. They should see, too, that promoters' stock is not floated to the injury of development stock. It is generally well if the stock other than development stock is bonded so that it cannot be sold until all or nearly all the development stock is sold, and not then unless at a good figure.

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Treasury stock should represent a very considerable proportion of the total stock. In ordinary circumstances one-third is a minimum necessary. The actual amount necessary varies with circumstances. Free milling bodies, such as are generally found in Ontario, and sometimes even in the Trail country, require far less of capital to develop into paying mines than the refractory deposits of some parts of eastern Ontario and of the large deposits of Rossland. Our north-western Ontario mining companies do not require, for their mines, the actual capital needed West, for their development, but in the future, as companies are formed, watchfulness as to the proportion the money spent on development work bears to actual cost of the mine and allowances for promoters, will be quite as necessary, as in regard to the companies working beyond the Rockies. No strict rule can be applied to the proportion development stock should bear to total stock. The property or properties concerned may, in fact, be real mines or well developed prospects, or slightly developed prospects. And the equipment already on the spot, the cost of transportation, the cost of treating ore, etc., are all factors that have to be considered. We can only point out the general rule, deviations from which the investor must examine into.

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Mining and development companies, especi-

ally the development side of their operations, are properly attractive to Canadian investors, for we have not the spare capital to carry on the full mining operations the mineral riches in sight demand. There are devices, too, in this development work which tempt the unwary. We will not call them dishonest. There may be enough behind to justify tempting offers that may be made. Development companies are yet a novelty. If a development company pays a dividend it should be either on actual earnings of a mine, or on net proceeds of a sale. From a business point of view, just to all concerned, these are the only two ways of paying a dividend. If a company has \$100,000 of actual cash invested in such an enterprise, if a prospect bought for \$10,000 and improved by development work at a cost of \$5,000, is sold for \$25,000, there is a net profit of \$10,000. Thus furnishing a dividend of 10 per cent. on every dollar invested.

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There are other ways of paying dividends, of paying them in advance of any earnings whatever. A real value of stock may be 25 cents on the dollar, or exploiters may obtain the stock at that figure. Then by dint of adroit use of appearances they may offer the stock to the public at 50, 75, 85 per cent., guaranteeing 10, 12, 15 or 20 per cent. dividends per annum, or, more attractive still, 1 or 2 per cent. per month. The tempting offer is enhanced when prominent business men or high officials are often innocently made use of as a sort of collateral guarantee of respectability. We knew of a poor doctor in New York who built up a very lucrative practice by attending a large and fashionable church, and having a liveried boy frequently call at the church and summon him from his devout exercises on apparently cases of extreme urgency—presumably cases where wealthy and fashionable people were concerned. Of course the device "took." Devices somewhat similar, and identical in nature, may "boom" some mining speculations. We do not say that the investor will always be cheated. He may not lose a cent, but make a good deal; the clever exploiter may have full faith in his mine, and in the exuberance of his nature and with a view to attract capital to help himself and partners, and incidentally investors, may take the plan he does. It is certainly not any more objectionable than the methods the so-called "integrities of commercial life," adopted in many other lines, permit of—integrities about which very many of the teachers of morality probably are not acquainted, but which are sapping the real morals of the community (and preparing for—, well, perhaps 1793 is not "in it") more than theatres, saloons, bicycles, etc.

The device is simple. The stock actually is worth, say 25 cents on the dollar, and may be bought by the shrewd (if not monopolized), at that figure. Now, make a fuss, sell guaranteed stock at 50 cents, or 75 cents or over, always being careful to bait under the dollar. The capital, mostly from the unexperienced, sometimes from the keen, who know what to do, comes in. The difference between actual

cost of the stock and the selling price of the guaranteed stock, leaves abundant room for a time, development or no development, to pay a good dividend to the investor. He may even luxuriate and invest more. The thing may turn out right; no doubt the exploiters, would prefer that, for few men care to see their fellowmen suffer if it not deemed essential for their own comfort. We give this as a hypothetical case. There are a good many other ways of accomplishing similar results, but we shall have further occasion to refer to them. Such things we think accompany, especially in new fields, all gold and silver developments. They should not discourage the wide awake investor, nor the quiet man who knows little of the business world. They may serve as a caution. We have vast riches and vast opportunities of developing them. We need no "booms;" our position in mineral wealth is secure. We must not hinder its development by methods, which if not dishonest, savor of humbug, or may appear to the outside world to do so.

SUDBURY'S NICKEL MINES.

SUDBURY arose in a night and became famous as the centre of the richest mineral district known at the time in the whole Province of Ontario. The chilly winds of November 30, 1891, blighted her growth. Her people may have wondered what so suddenly brought her prosperity to an end. Some have tried to believe it audacity to say that the Order-in-Council of that date had anything to do with it.

Experts from most of the civilized nations came to the district to see for themselves the mountains of nickel-copper that rose around in an abundance the like of which the world had never before known. They went away astounded, and also wondering why, so close to the busy haunts of men, such enormous wealth, its out-croppings exposed to the eye, should have lain so long undeveloped, and even unknown. Wide-awake men—prominent generals and financiers—from the United States, looked at the nickel lands with covetous eyes, thinking to what multifarious uses they could, with enormous profit to themselves, apply the nickel of Sudbury, if they only had the nickel territory in their own land. For to let alone the use of nickel in the nickel-steel armoring of battleships, the metal could be used profitably for solid nickel table service ware, to replace the plated ware so commonly used at present, and it could be used for art decorations, house furnishings, such as door knobs, railings, etc., and for cooking utensils and even skates. With nickel and its manifold uses we shall deal, however, in the future. The subject is worthy of consideration in influential quarters from which much good could come to the nickel industry.

The people of Sudbury should, in the meantime, be hopeful. If the quantity and quality of the coal in their neighborhood could be increased by the action of the Government, or in any way, it would be a boon to their district.

A FIFTY MILLION COMPANY FOR ONTARIO.

ENGLISH capital is rapidly coming to the development of the Canadian gold fields both of British Columbia and Ontario. In the Lake of the Woods district the reticence about what is being done by English companies amuses some people, but the fact is that work is being pushed and next season will take on great magnitude. The veins and the beds of north-western Ontario are immensely more rich than those of the Rand, and their width, sometimes reaching into the hundreds of feet, has not yet been paralleled in mining experience the world over. It is little wonder that London capitalists, after first incredulous then astonished curiosity, should examine our gold fields and then quietly invest, without letting others know what they are doing. We believe that hush is the word while some of these syndicates and companies are forestalling in a richer and vastly more extended field than the South African gold regions. We understand, on evidence thoroughly satisfactory to ourselves, that a British mining company, with a capital of nearly \$50,000,000, is applying for charter rights to operate mines in Ontario. Our joint stock companies act contemplated little more than provision for a million dollars or so, as capital in any company, and the maximum fee was fixed for a million dollars. Fifty millions is another matter, but we hope no niggardly spirit will be shown because the capital is large. No delay: take the letter of the law and, if necessary, legislation can be altered to meet such cases.

OUR OLD "SHINPLASTER."

YEARS ago the happy thought of issuing 25 cent "shinplasters" entered the mind of a Canadian Finance Minister, and was carried into action. This small currency was of much service then, but from some cause or other, perhaps it was the slight inconvenience it gave the banks, the issue was stopped. The currency still circulates and is valued by many, but there is so little of it that people cannot be bothered to scour around for it, though some yet do so at much personal inconvenience. The issue was stopped, but not by the desire of the people.

