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## The Journal of Commerce

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TUESDAY, MAY 30, 1916.

### Special Articles

#### India and the Empire.

By W. W. Swanson.

#### Conditions in the West.

By E. Cora Hind.

#### Banking in Belgium.

#### Special Supplement.

#### The Mining and Metallurgical Industries of Canada.

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## The Bi-lingual School Question

MR. Charles Langlois, in a letter which we publish to-day, plunges into the most contentious part of the Ontario bilingual school question. He warmly champions what may be called the French side of it. Defenders of the Ontario laws probably would take exception to some of his statements and dispute his interpretation of the policy which, it is well to remember, has the support not of the Ontario Government only, but of an almost unanimous Legislature. But into these thorny paths we have not entered, nor shall we do so now. While endeavoring to inform our readers of the general character of the difficulty, we have not deemed it necessary to sit in judgment between the two parties. Our purpose in discussing the question, besides informing our readers of its nature, has not been to sharpen the points of dispute, but rather to invite attention to the desirability of seeking a ground upon which the two parties could come together. We have urged that the question cannot be happily settled by the legal proceedings now pending, or by either party insisting upon what it may regard as its legal rights. We have presented the question as one on which the views of extremists in both parties should be set aside, and which moderate men should approach in a conciliatory spirit. In the particular article to which our correspondent refers, our expressed purpose was to emphasize the fact that, apart from a few extremists, both parties to the dispute profess to have in view the same object, viz., the teaching of French along with English in the districts settled largely by French-Canadians. It has seemed to us that, this being the case, it is most desirable that representatives of both sides should be brought together, aided by experienced educationists, with a view to the framing of regulations which will, beyond question, carry out that common purpose. Discussion along these lines may possibly be helpful in the good work of finding a solution of a troublesome problem. Discussion along a different line, where each party insists that it is right and that its opponents are wrong, may be interesting to those who love a fight, but it is not likely to promote the "peace, order and good government" of our country.

There is one thing in Mr. Langlois' letter with which we very cordially agree, though we are unable to see its bearing on the Ontario question. It is his statement as to the superiority of the French members of the Dominion Parliament over the English members in their knowledge of languages. It is a fact most creditable to the French members that they all understand English, and most of them are able to speak it well, while but few of the English members speak or understand French. In a country where such a large proportion of our

people are of French origin and justly devoted to their language, it should be an aim of the English speaking population, to a larger extent than it has hitherto been, to know both languages.

## The Quebec Elections

THE success of the Provincial Government in the election just held was a foregone conclusion. Sir Lomer Gouin's Government had given the Province a vigorous and progressive policy, which had left their opponents not much room for criticism, and it cannot be said that the Opposition campaign was very energetic. The return of a large number of Gouin supporters by acclamation on nomination day was in itself a widespread vote of confidence in the Ministry, and an intimation to the electors everywhere that Sir Lomer was to be entrusted with the management of the affairs of the Province for a further term. The victory is one of which Sir Lomer and his colleagues may well feel proud, for the popular verdict in their favor is unusually strong. But it is doubtful if, even in the interest of the Government, such a sweeping victory is a good thing. The party system under which we live assumes that there will be, along with a strong government, a substantial Opposition to watch the movement of affairs and offer such criticism as hardly can be expected from the Government's own friends. The weakness of the Opposition in the new House makes the responsibility of the Ministers to the public all the greater.

## Ireland

THE best news that has come over the cable for a considerable time is that which tells that, in response to a patriotic appeal from Mr. Asquith, all parties in the British House of Commons have united in approval of the new effort which the Government are to make, through the instrumentality of Mr. Lloyd George, to find some ground for common action in the solution of the Irish problem. The divisions among the Irish people and their representatives have been the gravest obstacle to the efforts of English statesmen to give Ireland a satisfactory system of local government. These differences took on their most dangerous form very shortly before the outbreak of the war, when the two bodies of volunteers—one favoring the Home Rule Act and the other opposing it—were armed and drilled for conflict. The situation at that time was so alarming that one wonders what would have happened if there had been no war. Dreadful as the European war has been in many respects, it seems to have

been almost a blessing to Ireland, since it caused the Irish people, with the exception of the comparatively small number composing the Sinn Fein society, to forget their differences and unite for the service of the Empire. It was worth something to have John Redmond, Sir Edward Carson and William O'Brien on a common platform. Irish soldiers have played a splendid part in the war, a fact that must be remembered at a time when the madness of the Dublin rebels is so much in the public eye. All parts of the Empire recognize this fact, and see in it a ground for hope that men who can be brought into such unity for the service of the war can be brought also into unity for the management of Irish affairs. Mr. Asquith took a wise step when he went over to Ireland to personally look into the conditions there. It is most gratifying to know that, despite the many difficulties he met, he has found reason to hope that out of all that has happened there may emerge a better day for Ireland. In selecting Mr. Lloyd George as the Minister to act as a conciliator between the various Irish sections, the Premier has given the best evidence that the recent reports of estrangement between himself and the Minister of Munitions have no foundation. They have differed, as Mr. Lloyd George frankly told his constituents a few days ago, only as to the time and manner in which a measure of compulsory enlistment might be applied. Since they have now reached the same conclusion, and compulsion has only been adopted after the voluntary system has to its credit the magnificent army of over five millions of men, there is no longer any cause of disagreement, and Mr. Asquith is able to nominate Mr. Lloyd George for the performance of a new duty of the very highest importance to the United Kingdom and to the Empire. All patriotic citizens must unite with the leaders of all parties in the British Parliament in the hope that success may crown the efforts of the Welsh statesman to find a solution of the Irish question that can be accepted by all.

### Rural Credits

BRITISH Columbia has taken a step in leadership that will at no distant day have to be followed by other Provinces, if not by the Dominion. The Legislature of that Province has supported the Government in providing a system of rural credit, designed to give the farmers the opportunity to borrow money at lower rates than have hitherto been available. The Government has arranged to borrow a million dollars at a little above 5½ per cent, and offers to reloan it to farmers at 6½ per cent. This is not what is usually regarded as cheap money, but it is said to be substantially lower than the ordinary rates of the Pacific Province. While in all the prairie Provinces this question of rural credits has been the subject of discussion and enquiry, none has hitherto taken the decisive action now announced in British Columbia. Canada's banking system, in the main, deserves the high repute accorded to it, in its relation to most branches of the trade and commerce of the country, but the farmers generally have felt that it is not adapted to their needs. So far as the lending of money on mortgage is concerned no blame can be attached to the banks, for that is a branch of finance in which they are not authorized to engage. Some re-

cent amendments to the Bank Act have been designed to facilitate transactions between the banks and the farmers, and the results of these will be watched with much interest. But it may be found necessary, in the judgment of the progressive Westerners, to go further than the banks are disposed to go, and that this view will lead to the creation of some Governmental credit system not confined to loans on mortgages. The desire to give to the farmers the benefit of cheaper money is natural and commendable. The business, however, is a delicate one for governments to engage in, and in its management there will be need of care and judgment that are not always found in governmental circles.

### A Contrast

THERE is a striking contrast between the condition of affairs in the United States and that on the Canadian side of the border. Our neighbors of the States are enjoying the highest degree of prosperity known in their history. Not many months ago there was widespread depression of trade, but that has entirely disappeared. Largely through the prime influence of great crops, and to a considerable extent through the influence of foreign war orders, business is booming in all directions. American exports have increased to enormous figures. American imports are increasing, too, and include large values in jewelry, silks, satins, wines and other luxuries. Employment is plentiful. Wages are high. The people have money in abundance, and they are spending it freely on all the luxuries and pleasures that money can supply.

On the Canadian side also there is a large measure of prosperity, but it is not manifesting itself in the same way as across the border. Here the more serious side of life is experienced and cheerfully faced. The people who have money are spending little of it on luxuries. Pleasures are not excluded, but they occupy only a small share of attention. Participating as they voluntarily and cordially do in the responsibilities of a great war, in which they believe the liberties of mankind are at stake, the Canadian people are displaying a commendable determination to use their resources, not for their own gratification, but for the upholding of the great cause. There are over 300,000 Canadian soldiers in the trenches or in training for service at the front, for whose maintenance and comfort provision must be made. There is a campaign on to increase the number to half a million. There are Government loans to be supported. There are Patriotic Funds, Red Cross Funds, Belgian and other relief funds, all of which have to be sustained. Men, women and children are all, in their various ways, engaged in the good work. Day by day the casualty list from the scene of war grows larger. The crippled soldiers returned from the seat of war are becoming much in evidence. The fields of France and Flanders have a harvest of little wooden crosses which mark the graves of hundreds of the sons of Canada. There is deepest sorrow in many Canadian homes. But in the presence of all these things there is no murmuring, no hesitation as to duty, no doubt as to the ultimate victory of the right.

Our brethren across the border are prosperous and are enjoying the fruits of prosperity. We on this side of the line are taking up the more serious side of life. But we take it read-

ily, hopefully, and with a conviction that out of all this burden bearing there will come good which will leave its impress upon our country in all the years to come.

### South American Trade

OUR American neighbors are not backward in taking advantage in any quarter of the trade opportunities which have become open through the inability of the belligerent nations to carry on business as formerly. Their activity, however, is particularly noticeable in seeking increased business in South America. Not unnaturally they regard this field as one upon which they have a special claim, and they are putting forth efforts to obtain markets there which if successful now, will undoubtedly strengthen their position for the keen trade battle that will come when the shock of arms ceases. The American banking laws formerly prevented the establishing of branch banks in foreign countries. This handicap has been removed by the Federal Reserve banking system lately adopted. American bankers have been inquiring into business conditions in the South American countries. Some of the larger American banks have opened branches, and others will follow. In the last seven months the exports of the United States to the South American countries amounted to \$97,000,000, against \$57,000,000 in the corresponding period of the previous year.

This is a business field that should be carefully inquired into by Canadian producers and manufacturers who are in a position to engage in the export trade. An important consideration in this connection is knowledge of foreign languages. French is useful, for, next to English, French is a world language, and Spanish is of the utmost value. In the New York commercial journals there are numerous advertisements offering places to persons who speak Spanish. The point is worth remembering by Canadians who desire to participate in the business opportunities of the South American Republics.

Sir Edward Grey was able to successfully defend, in the British House of Commons, his action in giving an interview to a correspondent for publication in a widely circulated American journal. Such things are against the traditions of British diplomacy, it is true, and one could not wish Sir Edward to oblige every newspaper man who comes along. But German agents were availing themselves of the opportunity offered in the American press to put the German side of affairs before the American people in their own German way. It is much to be desired that the British side of controversies in which the United States and the world are interested shall be put before the American people occasionally by British statesmen who can speak with authority.

Much interest is manifested in the United States in the new oil company known as the "Sinclair," which, with a large capital, is assumed to be a competitor of the famous Standard Oil Company. The operations of the new concern will be watched closely, and not without a doubt as to the reality of the proposed competition. The Standard has hitherto proved its ability to suppress all serious competition, and may again be able to do so.

## India and the Empire

*British Justice in India has been Answered by India's Wonderful Rally in Defence of the Empire, and the Indian Political Situation has Remained Remarkably Quiet*

By W. W. SWANSON.

The German Kaiser has had more than one disappointment since he mobilized his hordes for a kultur-war against the Allies, but assuredly none has been more bitter than the action and conduct of India since the conflagration broke out in Europe. Various United States journals to the contrary notwithstanding the great Dependency has remained superbly loyal and generous to the British cause since the first early and feverish days of August, 1914. For some hidden and inscrutable motive, nevertheless, the British Government has permitted to remain uncontradicted various malicious reports concerning alleged insurrection and sedition in India that have found currency in the United States and even in Italy and France. The truth is that at no time within the past decade have Indian politics and affairs been in so untroubled a condition as at the present moment. Whatever agitation there may be, has been caused by a group of revolutionaries, and intellectual visionaries and malcontents, that have found asylum, for the present, in the State of California, and from that vantage-ground have carried on a campaign of vilification and slander against the cause of Britain throughout the United States. That they have linked themselves up with German plotters and dynamiters in the Republic and have had their nefarious operations financed by German gold, sufficiently demonstrates their worth as impartial commentators on events that are transpiring at the present time in India. That India on the political side has remained absolutely calm and unmoved since the beginning of hostilities is a sufficient refutation of the charges made by such as the Hon. W. J. Bryan, who took occasion to attack British rule in India with the utmost virulence, merely, we presume, by way of showing how much better the Great Commoner could have managed the job himself. Be this as it may, and with a full and ready acknowledgment of mistakes made in the Dependency in the past, nothing could so strikingly testify to the innate justice and firmness of British government in India during the past two hundred years, as the manner in which Indians of all classes have acted during this struggle, and their unprecedented outburst of enthusiastic loyalty at its inception.

### Indian Aid to Britain.

When the Indian contingent landed at Marseilles in the autumn of 1914, welcomed with cheers and garlanded with roses, a new epoch dawned in British history and, indeed, in the march of the world's civilization. It is now known that England did not ask for these troops — they were thrust into the European field of battle by the Indian nation itself, determined as it was to stand by Anglo-Saxon ideals of liberty and justice and to fight for them to the bitter end. Notwithstanding the occasional friction that was manifest in the working of the government machinery in the Dependency, and despite injustices that had been perpetrated from time to time during the long two hundred years of British rule, it was recognized, almost intuitively by the Indian people, that Britain stood for something that was very precious to them and to the whole world — namely, the reign of law, order and liberty. There had been a certain amount of dissatisfaction in India with the existing order of affairs; but a dissatisfaction, be it noted, that was one of the direct and most fruitful products of British rule. England had gradually equipped India with railways, canals and roads; she had practically eliminated the possibility of widespread suffering for the future through a failure of crops in any one district, by constructing at enormous cost great irrigation works; she had given the Indian people domestic peace, and protection on their frontiers; and last, and perhaps most important of all, she had built up a great educational system comprising not only elementary schools, but technical institutes and colleges from which, each year, thousands of young men emerged to play their role in the upbuilding of the nation's material and intellectual structure. Unfortunately, there was not room in the civil service as hitherto constructed for all graduates of the higher institutions of learning; and hence the very natural demand on the part of native Indians for wider opportunities in govern-

ment service. More and more, however, posts were being found for Indians in the administrative work of their own country, and tens of thousands found scope for their abilities and training in that direction. Others entered the various learned professions; many found their way into journalism. And as the Government placed practically no obstacles in the way of free assembly or free speech there was, naturally enough, a good deal of criticism, among the young intellectuals, of British methods and of British rule. Nevertheless, we must insist upon the point that such an outcome of England's policy was not only natural but inevitable. The seeds of self-discipline and of self-government had begun to bear fruit. The teaching of the lessons of liberty gained through a study of the glorious pages of English history was not lost upon the young Indians; and therefore, in great measure and degree, the political and social ferment engendered by that teaching, as has been said, was not only inevitable but to be welcomed. It only remained to guide it into the right channels.

For these reasons, among many others, nothing so touched with emotion the British people in those first few weeks of war — not even the spontaneous manifestation of loyalty on the part of the Colonies, deeply felt as that was — as India's outburst of almost passionate devotion to the Empire, and its cause. There had been doubts and misgivings among Englishmen, so prone to self-criticism and self-deprecation in every period of national crisis, concerning India's attitude. But these were swept aside by the availance of offerings of men and money from India — in the loyal and devoted service extended by prince and peasant throughout the length and breadth of the entire Peninsula. It is not too much to say that British military operations in Gallipoli, in Egypt, and in Mesopotamia would have been impossible without Indian aid. The Dependency has furnished not less than 200,000 troops for the furthering of the Empire's cause. Nothing like it has been known in the world's history. And nothing could demonstrate more clearly the inherent justice of British rule in India.

### India Not a Nation.

Now and again there have appeared utterances in the press and on the platform, even in England itself, from visionaries and ultra-radicals like the late Keir Hardie, that Britain's day is done in India; and that the Dependency is at last ready for home rule. It is difficult to listen with patience to such words of wisdom from self-appointed mentors of empire. Everyone knows that India is not a nation; that it will take years to build up a national self-consciousness; and that England has been, and is, engaged upon this, more than upon any other, task. Lord Morley, who only resigned his office as Secretary of State for India in August, 1914, has done more, perhaps, than any other British statesman in this direction. He made it forever impossible to establish a military oligarchy in India; and laid wide and deep the foundations for a future great democracy. He destroyed the autocratic principle in India's government; and combined India and the United Kingdom in a limited liability partnership, for assuming the rights and obligations of guiding the destinies of 300,000,000 of the human race. He recognized the justice of the claim of native Indians to be admitted to a large and more important share in the government of their country; and put that principle into practical effect. A larger measure of local self-government was extended to the Dependency, and Indians were given a greater voice in the affairs of the Imperial Council. But this most liberal-minded of men also knew quite well that the power and prestige of the United Kingdom would be required for generations to come to maintain internal order and harmony in India itself, as well as to protect it from possible foreign aggrandizement. It is recognized by responsible men that India is not a country, but a continent; not a nation, but a congeries of tribes and races. There are forty-three distinct races within her borders, and nine separate and distinct religions. There are more than two thousand five hundred different castes, with their offshoots, each with its own customs and peculiar-

ties. Moreover, within that swarming mass of people there are more than 60,000,000 Mahomedans — a nation within the nation, themselves. Above all, these peoples and races are kept apart by the multiplicity of dialects and languages that are found between the Himalayan Mountains and Cape Camorin — a hard fact that is too often overlooked by superficial travelers who skim the surface of Indian life and then return to descant upon English autocratic rule. By the irony of fate, indeed, the Indian National Congresses, that have been foregathering these thirty years past, are compelled to use the English tongue in their deliberations, in order that the delegates may understand one another! In a word, it is quite accurate and fair to say that, because of religious, racial and linguistic reasons, the great main groups in the Dependency are kept farther apart than Danes, Poles, Prussians, French and English are in Europe.

### The Native States.

An astonishing outcome of the war has been the assurance given by the rulers of the Native States of their loyalty and friendship to the British Government. It is sometimes forgotten that one-third of India is still under native rule; and that there is in the Dependency about 700 Native States, comprising a population of more than 62,000,000 souls. It is astonishing, we repeat, that such unanimity of opinion has been felt and expressed regarding British overlordship in India. This is due, no doubt, to the fact that in 1858, just after the Mutiny, Queen Victoria issued a proclamation guaranteeing to the Native Rulers all their accustomed rights and privileges, together with the assurance of protection from foreign foes. All treaty rights with the Princes of these States have been scrupulously observed. For these, and other reasons, the outbreak of war found the Native States rallying to the defence of the Empire. The Nizam of Hyderabad gave out of his private purse \$2,000,000 for the equipment of war; the Maharaja of Gwalior donated \$1,500,000 for the equipment of a hospital ship; the Maharaja of Mysore and other rulers followed with like princely gifts. Even independent border States, like Nepal and Tibet, sent offers of aid for the British cause, as expressions of gratitude for English justice and protection. Even the enemies of the Empire must be compelled to admit that British rule in India rests upon something more enduring than force.

### The Secret of British Success.

There is no secret to the success of British administration in the great Dependency. In last analysis the Government of India is based upon the trust of the people, and not upon force. Even in normal times, England maintains only 80,000 white troops in India, and 160,000 native. Since the outbreak of hostilities half of the white troops have been replaced by Territorials from England — men who are much inferior, whatever undeveloped qualities may be in them, to regulars. At least half, also, of the native troops, have been withdrawn for active service elsewhere. It is a truly remarkable achievement that England has been able to protect successfully the lives and property of 300,000,000 people with a force that, at its greatest, does not exceed 240,000 men, more than half of whom are native Indians. In proportion to population this is a much smaller army than is possessed by the Pacific United States. Were the Indian people united and resolved, and convinced that English rule is unjust, the English troops would be swept into the sea.

### The Loyalty of India.

But India is convinced that British rule is rooted in justice and in impartial benevolence. Only so can the present situation be explained. Sir S. T. Sinho, the President of the Indian National Congress, which has just held its thirtieth annual meeting, paid a glowing tribute to British rule in India, and pledged the unqualified support of the people to the cause of the Empire. The All-Indian Moslem League has also, in unmeasured terms, praised the role that Britain has played in the Dependency, and pledged the support of 60,000,000 Mahomedans to the British Government — this, too, despite the attempts made from Berlin and Constantinople to foment trouble through the proclaiming of a Holy War in India. The Nizam of Hyderabad, head of the Indian Mahomedan, has not only furnished men but — as mentioned before — added a princely gift in money for the service of the Empire. During these twenty months of war India has remained firm, resolute and tranquil, notwithstanding all the machinations of Germany and Turkey. Little more than ordinary precautions have been taken to preserve the peace. There have been slight disorders and outbreaks, it is true; but not a

(Continued on page 27).

