

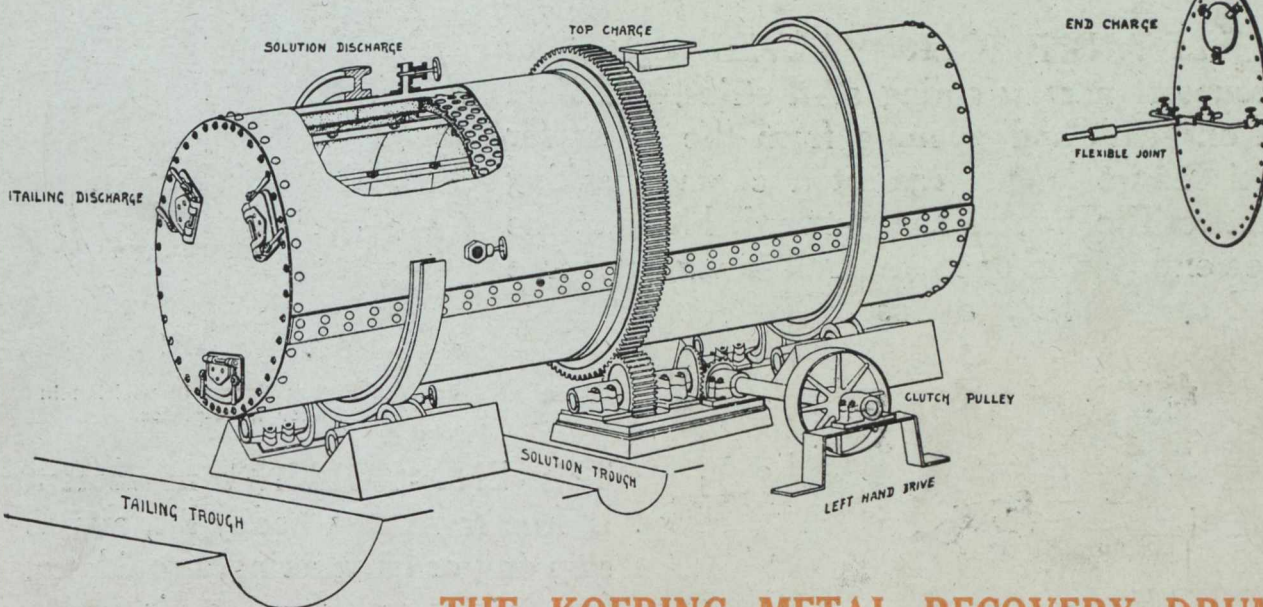
# ✂ CANADIAN ✂ MINING JOURNAL

VOL. XXXVIII

TORONTO

No. 16

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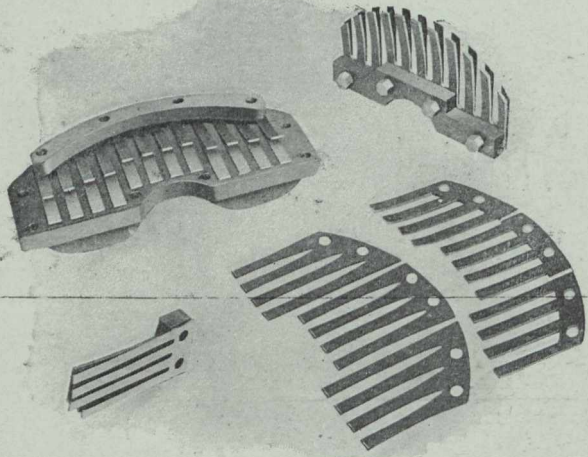
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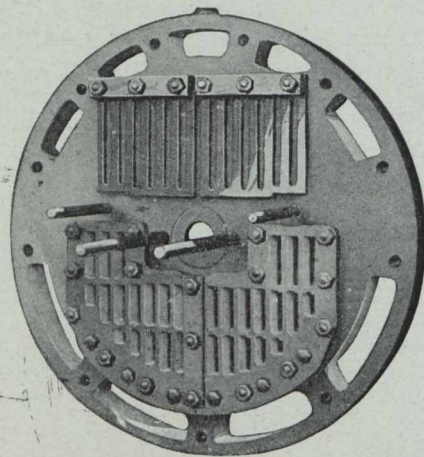
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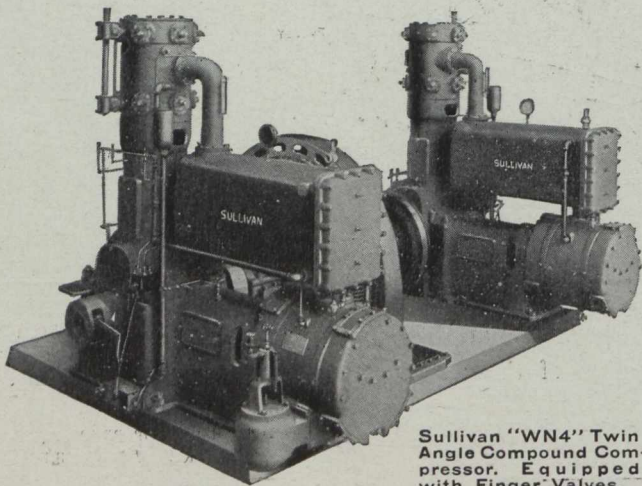
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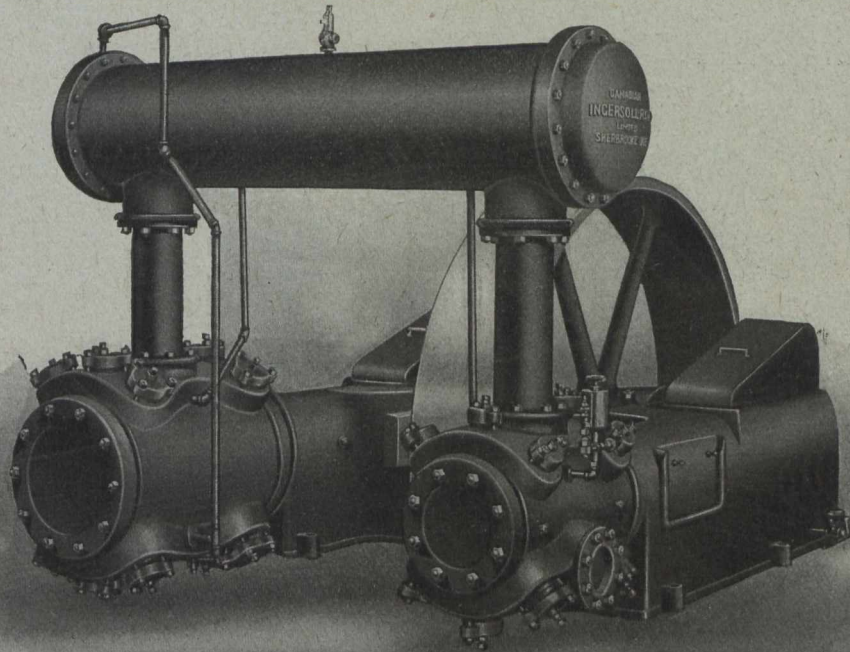
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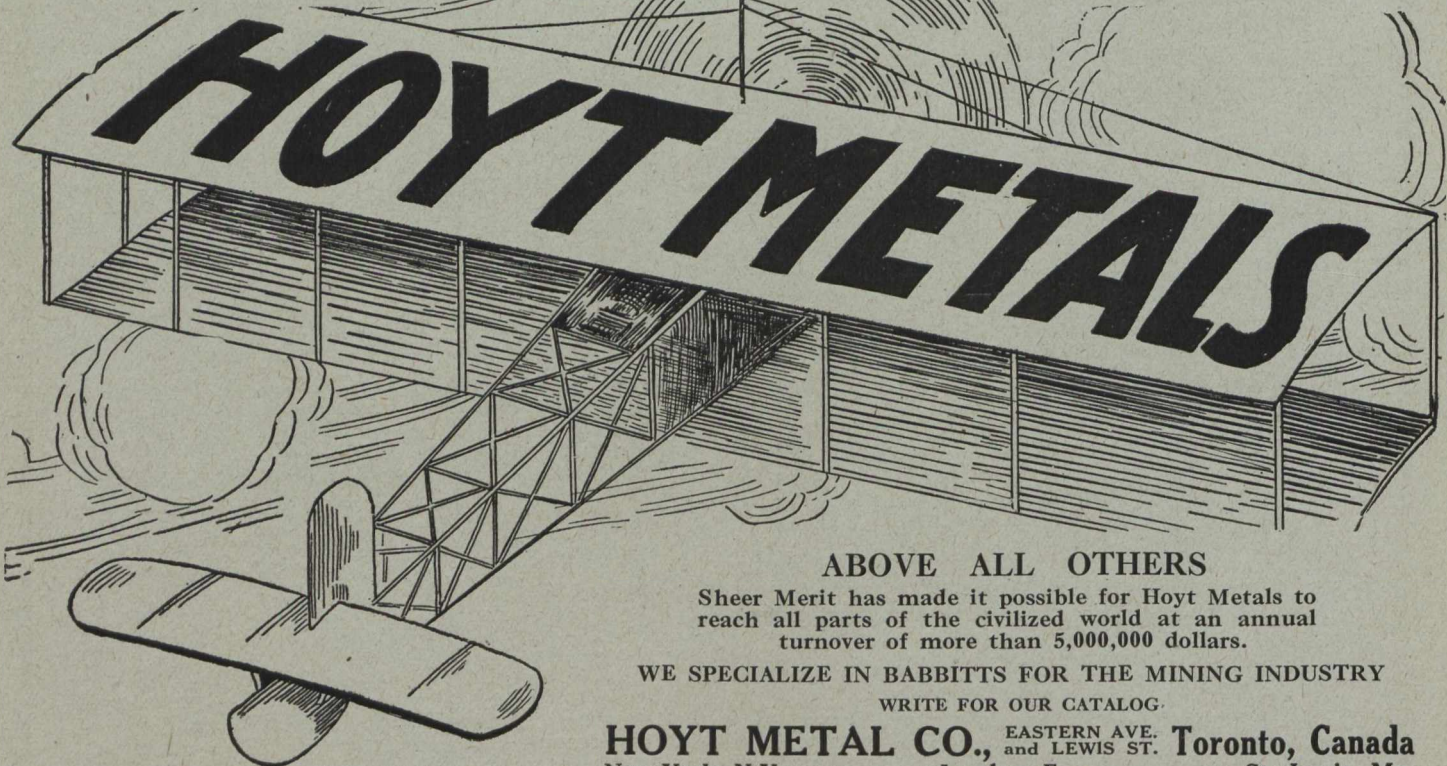
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### Aggregate Value of \$516,270,253

The substantial progress of the Mining Industry of this Province is strikingly exhibited in the following figures, which show the value of production for successive five-year periods: For all years to 1894, inclusive, \$88,904,199; for five years, 1894-1899, \$46,906,258; for five years, 1899-1904, \$90,391,394; for five years 1904-1909, \$121,618,733; for five years, 1909-1914, \$139,002,161, for the year 1915, \$29,447,508.

### Production During last ten years, \$267,607,077

Lode-mining has only been in progress for about twenty years, and not 20 per cent. of the Province has been even prospected; 300,000 square miles of unexplored mineral bearing land are open for prospecting.

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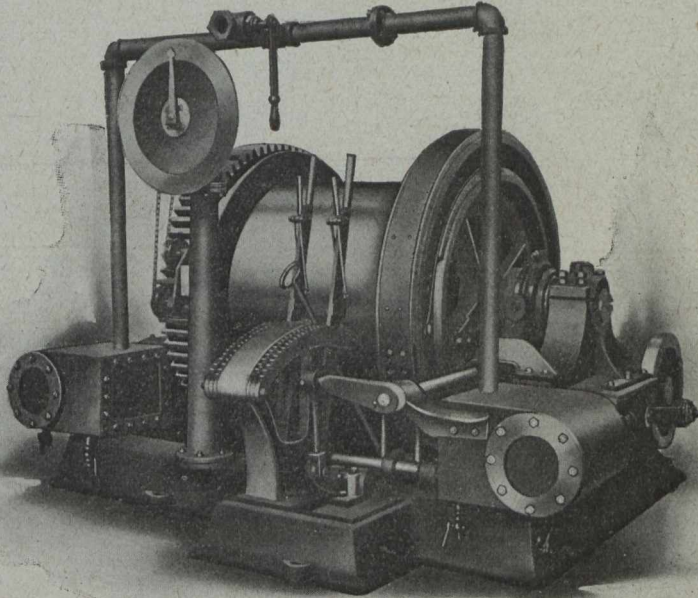
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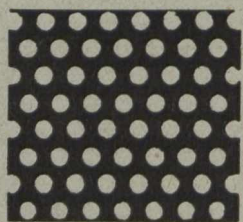
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# The Minerals of Nova Scotia

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Nova Scotia possesses extensive areas of mineral lands and offers a great field for those desirous of investment.

**Coal** Over six million tons of coal were produced in the province during 1916, making Nova Scotia by far the leader among the coal producing provinces of the Dominion.

**Iron** The province contains numerous districts in which occur various varieties of iron ore, practically at tide water and in touch with vast bodies of fluxes. Deposits of particularly high grade manganese ore occur at a number of different locations.

**Gold** Marked development has taken place in this industry the past several years. The gold fields of the province cover an area approximately 3,500 square miles. The gold is free milling and is from 870 to 970 fine.

**Gypsum** Enormous beds of gypsum of a very pure quality and frequently 100 feet thickness, are situated at the water's edge.

High grade cement making materials have been discovered in favorable situations for shipping.

Government core-drills can be had from the department for boring operations.

The available streams of Nova Scotia can supply at least 500,000 h.p. for industrial purposes.

Prospecting and Mining Rights are granted direct from the Crown on very favorable terms.

Copies of the Mining Law, Mines Reports, Maps and Other Literature may be had free on application to

**HON. E. H. ARMSTRONG, - Halifax, N. S.**

*Commissioner of Public Works and Mines*



## PROVINCE OF QUEBEC

### MINES BRANCH

#### Department of Colonization, Mines and Fisheries

*The chief minerals of the Province of Quebec are Asbestos, Chromite, Copper, Iron, Gold, Molybdenite, Phosphate, Mica, Graphite, Ornamental and Building Stone, Clays, etc.*

The Mining Law gives absolute security of Title and is very favourable to the Prospector.

**MINERS' CERTIFICATES.** First of all, obtain a miner's certificate, from the Department in Quebec or from the nearest agent. The price of this certificate is \$10.00, and it is valid until the first of January following. This certificate gives the right to prospect on public lands and on private lands, on which the mineral rights belong to the Crown.

The holder of the certificate may stake mining claims to the extent of 200 acres.

**WORKING CONDITIONS.** During the first six months following the staking of the claim, work on it must be performed to the extent of at least twenty-five days of eight hours.

**SIX MONTHS AFTER STAKING.** At the expiration of six months from date of the staking, the prospector, to retain his rights, must take out a mining license.

**MINING LICENSE.** The mining license may cover 40 to 200 acres in unsurveyed territory. The price of this license is Fifty Cents an acre per year, and a fee of \$10.00 on issue. It is valid for one year and is renewable on the same terms, on producing an affidavit that during the year work has been performed to the extent of at least twenty-five days labour on each forty acres.

**MINING CONCESSION.** Notwithstanding the above, a mining concession may be acquired at any time at the rate of \$5 an acre for SUPERIOR METALS, and \$3 an acre for INFERIOR MINERALS.

The attention of prospectors is specially called to the territory in the North-Western part of the Province of Quebec, north of the height of land, where important mineralized belts are known to exist.