That they did not oppose its suppression is because when the individual interest of the each one of the many is small, though great in the aggregate, and is opposed to the strong interest of a few, the few generally win, because the many will not spare the time and give the trouble to assert their opinions. If shinplasters were useful twenty-five years ago, they are ten-fold more useful now, when remissions of sums not making round dollars are so common in connection with big shops of all kinds, publication offices, etc. The stamp business is a nuisance to nearly all. People are deluged with stamps and it is trouble to dispose of them. The new Finance Minister will do the country a service that will be appreciated if he makes a new issue of \$500,000 or a million dollars of the 25 cent bills. If the old size be

objectionable—we do not think it is—let them be made square, and about the half the length of the regular Dominion note. In fact anything will do, so long as the small currency bill is restored.

NOTES AND COMMENTS.

THE British Empire and the United States produced in 1896 almost the same amount of gold. The yield of the United States is estimated at \$57,000,000; that of Australia, New Zealand, Tasmania, India, Canada, British Guiana, and the United Kingdom \$55,961,906, and, with the production of British South Africa added, the total of the British Empire is probably a little above \$57,000,000.

WESTERN Australia was popular as a gold field a few years ago. But reckless scheming and bad management caused losses and the British capitalist fought shy of investments in that colony and so gold mining there is at a standstill and not unlikely to be so for some time. In Canada let us profit by the lesson. Do not kill the goose that lays the golden egg.

MR. JNO. M. BURKE, one of the veteran miners of this continent and one of the keenest men in the mining business says, anent THE CANADIAN MINER'S proposal that a certain percentage of profit over and above the working expenses of a mine should be exempt from royalty, that it is the best proposal to encourage mining and give at the same time a due proportion of tax to the state that he has yet seen. He knows of no country which has so reasonable and justifiable a provision incorporated in its mining laws.

CORRESPONDENTS wishing to have their letters published in THE MINER should make them as brief as is consistent with clear expression of the point they wish to make. Furthermore, it is well to remind them that the printer's necessities in giving out copy, absolutely require that manuscript be written on one side of the page only. Writers who do not understand the reason for this requirement, often entail unnecessary trouble on the publisher.

OUR contemporary, the *World*, which has done so much for the mining interests of Canada, and for making Toronto a mining centre, is now publishing poems making a great fuss because in this mining centre the thermometer actually dropped the other day to 7 below zero and some snow fell and kept the pedestrian and back-platform passenger on the street-cars from being covered with the intolerable dust that has thus far characterized the season. We must have decent weather to prospect the Don.

Go ahead Sudbury. Your pluck is contagious. More than two hundred Sudburian business and mining men met a few days ago to discuss the means of bringing the great mineral wealth of the district around into development and notice. Mayor Cochrane who presided, said the vast majority of mining men were dissatisfied with the mining laws. After much deliberation it was decided to take advantage

of Premier Hardy's invitation to give him "pointers" in preparing a new mining act. Before the meeting broke up the following were appointed a committee to draft a series of resolutions for submission to the Government: W. A. Quibell, A. McCharles, J. R. Gordon, D. O'Connor, F. B. Chaplin, John McDonald, G. Harwood, M. Allard and F. G. Templeton.

THE CANADIAN MINER is impartial in its dealings with the gold fields of Canada. Those of Nova Scotia are long established; they go along steadily and with good returns. Little new development takes place, and public interest in the gold field there is comparatively small. British Columbia has many gold fields discovered and undiscovered. The fields partially known are enormously rich and are of great extent in the aggregate. We have faith in British Columbia, and will do what we can to make its mineral resources known both in Canada and abroad. We have, too, faith in Ontario. Its fields are probably as rich and extensive as those of the Pacific Province. Here the gold is chiefly free milling and very often enormously rich. It may be that feathers are struck and mistaken for beds of veins, but feathers lead to true fissures of indefinite, but great depth. And it is these almost entirely, that are being worked. Masses of ore in the shape of veins are found 20, 40, 80, and even in one instance over 400 feet wide. Ontario has gone quietly along. Heretofore the prospects and mines have been chiefly in the hands of individuals or small syndicates and hence have not attracted as much attention at home and abroad as the mines of British Columbia, the excitement over which has done much to stimulate interest in the gold mining of this province. Ontario, as well as the Pacific Province, will receive due attention from THE CANADIAN MINER.

THERE come disagreeable rumors from Roseland, which we hope are ill founded. It is said some American mining companies will employ only Americans, and refuse employment to Canadians. The report should be taken with a grain of salt, and if true it would be good policy as well as right morals for the directors of such companies to sit upon the managers of the mines, and squash them out if need be. This silly American "no-nothingism," that makes many Americans blush and fear for their country, we know nothing of. We enforce no alien law, either by legislation or individual choice. But we won't stand too much of ignorant, selfish bull-doing. Our race is built of sterner stuff. We must not be provoked too far, however, or we may take retaliatory measures, and, as there are more Americans in proportion to our population in Canada than there are Canadians in the United States, in proportion to theirs, the consequences may be disagreeable. High minded Americans hate this narrow view of certain classes of their countrymen, who would kill a Bayard because he is cosmopolitan, and because the highest instincts in the world would try to recognize his twenty-first century ideas by making him, were he a countryman, a duke in Britain or a prince in Germany, or in Switzerland or France bestow upon him the highest popular favor a sensible republic could give.

PETROLEUM.

THE OIL BOOM AT BOTHWELL.—THE OPERATORS.—HOW THE FARMER MAKES MONEY OUT OF IT.—A YEAR'S PROSPERITY IN OUR OIL FIELDS.

A SPECIAL to the *Globe* from Bothwell gives details of the operations in the new, or rather new-old oil field, south of the Petrolia oil field of south-western Ontario. We condense and add, and give excerpts.

The activity in locating and drilling oil wells, which has marked the past six months, and excited public interest in the province within the past two or three, has had a beneficial effect on the little town and on the farms surrounding, which secure not only a better local market for the important small odds and ends of farm products, but obtain for some of their owners considerable returns for leases to operate, and big prices for outright sales. The town has added fifty per cent. to its population since the interest in oil development began there last summer, and the unemployed have work. The farmer has, perhaps, reaped the richest harvest, and if it is found that the petroleum area extends much beyond that territory which has already been tested, and found to be rich in oil, his returns will be still larger.

THE OPERATORS.

A number of wells drilled had proved failures, or, according to the local term, had turned out to be dry holes; but in almost every instance these failures had been obtained outside of the area already mentioned as having been proved. Chief among the owners of producing wells are Messrs. Carmen and Fairbanks, Mr. W. J. Woodward, Mr. Hiram Walker, Messrs. Gurd and Kippin, Mr. Alex. Elliott, Messrs. Smith and Crawford, and Messrs. Whitman and Brenton. There are numerous other operators, but these are the largest at present, and are in possession of the most desirable locations. All these gentlemen have large tracts of land under lease, and a number of them have bought several farms outright, a circumstance which indicates their belief in the district. Messrs. Carmen and Fairbanks and Mr. Hiram Walker have the most productive wells in the territory, their situation being on the highest elevation within the whole oil area. These wells are located to the west of the town about two and a half miles, and are on what is known as the Goodyear farm. Fifty acres of this farm are in the possession of Messrs. Carmen and Fairbanks, and the other fifty are owned by Mr. Walker. It is understood that one well operated by Carmen and Fairbanks gives from

SIXTY TO SEVENTY BARRELS A DAY,

And it is expected that the other wells sunk by them on this property will be similarly productive. Mr. Hiram Walker, too, is obtaining great results from the operation of the wells sunk by him. East of the Goodyear farm Mr. Woodward has an excellent property, and is about to operate a well on the site of the old "Bull Dog" well, which was sunk in 1882, and proved to be a gusher. Mr. Alex. Elliott has also in this favorable locality about ten wells in operation, and Mr. John Puddycombe, a merchant of Bothwell, has one which is producing, and is drilling others. Within a short distance, and on the crest of the elevated area, are the wells of Smith & Crawford and Kippin & Gurd, and east of these a number of wells belonging to smaller owners, all of them yielding oil in paying quantities.

