

IRON PYRITE PRODUCT OF CANADIAN MINES

Mineral's Chief Use in the Manufacture of Sulphuric Acid.

VAST DEPOSITS

Important Industry Not Given Prominence It Deserves.

Iron pyrite has not as yet attained the prominence which it deserves. It has, however, been mined for many years in the Province of Quebec and in Eastern Ontario since 1900. Here the total production has brought about \$2,000,000. Its main use is as a source of sulphur in making sulphuric acid. When pure the mineral contains 53.4 sulphur and 46.6 iron. It is not to be confounded with pyrrhotite, the range of the nickel and copper ore-pyrite being extensively mined at Sudbury. The large quantities of sulphur are roasted out of the ore. There the percentage of sulphur runs from 15 to 30, and it is not saved. The miners claim that it would not pay the cost of its recovery.

Pyrrhotite does not heat as well as pyrite, and besides its sulphur content is much lower. It is therefore not valuable for the purpose of making acid.

Large deposits of iron pyrite have been discovered at Flin Flon Lake, north of Le Pas and near the boundary line between Manitoba and Saskatchewan. Here the pyrite contains 53.4 per cent sulphur, and its chief value is believed to be in the latter metal.

Pyrite alone must be of high grade in large quantities and convenient transportation before it is commercially valuable, and this is one of the most invariable in ores of iron. Most iron minerals, occurring almost invariably in ores of iron, occur in small percentages in the country rock over wide areas. It is seldom found in large masses. At Rio Tinto, in Spain, there is an enormous body of pyrite which has stood 2500 years of more or less active mining. Large quantities of iron pyrite occur in Britain and other parts of the world, and even before the war the remaining acid had very many uses, and it is also employed in the manufacture of all explosives.

The deposits at Rio Tinto are the largest of any metal or ore in any part of the world. Probably the largest bodies of pyrite now known in Ontario are at Vermilion Lake, near the Grand Trunk Pacific Ry., 180 miles west of Port Huron, Ont. There are also some large deposits of rather low grade ore north of Michipicott, Lake Superior, while high-grade ore in considerable bodies is reported from the Sudbury district.

It is believed that practically all the mines in Ontario are owned or controlled by American capitalists. The deposits of pyrite in the United States are very limited, and the liquid sulphur now being obtained in Canada is as suitable for acid as that contained in ordinary pyrite. The bromine or condensed liquid contains 90 to 99 per cent sulphur, but it has been proved by experiment that the pyrite as a source of acid is much cheaper than pure sulphur. Several of the Canadian plants still use bromine, but as mining for pyrite increases it will be largely employed to the exclusion of bromine.

Prior to the great war large quantities of Spanish pyrite were shipped annually to the United States, and the freight rates are likely to come down when peace is declared. It is not likely that pyrite from Ontario will be displaced except near the Atlantic seaboard. In the great iron region and in the middle west generally our pyrite will have the advantage so far as charges for transportation are concerned.

In the great pre-cambrian areas of Canada there are vast deposits of pyrite which will eventually be used. With the advance in the multiplication of railways and the increase in manufactures pyrite mining is certain to assume large dimensions. It is indeed, it has been proved, the material for acid making over the whole continent. Canada is essentially a mining country. More than half our total area contains the metal-bearing pre-cambrian rocks.

The Helen iron mine at Michipicott, was largely originally a pyrite property. The oxidation of this class of ore is so rapid that when exposed to the air in quantities it soon turns into oxide water-level it soon turns into oxide iron, or what is known as hematite. For this reason large bodies of pure pyrite are never found above ground. The water, their pyrite is usually betrayed by the reddish "rossan" or "red" outcrop of the pyrite. This is also the distinguishing feature of the pyrite. The percentage of sulphur in it is not as large as in the pure pyrite. Copper ores are also used in the raw material for acid making over the whole continent. Canada is essentially a mining country. More than half our total area contains the metal-bearing pre-cambrian rocks.

