

THE CANADIAN MINING JOURNAL

VOL. XXXIX

TORONTO, August 15th, 1918.

No. 16

The Canadian Mining Journal

With which is incorporated the
"CANADIAN MINING REVIEW"

Devoted to Mining, Metallurgy and Allied Industries in Canada.

Published 1st and 15th of each month by the
MINES PUBLISHING CO., LIMITED

Head Office 263-5 Adelaide Street, West, Toronto
Branch Office 600 Read Bldg., Montreal

Editor: REGINALD E. FORE, B.A. (Toronto)

SUBSCRIPTIONS.

Payable in advance, \$2.00 a year of 24 numbers, including postage in Canada. In all other countries, including postage, \$3.00 a year.

Single copies of current issue, 15 cents. Single copies of other than current issue, 25 cents.

The Mines Publishing Co. aims to serve the mining industry of Canada by publication of reliable news and technical articles. This company publishes the Canadian Mining Journal twice a month and the Canadian Mining Manual once a year.

ADVERTISING COPY.

Advertising copy should reach the Toronto Office by the 8th for issues of the 15th of each month, and by the 23rd for the issues of the first of the following month. If proof is required, the copy should be sent so that the accepted proof will reach the Toronto Office by the above dates.

ADVERTISING.

The Canadian Mining Journal covers the Canadian mining field. Ask for advertising rates.

CIRCULATION.

"Entered as second-class matter, April 23rd, 1908, at the post office at Buffalo, N.Y., under the Act of Congress of March 3rd, 1879."

THE ARBITRARY PRICE OF GOLD.

During recent months there has been much discussion concerning the difficulties being encountered by producers of gold and the advisability of encouraging production. These discussions have brought before the public the fact that increased costs threaten to make gold production unprofitable, and have raised the question whether gold production is essential.

A good deal of the discussion is more entertaining than instructive; but enough has been stated to make it clear that we cannot depend on the so-called economists to solve the problem. They are too much given to generalizing without stating the limits of the application of their arguments. If the gold producers want to get the facts correctly before the public they will have to get together and study the matter thoroughly as one that vitally affects their business.

As pointed out by Mr. B. L. Thane, in a recent letter published in "Mining and Scientific Press," production of gold is now being made at a loss by a large number of companies. This is, unfortunately, not a new experience in the history of mining, but it is one that is making an unusual amount of trouble because the conditions are peculiar. In the mining of other metals there are periods when over-production so breaks the price that operation of the lower grade or smaller properties becomes unprofitable; but such periods are attributable to lack of demand for the product. In the case of gold, there is no lack of demand, but a price fixed by Governments. Unfortunately, the price was fixed before the war and is out of keeping with the cost of production. Unfortunately also, the price cannot be changed so easily as that of other metals. Mr. Thane says:

"The production of gold from the majority of the low-grade deposits is now being made at a loss. Last month, 300,000 oz. of gold produced on the Rand, which is the most productive gold-mining region in the world, was sold to the Government at less than cost, and the same thing is true of several of the largest properties in Alaska, Canada, and the United States. It is inevitable that, unless some form of bonus is given to the producing mines, or an actual increase in the value of the product itself is made by the countries in which gold is now being mined, the large producers will be compelled to discontinue operating and the already decreasing production of gold will be most seriously affected. It is obvious, likewise, that the estimated profits on ore, based on pre-War conditions, on which these enterprises were established, have ceased to exist. Tonnages of developed ore in the mines that were carried as an asset because profit was indicated on the pre-war basis, must be entirely written off under pre-

Editorials—	CONTENTS, AUGUST 15	PAGE
	The Arbitrary Price of Gold	271
	Mining in Northern Manitoba, by J. A. Campbell	273
	Gold Deposits in MacMurchy and Churchill Townships, U. S. Allen Property Custodian Takes Over Control of	276
	Two Metal Corporations—the Official Announcement	282
	Gold and Silver Mines and the Stock Markets	285
	Markets	286
	Personal and General	287

Development of the oil fields of southern Ontario is meeting with very encouraging results. There will be considerable production from new wells this year and we may reasonably expect that the success of those who have been pioneers in the new campaign, will attract many others. As pointed out by Mr. M. Y. Williams in this Journal last year, southern Ontario offers good opportunities to the driller.

A considerable amount of wildcat drilling must be done before we know what the oil resources of Ontario are. With the assistance of men who have had experience in oil production in Ontario and with advice from geologists who have studied the structural features of the oil fields and of the surrounding country, the driller in Ontario is not without good guides in choosing likely places. It should be recognized by the public, however, as it is recognized by oil men, that many of the wells drilled must necessarily be wildcats, if the territory is to be thoroughly tested. The exploration for oil in Ontario has now been undertaken on a scale and with preliminary successes that warrant one in believing that important new fields will be developed. It is to be hoped that the progress of development will not be seriously hampered by the efforts of those who are more interested in fooling the public than in searching for oil.

sent conditions, and only the richer ore in the operating mines can be carried now in the form of a reserve. In other words, no low-grade gold-mining operation conceived, financed, and developed under pre-war conditions can possibly work out as originally planned, nor can it hope to continue for any length of time unless a bonus is offered by the Government to compensate for the increased operating costs, or unless the value of the gold, as fixed by the Government, is materially increased.

"One of the most important and interesting questions arising in this discussion is the value of gold as now fixed and accepted by the leading nations of the world. The price of pure gold in our standard of money is fixed at \$20.67 per ounce. This value was arbitrarily fixed by the Bank of England when England decided that it was advisable to fix the value of gold in order to standardize exchange. Prior to this, while England had adopted gold as a standard, she had been in the habit of purchasing gold in the open market at a variable range of prices. This necessarily affected, from day to day, and from purchase to purchase, the very basis of exchange. Hence the necessity for establishing a fixed price.

"It is generally conceded that the price as fixed was taken from the last purchase of gold made by the Bank of England in the open market. This, in our money, as stated above, happens to have been \$20.67. Shortly after this, the other leading nations accepted that gold standard, and likewise the price that had been fixed arbitrarily by the Bank of England and sustained with the approval of the British government. The important fact regarding this, so far as the present discussion is concerned, is that the price as fixed was purely arbitrary. - Even if measured in the currency of the time at which this occurred, when gold was estimated to be worth \$20.67 per ounce, it is evident that the great increase in the demand for this product and the increased cost in producing it, makes this valuation now incorrect and decidedly too low. Accepting gold as a basis of all credits, there has never been a period in the history of the world when the demand has been so great as now, in order to sustain a reasonable reserve against the Government issues of bonds, certificates, and other forms of obligation."

The "Annalist" says: "All the arguments for action in favor of the gold industry regard it as a burden instead of a convenience that there should be a fixed Mint price for gold. They fail to remark that they are under no compulsion to sell to the Mint, and that they do not sell to the Mint as selling usually is understood. Theoretically they receive their metal back again, in coins of certified weight. They often are paid in checks rather than in bullion, but that does not alter the fact that they get from the Mint all that they give to the Mint, less only an inconsiderable Mint charge. The Mint price has nothing to do with the worth of the gold. That is settled now, as it was originally settled

in England, by the universal market for all commodities. Gold is worth what it will buy, no more, no less. The worth of gold is fixed by the price of commodities as much as the worth of commodities is fixed by the price of gold. The goods buy the gold, and the gold buys the goods. The market is free even in these war times, and all buyers and sellers fix their own prices for whatever they own, whether goods or gold, subject only to the control which affects goods and gold alike, for reasons independent of the price or value of either goods or gold.

"It would make little difference whether the Mint price were doubled or halved. In either case the bargains would be for the weight of gold which passed, and which is certified to all buyers and sellers. The producers of gold get their profit when they spend it, not when they mint it. The alteration of the Mint price would be disturbing generally, without benefit to them. What they want really is an alteration in their favor of the relation of the prices of goods to gold. It is difficult enough to control individual prices. It is practically impossible to control the relation of one price to another. Gold and goods are exchanged around the globe in these days, and the attempt to control the value of gold in international exchange—something quite different from the control of the Mint price—requires control of world conditions."

With such plausible arguments economists convince themselves that gold is always selling for what it is worth. The public looks to them for information and generally they are able to obtain some; but many economists seem ever willing to believe that all things are as they should be. They repeat in various ways their much loved view, that the prices of commodities are directly determined by supply and demand, even though they know that the actions of certain groups of men may easily establish new prices at times when no serious change takes place in supply and demand, or cost of production. They say "if more gold is produced the price of commodities will be higher," when they mean "if more gold is produced and our theories are sound and prices change but do not decrease then prices must increase." There are many things affecting prices of commodities besides the available supply of gold. If the effect of all these things remained stationary over a long period we might find out the relation between gold production and prices; but it is folly to assume that they do and then make deductions simply to prove a theory. Gold is the standard by which we measure prices of commodities, but does it necessarily follow that prices are always what they should be?

While we do not advocate the changing of the price of gold we nevertheless believe that the selling price of gold is not in accordance with the demand and the cost of production. General recognition of this fact is desirable, as such recognition may result in changes that will tend to lower the cost of production.

Mining in Northern Manitoba

By J. A. Campbell, Commissioner of Northern Manitoba

"Northern Manitoba" is now beginning to have a really definite meaning to the people of Canada as a vast territory of immense possibilities, just in the initial stages of its development. What has already taken place in the way of development is merely a minute indication of what may be counted on in the future. This Northern hinterland having an area of 178,000 sq. miles was added to Manitoba in 1912, thus putting that province on an even footing, as to extent, with the other Western provinces, and only the future will show whether this equality holds good in other respects.

This extension of territory means much to Manitoba. Hitherto the most inland, it is now to be reckoned with as one of the Maritime provinces; and the province which has given its name to the best wheat in the world and which heretofore has been looked upon as devoted almost exclusively to the production of that wheat, must henceforth take an important place amongst the mineral producing areas in Canada, particularly in the output of copper and gold.

This country, which is looked upon and spoken of as "Hinterland" is really at the front of the province, for it was by way of Hudson Bay, through this region that the first settlers came to the Red River Valley in 1812. Before many more years have passed the wheat and farm products of the successors of these pioneers will pass out through the gateway by which they came. This means of export (and of import also) is the Hudson Bay Railway, extending from The Pas to Port Nelson and now almost completed.

Among other benefits, the construction of this road is directing the attention of the people to Northern Manitoba. It has become known that this immense area is not a vast stretch of rock, water and muskeg which has been the general opinion regarding it hitherto, but that there exists there natural resources of great richness and variety. While investigation as yet has been only of the most general nature, it has shown the existence of hundreds of thousands of acres of good agricultural land, great stretches of valuable pulp wood, a vast network of lakes and rivers abounding in fish of the finest quality, and an unknown area, hitherto merely scratched, in which there have been made discoveries of mineral wealth of such promise as to put Manitoba in a prominent position as a mineral producer.

Mineral Area.

Until very recently the known mineral area has been practically confined to that lake and river district stretching from Lake Athapapuskow and the Saskatchewan boundary on the west to Wekusko or Herb Lake on the east, a distance of approximately one hundred miles. This, roughly speaking, forms the base of an inverted triangle, the apex of which is The Pas, the westerly side being the Saskatchewan river, and connecting lakes, and the easterly side the Hudson Bay Railway.