Of the operators on the field there are

three who are eminently fitted to speak with authority regarding the district and its future outlook. These are Mr. W. J. Woodward, Mr. Carmen and Dr. Fairbanks. These gentlemen have been connected with the petroleum industry all their lives and are not only excellent business men but have made a study of the geological formations in which oil is found. They applied the results of their knowledge to the Bothwell field before they invested their capital in sinking wells, and the properties which they hold were taken up as the result of careful scientific calculation. Mr. Woodward, especially, made a scientific examination of the whole surrounding country. He had never withdrawn his attention entirely from the district since the collapse of '66, and proposed when the market should have become restored to a healthy condition to make some investments and some tests in the locality.

A FIRE GOOD SOMETIMES.

His purpose was very likely quickened by a circumstance which brought to the notice of the world at large the possibilities for the production of petroleum afforded by this field. In January last Moore Bros., of Bothwell, who own much property about here, and who have for a number of years done a little now and again in the sale of crude oil, pumped from old wells which they had acquired, got in a steam engine and began operations somewhat more systematically on one of their properties. They had pumped 150 barrels when, on February 4th, the place where the oil was stored took fire and was destroyed, together with the contents. The circumstance was recorded in the newspapers, and brought the fact of the existence of oil in paying quantities at Bothwell before the attention of the world generally.

Whether this stimulated Mr. Woodward to immediate action or not, he certainly commenced exploration next month, and Mr. Carmen joined with him in his labor. Mr. Carmen, however, had to go to Wyoming, and for a time his attention was withdrawn. He returned in May, and after going over the field and comparing notes with Mr. Woodward, they fixed on the property about the Goodyear farm as offering the best prospects for development. Part of this farm had previously been acquired by Mr. Hiram Walker, but the remaining fifty acres were obtained by Messrs. Carmen and Fairbanks, the latter forming a business partnership with Mr. Carmen, while property immediately to the east was purchased by Mr. Woodward. It was immediately after this that the activity became pronounced. Many Americans as well as Canadians took up properties, not only on the north, but to the south of the river, and the work of drilling was pushed with great energy. Not only has the re-establishment of the industry brought in money and population to the district and given work to the unemployed, but it affords to a large portion of the farming community a permanent and substantial addition to their income.

THE FARMER'S TERMS.

Under the terms of the leases the farmer not only gets satisfactory sums from the lessee for the privilege of sinking and operating wells (in some cases the sum is equal to the value of the farm), but he also receives a royalty of, as a general thing, one barrel in every eight pumped. Besides this, he of course, works the rest of his farm as before, and reaps nearly, if not quite, as large a crop as he did before the lease was effected.

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The Year's Progress.

In looking over the past year's affairs,

says the *Petrolia (Ont.) Advertiser*, one cannot but see that it has been a good one to the oil man. During the entire year prices in all lines of petroleum and its products have been fairly remunerative. There have been several reasons for this. The rise was originally caused by the appreciation in value of petroleum in all parts of the world, but particularly in the American market, although, owing to the absence of the speculative elements in the Petrolia market our quotations never fluctuated so wildly as the American, but rose to the prices the article might legitimately command, and stayed firmly there.

Another factor in the steady prices was the consideration that we had just accommodated ourselves to the changed conditions caused by two or three doses of tariff tinkering that had a very depressing effect on our industry, and after having made arrangements for the altered circumstances we felt justified in expecting a rest from such extraneous disturbances, and settled down to business in that hope.

The consequence has been that a large amount of business has been done in all lines during the past twelve months. The market for refined, lubricating oils and other by-products has been active, and the refineries have been busy supplying the demand, at prices that assured a reasonable profit. This enabled them to pay a proportionately good price for crude, while the demand for the latter was strong.

Drilling, therefore, has been active, both at home and abroad. In the more strictly defined territory perhaps not so much work has been done, merely enough to keep up the production. The chief work of the drill has been in outside places, and we may say, while results have not yet been very great, it has been amply demonstrated that oil exists in other parts of this county in paying quantities, and that the oil yield will probably be enlarged as the result of the operations in new territory. In Bothwell, for instance, a great amount of work has been done, and oil in considerable quantities obtained. While it would be premature to say that the Bothwell field will ever be a very large producing territory yet it will certainly produce oil in paying quantities and prove a valuable adjunct to the Petrolia field. In many other directions the drill has been busy, with varying results, sometimes encouraging, sometimes not.

This has been the most conspicuous feature of the year just passed, and, with a continued season of comparative prosperity during 1897 we may expect to see the oil district of Ontario a great deal enlarged beyond its present defined limits.

THE James' Bay Railway Company will apply at the next session of the Dominion Parliament for power to extend their proposed line from its southern terminus, Parry Sound, to Toronto. The promoters of this company are:—Messrs. George A. Cox, William McKenzie, George Bertram and others, and it is their intention to start in on an old-time railway campaign, to find the capital for building the line right through from Toronto to James' Bay, a distance of 600 miles. Mr. William G. McWilliams, has given notice that another company will apply at the coming session of the House of Commons, for a charter to build a road from Toronto to Parry Sound. The latter is bound to become a place of importance as a railway and steamboat terminus. Parry Sound is to be the lake port of a new through route to Duluth, Minneapolis, Chicago, Port Arthur and other Western points.

ONTARIO NEWS.

Lake of the Woods.

On Bath Island, Lake of the Woods, operations are about to begin.

An explosive manufacturing company is being organized at Rat Portage.

The Royal mine, owned by an English company, is shortly to be developed.

The Bullion Mining Company lately took nine new locations into camp.

Three veins on the Gold Coin are being stripped, and shafts are being sunk on each.

The Foley mine, in the Seine River country, will ship its first brick before the 1st of March.

The Rat Portage Mining Company is anxious to receive applications to furnish the Master Jack with a mining outfit.

The Ferguson mine, also in the Seine River, has a three stamp test mill, but will, before long, it is thought, erect a larger mill.

Active operations began a short time ago on the Emerald Isle location. Emerald Isle is one of the western Shoal Lake group of mines.

The Mascot and the Trojan are being actively worked, and the Regina has for some time been banking its gold bricks.

At the Sweden mine the shaft is down 70 feet, and considerable drifting has been done. An air compressor and drill and a hoisting plant are to be arranged for.

On the Norway property, situated between the Sweden and Bad mines, a shaft is down 50 feet, and arrangements have been made for sending an outfit to open it out. Graham, of Fort William, and Wm. Ross, of Rat Portage, are jointly interested.