# AMONG THE COMPANIES

## MONTREAL LIGHT, HEAT AND POWER COMPANY.

New records were made by the Montreal Light, Heat and Power Company during its fiscal year ended April 29th. As a matter of fact the company earned so much money during the past year that it has announced its intention of reducing the price of gas. The high levels in gross earnings, net earnings from operation and net income available for dividends, established the previous year, were all passed by substantial margins. Gross rose \$260,062, or 3.9 per cent to \$6,877,167; net earnings, \$284,462, or 7.6 per cent, to \$4,020,369, and net income \$261,445, or 10.1 per cent, to \$2,858,188.

On the average capital stock employed, and following the company's new plan of deducting depreciation reserve allowance before, instead of after, dividends, net income was equivalent to 15.3 per cent earned, against 14.2 per cent the previous year.

An interesting feature of the statement is that it is the first from any large Canadian corporation to contain definite provision for the new Canadian profits tax. President Sir Herbert S. Holt estimates that the company will be liable for approximately \$600,000 in the three years. Two tax periods have already accrued. The first year's tax, amounting to \$169,344 has been provided out of suspense account, while that for this year, \$204,729, has been provided out of the year's surplus earnings. The two items are duly entered among the current liabilities of the company.

Even after the extraordinary war tax deduction of \$204,729, as well as the regular pension fund contribution of \$10,000, the company carried forward a larger net surplus than in 1915, \$772,518 against \$759,242. This amount carried forward brought the total surplus of the company up to \$5,742,272, an amount representing more than 30 per cent on the capital stock, apart from equities created by reserve funds aggregating \$4,264,279.

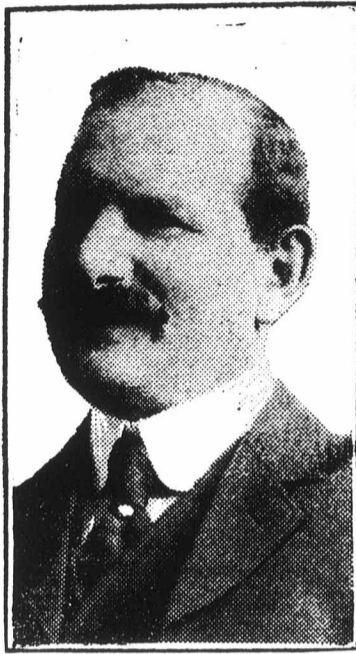
Comparisons of profit and loss figures for three years follow:

	1916.	1915.	1914.
Gross rev...	\$6,877,167	\$6,617,105	\$6,245,697
Oper. and main ..	2,856,798	2,881,197	2,778,451
Net earn. ....	\$4,020,369	\$3,735,907	\$3,467,246
Dep. res. ....	675,000	650,000	600,000
Net rev. ....	\$3,345,369	\$3,085,907	\$2,867,245
Fixed chg. ....	487,181	489,164	467,976
N. income ....	\$2,858,188	\$2,596,743	\$2,399,268
Divid. ....	1,870,940	1,827,500	1,700,000
Surplus .....	\$987,248	\$769,242	\$699,268
Pension F. ....	10,000	10,000	10,000
Balance. ....	\$977,248	\$759,242	\$689,268
War tax. ....	204,729		
Net surp. ....	\$772,518	\$759,242	\$689,268
Prev. surp. ....	4,969,754	4,210,512	3,521,242
Tot. surp. ....	\$5,742,272	\$4,969,754	\$4,210,511

The following table summarizes the fifteen years' results of the company, the percentage earned on capital stock being calculated the old way, that is deducting depreciation reserve appropriation after, instead of before, dividends, as recently:

Year.	Gross.	Net.	stock.	Div.
1916	\$6,877,167	\$4,020,369	18.7	10
1915	6,617,105	3,735,907	17.7	10
1914	6,245,697	3,467,246	17.6	10
1913	5,509,556	3,181,116	15.9	9
1912	4,969,254	2,847,015	13.8	8
1911	4,404,126	2,576,340	12.4	7½
1910	4,240,944	2,392,067	11.3	7
1909	4,079,769	2,235,116	10.3	6
1908	3,792,218	2,140,561	9.7	6
1907	3,453,490	1,924,220	8.5	5
1906	3,186,103	1,754,906	7.5	4
1905	2,901,265	1,599,142	6.6	4
1904	2,589,446	1,345,760	5.2	4
1903	1,937,560	900,873	4.2	4
1902	1,760,285	821,217	4.3	4

Sir Henry Pellatt, who went north last week with the party of capitalists to visit the mines in Porcupine, has returned to Toronto.



MR. MARK WORKMAN,  
President Dominion Steel Corporation.  
(Photo, British and Colonial Press).

## DOMINION STEEL CORPORATION.

The Dominion Steel Corporation is working to capacity, according to President Mark Workman who has just returned from an inspection of the big Sydney plant.

"So far as our steel output is concerned," he stated in an interview, "it is sold right up to the end of the year. As the output is now the largest in the history of the company, that in itself is a fair indication of activity. The rod mill, for instance, is working to capacity, with its output sold to the end of the year. The same applies to the bar mill, which is now being used for rods, and it also applies to the nail mill. Prices, of course, are satisfactory."

As an indication of how production has been increased to meet special demands, Mr. Workman noted that the output of barbed wire was now double what it was six months ago. And six months ago it was running double the capacity at the outbreak of war.

"We are also obtaining satisfactory results in the by-products departments," continued Mr. Workman. "Our output of benzol, for instance, is well sold up to the end of the year, and the output is now about 30 per cent ahead of what it was six months ago."

Mr. Workman, while discussing general prospects in a tone of restrained cheerfulness, did not seek to minimize the perplexities confronting all industries as a result of higher costs of production. In that his attitude is no different to that of other large manufacturers. The Steel Corporation, however, had so far met its various problems as they arose quite satisfactorily, and probably would in the future.

The coal situation, for instance, which has been a source of some uneasiness, is taking a turn for the better. Two vessels have been released to the corporation by the Government.

"That at least partially relieves the situation arising from the shortage of shipping," remarked the president.

Other vessels may be released in due course, but as to that there is no definite assurance as yet.

With reference to the earnings of the past year, Mr. Workman stated that the figures were not yet complete, but the statement would probably be ready in about ten days' time.

## THE DULUTH-SUPERIOR TRACTION CO.

Comparative weekly statement of gross passenger earnings for month of May, 1916.

	1916.	1915.	Inc. or Dec.	of Inc. Per cent
1st week...	\$23,470.50	\$20,211.92	\$3,258.58	16.1
2nd week...	23,426.27	19,628.96	3,797.31	19.3
3rd week...	23,860.79	20,335.66	3,525.13	17.3
Month to date,	\$70,757.56	\$60,176.54	\$10,581.02	17.6
Year to date,	\$70,757.56	\$60,176.54	\$10,581.02	17.1

## CANADIAN CAR & FOUNDRY CO.

The annual report of the Canadian Car and Foundry Company for the year ended September 30th, 1915, has just made its appearance, some eight months after the close of the fiscal year. It shows a deficit of \$558,471 after depreciation, sinking fund and bond interest charges.

However, the report deals with conditions which are past history now and gives no indication of the change that has taken place within the past nine months. It was stated on good authority recently that the company's net earnings for the first six months of 1916, from Canadian plants only, were as large as the deficit reported for the whole of 1915. In this statement, too, no allowance is being made for any of the profits accruing from the Russian business, the figures being based entirely on munition contracts from the Imperial Government and ordinary equipment orders.

Financial details regarding the Russian contract will be submitted, duly audited, at the annual meeting of shareholders in July. The auditor's report is expected to show that over a million shells, of the five million called for on the Russian Government business, have been loaded and shipped and that large weekly shipments are going forward without further delay.

The profits for the year ended September 30, 1915, amounted to \$321,839 against \$673,035 in 1914 and \$2,351,325 in 1913. The sharp decrease was due to an almost negligible output, sales for 1915 having amounted to only \$5,500,000, as compared with \$11,100,000 in 1914, and \$27,000,000 in 1913 — decreases of 50 and 80 per cent respectively.

Senator Curry, president, in his report announces that during the year the sum of \$550,000, expended in installing special machinery for the manufacture of munitions, was charged off against earnings on munition orders; \$325,000 was set aside for depreciation, renewals, etc., leaving a loss of \$3,150. Payment of bond interest was made by drawing on surplus account to the extent of \$555,311, making a total deficit of \$558,471 and so reducing surplus to \$1,073,798.

The subjoined tables give the profit and loss accounts for the past three years—

	1915.	1914.	1913.
Profits .. . . .	\$321,839	\$673,035	\$2,351,325
Deprec., etc. . . .	325,000	278,076	349,166
Balance .. . . .	*\$ 3,160	\$394,958	\$2,002,158
Bond int. . . . .	555,311	460,767	280,505
Balance .. . . .	*\$558,471	*\$ 65,808	\$1,721,653
Spec. res. . . . .			350,000
Balance .. . . .	*\$558,471	*\$ 65,808	\$1,371,653
Dfd. Div. . . . .		367,500	458,500
Balance. . . . .	*\$558,471	*\$433,308	\$913,153
Com. Div. . . . .		159,000	159,000
Balance. . . . .	*\$558,471	*\$592,308	\$754,153
Prev. bal. . . . .	1,632,269	2,224,578	1,440,266
Surplus .. . . .	\$1,073,798	\$1,632,269	\$2,194,419

\*Deficit.

## DOMINION POWER AND TRANSMISSION COMPANY.

An initial dividend of 2 per cent has been declared on the common stock of Dominion Power and Transmission Co. The dividend is payable June 15 to shareholders of record May 31st and as it is for the six months ending on the latter date, the declaration is accepted as equivalent to placing the common stock on a 4 per cent per annum basis.

The dividend applies to \$7,714,500 common stock, which includes the limited preference stock converted into common about six months ago, when the 10 per cent dividend to which it was entitled was all paid up.

## LOAN BRINGS GOOD RATE.

The successful tenderers for the \$2,000,000 City of Montreal 20 years 5 per cent loan were Messrs. R. M. Grant and Co., of New York, and A. E. Ames and Co., of Montreal and Toronto, at 98.867. This is considered a highly satisfactory price for the city.

# BANK OF MONTREAL

Established 1817

Capital Paid Up	- - - - -	\$ 16,000,000.00
Reserve Fund	- - - - -	16,000,000.00
Undivided Profits	- - - - -	1,293,952.00
Total Assets	- - - - -	302,980,554.00

## BOARD OF DIRECTORS:

H. V. MEREDITH, Esq., President

R. B. ANGUS, Esq.	E. B. GREENSHIELDS, Esq.	SIR WILLIAM MACDONALD,
Hon. ROBERT MACKAY,	LORD SHAUGHNESSY, K.C.V.O.	C. R. HOSMER, Esq.
A. BAUMGARTEN, Esq.	C. B. GORDON, Esq.	H. R. DRUMMOND, Esq.
D. FORBES ANGUS, Esq.		WM. McMASTER, Esq.

## Head Office, MONTREAL

General Manager, SIR FREDERICK WILLIAMS-TAYLOR, LL.D.  
Assistant General Manager, - - A. D. BRAITHWAITE, Esq.

Bankers in Canada and London, England, for the Government of the Dominion of Canada.  
Branches established throughout Canada and Newfoundland; also in London, England, New York, Chicago, and Spokane.

Savings Department at all Canadian Branches. Deposits from \$1. upwards received and interest allowed at current rates.

A GENERAL BANKING BUSINESS TRANSACTED

# ... THE ... Molsons BANK

Incorporated - - 1855

Paid-up Capital	: : :	\$4,000,000
Reserve Fund	: : :	\$4,000,000

HEAD OFFICE : MONTREAL

96 Branches  
Throughout  
Canada

## Banking in Belgium

The Actual Situation of the National Bank of Belgium

(From a Correspondent).

The National Bank of Belgium, which, in times of peace, acts as cashier for the Belgian State government and whose activity is one of the bases of the country's commercial life, has been able to continue its operations, under the occupation regime, only as a purely commercial bank. The Germans could not have suppressed it entirely without occasioning an economical catastrophe the effects of which would have affected their own interests.

What did above all exasperate the German government, was the fact that the National Bank had transferred to London, before the occupation of Brussels, its metallic reserve and its bills and acceptances on foreign exchange, which taken together constituted the security of its note-circulation.

This precaution was, however, only elementary prudence, as the German troops, on entering Hasselt, in the beginning of August, 1914, had, in defiance of the immunity of private property, seized upon the large metallic reserve of the local branch of the National Bank. Their pretext had been that the National Bank was an integrant organ of the Belgian State government, whereas the German government did not ignore that it is, in fact, a private institution giving the State its reserve services in consideration of the granting of certain privileges duly stipulated by statute, such as the mission of exchangeable bank-notes.

Besides, all the individuals interested in the National Bank's situation, have commended the directors of that institution upon their intelligent act of cautiousness.

To punish the National Bank for this offence, the German Government took away from it the privilege of issuing bank-notes and revived a similar privilege formerly enjoyed by the Société Générale of Belgium.

What has been since then the result of the National Bank's reduced activity?

The general meeting recently held in Brussels gives us information on this point.

According to Het Vaterland, a Dutch newspaper, the report submitted to the meeting states that, on account of the state of war, it has been impossible for the Bank to maintain its relations with all its foreign correspondents. The duration of the war and the events which will take place after the conclusion of peace must have a large influence upon the ordinary business. It was for such reasons that no balance-sheet had been drawn up for last year.

From the data furnished of receipts and expenditure it appears that the note circulation has decreased by 300 millions. Per contra, on December 31, 1915, the Société Générale had issued for more

than 600 millions of its own notes, which puts the total currency circulation, on December 31, 1915, at 1,614 millions.

While the moratorium was in existence, the Bank succeeded in decreasing notably its bill-case of exchange: from December 10, 1914, to end of December, 1915, it was reduced from 900 to 468 millions.

The decision, taken in accord with the other banks, to reduce the moratorium rate by 2 per cent on all exchanges withdrawn before March 15, 1915, has produced a diminution of 200 millions on its bills and acceptances.

Advances on vouchers have also decreased. By order of the German governor general, the removal of the moratorium for bills was set for March 1st, 1916. The Bank will allow liberal facilities to all its solvent debtors. The provincial food committees have a preferential benefit from the new credits.

Throughout the country, the National Bank has established relief funds to support the small capitalists and the trades-people. Finally, the National Bank has offered to advance the other banks 80 per cent of the sums the said banks might have accepted in the sundry war contributions imposed upon the country in November, 1915.

It may therefore be seen that, in spite of the state of war, the principal financial organism of Belgium has maintained its solidity and has rendered great services to the country.

(The figures in the foregoing refer to francs).

Mr. W. J. McMurtry, managing director of the National Life Insurance Company, is resigning that position June 1st. He will still act in an advisory capacity.

## THE COST OF WAR.

An analysis of the cost of the present European conflict, the war loans and Government indebtedness of Europe in their relation to the world at large, has been made by the Mechanics and Metals National Bank of New York City. The figures presented are almost staggering. If the war is still raging on the second anniversary of the outbreak of hostilities, it is shown, the total military expenditure will have been \$45,000,000,000. This does not allow for destruction of cities, railways, ships, factories, roads, agricultural values. The five principal powers engaged in the war will show the following debt charges:

	Aug. 1, 1916.	Aug. 1, 1914.
Great Britain . . . . .	\$14,500,000,000	\$3,500,000,000
France . . . . .	14,500,000,000	6,600,000,000
Russia . . . . .	15,000,000,000	4,600,000,000
Germany . . . . .	12,250,000,000	1,250,000,000
Austria-Hungary . . . . .	9,000,000,000	3,750,000,000
Total . . . . .	\$65,250,000,000	\$19,600,000,000

The Mechanics and Metals Bank statistician quotes a foreign authority showing that if the war should end at the close of its second year Great Britain will emerge from it with a debt four times the amount of which it entered. France will more than have doubled its debt. Russia's debt will more than have been trebled. Germany's debt will have increased ten-fold, Austria's three-fold.



## THE STANDARD BANK

OF CANADA  
HEAD OFFICE - TORONTO

Efficient and Prompt Service  
in every Department

SAVINGS BANK at all Branches.

MONTREAL BRANCH

E. C. GREEN, Manager

136 St. James Street

# IMPERIAL BANK OF CANADA

HEAD OFFICE, TORONTO

Capital Paid up, \$7,000,000      Reserve Fund, \$7,000,000  
 PELEG HOWLAND, President      E. HAY, General Manager

DRAFTS, Money Orders and Letters of Credit issued available throughout the World.

Dealers in Government and Municipal Securities.

Dealers in Foreign and Domestic Exchange.

Savings Department at all Branches. Interest Credited Half-Yearly at Current Rates.

GENERAL BANKING BUSINESS TRANSACTED

# THE DOMINION BANK

HEAD OFFICE - TORONTO

SIR EDMUND B. OSLER M.P., President  
 W. D. MATTHEWS, Vice-president

C. A. BOGERT, General Manager

The London, England, Branch  
 of  
 THE DOMINION BANK  
 at  
 73 CORNHILL, E.C.

Conducts a General Banking and Foreign Exchange Business, and has ample facilities for handling collections and remittances from Canada.

# THE HOME BANK OF CANADA

ORIGINAL CHARTER 1854

Head Office, Toronto. James Mason, General Manager

Branches and Connections Throughout Canada.

General Banking Business Transacted  
 MONTREAL OFFICES

Main Office, Transportation Bldg., St. James St.  
 Bonaventure Branch, 523 St. James St.  
 Hochelaga Branch, Cr. Cuvillier and Ontario Sts.  
 Mt. Royal Branch, Cr. Mt. Royal and Papineau Ave.

# BANK OF HAMILTON

ESTABLISHED 1872

Head Office: HAMILTON

CAPITAL AUTHORIZED..... \$5,000,000  
 CAPITAL PAID UP..... 3,000,000  
 SURPLUS..... 3,475,000

## IMPERIAL BANK ANNUAL.

At the annual meeting of the shareholders of the Imperial Bank held in Toronto a few days ago President Peleg Howland pointed out the strength of the Bank in liquid assets, the increase in Canadian Municipal and British securities and the increase in deposits subject to notice. The liquid assets of the bank stand at \$43,586,000, a gain over the previous year of \$7,519,000, and over \$9,000,000, above 1914. Canadian municipal securities, and British, foreign and colonial public securities increased during the year from \$1,070,713 to \$4,947,074.

Deposits show an increase of over \$5,000,000, a considerable portion of which is non-interest bearing.

The directors were re-elected, as follows: Peleg Howland, president; Elias Rogers, vice-president; William Ramsay, Cawthra Mulock, the Hon. Richard Turner, William Hamilton Merritt, W. J. Gage, Sir James A. M. Aitkins, K.C., the Hon. W. J. Hanna, M.P., John Northway, Lieut.-Col. J. F. Michie and J. W. Woods.

G. T. Clarkson was selected to replace the late George Hyde as one of the auditors of the bank.

## MERCHANTS' BANK REPORT.

A decrease in earnings characterize the annual report of the Merchants' Bank, but in many other respects the statement is satisfactory. Total assets are now \$96,361,000 or ten million above last years figures. Net earnings are \$950,713 as compared with \$995,000 last year and \$1,218,000 in 1914.

The gain in assets is confined very largely to the "liquid" holdings of the institution. The 1915 statement of the bank was notable chiefly for large gains in cash and liquid assets. Cash holdings this year are about 3½ millions lower, but still large at \$11,788,094 — an amount representing more than 14 per cent of the bank's liabilities to the public—but liquid assets of \$40,960,486 are nearly eight millions higher and equivalent to 50 per cent of the bank's liabilities to the public — against a corresponding percentage of 46 last year.

