

CANADIAN MINING JOURNAL

Vol. XL

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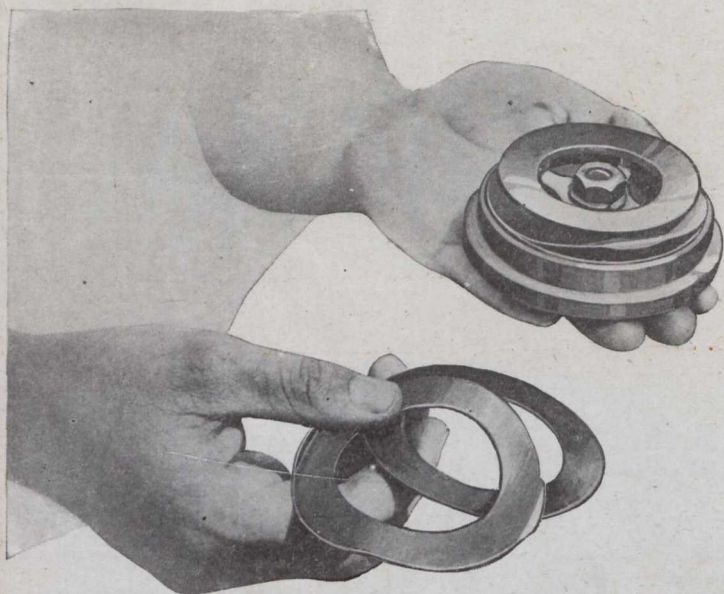
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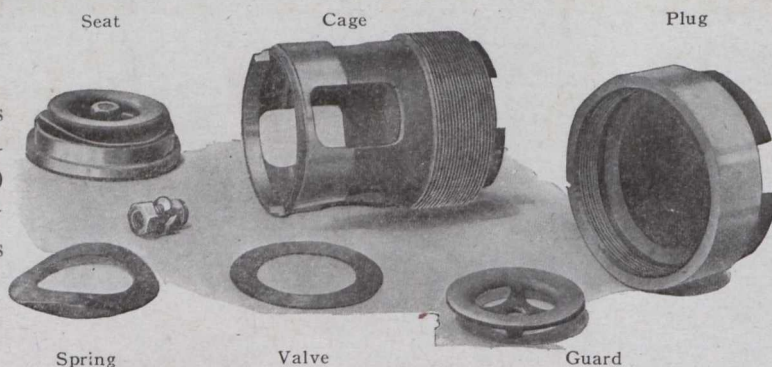
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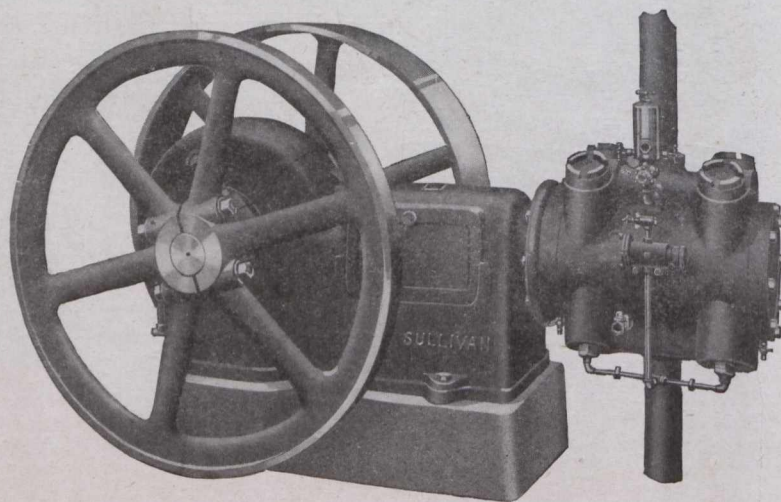


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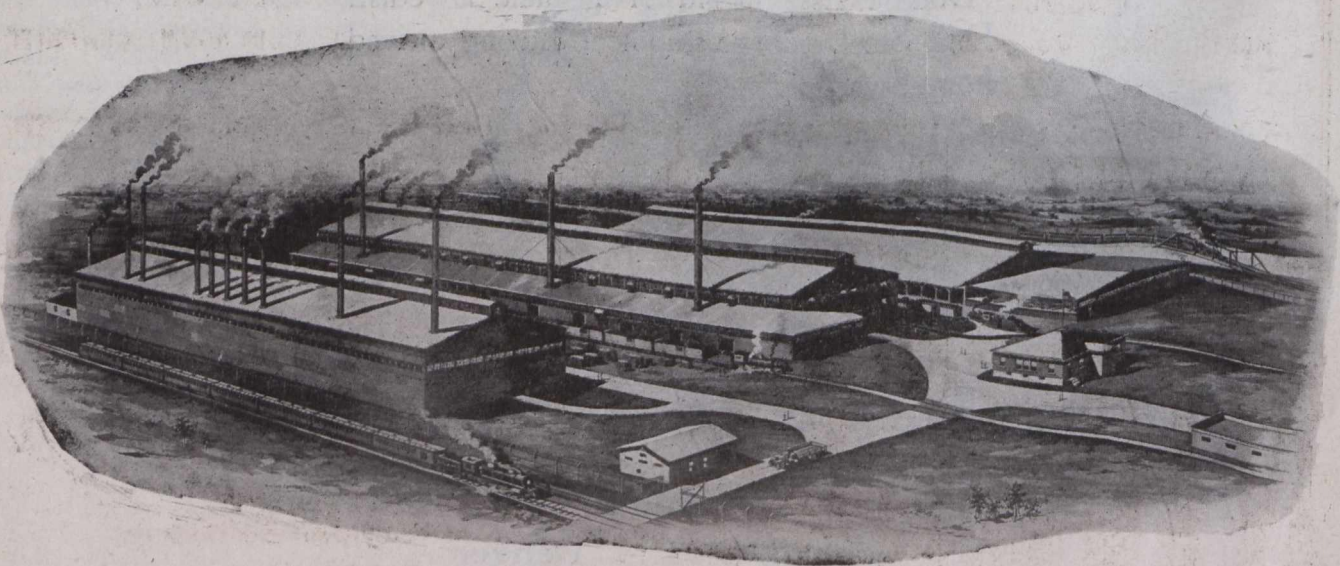
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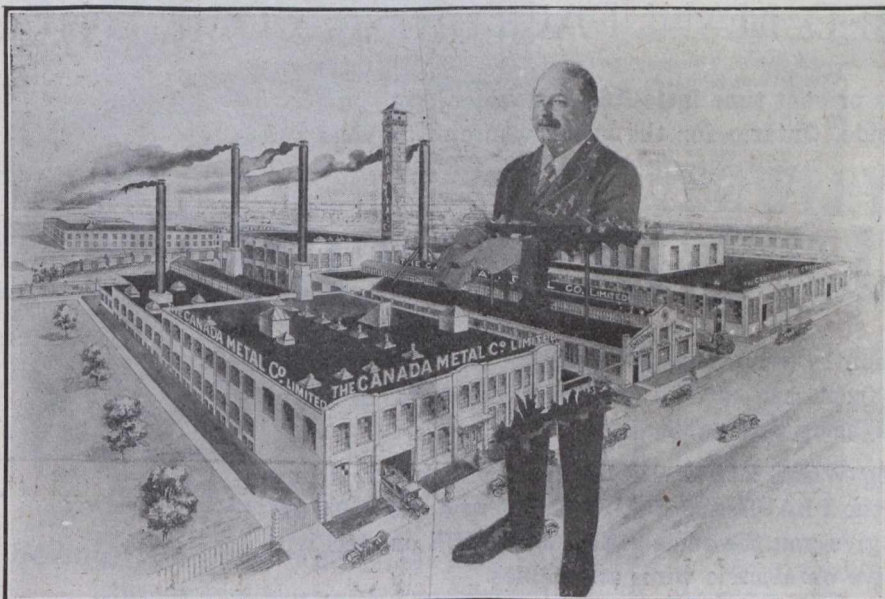
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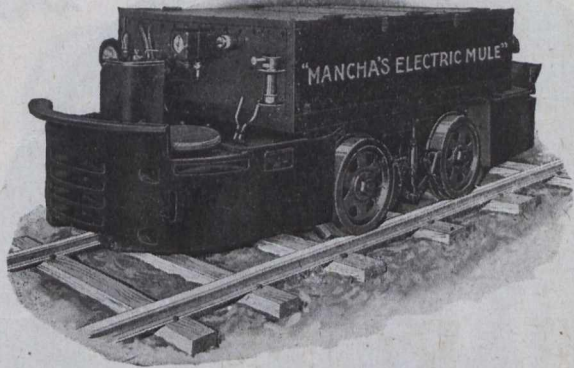
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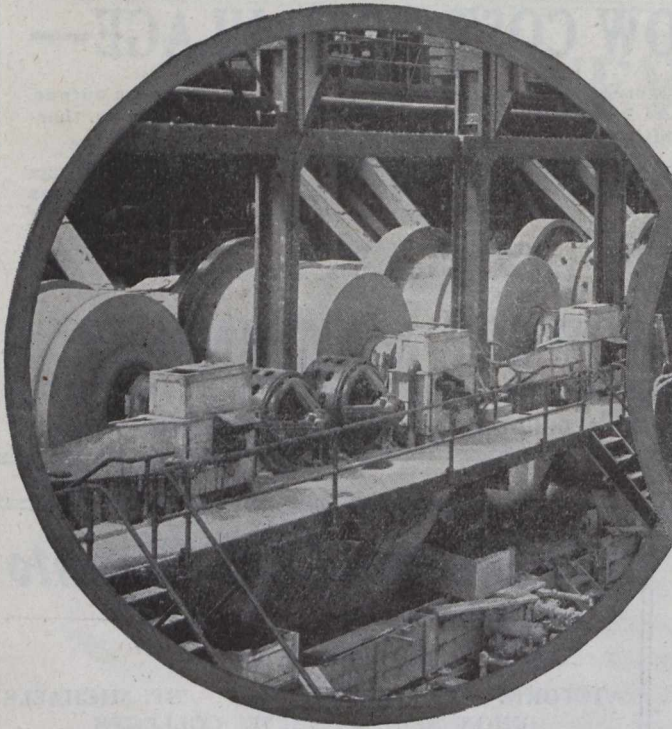
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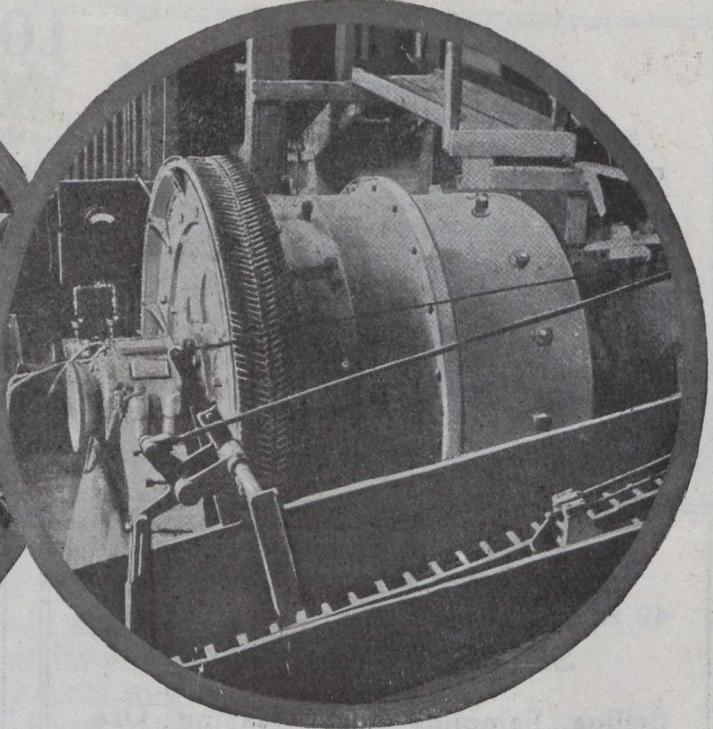
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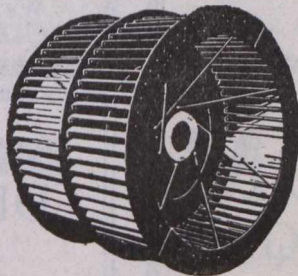
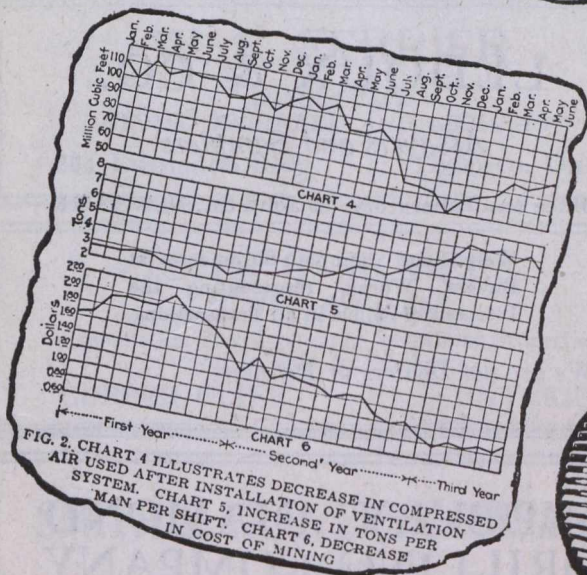
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The accompanying extract and chart are from “Standardization of Mining Methods” by Charles A. Mitke, Engineering and Mining Journal, Nov. 30, 1918, and answer most conclusively the question, does it pay?