Lake Athapapuskow is reached by Ross Navigation Company steamers, which give regular summer service from The Pas to Sturgeon Landing via the Saskatchewan river, Cumberland and Sturgeon Lakes. From Sturgeon Landing to Lake Athapapuskow, a distance of sixteen miles, a road has been constructed by the Manitoba Government which is of very material benefit for the hauling of machinery, supplies and other freight.

There is an alternative canoe route here, via Sturgeon and Goose rivers and Goose Lake, connecting with the terminus of the government road at Lake Athapapuskow, by a three mile portage.

The other end of the district at Herb Lake is still more easily reached. This is by the Hudson Bay railway from The Pas to Mile 82. From there a Government road, locally known as the "Gordon Highway" runs to McKay's Landing at the south end of the lake, a distance of eleven miles. Mining properties already discovered commence at a point about five miles north of this landing, and run to the northern end of the lake.

As might naturally be expected, mineral discoveries in this district were first made at each end of the mineral area, as being most readily accessible, and these also are the points where active development work and mining operations are now being carried on.

The Great Sulphide Property—Flin Flon Lake.

It is less than three years ago, August, 1915, since this great body of ore was located and thus was demonstrated the fact that copper must henceforth be taken into consideration as one of the important mineral resources of the North. Thomas Creighton was the original discoverer. He was one of a group of six prospectors sent out to prospect in that district by certain Toronto capitalists and mining men known as the Hammill-Currie-Fasken syndicate. Ten claims were staked and steps taken immediately to find out the quality and extent of the orebody. By stripping and trenching it was learned that it is approximately 2,000 ft. long. The body is narrowest at the north end and widest at the south end where it enters the lake, being there about 300 ft. wide, a vast deposit of solid sulphide. Sampling and re-sampling indicated that at normal values the ore would realize about \$10 to the ton in gold, copper and silver, the copper content averaging 1¼%.

This discovery attracted wide attention and during the succeeding two years prominent capitalists engaged in mining operations, and mining engineers from New York, Boston, San Francisco, as well as from eastern Canada, visited the property. Various propositions were submitted to the original owners, who held out for a figure and terms which were thought to be somewhat excessive and onerous for a new property. No sale outright has yet been made, although others have become interested in the property and it is now in the control of a syndicate which includes these along with most of the original owners. This syndicate is under the management of John H. Black, of Toronto, well known in connection with various Northern Ontario enterprises.

A few months after the discovery a contract was let for diamond drilling this property. A complete drilling outfit, supplies and equipment were taken in during the winter and camp established on the lake shore. On March 26th, 1916, two drills were started on the work and continued until July 15th, 1916. Further contracts were let subsequently and these drills have been almost constantly employed for a period of nearly two years. \$200,000 has been spent in this and other work of investigation in the same connection.

This big expenditure has been amply justified. Investigation has borne out the original estimate, and the

drilling done has resulted in proving up the stupendous quantity of over 20,000,000 tons of sulphide ore which will yield an average of from \$8 to \$10 per ton, at normal prices.

This proven tonnage has satisfied the owners that development work and actual mining operations should be proceeded with. To do this properly means the erection of a smelter at the mine or at some place convenient thereto, also the construction of a railway from The Pas, a distance of about eighty miles. Whatever it might be possible to do at the present time regarding the smelter, war conditions have now made it out of the question to construct the railway. Reports from reliable sources indicate that it is absolutely impossible to obtain the necessary steel.

To properly work and operate this property along the lines indicated means that an important camp of at least 2,500 people will be established there, and a tremendous impetus given to the northern mining industry generally. The construction and operation of the works required will also result in the development of other properties in the district, which the owners are not now able to handle properly owing to the great cost involved, but which properties can, when transportation facilities are afforded and a smelter located at an available point, be operated to advantage. Here is an immense enterprise, the development of which can be confidently looked forward to immediately on the conclusion of the war.

Mandy Mine—Schist Lake.

In all the history of mining there is probably on record no enterprise more unique than that carried on by the Mandy Mining Company at Schist Lake. The truth of this statement is readily conceded when it becomes known that this company after mining the ore, haul it about forty miles by teams, then ship it 125 miles by boat and barge to The Pas, and from there by rail to a smelter at Trail, B.C., half way across the continent. It is handled in the process six or seven times. Only marvellously rich ore and a large quantity of it could stand such expense.

In October, 1915, after the Flin Flon discovery had become known, Mr. F. C. Jackson, a sub-contractor on the Hudson Bay Railway and Mr. S. S. Reynolds, a prospector of some experience, started out from The Pas to see the North country and do some prospecting. By a lucky chance they discovered on the shore of Schist Lake at a spot where many others had been before, the deposit of copper sulphide, which has since proven to be so valuable. Mr. J. E. Spurr, Vice President of the Tonopah Mining Company, was in the district at the time, inspected the claims staked and was immediately impressed with their possibilities. Before he left, an agreement was entered into by which the Tonopah Mining Company took over the property and agreed to develop and operate it. A subsidiary company called the Mandy Mining Company was immediately formed for this purpose, and the following summer \$40,000 was spent in diamond drilling, trenching and other preliminary work. This revealed a body of over 100,000 tons in one lens. Careful assays of the ore showed it to be composed mainly of copper and zinc, the former averaging about 20% and in addition to this there was found to be gold and silver values of approximately \$5 a ton.

With the price of copper soaring skyward owing to the great demand brought about by the war, it was in order to put this mine in the producing class at the earliest possible moment. This decision was arrived at

in the latter part of December, 1916, and contract was let by Mr. H. C. Carlisle, Superintendent for the Company for the hauling of 3,000 tons or more to the head of navigation at Sturgeon Landing, almost forty miles distant. Commendable enterprise was shown by the contractor, C. B. Morgan, in starting and pushing forward the work and by the spring break-up 3,335 tons had been deposited at the Landing, with the exception of a small amount which had been teamed all the way to The Pas. The ore was simply taken out of an open cut, the only machinery used being a couple of steam drills, and a horse derrick. During the summer of 1917 this ore was shipped to the smelter and the returns, therefrom were 337 oz. gold, 60 oz. silver and 1,113,935 lbs. of copper, the total tonnage therefor, averaging 17% copper.

During the summer months complete new mining equipment which had been taken in during the preceding winter was installed in a large frame building. The main shaft was sunk to 200 ft. level, and two drifts started in the orebody. Drifting was continued throughout last winter, and it is now extended 534 feet. Also the company purchased, or built, and put in operation during the summer a 52 ft. tug on Lake Athapapuskow, and a small stern-wheel steamer on Schist Lake, together with a number of large barges. By this means a quantity of ore was transported part of the distance by water, thus lessening the winter team haul to a very considerable extent.

Last winter a contract was let to the same contractor for taking out a minimum of 7,500 tons, and when the season closed 8,600 tons were in the dump at Sturgeon Landing. This is now being hauled out as rapidly as possible by the Ross Navigation Company steamers and shipped to Trail. A spur track has been put in by the Canadian Northern Railway at The Pas, connecting the main line with the dock, in this way facilitating very materially the work of trans-shipment. Further effort is being made to reduce the labor and expense incident to this work, and to increase the annual output so it is expected that next winter a still greater tonnage will be got out.

As this mine is only a short distance from the Flin Flon property the erection of a smelter there would be of very material benefit, and would result in great increase of output and corresponding lessening of expense.

Lake Athapapuskow District.

Until within a quite recent period the only claim of Lake Athapapuskow to distinction was that it is not only the largest of the many lakes in the district, but with its numerous islands and rocky shores it is looked upon as an exceptionally beautiful body of water. The Chiea claims, located up the Pine Root river a short distance are being thoroughly prospected and a diamond drill has been working there for several months. This and others in the neighborhood are giving promise of satisfactory results. On the north shore of the east arm discoveries have recently been made which indicate that there is there a vast body of sulphide ore, running from 2½ per cent. to 3 per cent. copper. From reports received, it is estimated that this property will rival the Flin Flon discovery in extent and quality. A number of other finds have been made in the district, mostly copper. Geological indications point to the fact that there are other mineral deposits of value in the vicinity and further discoveries will doubtless be made from time to time.

Herb Lake Gold Mining District—Rex Mine.

It was in the summer of 1914, at Wekusko, or Herb

Lake as it is now more generally known, that the first important mineral discovery of the north was made. The prospectors who had this distinction were Messrs. Hackett and Woosey and the Kiski and Wekusko were the first claims staked. The discovery was a vein of gold-bearing quartz showing considerable free gold. This find attracted wide attention and soon the whole shore of the lake north of the above claims and for some distance in was all staked.

Among the claims subsequently located were those of the Rex group, staked by Messrs. Campbell, Hassett and Moore. These have since become the best known in the district and now contain a producing mine. The preliminary work of stripping and trenching showed up a vein of such promise that a deal was consummated with Makeever Brothers, mine operators of New York and Boston, whereby they undertook to develop the property, put up a mill and carry on mining work generally. A shaft was the first thing commenced, and it was found that as the depth increased the vein widened. One shaft has been sunk 120 ft. and another to a lesser depth. Considerable drifting has also been done.

As soon as the road from the railway to the lake was completed last summer, a portable saw mill was taken in, set up and put in operation forthwith, to cut lumber for mine buildings. It was fortunate that logs for this purpose were available in the vicinity. A full equipment of mill machinery for reduction work had already been shipped.

Buildings were erected and machinery installed during the winter. The main building is 60 x 55 ft. and shaft house 40 x 20 x 35 ft. Assay office was also put up. The camp buildings which are well built log structures were erected when the work on the claim was first commenced.

Machinery and equipment included a 10 ft. Lane mill with capacity of forty tons per day, together with amalgamation plates and Deister Overstrom concentrating tables. The engine is 55 H.P. and there are two 60 H.P. return tubular boilers and a 390 cubic feet air compressor with modern equipment of air drills. Forty men are now required in connection with operation of the mine and milling plant.

May 1st, 1918, was an eventful day in the history of Northern mining, for it was on that date that the Rex mill started crushing ore and with small interruptions for adjustments and cleaning, has operated continuously since. The first clean-up from 433 tons of ore crushed resulted in a sponge containing 365 oz. gold, 82% fine, having a value of \$6,186.53. Similar results were obtained from the next run of ore. These results are decidedly gratifying. To start up a small mill, and pay its way from the first month at a time when well known mines are shutting down on account of abnormal labor and commodity prices, is quite a feat and should definitely place Herb Lake on the map as a gold camp.

A few months ago when the owners had thoroughly satisfied themselves that they had a producing mine, a company known as the Herb Lake Gold Mines, Limited, was formed. Stock in this company is held mainly by Makeever Brothers, and the original owners of the claims. A few others have secured an interest but no stock has been put on the market in Manitoba.

The Moosehorn.

To the Northern Manitoba Mining and Development Company is due the credit for being the first to make an ore shipment from Herb Lake as a commercial pro-

position. The company is composed of local shareholders, and own the Moosehorn and other claims. Commendable energy was shown in development of the property. An 80 ft. shaft has been sunk and some remarkable returns received from assays. A 50 H.P. boiler, air compressor, drills, hoists, etc., together with regular camp equipment are on the property.