The explanation of smaller cash holdings, but larger liquid assets, is contained chiefly in the figures relating to investments in securities, to balances due and to call loans. The increase in security investments is a feature of the statement. Holdings of Dominion and Provincial Government securities have risen from \$583,997 to \$2,480,446, Canadian municipal and British, etc., securities other than Canadian from \$903,667 to \$5,251,321, while railway and other bonds, etc., at \$5,055,106 show a small increase. In all the three classes of securities give a total of \$12,786,873, or just about double that of a year ago. Call loans both at home and abroad are also higher, the aggregate increase being approximately 3¼ million dollars.

## TRADE FOLLOWS THE FLAG.

Exports from the United States to the Philippine Islands in the sixteen years since annexation aggregated \$201,000,000, compared with slightly more than \$2,000,000 in the preceding sixteen years.

## LONDON STOCK EXCHANGE SAVES DAYLIGHT.

The London Stock Exchange will conform to the new daylight saving plan, under which the time will be advanced one hour. Exchange will open at 10.45 o'clock and close at 3, except on Saturdays, when it will close at 1, an hour earlier than at present.

# LLOYDS BANK LIMITED

HEAD OFFICE: 71, LOMBARD ST., LONDON, E.C.



Capital Subscribed	- - -	£31,304,200
Capital paid up	- - -	5,008,672
Reserve Fund	- - -	3,600,000
Deposits, &c.	- - -	130,504,499
Advances, &c.	- - -	55,008,883

THIS BANK HAS 900 OFFICES IN ENGLAND AND WALES.

Colonial and Foreign Department: 17, Cornhill, London, E.C.  
 London Agency of the IMPERIAL BANK OF CANADA.

French Auxiliary: LLOYDS BANK (FRANCE) LIMITED,  
 with Offices at PARIS, BORDEAUX, BIARRITZ and HAVRE.

# THE BANK OF BRITISH NORTH AMERICA

Established in 1838  
 Incorporated by Royal Charter in 1847.

Paid up Capital..... \$4,866,666.63  
 Reserve Fund..... \$3,017,333.33

Head Office: 5 Gracechurch Street, London  
 Head Office in Canada: St. James St.  
 Montreal

H. B. MACKENZIE, General Manager

This Bank has Branches in all the principal Cities of Canada, including Dawson City (Y.T.), and Agencies at New York and San Francisco in the United States. Agents and Correspondents in every part of the world.

Agents for the Colonial Bank, West Indies. Drafts, Money Orders, Circular Letters of Credit and Travellers' Cheques issued negotiable in all parts of the world.

SAVINGS DEPARTMENT AT ALL BRANCHES

G. B. GERRARD, Manager, Montreal Branch

# THE Royal Bank of Canada

Incorporated 1869

Capital Authorized	- - -	\$25,000,000
Capital Paid up	- - -	\$11,560,000
Reserve Funds	- - -	\$13,236,000
Total Assets	- - -	\$200,000,000

HEAD OFFICE: MONTREAL

SIR HERBERT S. HOLT, President  
 E. L. PEASE, Vice-President and Managing Director  
 C. E. NEILL, General Manager

325 Branches in CANADA and N. W. DUNDLAND; 41 Branches CUBA, PORTO RICO, DOMINICAN REPUBLIC COSTA RICA and BRITISH WEST INDIES

LONDON, Eng.      NEW YORK  
 Princes Street, E. C.      Cor. William and Cedar Street

SAVINGS DEPARTMENTS at all Branches

## LA BANQUE NATIONALE.

The National Bank for the year ended April 29th, 1916, showed net profits of \$341,003 as compared with \$333,207 last year or a gain of \$78.00

The balance sheet shows the assets increased from \$27,051,790 to \$29,737,975. Liquid assets are almost a million higher, increasing from \$9,382,853 to \$10,192,059. Liabilities to the public are only slightly higher, being \$3,954,975 in 1915, against \$3,848,006 in 1914.

Current loans to the public have increased from \$15,819,956 to \$17,722,604, while loans to municipalities have been reduced about a quarter of a million to \$271,247.

The annual meeting of La Banque Nationale has been called, June 14, at Quebec.

Cyril E. B. Dobbin, of the St. James street branch of the Royal Bank has received a commission in a Toronto Battalion, and has gone to that city.

# The Canadian Bank of Commerce

ESTABLISHED 1867

PAID UP CAPITAL - \$15,000,000 RESERVE FUND - \$13,500,000

HEAD OFFICE --- TORONTO

## BOARD OF DIRECTORS

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President. Z. A. LASH, Esq., K.C., LL.D., Vice-President.  
 JOHN HOSKIN, Esq., K.C., LL.D., D.C.L. ROBERT STUART, Esq. A. C. FLUMERFELT, Esq.  
 J. W. FLAVELLE, Esq., LL.D. SIR JOHN MORISON GIBSON, K.C.M.G., K.C., LL.D. GEORGES G. FOSTER, Esq., K.C.  
 A. KINGMAN, Esq. G. F. GALT, Esq. CHARLES COLBY, Esq., M.A., Ph.D.  
 HON. SIR LYMAN MELVIN JONES. WILLIAM FARWELL, Esq., D.C.L. G. W. ALLAN, Esq., K.C.  
 HON. W. C. EDWARDS. H. C. COX, Esq. H. J. FULLER, Esq.  
 E. R. WOOD, Esq. JOHN AIRD, General Manager. H. V. F. JONES, Assistant General Manager.

## BRANCHES IN CANADA

44 in British Columbia and Yukon. 88 in Ontario. 81 in Quebec. 129 in Central Western Provinces. 23 in Maritime Provinces.

## BRANCHES AND AGENCIES ELSEWHERE THAN IN CANADA

St. John's, Nfld. London, Eng. New York. San Francisco. Portland, Oregon. Seattle, Wash. Mexico City.

The large number of branches of this Bank enables it to place at the disposal of its customers and correspondents unexcelled facilities for every kind of banking business, and especially for collections.

## SAVINGS DEPARTMENT

Connected with each Canadian branch, Yukon Territory excepted, and interest allowed at current rates.

### CANADIAN BANK CLEARINGS.

The total clearings of Canadian banks for the week (5 days) ending May 25, show a substantial increase of 64.5 per cent over those of the corresponding week last year, the grand total amounting to \$178,043,817, as compared with \$108,408,284 last year. All the cities showed an increase with the exception of New Westminster. The total clearings with percentage increase or decrease over last year were, as follows:

	May 25, 1916	Inc. %
Montreal	\$63,689,115	66.6
Toronto	46,715,898	67.1
Winnipeg	35,808,067	116.2
Vancouver	5,016,452	7.9
Ottawa	3,941,367	15.3
Calgary	3,938,706	66.8
Hamilton	3,045,982	36.1
Quebec	2,877,976	19.3
Edmonton	1,861,843	18.4
Halifax	1,846,987	14.4
St. John	1,635,733	38.0
Regina	1,630,360	50.1
London	1,499,128	10.4
Victoria	1,181,100	8.9
Saskatoon	939,157	54.6
Moose Jaw	687,147	38.5
Brantford	541,874	24.1
Berlin	452,951	...
Fort William	427,996	36.5
Brandon	414,091	11.7
Lethbridge	394,766	55.1
Sherbrooke	392,477	...
Medicine Hat	312,961	63.9
New Westminster	213,730	-17.0
Total	\$178,043,817	64.5

—Decrease.

### PERSONALS.

N. B. MacKellvie, of Hayden, Stone and Co., who was recently appointed as the representative of American interests on the Nova Scotia Steel and Coal board, was in Montreal during the week, accompanied by J. R. Nelson, of the same firm.

### BANK OF ENGLAND STATEMENT.

The Bank of England reports the proportion of reserve to liabilities at 32.23 per cent, against 31.50 per cent a week ago. The weekly statement shows the following changes: Total reserve increased £134,000; circulation increased £72,000; bullion decreased £61,561; other securities decreased £3,432,000; other deposits increased £2,822,000; public deposits decreased £6,394,000; notes reserve decreased £191,000; Government securities unchanged.

The rate of discount remains at 5 per cent.

The detailed return compares as follows:

	1916.	1915.	1914.
Gold	£59,032,326	£61,737,814	£35,947,360
Reserve	43,738,000	47,240,524	25,463,980
Notes res.	43,397,000	45,920,290	23,767,000
Res. to liab.	32 1/4%	21 1/2%	42 1/4%
Circulation	34,740,000	32,947,290	28,933,380
Public deposits	53,249,000	132,088,558	19,014,809
Other deposits	81,406,000	87,742,135	41,248,964
Govt. securities	33,187,000	51,043,491	11,046,570
Other securit's	76,448,000	139,290,022	41,461,280

### BANK OF FRANCE REPORT.

The weekly statement of the Bank of France shows the following changes, in francs:

Gold in hand increased 8,615,000, silver in hand decreased 1,833,000, notes in circulation decreased 10,585,000, Treasury deposits decreased 329,000, general deposits increased 113,608,000, bills discounted decreased 607,000, advances decreased 6,712,000.

The detailed return compares as follows, in francs (000 omitted):

	1916.	1915.	1914.
Gold	4,730,448	3,913,428	3,730,625
Silver	352,421	375,348	632,650
Circulation	15,434,935	11,829,222	5,811,868
General deposits	2,354,720	2,190,945	845,944
Bills discounted	3,163,920	130,320	1,496,214
Treasury deposits	9,917	110,613	183,707
*Advances	1,274,150	644,728	697,483

\*Not including advances to Government which amount to about 7,400,000,000 francs.

ESTABLISHED 1832

Paid-Up Capital  
\$6,500,000



Reserve Fund  
\$12,000,000

TOTAL ASSETS OVER \$100,000,000

The strong position of the Bank of Nova Scotia not only assures the safety of funds left on deposit with the Bank but also places it in a position where it can readily care for any legitimate business needs of its customers. We invite banking business of every description.

# THE BANK OF NOVA SCOTIA



# A Great Canadian Industry

Operating Twelve Mills  
Employing Ten Thousand People  
Producing Practically Everything in Cotton

## Dominion Textile Co. LIMITED

MONTREAL TORONTO WINNIPEG

ST. HENRY, Que. - MONTMORENCY FALLS, Que.  
HOCHELAGA, Que. - MAGOG, Que. - KINGSTON, Ont.  
HALIFAX, N.S. - WINDSOR, N.S. - MONCTON, N.B.

### Manufacturers of

All lines of White and Grey Cottons, Prints, Sheetings, Shirtings, Pillow Cottons, Longcloths, Cambrics, Ducks, Bags, Twills, Drills, Guilts, Bureau Covers, Towels and Towelling, Yarns, Blankets, Rugs, Twines and numerous other lines used by manufacturers in Rubber and other trades.



#### THE CIVIC INVESTMENT AND INDUSTRIAL CO.

The Civic Investment and Industrial Company is the name under which the Montreal Light, Heat and Power Company and the Cedar Rapids Power and Manufacturing Company are to be merged.

The general terms of the merger of the Montreal Power and Cedar Rapids properties have now been formerly approved by the boards of the two companies, and notices have been issued calling special meetings of the shareholders for June 7th to ratify the agreement.

Although no official information was available after Monday's meetings of the directors, the notices calling the meetings state that resolutions were adopted by the respective boards "authorizing the execution of an agreement with the Civic Investment and Industrial Company, providing for the operation by the latter company of the business and undertaking" of the respective companies.

#### AMERICAN LOCOMOTIVE CO.

President Marshall of the American Locomotive Company announces that the company has received an order from the allies for 2,200,000 fuses, to cost \$9,000,000, to be delivered before December 31. One-half of this will go to the Westinghouse Airbrake Company. The Nathan Mfg. Co., which is affiliated with the American Locomotive Co., will make some parts of the other half of the order.

#### BETHLEHEM STEEL CORPORATION.

March earnings of Bethlehem Steel Corporation are estimated at \$5,500,000, a new high record. April earnings were slightly less than they were in March. May earnings may pass the March figure. The various plants of company are operating to full capacity.

#### C. P. R. GROSS EARNINGS.

C. P. R. gross earnings for the third week of May show an increase of \$1,035,000 compared with the same period a year ago. The increase for the first week of May was \$1,169,000 and the second \$988,000.

#### LYALL CONSTRUCTION CO.

It has been officially announced that the Lyall Construction Company had been awarded the contract for the rebuilding of the Parliament Buildings at Ottawa.

Those close to the affairs of the Lyall Company here say that it has never enjoyed the amount of construction work which is already in hand.

The Toronto terminals are only just under way, and mean better than a \$5,000,000 contract, with the extras. Apart from these two large contracts the general business is reported as exceptionally good.

#### DULUTH-SUPERIOR TRACTION CO.

Duluth-Superior Traction Co. comparative weekly statement of gross passenger earnings for May is as follows:

	1916.	Increase	P.C. of Inc.
1st week . . . . .	\$23,470.50	\$3,258.58	16.1
2nd week . . . . .	23,426.27	2,797.31	19.3
Month to date . . . .	46,896.77	7,055.89	17.7
Year to date . . . .	474,647.53	61,814.63	15.0

#### DOMINION COAL BOATS.

Six of the Dominion Coal Company's great carriers have been taken over by the Admiralty and at the moment there are only two boats on charter of over 7,000 tons. Of course, there is a fleet of small steamers, but they are of insufficient capacity to fill orders.

#### WINNIPEG ELECTRIC.

Winnipeg Railway's March gross was \$303,209, decrease \$6,709, compared with March, 1915, but net was \$106,159, gain \$5,741, a change effected through economics in operative expenses. This is the first net gain for a good time.

#### GRANBY CONSOLIDATED MINING AND SMELTING CO.

The 1916-1917 programme for Granby Consolidated Mining, Smelting and Power Co., contemplates an increase in dividend rate beyond the \$6 basis which has been in force for the past year and a swelling of production to a basis of at least 50,000,000 pounds of copper per annum.

The company's fiscal year ends June 30 during which earnings of more than \$20 a share will have been recorded against which \$6 has been paid to stockholders. Bonds have been retired and the treasury position materially strengthened.

At their June meeting directors are expected to take action on dividend to be paid in August. At least \$2 and possibly more, will probably be decided upon, although metal conditions prevailing at that time will bear important weight.

#### ST. JOHN EXPORTS.

In the two items of lumber and fish shipped to the United States from St. John, N.B., the returns for the first quarter of 1916 show an appreciable increase over the same period in 1915, the figures being: Lumber, 1916, \$267,920.24; 1915, \$206,385.24; fish, 1916, \$13,545; 1915, \$5,851.12. Junk shows an increase from \$11,226.15 in 1915 to \$42,865.24 in 1916.

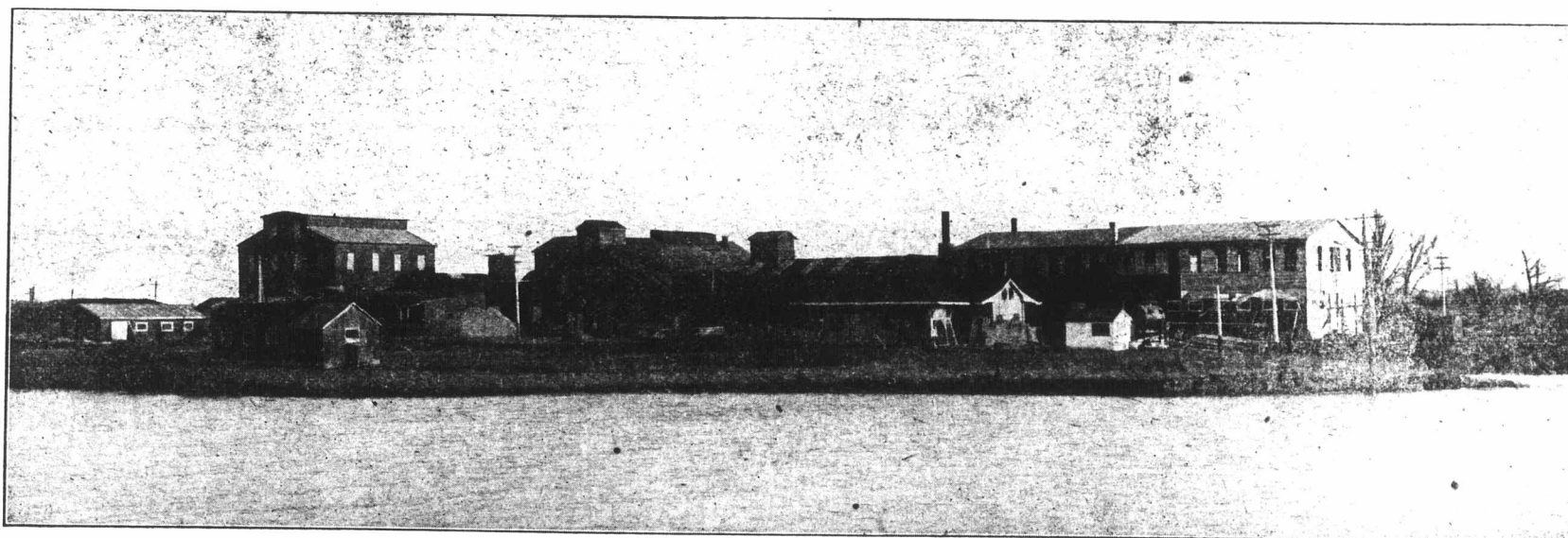
#### CANADIAN MINING DIVIDENDS.

Twenty-one Canadian companies participated in the 1916 declarations to the extent of \$3,467,731, says the Mining World. A comparison with previous years shows that the 1915 disbursements by sixteen companies totalled \$2,673,968, and \$5,098,090 by nineteen companies, during the first four months of 1913. Nipissing continues as Canada's premier dividend payer, with disbursements during the first four months of 1916 of \$600,000 and with total payments of \$14,040,000. Hollinger ranks second for the year, having declared regular four week dividends of \$120,000 each. It has enriched shareholders to the extent of \$4,670,000.