A Winnipeg syndicate which owns the Black Sturgeon or Benson property, as it was called until lately, is opening a mine on it. The Black Sturgeon adjoins the Princess, and is in the same belt as the Scramble mines.

Twenty thousand dollars has been refused, it is said, for a property adjoining the Monarch mine, in which operations are being carried on the Bullion Company. The Monarch shows a vein 5½ feet wide at a depth of 30 feet.

Labreque has sold a location on Eagle Lake, near the railway station, to Henry & Grout, of Winnipeg, for \$2,000. He says he has sold four locations during the winter. His is an example of how a poor man can succeed at mining in the Lake of the Woods country.

The famous Mikado is a bonanza. Col. Engledue, the manager, at the general meeting of the South African General Development Syndicate (Ltd.), is reported by the London *Financial Bulletin* to have said regarding the cost of making it a fully equipped mine:—"I may here say that only 500 pounds have been remitted to the mine from London, the expenditure having been met out of the gold raised, and there is every probability that no further money will be raised from this side, and that the mine will pay for its own machinery."

The Scramble vein, north or north-east of the Lake of the Woods, is rapidly becoming famous. It is very rich and wide, and has been traced in a north-east to south-west direction for about 8 miles, when it dips not far from the shores of the Lake, and is lost from view. On the lode are the Scramble, Royal, El Divir, Princess, Black Sturgeon (formerly Benson) mines, and the location known as lot 14, owned by the Dominion Mining and Reduction Company. The El Divir property was worked a few years ago by Americans but abandoned for a time during the financial troubles in the United States. It has now been found that the trouble was that the operators were working on a stringer, or side crack,

merely of the great lode near by, which traverses the location. The Scramble has undergone considerable development, and promises shortly to be a shipping mine of importance. A complete milling outfit is to be put in shortly. On the Royal Oak work is begun for an English syndicate. Lot 14, too, is being worked, and the Princess, which promises good returns, is also being placed in a position for good development under Major Greville Harston.

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Sudbury.

According to the *Sudbury News* Mr. R. Woods has given an option on his Wahnapietæ gold claim for \$6,000.

Mr. Craig of Toronto, who has an option on part of the Cook-Henry gold property, is to commence development in a few days.

The Citizens' Gold and Coal Mining Company of Sudbury have secured an option on Messrs. Williams and Pickard's gold property of \$10,000.

Mr. M. C. Biggar, president of the Citizens' Gold and Coal Mining Company, has secured a coal and gold option near Chelmsford for his company.

Mr. D. O'Connor of Sudbury, while in Toronto a fortnight ago, purchased a steam tug which will ply on Lake Wahnapietæ next season, and provide facilities for getting into the mining regions.

The first car of machinery for the Crystal Gold Mining Company has arrived at Wahnapietæ Station. A five-stamp mill will be erected, which can be extended to a ten at a small extra outlay. About 50 men will be employed for some time while building is going on.

The Sudbury Board of Trade has passed resolutions calling upon the Government to afford better opportunities for prospectors by promptly making known what lands are already sold or leased, as well as lands open for sale or lease. The board asks that a mining office be opened at Sudbury, where all necessary information may be obtained by prospectors and investors.

An exchange says:—Messrs. Robert Drake and M. H. Smith of Goulais Bay have discovered three large veins in that district, two of them being over 200 feet wide. The samples secured are well mineralized, and have been forwarded to Mr. Hamilton Merritt, the consulting engineer of the Great Northern Mining Company. The deposits are enormous, and may rival in bulk the far-famed Iron Mountain of Rossland.

The mining excitement is at fever heat at Desbarats, W. Edgar, the head man from the Hamilton smelter, as well as Mr. Corbett and other interested parties, are confident that it will turn out all right, and state that the iron found will average 65 per cent. They have laid out a site for ore docks and have given notice that they will apply for a charter for a railway in connection. Town lots in Desbarats advanced 25 per cent. on Monday.—*Algoma Advocate*.

A mining boom is imminent in the Wahnapietæ district, as numerous discoveries of rich free-milling ore are being there made. An old explorer says that so far only the tail end of the gold belt in that region has been explored, and that the main mother lode will be located farther to the north-east than the present scene of operations. It is also understood that the surface rocks on the range lying west of Lake Kokogaming are formed mainly of volcanic ashes and lava flows, and that in all probability ancient river channels and gravel beds containing placer gold may be found 50 or 100 feet below its upper crust, as well as quartz reefs of

which the surface veins were offshoots. Such conditions exist in some of the Australian gold fields.

In a single day recently five teams loaded with supplies for the Wahnapietæ gold fields left Sudbury with a contingent of about thirty men, prepared to spend the balance of the winter sinking shafts, drifting and stamping out the gold. The outfits were: Mr. D. O'Connor of the Comstock mine, 1 loaded team and 6 men; the Gold Cliff Mining Company of Toronto, 3 loaded teams and 12 men; the Hub Gold Mining Company of Sudbury, 1 loaded team and 6 men, to operate the Kettyle-Range property; the McKinnon-Kilpatrick-Jessop Company, 2 loaded teams and 6 men.

Mr. D. O'Connor, one of Sudbury's best known citizens, filled up his base burner last Monday night with Chelmsford coal from the Gordon mine. Mr. O'Connor says: "It was thirty degrees below, yet our residence was quite warm. At 7.30 in the morning the large lumps were burning nicely and throwing out a good heat." Mr. O'Connor thinks the product good enough for him. Police Magistrate Quibell shows some fine samples of Chelmsford coal from the McVittie mine, in which the mining company of which he is president has an interest. The samples shown were taken from a depth of nearly 25 feet, and are nearly the pure stuff. Mr. Quibell enjoys the distinction of being the first in town who has had breakfast cooked by a fire from Chelmsford coal, and to use his own words, "It was an extremely well cooked and tasty breakfast, too." As to the extent of the coal deposit—test pits have been sunk within a radius of a mile from the McVittie mine and coal found every time.—*Sudbury News*.

BRITISH COLUMBIA.

Rossland.

Zilor has 8 feet of ore.

Fine appearances are reported in the Juliet.

The Gopher tunnel shows a good body of ore.

Le Roi's new ore will make a train load every day.

The Josie will ship 12 tons per week to Southern smelters.

The new strike on the Monita assays over \$100 to the ton.

The Columbia-Kootenay is now shipping 10 tons of ore daily to the Trail smelter.

The Le Roi mine, it is said, may go to an English syndicate. The price mentioned is \$5,000,000.

A freight blockade is threatened, owing to lack of transportation facilities. The Nest Egg, Firefly, Silver Bell, and other companies are much inconvenienced in consequence of it.

The British Columbia Gold Fields Company, with 11 properties on the Salmon, reports the Sunset in the Nelson district with three feet of solid ore in the tunnel, and nine men at work. Hon. G. E. Foster, is president of the company.

The Heather Bell nine miles north of Rossland, last week had sunk a shaft 27 feet into what is reported a good body of ore, and had tunnelled 21 feet. This is only a beginning of a development which may test the value of the mine.

At the regular monthly meeting of the Le Roi Mining and Smelting Company, held at Spokane, a dividend of 5 cents a share was declared or \$25,000 in all. This brings the total of dividends to \$275,000. The dividends have been paid as follows:—October, 1895, \$25,000; January, 1896, \$50,000; February, 1896, \$25,000; April, \$50,000; June, \$25,000;

August, \$25,000; October, \$25,000; December, \$25,000; January, 1897, \$25,000. The facilities for taking out ore are now greatly increased, and it may be expected that this year the dividends will be larger. The dividends thus far paid by the producing mines foot up \$462,500.