Since the war began sulphuric acid has increased in value 233 per cent, and bleaching powder, which cannot be made without this acid, has appreciated 431 per cent. In refining petroleum and many other substances, in making powder and all explosives in the manufacture of fertilizers and other substances too numerous to mention, sulphuric acid is indispensable, and owing to the scarcity of pyrite in the United States sulphur mines are constantly coming into much greater demand. It is certain that eventually Canada will derive very considerable profit from the development of iron pyrite.

DOMINION RAND SHIPPING REGULARLY
Company's Gold Claims in Porcupine to Be Diamond Drilled.

TIMMINS, Sept. 5.—The Dominion Rand Company are now making regular shipments of their copper property situated at this point, the latest shipment of fairly high grade going out yesterday. The manager here also states that diamond drilling will be shortly commenced on the company's Porcupine gold claims. Tenders for this work have been asked and these will be awarded as soon as received.

CALUMET AND MONTANA LISTED ON THE MARKET

Airgold Claim in Cobalt Now Being Operated by a Strong Directorate.

Calumet and Montana Consolidated shares made their initial appearance on the Standard Mining Exchange yesterday, selling at 51 to 52 cents a share. The company is operating the property known as the Airgold claim, in the Cobalt district, and has been doing extensive development work for the past six months. The company has a strong financial western directorate, and the shares widely distributed throughout the western part of the United States. In addition to the Cobalt property the company is reported to have some very valuable copper holdings in Montana, and a gold property in Silver Lake County, Colorado, on which considerable development has been done, the company awaiting transportation facilities, when these properties will become producers.

The president of the company is Henry Oswald, treasurer Minneapolis Mining Co., Minneapolis, Minn.; James F. Patterson of the Schuneman-Evans Co., St. Paul, is vice-president; James F. Boyle of the Crocker-Hughes Co., Toronto, is treasurer. These gentlemen, with M. L. Danforth, Neche, North Dakota; Wm. Wetohal, Nepean, Ontario; C. H. Collins of the Sloan of Mackenzie-Mann Co., Toronto, comprise the directorate.

Mr. George G. Thomas, C. and M.E., is consulting engineer, and the work is in charge of Ernest McCarthy, M.E., of Halleybury.

Previous to introducing the shares to the local exchange, the property was visited by a representative party of people interested.

The transfer of the property to the Trust and Guarantee Co., Limited, of Toronto, and the local office of the company is at 909 Excelsior Life Building.

BIG FORCE OF MEN WORKING AT HOLLY

Concrete Foundation for New Mill Addition Almost Completed.

By Special Correspondent.
TIMMINS, Sept. 6.—Hollinger Consolidated is a mighty busy-looking property. Twelve hundred men are working, under and above ground. The concrete foundations for the new mill, which will have a 1600-ton capacity daily, are almost completed; the superstructure will be built this winter and the machinery, 100 stamps and ten tube mills with accessories, will be installed and the addition in operation next June.

The new central shaft plant, with its 1000-ton crusher, will be completed by the first of March and then put into use. An investment of three-quarters of a million dollars will be represented by the central shaft and mill addition. Underground, Hollinger is connecting up all the workings of the consolidated properties on the 425 foot level. The shaft is now being driven from the fact that one connection to workings near the Vipond, is 2600 feet long.

Co-ordinated work is being carried on in a strip over a mile long. In one sense Hollinger is in the position of a mine that has a 1600-ton mill coming along, and that must rush to get the ore ready for it. The cost of this repairing of ore is not being charged on the future, so that the mill can take care of it, but from month to month.

The present mill is handling 1900 tons a day, 40 per cent of which is coming from the Acme. It is figured that even with the new mill bringing in the total milling capacity to 3600 tons, it will be two years before all the ore is cleaned out above the 425 level, and seven years before the 1200 level begins taking-out ore from the 1200 foot level.

NEWRAY-HANSON VEIN VIGOROUSLY WORKED
Test Shaft Down Twenty Feet—To Be Sunk Thirty Feet More.