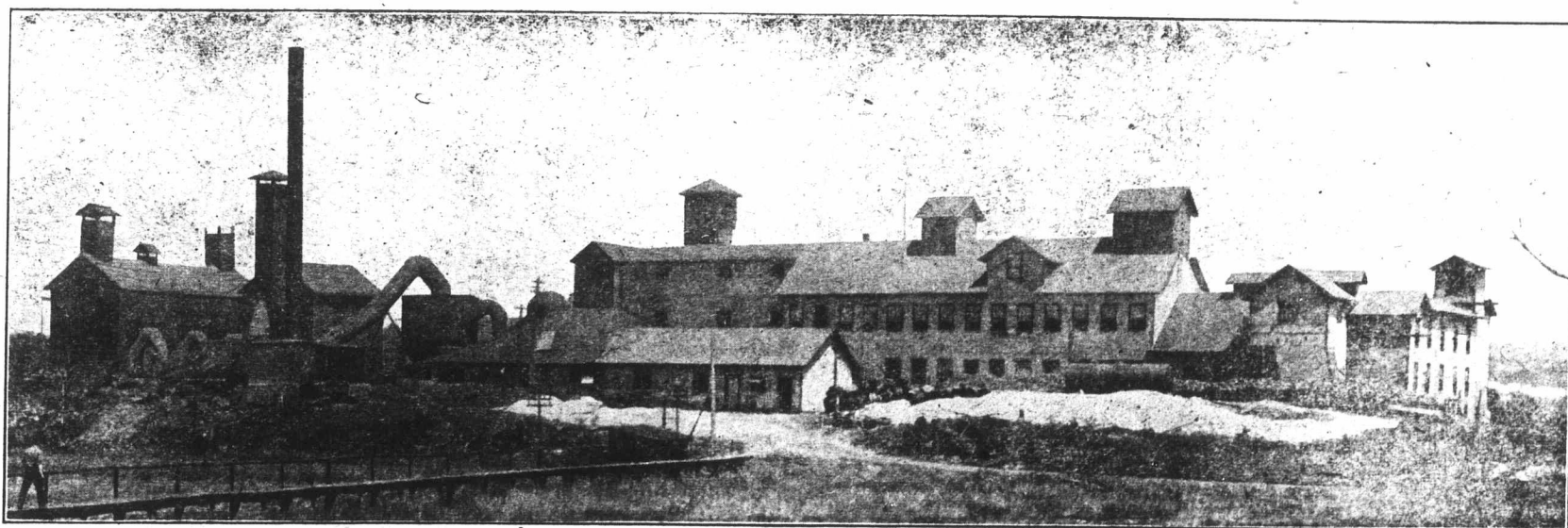


—THE—  
**Mining and Metallurgical  
Industries**  
OF  
**Canada**

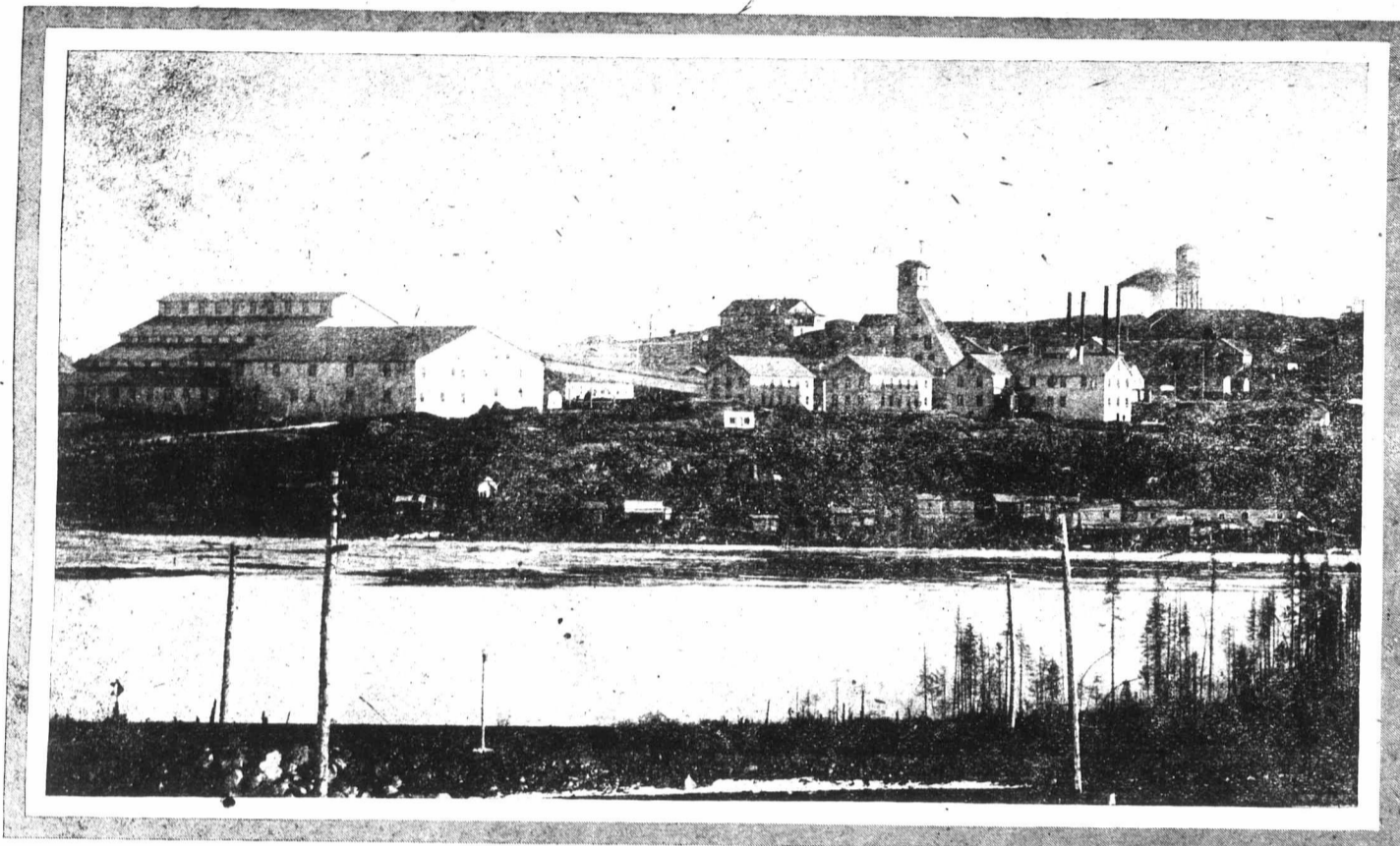
CONTINUED FROM APRIL ISSUE



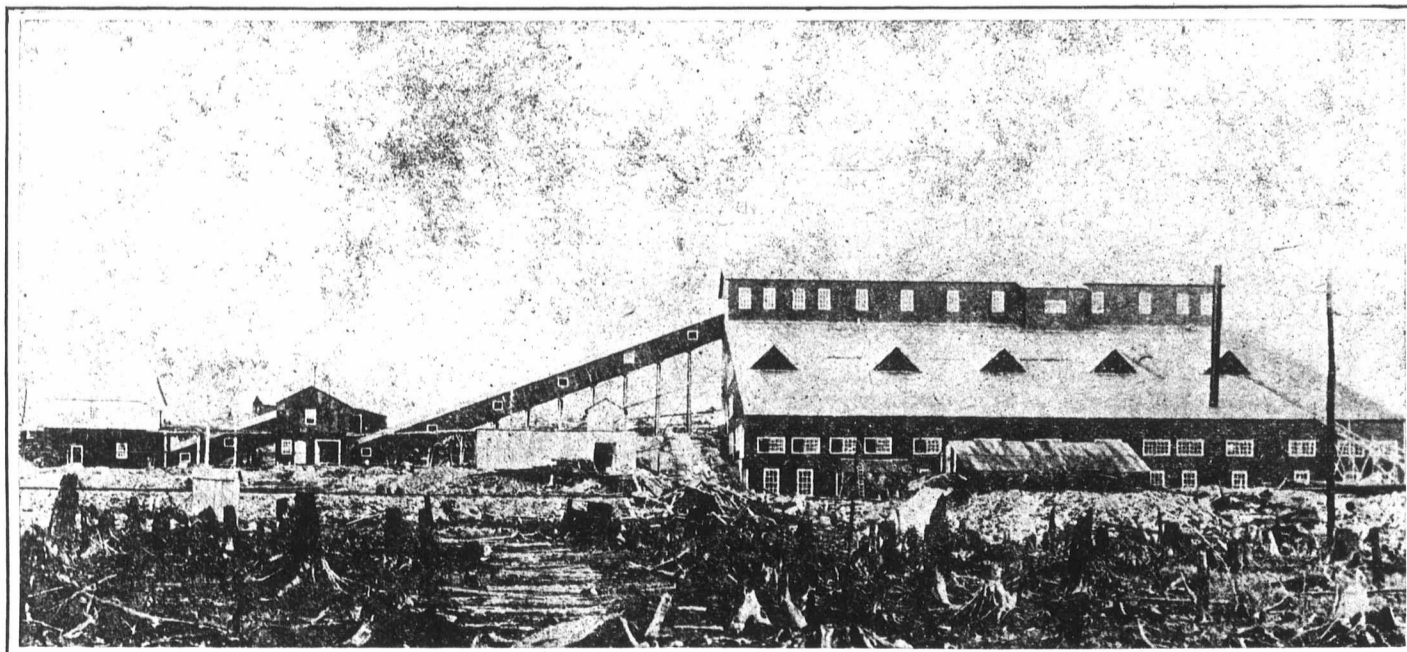
SMELTER AND REFINING PLANT OF THE CONIAGAS REDUCTION CO., LTD., ST. CATHARINES, ONT.



SMELTER AND REFINING PLANT OF THE DELORO MINING AND REDUCTION CO., LTD., DELORO, ONT.



MILL AND PLANT OF THE HOLLINGER GOLD MINES, LTD., TIMMINS, PORCUPINE DISTRICT, ONT.



MILL AND PLANT OF THE DOME MINES CO., LTD., PORCUPINE, ONT.

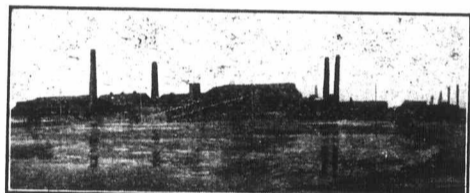
## The Mining and Metallurgical Industries of Canada

(Continued from April issue of this series of Industrial and Educational articles)

### Clay, Silica and Limestone

**F**EW, if any, mineral substances contribute more to our comforts than do clay, silica and limestone—a group that bulk so largely in the manufacture of structural materials, pottery, etc. They are more satisfactorily dealt with as a group because separately each has a more limited application. From a combination of burnt limestone and that form of silica commonly known as sand, mortar, which was used by our forefathers to fill the chinks in their log cabins and build their stone houses, is made. Common bricks are made from a mixture of clay and sand; and Portland cement from a mixture of clay and limestone. From mixtures of ball clay china clay and that form of silica known as flint or from ground quartz, all our chinawares are produced. Glass is made from silica, either in the form of pure sand or of ground quartz rock.

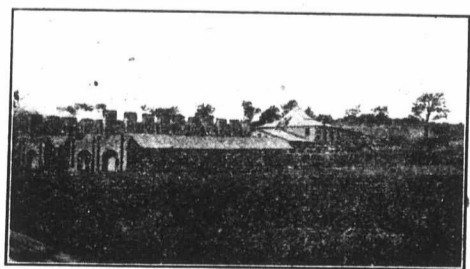
Every boy, who has had the privilege of being brought up on a farm, is familiar with that soft, soapy blue or reddish clay, which he dug up from the bottom of the ditch and which was so plastic and unctious to the touch that he rolled it into balls



NATIONAL BRICK CO., LAPRAIRIE, QUE.

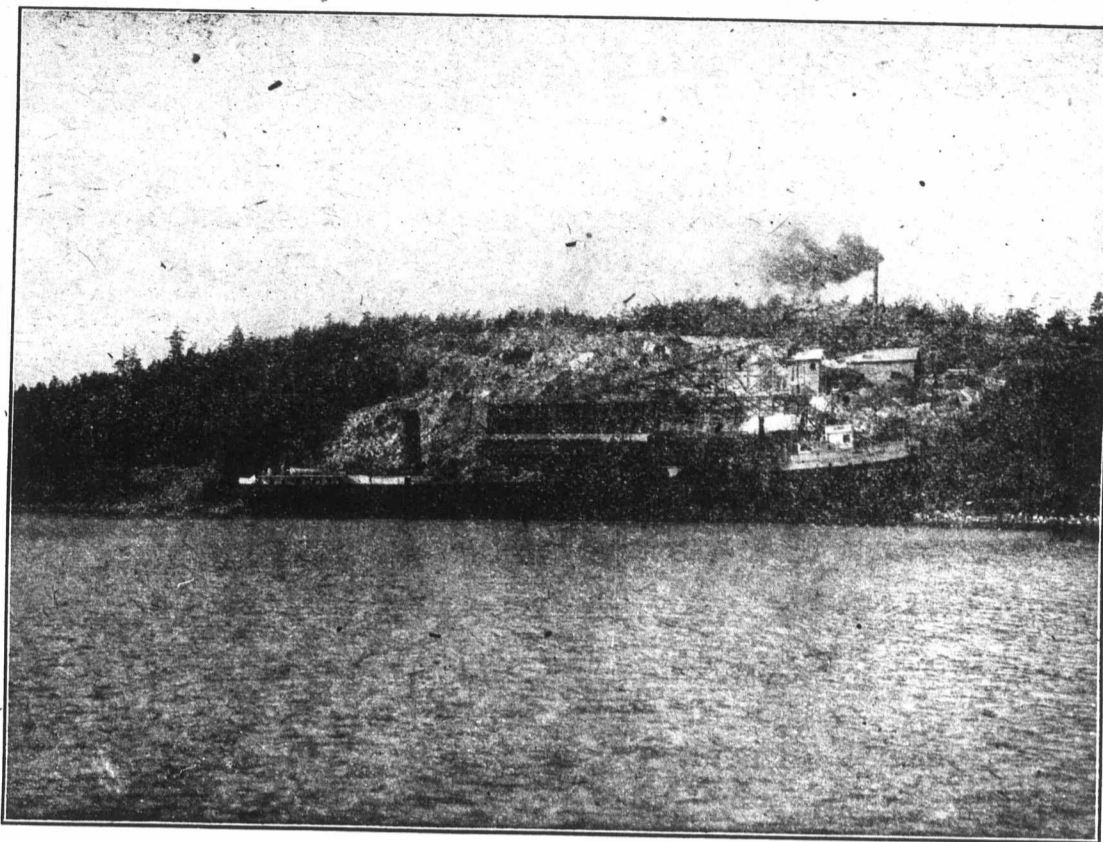
and marbles and shaped it into crude images of men and animals. Those, whose curiosity led them to burn these balls and shapes, will remember how its color was changed by the heat to a deeper red and how it got hard and brick-like. They will also remember, that, unless they mixed sand with it, the balls and images shrunk on being burnt, and cracks appeared on the surface, just as cracks open up on the surface of a clay field in hot dry weather, while, on the loamy field alongside, no cracks appeared.

Loam is a mixture of sand and clay with more or less lime or limestone present, as well as quantities of humus or vegetable matter. It is referred to as sandy loam when it contains more sand than clay and as clay loam when it contains more clay than sand. These three ingredients, namely, clay, silica and limestone, supply fully 95 per cent of the soils of our fields and gardens.



MONTREAL TERRA COTTA CO., LAKESIDE, QUE.

Boys who have had an opportunity of making the observations above mentioned, will be familiar with the materials for and elementary principals of brick-making. The common red brick is made from a mixture of sand and an ordinary variety of clay, which is not hard to find in almost any part of Canada. Even exceptionally pure deposits have little or no value unless situated close to a market for bricks. Most towns and cities throughout the Do-



LOADING LUMP QUARTZ OR SILICA AT THE MINE OF LONGWELL AND RAYNOR, KILLARNEY, ONT.

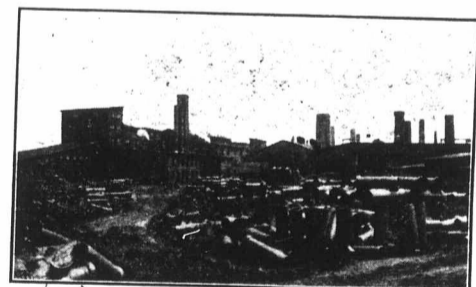
This Quartz is largely shipped to St. Catharines, Ont., where it is converted by an electric process into Ferro-Silica for use in steel making.

minion draw their supplies from local brick-yards and the largest yards are those situated in the vicinity of the largest cities. Bricks are moulded into the required shape, dried and burnt to the required hardness in a "kiln," fired either by wood or coal, or sometimes by natural gas.

Shale is merely hardened clay. The terms "clay" and "shale" are regarded as one and the same thing by the clay worker.

Shales or clays are also used largely in the manufacture of Portland cement. This material is essentially an artificial mixture of approximately 75 per cent of ground limestone or marl and 25 per cent of clay or shale, burnt to a clinder and then ground to a powder, bagged and shipped to the user. The purity of the clay and limestone has much to do with the quality of the resulting cement.

The occurrence of cement materials is so widespread and abundant in all parts of Canada that their utilization is dependent entirely upon a market for the product, the cost of fuel and transportation facilities. There are about thirty complete cement plants in Canada, with a total daily ca-



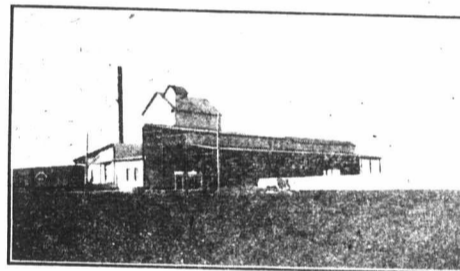
STANDARD CLAY PRODUCTS, ST. JOHNS, QUE.

capacity of over 50,000 barrels. The operating plants are distributed as follows: one at Sydney, N.S. This plant uses blast furnace slag and slaked lime. In the Province of Quebec there are three cement plants, two near Montreal, and one near Hull. Each of these uses limestone. In the Province of Ontario there are fourteen active plants. Of these nine use marl, and four limestone (marl is nothing more than limestone broken up and pulverized by nature). In the Province of Manitoba a "Natural Portland" cement is made at Babcock, just south of Winnipeg. ("Natural Portland" cement is simply an impure limestone containing a considerable quantity of clay, ground up and burnt). Alberta has three cement plants, all of which use limestone, located respectively at Calgary, Eckshaw, and Blainmore. British Columbia has two limestone plants, one at Tod Inlet and the other at Princeton.

Recent developments in the manufacture of bricks have resulted in the production of a very good brick made from sand and lime. Instead of being dried and burnt this sand-lime brick is sub-

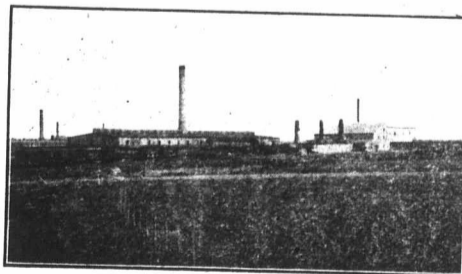
jected to the action of high pressure steam which seems to bind together the particles of sand and lime.

Sand-lime brick is sometimes erroneously called silica brick. It is true that there is a good deal of resemblance between the materials that enter



CANADA BRICK CO., LTD., POINTE AUX TREMBLES, QUE.

into the composition of each kind, but the ordinary sand-lime brick would be useless for the purposes to which silica brick are applied. Silica bricks are generally made from pure crushed silica rock, to which is added about 3 per cent of lime. These bricks are made by hand and burned in kilns at a very high temperature. There is an extensive demand for silica brick in the various metallurgical industries of this country, as they are more suitable for special parts of furnaces than clay fire-brick. They are used in the roofs of open-hearth furnaces in steel and iron works and for roofs and floors of reverberatory furnaces in copper smelters. No silica brick is being made in Canada at present

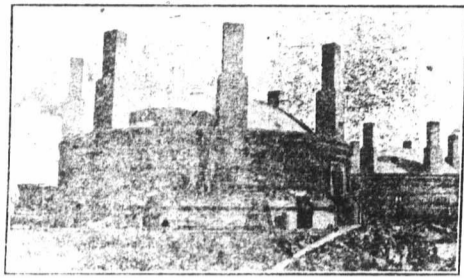


ST. LAWRENCE BRICK AND TERRA COTTA, CO., LAPRAIRIE, QUE.

although there is an excellent market for it and the fine quality of quartz that is now being mined and shipped from Killarney on the North shore of the Georgian Bay, should offer the needed encouragement for the establishment of such an industry. The only other refractory materials that could enter into competition, would be bricks made from fire-clay. But as all the fire clay used in Canada is imported, the silica bricks would have an additional advantage.

Clays or shales that burn to a vitrified body, in which condition they are best able to resist moisture, are most suitable for the manufacture of sewer pipes and paving-bricks. Paving bricks are made

chiefly at West Toronto, Ont., from shale obtained from the banks of the Humber River. Sewer pipe is manufactured by the Standard Clay Products, Limited, St. John's, Quebec, and New Glasgow, N.S.; The Ontario Sewer Pipe Company, Mimico, Ont.; The Dominion Sewer Pipe Company, Swansea, Ont.;



ONTARIO GOVERNMENT BRICK PLANT,  
MIMICO, ONT.

Hamilton and Toronto Sewer Pipe Company, Hamilton, Ont.; The Albert Clay Products Company, Medicine Hat, Alta.; Kilgard Fire Clay Company, Kilgard, B.C.; The Clayburn Company, Limited, Clayburn, B.C.; The British Columbia Pottery Company, Victoria, B.C.