Regarding the Slocan district, (which for the information of the uninitiated, we may say lies north of Rossland), D. R. Young of Slocan City the other day, said: "The character of the ore gradually changes from Sandon to Lemon Creek. At the former place but little, if any, gold is found in the ore, while as one gets further south the gold gradually comes in. At Eight Mile Creek the gold first becomes noticeable. At Ten Mile Creek there is still more of it. At the mines immediately surrounding the Enterprise there is a high enough value in gold to cut some figure; while when Lemon Creek is reached the ore has become almost, if not entirely, gold-bearing. Another factor in this gold belt is that it is not any of your low grade propositions but, like the silver properties in the Slocan, exceedingly high grade."

On behalf of the United States Government, ex-Governor West of Utah, Special Treasury Officer Geo. W. Whitehead of Washington, D.C., Special Treasury Agent Leslie E. Cullon, and M. J. Maloney, Collector of Customs at Northport, have just concluded a general inspection of Rossland, its ores and its facilities for smuggling, and the result is likely to be the establishment after all of the obnoxious sampling works at Northport. Ex-Governor West, after his visit, said: "The sampling works at Northport will be re-established when the new administration goes into power. It is an absolute necessity to the customs service. It will be remembered an appropriation of \$10,000 was made by Congress for this purpose, but its expenditure was made subject to the approval of the Secretary of the Treasury. Secretary Carlisle refused to expend the money. As it is the Government must accept the assays of the smelting companies and this is not satisfactory. It may be that, for the mutual convenience of shippers and the Government, sampling works will be established at other points also, but this will be determined when the whole matter comes up for consideration."

THE WAR EAGLE PURCHASE.

The general meeting of the shareholders of the War Eagle, held at Spokane, Wash., to discuss the sale of the mine to the Gooderham syndicate, was very tempestuous. There was strong opposition to the sale. Bids were made of \$810,000, finally increased to \$900,000 for the property, but only a small portion was cash. The Gooderham syndicate offered \$700,000 cash, leaving some assets to the company beyond this figure, and finally, after various adjournments of the meeting, the offer was accepted at a vote of 267,145 shares for the Gooderham sale to 172,995 for the acceptance of the Heneage offer. Spokane was greatly excited over the affair, and the opinion expressed in some quarters was that it would be much adverse to the interests of Spokane as a mining centre. The erection and profitable operation of the proposed Northport smelter will be hindered by the deal, as it is thought the purchasers will erect a smelter, or have, at least, a smelter on the Canadian side of the boundary. The purchase will have an important effect in the mining industry of British Columbia. The firm, of which the purchasers are heads are, we believe, generally regarded as worth, at least \$24,000,000, and Mr. George Gooderham is noted for great carefulness and success in investments. The *Spokane Review* says the Gooderham purchasers will clear 800,000 by the transaction.

The Slocan Silver Belt.

THIS statement showing value of galena ore from the different mines in the Slocan district shipped per Canadian Pacific railway to the United States, from October 1, 1895, to September 30, 1896, will convey to readers some idea of the wealth of this part of the Kootenay country:—Alamo, \$208,266; Ruth, \$20,113; Last Chance, \$6,187; Mountain Chief, \$2,950; Slocan Star, \$303,808; Idaho, \$105,516; Reco, \$31,523; Ivanhoe, \$26,355; Ajax, \$2,660; Monitor, \$29,913; Silver Cup, \$3,641; Lucky Jim, \$9,131; Alpha, \$1,602; Wonderful, \$6,653; Enterprise, \$4,657; total, \$762,988.

THE galena ore shipped to smelter from November 20, 1895, to January 1, 1897, via Kaslo and Slocan railway, was 25,878,929 pounds, or 12,939 tons of 2,000 pounds, valued at \$1,552,680, the product of forty shipping mines, as follows:—

	Lbs.
Slocan Star	6,372,250
Ruth	2,657,360
Wellington	757,950
Mt. Chief	1,098,500
Reco	604,000
Whitewater	2,356,934
Last Chance	833,000
Noble Five	989,905
Deadman	741,100
Blue Bird	65,200
Dardanelles	179,900
Washington	1,668,920
Antonio	371,800
Surprise	469,900
Slocan Boy	568,140
R. E. Lee	289,930
Ruby Silver	56,940
Eureka	99,350
Jackson	677,350
Rambler	339,000
Iron Hand	1,148,000
Goodenough	270,250
Lucky Jim	350,000
Payne	1,909,180
Wonderful	602,000
London	35,500
Black Fox	68,650
Consolation	24,000
Red Fox	12,900
Antelope	18,500
Madison	19,440
Gibson	18,570
American Boy	131,000
Chambers' Group	21,500
Lucky Boy	5,260
Snap	6,000
Longham	6,800
Nonpareil	1,300
Mike McAndrews	7,350
Northern Belle	25,000
Total	25,878,929

Pannings.

During 1896 there were 336 mining companies incorporated in British Columbia, with a capitalization of about \$325,000,000. It is said that there are 65,000 staked claims in the province.

Kettle River district is likely to have a great influx of people when the season opens, and not only in prospecting, but in development work on properties already taken up, is there likely to be considerable activity. Big mines will probably be started as soon as a railway is begun.

The Whitewater mine, Slocan district, declared a dividend of \$24,000 on December 31st. This, with a previous dividend, gives \$36,000 for the season's work. Only development work has been attempted. During 1896 about 1,400 feet of tunnels and 400 feet of connections were run.

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HOW FOUR LUCKY BRITISH COLUMBIA MINERS QUARTERED UP \$60,000.

JOHN P. Howe, the well-known Pacific Coast theatrical manager, says *The Spokesman* of

Spokane, has returned from a successful tour of the northern mining country, and announces that he has arranged to open a permanent theatre at Rossland next month. "The building is now being erected," he said, "and will be altered according to my plans. It will have a seating capacity of 500. I shall play both stock and combinations, and have arranged to send companies to Nelson, Trail, Kaslo and Sandon. On the recent trip we played Rossland, Nelson, Kaslo and Sandon, and everywhere the seating capacity of the halls was unable to accommodate the audiences. It is the most promising new section I was ever in. In 1878 I played through the Black Hills, in 1879 in Leadville, in 1880 in Butte, and the past summer I took a company through Cripple Creek and other mining camps of Colorado. None of those sections ever impressed me as I have been impressed with the resources and future of your northern country.

"On the trip from Nelson to Kaslo I observed a scene that struck me as unusual. Four miners had sold a mine for \$60,000, and had come down from the hills to get their money at the bank in Nelson. They had it in a satchel, and were dividing it in a corner of the cabin. There were great handfuls for each partner, and they had difficulty in stowing it away. I never saw a happier lot of fellows.

"I was greatly impressed with the admirable way in which the law is enforced and order preserved. I never saw anything like it in a mining camp. No one need hesitate to take his family anywhere in that country. The hotels are uniformly good, and the accommodations provided for much travel are excellent.

"Well-informed, conservative persons with whom I conversed believe that country will have 100,000 people within the next five years."

EAST KOOTENAY COAL.