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The Bureau of Mines at Quebec will give all the information desired in connection with the mines and mineral resources of the Province, on application addressed to

**HONOURABLE HONORÉ MERCIER,**  
MINISTER OF COLONIZATION, MINES AND FISHERIES, QUEBEC.

# The Flotation Process

All patent and other rights to this process  
in North America are now controlled by

## Minerals Separation North American Corporation

who is the registered owner of the following Canadian patents: Nos. 76,621; 87,700; 94,332; 94,516; 94,718; 96,182; 96,183; 99,743; 127,397; 129,819; 129,820; 134,271; 135,089; 137,404; 142,607; 147,431; 147,432; 148,275; 151,479; 151,480; 151,619; 151,810; 157,488; 157,603; 157,604; 160,692; 160,693; 160,694; 160,846; 160,847; 160,848; 160,849; 160,850; 160,937; 163,587; 163,608; 163,707; 163,936; 165,390; 166,415; 167,474; 167,475; 167,476; 167 603.

On December 11, 1916, the SUPREME COURT OF THE UNITED STATES adjudged our basic patent for air-froth flotation to be valid, holding that this patent covers any process of froth flotation wherein the results obtained are such results as are secured by the use of a fraction of one per cent., on the ore, of an oily frothing agent in an ore-pulp, with agitation. Three of the thirteen claims which specified the use of "a small quantity of oil" and which the Court held to be invalid have since, by proper disclaimer, been brought within the scope of the Supreme Court's decision and, at a recent trial in the United States District Court at Butte, Montana, Judge Bourquin admitted these claims as amended.

On May 24, 1917, the UNITED STATES CIRCUIT COURT OF APPEALS at Philadelphia, in the case of Minerals Separation, Ltd., against Miami Copper Company, unanimously sustained the validity and broadly construed a second basic patent, owned by us, for the use of all "Soluble Frothing Agents." In the same opinion, the Court also validated a third patent for the use of cresols and phenols in the cold and without acid. The defendants, Miami Copper Company, endeavored to avoid infringement of these patents by using Callow pneumatic cells, but the Court held that the operations of the defendant company infringed all three patents.

Prospective users of our flotation processes are earnestly requested not to be misled by the mistaken views disseminated by interested parties that any of these BASIC PROCESS PATENTS can be evaded by a mere variation of apparatus for agitating and aerating the pulp, or by the simple addition of oils or other materials in excess of a fraction of one per cent. on the weight of the ore treated.

### NOTICE

Notice is hereby given that we will enforce our patents and stop all infringements, but are prepared to grant licenses for the right to use all or any of our processes to those who wish to use them. To those who infringe or have infringed our patents, notice is given that a settlement for such infringement must precede the granting of licenses for the future use of same.

Notice is further given that no one is authorized to introduce our processes or apparatus into the United States, Canada or Mexico.

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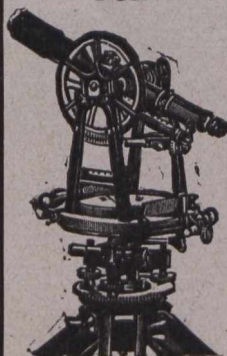
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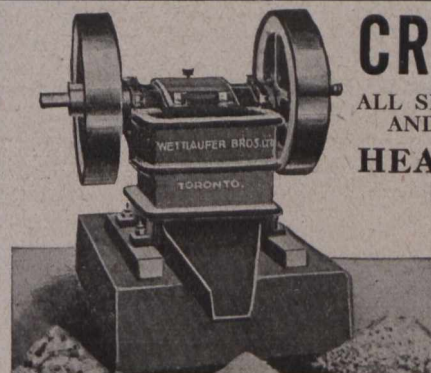


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# THE CANADIAN MINING JOURNAL

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### ESTIMATION OF ORE RESERVES.

Some of the troubles that arise from failure to include accurate estimates of ore reserves in annual reports of mining companies have been referred to in recent issues of this journal. Those who are interested in the subject will find some interesting discussion in a bulletin just issued by the Canadian Mining Institute.

In the July Bulletin Mr. R. W. Brigstocke suggested that statements in annual reports of mining companies in respect of ore reserves should be verified independently. Commenting on this suggestion several engineers consider it impractical.

Mr. John E. Hardman says: "No estimate of valuation of the reserves 'by an independent engineer' can be made without high costs, for such estimate would have to rest upon accurate and detailed sampling and measurement, both of which take time and cost money. No 'independent engineer' can hope during one visit to become as familiar with the distribution of values as is the regular consulting engineer of the company, whose copies of assay sheets and progress maps bring him weekly into temporary intimacy with the mine."

Mr. R. B. Watson says: "However, with the present custom, the stockholder only has to be suspicious of the manager's statement of ore reserves. How much better off would he be, if he had two—probably divergent—reports to worry over? The manager knows his mine better than an outsider and should be able to make a closer estimate of ore reserves than an auditor of equal calibre. The company directors would have to appoint the auditor and if they picked a poor manager, would they be any more likely to appoint a good auditor? All auditors are suspicious by nature and profession, and any ore reserve that received the official seal would have to be blocked out on six sides or bagged in the ore house. Every annual report would become a battle ground. The conflicting claims of the two engineers would so confuse and disgust the general public that they would have even less confidence than at present in the noble but misunderstood calling of the mining engineer."

Mr. E. P. Mathewson says: "Jealousy on the part of the local engineer would militate against co-operation, or in case this were avoided there would always be the suspicion of collusion. I think Mr. Brigstocke's proposition is hopeless until the millennium dawns."

An alternative suggestion is offered by Mr. Fraser D. Reid. Mr. Reid says: "The writer is of the opinion that if an act were passed, whereby mining companies publishing statements of 'Ore Reserves' were compelled to file, with the Government, an affidavit as to reserves, along with assay plans, stope maps and all information showing how reserves were arrived at,

it would be as effective, less costly, and much simpler than the scheme proposed by Mr. Brigstocke."

There can be no doubt that it will be found difficult to act on Mr. Brigstocke's suggestion. It would be well, however, to consider whether some of the objects striven for could not be obtained. Directors and mine managers should not be content to issue reports which do not give the shareholders the information they want. What do you think of Mr. Reid's proposal?

#### THE VALUE OF ASSETS.

The reports of some mining companies indicate that auditors of balance sheets are more eager to detect minor errors than major ones. With painstaking care they add up the fractional dollars and search through the books for little discrepancies. Then they calmly ignore errors of a few hundred thousand dollars in estimated value of assets.

It is obvious that the auditors have often not the necessary information to permit them to pass upon estimates of the chief assets of a mine. Why, then, do they append their signatures without stating frankly that their audit is only a partial one. Would it not be better to indicate clearly what figures have been checked carefully, and what are mere approximations or entirely arbitrary?

It may be convenient for book-keeping purposes to use some arbitrary or approximate figures in annual reports. Is it fair to the shareholder to fail to indicate the character of these figures?

The price of silver continues to rise. According to reports the demand from India is likely to continue large and increase in silver coinage in other countries is to be expected. The outlook for the companies producing silver is very bright. The embargo on shipments to India gave a temporary check to the rise in price; but the upward trend has been resumed.

#### TO ACQUIRE ORE DEPOSITS AND CONSTRUCT COKE PLANT.

The directors of the Steel Company of Canada, at a meeting in Montreal recently, practically adopted a new policy which is likely to have an important bearing on the future of the company. In co-operation with American interests, the directors propose to acquire certain ore and coal properties situated in an advantageous location in the Eastern States, from which such of its supply as is necessary in the future will be drawn. Hitherto the company has not controlled its supply of raw material, although it has enjoyed the reputation in the steel trade of having the benefit of some exceptional contracts.

It was stated that the plans of the company included the construction of a considerable plant for the production of coke.

The Steel Company of Canada has been the only large domestic steel corporation without its own ore and coal reserves.

#### CORRESPONDENCE.

##### The Survey of Mining Claims in Ontario.

To the Editor of the Canadian Mining Journal:

Sir,—It is a well known fact that when any special rights or privileges are granted to any class of people, this same class of people will in the course of time abuse the privilege, granted, unless easy and inexpensive means within reach of anyone interested, that will act as a restraining influence, are provided.

When the Ontario Legislature passed the Act making it compulsory to have the survey of a mining claim performed by an Ontario Land Surveyor, in order to be acceptable to the Government, the object undoubtedly was to make sure that such a survey would be performed by a man qualified to make a correct survey. When mining progressed and new camps were discovered, the O. L. S. found his services very much in demand. This resulted in a contract system being in a majority of cases adopted, whereby the surveys are performed by the O. L. S. at an agreed price per claim. Then in order to survey the greatest number of claims at the least expense to himself, the O. L. S. hires bushmen who are familiar with the country, to go and cut out, picket out, and chain the lines of the claims to be surveyed. This being done by men who have not the technical knowledge of surveying and without a transit, the result is far from accurate, and in cases where the line comes out within a few feet of the post and the posts are moveable, the posts are shifted so as to conform to the line, in place of the line being rerun. Of course they know that they are taking ground from Peter and giving it to Paul, but speed, not accuracy, is the first consideration.

In the course of time the O. L. S. arrives and by setting up his transit at the corners of the claims, he gets the angle and compass bearings from the pickets in sight. He gets the chainage notes from his men and the job is completed. In this manner he is able to complete several claims in one day and at a cost of only a fraction of what the claim owner has to pay. As he finds the posts at the corners and as the lines lead him from corner to corner the survey must be accurate. Of course he has no means of knowing if any of the posts have been moved. Very often he forgets to bring the iron posts required by the Mining Act to be planted at the corners, and usually offers the job of placing these posts to some one in the camp, who promises to plant them. Promises, like piecrust, are easily broken, and as a result subsection 4, section 113, The Mining Act of Ontario is seldom complied with.

I do not mean to say that all the O. L. S. are performing their work in this manner; but I know of some who do. While it may be satisfactory to the Department, it is not accurate nor satisfactory to some of the claim-owners.

In B. C. the law requires the Provincial Land Surveyor, in surveying a mining claim, to run all lines with a transit, using hubs driven in the ground. These hubs are provided with a copper tack which indicates the centre of the line. All measurements are taken from the hubs. As all these hubs are noted and the field notes filed in the Recording Office, as well as at the Department, it becomes a simple matter to check the accuracy of a survey. An interested party, who may be affected, can have a P. L. S. go over the work. If error is found a third P. L. S. is called in to act as umpire. If the first survey is found to be incorrect the P. L. S. who performed such incorrect survey is required to pay all costs. As a result the P. L. S. is extremely



careful to do his work correctly. His plans filed at the proper offices are required to show where the claim posts are located, as well as north and south. That however, does not seem to be required in Ontario, judging from a copy of a plan, just received from the Department, that lacks this very essential detail.

Yours, etc.,

L. O. Hedlund.

West Shiningtree, Ont., July 22, 1917.

#### The Phosphate Discussion.

To the Editor of the Canadian Mining Journal:

Sir,—After the amusing and somewhat pyrotechnic correspondence which has recently taken place in the Mining Journal with reference to the discovery of phosphate of lime in the Canadian Rockies, it is perhaps advisable that an independent statement should be made in order that your readers, who are not conversant with the animosities underlying the correspondence, may be put in possession of the facts of the case.

The need for phosphate of lime, which will arise as years go on and more intensive methods are employed in connection with agriculture in the Northwest, naturally leads any one interested in conservation in the Dominion, to think of the sources of raw material for the manufacture of phosphatic fertilizer in that part of Canada.

Now it happens that some of the greatest deposits of this mineral which are known in the world lie in Idaho, Utah and Montana. They occur at a certain definite geological horizon and are found in beds. It, therefore, seemed to be a matter of interest and importance to ascertain whether it was possible to locate this same geological horizon several hundred miles further north in the Dominion of Canada, and if so, to ascertain whether in this northern extension, phosphate beds occurred at the same horizon.

In the summer of 1915, having a month in which I could absent myself from University work in the east, I placed my services at the disposal of the Commission of Conservation and with Mr. Dick of the Commission went to the West to see whether we could succeed in discovering such a deposit.

The successive steps by which, applying the principles of geological field work, the looked for horizon was found near Banff, need not here be detailed, since they have been described in our report issued by the Commission of Conservation. (Discovery of Phosphate of Lime in the Rocky Mountains," by Frank D. Adams and W. J. Dick, Ottawa, Dec. 1st, 1915), and also in a paper read before the Canadian Mining Institute three months later in March, 1916, and published in the Transactions of the Society.

In carrying out the investigation the excellent maps issued by the Geological Survey of Canada were invaluable, and fortunately the Survey had published an especially detailed map of the district about Banff surveyed by Professor Allan. After a careful study of this map it was decided to look for phosphate beds along Forty Mile Creek, since this stream, three times in its course, cuts through the beds in which the phosphate might be expected to occur.

The detritus in the valley of this stream was found to contain much chert, like that associated with the American deposits, and this chert was found to contain phosphoric acid. On carefully examining the section on Stony Squaw Mountain, phosphate rock was found in place at one point, the exact locality being indicated

on the photograph shown on plate VII. of the report in question, and also reproduced in the paper published in the Transactions of the Canadian Mining Institute. This phosphate rock, however, was very low in grade, and the search was, therefore, continued in the stream for float derived from other and richer deposits. This search was rewarded by finding a large mass of float which weighed over 30 pounds, in the stream at the foot of Stony Squaw Mountain. This material had all the characters of one variety of the Montana phosphate and was found to contain 53.95 per cent. of phosphate of lime, indicating a material of fair grade.

This afforded direct proof that higher up the stream a heavier and richer deposit of mineral occurred in the form of one or more beds which had been cut through by the stream. It was, however, impossible for us to prosecute the search further, since the time at my disposal was now exhausted.

Upon returning to Ottawa an announcement was published to the effect that a deposit of phosphate of lime occurred in the Canadian Rockies near Banff, which, there was reason to believe, from the size and character of the float, would be of economic value. This was the first announcement ever made of the occurrence of phosphate of lime in the Canadian Rockies.

The result of the investigation, together with the specimens collected, were then laid before Dr. R. J. McConnell, the Deputy Minister of Mines, and Mr. Hugh S. de Schmid of the Mines Branch was at once sent to Banff to continue the work. This was prosecuted by him until the snow fell. Mr. de Schmid located the second bed, from which the float was derived, a few hundred yards up the creek from the point at which the float was discovered. The bed, however, was only about one foot in thickness. He then traced the bed along its strike for over thirteen miles and on the flank of Mount Norquay found that it had increased in thickness to two feet. On his return to Ottawa, Mr. de Schmid presented the results of his investigation, which were embodied in an excellent report (Hugh S. de Schmid—"Investigation of a Reported Discovery of Phosphate in Alberta, Bulletin No. 11, Mines Branch, Department of Mines, Ottawa, 1916.") The following extracts from this report will summarize some of Mr. de Schmid's conclusions:

"These phosphate deposits can scarcely be regarded as of particularly economic importance, since there is only one phosphate horizon of any consequence. This bed possesses an average thickness of about twelve inches. On the other hand, in the event of any attempt to exploit these deposits, there are at least two localities in the Banff district where phosphate outcrops are situated favorably for working; one of these, the Mount Norquay outcrops, lies three-quarters of a mile from the main road, though the railway runs within about one mile of the southern exposure."

As above remarked, at these latter outcrops the bed is two feet in thickness.

With reference to the amount of phosphate of lime present in the area in question, Mr. de Schmid makes the following statement: "With an average bed thickness of one foot and a depth limit for working of half a mile, this would give ten square miles of bed, or 26,137,600 short tons of phosphate rock for the area."