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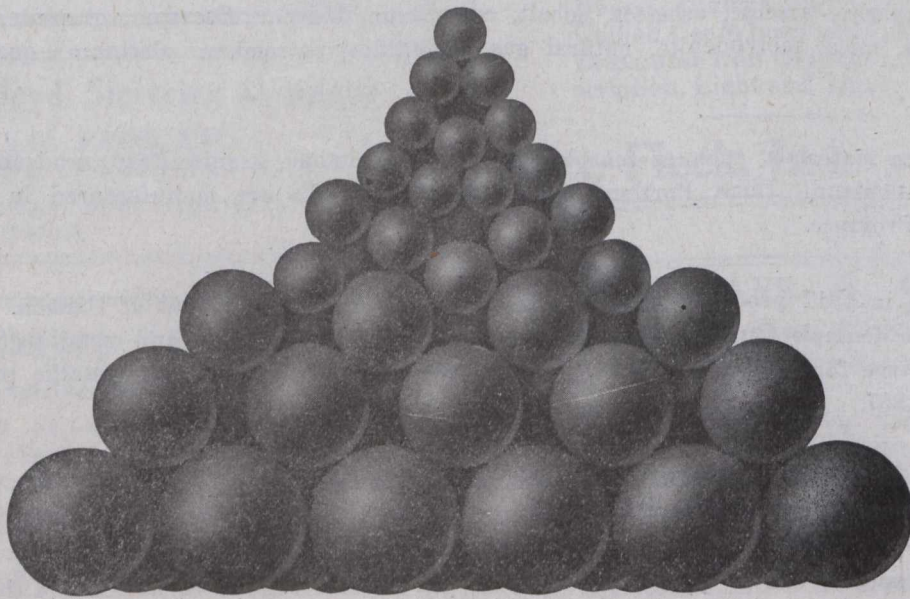
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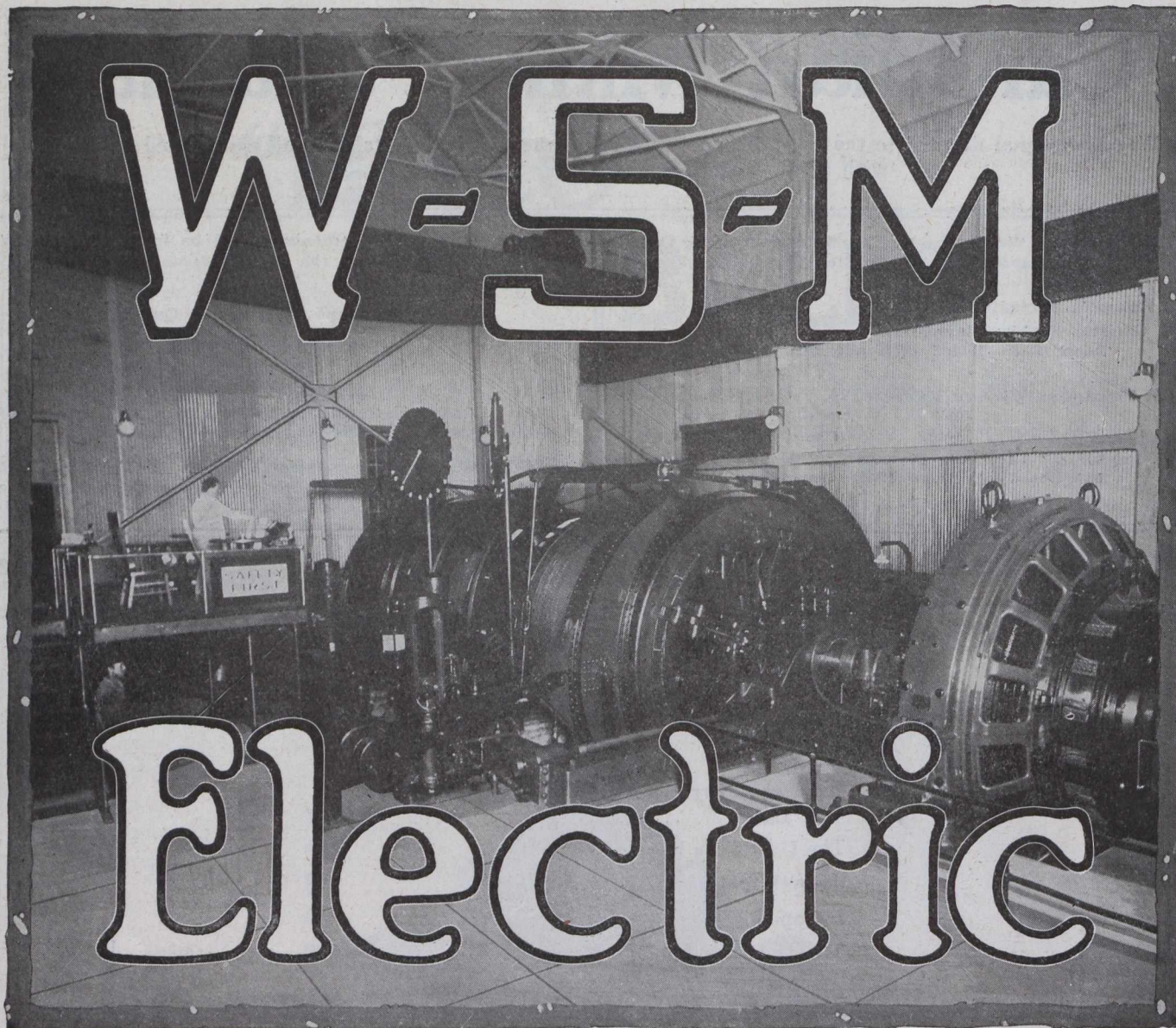
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Wellman-Seaver-Morgan Electric Hoist installed at the Granite Mountain Shaft of the North Butte Mining Company, Butte, Montana.

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EDITORIAL

THE COBALT STRIKE—STATEMENT OF THE MINISTER OF LABOUR.

The "Journal" has received the following letter from the Minister of Labour:

Ottawa, Ontario,
Aug. 6th, 1919.

My Dear Sir:—

Some articles appearing in your Journal of July 30th, relating to the Cobalt Miners' strike, your editorial notes and a reproduction of an editorial which appeared in the Montreal "Gazette" have been drawn to my attention.

Do you not think that it would have been but fair to have printed along side the quoted editorial from the Montreal "Gazette" the official statement given out by this Department as to its connection with the Cobalt difficulty and the attempts made to bring about an adjustment of the dispute by conciliatory methods?

The reproduction of the editorial from the Montreal "Gazette" would lead your readers to an entirely incorrect impression as to the attitude of the Department and the Minister, and is quite misleading.

If consistent would be glad to have this erroneous impression corrected in your next issue, by making reference to the official statement given out by the Department which properly sets forth the facts.

Yours very truly,

G. W. ROBERTSON,

Minister of Labour.

Editor, Canadian Mining Journal.

The statement of the Minister—to which we are very glad to give publicity—is as follows:

Interviewed as to cause of Cobalt strike and steps taken to avert it the Minister of Labour stated that, in his opinion, it was due to the expressed determination of the Temiskaming Mine Managers' Association not to deal with or recognize the Miners' Union. The employers base their stand on past unsatisfactory experiences in dealing with the Western Federation of Miners which, in the Minister's opinion, was, at that time, quite justified. During recent years the policy of the Western Federation has materially altered; employers who now recognize and deal with the Federation find the results quite satisfactory. It is, therefore, rather unfortunate that the Temiskaming Mine Managers' Association should judge the Federation now by its policy and leadership of ten years ago, when Mr. Haywood was its leading spirit.

On June 9th last the Miners' representatives brought the existing dispute to the attention of the Department of Labour. An official of the Department visited Cobalt on June 11th, and had conferences with both the Mine Managers' Association and the Miners' Committee, but could not effect an agreement. He, however, obtained an undertaking from the Committee not to call a strike until the Minister returned from the West.

On July 1st the Minister addressed a joint communication to Mr. W. C. Weir, Secretary of the Mine Managers' Association, and Mr. Jos. Gorman, President of the Miners' Union, recommending that inasmuch as both employers and workmen were organized that one or more representative of the men from each of the 16 mines affected and the managers should have a conference, for the purpose of reaching an agreement, if possible. Should they fail it was then proposed that they should agree to refer the matters in dispute to a Board of Conciliation. A representative of the miners came to Ottawa and reported that the men agreed to the suggestions made, but that the employers declined, which statement was confirmed in a letter from the employers to the Minister.

The situation was then explained to the Prime Minister, and

a decision reached to invite a delegation of the employers to come to Ottawa for a conference, which invitation was acknowledged and declined in a wire from the President of the Managers' Association on July 15th. The representatives of the men were then informed that there was only one other alternative left within reach of the Government, which would be to appoint a Royal Commission to investigate the trouble. Subsequently, I believe, the employees offered to accept a commission if the employers would agree to accept its decision. Upon the employers declining to agree to this suggestion the strike was called.

The Minister of Labour emphatically denies Press reports that he encouraged the strike, but, on the other hand, did everything consistent and possible to prevent it.

The "Journal" desires to explain that there was no intentional discourtesy or unfairness in omitting to publish along with the "Gazette" editorial the statement of the Minister, which, when our issue of the 30th ult. went to press, had not come to our notice.

With regard to the Minister's proposal that one or more representatives from each of the sixteen mines affected should confer with representatives of the Managers' Association, there is no doubt that this suggestion was an excellent one, and outlined the manner in which the dispute must eventually be adjusted, but unfortunately the union leaders blocked the proposal by stipulating that at this conference the Executive of the Union should be present. As the whole dispute concerns the question of "recognition" and nothing else, it is clear that the interpolation of this stipulation vitiated the essential fairness of the original proposal and distorted its intent.

In the "Correspondence" we publish a letter from "Another Engineer" who well remarks that "the character of the union has not been the character of its members but of its active leaders," and the objection of the Managers' Association to recognizing the Union, based on the record of leadership of the Western Federation of Miners, is admitted by the Minister to have been justified in the past.

"During recent years," states Senator Robertson, "the policy of the Western Federation has materially altered," and here lies the stumbling block to a settlement. The Mine Managers' Association believes it has no guarantee of the probability of satisfactory dealings with the present strike-leaders.

If the point of recognition of the Western Federation of Mines (or its local affiliation) is eliminated, all the essentials for a settlement exist. Good wages, short working-hours, collective bargaining in its widest and best sense, profit-sharing, and representation of workmen by committees, are all conceded and have been practised for a long time at Cobalt.

THE USE OF THE BAROMETER AT MINES.

Our contemporary "Coal Age" publishes a series of letters debating the utility of the barometer as an indicator of the variations in the composition and distribution of mine air occasioned by alterations in the atmospheric pressure.

A correspondent from Ladysmith, B.C., points out the greater usefulness of the compensated, aneroid recording-barometer, and the small value of the mercurial barometer in giving warning of important changes of atmospheric pressure.

There can be little doubt that the changes in pressure shown by the mercurial barometer follow the effects of such changes of pressure on the mine gases at such a long interval as to make the mercurial instrument quite useless for purposes of warning.

It is doubtful also whether the recording-aneroid is of much utility, except possibly in mines where there are large unventilated goaves communicating with working places, but the recording barometer has the advantage of showing the tendency of the barometric pressure. Long observation of the barometric charts in one locality, combined with observations of the wind direction, temperature, season, and some knowledge of the local meteorological peculiarities, will enable the observer to deduce certain probabilities from the trend of the barometric curve which, if linked up with perusal of the reports of the Government Weather Bureau, will prove of advantage to mine managers who are aware of underground conditions in collieries under their control likely to be affected by sudden barometric changes, or by unusually high or low readings.

Nevertheless, although the reading and recording of the barometer has been compulsory at most collieries for a good many years past, no tangible correspondence or connection between colliery explosions and the state of the barometer has been worked out.

At one time so-called "colliery warnings" were issued in Great Britain, giving publicity to unusual conditions of the barometer, and for a number of years these warnings were a source of mirth to colliery engineers, because the conditions they announced had in all instances come to pass before the "warning" was printed.

The science of weather prediction has made great strides in recent years. Nothing was more striking in the log of the "R-34" dirigible's voyage across the North Atlantic than the accurate weather observations and predictions. By the use of wireless messages, and the more careful weather observations which will doubtless be arranged and recorded by all civilized governments in the future, it may be possible for colliery managers to be accurately forewarned of coming atmospheric pressure variations.

At the best, however, the usefulness of the barometer to the colliery manager is small, and the best safeguard is, as pointed out by the British Columbia correspondent, to see that the mining law requiring the provision of adequate ventilation is properly carried out.

Another correspondent states that the barometer in the United States will average a range of from $\frac{1}{2}$ to $\frac{3}{4}$ inch, and that the maximum range may be assumed as not exceed two inches, and this only rarely. Fluctuations of a greater range than this have we believe occurred on several occasions in Nova Scotia, particularly in the vicinity of the Bay of Fundy, but so far as ascertained no extraordinary conditions manifested themselves underground on these occasions of maximum and minimum readings.

The views of the readers of the Journal on this matter, and any particulars of unusual barometric variations with associated phenomena in connection with mine air which may have been observed, would be of general interest and value.

GROWTH, NOT "RE-CONSTRUCTION."

There is a tendency in trade periodicals in the United States to refer to conditions of trade and prices as they existed after the American Civil War, and from these conditions to draw inferences as to the trend of events after the Five Years' War just ended. Is it not a rather useless proceeding?

The territory, trade, transportation, population and industry of the United States when the Civil War ended were in no sense comparable or analagous to present day conditions.

During the Civil War the resources of America were wasted by civil strife, the destruction wrought affected only the citizens of the United States.

Preceding the entry of the United States in 1917 into the fight that commenced in 1914, the need of the Allies was the industrial opportunity of the United States, and probably the material help that was afforded by the munition plants of the United States to the Allies before April, 1917, was as effective in defeating the Germans as was the military and naval aid that was afforded after the United States came fairly into the lists. Further, thanks to her unimpaired and generous man-power, the United States was able throughout the progress of the war not only to afford ever increasing military assistance, but was able to keep her manufacturing establishments working at full pressure on supplies for the Allies.

Since the close of hostilities, as well as preceding this, the food-needs of Europe were met by exports from the United States in very large part, and this work of both necessity and mercy, proved also very profitable to United States producers.