The trial shipment was sent to Trail smelter. This consisted of 57,000 lb. of gold bearing quartz, taken from the shaft in the ordinary way. The returns for the whole car were \$2,323.60 in gold, or \$81.53 per ton. Local capital, however, has not been found sufficient to work this mining property satisfactorily, so an interest therein has been disposed of to Makeever Brothers, who have undertaken to proceed with development work, and mining operations on the proper scale. As this mine is near the Rex the two properties can be worked together advantageously and with best results.

Other Properties.

The Elizabeth-Dauphin claims are another well-known group. Considerable work has been done thereon, including the sinking of a 50 ft. shaft. The Pas Consolidated Mines, Limited, control the property and have undertaken to spend a large amount of money in development work during the current year.

Shafts from 30 to 50 ft in depth have been sunk on several other claims, particularly the Syndicate, Kiski-Wekusko and McCafferty. War conditions have, however, prevented the programmes of the owners of these from being carried out, but they will be gone on with at a later date as the properties give good promise of satisfactory results.

Recent Discoveries.

A recent discovery which is attracting general attention is that made by Paul Gasse and his associates at the northern end of Herb Lake. The discovery was made in the granite which has hitherto been taboo to local prospectors. It has every appearance of being a pegmatite dyke in which there is considerable development of quartz in stringers and irregular masses.

The width of this mineral body is from ten to fifty feet; the length is not yet determined, but appears to be quite extensive. A number of samples have been assayed, and the results are very promising. The discoverers are now doing the usual preliminary work on the property in order to get a general idea of the extent and character. Several mining engineers from United States and Eastern Canada have recently visited it and one of them representing a big Canadian mining company has obtained a sampling option.

Now comes word of a find which opens up a new field. This is at Knee Lake, near Oxford House, on the Hayes River. Several prospectors working for an English syndicate have recently come out from there and recorded a number of claims. The discovery is gold quartz of low grade; but there is every indication from surface examination of there being a very large body of this ore, and that it is of uniform quality.

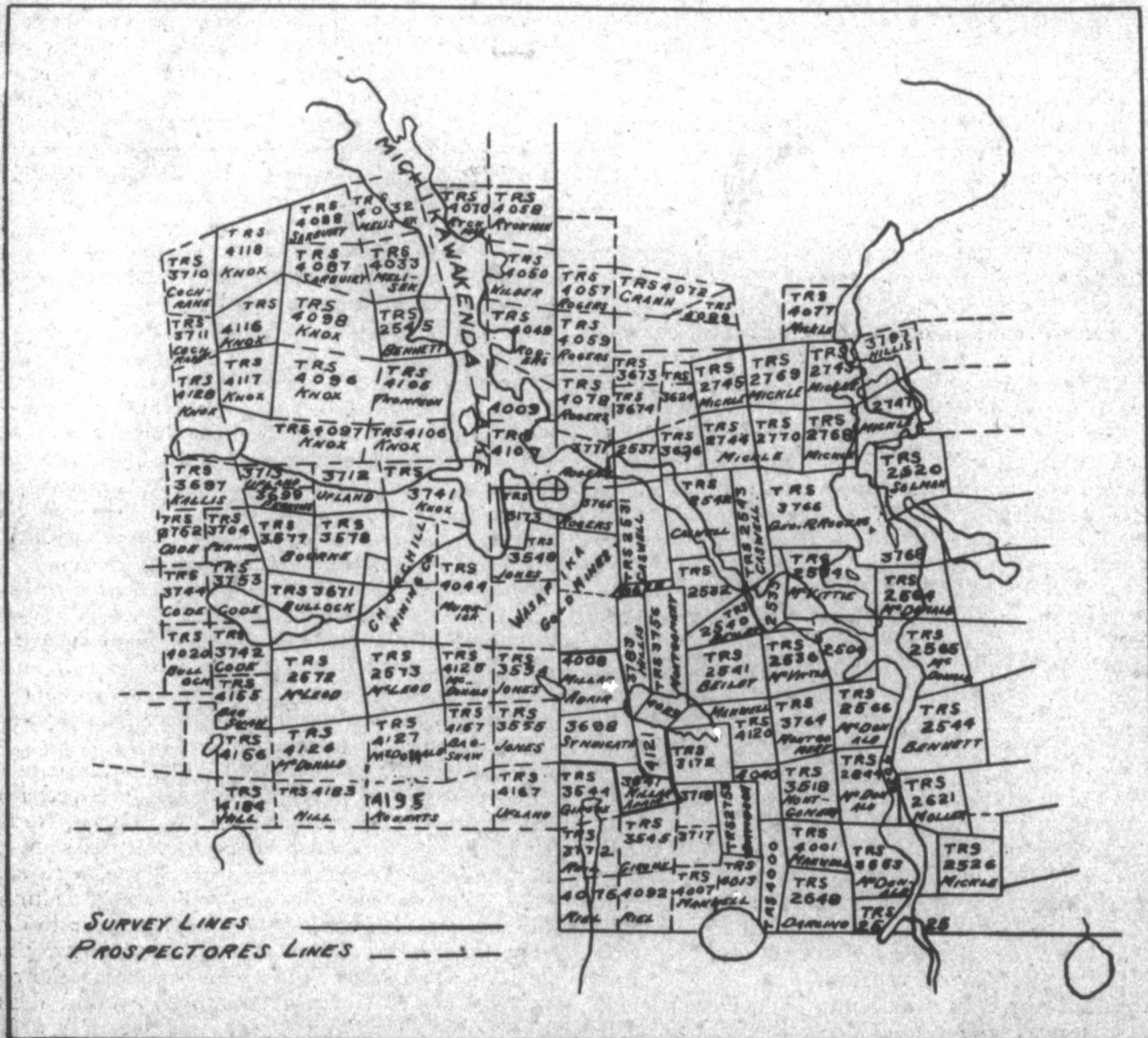
War conditions bear especially heavy on prospecting and mining operations, particularly in a new country. The kind of men engaged in these enterprises are those who are most useful in war work. The same can be said of many of the materials used directly or indirectly in mining development. Owing therefore to dearth of men and material, operations have been very much restricted; but sufficient has been done to show conclusively the existence of valuable mineral deposits which only await the recurrence of normal conditions to bring into being several good camps.

Gold Deposits in MacMurchy and Churchill Tps.

During the past two years a considerable amount of prospecting has been done with encouraging results on some gold properties in the vicinity of Michikawakenda and Wasapika lakes, in the eastern part of Churchill and the western part of MacMurchy townships. Gold was found in this area in 1911 and a large number of claims were staked in that year in Churchill, MacMurchy, Asquith and Fawcett townships. Many of the claims first staked are in the vicinity of Wasaguagama or West Shiningtree lake.

The properties referred to in this article are situated a few miles northeast of West Shiningtree lake and are thus about 70 miles north of Sudbury and 60 miles south of Porcupine. They are easily reached by water routes from the Canadian Northern Railway. Small motor boats which can be carried over the short portages make the trip from Kashbaw or Ruel in about ten hours. The water route is about 45 miles. A winter road has been cut and for part of the distance a summer road is available. Navigation has been made easy by the use of dams and by clearing obstructions from the streams and portages, but considerable work must be done on the roads before they will be satisfactory.

While numerous promising discoveries were made in 1911, comparatively little development work has yet been done in the area and most of what has been done has been disappointing. Gold is very abundant in the area and many small rich deposits have been found. It was obvious from the time the first discoveries were reported that the area merited careful investigation, and it is unfortunate that the results of examination of some of the early discoveries failed to justify the claims of the owners. With very little work done on the properties prices were placed on them that would only have been justified if the deposits had been bonanzas. Operators who might have been persuaded to take a chance, did not find the results of examination such as to warrant large prices being paid for the properties and few who came to investigate stayed to develop. Most of the prospectors themselves did little development work and as a consequence the area remained unproven. It is known that gold is plentiful in the area and it will be surprising if no profitable gold mine is developed, but the area has been for several reasons unpopular. The transportation problem is a serious one. Most of those who have carefully examined and



Sketch map of claims near Churchill-MacMurchy line, Sudbury Mining Division, Ontario.

sampled properties in the area have reported unfavorably. Rich ore occurs on several properties but, so far as is known, only in small quantity and scarcely to be considered in judging the possibility of mining the deposits profitably. Some bodies of fairly good ore have been indicated by surface sampling; but so many seem too small or too low grade that there is a natural tendency to fear that expenditure of money on development work under present transportation conditions would be unjustified. When one mine is in operation and producing gold there will probably be more work done on the neighboring properties, but nobody wants to be the pioneer.

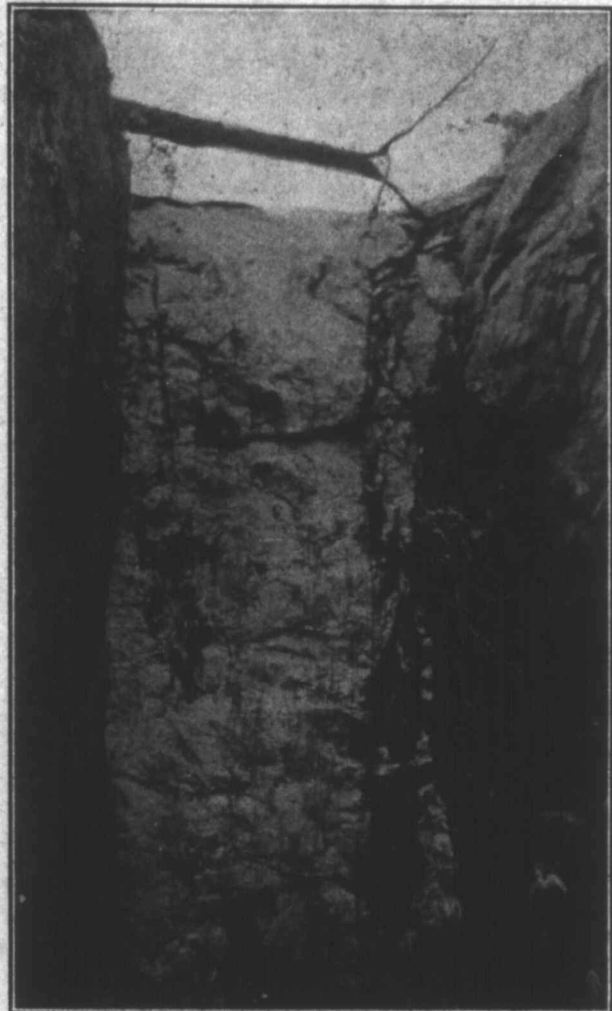
The Ontario Bureau of Mines in 1912 published a report on the West Shiningtree area by Mr. R. B. Stewart. In the following year the Bureau published further notes and a geological sketch map prepared by Mr. Stewart. The Geological Survey, Ottawa, has also published information concerning the geology of the area (Memoir 95) which is included in a large area mapped by Mr. W. H. Collins. In view of the numerous gold discoveries it is to be hoped that this preliminary geological work will soon be followed by a more detailed map and report on the area. The geology of the vicinity of the gold deposits examined by the writer needs careful study if the area is to be prospected intelligently. The wall rocks are of many kinds, including several varieties of greenstones and felsites, ferrodolomite, conglomerate, greywacke, and porphyries. Diabase dykes are common. The gold deposits vary considerably in character as well as in size and their composition and structure as well as their gold content need study. The rock relationships have yet to be worked out in sufficient detail and their structure is probably not understood by the prospectors. The relationship of the deposits to minor and major fractures and to the smaller intrusive masses of rock are of first importance and a detailed geological map would help one to determine them.