It may be safely stated that there is no other area in Canada at present known and of the same size which can be asserted to contain an equal amount of phosphate of lime.

Mr. de Schmid goes on to say that "While unsuited to the manufacture of super-phosphate by the sulphuric acid method, the Alberta rock would probably prove suitable for treatment by one of the thermic processes which have lately been proposed to supplant the sulphuric method."

The fact that Mr. de Schmid had located this richer bed was first announced in a paper on the discovery of these deposits which I read before the Geological Society of America, at Washington in December, 1915, and was published in an abstract of this paper, which, at the request of the officers of the National Academy of Science, appeared in the proceedings of the Academy a few weeks later.

To sum up then: The phosphate deposits of the Western United States have been found to extend across the boundary line into Canada. In a small area near Banff over 26,000,000 short tons of phosphate of lime are present. The bed varies in thickness considerably; but is too thin to work at the present time under present conditions. In that part of the area, however, where the bed is two feet thick and well situated for working, with changing conditions, as time goes on, especially should a law forbidding the export of phosphate from the United States be enacted, as has already been recommended by certain influential interests in that country, Canadians may be very glad to avail themselves of this great deposit of phosphates. Furthermore, the horizon containing these deposits has been found to strike both north and south from the Banff area, and hundreds of miles of promising tracts in Canadian territory await detailed study and prospecting for additional and richer bodies of this valuable mineral. The discovery as a matter of fact is one of much interest and importance, adding, as it does, another item to the mineral wealth of the Dominion of Canada.

In Professor Haultain's letter in your issue of July 1st, entitled the Ferrier-Adams Episode, he humorously reverts to his "idee fixe" with reference to the Geologist and the Mining Engineer. My old friend, Dr. Ferrier, is cited as a type of that ideal and commanding personality—the Engineer—who "followed up his discovery—as an Engineer—with care and thoroughness and then held his tongue—as an Engineer—until his clients gave him their long withheld permission to speak"—while the Geologist, with fewer facts at his disposal, got the credit for the discovery. Professor Haultain's story would have been a good one if his facts were correct. It is not a matter that I would have touched upon had he not compelled me to do so—but to continue the comedy, I may set forth the actual facts. The Engineer in the case, having been engaged by private clients to carry out certain work for them and to "hold his tongue" with reference to it, did so absolutely for some four years. But no sooner had these deposits been discovered by the Geologists than this silence was at once broken. The Deputy Minister of Mines, and a number of other gentlemen connected with the mining industry, were informed by Dr. Ferrier, who seemed to consider himself in some way aggrieved by our discovery, that he knew of the existence of these deposits and that they were "no good." This information naturally spread abroad in all directions, and, employing Professor Haultain's expressive phrase, "like the story of the crows, grew in the telling." When our report was nearly ready for the press, Dr. Ferrier also suggested that he should join us and

that a joint report be issued. This we declined, preferring to take the responsibility for our own work only, while at the same time pointing out to Dr. Ferrier that all the usual channels of publication open to us were open to him and that if he had any facts to make known to the public, he should at once do so over his own signature. He, however, did not see fit to do this. All this took place, it will be noted, several months before Dr. Ferrier received permission to say anything, since at the meeting of the Canadian Mining Institute in Ottawa, on March 1st, 1916, he stated that he had only succeeded in obtaining this permission on the previous day.

"Discovery" is only discovery when it is recorded. In his previous knowledge of the existence of these deposits Dr. Ferrier resembled the Creator of the Universe whose knowledge even antedated that of Dr. Ferrier, but the knowledge in both cases was equally valueless to the community, for neither revealed the secret. It is, furthermore, rather difficult to understand why Dr. Ferrier seemed so anxious to grasp at some shred of credit for a discovery which he asserted was of no value.

And so this heroic and ideal figure of the Mining Engineer, clothed with knowledge and girded about with silence, like some other glorious conceptions, upon examination "fades into the light of common day," while the more prosaic geologist, working in the interest of the public, and stating plainly what he had found so soon as he had found it, obtained the recognition due to his work. Yours, etc.

Frank D. Adams.

July 17, 1917.

#### Concerning the Proposed Information Bureau.

To the Editor of The Canadian Mining Journal:

Sir,—In your editorial "Development of Resources," in your issue of July 15th, you struck a true note when you wrote: "The success of the Bureau insofar as Canada is concerned will not depend so much on the initiative of those in London as on the ability of Canadians to keep the Bureau informed on Canada." You might have said with advantage, "willingness and ability." Still, without continual reminders a bureau from three to six thousand miles away is apt to be forgotten and, consequently, co-operation cease.

During the last two years it has fallen to my lot to see that the mineral section of Canadian exhibit at the Panama-Pacific, and Panama-California, International Expositions was kept as much as possible up-to-date from both a mineral and metallurgical standpoint. To do this while away from the country, one has had to rely on the technical press of both Canada and the United States and on the daily press of the mining sections of Canada. When a new mineral discovery or a new metallurgical process was reported in the press, if the parties making the discovery were known to be trustworthy they were written to and asked for such information as they were prepared to divulge and for samples that might prove of interest for the exhibit.

If, on the other hand, the discoverers were unknown, the Bureau of Mines of the province in which the discovery was made, or the Federal Department of Mines, was asked to corroborate the report and if possible to obtain samples. In this way, of course, it should have been possible to keep our department absolutely up-to-date with regard to both mineral discoveries and metal-

lurgical developments. I am pleased to be able to say that in the vast majority of cases we received the hearty co-operation of miners and metallurgists and always that of the heads of the departments, both provincial and federal, to whom I applied; but in a few cases, and generally from quarters least expected, my applications were turned down.

Though horribly annoying at the time, this produced many amusing situations. One of the first things a visitor is prone to seek at an international fair is something from his own part of the country; it matters not whether it be a turnip, a piece of ore or a shell. He is a very sore person and disposed to relieve his mind in no measured language if he finds his section has been neglected. I encountered several such persons during the two fairs; but fortunately, to my relief and their chagrin, I was generally able to take them to my office and show them letters, that had been denied or ignored, requesting for the exhibit the very things that they found wanting. On two such occasions there must have been trouble when the visitors returned to Canada, for immediately after their return we received by express excellent representative exhibits from mine managers who had previously denied our applications. The visitors happened to be large shareholders in the mines.

So, then, as you point out, co-operation and co-ordination of Canadian owners and operators with their representative in the Bureau at London is essential to the success of the enterprise; but not a little factor in that success will depend on the representatives in London, who will have to be ever watchful of Canadian developments reported in the press and often will have to exercise fine judgment and make diligent inquiry to winnow the wheat from the chaff. Yours, etc.,

F. H. Mason.

San Diego, Calif., July 30th, 1917.

#### MINERAL SURVEY AND DEVELOPMENT ACT OF BRITISH COLUMBIA.

The "Mineral Survey and Development Act," finally passed by the Legislative Assembly of British Columbia on May 3rd last, is "An act to make provision for a mineral survey of the Province of British Columbia and for the development of the mineral resources of the said Province, including provisions in aid of prospectors and miners and for the protection of wage-earners and investors."

Part I. of this act provides for a "Mineral Survey of the Province," for all purposes relating to which the Province is divided into six "Mineral Survey Districts," and for the appointment of a resident engineer for each district, each such appointee to be a duly qualified mining engineer who shall be a graduate of a recognized mining school or college, or member of some recognized society of engineers." (since the act was passed) are as follows:

The several districts and the Engineers (appointed)

(1) The Northwestern District, comprising Atlin, Stikine, Liard, Skeena, Portland Canal, Bella Coola, and Queen Charlotte mining divisions. Permanent survey station and office at Prince Rupert. Resident engineer, Mr. G. A. Clothier.

(2) The Northeastern District, comprising Omineca, Peace River, Cariboo, and Quesnel mining divisions. Office at Hazelton. Resident engineer, Mr. J. D. Galloway.

(3) The Central District, comprising Clinton, Lillooet, Kamloops, Ashcroft, Nicola, Vernon, and Yale

mining divisions. Office at Kamloops. Resident engineer, Mr. R. W. Thomson.

(4) The Southern District, comprising Similkameen, Greenwood, Grand Forks, and Osoyoos mining divisions. Office at Grand Forks. Resident engineer, Mr. P. B. Freeland.

(5) The Eastern District, comprising Golden, Windermere, Fort Steele, Ainsworth, Slocan, Slocan City, Trout Lake, Nelson, Arrow Lake, Revelstoke, Lardeau, and Trail Creek mining divisions. Office at Revelstoke. Resident engineer, Mr. A. G. Langley.

(6) The Western District, comprising Nanaimo, Alberni, Clayoquot, Quatsino, Victoria, Vancouver, and New Westminster mining divisions. Office at Nanaimo. Resident engineer, Mr. W. M. Brewer.

The prescribed duties of each engineer are as under:

He shall (a) Undertake and carry on continuously a mineral survey of the district for which he is appointed:

(b) Keep complete and comprehensive records and plans of such survey as the same progresses, in prescribed form.

(c) Keep complete official records of his office and official business, as prescribed.

(d) Make all such reports to the Minister of Mines as from time to time prescribed.

(e) and (f) Perform the duties imposed upon a resident engineer, as provided for by the act.

In addition, under Part II. of the act:

"Each resident engineer shall, so far as practicable, in and throughout his Mineral Survey District assist miners and prospectors in the manner following:

"(a) By giving information as to mineral indications and as to ground open for location as mineral claims or placer mines as a result of knowledge gained during the carrying-out of the mineral survey of his district;

"(b) By examining samples and applying such tests as may be possible on the ground or in his office and advising as to the nature of any mineral and as to the best available methods of analysis, sampling, assay, and test;

"(c) By forwarding samples to the Minister of Mines for further examination and tests whenever in his opinion such course is necessary or expedient;

"(d) By reporting to the Minister of Mines the location and approximate cost of such roads, trails, and bridges as in his opinion are reasonably necessary in order to render possible the development of any mineral resources; and

"(3) Generally, by giving such advice, information, and directions as may be of assistance to miners and prospectors within his district."

The foregoing are the chief provisions relating to resident engineers and their duties; other parts of the act make provisions for other objects in view in enacting this legislation.

#### ACTIVITY AT EAST BROUGHTON.

The old Ling asbestos mine at East Broughton is being reopened. The mill has been remodelled and shipments commenced.

#### ALBERTA COAL MINES.

Operations have been resumed at all coal mines in Alberta except the Jasper Park Collieries.

### THE EXPLOSION IN No. 12 COLLIERY OF THE DOMINION COAL COMPANY.

By F. W. Gray.

An explosion occurred in No. 12 colliery of the Dominion Coal Company at New Waterford about 7.30 a.m. on the 25th of July, which resulted in the death of 62 of the men in the mine, and the death of three members of the rescue parties. One man was rescued alive 36 hours after the explosion took place.

No. 12 colliery is on the Victoria seam, and the territory tributary to the workings is largely submarine. The deeps are down from the mouth of the slope approximately 3,500 feet, about 1,500 feet past the shore line. The method of extraction is pillar and room. The seam is from six to seven feet in height, and has sufficient inclination to allow the coal from the working rooms to be dropped down to the haulage levels by self-acting inclines, or "balances."

The mine is damp and free from dust, and could not be considered as a gassy mine.

On the west side of the mine the levels are longer than on the east side. The full extent of the levels on the west side is over 4,000 feet. Mechanical haulage is used along the main levels. The explosion area was confined entirely to the west side, and affected only No. 6 and No. 7 levels and the workings in between. Men were killed by gas in No. 4 level; but the evidences of violence and destruction were confined to Nos. 6 and 7 levels, and in those levels the area of violence was very restricted and ended quite abruptly.

The victims of the explosion died from monoxide poisoning, from burns, and from violence, according to the place where death took place; but in every case death must have taken place instantly, or within a very short period of time. The ventilation of the main haulage deep and the running of the haulage trips was not affected by the explosion, and in the lower levels, Nos. 8 and 9, the men were not aware that an explosion had taken place until they received warning. The outstanding features of the explosion are its violence in a restricted area, and the quickness with which the normal ventilation of the mine was restored. The mine was clear of noxious vapors by the evening of the day of the explosion, and all the bodies were recovered at the close of the second day. The work of rescue was very quickly undertaken. Unfortunately three of the rescuers were overpowered by monoxide gas, and although they received every possible medical attention, two of these brave men died after reaching the surface.

An inquest on the victims is proceeding at the time of writing, and an investigation is also proceeding under the chairmanship of the Inspector of Mines. The investigating committee consists of the Inspector of Mines and one of the Provincial Deputy Inspectors, Mr. T. J. Brown, the general superintendent of the Nova Scotia Steel & Coal Co., and Mr. G. B. Burchell, manager of the Bras d'Or Coal Co., Mr. A. J. Tonge, the general superintendent of the Dominion Coal Company, and Mr. Alex. MacDonald, superintendent of No. 3 district of the Dominion Coal Company, and five representatives of the Amalgamated Mine Workers of Nova Scotia.

When the investigating committee makes its report it is expected this will be made public and that it will throw light on the origin of the explosion. The characteristics of the explosion are clearly defined, and it is hoped the work of the committee will make it possible to assign a definite cause for the explosion, and possibly to enable precautions against a repetition. Until

the report is issued it would be premature to comment further, except that every praise is due to the officials and workmen of the company for the prompt and efficient work of restoring the normal conditions of the mine ventilation, and for the recovery of the injured and killed so rapidly. The work of rescue and recovery was carried on under conditions of great danger from falling roof and timbers, and, in the first stages, from the afterdamp of the explosion, but the best traditions of miners were fully maintained.

The victims of the explosion numbered 30 native Nova Scotians, 22 men from Newfoundland, and a number of Russians, Austrians and Germans.

The company has as yet made no statement, except to express its thanks for the help of its workmen and officials and that received from outside. The company says "Help was given in the most sympathetic and spontaneous fashion not only by the employees of the company and their families, but by the general public, and by the doctors, clergymen and nurses, who came from every direction in a very short time.

"When all gave help to the best of their ability it would be invidious to attempt to name those who so willingly volunteered their services. The company will endeavor, so far as that may be found possible, to convey its thanks by personal communication, but it will not be possible to avoid missing in this manner some of those who came forward to assist, and the company has asked the wider publicity of the newspapers in its grateful acknowledgment of the practical help given by its own employees and the general public.

"The management of the company further wishes to record its thankful observation of the widespread community of sympathy evoked by the lamentable disaster at New Waterford, as shown by the letters and telegrams and offers of assistance that have arrived constantly since the morning of the explosion."

The No. 12 explosion has the melancholy distinction of ranking second in the list of Nova Scotian mine explosions, so far as regards the loss of life. The Springhill explosion in 1891 caused the death of 125 men, and that of the Drummond Colliery in 1873 numbered 55 victims. The Dominion Coal Company has had but one disaster of this kind previously, namely, the slight explosion at Caledonia Colliery in 1894, following a mine fire, when 11 men were killed by monoxide poisoning.

The dependents of the men who lost their lives will be adequately provided for by the payments prescribed by the Nova Scotia Workmen's Compensation Act. The number of married men in the list was proportionately unusually small. The assessment made by the Compensation Board on the coal mining section for the first year of the operation of the Act was 3½ per cent. of the payroll, which in itself will provide on the payroll of the Dominion Coal Company alone more than sufficient to meet the capitalized liability that will result from the dependency claims arising out of the explosion.