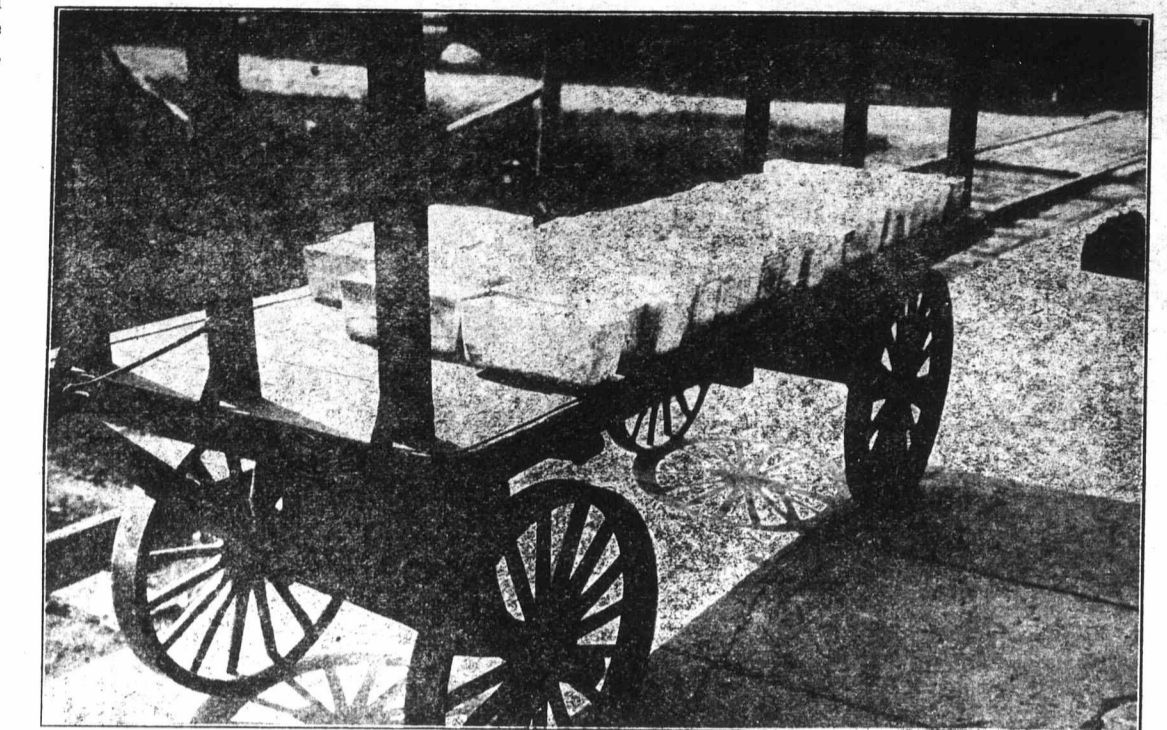
The pottery made from Canadian clay has been hitherto chiefly of the common grades such as flower pots, jardinières, crocks, churns, etc. Two clays, absolutely necessary for high grade china ware, are ball-clay and kaolin or china clay. No true ball-



CHINA CLAY MINE AND WASHING PLANT  
OF CANADIAN CHINA CLAY CO.,  
LTD., ST. REMI, QUE.

clay has yet been found in Canada, although the white clays of the Musquodoboit Valley, N.S. approach it closely. A very good China clay has been discovered at St. Remi, about seventy miles northwest of Montreal. The output, which is not yet large, is entirely used as a filler in the manufacture of paper and certain grades of textiles. Large quantities of china clay and chalk from Great Britain and talc from Continental Europe and the United States are regularly imported into this country and used as fillers and for other purposes in the industries of pulp and paper making, textile and rubber manufacturing, and also in the manufacture of such articles as oilcloths, etc.

In addition to the quantities of silica that are used in the form of sand in the manufacture of the indus-



SILVER BULLION READY FOR SHIPMENT FROM DELORO, ONT.

tries above mentioned, considerable quantities in the form of quartz rock are used by the smelters, particularly the nickel smelters at Sudbury. Quartz is also used in the manufacture of ferro-silica, a combination of iron and silica, used largely in the manufacture of steel. Ferro-silica is manufactured in electrical furnaces by The Metals Chemical Co., Ltd., Welland, Ont. Ground quartz is also used in the manufacture of sanitary and enamelled ware and also in the making of enamel signs, etc. Ground quartz, commonly known as silex, is also used as a filler for woods and as an abrasive principally in the manufacture of sandpapers, match boxes, etc. Both sand and ground quartz are used in the process of cleaning by sand blast.

Silica, generally in the form of a fine grade of pure sand, but occasionally in the form of ground quartz rock or flint, is the principal ingredient used in the manufacture of glass. For the various kinds of glass, different materials are added; for example, ground, sheet and plate window glass is made from silica with a portion of lime and soda added, and flint glass by the addition of lead and potash. If any particular color is desired, the required mineral pigment is also added. The pots, in which these ingredients are melted, are made of fire clay and cement, usually three feet high, and about four feet in diameter, and are open at the top. When the materials are melted, workmen gather a globule of it on the end of an iron tube or blow-pipe. This globule, still adhering to the blow-pipe, is inserted into the proper mould and a bubble of glass is blown to the

required thickness and until it takes the shape of the mould, which is that of a bottle, vase, tumbler or other vessel. Sheet or window glass is made by taking the molten material from the pot, blowing and twirling it, until it assumes a cylindrical form. The ends are then cut off, the cylinder split open longitudinally and pressed and rubbed until it is flattened out. In this way large sheets are made and then cut up into the sizes required. Plate glass is made by pouring the molten material upon a table which has a marginal edge equal in height to that desired for the thickness of the glass. It is then flattened out by a roller passed over the table, resting on the edges, thus securing equal thickness throughout.

The following are the principal glass manufacturers in Canada:

The Diamond Flint Glass Co., Ltd., with plants at Montreal, Toronto and Hamilton.

Canadian Glass Manufacturing Co., Montreal, Que.

Langwell, Geo. and Son, Montreal, Que.

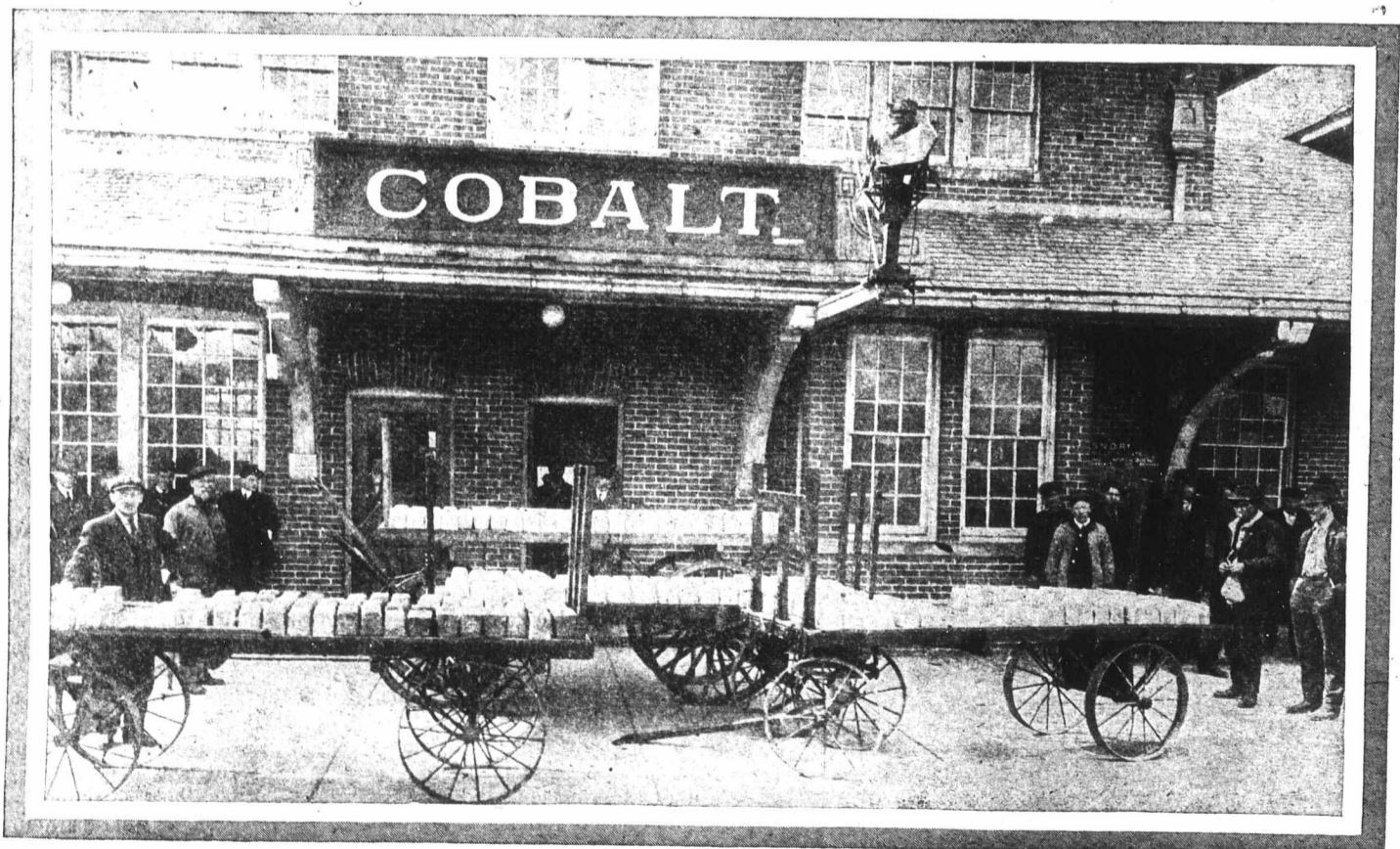
Independent Glass Producers, Toronto, Ont.

Humphrey Glass Co., Trenton, N.S.

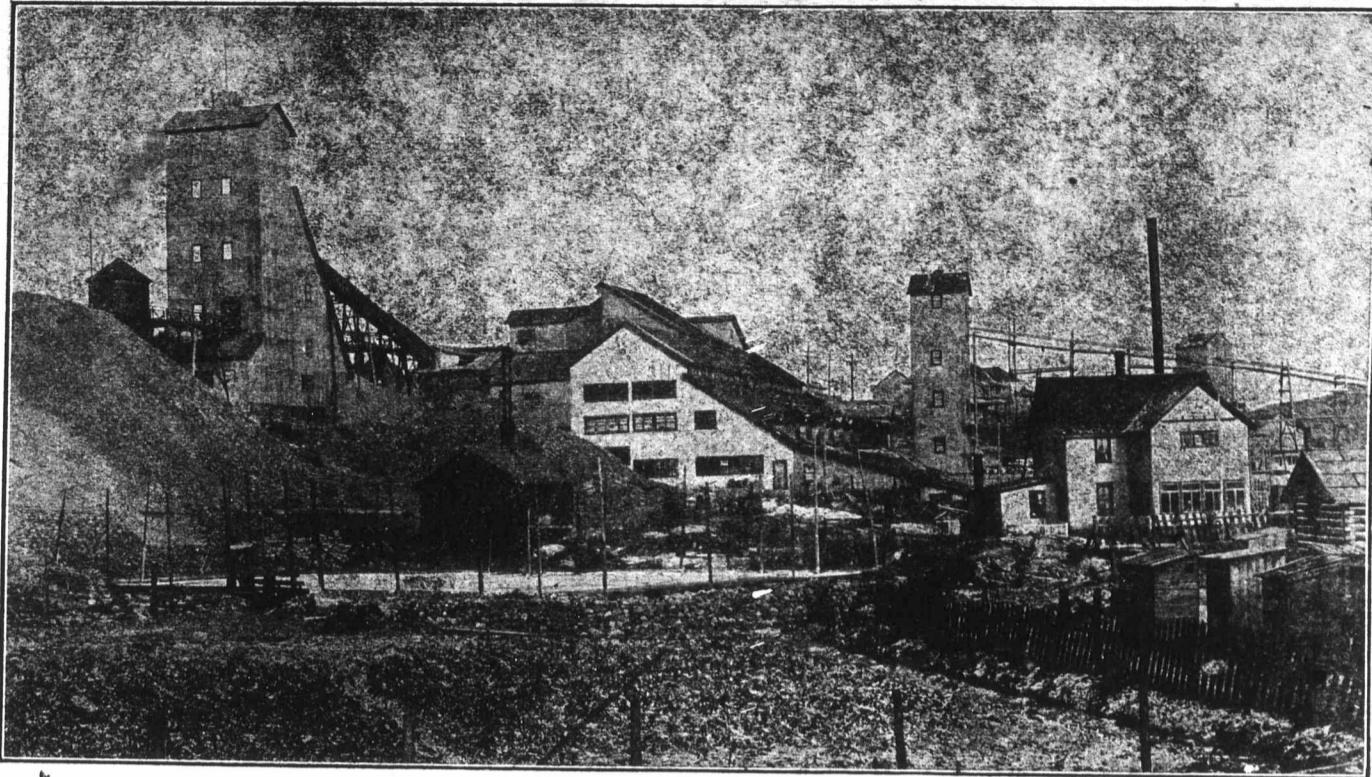
Sydenham Glass Co., Wallaceburg, Ont.

Manitoba Glass Manufacturing Co., Beausjour, Man.

There are a great many very fine deposits of limestone in Canada and it is extensively quarried, not only as building stone, but also for the manufacture of lime and cement and for use as a flux in metallurgical plants and in numerous other manufactures, chemical and otherwise.



A WEEKLY SHIPMENT OF SILVER BULLION FROM COBALT, ONT.  
236 Bars, containing 271,293 ozs. troy or 9.3 tons avoirdupois. The valuation at the present market price would be about \$200,000.00.



MILL, CONCENTRATOR AND MINING PLANT OF THE CONIAGAS MINES, LIMITED, COBALT, ONT.

Besides the compact hard limestone and the crystalline variety, commonly known as marble, there are two other varieties, namely, chalk and marl. Chalk or whitening, as it is usually called, is not found in Canada, but there are a number of fine deposits of marl. A variety of fine grained porous limestone, generally known as lithographic stone, is used by printers and lithographers for printing purposes. A very good quality of this stone is found in Canada, except that it is darker in color than are the best grades. Limestone, containing certain quantities of magnesia, is commonly known as dolomite. This grade is favored for certain purposes.

When limestone is burnt for several hours at a red heat in a special kind of furnace known as a kiln, the gas (carbon dioxide) is driven off and the resultant product, ordinarily known as quicklime, remains. Quicklime has a very strong affinity for water, with which it readily combines to form a slaked lime. Hydraulic lime, which has the property of setting under water, is made from a limestone containing clay (such limestone is also known as Natural Portland Cement).

Few, if any mineral, has such a wide range of uses as has limestone and its calcine product, lime.

Aerated water manufacturers use powdered limestone or chalk to produce the gas (carbon dioxide) with which they charge their various beverages. This is the gas that is given off when the cork is removed from a bottle of soda water, ginger ale, etc.

Calcium carbide, used in the production of acetylene gas, is made by fusing lime and coal dust in an electric furnace. The principal producers of calcium carbide in Canada are the Shawinigan Carbide Co., Limited, Shawinigan Falls, Que., and the Wilson Carbide Co., Limited, St. Catharines, Ont.

As a disinfectant and purifier, lime is used in gas plants, oil refineries, sugar refineries, city water and sewerage systems and by manufacturers of soaps, glycerine, lubricants, etc.

As a bleaching agent it is used by manufacturers of bleaching powder, and for the bleaching and renovating of rags, jute, ramie, and various paper stocks, etc. It is also extensively used in the manufacture of woodpulp for the purpose of bleaching and freeing the wood fibre of its resinous material.

As a filler it is used by the makers of paint, paper, rubber goods, oilcloths, patent floors, etc.

By tanners it is used to remove the hair from the pelts.

Lime is also used in the refining of mercury, to dehydrate alcohol, in the manufacture of ammonia, and a great many other chemicals.

## Silver

PURE silver is a brilliant white metal second only to gold in malleability and ductibility.

It is softer than copper, but harder than gold. As a conductor of heat and electricity, it excels all other metals. Its principal use is in the manufacture of coins, jewellery, table ware and alloys. It is also used in chemicals for staining glass, photography, etc.

The largest consuming countries are those such as

India and China in which silver is legal tender to any amount and is held instead of gold as a reserve. The world's production of silver in 1913 was 224,310,654 fine ounces. During the same year 139,232,726 fine ounces were coined into money, of which 96,983,439 fine ounces were for India and China. In Great Britain, silver is legal tender only up to 40s, and in Canada it is legal tender only up to \$1. That is, a debtor cannot be forced to accept more than \$1 in silver in payment of a debt.

When comparing the price of silver in London, England, with that in New York, it should be remembered that the London quotation is for standard silver, namely, .925, while the New York quotation is for pure silver.

Owing largely to the silver deposits of the Cobalt districts, discovered in 1903, Canada is one of the world's largest producers of silver. The total production of the Cobalt camp up to the end of 1915 was 234,314,368 fine ounces, valued at \$122,754,523. The average high grade ore shipped from the camp carries from 1,000 to 1,500 ounces to the ton. Some special shipments have carried as high as 5,000 ounces to the ton. The majority of ore taken from the mines at present carries much less silver. This low grade ore is treated in concentrators at the mine, while the high grade ore is shipped to the smelters.

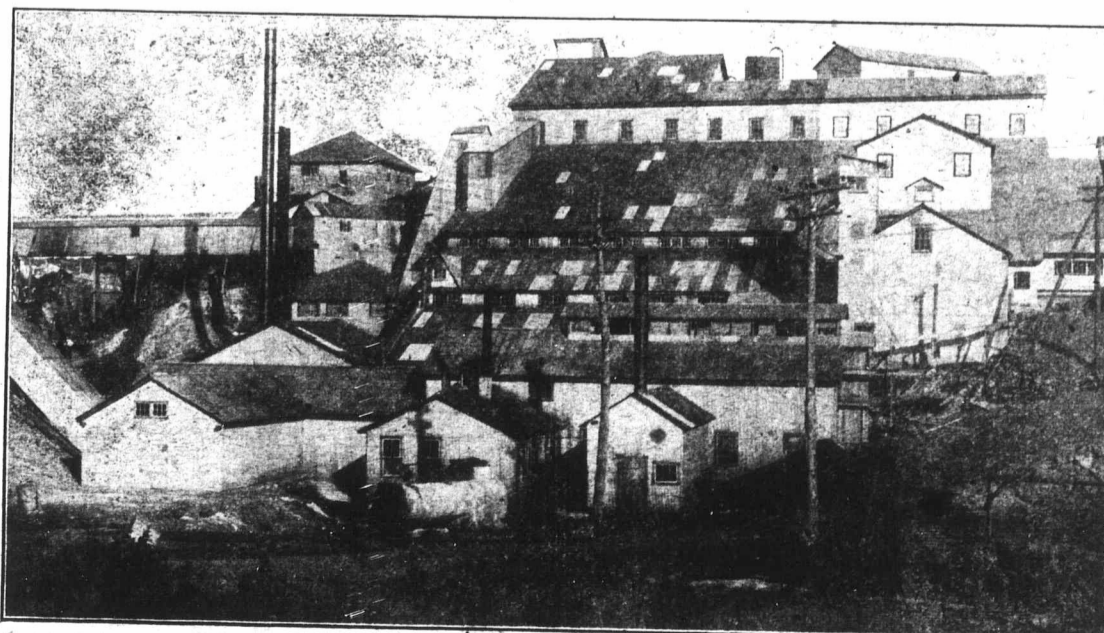
It is generally believed that the maximum output from the Cobalt camp was reached in 1912, but the annual production at the present time is not much less than it was in that year. The output in 1915 was 23,730,839 ounces valued at \$11,742,463. The companies producing over one million ounces in 1915 are as follows:

Nipissing Mining Company . . . . .	4,610,051 oz.
Mining Corporation of Canada (Town-site) . . . . .	2,776,589 "
Kerr Lake Mining Company, Ltd. . . . .	2,109,355 "