By Special Correspondent.
SCHUMACHER, Sept. 6.—Vigorous work on the Hanson vein is proceeding at the Newray. The test shaft is down 20 feet, and will be sunk to 30 feet. It is inside the vein so far with no signs of the footwall showing. The vein is as good as ever, free gold being in display at several places, and as the footwall approaches the value should even improve. Fine sulphides are appearing in abundance as the shaft deepens, and the ore is taking on all the characteristics of the best milling bodies in Porcupine. The vein is more than fulfilling all the splendid promises made when unworked.

A few more shots have been put into the vein 100 feet from the surface, still more free gold. Manager Charles, when examining the veins uncovered in the north-eastern part of the property several months ago by the old management, ran into some nice free gold showings early this week, and intends to go more fully into this section. No very extensive work has been done here, but very little labor should expose the worth of the veins.

The second drill hole is now 350 feet down. The cores at depth have not been assayed; the drill has run through quartz and schist in several places. The Newray is showing up stronger and bigger with each day's work. Management is gaining with their knowledge that can be successfully employed when underground development begins in late fall.

PRICE OF SILVER.
In London yesterday bar silver closed 4d higher than yesterday at 25 1/2 per ounce. The New York price was 1/4 of a cent higher at 88 1/2c.

NEWRAY NEXT DOOR TO BEING PRODUCER

Element of Costly Experiment Lacking Owing to Geological Knowledge.

MINING MAN'S OPINION
Surface Showings Most Encouraging, Resembling Big Pay Veins of Porcupine.

The following is a partial copy of a letter sent by a prominent man in Porcupine to a large shareholder in Newray. The letter speaks for itself and more than confirms all that has hitherto been stated as to the new development at the Newray:

"What first strikes an impartial visitor is the amount of equipment on the job. The mill, compressor plant, power house, head frame and camp buildings are all impressive in this way; that in them the property has a great advantage over the other similar stage of development. From a cursory glance at the mill and power plant one can gather that a very small amount of money and time would be needed to put them into first-class running order. Further, you have the advantage of a well-timbered shaft down to the 400-foot level and other underground work from which to proceed. And again you have the advantage of knowing how the vein is treated and a geological knowledge that is only gained by extensive underground labor and expenditure. In other words, Newray is not a matter of production, and this without delay or experiment.

"I could gain no personal knowledge of the vein which records show produced something over \$200,000 in gold. The diamond drill now running its second hole should acquaint the manager with the present location and value of that vein. This second hole is at 350 feet, the first ore, so core tabulations show, went 830 feet. In the core are several good showings of vein matter, and the assay would probably prove valuable.

"All work is now confined to the surface, and therefore the visitor has the advantage of seeing the vein uncovered since the present management took hold. The chief of these, from the point of view of work done, is the Hanson vein, which runs southeast of the shaft, and in common with other veins unworked lately on the property—in common with all the big mills in the district—has a strike northeast and southwest. It stretched out 400 feet of stripping and trenching on this vein and it has been exposed to the surface. A prospect shaft was down 15 feet when I called, and it was entirely in the vein, which appears to be 12 feet and upwards wide. The ore is of the best paying ore of the camp and splattered with free gold. Fifty feet of sinking should reveal it a big milling body of better than average grade.

"One hundred and fifty feet southeast of the shaft is another vein, the Hanson vein, which is known and seen here, and the quartz is identical with that of the vein the big shaft is on.

"The very latest discovery is very spectacular. It happened fortunately to be present when it was first broken into and saw a score of pea-size nuggets taken from it and plenty of free gold in place. The nuggets were two-inch tails, with very rough panning. The vein is 10 to 12 inch wide and a dandy. It is just behind the power house.

"Newray has a big thing in that from the shaft to the Hanson vein is an area which takes in within 700 feet the best of the camp. The area, from its schistose structure is admirably suited to the formation of strong veins. In most places the schist and quartz are heavily impregnated with sulphides, and in other respects this area is all that could be desired in mineralization and structure. It is a very good thing that other veins will be found in this area.

"An outstanding feature is that a crosscut 700 feet will pick up underground veins known at present and in all likelihood reveal other ore bodies and of course permit a far better estimation of their character.