The application of the workmen of the Dominion Coal Company for permission to contract out of the provisions of the Act has given rise to a great deal of misapprehension, and it has been suggested that it is fortunate a contracting-out certificate should not have been granted before this explosion occurred. This impression needs to be corrected. The granting of a certificate to contract-out would in this case merely have meant that the payments prescribed by the Act would have been disbursed through the medium of the

local Benefit Society instead of through the Compensation Board at Halifax. Nothing can lessen in any way the benefits provided by the Act, and the only question involved in the application of the workmen of the company for permission to contract out was whether the administration of the provisions of the Act should be directed from Glace Bay or Halifax. It is most unjust to suggest that the granting of a contracting-out certificate would have injured the claims of the dependents of men who have lost their lives in this disaster.

Any financial assistance required by the families of the deceased workmen, pending the adjustment of the compensation payments, will be given by the company, which has already seen to this.

#### NOVA SCOTIA STEEL.

Boston, Aug. 6.—On the recent offer of 50,000 shares of Nova Scotia Steel it is understood that shareholders took only about 10 per cent. This means that 45,000 shares of this company's ordinary stock have come into possession of a group of underwriters almost wholly living in the United States. Many of these underwriters have been actively interested in the steel industry and are among its foremost leaders.

With the former holdings of Hayden, Stone & Co.'s clientele this means the transfer of a decided majority of the stock ownership of this great property to the United States. There is in this transfer of ownership nothing whatever in any possible way inimical to British or Canadian interests and we believe that fact is thoroughly understood in British and Canadian governmental circles.

This transfer, however, fits in perfectly with the plan of Hayden, Stone & Co., and many of their substantial clients to exercise the dominant interest in the development and expansion of this steel property.

For more than a year there has been a search in progress to get the right man to take charge of this development. It is believed that this man has been found in Frank H. Crockard, who has within a few weeks been chosen president and general manager of the Nova Scotia Steel Co. Up to a few weeks ago Mr. Crockard was vice-president and in charge of operations and construction of the Tennessee Coal and Iron plants of the United States Steel Corporation at Birmingham, Alabama.

Mr. Crockard comes to the Nova Scotia Steel & Coal Co. with about as enviable a reputation for success and character as any man in the entire industry.

It is believed that only a very short time will elapse before information will become public of a more or less definite character as to the scope of plans of the new ownership for the development of this property. At present the owners of this property are well represented on the board of directors by N. Bruce MacKelvie of Hayden, Stone & Co.

Another large coal development company has been organized by Calgary business men for the purpose of mining that product in the bituminous fields west of Edmonton, Alberta. The company is capitalized at \$750,000 and will have headquarters in Calgary. The incorporators, as announced in a despatch from Ottawa, are three young men of the legal firm of Loughheed, Bennett & McLaws. They are: C. W. Coole, O. H. Might and F. G. Beaumont.

It is understood that others of the Loughheed & Bennett firm are financially interested in the corporation.

#### KIRKLAND LAKE GOLD MINING COMPANY, LTD.

In a report to the shareholders of Kirkland Lake Gold Mining Company, Limited, President F. L. Culver says:

Six years ago, gold was first discovered in the Kirkland Lake district. This district is situated seventy miles north of Cobalt about four miles from the Temiskaming and Northern Ontario Railway, which is owned and operated by the Ontario Government. Recently an appropriation was made by the Government to extend a branch line into the camp.

As soon as the discovery of gold became known the usual rush of prospectors into the district took place. Claims were staked, companies organized to take over the claims, and development work started. However, only one company, the Tough-Oakes, carried on work consistently until they were enabled to make their ground become a producer. Other companies worked intermittently as funds were available, and the next property to become a producer in the camp was the Teck-Hughes. Both of these companies now have well established plants and mills, while the Tough-Oakes has entered the dividend-paying class. This district is now very active, with a great many properties in the development stage. We understand that the Lake Shore has let the contract for the erection of a mill.

A syndicate staked a number of claims consisting of 362 acres and afterwards organized a company known as the Kirkland Lake Gold Mines Limited, deeding their claims to the company for which they received stock in the company. All assessment work required by the Government was done by them and patents obtained. A small prospecting plant, consisting of two small boilers, a three-drill compressor and a small hoist, was erected on one of the claims known as the McKane Lot, and a shaft sunk to a depth of 68 feet. Finances then became at a low ebb, and it was found necessary to reorganize the company and increase the capitalization from one million to two million shares. The new company was known as the Kirkland Lake Gold Mining Company, Limited, capitalized at 2,000,000 shares (par value \$1.00 each) with 966,666 shares in the treasury, the remaining shares belonging to the original syndicate.

In October, 1915, negotiations were entered into by Kirkland Lake Gold Mining Company Limited and Beaver Consolidated Mines Limited, which latter company took an option on all of the shares of Kirkland Lake Gold Mining Company Limited, owned by the syndicate and some of its treasury shares. The property, plant, etc., were turned over to the Beaver management, who immediately dewatered the shaft for an examination and found that it had been sunk to a depth of 68 feet on a vein where free gold was plainly discernible. A great deal of preliminary work had necessarily to be done in anticipation of actual mining operations which were commenced by the Beaver company about January 1st, 1916.

The shaft has been continued until it has reached its present depth of 600 feet, stations being cut at the 100, 200, 300, 400, 500 and 600-ft. levels. The following is a description of development which has been accomplished on the different levels.

100-ft. level—The vein in the shaft was followed for a distance of 166 feet with very encouraging results. A large tonnage of ore has been put in sight on this level.

200-ft. level—Crosscutting a short distance to the south of the shaft and drifting from where it was supposed the vein would come in, led to the assumption that the vein had faulted, consequently operations were temporarily suspended on this level and the shaft continued to the 300-ft. level.

300-ft. level—When this level was reached and the station completed, a crosscut was commenced, and 19 feet from the station, a vein about five feet wide was encountered, channel assays from which average \$11.00 to the ton. Continuing the crosscut, ten feet of porphyry was cut, assays from which average \$7.00 to the ton, when another vein, running parallel with the first vein, was encountered. This second vein is 12 feet wide, channel assays from which give an average of \$12.80 to the ton. Visible gold is plainly discernible through the vein at this point.

400-ft. level—The station was cut at this level, and crosscutting to the south as on the levels above, the main vein was encountered, which, at point of intersection, proved to be eleven feet in width. Two drifts were commenced on the foot wall or north wall of the mineralized zone, one to the east and one to the west. No. 2 or east drift has been driven on for a distance of 37 feet and is in high-grade mill ore all the way, but in No. 1 or west drift, the values pinched out after about 60 feet. In order to ascertain the width of the orebody a crosscut was driven south from this point and a vein seven feet wide was encountered, which, where cut, gave values of \$47.00 to the ton. This vein has been drifted on for a distance of 295 feet, of which distance 220 feet is in ore. The result of the work on this level is particularly encouraging and a large tonnage of ore has been blocked out.

500-ft. level—Work on the upper levels proved that the vein was gradually dipping to the south; it was, therefore, necessary to drive a distance of 70 feet from the station on this level before encountering the orebody which at point of intersection is 27 feet wide. On the foot wall of the ore deposit a quartz vein five feet wide has been followed for a distance of 46 feet. The quartz is narrowing down, but the ore is of a better grade than that first encountered. On the hanging wall, drifts have been driven both east and west. No. 1 drift is in 90 feet and is improving with each round. No. 2 drift is exceptionally rich with free gold throughout its length of 30 feet.

600-ft. level—As on the 400 and 500-ft. levels, there are two heavy bodies of quartz, one on the hanging wall and one on the foot wall. Drifting to the extent of 31.5 and 27.5 feet respectively on these orebodies has been done and strong veins are showing in each heading. Besides the two main bodies of quartz, the porphyry is full of quartz stringers and isolated masses of quartz, similar to the condition which obtains on the levels above. The orebody was first cut 44 feet south of the shaft and is 42 feet wide.

Summary—Work on the Kirkland Lake property has been in progress for about one year and six months, during which time the following development work has been accomplished: Drifting, 1,534.5 feet; crosscutting, 796.0 feet; station cutting, 215.5 feet; sinking, 526.0 feet; total, 3,072.0 feet, which with the 68 feet of sinking previously accomplished, gives a grand total to date of 3,140 feet. It is the intention to continue the shaft to a depth of 700 feet as quickly as possible.

No stoping has been done on the property so far, all ore which has been extracted being taken from development work in driving on the veins. We estimate

to have on the surface ready for milling about 6,000 tons of ten-dollar ore and a careful and conservative estimate of the value of the ore in sight underground is placed at \$420,180.

As the present shaft is near the eastern boundary of the property, development has been towards the western or central part of the property, where it will be necessary to sink a permanent working shaft of sufficient capacity to take care of the large tonnage of ore which is now in sight. Near the new or central shaft, a mill and power plant will be erected. The mill will have an initial daily capacity of 150 tons and will be so constructed that another unit can be added at any time at a minimum cost.

The Northern Ontario Light and Power Company has recently constructed a power line from Cobalt to Kirkland Lake, a distance of about 70 miles, and there is an abundance of electrical power available for the operation of a plant.

There are no debts whatever against the company, and money is being provided for development purposes from month to month by Beaver Consolidated Mines Limited (they taking treasury shares for same).

#### Balance Sheet.

Financial statement for period ending 31st May, 1917:

Assets.	
Cash in bank .....	\$ 8,212
Accounts receivable .....	45
Supplies on hand .....	12,536
Unexpired insurance .....	348
	\$ 21,142
Mining claims .....	\$1,000,000
Buildings, plant, machinery and equipment .....	34,904
Development .....	129,041
	\$1,185,087
Liabilities.	
To the public—	
Wages accrued .....	\$2,098
Accounts payable .....	5,637
	7,736
	1,177,351
To the shareholders—	
Capital authorized .....	\$2,000,000
Less unissued .....	169,474
	1,830,526
Discount on shares issued .....	\$ 653,174

#### ASBESTOS MINES BUSY.

Asbestos mining companies in Quebec are increasing operations to meet the demand. High prices are now offered and properties that have been idle will soon be working again. The regular producers are materially increasing their output.

#### ANTIMONY.

The West Gore antimony mine is increasing output as the result of the opening up of a new oreshoot.

#### MOLYBDENITE.

Prospecting for molybdenite in the vicinity of Quyon, Quebec, is being carried on by several parties. Numerous locations have been staked. The Wood mine, now controlled by C. A. Foster, is being diamond drilled.

Operations in the Lake Keewagama district have been resumed by St. Maurice Mines Ltd.

**PERSONAL.**

Mr. W. W. Mein is at The Pas, Manitoba.

Mr. B. W. Knowles succeeds Mr. W. Sampson as superintendent of the Nickel Plate mine, Hedley, B.C.

Mr. A. L. Meuche is expected in Toronto this week. He will visit mines in Northern Ontario.

Mr. C. A. Foster, who recently acquired control of the Wood Molybdenite mine at Quyon, Quebec, is at Ottawa.

Mr. A. M. Hotchkin, formerly of the Tough-Oakes staff, is now at Quyon, Quebec.

Mr. P. Crane, of Greenwood, B.C., superintendent of the Canada Copper Corporation's Mother Lode mine, has been on a visit to Seattle, Washington.

Mr. Thos. French, of Nelson, B.C., in charge of the electrolytic zinc plant the French Complex Ore Reduction Co. has for some time past been installing at that place, was in Spokane, Washington, last month.

Mr. Jay P. Graves has returned to Spokane from a recent visit to the Granby Consolidated Co.'s mines and smelting works near Anyox, Observatory Inlet, B.C. For many years Mr. Graves was vice-president and general manager of the Granby Co. until health considerations necessitated his retirement from that responsible position.

Mr. Lashley W. Hope, for the last year superintendent of the Yankee Girl mine near Ymir, Nelson mining division of British Columbia, has returned to Nevada.

Mr. Thos. Kiddie, after spending two or three weeks in Vancouver and on Vancouver Island, has gone back to Southern California. During his brief stay on Vancouver Island he visited the smeltery at Ladysmith, which works he designed and erected for the Tye Copper Co., and for some years was in charge as superintendent.

Mr. Oscar Lachmund, general manager for the Canada Copper Corporation, operating copper mines and smelting works in the Boundary district of British Columbia, and developing a large group of copper claims in Similkameen district of that province, was in San Francisco lately.

Mr. Clifford Smith has returned to South Porcupine to install a power plant and lay out further development on the Ankerite property, for the Coniagas Mines.

Mr. F. S. Norcross, Jun., of Copper Mountain, near Princeton, B.C., superintendent of mines for the Canada Copper Corporation, recently made a business visit to Seattle, Washington.

Mr. R. K. Neill, of Spokane, formerly prominently identified with the development of the Hudson Bay zinc mine, in the southern part of Nelson mining division of British Columbia, is now engaged in developing a mining property in Portland Canal mining division of that province.

Mr. Dale L. Pitt, field engineer for the Tacoma Smelting Company, which smelts the greater part of the custom ore from the northern Pacific Coast districts, has been giving much attention lately to productive mining districts in British Columbia.

Mr. Floyd W. Parsons, of New York, editor of Coal Age, has returned to that city from a trip to the Northwest, in the course of which he visited British Columbia.

Mr. F. H. Skeels, of Nelson, B.C., has resigned as superintendent for the Kootenay Gold Exploration Co., operating the Granite-Poorman group of mines and 20-stamp mill near Nelson, to take charge of mining in the Coeur d'Alene district of Idaho.

Mr. Thos. R. Stockett, for a number of years and until quite recently manager for the Western Fuel Company, of San Francisco, owning large coal mines in Nanaimo district of Vancouver Island, has been examining coal-mining properties in Nicola Valley district, B.C.

Mr. Bruce White, of Sandon, Slocan, left British Columbia last month on a visit to Toronto.

Mr. W. R. Wilson, of Fernie, B.C., general manager for the Crow's Nest Pass Coal Co., was in the neighborhood of Stewart, Portland Canal mining division of that province, about the end of July, looking into some metalliferous mining interests there.

Mr. Clyde A. Heller, of Philadelphia, president, and Mr. F. Bradshaw, of Tonopah, Nevada, general manager of the Tonopah-Belmont Development Co., late last month were in Vancouver, B.C., on their way to Surf Inlet, Princess Royal Island, to investigate progress being made there by the Belmont-Canadian Mines, Ltd., in developing a gold mine and putting in a hydro-electric power plant and a mill.

Mr. John V. Rittenhouse has returned from New York city to Omineca mining division of British Columbia, in which he is interested in iron and other mineral claims.

**MAPPING CAIRO AND POWELL TOWNSHIPS.**

Mr. A. G. Burrows of the Ontario Bureau of Mines is making a preliminary examination of the townships of Alma, Baden, Cairo and Powell, a new gold area in Northern Ontario. Mr. H. C. Cooke of the Geological Survey of Canada is working to the west of the area.

**THE IRON ORES OF LAKE SUPERIOR, by Crowell and Murray, Penton Press, Cleveland.**

This is the third edition of an excellent handbook on the iron ores and iron mines of the Lake Superior district. The matter has been brought up-to-date and new features added.

The chapter headings are: Early history, geology, mineralogy, production, dock equipment, classification of ores, valuation, beneficiation, methods of analysis, geology of Wakefield area, development of Cuyuna range, description of mines and ores with maps, index to mines and ores.

**THE MINING MANUAL AND MINING YEAR BOOK, 1917, by Walter R. Skinner. Published by W. R. Skinner and "The Financial Times," London. Price 20s net.**

This well known publication is consulted in all parts of the world for information on mines. The new edition is an excellent compilation of up-to-date matter. While full particulars are supplied of 1710 companies, the supplementary index, with its references to earlier volumes, covers no less than 2,286 additional companies. Alphabetical lists of mining directors, secretaries, engineers, and mine managers, with their addresses and the names of the companies with which they are connected, are as usual appended to the book. These lists are supplemented by an up-to-date dictionary of mining terms, which is yearly revised in order to include the fresh puzzles set mining operators by the extension of enterprise to new fields, where unfamiliar currency, weights, etc., are employed. For instance, the explanation of the terms used in the reports of Russian mining enterprises will be found particularly helpful.