W. H. Collins' Report on Geology.

While detailed maps are lacking, a very good idea of the general geology of the area can be obtained from the reports of Mr. Stewart and Mr. Collins. Mr. Collins' report is the more recent and is accompanied by geologically colored maps; Map 179A of the Onaping area, published in 1917; and Map 153A of Asquith and Churchill townships, published in 1916. Mr. Collins says in part:

"Three main geological divisions are represented: the pre-Huronian schist-complex, the batholithic granite-gneisses intrusive in these schists, and dykes and remnants of sills of quartz diabase similar in character, and presumably in age, to the post-Cobalt diabases found throughout Onaping map-area. The gold-bearing veins are found only in the schist-complex, which is, therefore, of chief interest. The schist-complex consists of an extraordinary variety of igneous, mainly volcanic, rocks. The lavas range from basalt to rhyolite and with these are associated volcanic tuffs and one sedimentary series derived from pyroclastic materials.

"The older part of the complex, which was not differentiated into its component formations, includes diabases, amphibolite, quartz porphyry, etc. The oldest rocks differentiated from it consist of flows and tuffs of hornblende andesite and trachyte not separable one from the other. These tuffs grade upward into a well stratified series several hundred feet thick, consisting, in ascending order, of conglomerate, an arkose-like



Gold Quartz vein on McVittie property (the Saville vein).

member, and finely bedded greywacke which locally becomes a lean iron formation. This series is composed of the same materials as the underlying tuffs and appears to be only a water-assorted phase of them. The sediments are cut by dykes of a pale-grey rock of intermediate composition, characterized by its bright red color when decomposed. A large flow of ellipsoidal andesite around West Shiningtree lake appears to be younger than the red-weathering rock and still younger are small bodies of nearly white rhyolite. All these rocks are traversed by wide dyke-like bodies of a coarse porphyritic granodiorite which may represent apophyses from the granite-gneiss batholith. These rocks have been greatly disturbed; nevertheless schistification has been confined mainly to the tuffs and sediments and to local zones in the non-clastic formations. Most of the intrusives and flows are remarkably well



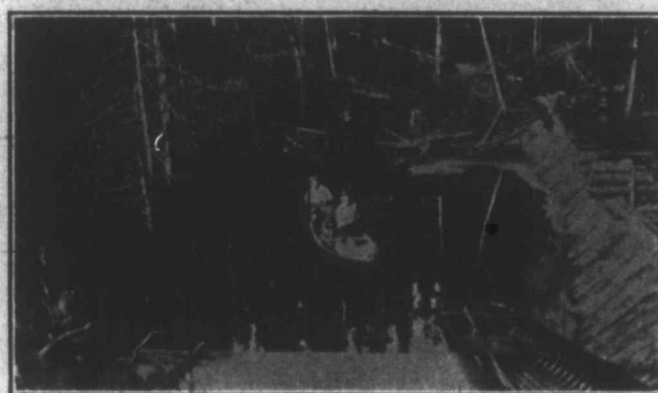
Gold Quartz on Foisey claim.

preserved and massive. Besides the metamorphism due to deformation, all the schist-complex in a zone about half a mile wide next to the granite-gneiss batholith has been contact metamorphosed chiefly to chloritic schist and amphibolite.

"The overburden of sand and gravel is, fortunately for prospecting, not thick nor continuous. Rock outcrops are abundant and none of the exploration trenches seen were more than 10 feet deep. Recent forest fires have also overrun a large part of the district, facilitating its exploration.

be a purely fortuitous circumstance. The genesis of the West Shiningtree veins remains, therefore, an open question.

"There are two somewhat different types of deposit. In most cases the gold is found in distinct veins from a few inches to 6 feet wide, the widths varying greatly from place to place. Some have apparent widths at the surface of 20 feet or even more, but this is due, in a number of cases at least, to the veins being folded, so that the surface exposed is oblique instead of a normal cross-section of the vein. Ordinarily they are nearly



Scenes on the water route from Kashbaw to Michikawakenda lake.

Ore Deposits

"The gold-bearing quartz veins intersect all the rocks of the schist-complex with the possible exception of the granodiorite dykes. Their relation to these dykes has not been observed. They are cut, however, by dykes of the post-Cobalt diabase. It has not been possible to fix the age of the vein formation within narrower limits. The veins have been found in greatest abundance in the ellipsoidal andesite. It is also noteworthy that the interspaces between the ellipsoids are filled with quartz, calcite, and epidote, a sample of which, collected by the writer and assayed by Mr. H. Leverin of the Mines Branch, was found to carry a small amount of gold. The abundance of veins in the ellipsoidal andesite and the presence of gold in the interellipsoidal filling suggest some relationship with the andesite flow. It is not to be overlooked, however, that the interellipsoidal spaces may have been filled by agencies quite unconnected with the andesite flow, and that the abundance of veins in that formation may

vertical. A number of veins had been traced for a distance of 200 feet when the district was last visited by the writer, so it is probable that they attain considerably greater lengths. They are filled with white quartz. Occasionally the quartz is accompanied by patches of white carbonate, which weathers to a rusty, limonitic powder. Minute aggregates of tourmaline were found locally in the quartz. Pyrite in scattered grains occurs both in the vein matter and in the wall rock. Gold occurs as small flakes and irregular particles in the quartz and also in small cavities in the quartz which are filled with limonitic powder, probably the weathering product of pyrite.

"In fewer cases mineralization has occurred in a shear zone in the schist-complex. The schist is filled with small veins and stringers of quartz and both schist and quartz are sprinkled with pyrite. These mineralized shear zones have no definite boundaries separating them from the less sheared, unmineralized country

rock. They are larger than the quartz veins but their gold content is too low for profitable mining."

At the south end of Michikawakenda lake are two promising gold deposits which have been discovered and stripped since Mr. Collins examined this area. The larger of these, the Ribble vein, on the property of the Wasapika Gold Mines, is in altered igneous rocks—mostly a grey volcanic rock that is altered in places to

deposit and its gold content. It will be noted that the structure is by no means simple and that the deposit is a difficult one to sample. The large number of samples taken indicates a good average value and a considerable quantity of ore; but development work is necessary to determine more definitely the shape and size of the ore body. The information at present available is encouraging enough to warrant considerable expendi-



Camp buildings, Wasapika Gold Mines.



Wasapika mine, from the north.



Wasapika deposit. The vein lies on face of this outcrop.



Wasapika mine, from the south.

a ferrodolomite. The other deposit, the Kingsley, on the Knox claims, is enclosed partly by conglomerate and greywacke and partly by grey but red-weathering fine-grained, porphyritic, igneous rock which may conveniently be called a porphyry. Those familiar with gold deposits in Northern Ontario will find the altered wall rock from the shaft at the Wasapika mine to be quite similar to the grey ferrodolomite at the Hollinger mine at Porcupine, while the wall rocks at the Knox property are somewhat similar to those at the Tough-Oakes mine, Kirkland Lake. We would not like to have our readers infer that the value of the properties is necessarily great because of these similarities; but there are some advantages in finding yourself among old friends. We would consider that so far as their composition effects them the wall rocks are kindly disposed. They have been much altered and saturated with carbonates and then the fissures have been filled with auriferous quartz.

The Ribble Vein.

One of the most promising deposits in the area is the Ribble vein on the property of Wasapika Gold Mines, Ltd., held under lease from the Province of Ontario. Mr. George R. Rogers, president and manager of the Wasapika Company, has carefully stripped and sampled this deposit and has begun the sinking of a shaft to develop it at depth. The accompanying photographs and copy of the assay plan will give some idea of this

ture on development work. The irregularity of the deposit as exhibited in the surface outcrops suggests that considerable skill will be necessary in order to avoid mining too much waste with the ore. On the other hand, the persistency of the auriferous quartz outcroppings along the strike on both this and adjoining properties indicates great possibilities in the event that it is proven possible to mine a part of the deposit profitably. The obliquely truncated folds exposed on the side of the hill give an exaggerated idea of the size of individual quartz bodies; but the deposit is nevertheless of considerable size. The shaft has been located in a position which should prove advantageous in exploring the deposit at depth.

In his report on the property, Mr. Rogers states that the vein, as uncovered on the Wasapika properties for 1,800 feet, averages 5 ft. 1 in. So far the vein has only been sampled for a distance of 500 ft. Concerning the results of this sampling Mr. Rogers says: "I have divided this work into two sections:

"**No. 1 Section**—Starting at a point 229 feet north of the south boundary line of claim No. T.R.S. 2530, eighteen carefully moiled samples were taken at intervals across the full width of the vein for a length of 150 feet, which gave an average stopping width of 50 inches and the assay results gave an average value of \$10.40 per ton in gold. **No. 2 Section**—Starting at a point 120 feet north of sample No. 32 and continuing

north along the vein for a distance of 280 feet, over which distance 58 carefully moiled samples were taken across the full width of the vein, which show an average stoping width of 49 inches and an average assay value of \$8.00. A sketch plan of the vein and assay chart attached to this report.

"The main shaft, which is being sunk 80 feet west of the vein, has reached a depth of 50 feet. Samples taken across the bottom of the shaft gave an average of \$11.20 per ton over a width of seven feet. . . . For a distance of 500 feet the schist forming the hanging wall of the vein has been eroded away for an average depth of 20 feet. The average width of the vein over this distance is 5 feet. Estimating the weight of this ore at 13 cubic feet to one ton will give approximately 3,846 tons of ore in sight, with an average assay value of \$9.00 per ton, and practically ready for the mill."