A DESCRIPTION OF THE CROW'S NEST FUEL DEPOSITS.

THE coal fields of the East Kootenay District, in what is known as the Crow's Nest Pass, lie says the *Fort Steel Prospector*, in a south easterly direction from Fort Steele, the distance to the nearest available coal being about 60 miles. These coal fields in the near future will have a world-wide reputation, both on account of the quality and quantity to be extracted, and are, without doubt, the best coal fields in America undeveloped. The western outcrop of the field is on the side of a mountain in the valley of Elk River, "one of the largest tributaries of the Kootenay River." On the eastern side the coal seams have been traced a distance of 40 miles, with surface crosscuts made at intervals showing the seams and walls. The lowest known seam is some 1500 feet above the drainage level of the valley, and is 30 feet in thickness; 100 feet higher there is another seam 30 feet thick; then comes a seam 15 feet thick; then a small 3-foot one; then a 7-foot one; then another 30-foot seam, and above these are five more workable seams, from 4 to 10 feet in thickness, 11 seams in all, making a total of 148 feet in thickness of coal exposed. These seams dip at an angle of 30 to 35 degrees, the upper seams having the least dip. There are three large creeks cutting this coal field, and the seams are exposed on the banks of those creeks, and openings can be made to mine the coal without much preliminary expense, the cuts made by the creek being more valuable than so many tunnels to prospect the coal, because there is room to operate the mines on both sides of the creek and the mines are proved to be permanent without any cost; in fact, nature did the prospecting. In addition to the coal on Elk River, further east on Martin's

Creek and other tributaries of Mitchell's Creek, "which is the fork of Elk River," there is another large body of coal above the Elk River field, but of smaller area, a large amount of the field having been carried away by natural causes through the different ages since the coal was formed. The aggregate of the depth of the seams of coal in the upper basin is somewhat more than on Elk River, so that if a shaft be sunk through the whole field there would be found 200 feet of coal in workable seams. It would be hard to find another field of coal with so much to the acre and so easy and cheap to work. The eastern outcrop of this field is near the summit of the Rocky Mountains, the average distance from the western crop being 10 miles, showing a coal field 40 miles north and south by 10 miles east and west, with an area exceeding 250,000 acres. The coals in this field differ, owing, no doubt, to the different ages of the coal, there being three different qualities; the lowest seams are anthracite in their nature, while the upper seams are the bituminous coals; in between, both above and below the bituminous coals, are a number of seams of coal different from anything heretofore known; it is similar to cannel coal, but superior to any cannel coal known. These coals have been analyzed and treated by different parties, among them Prof. Hoffman, Government assayer at Ottawa for the Geological Department, and the results, as shown in the department reports, prove that these coals would lose nothing by comparing them with the best coals of the same variety in Pennsylvania.

NORTH-WEST TERRITORIES.

PLACERS ON THE SASKATCHEWAN.

J. S. MULLIN, M. C. Cook, and Dr. Kelly of Omaha, Neb., and C. A. Loveland of Plattville, Wis., visited Edmonton, N.W.T., last week, says *The Calgary Tribune*. These gentlemen are organizing a gold dredging company to work on the Saskatchewan during the coming summer. The machinery they will use will be of a kind never before used in Canada, and not manufactured here. As their attempt is entirely experimental, which, if successful, will result in a tremendous development upon the Saskatchewan, Athabasca, McLeod, Peace and Liard Rivers, they are asking that the 35 per cent. duty be remitted. The richest of the deposits are worked out, and what remains can only be worked profitably by machinery. Many attempts at providing machines to work the gold-bearing gravels have been made, but so far none of them have been fully successful. The introduction of a really successful machine would mean a great deal to the development of the country.

The above calls to mind that for many years the auriferous gravel on the Saskatchewan River has produced a large amount of placer gold. While the yield each year has not been great, it has paid miners who were working the bars below Edmonton from \$3 to \$10 a day during the season. They would work the bars out during the summer, but next year the deposits would be there. This has gone on for years. The sources from whence this golden supply came have never been ascertained. The gold supply is not confined to the Saskatchewan, but it is characteristic of all of the streams flowing east of the Rocky Mountains. In all of the rivers mentioned in the foregoing gold has been found, including in the far north the Peace, Athabasca and McLeod Rivers. It has also been found in the south Saskatchewan and in a number of its tributaries. No systematic method has ever been employed in the handling of the gravel bars, only the primitive rocker and pan.

NONSENSE ABOUT THE DON.

THE Toronto World has published a long report of the discovery of gold in the Don valley, as a result of boring for natural gas. Granite rock was found at a depth of 1,300 feet, and explosives having been applied to loosen the material around, with a view to striking a flow of gas that might lie above the impervious rock, a piece of gold ore was shot clear up the 1,300 foot muzzle, after the manner of the habitable projectile in which Jules Verne makes his passengers ascend from the deep alluvium of Florida on their trip to the moon. And now, borings are said to be going on in the Don valley, or are about to go on, in quest of the yellow metal.

Well, without entering upon questions as to the *modus operandi* of the projection upwards of the golden missile, what does its discovery amount to? *The World* says: "Of course from the standpoint of geologists, there is no possibility of the existence of gold in the Don valley, because the country formation there found is not such as characterizes ore bearing regions."

Geologists say nothing of the kind. Every one, we had supposed before seeing this statement, knew that the granitic rocks, including the gold-bearing Huronians, lie beneath the Silurian and more recent deposits that overspread south-western Ontario. It is true that as we go south-west from the Huronian and granitic rocks of north-eastern Ontario, the dip of the strata requires rapidly increased depth to reach these almost primitive rocks. But the rocks are there, away down, as they are in Hastings county on the surface. Gold is here, too. Only there is this difference, that where the Huronians are exposed on the surface, veins or beds are easily found and cheaply worked, whereas we have as in the Don valley, to penetrate through over a thousand feet or more of alluvium and Silurian rocks to get barren gneiss, with one chance in a million of striking gold-bearing rock. No, the Don valley will never rival Rossland or the Lake of the Woods as a gold district. It is much easier to bore the air horizontally four or five hours, *via* the C.P.R. to Hastings County, or the G.T.R. northward to Sudbury, and there find gold on the surface, than to take months or years sinking a shaft in the Don valley, with one chance in a million of striking gold-bearing rock. Not till some kind of Röntgen rays is discovered that will detect gold through all intervening rocks is there any likelihood of the Don valley giving up its possible treasures of precious metals. But let the boring continue—it gets hotter and hotter and hotter as we go down in the earth, and perhaps at some depth gold gas may be found, which on being condensed at the mouth of the boring, may yield more of the yellow metal than the richest mine the world has known ever produced. But as yet it is not right to connect the name of a respectable firm with boring for gold on the Don. As the Khan, or some other Canadian poet, says:—

"Along the flats will browse the kine,
Midst cackling fowl and grunting swine;
Along the slopes will spread the vine,
But scarce a fool will ever pine,
To search below for a golden mine."

No, though on homely fare I dine,
Nor purple wear, nor linen fine,
I'd ne'er with others ever jine,
To drive away the lowing kine,
The cackling fowl and grunting swine,
To make a roaring railway line,
On even tap a golden mine,
For the Don is sacred as the Rhine,
And gold counts nought for "auld lang syne."

In replying to Advertisements in this paper, mention *The Canadian Miner*.

PERSONAL.