Moreover, the future will probably make demands on American exports fully as heavy as the country can supply, which means a continuance of profitable merchandising in Europe with the profit accruing to the United States.

Why, therefore, should the United States fear the problems of re-construction? They have none. The

problems of growth are more likely to trouble our neighbours.

The analogies of the aftermath of the Civil War would apply with greater accuracy to the future of Germany, or France. In these countries reconstruction is an actual and dire problem that will tax the courage and patriotism of all the citizens of these countries to the utmost.

All that has been remarked herein regarding the outlook of the United States applies to Canada. While the population of Canada offered, in proportion to their numbers, a much greater sacrifice to maintain the rights of man than did the United States, yet economically speaking Canada is a nation just as virile, and with more virgin potentialities than even our extremely numerous and wealthy neighbours.

There are scars in Canadian hearts that only time can heal, and memories and regrets that will out-last this generation, but, from the mere viewpoint of commercial prosperity and industrial permanence, Canada has no more a "re-construction" problem than has the United States.

Not a foot of Canadian soil—except the Ridge at Vimy—has suffered violence at the hands of our foes, and we have prospered materially. Perhaps the distribution of the material gains of war has been unfair, but industrially, commercially, financially, and politically, Canada never was so eminent as she stands today. Morally also, and in the springs of nationhood, has Canada been tested, and we are citizens of no mean country.

Let us, therefore, also cease lamenting the problems of "re-construction," and get down to work. It is growing pains this country has, nothing worse, and many of our troubles are nothing but a state of mind.

EUROPE'S DIMINISHED COAL PRODUCTION.

By the actual physical destruction of coal mines, by death in war and from war-diseases and war-caused famine; by the removal of miners to other occupation through conscription and personal preference, by deliberate reduction of production through shorter working hours, and by the unbalanced and unefficient character of the colliery working organizations—which is another aftermath of war—the coal-mining industry of Great Britain and Europe has become reduced to terrible straits.

While the suicidal tendency of coal-mining events have been long foreseen by those engaged in the commercial direction of the industry, it has apparently required the voice of a mining engineer from the United States to crystallise the situation, and it is to be hoped that no international jealousies will be allowed to lessen the weight of Mr. Hoover's utterances, which are made out of his technical knowledge of mining, aided by his unique knowledge of the internal conditions of Europe and his detached and disinterested viewpoint as a citizen of the United States.

Mr. Hoover points out that the coal production of Europe is reduced thirty-five per cent from the normal, that the problem is domestic to Europe and cannot be alleviated by coal shipments from this side the water because of the shipping shortage. Mr. Hoover is specific when he characterises the coal shortage as "the greatest menace to the stability of life in Europe," but we are certain that Mr. Hoover did not, as reported, state "the fate of European civilization now rests in the hands of the coal-mine owners of Europe," because the colliery owners have little or nothing to do with their mines nowadays.

The territorial adjustments have been largely influenced by considerations of coal, and the relatively smaller extent of coal-bearing territory now held by Germany, together with the larger areas now held by France and Poland will in due time exert weighty influences on the industrial progress and material wealth of these nations, but today the problem that faces all Europe alike is that of destroyed mines, dissipated working organizations, wrecked transportation systems, and highly organized groups of miners who know exactly what they want and precisely how to get it, but are careless of the effect upon the rest of mankind.

A further consideration is that a reduction in European coal production was approaching, whether there had been war or not. What is true of the British mines is true of all European mines, namely, that the best picking is gone, and what remains has to be won by increased effort, at increased depths, from thinner and inferior seams, and under conditions of cost which have to bear a large proportion of expenditures that should have been amortized and charged into the selling price of coal years ago. In one sense it may be said that coal is not so much dear to-day, as it has been sold at deceptively cheap figures in former years.

United States papers, and many English papers also, make a great deal of the greater percentage of machine-mined coal in the United States, and intimate that the small production per man in British mines, and the greater cost of mining in Britain is largely due to the unprogressive attitude of the British coal-owner who will not use mining machines to the fullest possible extent.

If a comparison were to be made between the physical characteristics of the seams from which coal is today won in Britain, and the seams from which coal is now being taken in the United States, the comparison would remove a good deal of misunderstanding. Coal is being mined in Britain, and in Continental Europe to-day, under conditions of great depth, inclination of seams, faulting, inferior quality of coal, distance from the pit-mouth, drainage, ventilation, gas emission, thinness of seams, and drastic government regulations, of which United States miners have no conception.

Britain and Europe also is in the second stage of coal-mining to-day, a stage that has not been entered upon in the United States, unless it be in the anthracite mines.

To coal-mines operated under such conditions of failing extent, five years of time, and that war-time, makes a great difference. It is extremely unlikely that the European coal-mines taken as a whole, can ever again reach pre-war figures of production, and it will be a long long time before the collieries reach the maximum production of which they are capable, which, it may be re-stated will not equal pre-war figures. This condition might as well be faced by those who have the consideration of European coal matters. While lessened hours of labour will doubtless play its part in reducing the coal production of the future, the diminishing productivity of European coal-mines will be a factor less amenable to amelioration than labor efficiency.

No amount of mechanical coal-cutters will help this condition very much, or for any length of time, and it may be further remarked, in fairness to British coal miners and those who direct their work, that coal is being cut in Britain by mechanical cutters in seams so thin and deep that no United States mining engineer would consider the feat possible, unless possibly he also, like the British miner, was driven to mining under such difficult conditions by sheer lack of more easily mined coal. An advertisement in a well-known United States trade periodical refers to a pump installation in the "deepest bituminous coal-mine in the United States" in a shaft 1100 feet deep. The correctness of this figure is not ascertained, but in Britain 1100 feet would be considered a shallow mine, and one of the pressing problems of British coal-mines today is how to mine at great depths under conditions of high temperature.

"Only a greatly increased coal production, and improved organization for its distribution can save Europe from disaster next year," says Mr. Hoover, who further urged that some sort of fuel control be established to bring this about, but declined to accept the post of director of the proposed Commission, stating he believed the problem to be strictly European. In making his statement, Mr. Hoover shows that he realises that European problems must be solved by Europeans, but the thanks of all are due to him for courageously telling some truths about the menacing aspect of the problem of coal supply.

The greatness of the coal necessity of Europe is shown by the statistics collected under Mr. Hoover's direction, which indicate a probable coal output in Europe next year of 443,000,000 tons, against requirements of 614,000,000 tons.

As an exporter of coal, Europe is completely and finally out of the running, which is not the least significant event in these upsetting and world-shaking days.

Admiral Tirpitz says: "The Germans never understood the sea. In the nation's fateful hour the fleet was not used. I can only write the epitaph."

But the British did understand the sea. It is their father and mother too. And the British Navy wrote the German epitaph.

THE IMPERIAL MINERAL RESOURCES BUREAU

The Imperial Mineral Resources Bureau, organized for the collection of information with reference to the mineral resources of all parts of the British Empire, has been incorporated. The Charter granted on June 12th, provides that there shall be representatives of the United Kingdom, Canada, Australia, New Zealand, South Africa, Newfoundland and India appointed by the several governments. The Secretary of State for the Colonies will represent all other parts of the Empire. There shall also be six other persons who "may from time to time be respectively appointed by the Lord President of Our Council for the time being, and after due consultation by him with all important interests concerned shall be the President and Governors respectively of a body corporate by the name of "The Imperial Mineral Resources Bureau."

The purposes of the Bureau are: (1) to collect, coordinate, and disseminate information as to the resources, production, treatment, consumption and requirements of every mineral and metal; (2) to ascertain the scope of existing agencies, with a view ultimately to avoid any unnecessary overlapping that may prevail; (3) to devise means whereby existing agencies can, if necessary, be assisted and improved in the accomplishment of their respective tasks; (4) to supplement these agencies, if necessary, in order to obtain any information not now collected which may be required for the purposes of the Bureau, (5) to advise on the development of the mineral resources of the Empire or of particular parts thereof, in order that such resources may be made available for the purposes of Imperial Defence or Industry or Commerce.

Earl Curzon is the first President of the Bureau. The first Governors are: Sir Richard A. S. Redmayne, K.C.B., Chairman of the Bureau and Representative of the United Kingdom, appointed by the Lord President of the Council; Willet G. Miller, L.L.D., appointed by the Government of Canada; Thomas H. Hamer, appointed by the Government of Australia; William S. Robinson, appointed by the Government of New Zealand; Hon. William P. Schreiner, C.M.G.K.C., appointed by the Government of South Africa; Hon. Edward P. Lord Morris, K.C.M.G., appointed by the Government of Newfoundland; Richard D. Oldham, F.R.S., appointed by the Government of India; John William Evans, D.C., appointed by the Secretary of State for the Colonies and the following persons appointed by the President of Council; Westgarth F. Brown, Frederick H. Hatch, Sir Lionel Phillips, Edgar Taylor, Wallace Thorneycroft and Thomas Turner.

The success of the Imperial Mineral Resources Bureau will naturally depend upon the men who are its first Governors. In the list of names above are many well known among mining men in Canada. There can be little doubt that if these men meet frequently and do their best to perfect such an organization as is planned they will do great service to the industry and to the Empire.

In Dr. Miller Canada has an able representative on the Board of Governors. He will do his share towards making the Bureau really useful to the Empire and he will bring to his confreres reliable information concerning Canada's rich mineral resources.

The Revival of Local Ore Treatment: The "Journal" is pleased to be able to publish the text of the address on the revival of local ore treatment given by Dean Francis A. Thomson of the University of Idaho, at the International Mining Convention, held last June in Nelson, B.C.

A condensation of this address was contained in the report of the Nelson Convention contributed by our B.C. correspondent to the "Journal" of July 9th, but readers may desire to read the argument for the revival of the small smelter in full.

CORRESPONDENCE.

Sudbury, Ont., August 8, 1919.

The Editor of the Canadian Mining Journal,—

Dear Sir,—All who are interested in the Canadian mining industry must deeply regret the strike at Cobalt. But no one who is interested in genuine industrial peace, which can only exist on a basis of mutual good faith, can avoid sympathizing with the Cobalt mine operators.

The writer was in Cobalt twelve years ago, when the first strike was started and a "gentleman of the name of McGuire" was president of the local union. There could be no question as to the evils of policy and leadership where Mr. McGuire was concerned.

Then, as now, a large number of the steady men—the majority, I believe,—were opposed to the actions of the union officials. Yet they seemed to be unwilling to oust them from positions of trust they freely claimed the officials were abusing. Such unwillingness of the sane majority to control, and if necessary to repudiate, unwise leaders is an unfortunate weakness in many unions, including the Western Federation of Miners under whatever name it has appeared. The character of the union has not been the character of its membership, but of its active leaders. No sensible man can blame the Cobalt mine operators for refusing to deal with parasitical leaders, or for preferring to deal directly with the essentially sensible body of their own men.

The Montreal Gazette, as quoted by you sees more in the Cobalt strike than there really is: The spirit and good sense of the majority of the men are sound, but the men, individually and collectively, seem to be stricken by a strange helplessness when it is necessary to repudiate reckless, self-seeking leaders. This strike, engineered by the union officials, is not a manifestation of a political movement, but it is a selfish and heartless exploiting by the union officials of the instinctive loyalty of men toward each other.

Yours truly,

ANOTHER ENGINEER.

Brussels, July 10th, 1919.

The Editor of The Canadian Mining Journal,—

Dear Sir,—We wish to present to you a matter that is of more interest to the mining machinery companies of Canada who are looking for business in Europe than it is to ourselves.

To explain: We are receiving many inquiries and correspondence from Canadian mining machinery concerns, which mostly are inadequately stamped. We do not mind in the least paying the extra postage, but we think it possible that European concerns here who may receive similar insufficiently stamped correspondence, might think that Canadian concerns should acquaint themselves with this matter. We cannot find time or trouble to write to each individual company that addresses us as practically all these companies are guilty of this lack of knowledge or attention, and we thought that in the interest of mining industry you could perhaps find in your magazine space for a short message stating that you had received notification from Belgium that a three-cent stamp is insufficient on letters and a five-cent stamp is necessary. I state it in this way as one firm replied to us that they were told at the post-office this was sufficient; but our regulations here say a five-cent stamp and of course we are governed by the latter.

We extend you our thanks for the attention you will give to this matter and remain,

Yours very truly,

JUALIN ALASKA MINES CO.,

E. G. ASHBY,

Chief Accountant.

Note:—This letter was submitted to the Postmaster of Montreal who replies: "The rate on letters to Belgium is five cents for the first ounce, or fraction thereof, and three cents for each additional ounce."

GRANBY WORKMEN GET HIGHER PAY.

Anyox, August 5.—With the price of copper soaring and maintaining a level of twenty-three cents per lb. flat from smelter to refinery for the two weeks ended August 1, the Granby Consolidated Mining, Smelting & Power Company has posted another advance in wages to men in its employ. A twenty-five-cent raise per day to all men, which was posted on July 16, has now been capped with a further increase of fifty cents per day, effective from August 1. Notice to this effect is now posted at the Granby works here and at adjoining properties owned by the company.

The latest increase places this camp in the list of those paying the highest wages of any camps on the North American continent. All the Granby workings are under the eight-hour plan.

Since the signing of the armistice ending the great war increased prices in copper have resulted to date in an increase of wages over the basic scale of \$4.25 per day, miners now receiving \$5.75 per day straight time of eight hours. Muckers get \$5.25 per day and common labor is paid for at the rate of 6½ cents per hour, or \$5 per day.

A R. Roberts, lately of the firm of Burns & Roberts, Toronto, has severed his connection with the firm and opened offices under his own name at 201 Bank of Hamilton Building, Toronto. He will handle contractor's power plant and railway equipment.

The Revival of Local Ore Treatment

By FRANCIS A. THOMSON,

Dean, School of Mines, University of Idaho.

(Notes from an Address delivered at the International Mining Convention at Nelson, B.C., June 20th, 1919.)