## SPECIAL CORRESPONDENCE

### NORTHERN ONTARIO.

#### McIntyre.

At the present rate of production, August figures for the McIntyre-Porcupine Mining Company will set a new high record for this property. During the fifteen months ended June 30th, and which will be covered in the annual statement of the McIntyre-Porcupine to be issued in the near future, it will be shown that the company treated approximately 195,837 tons of ore from which \$1,885,943 in bullion was recovered. Of this amount \$1,449,231 was recovered during the twelve months period ending March 31st, and the balance, \$436,712, in the extra three months, April, May and June.

A remarkably good recovery has been obtained and the costs of milling are very low. The recovery averaged 95 per cent., while the milling costs were less than 90 cents per ton. Mining costs were fairly high, owing to the large amount of development work done. The average recovery from the ore treated was about \$10 per ton, resulting in a profit of approximately \$4.25 per ton, netting the company a total profit for the fifteen months' period of around \$822,307. During the year 1915, McIntyre produced only \$101,955 and during 1917 the production should be nearly two million dollars. Within another year it is expected that the milling capacity of the property will be almost doubled, which will allow for still greater expansion.

Ore reserves have been added to at a very rapid rate, owing to the very satisfactory results obtaining at the 1,000-ft. level, where a large orebody carrying very high grade milling ore has been developed. This orebody extends from the original McIntyre property, across the McIntyre extension and at the present time the face of the drift is in the Jupiter portion of the McIntyre territory, where the face of the drift is about 55 feet in width. Since entering the Jupiter the vein has split into two sections; one of these is about 12 feet in width and carried ore which assays \$200 to the ton across this width, the remainder of the vein is averaging around the usual run of the vein which varies from \$10 to \$20 to the ton. Owing to the inefficiency of the labor available for mining at the present time the McIntyre, in common with all the producing mines of the North, has been seriously handicapped. However, in point of numbers the McIntyre has been fortunate in regard to its supply of labor, which in a great measure makes possible the wonderful results of the past fifteen months' work.

#### Vipond.

At the 600-ft. level of the Porcupine V. N. T. property what appears to be one of the best ore shoots so far encountered at the mine is being opened up. Where encountered on the North Thompson portion of the property the vein was around 20 feet in width and carried values of \$15 to the ton; the drift has since been driven over 60 feet and the vein is maintaining both its width and values. Some of the ore being obtained at this working is exceedingly spectacular, which leads to the belief that it will ultimately be possible to maintain much higher mill heads. The present mill is treating 100 tons per day, and the heads are ranging around \$10 to the ton. All mill feed at the present time is being drawn from the mine and the large tonnage on the dumps is being kept in reserve. On the return to more normal conditions in the supply of labor, the company propose the erection of a 400-ton mill.

The Vipond consists of about 160 acres and lies in a portion of the camp where it should benefit considerably by successful developments along the south side of the Hollinger Consolidated, and also by favorable results in the development of the Porcupine Crown. Recent developments in drifting on the main vein from the 600-ft. level of the North Thompson have disclosed the probability of this being an entirely different vein to that which is in evidence at the same level of the old Vipond property, with the result that this vein is expected to pass some considerable distance to the north of the old Vipond working. It was at first supposed that the drift on the vein from both these workings would connect, but it is now believed that they are two distinct orebodies. It might also be mentioned that diamond drilling has proven the existence of two other parallel veins further north, and it would now appear that instead of one main vein on the property there are four veins at least on the Porcupine V. N. T.

#### Hollinger Consolidated.

Development work on the Hollinger Consolidated is being carried on at a maximum these days, and production is also on the upward trend. Approximately one mile of underground work is being done per month, and development work is being pushed forward at one hundred different faces. Every level from the surface to the 1,250-ft. is being opened up and about 40 machines are engaged on the work, with the result that it is expected the ore reserves at the end of the current year will show a considerable increase. Heretofore reports on ore reserves at this mine did not include anything below the 900-ft. level, and the decision to resume developments at the 1,250-ft. depth is of more than ordinary interest. Current production returns are said to be a good deal higher than for many weeks past, and it is altogether probable that from this time forward a steady improvement will be recorded at the big mine.

#### Schumacher.

The cement foundations are now in place and the framework of the building is under construction to house the 400-ton mill which it is expected will be in operation at the Schumacher mine by September. The machinery for this new mill was ordered some time ago and is now on the property ready for installation. It is anticipated that on the resumption of operations at the mill it will not be possible to run at full capacity, but that it will be possible to treat upwards of 300 tons per day, owing to the difficulty in securing labor to keep up the ore supply. A good deal of repairing has been done at the mine since the curtailing of active mining operations some weeks ago, which will greatly facilitate the handling of ore underground. A new power house has been built and two new transformers have already been installed. The building has been so constructed as to allow of the installation of additional transformers as required, room for six being arranged for with an aggregate capacity of 1,200 h.p. It is expected that with the higher grade of ore encountered in the south orebody at the Schumacher it will be possible to increase the mill heads to about \$7 per ton. Up till the present time the value of the ore treated has averaged around \$6 to the ton. The ratio of costs as compared with the present milling system will be greatly reduced and it is expected that the treatment of the 300 tons of ore per day in the new mill will just about double the present milling costs, with the result that with the increased value of the ore it should be easy for the company to increase



its profit to \$30,000 a month or \$360,000 annually, when the new mill is in operation.

#### Plenaureum.

Diamond drilling is being carried on on the Plenaureum property at Porcupine, which is under option to the McIntyre mines at the present time. It is intended to explore the ground at the 1,000-ft. and deeper levels to determine if the veins of the Jupiter property extend into the Plenaureum. Diamond drilling is also being done on the Jupiter property by the same company.

#### Porcupine Crown.

Arrangements are being made for the exploration of the Porcupine Crown mine at deeper levels and at the present time a winze is being sunk from the 900-ft. level to the 1,000-ft. and will be continued to the 1,100-ft., at which levels considerable development work will be undertaken. Some of the richest ore ever taken from this mine came from the lower workings, and with this in view the continuation of the work to deeper levels leaves reason for much optimism regarding the future of Porcupine Crown. The Porcupine Crown has paid a total of \$780,000 in dividends and has paid a three per cent. quarterly dividend since the beginning of the year 1914. At the beginning of the present year the ore reserves at the mine were estimated at a little over one million dollars, which would keep the mill in operation for the next two years. With developments at present under way it is considered very probable that these ore reserves will show a considerable increase. Notwithstanding the labor shortage throughout the district the Porcupine Crown is in a physical condition quite on a par with any other time in its history.

#### Ontario Western.

A new company, known as the Ontario Western Mining Company has been organized to take over five claims in the Boston Creek mining district. Two of these claims are located in the township of McElroy and adjoin the group recently optioned to interests closely identified with the Buffalo Mining Company of Cobalt, while three of the company's claims are located in Boston township close to the Charette group, on which considerable free gold has been discovered. The company has a capitalization of \$25,000, divided into 250 shares of \$100 each. At the present time development work consists of trenching and stripping during the course of which a number of promising veins have been uncovered. Plans for more extensive operations are being arranged.

#### Croesus.

The work of de-watering the Croesus mine in Munro township is proceeding and it is expected that the difficulty from the flooding of the lower workings through encountering a water seam will be definitely dealt with in the course of the next week. A cement bulk-head will perhaps be installed to shut out the water. The mill is being kept running on ore from the dump.

#### Larder Lake.

A telephone line has been completed from Dane to Larder Lake, which connects this mining camp with the larger business centres of the north country, and often eliminates the hitherto necessary stage journey of twenty miles which separated that camp from the railway. The Larder Lake Goldfields mine is getting operations under way and it would appear a promising future is opening out for this district.

#### Bourke's.

A number of prospects in the vicinity of Bourke's Siding are standing up well under development. A company has been formed to work the property known as the Anderson farm, which was under litigation recently, and developments are understood to be very favorable here. The nearest actual mining development of any importance to Bourke's is on the Murray-Mogridge property at Wolfe Lake, which is about three miles south-east. Present indications, however, point to considerable activity in the district in the near future.

#### Kirkland Lake.

The crosscut to tap the vein of the Kirkland Lake gold mine at Kirkland Lake is well under way. There are only four deeper gold mines in the north country than this one, which has the distinction of being the deepest working in the Kirkland Lake camp. The four deeper gold mine workings in the north country are to be found at the Hollinger, McIntyre, Porcupine Crown and Dome Mines. In the Kirkland Lake the Tough-Oakes comes second and the Teck-Hughes third.

#### White Reserve.

Encouraging results are being encountered at the 140-ft. level of the White Reserve mine in the Maple Mountain district. A number of veins have been opened up in which fair values occur. Some high grade ore was recently found in a vein about two inches wide, and generally speaking, the lateral work which is being done is proving very satisfactory.

#### Elliott-Kirkland.

The trouble from the flow of water which was struck at the 165-ft. level of the Elliott-Kirkland property last month has been overcome and operations have again been resumed. The shaft will be continued to the 300-ft. level, where a crosscut will be run to encounter the vein which it is expected continues from the Kirkland Lake gold property into the Elliott-Kirkland, and determine its values at this depth. About 185 feet of crosscutting will be necessary.

#### Black Claims.

Operations will be resumed shortly on the Black claims at Kirkland Lake which lie close to, on the south of, the Tough-Oakes and Wright-Hargraves properties. A shaft has been sunk to a depth of over one hundred feet and promising results have been met with.

#### Lake Shore.

The new vein recently encountered at the 200-ft. level of the Lake Shore property at Kirkland Lake has faulted. As yet the nature of the fault has not been definitely determined. Some three hundred feet of drifting, two hundred feet of which had been in high grade mill ore, was accomplished before the fault occurred. Sinking of the shaft to the 400-ft. level is now being proceeded with and a crosscut will be run to the north from this depth to determine whether the vein continues beneath the conglomerate which at this point is about three hundred feet in depth.

#### Fisher.

The Fisher property at Kirkland Lake taken over a short time ago by Montreal interests is to be actively developed in the near future. A force of men are to commence the erection of camp buildings at an early date.

#### Gold Discovery in Rickard.

While cruising for pulpwood in the township of Rickard, two Swedes accidentally came across what appears to be an important outcropping of gold bearing

quartz. The scene of the new discovery which caused a small sized rush, is about twelve miles east from Iroquois Falls and about four miles south from the Abitibi River. The outcropping of rock is very limited, being less than one square mile in extent. A number of veins were discovered, one of which is said to be over twenty feet in width and to carry very high values. The property on which the original discovery was made has been optioned to Haileybury interests for a sum said to be well up in six figures and active development is to be commenced as soon as a working permit can be secured. A large number of veteran claims are situated in this district and there was a very small portion of the country that was available for staking. All has been staked.

#### Boston-Hollinger.

The Boston-Hollinger property at Boston Creek has changed hands and an aggressive plan of operations has been outlined which will be commenced at once. The purchasers, who have had considerable experience in mining in British Columbia, represent one of the largest manufacturing concerns in the province of Quebec. The intention of the new owners is to install an up-to-date mining plant and the initial operations will consist in sinking a shaft to the 200-ft. depth. A road is being cut from the railroad to the property, a distance of less than a mile. Manager Charles O'Connell of the Tough-Oakes examined the property for the purchasers. A substantial cash payment is understood to have been made, and the total purchase price is said to run well up into six figures. Owing to the richness of the surface showings on the property a great deal of interest is being taken in the developments.

#### Huronia.

It is learned from a reliable source that the Huronia mine in Gauthier township will be again re-opened. A short time ago the property changed hands, and it is probable that it will be extensively developed. The results of diamond drilling done by Timmins interests some two years ago determined the existence of more or less substantial orebodies on the property. The property lies about twelve miles east from the Tough-Oakes mine at Kirkland Lake.

#### Mining Corporation.

During the week ended July 30th, the Mining Corporation of Canada shipped out of the Cobalt camp over three hundred thousand ounces of silver, valued at nearly a quarter of a million dollars. Owing to the continued high quotation for silver a very aggressive policy is being followed at this property. The shipments for the week from this mine were made up as follows:

Bars.	Ounces.	Value.
191	199,934	\$167,070
101	100,816	82,228

Besides this amount of bullion three car-loads of ore were shipped which contained 195,722 pounds.

#### Nipissing.

In July the Nipissing Mining Company issued the following financial statement:

Cash in bank .....	\$1,662,200.05
Value of bullion and ore in transit and at smelter .....	184,508.13
Value of ore on hand and in process and bullion ready for shipment .....	733,195.00
<b>Total .....</b>	<b>\$2,579,903.18</b>

On August 21st a meeting of the shareholders of the Nipissing Mines Company will be held for the purpose of voting on a proposition made by Nipissing Mine Company, Ltd., an Ontario corporation, to purchase all the capital assets of this company. The object is to re-incorporate the company in Canada under the same charter and by-laws as nearly as practicable, and with the same officers and directors and with the same capitalization which is \$6,000,000 divided into 1,200,000 shares of the par value of \$5 each. The stockholders of the company will receive share for share in the new Nipissing Mines Company, Ltd., of Ontario, for their present holdings in the Nipissing Mines Company, the latter company which will thereupon be dissolved.

#### La Rose.

The half-yearly statement of the La Rose Mines recently issued shows the financial position of that company fairly strong but to be on a gradual decline. The net surplus is now \$640,180, as compared with a surplus brought forward from 1916 of \$727,169, and with \$926,644 from the year 1915. The following is a summary of La Rose finances.

Cash surplus .....	\$579,949.50
Ore in transit, etc.....	86,668.52
	<hr/>
	\$668,618.02
Less current liabilities..	28,437.08
	<hr/>
Net surplus .....	\$640,180.94

#### BRITISH COLUMBIA.

The resumption of work in the coal mines and at the coke ovens of the Crowsnest district of Southeast Kootenay and the neighboring coal mining region of Southwest Alberta, is having a beneficial effect on the mining industry of the Kootenay and Boundary districts of British Columbia, for with coke again obtainable for the smelting works at Trail, Grand Forks, and Greenwood, respectively, production of ore on a larger scale than has been practicable during the last three months, may be expected to be an early result. It is not to be expected that a return to the flourishing conditions that prevailed at the time labor troubles arrested progress several months ago will be immediate, for quite a number of men who were thrown out of employment at some of the metalliferous mines when it was found necessary to temporarily suspend taking out ore left the several districts affected by the stoppage of smelting operations when the coke supply gave out. Yet the fact that activity again prevails at the larger mines will induce many men to return, and eventually, it is believed, things will again be running in their regular course in the chief mining camps of the interior of the province.

The total of dividends already paid in 1917 by metalliferous mining companies operating in the province has exceeded \$2,000,000, as compared with \$2,800,946 for the whole of 1916, and 1,586,820 for 1915. The 1917 total includes the third quarterly dividend of the Granby Consolidated Co., payable at the beginning of August. The several amounts making up the total are approximately as under:

Consolidated Mining and Smelting Co.....	\$ 471,142
Granby Consolidated M. S. & P. Co.....	1,124,887
Hedley Gold Mining Co. ....	120,000
Le Roi No. 2, Ltd. ....	29,220
Rambler-Cariboo Mines, Ltd. ....	35,000
Standard Silver-Lead Mining Co. ....	200,000

Utica Mines, Ltd. .... 32,000

Approximate total to August, 1917.... \$2,010,249

#### East Kootenay.

Apart from the continued large output of lead-zinc ore from the Consolidated Co.'s Sullivan mine, there is little of importance to chronicle in connection with metalliferous mining in East Kootenay district. Some miners who have leased a part of the St. Eugene lead-silver mine near Moyie, in Fort Steele division, have made a carload shipment of ore to Trail, while the total shipped this year by the company is now nearly 900 tons. The Burton property, near Elko, west of Moyie, is expected to produce more ore later in the year, Alberta men having acquired it and, with Mr. J. L. Parker in charge, made preparations to work it. Little ore has been produced in recent weeks from mines in either Windermere or Golden division. It is expected those divisions will have made a better showing, as regards output, by the end of the autumn.