GEORGE DRURY'S is the Delmonico of Rat Portage. The daintiest dishes are here served up, and the choicest brands of liquor are to be had. Gold is the topic of the house. Dollar bills and gold nuggets lie around indiscriminately. Even the small boy has his wallet, and the hired girl keeps her ears open in the desire to find profitable investments in gold mines.

MR. KENDAL of Rat Portage is in the city on his way home from New York. He says there is abundance of money in Gotham waiting for investment in big well developed properties in the Lake of the Woods country. The Gothamites want properties on which a good deal has been spent in development work. These properties so far have rapidly gone off the hand of developers, and largely into the hands of English companies who are equipping them as full fledged mines.

MR. R. H. AHN, of Rat Portage, who has been in the city for a few days, looking after the Golden Gate Company, and other mining matters, has left for home. The Golden Gate Mining and Development Company, since it declared its 50 per cent. dividend, is being referred to by other development companies as an example of what they may prove to be. There is a good deal of good work to be done by such companies, profitable to their shareholders, as well to the buyers of partially developed mines, but, of course, it all depends on whether it is Hamlet with Hamlet in or Hamlet out.

COMPANY NOTES.

ACTIVE work, including the erection of stamp mills, is in progress or being commenced on the great Scramble gold belt north-east of Rat Portage. The chief lode appears to have been traced for seven or eight miles south-westward from the Black Sturgeon property, through the Princess, Scramble and other mines and wherever tested a great ore bed is found. The Princess Company, one of the latest to get to work, has a capital of \$500,000 in \$1 shares, non-assessable. Three-fifths of this stock is treasury stock, assumably to be devoted to developing the property. The proportion is much larger than with most of the mining companies. A portion of the treasury stock is now being offered at 25 cents on the dollar. Mr. E. Mackenzie, president of the Toronto Street Railway Co., is president of the company. Major Harston, a director and the supervisor of operations at the mine has unbounded faith in the property, which he believes, in common with several financially uninterested people in that district, is one of rare promise.

NUGGETS.

GOLD is sometimes found where geologists would not think of looking for it. So much for scientific ignorance. An accident occurred in the Cornucopia mine the other day. An employee, Jan Andersen, a Swede, while tampering with dynamite cartridges very nearly had his nose blown off. Dr. Hawke was called in to treat the man, and to his utter surprise he found enough gold concealed in Jan's nose to pay the medical bill. This is one of the doctor's latest finds, and should be encouraging to physicians thinking of locating in mining regions.

LOUIS, the genial and hospitable host of the Hilliard House, at Rat Portage, has a fashion of remarking to every newly registered guest, stranger or acquaintance, it matters not: "Will you take a little drink again?" The "again" brand is well-known, locally. Some people call the drinks gold bugs, and it is said that around this house these bugs sometimes interfere with the sleep of those who sit watching them.