One of the outstanding features of metallurgical economics during the past 30 years have been the consolidation of treatment plants at strategic centres. This was of course the logical and inevitable result of what our socialistic friends call "economic determinism." It would seem, however, that for causes which I shall attempt presently to show, this movement has about reached its maximum and that the pendulum is due to swing in the opposite direction.

Those of you who are familiar with metallurgical history will recall that prior to 1890 there were only three ore-treatment processes in general use, viz.: Amalgamation, Smelting, and the numerous more or less unsuccessful leaching schemes. During this period little smelters dotted the landscape wherever there were mines, unless the ore were readily amenable to amalgamation; and this was usually true only while the mine was working in the oxidized zone.

Throughout the Western States were hundreds of little smelters operating often inefficiently and always expensively because of lack of variety in their ore supply. This situation continued until the period of consolidation, which might be dated from 1890 to approximately 1920.

In British Columbia out of nine or ten plants formerly in active operation, Pilot Bay, Nelson, Sullivan, Revelstoke, Vancouver, Trail, Van Anda, Crofton, Ladysmith and Northport (a British Columbia smelter built in Washington, and no longer to be counted as a British Columbia asset), Trail alone survives. In the Western States, Tacoma, the Selby Plant at San Francisco, two or three plants at Salt Lake, one at Denver, one at Leadville, and one at East Helena, at Northport and at Kellogg represent the hundred or more smelters, large and small, of which they are the lineal descendants and successors in interest.

Monopoly, yes, inevitably under the circumstances; stifling of competition of course, due to the immutable laws of chemical combination.

The smelting business is as natural a monopoly as the street car business, or the telephone business. That does not mean it should be free from scrutiny, quite the contrary indeed.

Let me illustrate briefly and simply by a hypothetical case. Suppose we have three mines, A, B, and C, each producing 200 tons of smelting ore, and each manager smelting this at his own mine. A has a silicious ore; B, an iron ore; C, a limey ore. Let us assume further in order to make the thing quite concrete, that each ton of ore requires a ton of flux and that the total smelting cost per ton of furnace burden is, let us say, \$4. Then the cost to A, to B, and to C, will be \$8 per ton of ore smelted; that is \$4 per ton of flux, which yields no valuable product. Now if the smelting of these three ores can be carried out at one centrally located plant with a capacity of 600 tons, the cost under the conditions assumed, will probably be less than \$4 per ton, plus freight, so that the central plant will be able to charge \$5 or \$6 per ton, make

a profit of \$1 or \$2 and cut the cost for A, B, and C, of a like amount, thereby making a profit of \$500 to \$1,200 per day, and a saving to the three mines concerned of a like amount.

This illustration is, of course, schematic, and not at all exact, it will serve nevertheless to demonstrate the logic and inevitability of smelter consolidation. Yet I believe we have gone about as far as we are going in that particular direction — not that I think Trail is going to be put out of business and that we are going back to the days of the little inefficient smelter, but that metallurgical developments of the last 30 years, beginning with the application of the cyanide process by McArthur and Forrest in South Africa, here made it evident that smelting has no longer the supremacy in ore treatment which it formerly enjoyed. This situation is due to the developments in two fields, flotation and hydrometallurgy.

As long as recoveries by water concentration were hovering around 70 per cent, direct smelting was often, indeed I would say, in most cases, preferable, because of the higher recoveries possible by smelting. With the coming of flotation, making possible recoveries of 90 per cent or better, smelting is no longer necessarily preferable as a primary treatment process—and hence the field of raw ore smelting is being continually narrowed and more and more the smelters are being embarrassed by receipts of larger and still larger tonnages of flotation concentrate.

Meanwhile great strides have been made in the field of hydrometallurgy. This is perhaps best exemplified in the case of zinc, the hydrometallurgy of which has progressed by leaps and bounds in the last five years. The leaders in this work have been the metallurgists at Trail and at Anaconda, and while there has and probably will continue to be a good deal of dispute as to who was the inventor or discoverer of this process, it must be said of the men at Anaconda and Trail, as was said of McArthur and Forrest in the historic cyanide controversy, that "They converted what had heretofore been a pretty chemical scheme into a sound commercial success." Indeed so successful has electrolytic zinc become that in spite of predictions to the contrary, it will be able to stay in the market in competition with retort zinc even at the present low price levels.

Leaching of copper ores, both oxidized and semi-oxidized, is being carried out on a large tonnage basis in the south-western States and in South America. So far as sulphide copper ore is concerned, not much progress has been made, but there is no inherent reason why a method similar to that employed for zinc-roasting, followed by sulphate leaching, should not be successfully developed.

The hydrometallurgy of lead lags behind that of her sister metals, perhaps because of the relative insolubility of lead compounds. There is promise, however, in the new process for the volatilization of lead and silver in the form of chlorides, followed by recov-

ery in Cottrell Treaters, phenomenal extractions having been made with this scheme on a large laboratory scale.

Gold and silver we can always recover, if the cost is justified, by cyaniding, sometimes as in the case of gravity or flotation concentrate from gold or silver ores, only after roasting however.

Now in most cases these hydrometallurgical methods neither require nor justify centralized plants, provided any one mine or district can supply sufficient ore to ensure the minimum tonnage necessary for economical operation. The great advantage which lies in mixing ores for smelting does not apply to hydrometallurgy at all. In fact, each ore is likely to require slightly different treatment and the plant treating the ore from one mine is likely to have the simpler problem. Coke supply—always a bug bear to the lead and copper smelter need no longer be considered, cheap fuel can be used for roasting if indeed the ore does not practically furnish sufficient heat for its own roasting. In zinc, and in copper to a less extent, probably also in lead as its hydrometallurgy is developed, there will be need for abundant and cheap electric power, this, however, can be transmitted to any point readily if it can not be developed near at hand as is usually the case except in the desert regions.

There is a further general advantage possessed by hydrometallurgical methods, namely, that the residue or tailing is readily amenable to further treatment, a condition not true of slag, the pyrometallurgical residue.

For these reasons therefore I believe we face an era of decentralization in metallurgy and that in view of what has been said concerning flotation and hydrometallurgical development, I am convinced that the next 25 or 30 years will witness a renaissance of home treatment. This will, of course, by no means make the large centralized plants, such as Trail, superfluous, far from it, for they will have more to do than ever although the nature of the material they are called upon to treat may be somewhat different.

The net result will of course be the treatment of more ore, of lower grade ore, and the production of more gold, silver, lead, copper and zinc on both sides of the 49th parallel, for these problems are common to Canada and the United States, and they are being solved co-operatively, and with the freest interchange of information and ideas.

H. M. COMMISSIONER REPORT ON ONTARIO'S MINERAL INDUSTRY.

In the report of the British Trade Commissioners on the Trade of Canada and Newfoundland for the year 1918, the mining industry of Ontario receives attention. Mr. F. W. Field, who was a short time ago appointed His Majesty's Trade Commissioner at Toronto points out that the production of minerals is large and varied, and that the prospects for increasingly large outputs are good, the greater part of the undeveloped areas of the province being of pre-Cambrian formations, which are the chief productive rocks in this part of Northern America.

Mr. Field is an Englishman who has resided for several years in Ontario. He is well informed on financial and industrial conditions, and can be depended upon to furnish reliable information concerning the trade of the province. Much of the information in this report will prove of interest to all Canadian as well as to the British manufacturers who are specially served by the activities of the Trade Commissioners.

SAND AND GRAVEL IN ONTARIO.

Report by A. LEDOUX.

Part Two of the Ontario Bureau of Mines Report for 1918 consists of a monograph on the sands and gravels of Ontario by A. Ledoux.

The Report, it is explained, should be considered only as a preliminary one, deposits in over forty counties having been visited during four months of field work, thus allowing only a very short time for detailed examination of any deposit. Under these circumstances, the extended scope of the monograph, and the very full and detailed information it contains, is evidence that no time was wasted by its author.

The Report begins with a review of the characteristic properties of sand and gravel, and the methods of testing applied. These properties have been divided into morphological, physical and chemical. The origin and occurrence of the sands and gravels are explained, such considerations being of practical interest, as there is a close relation between the geological origin and the qualities of sands and gravels. In numerous cases continuous lines of deposits, marking ancient lake shores, may be followed in southern Ontario. An interesting map is included in the Report, showing the trace of the ancient shore lines and channels of Lake Iroquois and Lake Algonquin, which occur within the Province of Ontario.

"Most of the sand and gravel deposits in southern and eastern Ontario are very closely connected with the geological history of the Great Lakes. Just as the present shore lines do not show continuous deposits of sand and gravel, the old shore lines are marked by isolated zones or areas more or less parallel to the present shore lines."

On the shores of existing lakes certain parts are marked by extensive beaches containing abundant reserves of good building material.

Attention is also directed by the Report to some artificial sands made by crushing soft sandstones, suitable for special purposes such as glass-making and iron-smelting.

Moulding sands are found in the vicinity of Hamilton and Ontario. It is seldom more than two or three feet thick, appearing generally as a deposit under the superficial soil, when this soil comes in contact with an underlying sand formation. It seems to owe its origin to the circulation of water and to the action of vegetable and other organic life. It occurs in different grades of fineness, the coarsest material being used for large and rough castings, while very fine moulding sand is used for brass and copper castings. As, says the Report, this is a high-priced sand which can be exploited without expensive equipment, "there is a possibility of developing a considerable industry in this material for Canada.

Glass sand, which should be as pure as possible, is sometimes obtained directly from the pits, and sometimes as at the plant of the Oneida Lime & Sand Company near Hagersville, is prepared by crushing a more or less disintegrated sandstone. This particular product is prepared from Oriskany sandstone of Devonian age, which after crushing and washing contains sometimes as high as 99.5% of pure silica.

Some of the Ontario sands appear to be suitable for the manufacture of silica bricks, a product that is badly needed in Canada, but no instance of their manufacture in Ontario was noticed in the Report, although the suitability of the sands for this purpose is pointed out, and analyses of typical quartz sands are given.

An interesting quartz occurrence is located at Bellevue, at mile 21 on the Algoma Central Railway. From 6,000 to 8,000 tons a year of this material is shipped, principally for the use of the Algoma Steel plant. The rock has a faint pink tinge. It sells for \$1.25 to \$1.50 per ton at the quarry, and freight costs about 40 cents. The rock analyses 97.25% of silica, and 1.86% of iron, with traces of alumina and lime.

The Report contains numerous well-chosen and typical photographs, and like all the Ontario Bureau of Mines publications, is well printed. The Province of Ontario is apparently well supplied with sands and gravels, of differing characteristics, and of considerable applicability to the arts and to the industries already existing in Ontario.

Complete lists of the producing deposits are given, with names of operators, class of product and output, and a full index to the monograph is appended.

BUREAU OF MINES REPORTS ON GOLD AREAS.

The Ontario Bureau of Mines has just published reports on the Abitibi-Night Hawk Gold Area and the Larder Lake Area. The former is the work of C. W. Knight, A. G. Burrows, P. E. Hopkins and A. L. Parsons. The Larder Lake report is by Mr. Hopkins.

The Abitibi-Night Hawk Gold Area.

The Abitibi-Night Hawk Gold Area is the name given by the Ontario Bureau of Mines to that part of Northern Ontario embraced by geological map No. 286. The area is roughly bounded on the west by Frederick House river. Night-Hawk Lake is in the south-west corner of the map and the town of Cochrane in the north-west corner. The eastern boundary is the Ontario-Quebec provincial boundary.

The western half is crossed in a south-easterly direction by the T. & N. O. Ry. of which the terminus is at Cochrane. From Porquis Jet. the Porcupine branch runs south-easterly, and a short line runs north-westerly to Iroquois Falls on the Abitibi River where a great pulp and paper plant is located. From east to west the northern part of the area is traversed by the Canadian National Railway.

In considerable part of this area the predominant rocks are altered, volcanic rocks, which the authors of the report call Keewatin greenstones. Since it is gold deposits in such rocks that are yielding nearly all the gold that is being mined in Ontario the geological staff of the Bureau during the field season of 1918 devoted its attention to the mapping of this area. The map just published and the accompanying report indicate where the rock outcrops are and their nature. With this available the prospector will be able to use his time to greater advantage than before.

While little was known about the geology of the area, two important ore deposits had been developed; the Croesus gold deposit in Munro townships and the Alexo nickel deposit near Porquis Junction.

An unusual feature of the area is the occurrence of Keewatin lavas so little altered that a series of flows could be recognized. The authors found in Holloway township 14 distinct flows having a combined thickness of 4,400 ft. Features characteristic of the upper portions, middle and lower part of flows were readily observed.

In most cases where gold has been found in the area there are dykes of siliceous composition, such as feldspar porphyry, intruding the greenstones.

The authors of the report describe several gold deposits, including the Croesus, Howey-Cochéour-Wilans and the Ratz. Some information concerning several other gold properties is also given. Reference is also made to nickel, chromite, pyrites and asbestos occurrences. Unusual magnetic declination was found in Frecheville and Rand townships.

The Larder Lake Gold Area.

The Larder Lake Gold Area described by P. E. Hopkins includes the properties of the Associated Goldfields Mining Company, and of La Mine d'Or Huronia, as well as a promising prospect on Sharp Creek in Heart township. Mr. Hopkins' preliminary report on the area was published in the Canadian Mining Journal. Some additional information will be found in the report just published.

Mr. Hopkins says of the rusty-weathering carbonate rocks in which the gold deposits at Larder Lake occur "rusty weathering carbonate rocks are found in or near many of the gold areas of Northern Ontario. This type of material has been prospected to a considerable extent in various parts of Ontario without yielding any producing mines. These rocks are more widely distributed in Larder Lake than elsewhere, and are important since they appear to contain a greater quantity of gold than the other rocks of the area.

R. E. H.

ENLARGING PLANT AT HUNTINGDON MINE.