#### West Kootenay.

**Rossland and Trail.**—Production of ore on a large scale has not yet been resumed at mines in Rossland camp, the total quantity shipped to the Consolidated Co.'s smelting works at Trail having been 994 tons during the month of June and 308 tons in the three weeks ended July 21st. Of the June output, 827 tons was from the Consolidated Co.'s Centre Star group of mines and 167 tons from its Le Roi mine. The July production shown above was from the Centre Star group only. A few cars of ore have been shipped from the Josie group of the Le Roi No. 2, Ltd., to the smelting works at Ladysmith, Vancouver Island, but this is probably only a temporary arrangement pending receipt at Trail of sufficient coke to warrant the blowing in of the copper furnaces there.

On July 27 the Trail News stated that on or about August 1 one copper furnace would probably be in blast, perhaps more furnaces than one, as coke supplies were coming in with some regularity; also that the total of ore receipts for the week ended July 21, of only 2,544 tons, was about the smallest weekly total for the last two years, a car barge on Kootenay Lake having temporarily gone out of use and thus interfered with the transportation of ore en route from the Sullivan mine, East Kootenay.

Monthly totals of ore received at Trail during the first half of 1917 were as follows: In January 36,570 tons, February 40,967 tons, March 43,979 tons, April 24,909 tons, May 15,939 tons, June 17,129 tons; total for six months, 179,493 tons, which compares with 245,466 tons for the corresponding period of 1916. While the total for July may be smaller than that for June, it is expected that there will be a gradual increase thereafter until receipts shall again be comparatively large.

**Revelstoke.**—The Montgomery group of nine mineral claims, situated in the neighborhood of Downie creek, about 40 miles north of Revelstoke, in the Big Bend region of Revelstoke mining division, is reported to have been bonded to the Granby Consolidated M. S. and P. Co., one of whose mining engineers, Mr. M. E. Nelson, is to superintend development work about to be undertaken. It is stated that there are on the property big showings of copper-gold ore.

The ore receipts at Trail for the week ended July 21 included 29 tons from the Lanark mine, Illecillewaet, along the main line of the Canadian Pacific Railway east of Revelstoke. Another small lot, of 41 tons, was

received from the same mine early in May. It is of interest to recall that the first production of ore in quantity from a lode mine in British Columbia was stated "to have been made by the Selkirk Mining and Smelting Co., which in 1887 and 1888 shipped to a smeltery in San Francisco, California, 422 tons of sorted silver-lead ore from the Lanark mine, where a small crushing and sampling mill had previously been put in." One lot of 64 tons of ore shipped by the present operators of the mine shortly after they bonded it was officially averaged 34 per cent. lead and 33 oz. silver to the ton, while 32 tons averaged 29 per cent. lead and 26 oz. silver to the ton. Last year's shipments to Trail totalled 415 tons. An aerial tramway, 6,900 ft. in length, in two sections of 3,600 and 3,300 ft., respectively, was constructed late in the Autumn of 1915 from the railway up to the mine, the difference of elevation between terminals being about 2,600 ft. The mining recorder for Revelstoke division, in his official report for 1916, made public last month, gave the following information relative to the Lanark mine.

"The owners have been sinking shafts and drifting to prove the occurrence of enough ore for a plant they are erecting. The ore in the lower levels contains so much zinc that they find it necessary to make a concentration. They are erecting a modern mill of 75 tons a day capacity. They have about 15,000 tons of ore in sight, which is expected to average about 7 to 8 per cent. lead and 12 to 15 per cent. zinc."

As in many other instances of reopening of mines in Kootenay district long inactive, the enterprising men who are now working the Lanark are Spokane men, and they expect to be successful in this enterprise.

#### Boundary.

On Friday, July 20, the Gazette, published at Grand Forks, where is situated the big copper smeltery of the Granby Consolidated Mining, Smelting, and Power Company, printed the following statement: "Coke shipments from the Fernie (Crowsnest) ovens to the Granby Co.'s smelting works, did not come up to expectations, so resumption of operations has been somewhat delayed. It had been hoped to have blown in four furnaces today, but this has been postponed until Monday. Quite a number of men have been at work this week at the smeltery getting things in readiness for blowing in. At the company's mines at Phoenix, the full force of miners are now being put to work and two shipments of ore reached the smelting works this week. While there is likely to be a temporary shortage of labor at the mines, the Granby Co. has about 10,000 tons of ore at Phoenix ready for shipment. The Fernie and Michel ovens, which supply coke to the Granby Co.'s works, are turning out about 400 tons a day, approximately 50 per cent. of the normal output which is expected to be reached in about thirty days. Small shipments of coke from the ovens of the International Co., at Coleman, Alberta, which supply the smeltery at Greenwood, have been commenced, and it is expected they will be running at full capacity in thirty days.

#### General Notes.

In a published account of a meeting held in the Board of Trade Hall, Victoria, on July 30, at which addresses were delivered by three members of the Advisory Council for Scientific and Industrial Research, one member, from Montreal, is reported to have stated that "the finest tungsten deposits of the Dominion are to be found on the northern borders of the Pacific province."

News from Prince Rupert is to the effect that Mr. H. N. Witt, representing the Goldfields Consolidated Mining Co., of San Francisco, Cal., has been examining a group of mineral claims on Salmon River, in Portland Canal mining division, and that a contract had been let for driving an adit 200 ft. farther, on Mr. R. Martin's property on Seven-mile creek. Mr. R. K. Neill, of Spokane, who has for several years been associated with others engaged in developing mines in West Kootenay district, is also doing some exploratory work on a mineral claim in the same mining division.

A press despatch sent out from Vancouver states that gold bullion deposited in the Dominion of Canada Assay Office in that city in 1917 up to July 19 amounted in value to \$1,669,149.37, as compared with \$965,157.54 during the corresponding period of 1916, thus showing an increase of \$703,991.83. Comment is added that the first half of the year is only the early part of the gold-producing period; in some districts the season has only lately been begun, so from the present on for several months the heaviest receipts of gold for the year are expected.

The Rossland Miner lately published news from Northport, Washington, where is situated the smeltery long owned by the Le Roi Mining Co., established with the chief object of smelting ore from the Le Roi and other Rossland mines, as follows: "Activities at the Northport smeltery indicate that plans to gradually enlarge the plant by various new buildings and departments, and probably by additional blast furnaces, are under way. The large machine shop and the electric power-house are nearing completion. Electric power is being brought in from the plant of the West Kootenay Power and Light Co. at Bonnington Falls, B.C., and much money is being expended on the smoke condenser. Room is being made for more furnaces. Meanwhile, the mines and mining prospects of the surrounding district are being developed, and in due time ore from these properties may tax the present capacity of the plant."

#### ALBERTA OIL COMPANIES.

Calgary, July 28.—The first financial statement of the Southern Alberta Refineries, Limited, has just been issued, which shows a most satisfactory condition of affairs. The directors recommend the payment of a 10 per cent. dividend on all shares on record July 30, 1917, and an additional 5 per cent. on all shares issued before June 30, 1916. This company has therefore earned for itself the proud distinction of being the first oil concern in western Canada to pay a cash dividend.

William Livingston, the president and managing director, states that practically all of the sales of gasoline have been made since last September when No. 1 well was cleaned out, and show a total of over \$75,000. After deducting operating expenses, the financial statement shows a gross profit of \$21,035, and a net profit of \$12,493. The bank balance is over \$21,000.

A. W. Dingman, in the course of a brief interview with The Herald this morning, expressed much satisfaction with the financial statement of the Southern Alberta Refineries. Tentative arrangements had been made, he said, to purchase any oil from the Alberta Consolidated company as soon as that well had been cleaned out, which he anticipated would be at an early date. At the moment he could not, of course, hazard an opinion as to the probable quality of oil that would be produced from the well.

Speaking of the work at the Calgary Petroleum company's refinery, Mr. Dingman stated that the immediate proposition was the fitting up of machinery to extract the gasoline from the crude product. American associates of the company on the other side of the line expected to ship this machinery now in the course of a few days. With regard to the quality of oil at the present time at their wells, Mr. Dingman stated that carload lots were periodically being sent forward.

Mr. Dingman is as optimistic as ever over the future of the Alberta oil fields. They were now down 3,900 feet, he said, and he was convinced that it was at about this depth that large quantities of oil would eventually be found.

#### THE TASHOTA GOLD DISTRICT, ONTARIO.

By R. C. W. Lett.\*

I recently spent a few days at Tashota, Ontario, for the purpose of ascertaining, as far as practicable, whether or not Tashota is, or ever will be, a mining camp.

It has often been said that neither the scientist nor the prospector can see down any distance through rock and muskeg. Therefore, as the matter stands at Tashota, we cannot say whether the camp will stand up under development. We do know, however, that nearly every vein so far located and tested, carries gold values. These run from traces up to \$600 per ton.

Possibly more publicity would have been given to this district, if it were less accessible. Where strikes are generally made, they are beyond transportation facilities, oftentimes at the end of a brutal trail. A rough, hard trail seems to add to the lure.

To reach Tashota, which is in the Kowkash mining division, Ontario, one may board the G. T. P. train here at Winnipeg at 5.15 in the evening, and at 8.36 the following morning, find himself in the very heart of the mining camp, where claims are to be seen on both sides of the railway track. Never before has a gold-mining camp been established under such favorable transportation conditions.

Let us go back to the early history of the district. A spectacular gold find was made by E. W. King Dodds on August 21st, 1915, nine miles northwest of Kowkash, which lies east of Tashota. This was near Howard Falls, on the river Kawa-Kash-Kagama, which signifies sparkling water, now corrupted to Kowkash.

Years before, however, the region was explored by the Geological Survey, and W. H. Collins in 1909 made a report, and his description of the rock formation may have had something to do with attracting the prospectors' attention to the Nipigon country. Mr. A. P. Coleman's report likewise was valuable. More attention, however, at that time, was given by the prospectors in their search for iron, which, although present in that area, has not yet been discovered in economic values.

Robert Bell, in a report to the Geological Survey in 1870-71, and again E. G. Neelands, Geologist, 1900, paved the way for the prospector, when he stated, "Huronian (Keewatin Rocks), mainly chlorite and other soft green schists occur in the Kawa-Kash-Kagama River for about four miles below Wa-Wong Portage (Howard Falls)."

Gold at that time was found in small quartz veins. It was therefore not surprising that King Dodds made his discovery. Like many others, it was accidental. This man was walking over a rocky hill below Howard Falls (the rocks had been burned clean of moss and trees on the previous day) and found gold in the veins

\*Tourist and Colonization Agent, G. T. P.

which ran through the rock. Immediately there was a rush of prospectors to that district.

It appears that some of the veins in the district, while exceptionally rich, were small and did not bear up as to values. There are about 1,000 claims staked in the district of Kowkash. Most of these are near Tashota, and, judging from the formation, which is very similar to that of Poreupine, there is every likelihood that a few good mines may be developed.

It will be found interesting to review the first good discovery at Tashota. Section Foreman Wells of the Canadian Government Railways at Tashota, used to accommodate in any way he could the prospectors who were first upon the ground. He looked after their outfits, keeping them safe until called for. In return for this kindness, a few of the boys staked a claim for Wells, close to the great gravel-pit, a little better than a mile from the station of Tashota. The only indication on his particular claim was a small out-cropping of rock through which an ordinary vein cut. The boys put in a shot, which merely blew out some fragments of rock from the vein. The second shot exposed native gold, and when they made the suggestion that another shot be put in, Wells objected, saying, "Maybe you will blow out all my gold, and then I can never sell my claim."

Not long after this a syndicate from Baltimore and Buffalo under the management of Mr. John Orn, purchased the Wells claim from him for \$25,000. Wells no longer pumps a hand car. A working mine now exists, where was only a patch of timber and rock. The Tash-Orn people have sunk a shaft 130 feet, have drifted at the 100-foot level, and are sinking another 100 feet. Instead of the gold petering out in this vein, values averaging \$14 per ton have carried the entire depth sunk. When I visited the Tash-Orn there were 60 men employed at the camp, and the value of the ore on the dump was calculated to be worth \$100,000.

Another claim inspected was the Ross claim. The Trethewey people, so well known in Cobalt and Poreupine, were busy stripping and testing a very large vein, which could be traced for about 1,000 feet. Their engineer, Mr. McReavy, informed me when I visited this vein, that his average assays ran \$12 per ton. On the Devauney claim, which is directly north of the station, a little better than half as distant, I found a very large quartz vein carrying values in tellurides, which in that district are good indications. The gold value assays of this claim ran from \$8 to \$80 per ton.

I visited many other claims; but in no instance was I at a greater distance than four miles from the station at Tashota. We know of other camps, which promise great things, but when the question of transportation is considered, development would appear to be a long way off. In this case the railroad is in the heart of the camp.

I would class the majority of the prospectors at Tashota as reliable and I have had many a heart-to-heart talk with quite a number of these fine chaps (who, by the way, would look upon you with suspicion if you passed their cabin door and failed to enter for a meal). They, one and all, gave it as their candid opinion that the country looked better to them than Poreupine. The formation was the same and the leads were stronger.

I find that Mr. P. E. Hopkins of the Ontario Bureau of Mines, Toronto, spent a portion of last year, when the first discovery was made, in and about Tashota. The department at Toronto thought well enough of the district to open up a recording office at Tashota, which

is still in existence and in charge of Mr. Morgan.

Mr. Hopkins made a report, which was published last year, but I do not think it is as valuable as a report of his which will be published in August of this year. Mr. Hopkins has returned to Tashota and will spend, I understand, all summer in the district.

Mining facilities at Tashota are as good, if not better than the average. There is sufficient small timber to furnish material for light crib-work, etc. The heavier dimension timber, boards, shingles, etc., are shipped in from Hearst.

There are no water powers, as the country has been glaciated, and lies for the most part very flat. The water question, however, is most satisfactory to many of the claims, for the reason that a small stream cuts through the district, draining a few small lakes and eventually flowing into Lake Nipigon. This stream is navigable part of the season for canoes.

At Topsy Lake, named for G. E. Metcalfe (Topsy) by Mr. Hopkins, there are located on the southwest shore of the lake a few claims which I inspected. On K. K. 234 King, I was particularly interested in a very large quartz vein, which appeared to strike northwest and southeast, and easily traced to the water's edge, a considerable distance from discovery post. Samples which were collected from the surface assayed more than a trace of gold.

What the district now needs is working capital. I have had letters from some of the prospectors at Tashota offering reasonable opportunities for sporting chances for investment in part interests in their claims.

I think that more publicity should be given to the camp and attention of mining men and capitalists should be drawn to the district of Tashota, for I feel it is worthy of notice, and in the event of the camp proving up, we may expect a considerable revenue to develop for our railway.

#### RE-EXAMINING PHOSPHATE BEDS.

Calgary, July 18.—Prof. Frank D. Adams of the advisory council for industrial research, one of the best known geologists of the Dominion, left Calgary for Banff on Wednesday morning to investigate the existence of phosphate deposits near that place. It is reported that the deposits are very large in extent and that they may be of great commercial value.