T. DRAPER, ...Oil Well Supplies

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BALL CHECK VALVES, BALL GLOBE VALVES,
BALL VALVES for various purposes,
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 REPORTS, SURVEYS, ESTIMATES,
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 REFERENCES:
 Engineering and Mining Journal, New York.
 The Canadian Mining Review, Ottawa, and
 The Mining Journal, London, England.
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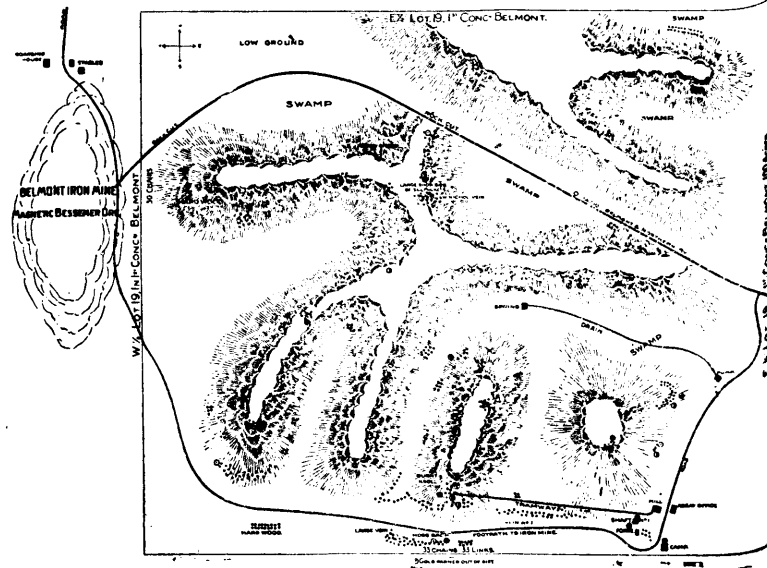
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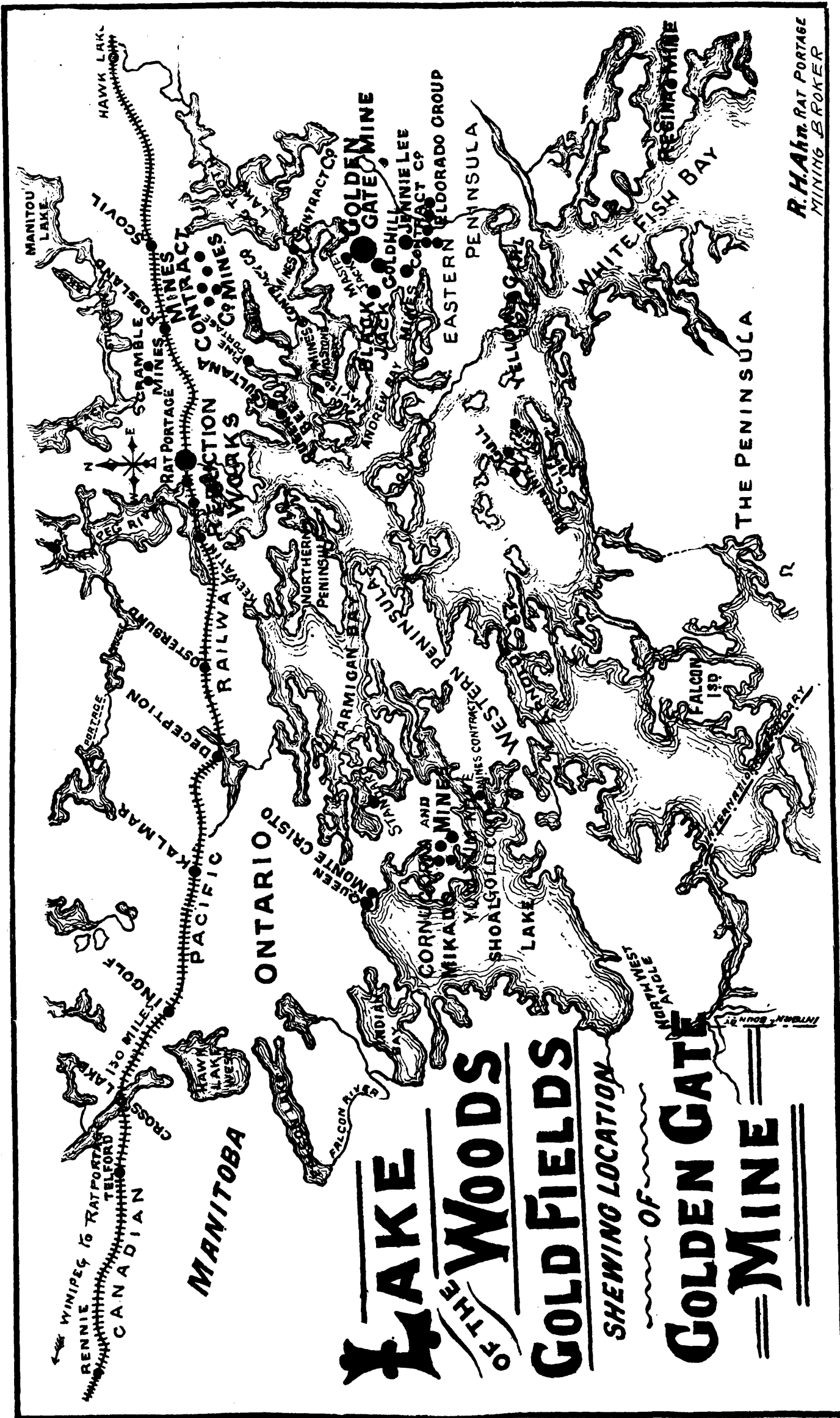
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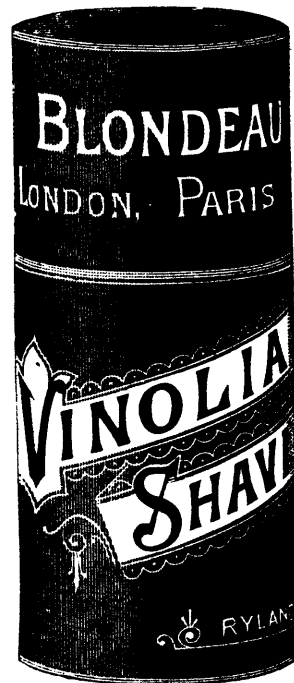
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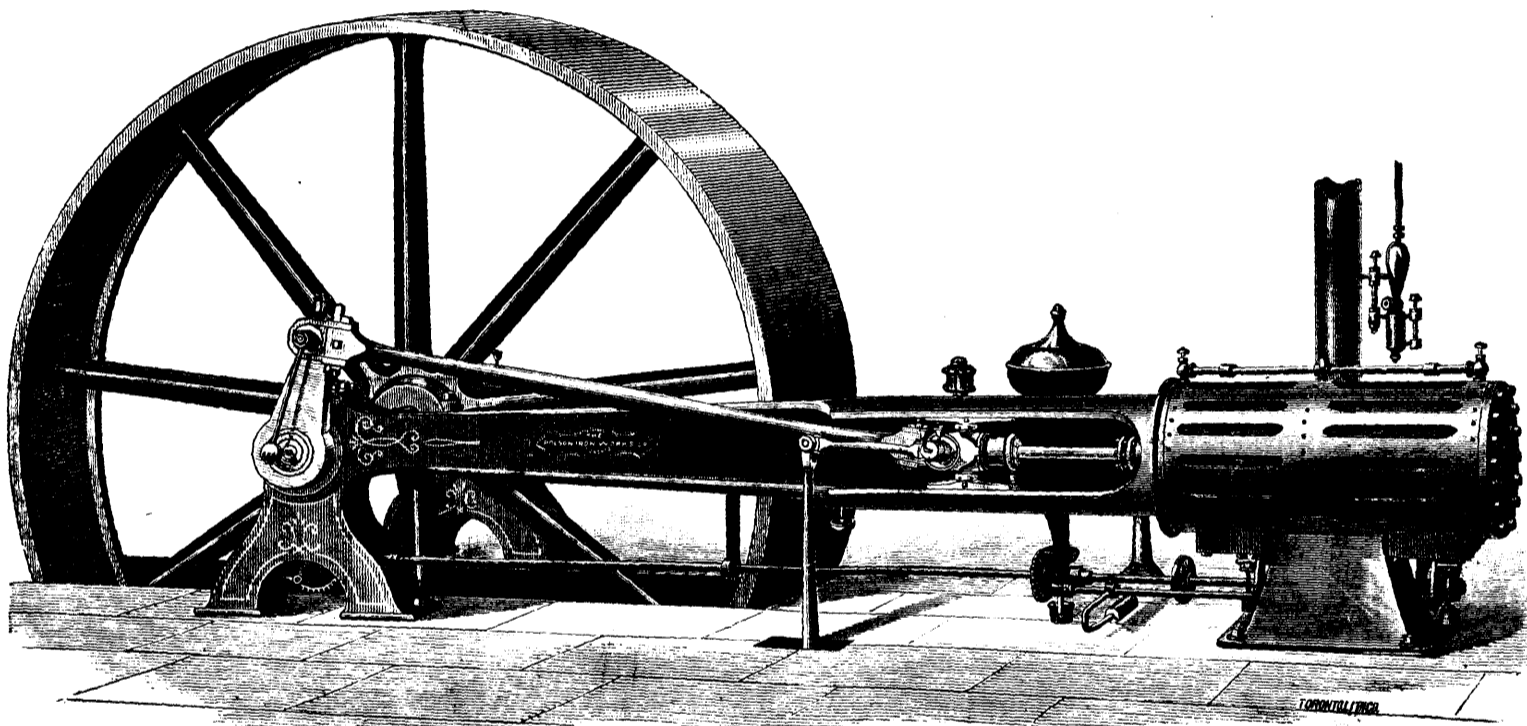
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THE CANADIAN MINER.

Vol. 1.

JANUARY 30, 1897.

No. 3.

THE CANADIAN MINER'S AUTHORIZED STOCK BULLETIN.

NAME OF STOCK.		NAME OF STOCK.	
Bondholder	\$0 17	Jumbo	0 60
Big Three	0 12½	Kootenay London	0 12½
Columbia and Ontario	0 10	Kelly Creek	0 15
Caledonia Consolidated	0 10	Lily May	0 20
Colonna	0 25	Le Roi	7 50
Commander	0 30	Lloyd Gold Mining and Development Company	0 96
Crown Point	0 45	May Flower	0 17½
Cariboo M. M. C.	0 50	Monte Christo	0 18
California	0 15	Morning Star	0 12½
Eldon	0 10	Monarch	0 10
Elise	0 15	Mabel	0 15
Evening Star	0 15½	Novelty	0 10
Ethel Group	0 10	Norway	0 10
Eureka Consolidated	0 10	O. K.	0 30
Enterprise	0 20	Old Ironsides	0 15
Great Western	0 17	Phoenix	0 15
Gertrude	0 15	Pug	0 17
Gold Hills Exploration and Develop- ment Company	0 10	Poor Man	0 11
Golden Queen	0 10	Queen Victoria	0 10
Good Hope	0 10	Rossland Red Mountain	0 25
Hansard Gold and Copper Mining Company	0 10	St. Elmo	0 12½
Heather Bell	0 15	St. Paul	0 12½
High Ore	0 07	Silverine	0 12½
Iron Mask	0 60	Silver Bell	0 15
Iron Colt	0 20	Virginia	0 19
Iron Queen	\$0 04	West Le Roi and Josie	0 27
Josie	0 60	War Eagle	1 57
Josie Mack	0 10	White Bear	0 10
		Zilor	0 15

LONDON (ENG.) QUOTATIONS.

PAR VALUE £1.

Cornucopia (Lake of The Woods)	\$7 50
Mikado " " "	7 50
Gold Exploration Company of Canada (Seine River)	5 00