The Eastern Mining and Milling Co., Ltd., which is operating under lease and option the Huntingdon copper mine near Eastman, Quebec, has placed orders for additional machinery to increase the capacity of the ore treatment plant. Developments at the mine continue favorably. The map showing the location and surface plant of the Huntingdon mine, illustrating Mr. R. E. Hore's article in last week's issue was omitted through a delay in transit, and will be found in this issue (see page 605.)

PERSONALS.

Mr. George R. Rogers has returned to the properties at Wasapika after a visit to Toronto.

Mr. G. C. Bateman has returned to Toronto from Montreal and New York.

Mr. F. M. Connell has returned to the Huntingdon mine after a brief visit to Toronto, where he ordered additional machinery for the mill.

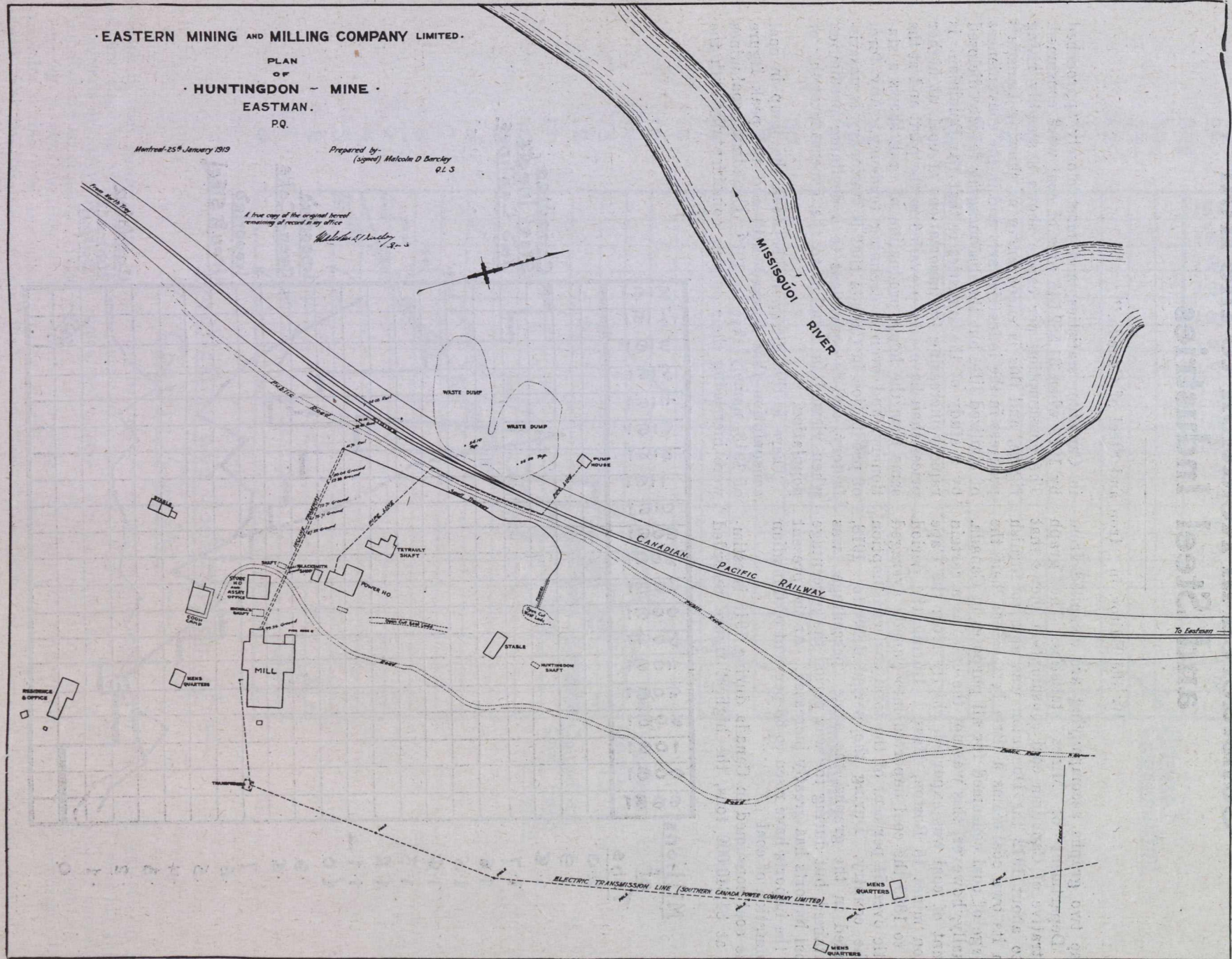
Mr. R. E. Hore is taking up professional practice as consulting geologist. His office will be, as at present, 1402 C.P.R. Bldg., Toronto. Mr. Hore will act as consulting editor for the Canadian Mining Journal.

Dr. W. G. Miller of Toronto, is one of the first Governors of the Imperial Mineral Resources Bureau which has been granted a charter of incorporation.

Professor H. E. T. Haultain is in Minnesota studying the Minnesota Mines Experiment Station.

BOUNTIES ON PETROLEUM

The amount paid in bounties on crude petroleum (the only bounties now being paid) in 1918 was \$113,497 for 6,566,133 gallons, and for 1917, \$101,428 for 6,761,886 gallons, the total from 1905 to 1918 being \$2,791,937 on 183,462,142 gallons, as given in the Canada Year Book for 1918.



Plan of Huntingdon Mine, Eastman, P.Q.
(See Journal of August 6th, 1919, pp. 594-6.)

The Production of Coal and Iron Ore in Canada Considered in Relation to the Iron and Steel Industries

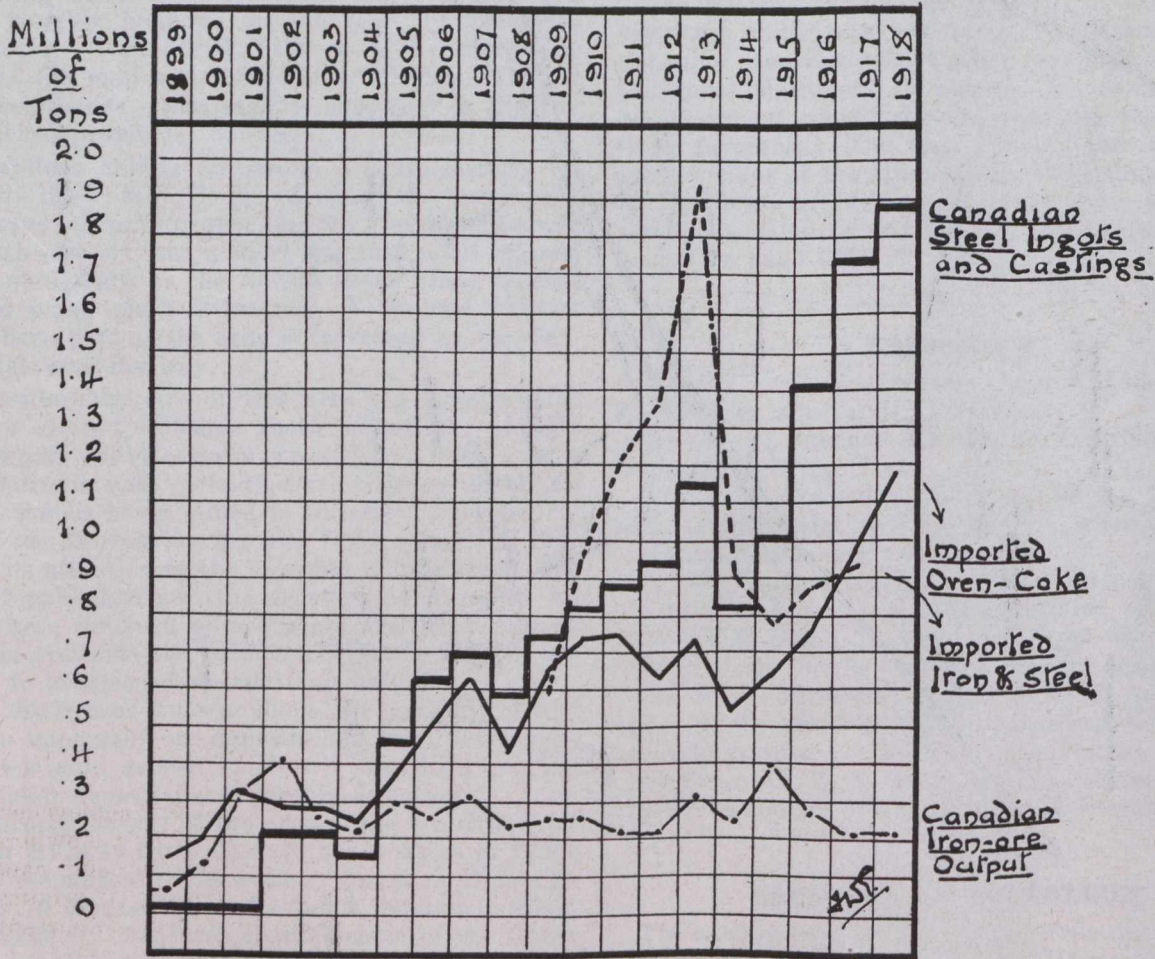
By the Editor, in "Iron and Steel of Canada."

The two graphs accompanying are compiled from the Department of Mines statistics. The graph illustrative of Canadian coal consumption shows that up to about 1912 the Dominion was able to furnish from its own coal-seams a little better than half the tonnage of coal consumed for all purposes in Canada. Actually, however, this was not the case, as a certain amount of coal was exported, chiefly from the Cape Breton mines to Boston, Mass. During the period 1886 to 1899 the coal imported into Canada averaged a little over 54 per cent of the total coal consumption of the country. During the period 1899 to 1918, included in the graphs, the same percentage was maintained, but during the war period the percentage of coal imports has greatly increased. At the present time the imports have risen to 63 per cent of Canadian consumption of coal

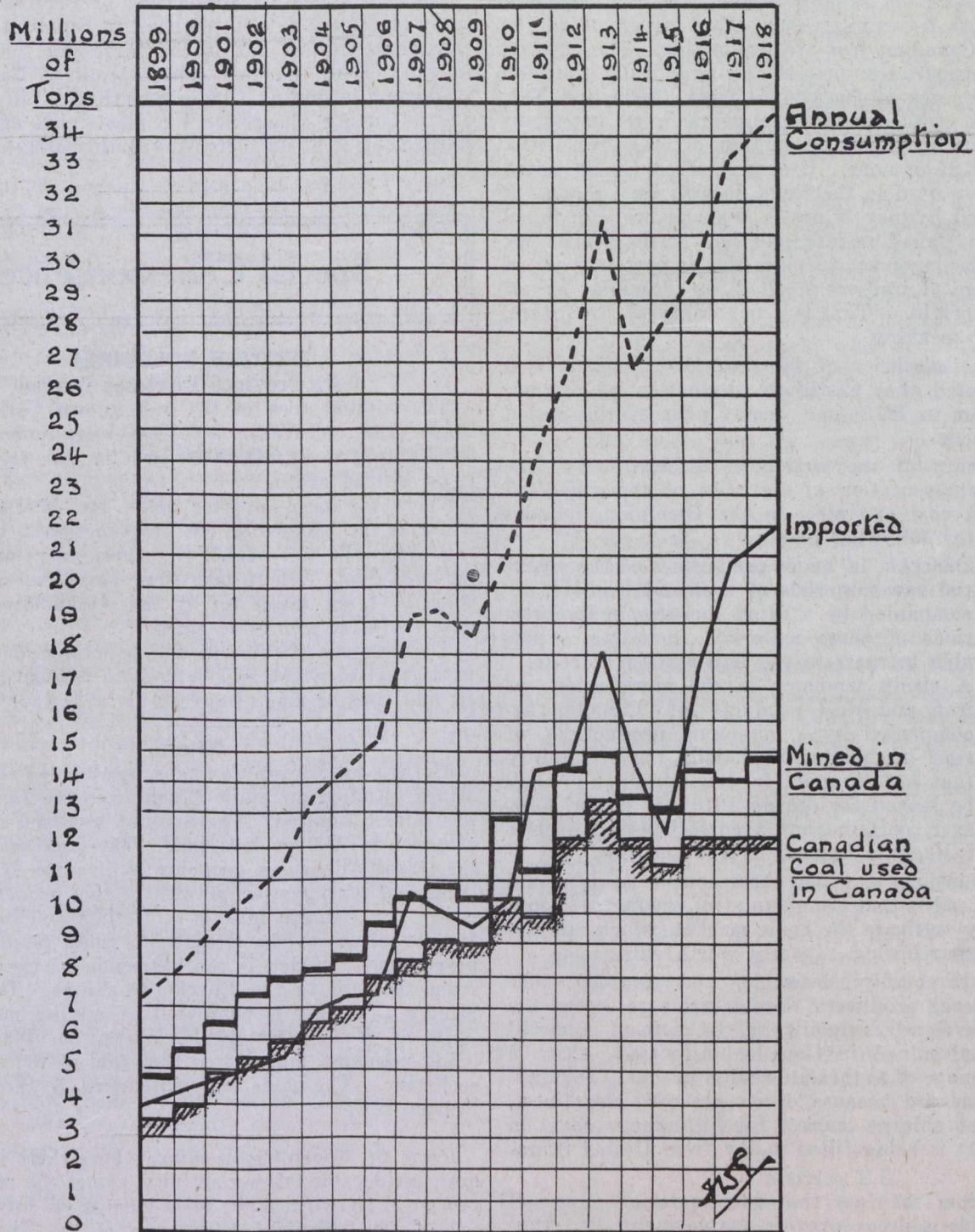
The coal consumed in Canada during 1918 is estimated at 34,840,000 tons, the highest figure recorded

in Canadian statistics, and most closely approached by 1913 when 31,582,545 tons of coal were consumed. The consumption per capita shows a steadily rising figure, and this is encouraging as showing Canada's progress in the industrial arts and in the conveniences of civilized life, but the discouraging feature disclosed by a study of the statistics is that the Dominion is rapidly increasing its importations of coal, at higher prices than have ever prevailed in the past, and at the same time the home production of coal, shows a stationary, and even a declining tendency. Any form of production in Canada that is stationary is unsatisfactory, and is equivalent to a declining production when viewed in relation to the general growth of population.