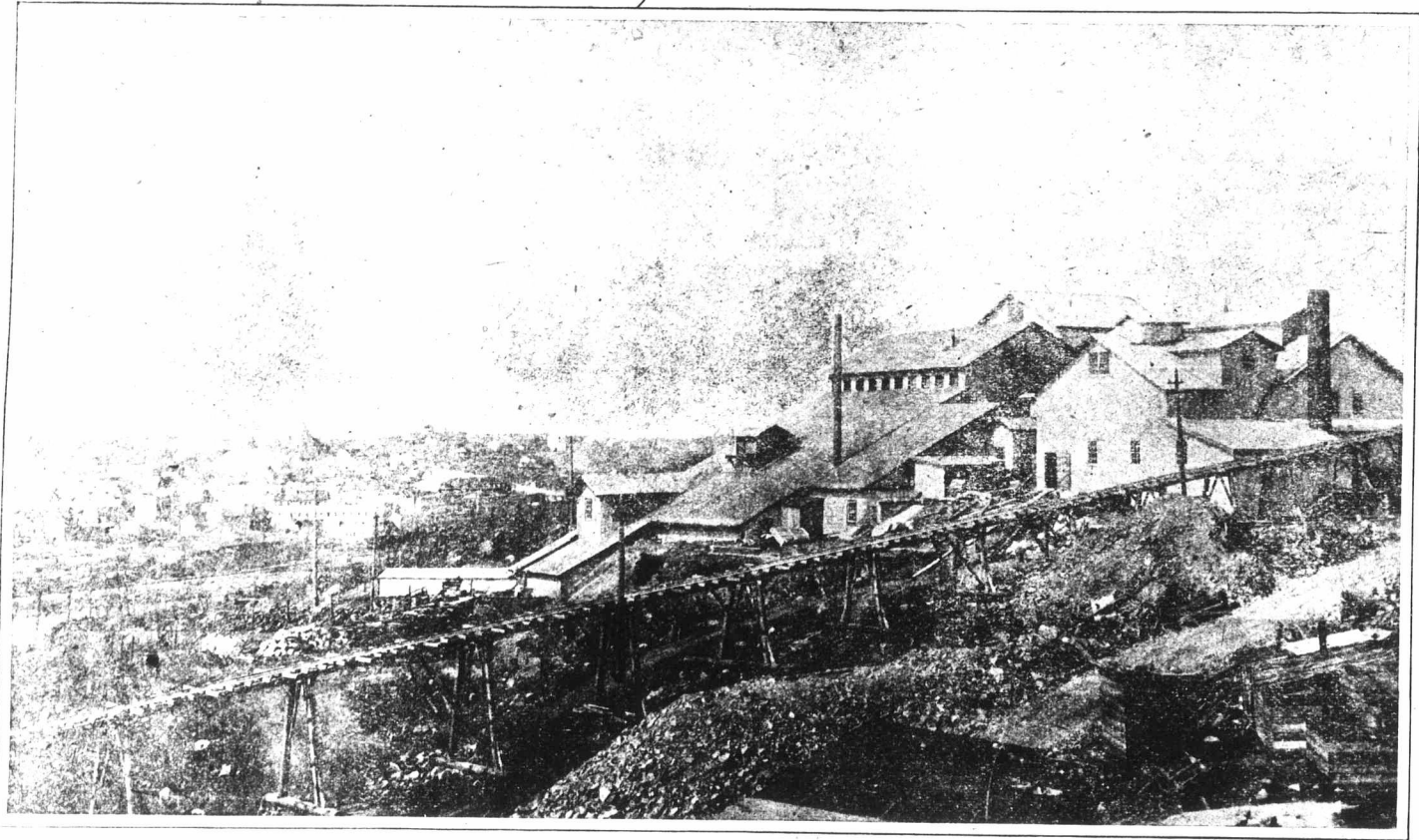
Seneca Superior Mining Company . . . . .	2,109,355 "
Coniagas Mines, Limited. . . . .	1,996,257 "
Mining Corporation of Canada (Cobalt Lake) . . . . .	1,566,206 "
Temiskaming Mining Company . . . . .	1,486,400 "
La Rose Consolidated Mines Company, Ltd. . . . .	1,071,694 "
McKinley-Darragh-Savage Mines, of Cobalt, Ltd. . . . .	1,061,827 "

The Cobalt ore deposits which carry values in silver, cobalt, nickel and arsenic, were discovered during the building of the Temiskaming and North Ontario Railway, and it may be said that the railway discovered the deposits as it runs almost over the top of one of the most important veins. The finding of such rich ore within so short a distance of the shore of Lake Temiskaming, a stretch of water which has been a well travelled route to the North by white men for 200 years or more, and the deposits being only about four miles from the town of Halleybury, shows the possibilities there are for the discovery of important mineral bearing areas in the vast hinterland of Canada, much of which is little known. Cobalt is distant by rail, 103 miles from North Bay Junction on the transcontinental line of the Canadian Pacific, and 330 miles almost directly north of the city of Toronto.

The silver production of British Columbia which is the next important silver producing province of the Dominion, comes mainly from the lead ores of that province. In East Kootenay, the orebodies are large and the silver content low, and the same may be said of the ore bodies in the Sheep Creek division of West Kootenay, and in the Blue Bell mine on the East shore of the Kootenay Lake. The ores of the Slocan district are much higher in silver values, probably averaging 75 ounces per ton of ore. There is a considerable amount of silver, also recovered from the gold and copper ores of British Columbia.



MILL, CONCENTRATOR AND MINING PLANT OF THE MCKINLEY-DARRAGH-SAVAGE MINES, LTD., COBALT, ONT.



HIGH GRADE MILL OF NIPISSING MINING CO., COBALT, ONT.

The silver from the Yukon is derived mainly from the placer gold bullion, but there are many silver lead properties which will probably become steady producers in the near future.

The silver production from the Province of Quebec comes from the copper sulphide ores of the Eastern Townships.

Silver is recovered from its ores by amalgamation, cyanidation, and by smelting processes, similar to the processes used in the recovery of gold. Smelting is the chief process used for the British Columbia ores. The high grade ores from the Cobalt district of Ontario are also commonly smelted. The low grade ores are concentrated or cyanided.

A considerable portion of the silver ore shipped from the Cobalt district has been smelted in the United States, there being no suitable plants in Canada when production from this district began. There are now in Ontario two well equipped plants, the Cominco Reduction Company, Limited, at St. Catharines, and the Deloro Mining and Smelting Company at Deloro. The Nipissing Company treats practically all its ores at its plant at Cobalt. The Buffalo Company also treats most of its ore in a plant similar to that of the Nipissing.

The ores from Cobalt silver mines are commonly hand picked to recover the high grade ore. The low grade ore is crushed and then concentrated on

concentrating tables or treated with the cyanide solution. The ore is mostly crushed by the stamp mill process.

## Asbestos

**U**NDER the name Asbestos, there are several fibrous minerals used in commerce, but the one that is best in quality and is of most importance to Canadians is known as chrysotile or serpentine asbestos, since the product of the mines of the Eastern Townships of Quebec are of this variety.

Asbestos fibre may be spun into yarn and rope and woven into fabric, in which form, it finds many uses where a fire resisting material is required. For weaving purposes, a long fibre, both strong and very flexible is desired. At present there are no factories in Canada weaving asbestos and all the long fibre produced from the mines in Quebec is exported. The asbestos manufacturers in this country make only mill board, paper, shingles, siding and pipe covering, for which purpose the shorter fibres are used.

On account of its low electrical conductivity, as-

bestos is used as an insulator in electrical instruments. The very short fibre is also ground for paints, particularly a fire resisting paint. The long fibre besides the uses referred to above, is used in making packing and piping joints where high temperatures or acid solutions are encountered.

Asbestic is the name applied to impure very short fibre asbestos. It generally contains a good deal of sand and is used by plasterers and manufacturers of roofing.

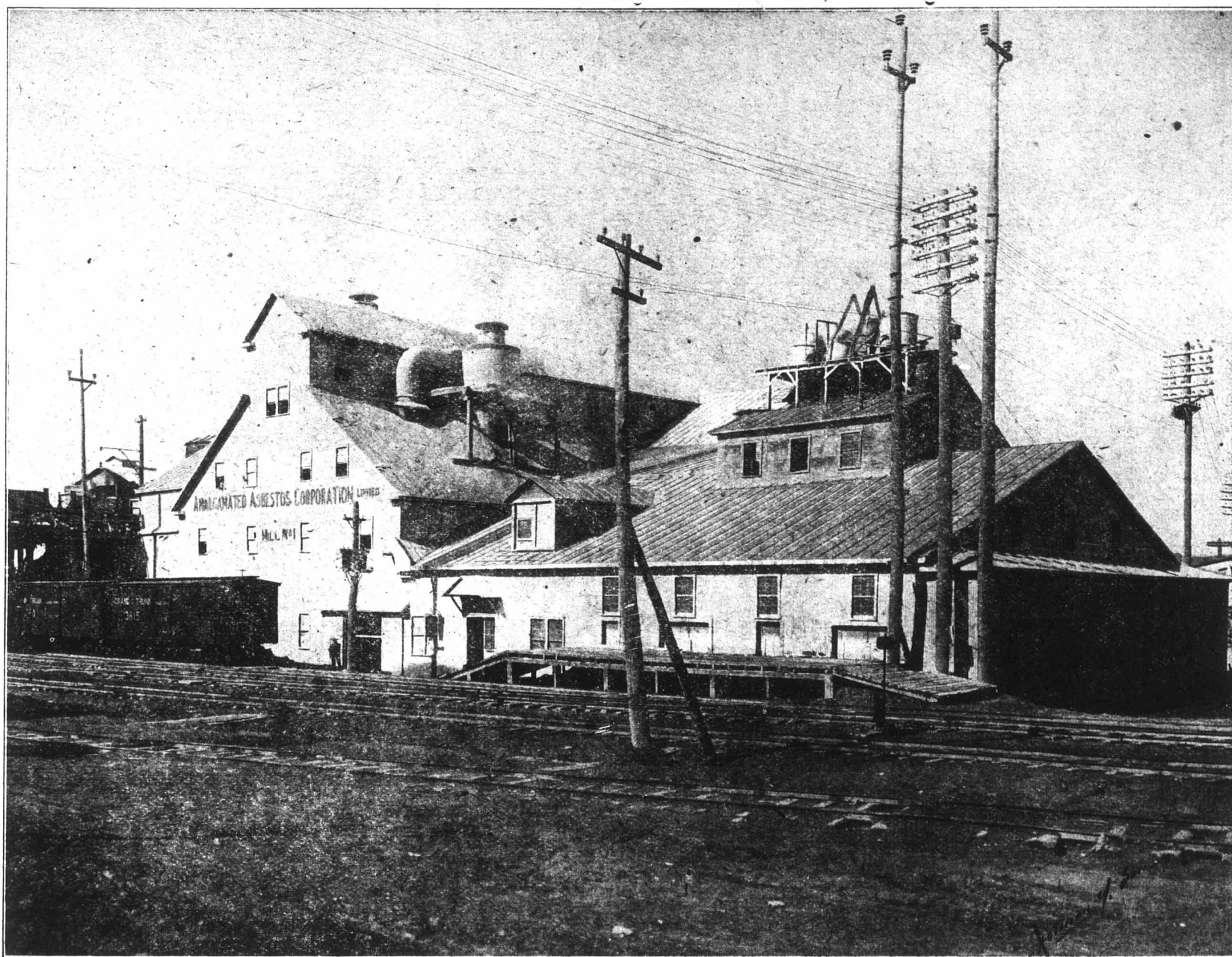
The controlling supply of asbestos for the world is obtained from Southern Quebec, 150 miles or less north of the international boundary line between Canada and United States and about 75 miles south of the city of Quebec. The principal production is furnished by eight mines as follows:

The Asbestos Corporation of Canada, with mines and mills at Thetford Mines and Black Lake. At Thetford Mines are also situated Bell Asbestos Mines, Jacob Asbestos Manufacturing Company, Johnson's Asbestos Company, Limited, and Martin Bennett Asbestos Mines Limited. The Asbestos and Asbestic Company Limited, is situated at Asbestos, Que., and the mills and mines of the Black Lake Asbestos and Chrome Company Limited, are situated at Black Lake. There are also a number of smaller plants at Robertsonville and East Broughton.

The asbestos mining industry was begun in Que-



LOW GRADE MILL OF NIPISSING MINING CO., COBALT, ONT.



ASBESTOS MILL OF THE ASBESTOS CORPORATION OF CANADA, LTD., THETFORD MINES, QUE.

bec in a small way some thirty-five years ago, and has advanced more or less regularly ever since. For the first fifteen years only the "crude" asbestos was recovered, that is, fibre long enough to be extracted by hand cobbing. Although this is still a valuable part of the production, it is now a relatively small part of the total output. After several trials a process of machine separation was begun about 1893. The product from this process is generally known as mill fibre. Although there have been numberless changes in this milling operation, the present practice is a direct development of the first principles of the earliest attempts, and much credit is due to those who originated it. Its effect may be realized when it is stated that at the present time 95 per cent of the quantity and 75 per cent of the value of the total output is obtained by the milling operation.

Except in one mine where underground work is quite extensively carried on during the winter months, the mining or rather quarrying is all open-cut work. The ground is cut down in benches generally from six to twelve feet high, which are carried across the floor of the pit so as to afford sufficient working face. Several of the pits have reached a depth of 200 feet and are from 600 to 1,200 feet or even more in width.

Hoisting is done by means of a cable derrick with boxes carrying about a ton each.

The separation of fibre from the rock commonly begins in the pit. Rock containing "crude" asbestos — that is, veins of asbestos three-quarters of an inch or more in width and of good quality — is sent to the cobbing sheds for hand separation. Dead rock is taken to the waste dump and the remainder, usually from 35 to 60 per cent of all the rock handled, goes to the ore bins or directly to the mill.

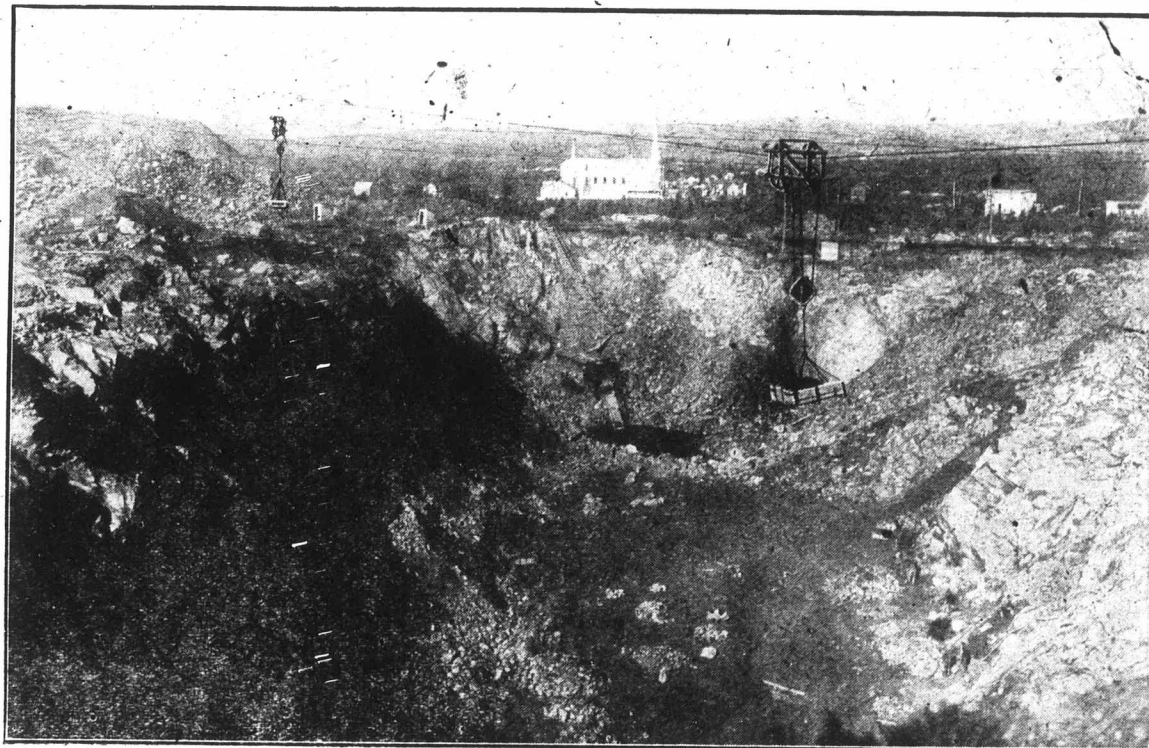
The milling practice varies somewhat in different mills, but is very similar in all. It consists essentially of coarse crushing, drying and alternate finer crushing and screening. At each screening, the asbestos when liberated, is drawn off through overhead piping by suction fans and collected in settling

tanks. When thoroughly screened from dust and classified according to length of fibre, the different grades are bagged ready for shipment.

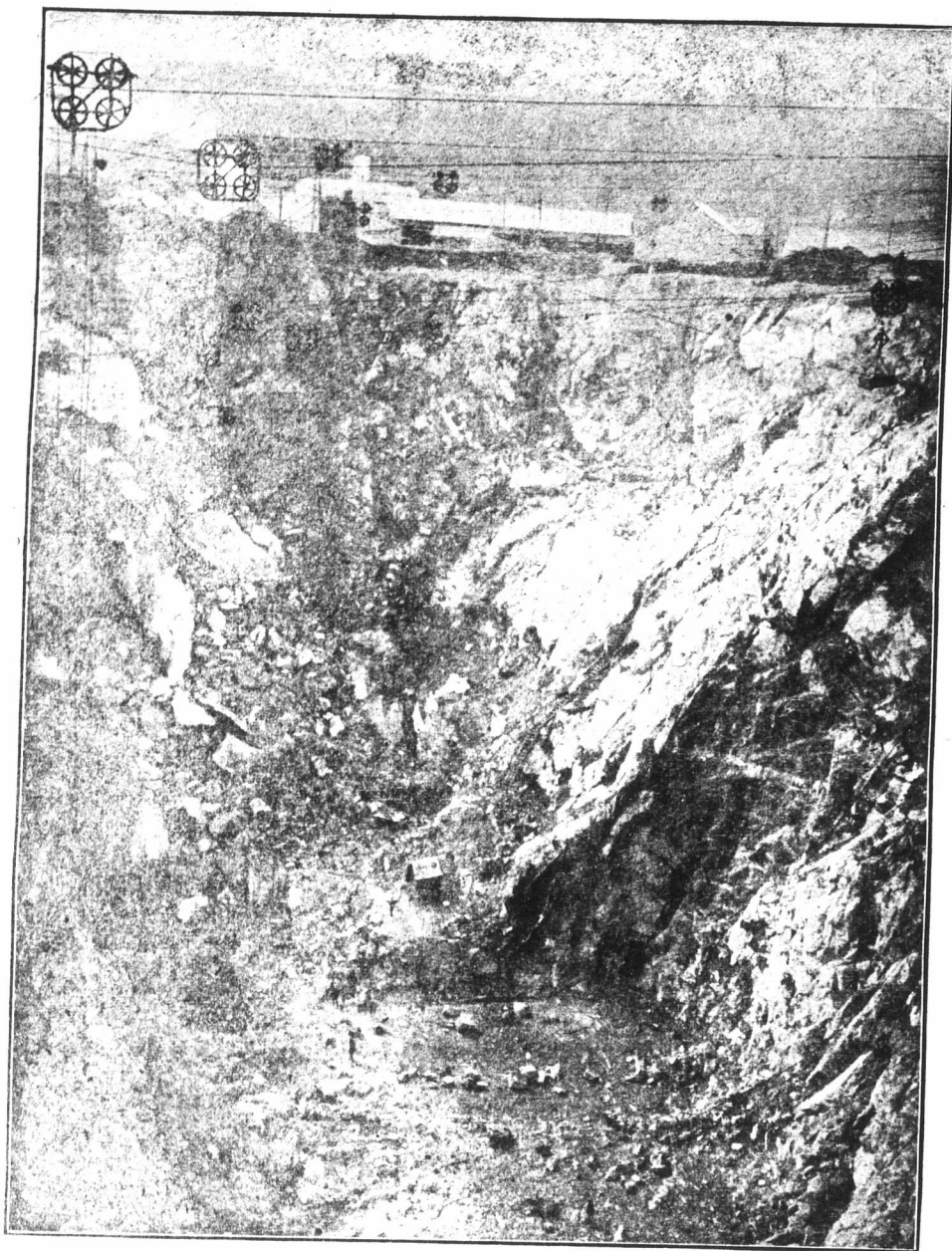
In the coarse crushing, jaw crushers are used, Gyratories and frequently rolls are used for the fine crushing. The final crushing of rock and separation of asbestos is effected by a specially designed "cyclone." This consists of two "beaters" or fans of chilled iron in shape like a screw propeller of a boat and weighing upwards of 100 pounds, which revolve at a speed of 2,000 revolutions per minute, or more, in a closed chamber. The average recovery of mill fibre is from 3 to 8 per cent of the rock treated.

## Natural Gas

THE oldest and at the present time the largest natural gas producing district in Canada is the territory bordering on the east and north shore of Lake Erie. This area can at present be divided into several distinct fields, but the intervening areas between these fields are fast being drilled and the results tend to show that in all probability the whole of this district is underlain by gas producing strata. In the counties of Haldimand, Welland, Essex and Kent, large supplies appear to be available. In Essex County a single well drilled 1,020 feet yielded gas at the rate of 10,000,000 cubic



AN ASBESTOS MINE.



ONE OF THE DEEPEST PITS IN THE ASBESTOS MINING REGION OF THE PROVINCE OF QUEBEC.

per day. The gas from this district is piped to the larger towns in the Southern Ontario Peninsula where it is used for industrial and domestic purposes.