On Tuesday, when asked about the possibility of commercial phosphate deposits at Banff and their value, Prof. Adams said that this form of phosphate rock was very valuable as a fertilizer, but that in the form it existed at Banff, as he understood it to exist from what he had so far heard, the commercial value of the deposit was doubtful at the present time.

When the geologist returns, however, it is probable that he will have a more complete statement to make.—News-Telegram.

#### COPPER ORE SHIPMENTS.

Whitehorse, July 20.—The freighter Redondo of the Alaska Steamship Co. left Skagway last week with over 1,000 tons of copper ore from Whitehorse Copper Camp, consigned to outside smelters. The shipment was divided up as follows: Valerie, 700 tons; War Eagle, 125 tons; Grafton, 85 tons; Copper King, 65 tons; Anaconda, 35 tons.

Some of the ore shipped had been lying in the bunkers at Skagway for a considerable length of time and there is still a large quantity remaining there awaiting transportation.

## MARKETS

## SILVER PRICES.

	New York. cents.	London. pence.
July 24 .....	78 $\frac{5}{8}$	39 $\frac{3}{8}$
" 25 .....	78 $\frac{3}{8}$	39 $\frac{3}{4}$
" 27 .....	78 $\frac{1}{8}$	39 $\frac{5}{8}$
" 30 .....	78 $\frac{1}{8}$	39 $\frac{5}{8}$
" 31 .....	78 $\frac{5}{8}$	39 $\frac{3}{8}$
Aug. 1 .....	79	40 $\frac{1}{8}$
" 2 .....	80	40 $\frac{5}{8}$
" 3 .....	80 $\frac{3}{4}$	41
" 4 .....	80 $\frac{3}{4}$	40 $\frac{3}{4}$
" 6 .....	80 $\frac{3}{4}$	Holiday

Moneta .....	.09	.06
Newray Mines .....	.72	.70
Pearl Lake .....	$\frac{1}{4}$	...
Porcupine Bonanza .....	.09	...
Porcupine Crown .....	.38	.37 $\frac{1}{4}$
Porcupine Gold .....	.01 $\frac{1}{2}$	...
Porcupine Imperial .....	.03	.02 $\frac{1}{2}$
Porcupine Tisdale .....	.02 $\frac{1}{2}$	.01 $\frac{7}{8}$
Porcupine Vipond .....	.32 $\frac{1}{2}$	.32
Preston .....	.04 $\frac{1}{2}$	.04
Schumacher Gold M. ....	.43	.42
Teck-Hughes .....	.55	.49
Thompson-Krist .....	.09 $\frac{1}{2}$	.08
West Dome Consolidated .....	.18	.17 $\frac{3}{4}$

## STANDARD MINING EXCHANGE.

(As of close August 9, 1917))

## Silver.

	Asked.	Bid.
Adanac .....	.16	.15 $\frac{3}{4}$
Bailey .....	.04	.03 $\frac{3}{4}$
Beaver .....	.33 $\frac{3}{4}$	.33
Buffalo .....	1.50	1.25
Chambers-Ferland .....	.14 $\frac{1}{2}$	.13 $\frac{1}{2}$
Coniagas .....	4.00	3.50
Crown Reserve .....	.26	.20
Foster .....	.04 $\frac{1}{2}$	...
Gifford .....	.05 $\frac{1}{2}$	.05
Gould Con. ....	.00 $\frac{3}{8}$	...
Great Northern .....	.07 $\frac{3}{4}$	.07 $\frac{1}{2}$
Hargraves .....	.11 $\frac{1}{2}$	.11
Hudson Bay .....	40.00	38.00
Kenabeek .....	.20	.18
Kerr Lake .....	...	4.95
Lorrain .....	.10	...
La Rose .....	.47 $\frac{1}{2}$	.46
McKinley-Darragh .....	...	.52
Nipissing .....	7.80	7.70
Ophir .....	.09 $\frac{1}{2}$	.09
Peterson Lake .....	.11	.10 $\frac{1}{2}$
Right-of-Way .....	.05	...
Rochester Mines .....	.05	...
Shamrock .....	.21	...
Silver Leaf .....	.02	.01 $\frac{1}{4}$
Seneca-Superior .....	.02 $\frac{1}{2}$	.01 $\frac{1}{2}$
Timiskaming .....	.33	.32 $\frac{1}{2}$
Trethewey .....	.15	.13 $\frac{1}{2}$
White Reserve .....	.22	...
Wettlaufer .....	.07	.06
York, Ontario .....	...	.01 $\frac{1}{2}$

## Gold.

	Asked.	Bid.
Apex .....	.05 $\frac{3}{4}$	.05 $\frac{1}{4}$
Boston Creek .....	.03	...
Davidson .....	.39	...
Dome Extension .....	.16	.15
Dome Lake .....	.19	.18
Dome Mines .....	10.25	9.85
Dome Consolidated .....	.08	.06
Eldorado .....	.02 $\frac{1}{4}$	.01 $\frac{1}{2}$
Gold Reef .....	.01 $\frac{1}{2}$	.01 $\frac{1}{4}$
Foley .....	.55	...
Hollinger Consolidated .....	4.33	4.30
Homestake .....	.48	...
Inspiration .....	.07	.04 $\frac{1}{2}$
Keora .....	.20	.16
Kirkland Lake .....	...	.40 $\frac{1}{2}$
McIntyre .....	1.50	1.49

## TORONTO MARKETS.

Cobalt oxide, black, \$1.50 per lb.
Cobalt oxide, grey, \$1.65 per lb.
Cobalt metal, \$2.25 per lb.
Nickel metal, 45 to 50 cents per lb.
White arsenic, 15 cents per lb.
Aug. 8, 1917—(Quotations from Canada Metal Co., Toronto.)
Spelter, 12 $\frac{1}{2}$ cents per lb.
Lead, 13 cents per lb.
Tin, 63 cents per lb.
Antimony, 18 cents per lb.
Copper, casting, 33 cents per lb.
Electrolytic, 35 cents per lb.
Ingot brass, yellow, 23 cents; red, 25 $\frac{1}{2}$ cents per lb.
Aug. 8, 1917—(Quotations from Elias Rogers Co., Toronto.)
Coal, anthracite, \$9.50 per ton.
Coal, bituminous, nominal, \$9.00.

## NEW YORK MARKETS.

Connellsville Coke—
Furnace, spot, \$12.50 to \$13.50.
Furnace, contract, nominal.
Foundry, spot, \$13.50 to \$14.50.
Foundry, contract, nominal.
Straits Tin, spot, f.o.b., \$63.75.
Copper—
Prime Lake, nominal, \$29.50 to \$30.00.
Electrolytic, nominal, \$28.00 to \$28.50.
Casting, nominal, \$28.00 to \$28.50.
Lead, Trust price, 11.00 cents.
Lead, outside, nominal, 10.75 to 11.00 cents.
Spelter, prompt western shipment, 8.67 $\frac{1}{2}$ to 8.80 cents.
Antimony—Chinese and Japanese, nominal, 15.50 cents.
Aluminum—nominal.
No. 1 Virgin 98-99 per cent., 48.00 to 50.00 cents.
Pure, 98-99 per cent. remelt, 46.00 to 48.00 cents.
No. 12 alloy remelt, 36.00 to 38.00 cents.
Powdered aluminum, 75.00 to 85.00 cents.
Metallic magnesium—99 per cent. plus, \$2.00 to \$2.50.
Nickel—Shot and ingot, 50.00 cents.
Electrolytic, 55.00 cents.
Cadmium, nominal, \$1.45 to \$1.50.
Palladium, \$115.00.
Quicksilver (July shipment from California), \$115.00.
Platinum—Pure, \$105.00.
10 per cent. Iridium, \$111.00.
Cobalt (metallic), \$2.70.
Tungsten—
Wolframite, \$25.00.
Scheelite, \$26.00.
Silver (official), 80 $\frac{3}{4}$ cents.

**Metal Products.**—Following quotations represent mill prices and are strictly nominal except in the case of lead sheets and sheet zinc:

- Sheet Copper—
  - Hot rolled, 36.00 to 38.00 cents.
  - Cold rolled, 37.00 to 39.00 cents.
  - (Shipments from stock 2c per pound extra.)
- Copper bottoms, 50.00 cents.
- Copper in rods (round), 40.00 cents.
  - Square and rectangular, 41.00 cents.
- Copper wire, nominal, Aug., 33.00 to 33.50 cents.
- Copper wire, Sept., Oct., 32.00 to 33.00.
- High brass—
  - Sheets, 33.25 to 35.25.
  - Wire and light rods, 33.25 to 35.25.
  - Heavy rods, 33.25 to 33.75.
- Low brass—sheet, wire and rods, 33.75 cents.
- Tubing—
  - Brazed bronze, 50.25 to 50.50.
  - Brazed brass, 46.75 to 47.75.
  - Seamless copper, 45.50 to 48.00.
  - Seamless brass, 41.00 to 45.00.
  - Seamless bronze, 54.00 cents.
- Full lead sheets, 12.75 cents.
- Cut lead sheets, 13.00 cents.
- Sheet zinc, f.o.b. smelter, 19.00 cents.

**STANDARD SILVER-LEAD MINING COMPANY.**

For reference purposes, the following figures have been taken from the balance sheet, for the year ended December 31, 1916, of the Standard Silver-Lead Mining Co., operating silver-lead-zinc mines and a concentrating mill near Silvertown, Sloean Lake, British Columbia, and having its head office in Spokane, Washington, U.S.A., and its provincial office in Victoria:

<b>Dr.—</b>	
Capital stock . . . . .	\$2,000,000.00
Accounts payable . . . . .	52,441.64
Net amount realized from operations . . . . .	2,642,626.32
Surplus . . . . .	170,000.00
	\$4,865,067.96
<b>Cr.—</b>	
Amount computed as representing value of ore deposits exhausted . . . . .	2,000,000.00
Plant and buildings . . . . .	132,249.20
Aylard tunnel . . . . .	43,497.73
No. 7 tunnel . . . . .	29,496.85
Alpha and Anacortes mineral claims . . . . .	71,000.00
Ore in transit . . . . .	72,870.67
Supplies in stock . . . . .	11,075.47
Distributed as dividends . . . . .	2,400,000.00
Cash on hand . . . . .	104,878.04
	\$4,865,067.96

**IMPERIAL OIL TO DRILL IN ALBERTA.**

Calgary, July 29.—It is reported that the Imperial Oil Company, through its agents, already has six cars of oil drilling machinery on the ground in the Viking, Alberta, gas and prospective oil field, and that drilling operations will begin at once. Five wells are to be put down. The derricks are already under construction.

Dr. T. O. Bosworth, the geologist, who has located the drilling site for the new wells, has long been associated with the Imperial Oil Company of Canada, as geological expert, and he has made his headquarters at the general offices of the Imperial Oil Company at Toronto.

**THE EFFICIENT USE OF COAL.**

The U. S. Bureau of Mines, Department of the Interior, in co-operation with the Illinois State Geological Survey and the Department of Mining Engineering of the University of Illinois, has completed a study on the coking of Illinois coals, and has published the results of this investigation in Bulletin 138, by F. K. Ovitiz. Mr. Ovitiz, in discussing the subject, says:

“In its endeavor to promote a more efficient use of coal the Bureau of Mines, in co-operation with the Illinois State Geological Survey and the University of Illinois, has undertaken an investigation of the coking of Illinois coals. The investigation was started by collecting from various sources the data regarding experiments already made by others; these data have been compiled and are presented herein.

“The present methods of using coal seem wasteful. When coal is burned in furnaces for the generation of steam, only the heat generated by the fuel is utilized; possible by-products are not only lost, but frequently are the source of the smoke nuisance. The volatile matter containing the tar and heavy hydrocarbon gases is difficult to burn completely in many furnaces, and its decomposition produces black smoke. When coal is coked in a by-product oven, the volatile matter is no longer a nuisance but, on the contrary, is the source of many by-products, including benzol, toluol, gas, tar, ammonia, and cyanogen, all of which increase the value that may be obtained from coal.

“The coke that remains after the volatile matter has been driven off is a valuable fuel that can be used for almost all purposes for which bituminous coal can be used, and it is necessary for some metallurgical work. It has about the same heating value as anthracite coal. Because of its cleanness and its burning without smoke, it is well suited for domestic heating and the generation of steam in plants where smokelessness is demanded. The use of coke for these purposes would do much to eliminate smoke in cities. The best grades are regarded as essential in many metallurgical processes for reducing ores to their metals.

“By-product coking in the United States during the past three years has increased greatly. When the ovens now in course of construction are completed, the total capacity of by-product ovens will be more than double what it was in 1913. This increase has led to a search for coals other than those now known to be available for use in by-product ovens. Tests with coals from the southern part of Illinois have indicated that coke from Illinois coal unmixed with other coals can be used for fuel purposes and that coke from mixtures of Illinois coal with low-volatile coking coal might be suitable for some metallurgical work. In the tests the yield of ammonia was larger than is obtained from eastern coal.

**ENGLAND TAKES OVER IRON ORE MINES.**

Washington, Aug. 6.—A cablegram from United States Consul General at London states that Minister of Munitions has taken possession of all iron ore mines in counties of Cumberland and Lancaster.

**APPEAL IN SULPHUR SMOKE CASES.**

Sudbury, Aug. 4.—In the five actions against the Canadian Copper Company, brought by Morley Arthur, Louis B. Giroux and Joseph David, all of the Township of Balfour, and by John Lindala and Matti Lindala, of the Township of Louise, for damages to their crops in 1916 by sulphur smoke from the smelter and roast-beds at Copper Cliff and from the new roast-beds at Mileage 17 on the A. E. R., the Canadian Copper Company has now appealed through its solicitor, Geo. E. Buchanan, Esq.

His Honor Judge Kehoe heard the evidence for the full week beginning June 18th. He rendered his decision on July 16th and disposed of the question of costs on July 17th. In the written judgment he awards Morley Arthur \$300 and costs, Joseph David \$175 and costs, Louis B. Giroux \$150 and costs, Matti Lindala \$140 and costs, John Lindala \$80 with costs fixed at \$15. All the others were allowed their costs in full to be taxed.

The reasons for the appeal in each of the five cases are:

(1) The said judgment was contrary to evidence and against the weight of evidence.

(2) The learned trial judge erred in holding that there was any damage to the plaintiff's crops. The mere presence of smoke on the plaintiff's farm is no indication of damage to vegetation; damage can only occur under certain special coincidences of weather conditions, when vegetation becomes bleached or marked, and it is the extent of bleaching or marking which is the only criterion of damage. The extent of the bleaching was so slight and so doubtful on the plaintiff's farm that it could have no effect on his crops.

(3) The description given by the plaintiff and his witnesses is evidence of the result of disease, weather conditions and poor cultivation, and not of sulphur smoke bleaching.

**TEMISKAMING.**

In a letter to shareholders in Temiskaming Mining Co., Mr. Max Morgenstein says in part: When the apex of production is believed passed, producing mining companies have been anxious to add years of life and prosperity through the purchase of additional properties, but never before to my knowledge has any company of importance been interested in a "no voice" or minority interest. A controlling interest must be acquired or none at all. Yet the men who have been elected to act in the capacity of our directors and trustees to look after our combined interest had the audacity to ask you and me to diminish our treasury heavily in order to invest in some of the shares of another company in which they were interested while the benefits of the major portion of that company would have gone to the Beaver company.