There is this difference between the jump in coal consumption that marked 1913 and the peak figure of 1918, namely that in 1913 Canadian coal-mines were increasing their outputs coincidentally with the



— Production of Iron-Ore and Steel Manufacture in Canada. —



— Production and Consumption of —
Coal in Canada —

increase in coal imports, but in 1918 the imports of coal are climbing without precedent, while domestic coal outputs are declining with no immediate prospect of manifesting an opposite tendency.

Turning to consideration of the graph showing tendencies in the iron and steel industry, it will be noticed that the tonnage of steel ingots and steel castings produced in Canada has climbed rapidly during the war period. This, of course, is a war condition, and does not represent the industrial growth of the Dominion with accuracy. Nevertheless, the peak reached by imports of iron and steel

in 1913 is still higher than the record achievement of Canadian iron and steel plants in 1918, showing that a home market exists and that the producing capacity of the domestic iron and steel industry is required to fill Canadian requirements to a very important extent.

The curve of imports of furnace coke should be considered in relation to the imports of United States coal, and discloses that Canadian steel plants are largely dependent both for coal and coke upon an outside source.

The tonnage of iron-ore into Canada is not shown,

partly because no reliable figures are available, but also because it is unnecessary after inspection of the curve of Canadian iron-ore production. The production of domestic iron-ores is now practically confined to the Province of Ontario. Nova Scotia and New Brunswick, which in former years were important contributors to home production of iron-ores, now produce little or none. It should, of course, be noted that the ore used in the Nova Scotian steel plants, at Sydney and Sydney Mines is Wabana ore, controlled entirely by Canadian interests, but, at the same time, it would be incorrect to class this important part of the tonnage of iron-ore smelted in Canada as of Canadian origin. That is a possibility of the future, politically speaking.

With the exception of the years 1899 and 1900 it will be noted that Canadian production of iron-ore was smaller in 1918 than in any year of the period under review.

A summary of the tendencies disclosed by the graphic representation of statistics of the allied industries of coal and steel in the Dominion includes therefore the following points:

- a. Decrease in home production of the essential raw materials of coal and iron-ore, accompanied by a rapid increase in importations of these materials, including a notable increase in the importation of coke.
- b. A rising tendency in the importation of iron and steel products into Canada, accompanied by a maximum production of steel in the Dominion, with the probability that a falling-off in steel production may be looked for during 1919. It is not, however, certain that a corresponding decline is likely in imports of iron and steel.

The conclusions to which these considerations would appear to lead is that Canadian steel producers should strenuously cultivate the home market, which appears to have a purchasing capacity worth cultivating.

It appears equally desirable and feasible that Canadian coal producers should strive to lessen the recently developed inequality in the ratio of imported coal to coal mined in Canada. Admitted that a certain tonnage of anthracite coal is probably required for domestic use because of its greater cleanliness, there is yet a large market for bituminous coal in Canada that is being filled to-day from United States sources.

Apart from the fact that raw materials obtained from outside sources provide employment in that outside source and not in the country where they are used—at least not in the same proportion—there is the further consideration that we are to-day paying for imports with a depreciated currency.

In a lecture recently delivered to the staff of Barclay's Bank, in London, Professor Nicholson says with reference to conditions in Great Britain:

"We are suffering in the first place from over-importation. During the war a great part of this over-importation was of the greatest national benefit. The imports from America were necessary for the conduct of the war. But an increasing part of the aggregate money value of these imports was due to the inflation of the currency and the associated rise in prices. This part was not a blessing—quite the contrary."

While a wholesale application of Professor Nicholson's statement is not justified in regard to all the considerations set out in the foregoing remarks, yet in relation to the coal consumption of Canada, the statement is one of fitting exactitude. In brief, we are importing altogether too much coal and we are purchasing it at an increasing disadvantage.

Special Correspondence

BRITISH COLUMBIA.

Cork-Province Increases Capital.

The capital stock of the well known Cork-Province Mines, Ltd., of Kaslo, B.C., has been increased from 1,000,000.00 to \$1,250,000.00 and the par value is now \$1.00 instead of 10c.

There has been an offer made for 400,000 shares, which is the balance of the Treasury stock, but before this offer will be accepted the stockholders will be given until Sept. 15th to take these shares up at 25c per share. If not taken up by the stockholders by that date the offer will be accepted.

The proceeds of this sale will be used in development work, part of which will be used to develop more power, and thus be able to operate on a 24-hour basis.

Nelson.

The Inland Mining Company has bonded the Eureka Mines, situated on Eagle Creek from the Eureka Copper Mines, Limited. The amount involved is \$60,000, of which \$17,000 has been paid. The same company has the Granite-Poorman property at Granite, B.C., under bond and proposes to operate the two properties. Already the Granite mill is operating on Eureka ore. Improvements to the Granite-Poorman plant are proposed among which is the extension of the tram-line from the mill to the Eureka workings. The Inland Mining Company is composed of mining men of the State of Washington, H. H. Vincent of Walla Walla being manager, and Alfred Bachtold of the same city, secretary. The mine superintendent is B. Crilly, of Nelson, B.C.

From the Sheep Creek camp, where there is at present considerable mining activity, comes the report that two good showings have been located on Fawn Creek, one of the principal tributaries of the Sheep. The larger of these is on the Iron Dollar group owned by Neil McColman and Murdoch McLeod, who have been doing development work on the vein for a long time. Recently they have opened up the lead in a new place where it has a width of twenty feet and shows considerable milling ore and some shipping ore. On the headquarters of the Fawn Creek is the Wonderful group held by Mr. Phil Billings. Mr. Billings has sunk a small shaft on lead which now is twenty feet down and the ore has consistently improved. Fawn Creek is one of the lower tributaries within the Gold section of the camp.

Good progress is being made in driving a long tunnel on the Queen Mine, Sheep Creek. This is now in over 1,200 ft. At a distance in of 700 feet the tunnel crosses the Yellowstone vein and it is expected to catch

its objective the Queen Vein, at about 1,500 ft. From the intersection of the cross-cut with the Yellowstone vein, a drift has been carried in an easterly direction for 200 feet, proving the ore on this vein to be variable in grade. A W. McCune, who has the entire Queen property under bond, from the Queen Mines Incorporated, is responsible for the foregoing information. The object of the present development is to gain depth on the Queen vein, which has produced much good milling ore in the past. The Queen has a twenty stamp mill and a compressor, both operated by water power.

The Orinoco group of mineral claims in the Nelson district is reported to have been sold to United States capitalists for \$60,000. A considerable body of copper silver ore has been exposed by ground sluicing and open cutting.

West Kootenay.

The Perrier Group of mineral claims, situated near Nelson, B.C., are being examined by Trevor Starky, the mining engineer of London, England, on behalf of capitalists who are considering bonding them. The proposed financial consideration has not been stated but it is said that if the negotiations are consummated, between \$50,000 and \$60,000 will be available for the further development of the property. These claims have been opened up to the extent of sinking a shaft on hundred feet, drifting 150 feet, and a small raise. Some difficulty was experienced at the outset with water which necessitated the installation of a hydraulic automatic pump. Ore and concentrates shipped in the past amounts to about 40 or 50 tons, and about \$4,000 has been taken out in the form of bullion. The ore is averaging about \$14 a ton.

Another property near Nelson, B.C., receiving attention is the Emerald Mine on Iron Mountain. A small concentrator with a capacity of 30 tons of ore running two shifts a day is to be installed.

Sandon, B.C.

The Blue-Bird and Rawdon claims on Reco mountain, near Sandon, B.C., have been purchased by Clarence Cunningham and associates, from the Montgomery heirs in New York for \$35,000, under a bond and lease for three years. Operations already have commenced in developing and putting the property on a shipping basis.

It is reliably reported that the Rambler-Cariboo Mines has purchased claims adjoining its present holdings. The property which is situated near Three Forks, B.C., consists of two claims, the price of which is said to be in the neighborhood of \$75,000. The claims acquired contain about 1,600 ft. of the vein from which the Rambler-Cariboo Company has produced a considerable quantity of good paying ore.

A strike of some importance is reported to have been made on Silverite property, owned by Clarence Cunningham. In drifting on the vein an ore shoot has been encountered with high values in silver. This property is situated in the vicinity of the old Queen Bess mine, out of which Mr. Cunningham made a considerable stake.

Revelstoke, B. C.

O. T. Bibb, president of the Multiplex Mining and Power Company, speaks very optimistically as to the

future of the district adjacent to the town of Revelstoke, from a mining standpoint. He says that excellent progress is being made in the development of the Woolsey group of claims, and that the Lanark mines at Illicellewaet is also showing up well. This property has been under development for a number of years, and the company has installed a modern concentrating plant. Recently a new body of ore was discovered which decidedly increased the output. Some shipping, both of ore and concentrates, has taken place. In the North Bend District (north of Revelstoke, the Mastodon Mine, which was closed down for a time, has again opened up. This is a silver, lead and zinc proposition. In the Lardo district several parties of engineers are at work who are interested particularly in properties in the neighborhood of Goat Mountain. Prospects are being inspected by other parties in the Fergusson and Trout Lake Districts. Mr. Bibb states that his company proposes installing a concentrator on its property near Revelstoke as soon as possible.

The Silver Creek mineral claims situated near Revelstoke have been bonded to W. H. Eldridge, formerly of the Trail smelter, who proposes to proceed with developments.

Marblehead Quarries to be Reopened.

Having been closed down practically throughout the war the quarries of the Canadian Marble and Granite Works, located at Marblehead, will be reopened immediately. G. B. Wilson, the manager, recently returned from the east, where he was in conference with James Carruthers, his principal. Mr. Wilson has left for Marblehead with a crew of men to commence sawing operations. In a short time a polishing crew will be employed. A considerable quantity of stone is already quarried and only awaits finishing. The huge seam or bed of marble at Marblehead, said to be really almost a marble mountain is unique and one of the wonders of the country. A thoroughly modern plant was installed some years ago. It includes at the quarry derricks, oilers and hoisting engines, three drills and three channelling machines; at the mill four gangs for sawing marble; in the polishing shop which is operated by electricity generated by steam power, rubbing bed, planer and polishing machines; and machine shop.

Merritt, B.C.

The Aberdeen Mine on Ten Mile Creek is being unwatered preparatory to a careful examination of the property by engineers representing British interests, while T. J. Corwin, manager of the Aberdeen Mine Syndicate, is not prepared to make a statement as to the property's future, it is understood that in the event of the engineers making a favorable report, finances will be available for the reopening of the mine and equipping it with a concentrator and a mill.

Kaslo, B.C.

The Index Mine, situated on the South fork of Kaslo Creek is to be provided with a very complete operating plant. The equipment includes compressor, Pelton wheel, rails and ore cars. A dam and water flume already has been constructed. There are four leads on the property which are being developed by a cross-cut, which is now in the first lead and which ultimately will give a depth of a thousand feet on the fourth

lead. The first vein has a good width of milling ore with a shoot of twenty to twenty-four inches of pay ore, which is now being sorted for shipment.

Fort Steele, B.C.

Gold placer mining operations are being carried on at Wild Horse Creek, near Fort Steele, on a considerably larger scale than for the last few years. The Gamble Company, after a twelve days' run, closed down operations owing to a break in the flume line on Boulder Creek. To test the ground a clean-up was made while the repairs were in progress, with results more than satisfactory. The Wild Horse Dredging Company, with leases covering the bed of the Creek from Kootenay River up about five miles, is working steadily to get its machinery in operation.

Trail, B.C.

The announcement has been made that James J. Warren, who has held the office of General Manager of the Consolidated Mining and Smelting Company of Canada for a number of years, has been elected to the Presidency of that company. Mr. Warren's preference has created favorable comment throughout mining circles in this province.

Grand Forks, B.C.

A compressor plant has been installed at the Maple Leaf Mills Franklin Camp. H. W. Young, the Manager, states that work will start immediately in the further development of the property. Two shifts will be employed in driving the tunnel which now is in some sixty feet, it being planned to do several hundred feet of tunnelling in opening up the property. The Union Mine, of the same camp, also is being energetically developed.

Yale, B.C.

Diamond drilling operations have been started on the property of the Aspen Grove Amalgamated Mines, Limited. Surface indications promise an extensive zone of medium grade copper ore and to prove this it is the intention of the company to do some 10,000 feet of drilling. The drilling started by the Provincial Government on the Snow-storm Group in Highland Valley continues and the results so far are promising.

Cowichan, B.C.

The Lenora property, Mount Sicker, Vancouver Island, has been bonded by G. B. Turner, representing New York interests, and there are indications promising a revival of copper mines in that district. It will be remembered that the operations of the Lenora Mines ceased years ago when the property appeared to be exhausted. Mr. Turner, however, has started a shaft from which he intends to cross-cut the formation north of the fault, an area left untouched by previous development. There are no indications of copper on the surface, but a small vein has been encountered. It is interesting to note that the Tye and Lenora Mines combined have produced over \$3,500,000 in copper and gold, of which \$500,000 was derived from the gold recovered. Mr. Turner is reasonably sure that he is putting a theory to a practical test that will result in a renewal of mining activity in the Mount Sicker Section.

The B. C. Manganese Company, Limited, is developing the manganese products situated near Cowichan

lake. A railroad is being built to connect the E. & N. Railway with the mine. Bunkers are being constructed at the mine and a water system has been installed. Already contracts have been arranged to start shipping almost immediately to the Bilrowe Alloys Company, Tacoma. The company has also been asked by the Canadian Consolidated Mining and Smelting Company, Trail, B.C., for a supply of manganese ore. Dr. T. L. Walker, Professor of Mineralogy, University of Toronto, visited the property recently and commented very favorably upon it.

Portland Canal.