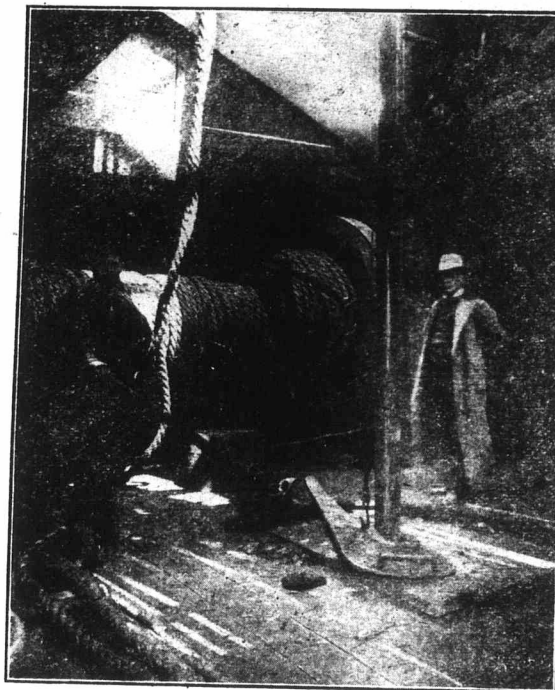
In New Brunswick, an important and extensive gas producing area is found in the Counties of Albert and Westmorland. The main district in which drillings are being carried on lies approximately eleven miles to the south of Moncton. At the present time the gas is being used to supply the towns of Moncton and Hillsborough.

In the southern part of Alberta, in an extensive area of which Medicine Hat is the centre, natural gas has been found in a number of wells drilled to a depth of 1,000 feet. Wells drilled at Bow Island, forty miles west of Medicine Hat, encountered a strong flow of gas at a depth of about 2,000 feet and

this gas is being piped 170 miles to Calgary, Lethbridge, MacLeod and other towns in Southern Alberta. South-west of Calgary, at Black Diamond, natural gas, high in gasoline was found in a well which was being drilled in search of petroleum and gas has been struck in practically all of the petroleum prospect wells of this district.

### Lead

**L**EAD is a heavy gray metal which rarely occurs in the natural state, but is generally obtained from the ore commonly known as galena. Lead is soft, easily malleable and to a cer-



DRILLING FOR NATURAL GAS.



A GAS WELL IGNITED.

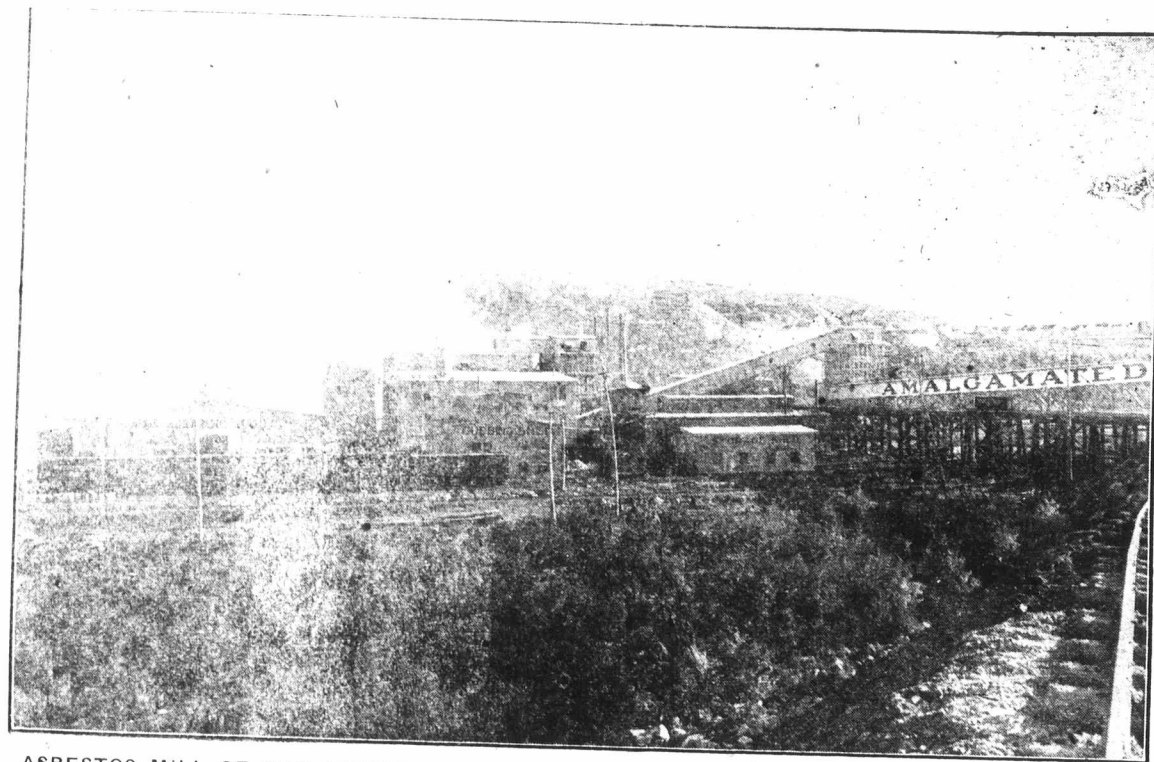
tain extent ductile. It can readily be manufactured into piping, sheet lead for roofing, etc., and into bullets and shot. It suffers less than most metals when exposed to the dampness in the soil or atmosphere and hence is extensively used for drain piping and plumbing. It enters into the composition of many alloys such as type metal, pewter, Britannia metal, etc., and having a low melting point is mixed with tin to form soldering metal. Many of its salts are important in the industry, for instance litharge is used in glazing earthenware and makes oil varnishes dry more quickly and thoroughly. The red oxide of lead or red lead is used in the manufacturing of flint glass and for pipe joints. The carbon of lead or white lead is used as a pigment in paints. The chromite of lead is a yellow pigment. Sugar or acetate of lead is used in the drug industry.

The world's production of lead in the year 1913 amounted to 1,270,458 tons. The principal countries producing this production were as follows:

	Tons.
United States	411,878
Spain	223,667
Germany	199,627
Australia	127,867
Mexico	68,343
Belgium	55,997
Great Britain	33,620
France	30,864
Austria-Hungary	26,565
Italy	23,970
Greece	20,282
Canada	18,847

In 1915, Canada produced 22,688 tons.

The mining and treatment of Canadian lead ores is almost entirely a British Columbia industry. The ores come very largely from the East Kootenay and West Kootenay districts. They are smelted and the product refined at Trail, B.C.



ASBESTOS MILL OF THE ASBESTOS CORPORATION OF CANADA, LTD., AT BLACK LAKE, QUE.



## Aluminium

**W**HITE aluminium or aluminum, as it is commonly known in commerce, is one of the most abundant elements in common rocks, but there are few minerals from which it can be economically extracted.

Bauxite, which is the chief source of the metal, is a comparatively scarce mineral of various colors and somewhat resembling clay. It occurs in beds or in pockets in clays.

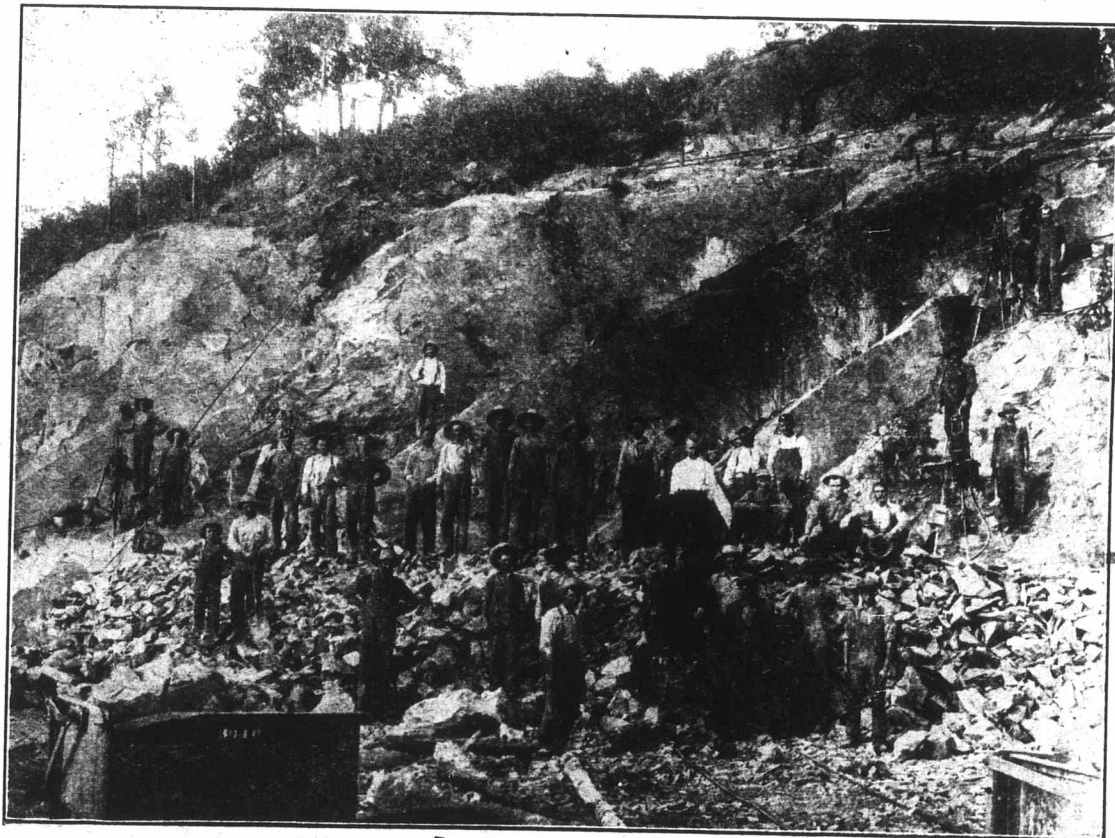
Bauxite is not found in Canada, but Canada is nevertheless a very important producer of aluminium metal. This is owing to the location at Shawinigan Falls, Que., of a large plant for the treatment of imported ores. The Northern Aluminium Company which operates this plant produces several million pounds of aluminum annually. Aluminum is extracted from bauxite in an electrical furnace.

Aluminum metal is extremely light with a specific gravity barely one-third that of iron. It is quite white in color, does not tarnish and takes a high polish. These qualities render a suitable material for a great many purposes such as making of scientific instruments, kitchen utensils, motor car parts, aeroplane parts, etc. The metal is a very good conductor and is therefore used for long distance transmission wires. Another important use is as aluminum bronze powders for inks, etc.

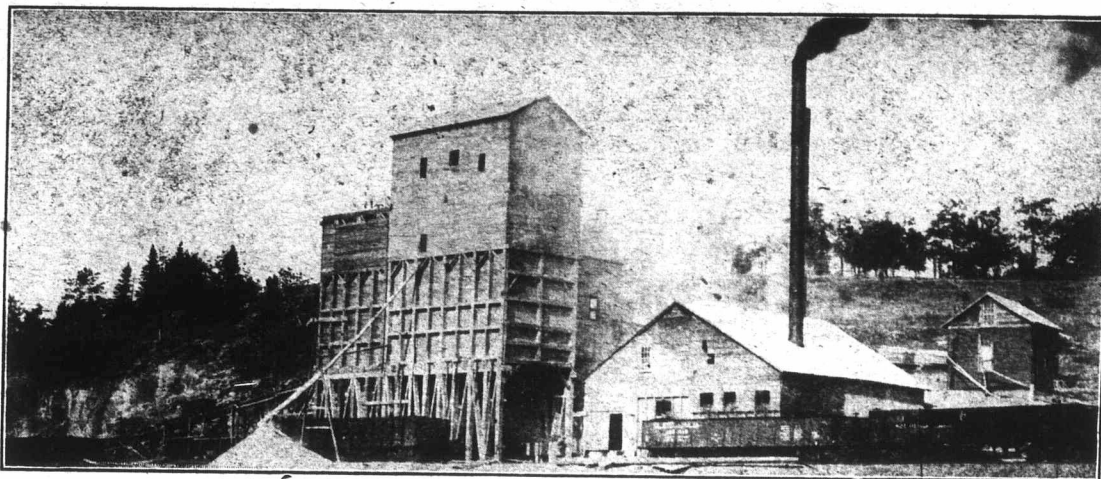
## Granite

**G**RANITE is quarried for building and road-making purposes. In building it is used either in large blocks or as crushed stone in concrete. For road making and paving purposes, it is used either in the form of crushed stone or as small blocks about the size of a brick.

Granite is quarried in Nova Scotia, near Halifax, and at Nictaux, in Annapolis County; in New Brunswick in the vicinity of St. George, in Charlotte County, and at Hornstead, in Queen's County; in Quebec it is quarried in the counties of Beauce, Stanstead, Iberville, Portneuf and Argenteuil. In Ontario, granite is quarried in the counties of Hastings, Leeds, Ontario, and in the districts of Muskoka and Parry Sound. Trap rock, which is the finest grade of road making material, is quarried by the Ontario Rock Company, in Peterboro' County, near the town of Havelock. There is also some trap rock in Northern Ontario. Most of the quarries in British Columbia are on the west coast of Burrard Inlet and on islands conveniently situated for transportation to Vancouver and Victoria.



TRAP ROCK QUARRY AND MINING GANG OF ONTARIO ROCK CO., LTD.



TRAP ROCK CRUSHING PLANT OF THE ONTARIO ROCK CO., LTD., HEAD OFFICE, TORONTO, ONT.

This plant is situated near Havelock, Ont., at one of the finest trap rock deposits, for road paving purposes, on the Continent.

## Pyrite

**T**HE main use to which pyrite is put is as a source of sulphur in the manufacture of sulphuric acid. For this purpose the ore is roasted in specially designed furnaces. The sulphur in the ore goes off in fumes which are caught and treated with water, producing sulphuric acid. The residue from this burning process, often spoken of as pyrite residue, or cinder, is an iron oxide. It is a brilliant red and makes the pigment known as red oxide, or Indian Red. Frequently this residue is smelted for its iron contents or if the original pyrite contained copper, gold or silver values, these metals may be extracted by smelting the cinder or by subjecting it to some other metallurgical process.

Sulphate of iron or copperas is manufactured by allowing water to trickle slowly through a bed of finely broken pyrite. In the presence of the water, oxidation takes place, producing sulphate of iron which is taken into solution by the water. By evaporating the water, the sulphate iron is obtained in crystalline form. Important deposits of iron pyrites or pyrite, occur in Quebec in the Sherbrooke district; in Ontario in the Hastings district and at a number of localities east and northwest of Lake Superior. Other deposits have been found in the northern part of British Columbia at Granby Bay and near Port Essington on the Skeena River.

In Quebec, active mining operations have been carried on continuously for more than 30 years; the first pyrite used in a sulphuric acid plant in America is said to have come from the Eustis Mine in the Sherbrooke district of Quebec Province. At present there are two producing mines in Quebec, namely the Eustis Mining Company, Eustis, Que., and the Weeden Mining Company, Weeden, Que., the total output of which is about 65,000 tons, containing

about 42 per cent sulphur. About half of this is burned in the sulphuric acid plant of the Nichols Chemical Company, at Eustis, Que., and the balance is shipped to the United States. The Quebec pyrites contains a small quantity of copper and a little gold and silver, all of which are recovered by treating the cinder residues obtained in the acid works.

In Ontario four pyrites mines are producing ore, two in the Hastings district, namely the Canadian Sulphur Ore Company, Limited, Queensboro, Ont., and the Nichols Chemical Company of Canada, Sulphide, Ont., and two in Northwestern Ontario, namely, the Northern Pyrites Company, Dinowic, Ont., and Lake Superior Power Company, Sault Ste. Marie, Ont. Part of the ore produced in Ontario is burned in the plant of the Nichols Chemical Company, at Sulphide, Ont., and part in the plant of the Grasselli Chemical Company, Hamilton, Ont.

## Gypsum

**G**YPSUM is a soft, light-colored mineral, best known for its use as land plaster. It is a hydrated sulphate of lime, often white in color, often massive, but sometimes crystalline, and then known as selenite. Massive varieties are generally colored, owing to the presence of impurities, but beds of almost pure white gypsum are sometimes found.

The principal use of gypsum is for the manufacture of plaster of Paris, which consists of partially dehydrated gypsum. On heating finely powdered gypsum, within certain limits of temperature, it gives off part of its water of crystallization but retains the power of again taking up a like quantity of water, and, at the same time, forming into a solid mass. This property of the calcined gypsum or plaster of Paris finds for it many uses in the arts and trades. A partial list of the uses is as follows: wall plaster and decorations, moulds and patterns for various purposes, casts of art objects, etc., surgical and dental purposes, and as a cement. It is also the base of alabastine, used for tinting walls.

In the manufacturing of Portland cement, gypsum is introduced into the cement for the purpose of regulating the rapidity of setting when mixed with water.

Considerable quantities of ground gypsum and plaster of Paris are used by asbestos manufacturers in the manufacturing of pipe and boiler coverings, mill board, etc.

In the paint making industry gypsum is employed in the manufacturing of "cold water paints," in which it acts as the body or vehicle for the color. It is also used to a lesser extent in the making of paints, mixed in oils. It should be pure white, very finely ground and free from grit.

Finely ground gypsum, when spread upon the soil, has the power of aiding in the decomposition of certain minerals and thus liberating plant-nourishing materials. It also plays a useful part when mixed with manure. It is used, either in its crude state or mixed with plant-nourishing materials, to form certain artificial fertilizers.

In the textile industry, very finely ground white gypsum is used to some extent as a filler for cotton goods.

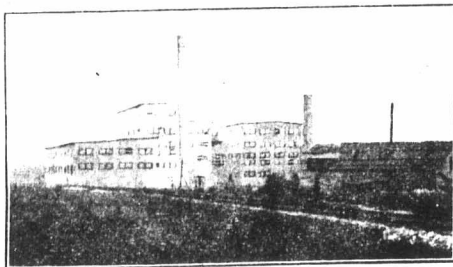
Gypsum is usually mined by open quarry methods, though in some cases underground mining, similar to that of coal mining, is the method employed. The material is hand cobbled to remove objectionable materials. From the pits it goes to the mill, where it

is crushed, and ground to the necessary degree of fineness and calcined. The finished product is graded according to purity and color.

Most of the gypsum mined in Canada is shipped to the United States for manufacture into the finer grades of plaster of Paris. The number of plants in Canada for treating gypsum has increased considerably during the past few years. The use of hard wall plaster in place of lime mortar is increasing and will likely lead to more manufacturing being done in Canada.

The quality of the gypsum found in Canada, more especially the white rock found in Nova Scotia, New Brunswick and Ontario, is of an exceptionally high grade.

In Nova Scotia, the principal districts in which gypsum is found are in Hants county, near Windsor, in Cumberland county near Amherst; in Victoria county near McKinnon Harbor; Baddeck, and St.



GYPSUM MILL OF THE ALBERT MANUFACTURING CO., HILSBOROUGH, N.B.

Annex; and in Inverness county near Cheticamp. Gypsum also occurs in large quantities along the coast of Cape Breton island, in the interior, and along the shores of the Bras d'Or lakes.

In New Brunswick the principal deposits occur in Albert county in the district around the town of Hillsborough; near Petitcodiac in Westmorland county; and in the northern part of the province on the Tobique river at Plaster Rock, in Victoria county.

In Ontario, gypsum deposits are found in Haldimand county along the banks of the Grand river, the occurrence being in beds averaging about 4 and 11 feet in thickness. A small annual output, which is mostly calcined, has been maintained for many years. Occurrences have also been noted in the northern part of the province along the banks of the Moose river in the Hudson Bay basin, about 30 or 40 miles south of Moose Factory.

In Manitoba large workable deposits of gypsum occur in an area about 8 miles square situated about 170 miles north of the city of Winnipeg. These deposits are being operated and the rock transported to Winnipeg, where it is calcined.