The official records of the Temiskaming and Beaver companies answer the important question, without any doubt, where the interest of our directors lay. President Culver and his associates owned in all 126,865 shares Beaver to only 36,450 of Temiskaming. It is the natural thing for any coterie of shrewd business men to seek protection where their largest interests lay. These gentlemen represented us and were elected to safeguard our interests. Could they conscientiously act for the sellers as well? Can they make the best bargain for us which it is their duty to do while their major interest lies with the selling company?

While I quite agree with Mr. Culver that our company will have to buy other mining interests some time

if it wishes to stay in business, as all precious metal mines get exhausted some time, it should be done on entirely different lines than proposed lately.

Assuming that your curiosity to know who I am has been aroused, I am entirely willing for you to know that I am a merchant of established reputation in New York city, where I have been a resident for upward of thirty-four years, am a citizen of U. S. for over twenty-nine years. I began to become interested in mines for precious metals by small investments, so I am today the largest individual owner of shares in a number of companies in the Province of Ontario, Canada, I candidly admit that I still own Temiskaming shares at 9¼c per share on which I have collected in the meantime 21c per share in dividends and have kept buying continuously ever since with no intention of selling any, because, I bought this vast amount of much over 200,000 shares with my eyes wide open on intrinsic value only. Our company has nearly 2,900 shareholders scattered all over, materially over half of the shares are owned in the United States.

**CANADA COPPER CORPORATION.**

New financing through an issue of \$2,500,000 convertible bonds has been perfected by Canada Copper Corporation. The new issue will be underwritten by Hayden, Stone & Co. and Eugene Meyer, Jr., & Co. The proceeds of the bonds will be used for the construction of a 3,000-ton mill and its complete equipment including flotation. Bonds will be convertible into stock of the company at \$3.

There has been fully developed on the property of the Canada Corporation 10,000,000 tons of ore, although indications point to a material increase in tonnage as development progresses. The property stands alone among disseminated deposits as having only sulphide ores; test runs in a 60-ton mill have shown that a 90 per cent. extraction, or 27 pounds of copper per ton of ore, may be expected.

Canadian Pacific will build a spur into the property, making it a comparatively simple matter to ship concentrates from the new mill to the company's Greenwood smelter.

Further on, along the same line is the Trail smelter and refinery, controlled by the Canadian Pacific, where the product will probably be put into marketable shape.

The Canada mine at present could ship 1,000 tons of ore daily. The mill should be finished within a year.

**LAKE SUPERIOR CORPORATION.**

It is reported that negotiations between Lake Superior stockholders and bondholders' committee representing Flemming interests, looking to election of a new president who shall be an experienced steel man, have progressed considerably. Such a man has been approached and was inclined favorably, it is understood, provided directors induce bondholders to agree to certain things.

Directors on recent visit to the plant were shown contracts, which will keep the steel plant running at capacity until July, 1918, signed with Canadian Government, at prices ranging around \$70 a ton.

With recent blowing in of new 75-ton furnace the steel plant now has a daily capacity of 2,000 tons. The greater part will be shell steel, since the Canadian Government has issued orders to make steel rails only on absolute necessity for national railways.—Boston News Bureau.



**ANKERITE.**

The Coniagas Mines, Limited, of St. Catharines, are now proceeding to development of deposits located on the Ankerite property, Porcupine. The Coniagas company has held this property under option since February, 1916, and during this period has conducted an extensive and successful exploration of one of the three claims comprising the group. Two strong, parallel veins were located, one for a length of over 1,400 ft. and the other for about 900 ft. These were explored by cross-cutting, sinking, drifting and diamond drilling at numerous points along their strike and it is said that satisfactory gold values were found at every point. A steam power plant for development purposes is now being installed and while development of located deposits is under way the company will proceed with exploration of other areas of the property.

In March last, there was received at the Consolidated Mining and Smelting Company's smelting works at Trail a carload of ore from the Mandy Mining Company, which is opening a mining property in the new field of Northern Manitoba, north of Le Pas. Two or three weeks later another carload of ore was received, the consignor having been another company operating in the same part of the Dominion. Concerning the latter, it is learned from the Engineering and Mining Journal that "the Northern Manitoba Mining and Development Co. recently shipped a carload of 57,000 lbs. of gold-bearing quartz to Trail, British Columbia. The returns for the car were \$2,323 in gold, an average of \$81.53 a ton. The company is purely a local concern, the organizers being well known engineers and mining men."

Later information is that during the period between June 22nd and July 7th ore receipts at Trail included 565 tons of ore from the Mandy Mining Company, a brief account of whose operations was printed in The Canadian Mining Journal of July 1st, p. 274.

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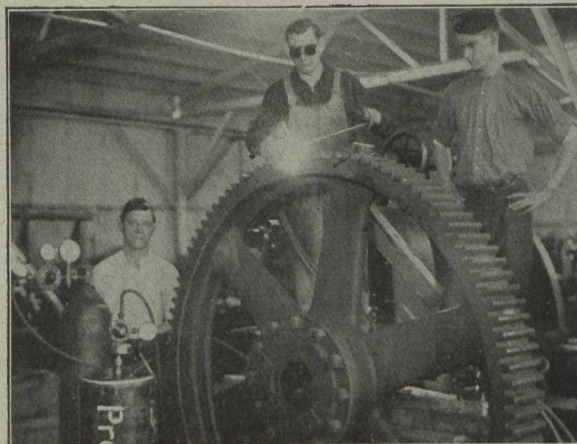
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#### Recent Publications

- The Nickel Industry: with special reference to the Sudbury region, Ont. Report on, by Professor A. P. Coleman, Ph.D.
- The Copper Smelting Industry of Canada. Report on, by A. W. G. Wilson, Ph.D.
- Building and Ornamental Stones of Canada (Quebec). Vol. III. Report on, by W. A. Parks, Ph.D.
- The Bituminous Sands of Northern Alberta. Report on, by S. C. Ellis, M.E.
- Peat, Lignite and Coal: their value as fuels for the production of gas and power in the by-product, recovery producer. Report on, by B. F. Haanel, B.Sc.
- Annual Report of the Mineral Production of Canada During the Calendar Year 1914, by John McLeish, B.A.
- The Petroleum and Natural Gas Resources of Canada: Vols. I. and II., by F. G. Clapp, M.A., and others.
- The Salt Industry of Canada. Report on, by L. H. Cole, B.Sc.
- Electro-plating with Cobalt. Report on, by H. T. Kalmus, Ph.D.
- Electro-thermic Smelting of Iron Ores in Sweden. Report on, by A. Stansfield, D.Sc.
- Non-metallic Minerals Used in Canadian Manufacturing Industries. Report on, by H. Frechette, M.Sc.

The Mines Branch maintains the following laboratories in which investigations are made with a view to assisting in the development of the general mining industries of Canada:—

- Fuel Testing Laboratory.**—Testing value of Canadian fuels for steam raising and production of power gas; analyses, and other chemical and physical examinations of solid, liquid and gaseous fuels are also made.
- Ore-Dressing Laboratory.**—Testing of Canadian ores and minerals, to ascertain most economical methods of treatment.
- Chemical Laboratory.**—Analysing and assaying of all mineral substances and their manufactured products. Copies of schedules of fees, which are slightly in excess of those charged by private practitioners, may be had on application.
- Ceramic Laboratory.**—Equipment is such that complete physical tests on clays and shale of the Dominion can be made, to determine their value from an economic standpoint.
- Structural Materials Laboratory.**—Experimental work on sands, cements and limes is also undertaken.
- Applications for reports and particulars relative to having investigations made in the several laboratories should be addressed to **The Director, Mines Branch, Department of Mines, Ottawa.**

### GEOLOGICAL SURVEY

#### Recent Publications

- Memoir 64. Preliminary Report on the Clay and Shale Deposits of the Province of Quebec, by J. Keele.
- Memoir 74. A List of Canadian Mineral Occurrences, by Robert A. A. Johnston.
- Memoir 77. Geology and Ore Deposits of Rossland, British Columbia, by C. W. Drysdale.
- Memoir 82. Rainy River District of Ontario. Surficial Geology and Soils, by W. A. Johnston.
- Memoir 84. An Exploration of the Tazin and Taltson Rivers, Northwest Territory, by Charles Camsell.
- Memoir 85. Road Material Surveys in 1914, by L. Reinecke.
- Memoir 87. Geology of a Portion of the Flathead Coal Area, British Columbia, by J. D. Mackenzie.
- Memoir 88. Geology of Graham Island, British Columbia, by J. D. Mackenzie.
- Memoir 89. Wood Mountain-Willowbunch Coal Area, Saskatchewan, by Bruce Rose.
- Memoir 92. Part of the District of Lake St. John, Quebec, by John A. Dresser.
- Memoir 93. The Southern Plains of Alberta, by D. B. Dowling.
- Memoir 94. Ymir Mining Camp, British Columbia, by Charles Wales Drysdale.
- Memoir 95. Onaping Map-Area, by W. H. Collins.
- Map 59A. Wheaton, Yukon Territory.
- Map 60A. Wheaton, Yukon.
- Map 67A. Kirkfield Sheet, Victoria County, Ontario.
- Map 150A. Ponhook Lake Sheet, Nova Scotia.
- Map 175A. Ymir, Kootenay, British Columbia.
- Map 176A. Graham Island, Queen Charlotte Islands, British Columbia.
- Map 177A. Southern Portion of Graham Island, Queen Charlotte Islands, British Columbia.
- Map 180A. Espanola Area, Sudbury District, Ontario.
- Map 184A. Roberval, Lake St. John County, Quebec.
- Map 187A. Southern Plains of Alberta.
- Applicants for publications not listed above should mention the precise area concerning which information is desired.
- Maps published within recent years may be had, printed on linen, at the nominal cost of ten cents each.
- The Geological Survey will, under certain limitations, give information and advice upon subjects relating to general and economic geology. Mineral and rock specimens, when accompanied by definite statements of localities, will be examined and their nature reported upon.
- Communications should be addressed to **The Director, Geological Survey, Ottawa.**

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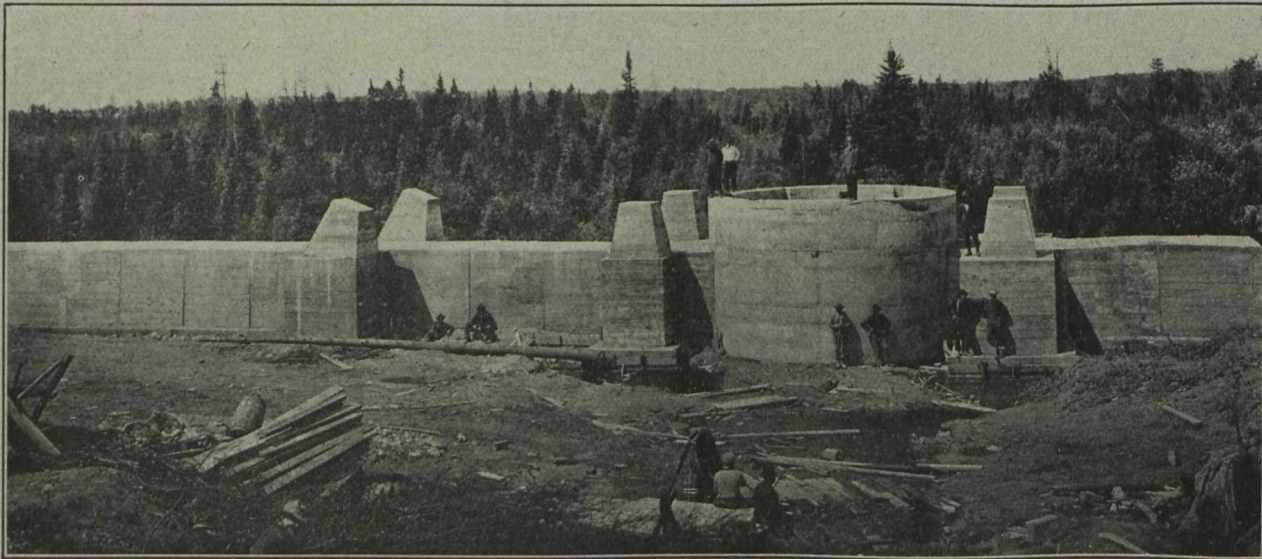
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# Ontario's Mining Lands

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Ontario, with its 407,262 square miles of area, contains many millions of acres in which the geological formations are favourable for the occurrence of minerals, 70 per cent. of the rocks being of pre-Cambrian age.

The phenomenally rich silver mines of Cobalt occur in these rocks; so also do the far-famed nickel-copper deposits of Sudbury, the gold of Porcupine and Kirkland Lake, and the iron ore of Helen, Magpie and Moose Mountain mines.

Many other varieties of useful products are found in Ontario:—cobalt, iron pyrites, arsenic, quartz, graphite, talc, feldspar, mica, corundum, molybdenite, platinum, palladium, actinolite, apatite, fluorite, salt, gypsum, petroleum and natural gas.

Building materials, such as cement, brick, marble, limestone, sandstone, trap, lime, sand and gravel, are abundant.

Ontario in 1915 produced over 44 per cent. of the total mineral production of Canada, or more than twice that from any other Province. The preliminary report of the Ontario Bureau of Mines shows the output of the mines and metallurgical works of Ontario for the year 1915 to be worth \$57,532,844, of which the metallic production was \$47,721,180. There were 79 producing mines, 62 of which operated at a profit.

The prospector can go almost anywhere in the mineral regions in his canoe; the climate is invigorating and healthy, and there is plenty of wood and good water.

A miner's license costs \$5.00 per annum and entitles the holder to stake out in any or every mining division three claims of 40 acres each.

For list of publications, illustrated reports, geological maps and mining laws, apply to

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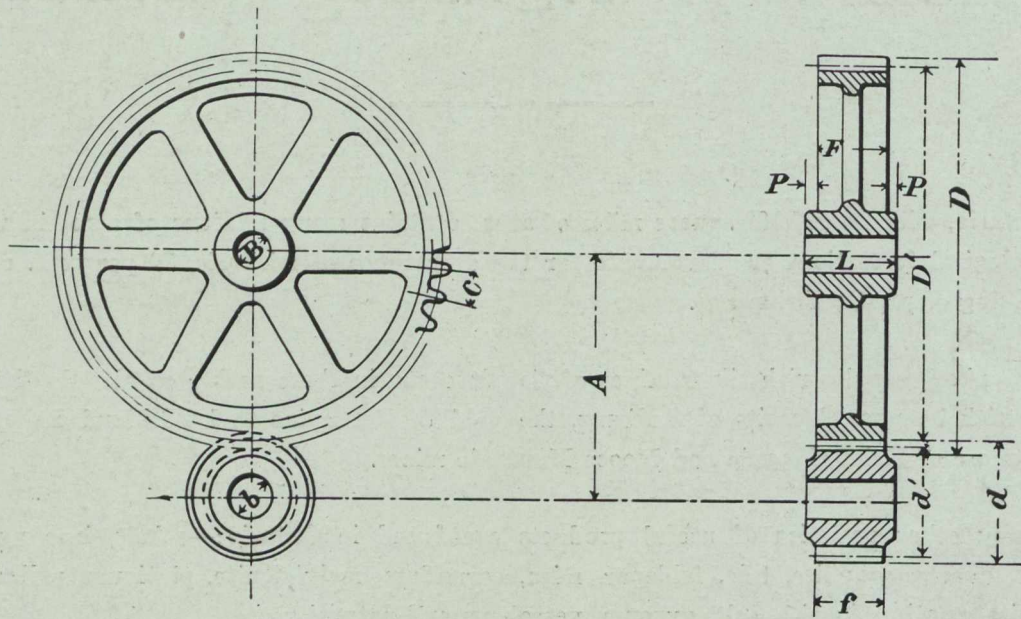
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