There is no section of British Columbia attracting more attention in a mining way than Portland Canal. Hon. William Sloan, Minister of Mines, recently made a tour of inspection of the district. From Stewart he went inland to Salmon River and visiting the Premier, Big Missouri and other mining properties of the locality. On his return he spoke very optimistically of the outlook. He reported that development is in progress not only on the Premier but also on the Big Missouri in which Sir Donald Mann is interested, and on other first-class prospects. Mr. Sloan stated that in order to facilitate the opening up of the mineral resources of this section considerable road construction is necessary. The owners of the Premier mines were building eleven miles of road from Hyder through American territory to the Boundary line. The Provincial Government would assist in the building of the road from that point to the mine and also in the opening up of roads and trails to other properties in the vicinity. He observed that there could be no reasonable doubt that the prosperity following successful mining operations would mean a material expansion in trade. It was the opinion therefore that Canadian merchants should be alive to the opportunity offered. The Dominion government was spending a considerable sum in the construction of a wharf at Stewart and the British Columbia administration was constructing a road from Stewart to Hyder at an expense of approximately \$30,000. It will be seen, therefore, that the Government realize the importance of providing necessary transportation. He concluded by stating that present indications were that some of these properties would develop into first-class mines and that the whole district was rich in mineral resources. Mr. Sloan also visited the smelter of the Granby Consolidated Mining and Smelting Company at Anyox, B.C., and travelled over the Grand Trunk Pacific as far as Smithers, where he was in consultation with a number of mine operators of property situated on Hudson's Bay Mountain. He promised that the Government would extend some assistance towards providing roads and trails to the Colorado and Victory mining claims as well as other properties situated in that district.

Alice Arm, B.C.

The railroad from Alice Arm to Dolly Varden Mines has been completed, and the loading chutes on the company's wharf have been finished. It is not expected to be long therefore before the Dolly Varden is again on the shipping list.

The LaRose mine has started active operations and the North Star should be shipping at an early date. The latter has a good tonnage of ore on the dump. The Vanguard Group also is being put in shape for shipment of ore while the United Metals Company has open-

ed up a face of lead and grey copper ore that is reported to assay very highly. The Joplin Mineral claims, the ore of which goes high in silver, is being developed with encouraging results.

One of the most interesting mining deals of the year is the reported bonding of George Copper Mines in the Beaver River section of the Portland Canal Division to the American Smelting and Refining Company. These mines consist of ten claims situated six miles from the terminus of the Portland Canal Short Line Railway. Three mineralized belts have been explored on the property and are known as the Blue Vein, the White Vein and Green Vein. The Blue Vein comprises three veins aggregating ten feet of quartz in a fifty foot mineralized belt. The belt has been traced by open cuts for a thousand feet and the ten feet of ore averages \$4.00 in gold and 3 per cent of copper. The white vein has been traced for two thousand feet, measures four to six feet in width, and in places contains a high grade copper ore. Consideration is said to have been \$1,000.

B. C. PERSONALS.

Mr. W. G. Trethewey, now of Sussex, England, but formerly of the Coniagas & Trethewey Mines of Cobalt, in which district he is well known, was a recent visitor to British Columbia.

Mr. Trethewey has been looking over some properties here. He is a great believer in British Columbia, and just as soon as conditions right themselves in England will probably locate in B.C. Like many other investors, Mr. Trethewey states that labor conditions will have to become more settled in England before any moves can be made to make active investments here.

Mr. Alexander Sharp, the prominent coal mining engineer of Vancouver, who has charge of M. P. Burns' property at Coalmont, has resumed practice again after 10 days' illness.

Mr. Sharp is to deliver a lecture on cheaper and better coal before the B.C. Chamber of Mines at an early date.

B. C. Chamber of Mines Will Exhibit at Fall Exhibition in Vancouver, September 8 to 13 Inclusive.

Arrangements are fast being completed for an exhibition of British Columbia's mineral resources at the Fall show of the Vancouver Exhibition Association.

The Association is lending every possible aid to the B.C. Chamber of Mines, to make this exhibit a success. They have given the Chamber of Mines space for the use of nearly all of one of the principal buildings right near Hastings Street Entrance to the Park. This means that the first thing the visitor will see is the mineral exhibit.

Everything is being done by the Chamber of Mines to make this exhibit exceptionally attractive. It is planned to have an assay furnace in actual operation, also many other features that will demonstrate actual operations in connection with the mining industry.

Exhibitors Please Note: A hearty invitation is extended to those wishing to exhibit specimens of British Columbia minerals from any section of the Province. Same may be shipped care of the "Mining Exhibit, Vancouver Exhibition Association, Hastings Park, Vancouver, B.C.," and the Association will pay the freight or express charges on same.

Exhibitors should bear in mind that it isn't the size of the specimen, but the quality that counts. Have a full description of specimen, location of property and any other particulars of interest with name of owners.

Mark everything plainly so there will be no confusion in properly marking exhibit.

Mine Supplies.—Manufacturers of mine supplies and equipment firms will also exhibit and there promises to be one of the best supply exhibits ever held. Much machinery such as drills, etc., will be in actual operation. All firms wishing to exhibit will do well to get in touch with the Secretary of the British Columbia Chamber of Mines, Dominion Bldg., Vancouver, B.C.

Cobalt Strike

UNION EXECUTIVE REJECTS PROPOSAL OF SOLDIERS' COMMITTEE.

Cobalt.—After a full discussion on the local strike situation with the Minister of Labor, the deputation of returned soldiers returned from Ottawa on the seventh, and reported to a mass meeting of the returned men. They informed the meeting that the Minister of Labor would, on the request of either party to the dispute, appoint a Board of Conciliation, with full power to bring about a settlement. The findings of such a board are, of course, not necessarily binding on either party unless mutually agreed upon, but the Deputy Minister pointed out that in at least nine cases out of ten a board of this kind has successfully obtained its objective. If either party refuses to appoint a representative, the Minister of Labor will name one to represent that party.

The Deputy Minister further pointed out—and this point seems to have been completely overlooked at Ottawa — that the mine managers are an organized body, and therefore, that one Board of Conciliation can be appointed to cover all the mines in the camp, rather than having a board for each mine.

A Board of Conciliation cannot become operative unless all employees have returned to work.

The deputation therefore recommended that this proposal be adopted, since it meant that work in the mines could be recommended immediately, with a fair prospect of the ultimate adjustment of all points at issue.

The meeting then adopted the report, and instructed the committee to take up the proposal with the executive of the Miners Union, and, if they deemed it advisable, ask the Union Executive to hold a vote by secret ballot of all the workers in the camp as to whether they wished to return to work immediately, pending the result of a Board of Conciliation.

In the evening the committee held a meeting with the Union Executive. They pointed out that if the men returned to work immediately, pending a Board of Conciliation, a very great deal of hardship would be done away with, that work could be recommenced immediately, that even if the findings of the board were not binding, yet the chances were very strongly in favor of its findings affecting coming legislation in a manner beneficial to the workers, and that Cobalt and the surrounding district could look forward to a period of prosperity rather than one of depression and real hardship.

The miners' executive replied to the effect that, unless the operators conceded some points, they would not entertain the proposition, and that they considered it inadvisable to take a vote on the question of returning to work on the conditions proposed by the soldiers' committee.

Filter Problem Solved
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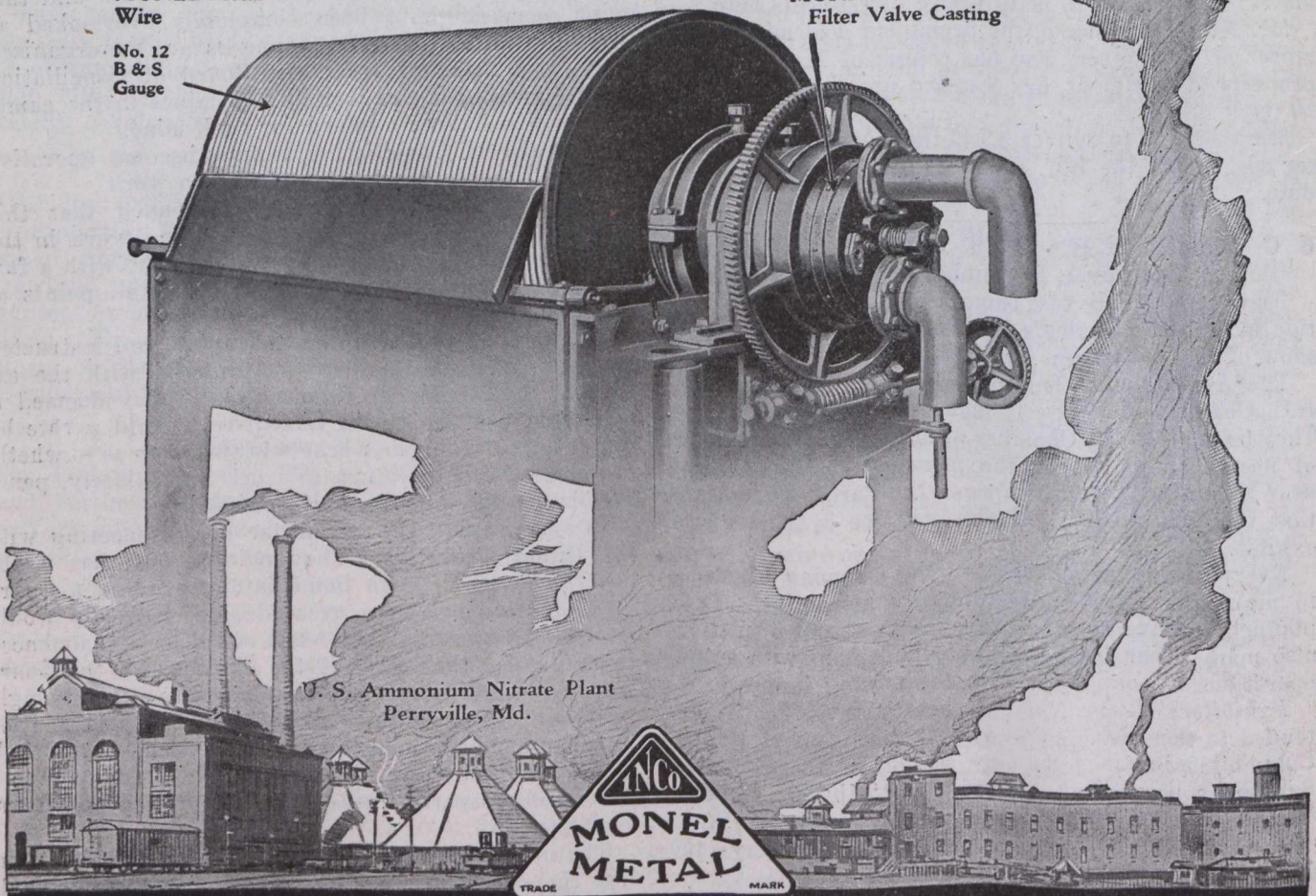
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MONEL Metal wire wound spirally over wool fabric (see illustration) gave permanent service. One MONEL wire, taken off and rewound over new fabric nine times, was still in perfect condition for further use. This is a typical example of MONEL Metal's wonderful resistance to acids and its superiority over other metals for equipment used in the chemical field.

MONEL Metal is very generally employed in manufacturing parts of bleaching and scouring machinery and dyehouse equipment

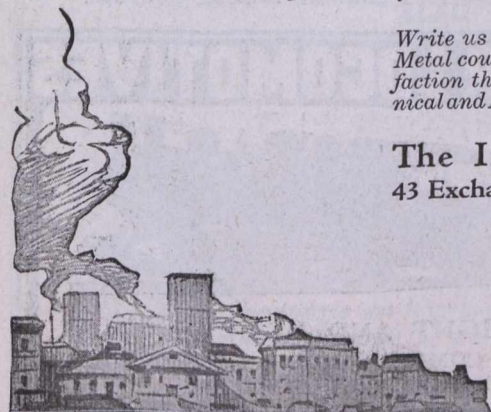
which come in contact with acids or strongly alkaline solutions.

MONEL Metal is a natural alloy of nickel and copper — non-corrodible — strong as steel — tough and ductile. Withstands acids, high temperatures and erosive action of hot gases and superheated steam. Can be machined, cast, forged, brazed, soldered and welded by electric or oxy-acetylene method. Takes and retains a perfect nickel finish.

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THE INTERNATIONAL NICKEL COMPANY

Special Correspondence

BRITISH COLUMBIA.

Test of the Fleet Process of Electric Smelting.

Having the financial support of the Provincial Government to the extent of a grant of \$2,000 the Vancouver Magnetite Iron and Steel Smelting Company, of Vancouver, B.C., has arranged for a test of a new electro smelting process which, it is hoped, will prove that the magnetite ores of British Columbia can be treated electrically with the assurance that the quality and cost of the product will permit it to meet competition in the open market. This company, of which J. H. Fraser, of Vancouver, is the managing director, is the owner of the Ronaldsay plant, Howe Sound. The experiments, by arrangement with the B. C. Electric Ry. Company, are being facilitated by the use of the latter's old power plant at Highland Station. The Provincial Government, through the instrumentality of the Minister of Mines, has shipped a quantity of magnetite ore from Texada Island properties. Wm. M. Brewer, District Mining Engineer, has had charge of this work which he reports to have been completed. The furnace is expected to be blown in on or about the 6th of August. Representatives of the Department of Mines are to be in attendance. Wm. D. Fleet, of Montreal, is the inventor of the process on trial. He was superintendent of the Canadian Copper Smelting Company at Sudbury, Ont., for six years and later installed the electrical equipment of the hydro plant of the Calgary Power Company at Kananaskis and Horse-shoe Falls. Subsequently he was a member of the Manitoba Public Utilities Commission.