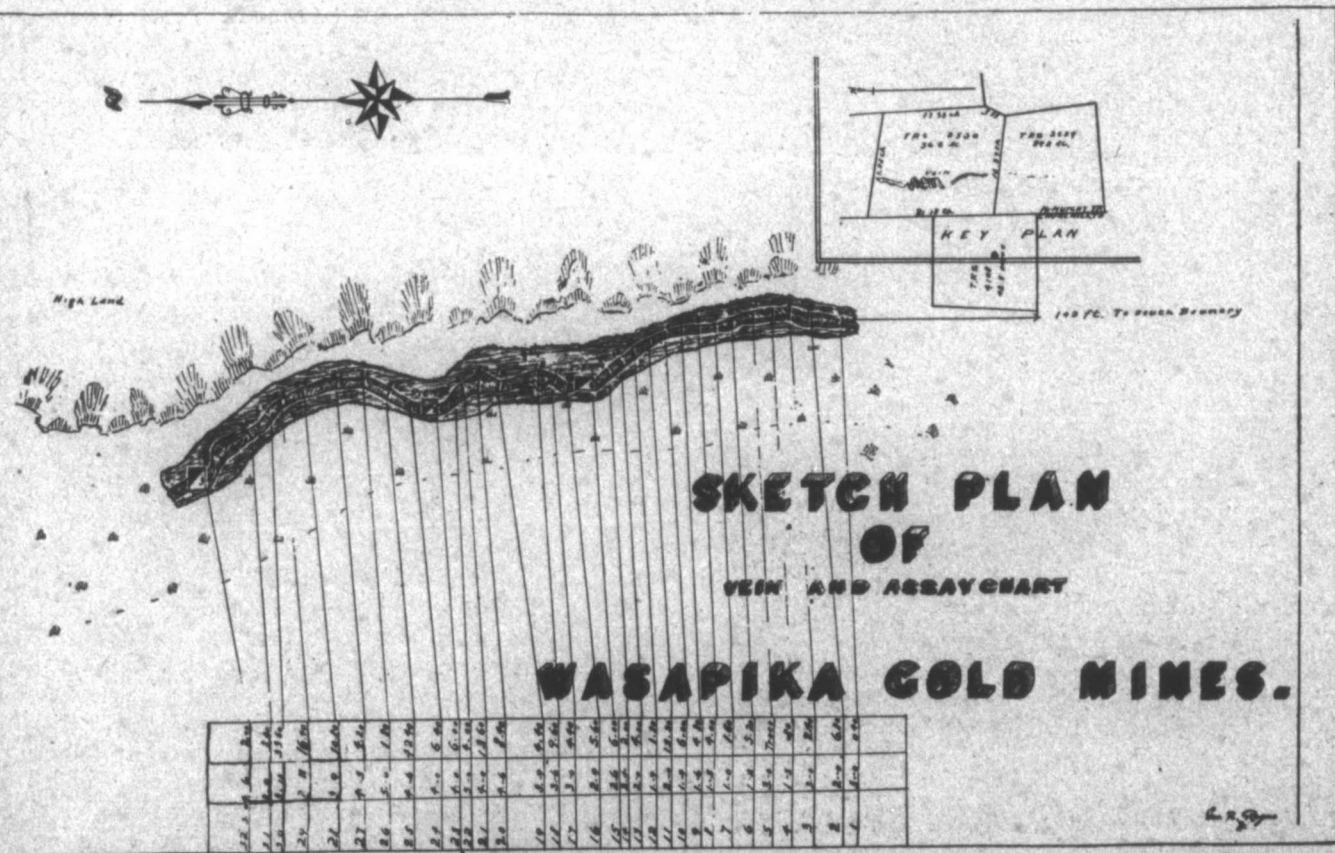
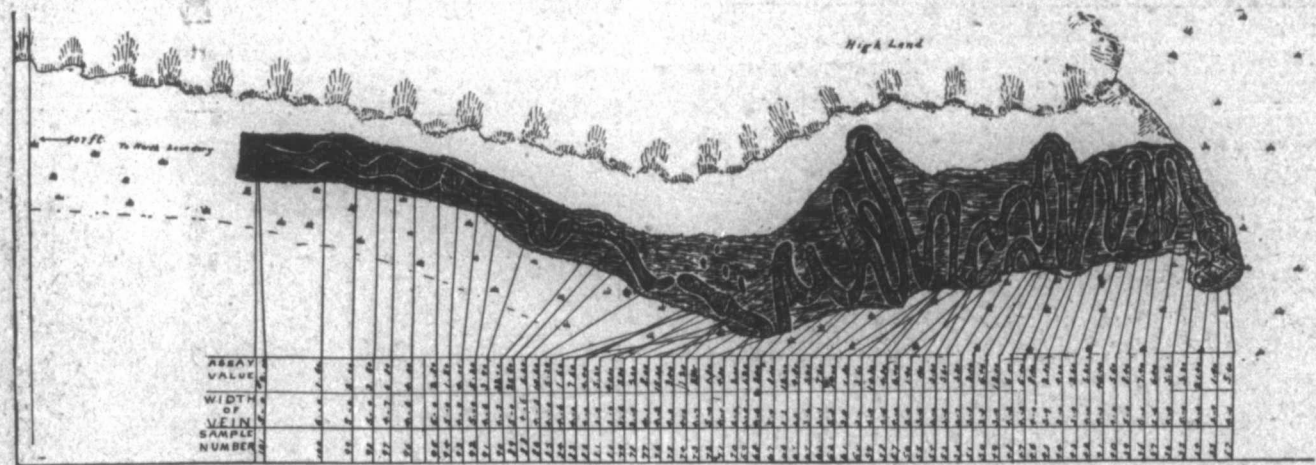
Mr. Rogers notes that where the vein is in contact with diabase dykes, which cross the vein diagonally, high assays are obtained.

The Kingsley Vein.

As shown on the accompanying map the Knox claims lie to the west of the south end of Michikawakenda lake, a short distance north-west of the Wasapika property. On one of these claims is the Kingsley vein, a persistent, narrow, comparatively regular, quartz vein enclosed partly in sedimentary rocks—greywacke and conglomerate—and partly in igneous rocks—a grey and red fine grained porphyritic rock. A shaft has been started on a part of the vein that sampling has indicated to be very good ore. The results so far have been very encouraging, and further development here may reasonably be expected to show a quantity of ore that will make operations profitable.

Other Properties.

At the south end of Lake Wasapika are the Atlas and McVittie properties, known to many as the Jefferson and Saville claims. On the Atlas are two types of gold deposit. That appearing on the hill top which com-



Plan and assay chart of Ribble vein—by Geo. R. Rogers.

mands Wasapika lake is a white quartz vein enclosed in massive greenstones. The accompanying photograph shows this vein and stringers from it. Another deposit, from which some very rich ore was taken is a narrow very pyritic band in rusty grey schist. The rich ore is said to have been taken from quartz nests found in pits sunk in this pyritic band. The quartz, which shows in the pits along the deposit is very dark and rusty and is not nearly so conspicuous as the weathered pyritic rock.

To the west of the Atlas is the McVittie property. An open cut has exposed an imposing vertical face of quartz on the Saville vein. The accompanying photograph shows this exposure.



Gold Quartz vein on Atlas property (the Jefferson claim).

On the shore of the narrow south-east arm of Michikawakenda lake are the workings on the Caswell property, now known as the Gold Banner. Rich samples of ore from this property attracted considerable attention a few years ago and considerable development work has been done. We were, however, not allowed to look at the vein when we visited the property. The accompanying photograph shows the workings on the north shore as they appear from the lake.

South of the Wasapika property on the Miller-Adair and Foisey claims quartz veins have been uncovered at the edge of outcrops which appear on the eastern edge of the low-lying land which runs south from Michikawakenda lake. These veins run along the edge of the rock outcrops in about the same direction as the Ribble vein. Gold can be seen in the quartz on the Foisey claim. No work has recently been done at either of these properties.



A view of Caswell property from the lake.

WILL SAMPLE PEAT BOGS.

Cobalt, Aug. 11.—With the intention of prospecting in the bogs of New Ontario, giving special attention to those in the vicinity of Cochrane, A. Anrep, a Dominion Government specialist on peat, arrived in town yesterday en route to the north. While here Mr. Anrep conferred with A. A. Cole, a member of the peat commission regarding the prosecution of the work. He expects to be in this district for two or three weeks and intended taking a number of men north with him to carry out his scheme of operations. There is no possibility of any official action being taken this year to utilize the peat for fuel, but sampling will be carried out until the winter frosts put a stop to outdoor work, after which testing will be done.

A NEW DIAMOND DRILLING COMPANY.

The Sudbury Diamond Drilling Company, Ltd., has been organized under a Dominion charter, with head office at Sudbury, Ontario. The leading spirit in the organization is Mr. S. J. Fitzgerald, with whom are associated several others, principally local men who are prominent in the mining and commercial life of the section. Mr. Fitzgerald, who is President and General Manager, is a man of wide experience in diamond drilling, having successfully carried on operations not only in Ontario, but also in the United States and Western Canada as well. For the past several years he has been connected with the drilling companies operating in Ontario, and is thoroughly familiar with a great variety of rock formations.

MINERALS SEPARATION.

The Minerals Separation Co. has filed with the Supreme Court petition for a writ of certiorari in the Butte & Superior litigation. If granted, Federal Court decrees in Montana will be reviewed by the highest court in the United States.

The petition states that two errors in the interpretation of the Supreme Court decision in the Hyde case are involved. These are: (1) Imputed limitation of patent to the use of half of 1% of oil or oily substance. (2) Imputed extension of patent to any oil or oily substance having preferential affinity for metalliferous matter over gangue whether capable of effectuating the process or not.

PROFESSOR LEDOUX DIED IN BATH TUB.

Sudbury, Aug. 8.—Particulars obtained to-day regarding the death of Professor Gaston Auguste Ledoux, the Belgian soldier-mineralogist, show that he lost his life in his bath tub. When the body was found the head was submerged, and it is thought that the Professor was stricken with heart failure during his cold plunge. He lost his home in Belgium when the Germans devastated the country, and afterwards he was grievously wounded fighting them. The body will be sent to Toronto, where Madame Ledoux resides.

NIPISSING.

In his regular monthly report to the President and directors, Mr. H. Park, manager, says that during July the company mined ore of an estimated value of \$333,947 and shipped bullion and residue of an estimated net value of \$877,231.

Underground operations continued to be of the usual nature and extent. Several new small veins of low assay were encountered at 73 shaft.

ALIEN PROPERTY CUSTODIAN TAKES OVER THE CONTROL OF TWO LARGE GERMAN-OWNED METAL CORPORATIONS.

Washington, July 24.—The Alien Property Custodian authorizes the following:

A. Mitchell Palmer, Alien Property Custodian, announced Monday that he had taken over the business of L. Vogelstein & Co. (Inc.), 42 Broadway, New York, and of Beer, Sondheimer & Co. (Inc.), 61 Broadway, New York, both of which were large German-owned metal concerns. In taking over these, and other metal businesses, the Alien Property Custodian has smashed for all time the German control of the metal industry in this country. The assets of L. Vogelstein & Co. are upward of \$9,000,000, and those of Beer, Sondheimer & Co. (Inc.) are upward of \$5,000,000.

Result of Investigation.

The two companies were taken over by Mr. Palmer as the result of investigations conducted by Francis P. Garvan, director of the Bureau of Investigation of the Alien Property Custodian's office. Further investigation into the metal situation is being made by him.

Beer, Sondheimer & Co. (Inc.) and L. Vogelstein & Co. (Inc.) were closely affiliated with the German Metal Gessellschaft, which for some years has dominated the entire metal market of the world. They dominated the metal market of this country in such a manner that they were enabled to sell copper, aluminum, zinc and other metals in Germany at a price much lower than the American consumer had to pay.

The enemy interest in Stallforth & Co., of New York, dealers in silver bullion, with a capitalization of \$1,000,000, has also been taken over by the Alien Property Custodian. This concern was another link in the chain of the German control of the metal markets of this country. F. Stallforth, the principal stockholder in this company, is now interned at Fort Oglethorpe, Ga.

Some of the Company Holdings.

With the American Metals Co., the large enemy interest in which has already been taken over by the Alien Property Custodian, Beer, Sondheimer & Co. and L. Vogelstein & Co. controlled most of the principal metal and smelting companies of this country, either by complete ownership of stock or by the ownership of enough stock to give them substantial representation on boards of directors.