"This is a very short time from the commencement of underground operations the mine should be into milling ore in plenty, a good achievement it strikes me, and this is considered. Newray has all the earmarks of a strong proposition and big, sure winner."

PORC. CROWN STRIKE OF GREAT IMPORTANCE

Not a New Vein, But the Old One Struck in Different Place.

By Special Correspondent.
TIMMINS, Sept. 4.—First reports, while slightly awry, did not exaggerate the importance of the strike on Porcupine Crown. It is not a new vein, but the old one struck in a new place.

Nevertheless, the strike is a good thing for the mine. On the 700-foot level the vein swelled a bit, reducing mill heads. The higher grade ore now run into will bring values back again.

The strike was made in a winze being run from the 700 to the 800-foot level, just above the 800-foot winze was continued, and in the sump, which of course was run down to the usual depth, the floor was found to be "plastered" with free gold. It was decided to continue sinking to the 800-foot level, and with forty feet more depth the vein is averaging about as rich as ever. It is about 55 feet more to the 800-foot level.

From the 800-foot level the vein has been traced in places into the 900-foot level, and the faces show good milling ore. The strike runs four to six feet wide and the vein is in places several hundred feet long. When opened out the value of the same ore body where it is being worked on higher levels. But until it is developed more fully nothing definite will be said.

MINING STOCKS MORE ACTIVE AND BUOYANT

McIntyre, Teck-Hughes and Kirkland Lake Features of Strength.

The mining market at the Standard Exchange yesterday was more active, with business well distributed throughout the list. Interest was centered chiefly in the gold stocks, however, although the continued advance in the price of silver is causing a renewal of trading in the Cobalt stocks. The tone of the market was more buoyant than in good volume from both the north country and New York, which tended to swell the volume of business and to cause an upward trend to prevail.

McIntyre, Teck-Hughes and Kirkland Lake were the outstanding features of strength in the market. The continuation of inside buying in McIntyre, which has been going on for the past few weeks, was reflected in the market yesterday when the stock made a new high point for this movement, selling up to 146 for an odd lot. It was heavily dealt in around 140 to 144.

The generally satisfactory condition of Teck-Hughes, assisted by a large volume of orders, served to push the stock of this company to a new high record at 48 1/2, a gain for the day of 1 1/2 points. The Kirkland Lake stock, which was listed a few days ago, was advanced to 35, a ten-point advance over the recent bid.

The optimistic reports from the Kirkland Lake district on this property have created a very favorable impression locally, giving the stock an auspicious beginning.

Some Extension firming up 1 1/2 points from the opening at 36 and Dome Lake held firmly around 44 to 45. Jupiter sold at 39 to 38 1/2, and trading in the best bid 31 in the afternoon, with the best bid 31 on the close.

Porcupine Crown opened at 84 and reacted to 81, closing better at 82. West Dome at 59 to 58 1/2 was steady, holding at 55 to 56 1/2. The Davidson stock, which has just been added to the Porcupine list, was a feature, opening at 25 bid and jumping to 32 bid in the afternoon.

Beaver displayed its customary strength, holding at 42 and ending at 41. Nipissing was stronger at 27 1/2 to 27 and Le Rose for an odd lot sold at 63. McKinley held at 59 and Timiskaming gained a little ground to 68. Another issue to be listed was Cobalt and Montana, which made its initial sale at 60 and rose a point.

STANDARD STOCK EXCHANGE.

Stock	Op.	High	Low	Cl.	Sales
Porcupine	84	84	82	81	1,200
McIntyre	146	146	144	144	2,500
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	4,300
Kirkland Lake	35	35	34	34	250
McIntyre	146	146	144	144	1,400
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,700
Kirkland Lake	35	35	34	34	4,500
McIntyre	146	146	144	144	1,400
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,700
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
Teck-Hughes	48 1/2	48 1/2	47 1/2	47 1/2	1,000
Kirkland Lake	35	35	34	34	1,000
McIntyre	146	146	144	144	1,000
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