It is interesting to note in this connection that general interest in the problem of developing the iron and steel industries in this province continues. The Hyatt Steel Products Company reopened its rolling mill at Port Moody recently after temporary embarrassment due to a strike. Several improvements have been made to the plant, as a result of which it is possible to turn out both a larger quantity and a better grade of steel than heretofore. Public sentiment is behind the proposal that these small firms and any other concern which might be induced to launch an iron and steel industry should have every encouragement. Many think that the Dominion Government should supplement the bonus now offered by the Provincial Government on pig iron produced within the Province from local ores. They take the position that if the resources of Canada are to be developed this basic industry must be stimulated, pointing out that less than five per cent of Canadian iron enters into iron and steel products manufactured in the Dominion, although there are unlimited quantities of raw material available.

An editor can feel grateful for such freedom of his pen as comes from the fact that he is called upon to write on matters that do not affect the pocket nerve of his advertising supporters. Such detachment—not degenerating, however, into vacuous aloofness—is the best guarantee of reasonable independence; absolutely independent no human being can be, for every man has prejudices and pre-occupations that color his views of life; but we confess that the editorial ideal, expressed though it may be with some lack of literary refinement, is the truly American notion of living so as to be able to look any man in the face and tell him to go to hell, most politely, most politely.—Mining & Scientific Press.

BARTER.

Bills of exchange and sight drafts fade afar,
With tedious detail of the ocean trade;
And dreaming I can see past foam and bar,
Primeval barter; in this eastern raid
Essential oils and simsim seeds are spread
For gleaming cutlery and iron bars;
And eyes strain westward where the sun sinks red,
Seeking a market under alien stars.

Textiles are asked in trade for caraway,
And coriander for enameled kid;
In ardent Africa the merchants pray
For roaring motors; in their eager bid
They offer almonds and pistachio
And dates conveyed through distant desert haze
On patient camels rocking to and fro,
Through far, entrancing, slow Algerian days.
Thos. J. Murray in the New York Times.

PRESIDENT OF THE INSTITUTION OF MINING ENGINEERS VISITING CANADA.

G. Blake Walker, the President of the British Institution of Mining Engineers is visiting Canada and the United States, and is expected to arrive at Quebec about the 23rd of August. Mr. Walker is one of the best known mining engineers in England. He is a charter member of the Institution of Mining Engineers, past President, and Hon. Secretary of the Midland Institute of Mining & Mechanical Engineers, and the recipient of a number of medals from the technical societies in Britain in recognition of his services and the interest he has taken in the problems surrounding the safety of coal mines.

The Deister Concentrator Company of Fort Wayne, Ind., have had prepared for distribution a very interesting map of Europe revised to show the new boundaries agreed on by the Peace Conference in comparison with the old outline of all countries. It bears the imprint of the Deister Concentrator Company from a publicity standpoint, and will be sent free to any of the readers of the Journal on request of the company.

SALES ENGINEER—With connections among Mines and Mills in Northern Ontario, wants position with live concern manufacturing Mining Machinery and Supplies. Salary and commission. Write in first instance to Box 10, Canadian Mining Journal.

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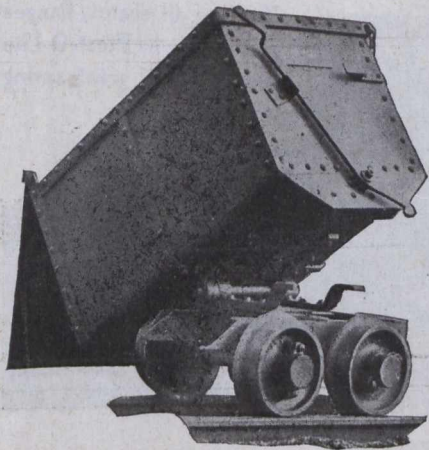
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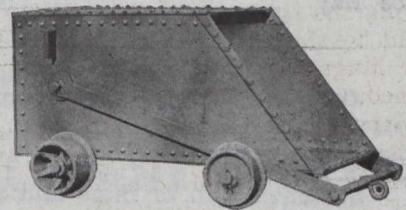
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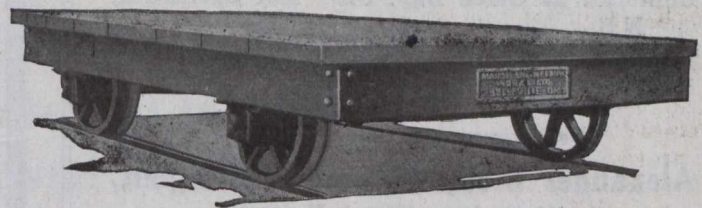
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2 Porter	7" x 14"	"	24"	4	5'3"	20000	18'0"
1 Baldwin	11" x 14"	"	28"	6	6'6"	40000	22'8"
1 Baldwin	11" x 14"	"	28"	6	6'5"	34000	19'8"
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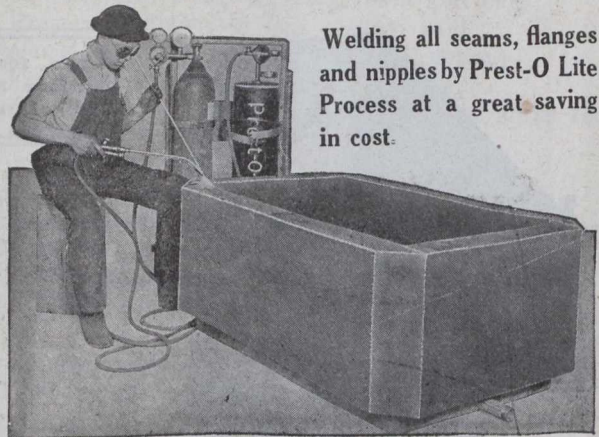
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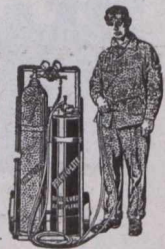
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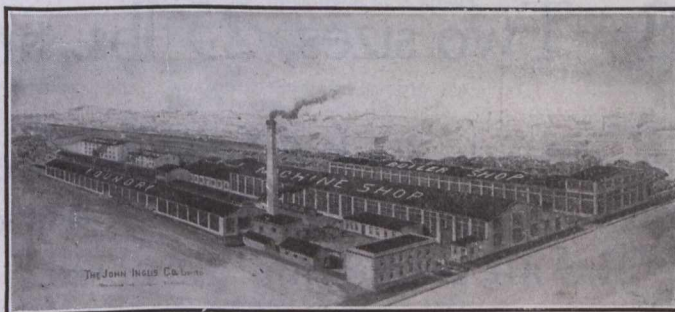
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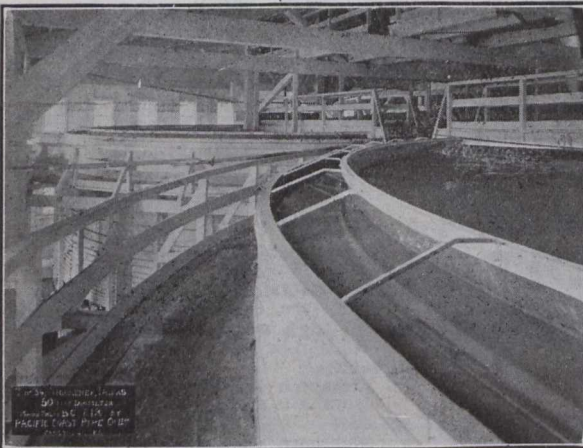
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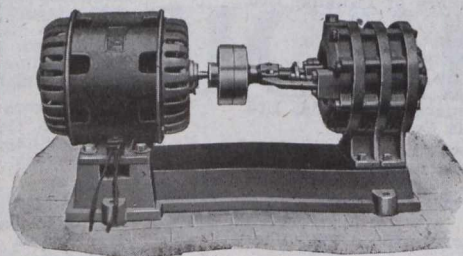
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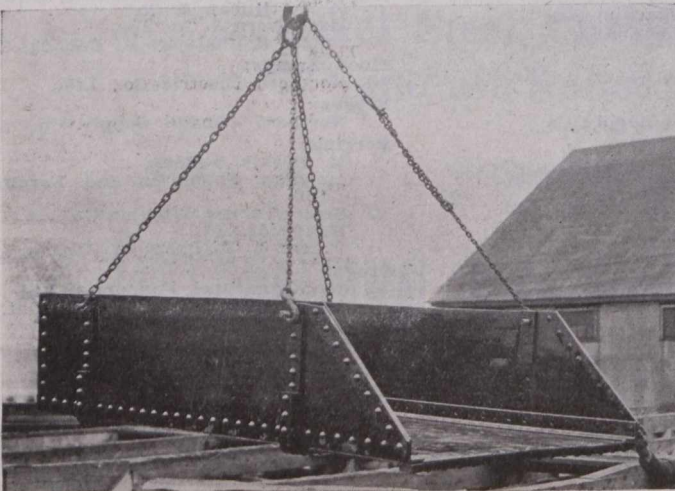
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Marsh Engineering Works.
Fraser & Chalmers Engineering
Works.
Fraser & Chalmers of Canada, Ltd.

Hose:

Northern Canada Supply Co.

Hydraulic Machinery:

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MacGovern & Co., Inc.
Fraser & Chalmers of Canada, Ltd.

Ingot Copper:

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Hoyt Metal Co.

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Jacks:

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Can. Brakeshoe Co., Ltd.
Northern Canada Supply Co.

Laboratory Machinery:

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Lamps, Miners:

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Dewar Mfg. Co., Inc.
Northern Electric Co., Ltd.

**Locomotives (Steam, Compressed Air
and Storage Steam):**

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John J. Gartshore, Toronto, Ont.
R. T. Gilman & Co.
Fraser & Chalmers of Canada, Ltd.

Link Belt:

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Jones & Glassco.

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Hadfields Ltd.
Fraser & Chalmers of Canada, Ltd.

Metal Merchants:

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Geo. G. Blackwell, Sons, & Co.
Consolidated Mining and Smelting
Co. of Canada.
Canada Metal Co.
C. L. Constant Co.
Everitt & Co.

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Hadfields Ltd.
Fraser & Chalmers of Canada, Ltd.

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Pumps—Sand and Slime:
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Pumps—Pneumatic:

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Sullivan Machinery Co.

Pumps—Steam:

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Mussens, Limited.
Northern Canada Supply Co.
Smart-Turner Machine Co.
R. T. Gilman & Co.
Fraser & Chalmers of Canada, Ltd.

Pumps—Turbine:

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Fraser & Chalmers Engineering
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Fraser & Chalmers of Canada, Ltd.

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Ledoux & Co.
Milton Hersey Co.
Thos. Heyes & Son.
Mine & Smelter Supply Co.
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Hendrick Mfg. Co.
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R. T. Gilman & Co.

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Hendrick Mfg. Co.
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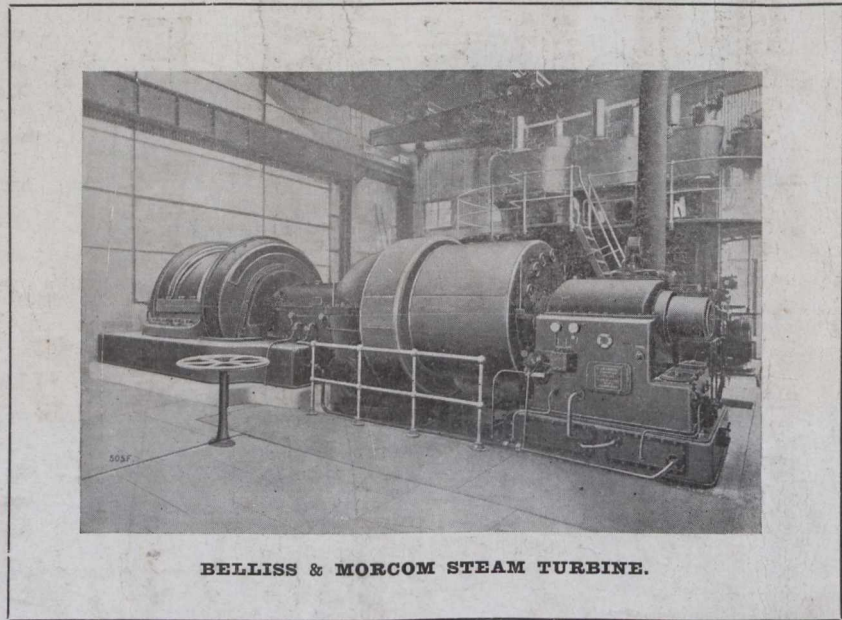
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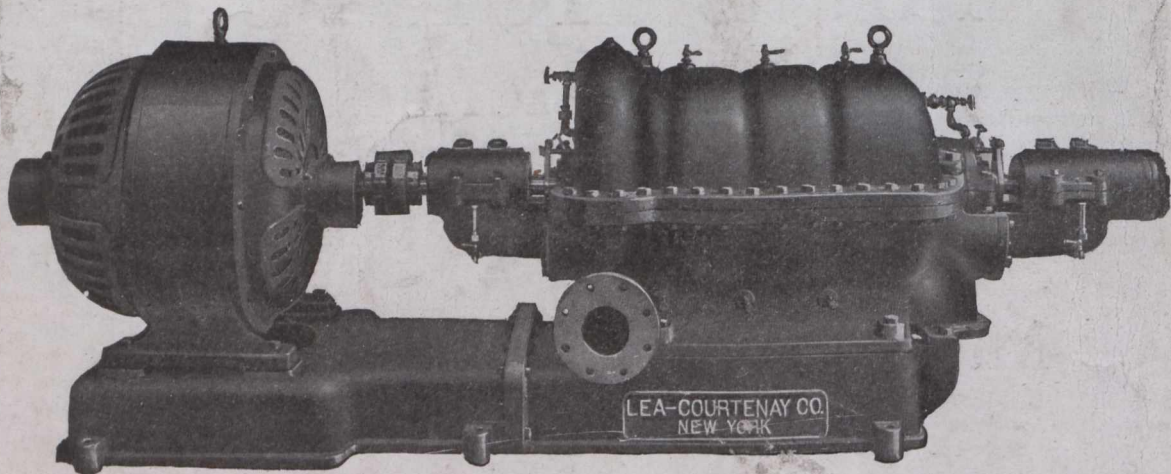
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