Beer, Sondheimer & Co. own a one-half interest in the National Zinc Co., the entire stock of the Cuban Copper Co., the Cuba Copper Leasing Co., and the Norfolk Smelting Co., and 30,000 shares of the Minerals Separation American Syndicate (Ltd.).

Vogelstein & Co. have large holdings in the United States Metal Refining Co. and the American Zinc, Lead and Smelting Co. This latter concern controls the Wisconsin Zinc Co., American Zinc Co. of Tennessee, the American Zinc Ore Separating Co., the American Pipe Line Co., and the Oblesby Gas Co. Of the 70,000 shares of capital stock of the American Metals Co., 15,180 shares are owned by the Metallbank and M. C. of Frankfurt A/M, and 18,180 shares by the Metallgesellschaft of the same place.

The American Metals Co. completely owns the following companies: American Zinc & Chemical Co., Langeloth Coal Co., Langeloth Mercantile Co., Langeloth Townsite Co., American Metal Transport Co., Bartlesville Zinc Co., and South American Metal Co.

It had large holdings of stock in the following companies: Ohio & Colorado Smelting & Refining Co.;

Compania Minera de Penoles, South America; Compania de Minerales y Metales, South America; Compania Metalurgica de Torreon, South America; Compania Minera Paloma y Oabrillas, South America; Compania de Combustibbs Agujita, South America; Fundicion de Guayacan, South America; Balback Smelting & Refining Co.; and Nichols Copper Co.

Firm's Part in the War.

From the evidence which Mr. Garvan unearthed it is apparent that L. Vogelstein and Beer, Sondheimer & Co. played an important part in Germany's declaration of war, and of the continuation of the war after Germany had gotten into it. Through their domination of the metal industry in this country these concerns were enabled to send vast supplies of copper and other necessary metals to Germany.

The activities of these German concerns in supplying necessary metals to Germany seems to have continued even after the beginning of the war in August, 1914, and only came to an end when the United States joined in the European struggle.

In 1914 the profits of Beer, Sondheimer & Co., were \$116,624; in 1915 the profits of this concern jumped to \$1,013,676; and in 1916 they reached the large total of \$2,000,000. In 1917, after the United States got into the war, the profits of this company dropped to \$196,900.

The profits of L. Vogelstein & Co. since April, 1916, were extremely large, the firm's business for the last three years approximating \$70,000,000. Between April and December of 1916 the profits of Vogelstein & Co. amounted to upward of \$2,500,000.

New Directors Appointed.

To make these concerns 100 per cent. American the Alien Property Custodian has appointed as directors Americans who are well known in the business and financial life of the country.

The directors named for Vogelstein & Co. are Edward M. Mellvain, former president of the Bethlehem Steel Co.; Louis A. Watres, president of the Scranton Trust Co. and former lieutenant governor of Pennsylvania; James N. Wallace, president of the Central Trust Co. of New York; Alfred H. Smith, president of the New York board of aldermen; C. C. Daniels, of New York City.

The Alien Property Custodian will allow Paul L. Vogelstein and Ernest Hethern to act as directors also. Isidor J. Kresel, 37 Wall Street, New York City, will act as counsel for this company.

Messrs. Wallace, Mellvain, and Watres will also act as directors of Beer, Sondheimer & Co., in addition to John P. Greer, 15 Broad Street, New York City, and Ford Huntington, 15 Dey Street, New York City. Benno Elkan and Otto Frohnknecht will act with the above directors.

Joseph F. Davies, former chairman of the Federal Trade Commission, and Isidor J. Kresel will act as counsel for this company.

Represent Enemy Interests.

The directors whom the Alien Property Custodian has selected to represent the enemy interest in the American Metals Co. are Henry Morgenthau, former ambassador to Turkey; Andrew W. Mellon, of Pittsburgh; George McAneny, assistant publisher of the New York Times; Lewis L. Clarke, of the American Exchange National Bank of New York; E. C. Converse, of the Bankers Trust Co. of New York. John J. Fitzgerald will act as counsel.

Mr. Wallace, with Francis P. Garvan, has been chosen by the Alien Property Custodian to act as directors for Stallforth & Co.

L. Vogelstein & Co. and Beer, Sondheimer & Co. filed reports with the Alien Property Custodian as required by the trading-with-the-enemy act, in which they claimed that they were American-owned New York corporations. Mr. Palmer referred these reports to his bureau of investigation, and after several months of investigation Mr. Garvan, the director of this bureau, found that an endeavor had been made to cover up the German ownership of the assets and that, in spite of the process of Americanizing them, undertaken after the outbreak of the war, their ownership was thinly disguised. **Establishment in New York.**

Prior to the war, Beer, Sondheimer & Co., of Frankfurt am Main, German dealers in metals, especially copper, established an American branch in New York (about 1904), which was managed by Benno Elkan and Otto Frohnknecht. They had written agreements with the home office whereby each was to receive a salary varying in amount, and each was to participate in the profits of the American business.

The American branch had control of the firm's business in the United States, Canada, Mexico, South America, and Central America. In 1912 Elkan and Frohnknecht made an agreement with the home office in Germany whereby each would receive a salary of \$900 per month and in addition 12½ per cent. of the net profits of the American branch, the German firm guaranteeing to each that the salary and participation in the profits should equal not less than \$18,700 per year. The German office provided all of the capital that was required in the business. At the time these agreements were made Elkan and Frohnknecht were German citizens. Although they had been in this country for a number of years, they never took out naturalization papers until early in 1917.

In August, 1915, the New York corporation was organized with the corporate name of Beer, Sondheimer & Co. (Inc.). The reason for the organization of this new corporation is perhaps best stated by Elkan and Frohnknecht in their report to the Alien Property Custodian, in which they say:

"On the outbreak of the European war it became increasingly difficult, and finally impossible, to communicate with the same partnership (the German partnership), and it has therefore been impossible to have a final statement of their accounts, as such managers of said American branch, with said partnership. In August, 1915, the New York corporation was organized with the corporate name of Beer, Sondheimer & Co. (Inc.), under the direction of Sullivan and Cromwell, as counsel."

Wireless Message Quoted.

That the home office was familiar with the plans for the organization of the American company, and that the latter was organized upon the advice of the German concerns is shown by the following wireless dispatch, dated August 28, 1915:

"Beer, Sondheimer Co.,

"Frankfort, Main:

"Have completed the corporation as planned under name Beer, Sondheimer & Co.; incorporated capital, \$1,000,000. "Elkan Frohnknecht."

The capital stock of the new American corporation consisted of 10,000 shares of the par value of \$1,000,000 and were all issued to the German copartnership, thus

recognizing that the assets of the American branch at that time belonged to the German firm.

It is regarded as significant that the capitalization of the new company was only \$1,000,000, whereas the books show that on June 30, 1915, the assets exceeded the liabilities by \$3,200,000, so that the book value of each share of stock was more than \$300. Five shares of stock in the new company were issued to qualify directors and the balance of 9,995 shares were put into a voting trust, the voting trustees being Elkan and Frohnknecht, one Falck, bookkeeper of the concern, and a lawyer named Nelson.

Elkan became president of the new corporation and Frohnknecht the vice-president. The new corporation voted them exactly the same salary and the same percentage in the net profits of the business as was provided for them in 1912 agreement with the German firm.

Purchase of German Stock.

In the spring of 1916, when the war clouds began to look threatening in this country, Elkan and Frohnknecht engaged one E. O. Jacobson to go to Europe for the alleged purpose of purchasing from the German partnership 3,000 shares of the stock owned by the German partnership in the American corporation. They claimed that Jacobson bought this stock at \$80 a share and that they paid \$240,000 for it, paying \$151,000 in cash and transferring to the German firm \$50,000, which they had on deposit with it, and \$39,000 likewise on deposit on a subscription to the German war loan. Jacobson is said to be dead. The only receipt submitted by Elkan and Frohnknecht is for \$89,000.

It was claimed that Jacobson while abroad obtained from the German firm a power of attorney, pursuant to which he sold to the American corporation the 6,995 shares of stock left in the ownership of the German firm after the pretended sale of the 3,000 shares to Elkan and Frohnknecht. In other words, Jacobson was at the same time attorney in fact for Elkan and Frohnknecht, and for the German firm, and dealt with himself in both capacities. Acting under power of attorney for the German firm Jacobson sold to the American corporation, who apparently were only Elkan and Frohnknecht, the remaining 6,995 shares of stock.

Price Statements Contradictory.

Contradictory statements were made as to the price at which this sale was made. In the report to the Alien Property Custodian by Elkan and Frohnknecht, in which they undertake to give the history of this pretended sale, it is stated that the American corporation in January, 1917, purchased this stock out of its accumulated surplus, paying therefor the sum of \$700,000 in cash. It is also stated in the report that in addition to the \$700,000 approximately \$2,410,000 was paid by the American corporation to the German firm as "the balance of the original investment," the claim being that the German firm was willing to sell out its interest here for the amount of the original investment. Later Elkan and Frohnknecht claimed that the \$700,000 was not the amount of the purchase price, but that the purchase price was \$700,000 plus the balance of the original investment so paid back.

In the course of his investigation Mr. Garvan discovered that in July, 1916, Elkan and Frohnknecht each drew \$75,500 from the American corporation, thus making up \$151,000, which, added to the \$89,000 on deposit in Germany, enabled them to pay \$240,000 as the alleged purchase price for the 3,000 shares of stock.

Convinced Sale Was "Camouflaged."

Mr. Garvan became convinced that the sale of the German-owned stock in the American concern was camouflaged. It appeared that all of the money, with the possible exception of \$89,000 held by Elkan and Frohnknecht, came from the treasury of the American corporation, which in turn was owned by the German partnership. It appeared also that for the sum of \$240,000 Elkan and Frohnknecht purchased a property that during the year in which they purchased it yielded a profit of \$2,000,000.

In fact there was considerable doubt as to whether more than \$89,000 of this purchase price was actually paid. In January, 1917, when the purchase was supposed to have been made, the American corporation had net assets over all liabilities amounting to \$4,866,000, and the profits of the corporation in 1916 were \$2,000,000. Thus it would seem that the German partnership took about \$3,000,000 of \$4,866,000, made a present of \$1,866,000 to Elkan and Frohnknecht, in addition to giving them the business which in one year made a net profit of \$2,000,000.

That the Germans knew that the sale was only a pretended and pro forma transaction is shown by a wireless which they sent to one Harry Falek, an employee of the American branch, acknowledging the receipt of part of the \$240,000. In that wireless they referred to the shares as "pro forma Jacobson shares." The following is the wireless:

"Berlin, November 26, 1916, 9.25 p.m.

"Harry Falek,

"61 Broadway, New York.

"Friday, 24th. Don't sell now steels. below 110. Understood your remittance kronen 340,000 Knauth Nachod 290,000 mark against proforma Jacobson shares, but will not arrange for balance shares same kind. Wire whether arrangement White made as per our letter 7544. How is phosphate position and domestic market. Could you sell part stock domestic?"

"Beer, Sondheimer."

Among other steps to hide the alien character of the assets of this concern was a purported consolidation of the New York corporation with another corporation called Pendennis Metals Corporation.

The Pendennis corporation was a mere shell, which was organized for the very purpose of consolidating it with Beer, Sondheimer & Co. It had no assets; only \$1,000 worth of stock was ever issued, and the stockholders were clerks in the office of the lawyer under whose supervision the consolidation was effected.

Vogelstein Naturalized Citizen.

Ludwig Vogelstein is the head of L. Vogelstein & Co. He is a naturalized American citizen. For many years he has represented in this country the firm of Aaron, Hirsch & Sohn, of Halberstadt, Germany. He had charge of their business in the United States, Canada, and Mexico. The concern did a very large business, the average for the past three years being about \$70,000,000 a year. He had an arrangement with the German firm whereby he received a share in the profits made upon the firm's business in America. His interest in the profits was about 15 per cent. and he also had an interest in the profits of this firm's business in Germany. These profits were determined annually from accounts rendered at the end of each year. Vogelstein claims that since 1915 he has been unable to get an accounting from the German firm.

Up to December, 1916, the American branch was conducted as a partnership and Aaron Hirsch was one of

the partners. In December, 1916, Vogelstein formed a New York corporation, capitalized at \$5,000,000. All the property of the partnership was transferred to the corporation, including, according to Vogelstein, the accumulated profits belonging to the German firm, which, in April, 1916, amounted to upward of \$1,600,000.

Vogelstein claimed that in April, 1916, his agreements with the German firm were terminated, but the Alien Property Custodian declined to accept that statement and contended that the interest of Aaron Hirsch & Sohn in the American business has continued to date and that except for Mr. Vogelstein's participation in the profits, all of the assets of the American concern belong to the German firm.

Large Quantities of Copper Stored.

Mr. Garvan in his investigation discovered that Vogelstein & Co. had stored large quantities of copper for delivery after the war to Aaron Hirsch & Sohn. He also found that the latter concern had guaranteed notes for several hundred thousand dollars given to a New York bank by L. Vogelstein & Co.

When Vogelstein formed the corporation he recognized that Aaron Hirsch & Sohn owned at least some of the stock, and the entire \$5,000,000 of capital stock was placed in the possession of Vogelstein's attorneys to await an accounting with the German firm at the end of the war. Mr. Palmer has taken possession of the entire \$5,000,000 of stock and has taken control of the business.

MONTANA COPPER SMELTERS AGAIN PRODUCING 1,000,000 LB. PER DAY.

Reports of the production of copper in Montana in 1918, according to V. C. Heikes, United States Geological Survey, Department of the Interior, indicate that the State will this year make an output equal to that of 1916, which was more than 352,000,000 pounds. The output in 1917 was about 278,000,000 pounds. The large copper mines at Butte gradually regained their normal output in 1918, reaching it in February, and the smelters in Montana were said to be producing copper in May at the rate of more than 30,000,000 pounds a month. Early in 1918 the Anaconda Co. was producing copper at the rate of nearly 27,000,000 pounds a month, and the East Butte Co. at the rate of 2,300,000 pounds a month. Though many mines resumed operations in 1918, the High Ore mine, which has been producing 1,900 tons of ore daily, was closed in June to permit the shaft to be concreted. The North Butte and the Davis Daly mines are making improvements in equipment and are increasing their shipments.

MANGANESE AT COWICHAN LAKE, B.C.

Manganese has been discovered in the vicinity of Cowichan Lake, Vancouver Island, and, according to report, there is a considerable deposit of the ore. The locator is a Mr. Douglas, the staker of the Blue Grouse Copper Claims, Cowichan Lake. Nothing definite is yet known of the new property, but those interested are enthusiastic and a mining engineer will make an inspection immediately.

CHROMITE FROM CASCADE, B.C.

The chromite claims of Cascade, B.C., are being operated by the Stewart-Calvert Co., which recently acquired them. Small shipments, totalling 150 tons, have gone forward to Niagara, Ont., and Pittsburg. Another 100 tons is ready for shipment.

ONTARIO GOLD AND SILVER MINES AND GOLD AND SILVER MINING STOCK MARKETS.

The Ontario Bureau of Mines recently issued the following figures relative to the production of gold and silver from the Northern Ontario Camps:

Government returns show a gold and silver production for 1917 of \$25,000,000 in value.

The total gold production to date is valued at about \$37,000,000 and the silver production at \$152,000,000.

The total dividends and bonuses paid to shareholders to the end of 1917 were \$71,200,000 from the Cobalt Silver Camp and \$11,500,000 from Porcupine and Kirkland Lake Gold Camps, or a total of \$82,700,000.

These are huge figures and yet the mineralized section of Northern Ontario has only been developed to the producing stage in three or four comparatively small areas. A vast extent of territory is entirely undeveloped though several new districts are at the present time being explored by the older established mining companies as well as by syndicates and individuals with a view to opening up new deposits of gold and silver.

It may be said, without fear of serious contradiction, that the chief companies producing gold and silver in quantity are ably, efficiently and economically administered and several of the large producers are carrying on exploration work in new gold and silver districts with a view to prolonging the productive life of their organizations. This must be considered a wise policy, as the acquisition of new producing territory tends to make the shareholders' dividends more secure and to add to the stability of their investment. A further advantage, both to the Government and the shareholders, is that administrative ability and mining brains, combined with ample capital, insure intelligent, efficient and thorough development of Ontario's north country which has been proven to be so rich in mineral resources.

Many changing economic conditions have made it increasingly difficult to carry on mining and exploration work in the North country. Chief among these is the scarcity and high price of labor (accompanied in many cases by a marked decrease in efficiency); the high cost and slow delivery of materials and machinery, and the fixed price of gold. As against these features, the rapid rise in the price of silver has enabled the silver producers to meet these adverse conditions and has encouraged them to increase their output.

Gold properties are finding it increasingly difficult to carry on operations, several producing mines having cut off dividend payments and others having closed down altogether. The gold mines are in somewhat the same position as traction companies who have a fixed rate of fare and rapidly mounting operating expenses.

This condition is causing grave anxiety to the different Governments who have made huge issue of gold bonds and it is understood that discussions are now under way to find some means to, at least, maintain, if not increase, gold production. Many suggestions have been made to obtain larger production such as: Chinese labor, bonuses to producers, remitting taxes, etc. It is a difficult question to adjust as long as cost of production continues to increase, as gold—the basis of all values—must remain stationary.

Notwithstanding many adverse working conditions and difficulties, the Northern Ontario mines have during the war period added very materially to the prosperity of Ontario as a whole and will undoubtedly

continue to do so for very many years to come. New producing areas are developed to a large extent by individuals or syndicates providing the necessary financial backing and every possible safeguard should be provided to protect this important source of development money and see that it gets a "square deal." Speculators are satisfied, usually, if they get a fair chance and have assurance that their money goes into legitimate development work.

While increased cost of labor and material must be faced as a result of war conditions and the consequent high cost of living, there are other adverse conditions which the Government can and should control. The wonderful dividend record mentioned above has attracted certain unscrupulous and self-styled mining brokers and promoters. Their operations begin with the securing of a Government Charter and a lot or two of worthless land. Circulars issued widespread contain the most reprehensible statements about profits to purchasers of the shares. The results are large profits to the "broker," very little, if any money for development and, in most cases, total or large loss to the unfortunate investor. Operations of this class are not infrequent although absolutely prohibited by law.

Misrepresentation of this kind, with consequent heavy losses to a very large number of investors in Canada and the United States, has given these brokers a bad name. It has also caused a feeling that investments in mining securities are dangerous. Many legitimate investors and speculators have been driven away from mining securities on account of lax and questionable methods employed in their purchase and sale. This attitude towards mining securities is widespread and the blame must be placed firstly, on the mining brokers themselves on account of the methods employed by some of them in buying and selling and, secondly, on the legal department of the Government which appears unwilling to put laws, already on the Statute books, into effect.

Ontario has a great heritage in the North Country and everything possible should be done to protect legitimate development work and the legitimate mining investor and put a stop to unscrupulous exploitation.

RICE CAUGHT AGAIN.

New York, Aug. 1.—George Graham Rice, former convict, who is now in the stock brokerage business, was arrested last night, charged with using the mails to defraud.

The specific complaint was lodged by R. W. Hartman, of Mansfield, Ohio, who alleged he entrusted \$721 to the prisoner for the purchase of stocks.

Rice, whose true name is Herzog, was arrested on a warrant issued by direction of Postoffice Inspectors McQuillan and Hunsberry, who declared Hartman's complaint was one of many similar ones.

A "sucker list" of 53,000 names was one of Herzog's assets, Federal officials declared. His monthly office expenses aggregated \$200,000. An estimate of his income since his release from the penitentiary four years ago made by Federal authorities placed his profits at over \$2,000,000.

In order to stimulate the production of platinum in Canada, the Hon. Martin Burrell, Minister of Mines, has authorized the purchase of the metal at the Dominion Assay Office, Vancouver, B.C. It is believed that this arrangement will prove a great convenience to small producers who, in the past, have found it necessary to market their product in the United States.

MARKETS

TORONTO MARKETS.

Cobalt oxide, black, \$1.50 per lb.
 Cobalt oxide, grey, \$1.65 per lb.
 Cobalt metal, \$2.50 per lb.
 Nickel metal, 45 to 50 cents per lb.
 White arsenic, 12 cents per lb.
 Aug. 13, 1918—(Quotations from Canada Metal Co., Toronto).
 Spelter, 11 cents per lb.
 Lead, 10¼ cents to 10½ cents per lb.
 Antimony, 18 cents per lb.
 Copper, casting, 30 cents per lb.
 Electrolytic, 29½ cents per lb.
 Ingot brass, yellow, 21 cents; red, 26 cents per lb.
 Aug. 13, 1918—(Quotations from Elias Rogers Co., Toronto).
 Coal, anthracite, \$10.50 per ton.
 Coal, bituminous, nominal, \$9.50 per ton.

SILVER PRICES.

	New York cents.	London pence.
August 13	99½	48½

STANDARD MINING EXCHANGE.

(Messrs. J. P. Bickell & Co. report the following quotations on the Standard Stock and Mining Exchange, August 9, 1918.)

Gold.		
	Bid.	Asked.
Apex .....	.02½	.02¾
Boston Creek .....	..	.20
Dome Extension .....	.11½	.12½
Dome Lake .....	.12½	.15½
Dome Mines	8.35	..
Imperial .....	.01½	..
McIntyre	1.37	1.39
New Holly	4.55	4.59
New Ray .....	.15	.16
Porcupine Crown .....	.12	.12½
Porcupine Vipond .....	.12	.13½
Preston East Dome .....	.02	.03
Teck-Hughes .....	.14½	.15
West Dome .....	.09½	.10

Silver.		
	Bid.	Asked.
Adanac .....	.06½	.07¼
Bailey .....	.03	..
Beaver .....	.23	.25
Buffalo .....	..	1.00
Chambers Ferland .....	.12	.13
Coniagas	2.40	..
Crown Reserve .....	.18	.19½
Gifford .....	.01¾	.02
Great Northern .....	.02¾	.03¾
Hargraves .....	.04¼	.04½
Hudson Bay	20.	29.
Kerr Lake	5.65	..
La Rose .....	.35	.38
McKinley .....	.38	.39½
Nipissing	8.60	..
Peterson Lake .....	.09¾	.10
Right of Way .....	..	.04
Seneca Superior .....	..	.02
Temiskaming .....	.30	.30½
Trethewey .....	.23	.25
Wettlaufer .....	.04½	..

Mining Corporation	2.00	2.25
Provincial .....	.46	..

NEW YORK MARKETS.

Aug. 7, 1918.

As quoted by Engineering and Mining Journal.

Copper, 26 cents.
 Lead, 8.05 cents.
 Zinc, 8.12 cents.
 Tin—Banka, \$1.
 Aluminum, 33 cents.
 Antimony, 13¼ cents.
 Bismuth, \$3.50.
 Cadmium, \$1.50 to \$1.75.
 Nickel, 45 cents.
 Quicksilver, \$125.
 Silver, 99½ cents.
 Platinum, \$105.
 Palladium, \$135.
 Iridium, \$175.
 Chrome ore, \$1.70 per unit for 50% ore.
 Molybdenite, about \$1.00 per lb.
 Pyrites, 25 to 34 cents per unit f.o.b. mine.
 Tungsten ore, \$20 to \$24 per unit.
 Ferromanganese, \$250 for 70%.
 Spielgeleisen, \$75 for 16 to 18%.

ALBERTA CAN SUPPLY COAL FOR ONTARIO.

In a letter to the "Globe," H. C. Anderson, of the Twin City Coal Co., Ltd., says: "At the present time it is a most conservative statement to say that Alberta could supply Ontario with 2,000 tons of choice domestic coal each day for the next six weeks at least. If the weather continues mild that quantity of coal could be shipped for the next sixty days.

GRANBY STRIKE SETTLED.

Victoria, B.C., July 29.—The strike at Anyox, B.C., the smelter centre of the Granby Consolidated Mining and Smelting Co., has been settled and the plant is in operation again after two weeks of comparative inactivity. Mr. F. M. Sylvester, general manager, issued the following statement dealing with the walk-out: "The return to work of the men at Anyox is consistent with the usual good sense and spirit of fair dealing that may be relied upon to a large degree in Granby employees. While we deplored a shutdown of the plant at this time, when Allied demands for munition materials, including copper, is at its highest, making it necessary, as it did, for us to curtail the regular shipments of our quota of copper and thus augmenting the already substantial decrease of copper produced during May, June and July, we believe that much good will result from the vacation of the last two weeks. For some time, more than a year I would say, we have known that sinister influences have been at work at Anyox, among the men, both at the beach, where the smelter is located, and among the miners at the mine camp. You may call that influence by any name you like, I. W. W. 'ism, social unrest, or pro-Germanism."

GOLD BANNER.

The consent of the Finance Minister, permitting the Gold Banner Mines to sell stock, has been withdrawn. The Gold Banner Mines, Limited, in their prospectus represented the Finance Department's sanction of the flotation as placing on the enterprise itself the seal of government approval, which, of course, was never intended.

PERSONAL.

Mr. A. Anrep is at Cobalt to investigate peat bogs along the line of the T. & N. O. Railway.

Mr. J. A. Allan, of the University of Alberta, Edmonton, was in Toronto last week. He spent the early part of the summer in the Peace River district.

Mr. L. H. Cole, of the Geological Survey, is in South-western Ontario, investigating sand resources.

Mr. R. C. Wallace and Mr. J. A. Campbell, the newly appointed and retiring Commissioners of Northern Manitoba will make a trip to Hudson Bay, starting this week.

Mr. Albert E. Hall is in France with the U. S. army.

Mr. R. G. McConnell, Deputy Minister of Mines, is on a visit to Western mining districts.

Mr. D. H. McDougall succeeds F. H. Crockard as President of Nova Scotia Steel & Coal Co.

Mr. F. W. Gray has joined the staff of the Nova Scotia Steel & Coal Co.

Mr. L. R. Campbell has been elected president of McGillivray Coke & Coal Co.

Mr. J. L. Parker is general manager for the Diamond Coal Co., Diamond City, Alberta.

Dr. Alfred Stansfield has returned to Montreal from British Columbia, where he has been working in connection with the proposal to establish an iron industry.

Dr. F. D. Adams is in London, attached to the staff of the Khaki University.

Mr. E. L. Bruce, of the Geological Survey, is examining the area between Reed and Herb lakes, Northern Manitoba.

Mr. M. Y. Williams is making geological surveys of oil districts in southeastern Ontario.

Mr. A. Wende has returned to Kirkland Lake after a visit to Buffalo.

Mr. Robert Bryce was in Cobalt last week.

Mr. T. J. Harwood, recently manager of the Schumacher mine, has gone to Los Angeles.

Mr. H. B. Lee, recently manager at the Porcupine Crown mine, has been appointed lecturer in Metallurgy in Pennsylvania State University.

Mr. R. L. Baker, of Toronto, succeeds the late A. M. Hay as a director of West Dome Mines.

KEELEY MINE SOLD.

The old Keeley mine which came into such prominence at the time of the Farmers' Bank smash, has been purchased for \$100,000 by the Associated Goldfields Co. of West Australia, an Old Country concern, which was working it under option prior to the war. An extension of time was asked until one year after the cessation of hostilities, by the buyers. This was granted and the property then closed. The purchasers, however, have now taken up the option of the South Lorrain property, which is being worked with increasing vigor. M. Black, formerly mill superintendent at the Porcupine V. N. T., being in charge.

TEMISKAMING BOUNDARIES CHANGED.

The Temiskaming mining division now embraces the townships of Strathy, Stratheona, Law, Olive, Milne, Askin, Riddell, Cassel and all that part of the Temagami forest reserve lying east of the Temiskaming and Northern Ontario Railway. The new order went into effect August 1.

Oxy-Acetylene Welding and Cutting

Reduces Repair Costs
Saves Time and Money

Oxy-Acetylene Welding is saving hundreds of thousands of dollars annually in Canadian Factories, Mills, Mines, Machine Shops and wherever metal or machinery is used. Broken machinery parts, tools and defective castings are quickly and permanently repaired. Many economies and advantages are derived from welding in construction as well as repairing.

Prest-O-Lite

PROCESS

employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry purified gas, insuring better welds, quicker work and lower operating cost.

Apparatus consists of an equal pressure blow-pipe, automatic regulators and gauges, and all necessary equipment. Adaptable for oxy-acetylene cutting by the addition of special cutting blow-pipe.

Thorough instructions are furnished free to every user of Prest-O-Lite Dissolved Acetylene. Any average workman who understands metals can learn the welding process quickly and easily.

We will gladly send illustrated literature and interesting data showing actual instances of savings made by others. It may suggest valuable ideas to you. Write for it. Address Department C-108.

The Prest-O-Lite Co. of Canada
Limited

Prest-O-Lite Building
Corner Elm St. and Centre Ave.
Toronto

Plants at:—

Toronto, Ont. Shawinigan Falls, P.Q.
Merriton, Ont. St. Boniface, Man.



World's Largest Makers of Dissolved Acetylene

HOW UNCLE SAM IS ENLISTING COAL MINERS.

The United States Fuel Administration has issued the following:

In order to supply leaders for an intensive campaign for increased bituminous coal production the United States Fuel Administration is appointing in each of the producing districts throughout the country a man to serve as production manager for his district. At each mine a committee of six, to be known as the production committee of the United States Fuel Administration, will be formed; three men representing the mine workers; three men the mining company.

The duties of the production committees will be to stimulate patriotism; to set a good example of patriotic industry; to arrange for local meetings at which patriotism and increased production alone shall be discussed. It is the task of the production committee to make known the fact that there must be a large increase in tonnage if the United States is not to fail in its war work. It will also make clear that it is the duty of every mine worker to work the full prescribed hours during six days each week; to pass upon the reasons given for absence, short hours worked, or any other causes that may have resulted in a loss of tonnage.

In announcing the formation of these production committees James B. Neale, director of production, wrote to the local unions of the United Mine Workers of America:

"You mine workers are like a great reserve army which shoulder the burden of a long campaign in which there can be no let-up or the whole offensive plan will crumble and collapse. Not a man of you would flinch or hang back if he were in France to-day and the order came to advance in the face of the enemy's machine guns. In the same way I am sure you will not falter

when you realize how great the need is for your best efforts at home."

SHIPPING MANGANESE ORE FROM KASLO, B.C.

Col. B. F. Millard, of Seattle, Wash., who is operating a manganese property near Kaslo, B.C., states that in shipments thus far, water in some cases ran over 40 per cent. A drying plant, therefore, is being installed. It is expected that 2,000 tons will be taken out this summer, which was all the ore in sight, although more might be located with prospecting. The ore is being shipped to Pennsylvania.

TESTING GAS FOR GASOLINE SUPPLY.

The natural gas of both Northern and Southern Alberta is to be tested as to its value as a source of gasoline. The work is to be carried out under the direction of Mr. D. B. Dowling, of the Canadian Geological Survey Branch, Mines Department, Ottawa. A start is likely to be made at the Dingman Well, south of Calgary City, to be followed by similar tests in the Viking and Peace River Fields.

PYRITES PROPERTY FOR SALE

A pyrites property of exceptional merit, well located, one mile from main line of railway, handy to water transportation, and unlimited electric power.

Only cash proposals considered. For information and samples of ore, write Box Y, care of The Canadian Mining Journal.

WANTED——

Copper Refiner, to take charge of copper cathode melting plant, casting various shapes, including wire bars. A practical furnaceman, who knows from years of actual experience how to fuse in a bottom, how to train a crew of "green" men, and can himself produce marketable copper, can secure a steady position, and a satisfactory salary, with a responsible smelting company. Apply Box N Canadian Mining Journal.

FOR SALE

ONE DOUBLE SET OF TOOTHED ROLLS, 22 in. diam., 20 in. face. Suitable for reducing any soft material. Complete with drive pulleys, spare shells, gears, springs, etc.

ONE SET PLAIN ROLLS, 22 in. diam., 12 in. face. Suitable for any fine reducing. Complete with drive pulleys, and one set of spare roller shells.

Both machines are as good as new, having run only four months, and are open to inspection.

Will consider any offer. Write for further particulars.

NEW QUEBEC GRAPHITE CO., LTD.
BUCKINGHAM, P.Q.

FOR SALE——

One Litchfield Hoisting Engine, 18 in. cylinder, 32 in. stroke. Two 5 ft. drums with 4 ft. face and grooved for 1 in. rope. In excellent condition. One "WC" Sullivan tandem Air Compressor. Compound steam and two stage air cylinders. Corlies Valve Gear. Capacity 1,800 cu. ft. to 100 lbs. pressure per minute. For full information and price, address:

THE TEMISKAMING MINING CO., LTD.
COBALT, ONT.

HOISTS, BUCKETS, CARS

MINE HOISTS, made in 7 sizes, from 10 to 50 horse power, and with any diameter of drum up to 48 inches at bottom of flanges.

MINE BUCKETS, made any size shape, or style, to suit the customer.

MINE CARS, made in a large variety of sizes and styles to suit the particular work for which they are intended.

MINE CAGES, with safety devices, made to order, to fit the customer's shaft.

MINE SKIPS, self-dumping and self-righting, made in a variety of sizes and styles.

Our large catalog describing all of above is yours for the asking.

Marsh Engineering Works, Limited, Belleville, Ontario

Established 1846