## Zinc

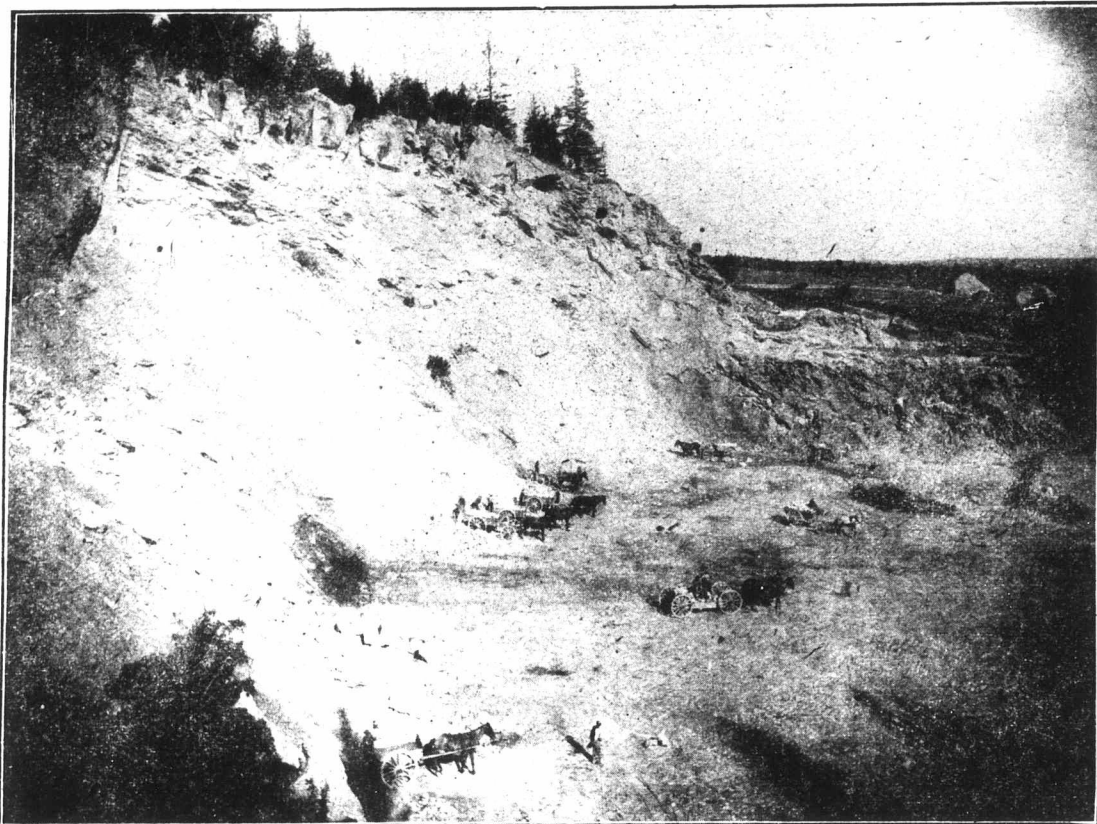
ZINC is one of the most useful metals. With copper it forms the alloy brass and for this purpose it is greatly in demand. Large quantities are also used in galvanizing iron plates. The metal smelted from the ore is called "spelter" and zinc is generally quoted in the markets under this name. Spelter is nothing more than bars or pigs of zinc.

Zinc can be hammered out into sheets and in this form is used for roofing. It is also used for engraving plates. In galvanizing iron, the iron sheets or other pieces of iron are dipped into molten zinc. Zinc oxide forms the pigment known as zinc white. Zinc sulphate, generally known as "vitriol" is used in electroplating, in varnishes and in medicine.

The world's production of spelter in 1913 was 1,091,675 short tons. The following were the principal producing countries:

United States	346,676
Germany	312,075
Belgium	217,298
France and Spain	78,289
Great Britain	65,197
Holland	26,811
Austria and Italy	23,928
Norway	10,237
Poland	8,539
Australia	4,105

In 1913 Canada had no smelters for the reduction of spelter from zinc ores. The Canadian production of zinc ore in 1913 was 7,554 tons. The Canadian production in 1915 was about double what it was in 1913.



A GYPSUM MINE IN NOVA SCOTIA.

The close association of zinc blende (zinc ores) with galena (lead ores) and its wide distribution have made its treatment one of the economic problems of mining in Canada and its history is interwoven with the history of silver lead mines in British Columbia. The Dominion Government in 1905 appointed a Zinc Commission to investigate and report upon the zinc resources of British Columbia and their commercial possibilities. The exhaustive report of the Commission was published in 1906. An electric smelting furnace was erected at Nelson, B.C., in 1908, but did not go into commercial operation. At the present time the Hewitt, Noble Five, Ruth, Slocan Star, Standard, Van Roi and White-water mines are producing hand-picked zinc or concentrates as a by-product from the milling of the silver lead ores.

In the Province of Quebec the Weeden Mining Co. has recently put into operation a plant for the concentrating of the complex lead zinc ores of Notre Dames des Agnes, Quebec.

Ontario possesses a number of very promising zinc deposits, but none of them are being worked at the present time.

Until a few months ago, all the zinc ore, or blende, produced in Canada was shipped to the smelters of the United States, but since the Dominion Government, a short time ago, decided to pay a bounty on zinc refined in Canada, the Consolidated Mining and Smelting Company at Trail, began the erection of a smelter and refinery for the treatment of zinc ores.

## Salt

SALT occurs in nature in large quantities in aqueous solution, as the brine of the ocean, salt lakes and springs, and also in the solid form, called rock salt.

The salt of commerce is obtained both from brines and from rock salt deposits.

In some cases the deposits of salt lie at the surface of the ground with little or no overburden and may be excavated by ordinary open-cut methods. Where the overburden of soil and rock is too great to warrant stripping, underground methods may be used similar to those employed in coal mining, but if the overburden be very great, or if for other reasons it is advisable, the salt is won by dissolving it in situ and pumping the brine to the surface. The last method is the one employed in winning the salt in the Ontario salt district. A drill hole is sunk through the deposit and cased with an iron pipe down as far as the upper limit of the salt. An inner pipe of considerably smaller diameter extends from the surface to the bottom of the deposit. Fresh water is forced down, between the inner and the outer pipes, to the deposit. The salt is dissolved, forming a very strong brine. The brine is pumped to the surface through the small inner pipe. The salt is obtained from the brine by evaporating the water.

The following is a list of the principal uses of salt in the Canadian industries, arranged roughly in order of the amount of salt consumed — preserving meats, fish, butter and hides; making hydrochloric acid and other chemical compounds of either sodium or chlorine; in soap making; glazing drain tile, etc.; refrigeration; and in certain metallurgical processes.

Extensive beds of salt or salt producing springs are found in nearly every province of the Dominion of Canada.

The largest and at present the only producing district is situated in the southwestern peninsula of the province of Ontario, bordering on Lake Huron, the St. Clair river, Lake St. Clair and the Detroit river. The salt here exists as beds, covered by upwards of 1,000 feet of other strata.

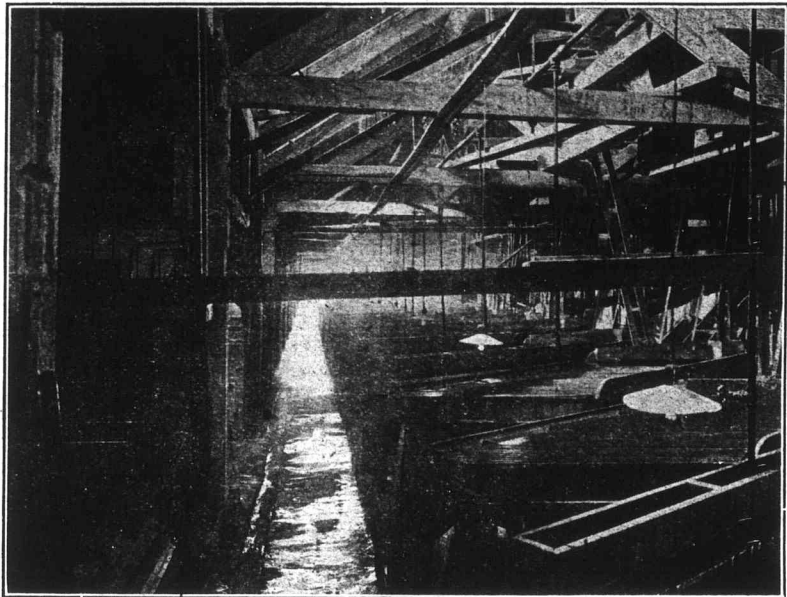
In this district, the principal plants are located at Windsor, Sarnia, Sandwich, Goderich, Clinton and Kincardine. A prominent feature of the salt produced from the brine in Canada is its remarkable purity and also its freedom from other salts detrimental to its use in the production of caustic soda and bleaching powder. At Sandwich, a plant has been recently erected for the manufacture of caustic soda and bleaching powder from the brine.

## Cobalt

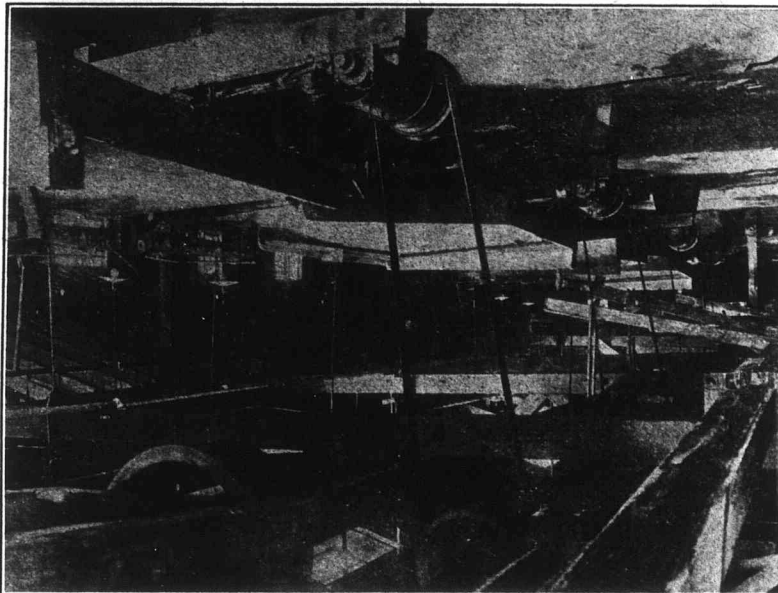
THE ore from the silver mines at Cobalt contains large quantities of the metal cobalt, from which the district and town derive their name. In smelting the ore for the recovery of the silver, cobalt is obtained as a by-product, usually in the form of cobalt oxide.

Cobalt, previous to the discovery of the cobalt ore deposits at Cobalt, Ontario, was a comparatively rare metal and had few uses. The small amount produced was used chiefly as a coloring agent, cobalt blue being well known to manufacturers of china, glass, inks, etc. But the discovery of the metal in large quantities in the Cobalt District of Northern Ontario reduced the price and instituted much investigation into the properties of cobalt and its compounds with the purpose of discovering new uses for these substances. Until a few years ago the refineries of Europe held a monopoly on the metal but at the present time the Canadian producers control the markets of the world for the metal and its oxides. The refineries of the Coniagas Reduction Company at St. Catharines, Ontario, and of Deloro Mining and Smelting Company at Deloro, Ontario, are now producing metallic cobalt, as well as the various cobalt oxides.

Metallic cobalt resembles nickel in appearance, but is somewhat more lustrous. It alloys in a great variety of preparations with nearly all the important metals. Castings of cobalt metal may be readily turned with the ordinary lathe tools. The metal may also be rolled and forged in a manner and to a degree very similar to nickel. It has about the hardness of rot iron.



CONCENTRATING TABLES OF CONIAGAS MINING CO., COBALT, ONT.



SLIME TABLES IN MILL OF CONIAGAS MINING CO., COBALT, ONT.

Alloys containing cobalt have been found much superior to the best self-hardening steels for use as lathe tools. One of these alloys known as "steelite" now manufactured by the Deloro Mining and Smelting Co., Deloro, Ont., is rapidly coming into general use for cutting tools.

Another most promising field for cobalt is the plating industry. It has been demonstrated that cobalt is much superior to nickel for plating many materials. Cobalt for plating purposes may be had from either the Coniagas Reduction Co., or the Deloro Mining and Smelting Co.

Recently Mr. T. W. Gibson, Deputy Minister of Mines of Ontario, has advocated the use of cobalt metal for coinage. It might very advantageously be used instead of our small five-cent silver coins.

An investigation of cobalt and its compounds has been carried on at Queen's University for the Mines Branch at Ottawa, by Dr. H. T. Kalmus and his assistants.

In connection with the oil industry in Canada, mention should be made of the existence of extensive deposits of bituminous shales and tar sands. Beds of bituminous shales, are found in Gaspé, New Brunswick, and Nova Scotia. Those in New Brunswick are without question the most important. They occur in the counties of Albert and Westmoreland and extend in an easterly and westerly direction over a distance of 40 miles. Extensive exploration by means of diamond drilling and surface work, has demonstrated not only the quantity but the quality of these valuable deposits. It is anticipated that in the near future a plant with a capacity for an initial daily treatment of 2,000 tons of shale will yield approximately 80,000 gallons of crude oil per day. Tar sands are known to occur in Alberta along the Athabaska river for a distance of upwards of 100 miles north and south of Fort McMurray.

William, York County, N.B. In both cases mining operations have been intermittent in character. The ore at West Gore is auriferous, although the presence of gold was not recognized in the earlier shipments, which consisted of high grade ore carrying 50 per cent and upwards of antimony. A mill for treating low grade ore was built in 1907 and 1908 and is now in operation.

## Petroleum

THE principal oil fields in Canada are situated in the peninsula of south-western Ontario, between Lake Huron and Lake Erie. The first oil was found in Lambton county in 1862, and active production has been continued ever since. Until 1907, the Lambton county fields, in which there have been about 11,000 producing wells, were by far the largest producers; since then several new districts have been opened up, the most prominent ones being the Tilbury district in Kent county and the Onondaga district in Brant county. When the wells are first drilled, the natural pressure is usually sufficient to force the crude oil to the surface, sometimes producing what are known as gushers. After the flowing period, the oil has to be pumped. While some of the smaller districts became exhausted in a few years, others have continued to furnish oil for a long period.

Four refining companies are operating in Canada, distilling about 10 million gallons of Canadian crude oil per year, but the greater part being distilled at these refineries is still being imported from the United States.

In New Brunswick, in the district lying 11 miles to the south of Moncton, oil is being pumped in small quantities from the holes which produce the gas of this district. Although the production so far is not large, drill holes are continually being sunk, and it is hoped that very shortly a stronger and more continuous yield will be the result.

In Alberta prospecting is being carried on vigorously. Seepages of oil have been found in several parts of the province. In October, 1913, a light oil (about 90 per cent gasoline) was struck at a depth of about 1,550 feet in a boring that was in progress near Black Diamond P. O. Drilling was continued and on May 14, 1914, a second strike was made of an apparently similar grade of oil at a depth of 2,700 feet.

## Chromite

CHROMITE or chrome iron ore is an oxide of iron and chromium. It occurs in serpentine rocks, in irregular masses or disseminated in small grains which must be won by crushing and concentrating. It is also found in sand resulting from the disintegration of these rocks.

Chromite is used in the chemical industry for making chromic acid and the various salts of chromium, which in turn are used for making paint and ink pigments, and other purposes.

It is also employed as a source of chromium in the manufacture of chrome steel. In this case the iron content is also utilized.

Chromite is very basic in chemical reaction and highly refractory, suiting it to the manufacturing of fire bricks for certain metallurgical purposes, and also for the lining of basic open hearth steel furnaces, the only use to which it is put in Canada at present.

Chromite deposits occur in the Coleraine and Black Lake districts, Quebec. Some ore was shipped in 1910 and 1911, but not during the following years. During 1915 increased demand resulted in renewed activity, and a considerable amount of ore was shipped.

## Antimony

ANTIMONY is used in the manufacture of alloys, much of it being made into type metal.

Ores of antimony consisting mainly of stibnite or sulphide of antimony have been found and worked in a number of localities in eastern Canada, chief among which are the mines at West Gore in Hants county, Nova Scotia, and in the parish of Prince



POURING THE NITRO-GLYCERINE IN THE HOLE PREPARATORY TO SHOOTING AN OIL WELL.



SHOOTING AN OIL WELL.

## Arsenic

**A**RSENIC is one of the chief constituents of the silver ores of the Cobalt District, Ontario, and since the discovery of cobalt, the production has more than met the demand for arsenic. In the roasting of the silver ores, arsenic is driven off in the form of fumes of arsenic oxide. These are caught in condensing chambers and sold in the form of white powder. The two companies producing arsenic oxide at the present time are the Coniagas Reduction Company, at St. Catharines, Ont., and the Deloro Mining and Smelting Company, at Deloro, Ont. Previous to the discovery of the cobalt ores, arsenic oxide was being produced by the burning of arsenopyrite or mispickel ores, which are found abundantly in Eastern Ontario, particularly in the County of Hastings. These ores, particularly at Deloro, in Marmora Township, County of Hastings, carries some gold. The existence of these ores accounts for the location of the Deloro Mining and Smelting Company at Deloro, Ontario.

White arsenic, or arsenic oxide, is a highly poisonous substance, and is used largely in the manufacture of insecticides, particularly that insecticide commonly known as paris green.

## Magnesite

**T**HE main source of the world's supply of magnesite has been Austria and Greece. Since the European war began and these sources of supply have been curtailed while at the same time the demand has increased, there has been a great deal of activity in the exploitation and working of local deposits, of which one of the most important on the North American Continent is situated in the eastern part of Quebec, in the Township of Grenville, Argenteuil County, about ten miles north of the town of Calumet.

An important deposit of this mineral is also being worked near Atlin, B.C.

In the basic method of metal smelting calcined magnesite is used as a furnace lining, either in the form of bricks or shaped within the furnace from the ground material.

During calcination the ore gives off carbon dioxide, equal to about half its weight. Where the calcining is done in retorts, this carbon dioxide may be saved and stored in iron cylinders under pressure, for use in aerating soda water, and so forth.

The pure metal magnesite, which is extracted from magnesite ores, is used to give light for signalling and in photography. The metal is extracted from the ore by an electrical process, and preparations are being made at Shawinigan, Quebec, for the installation of this process.

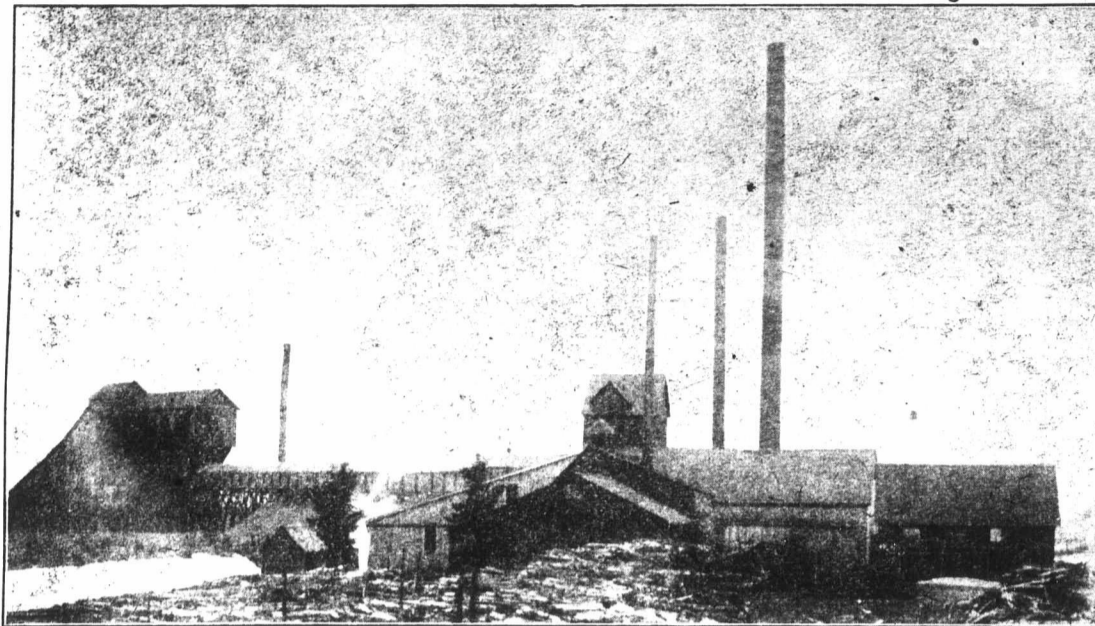
It is also the sulphate of magnesite is commonly known as "Epsom salts."

## Graphite

**G**RAPHITE is a soft black or steel grey mineral composed of carbon. It occurs in a great variety of forms crystalline and amorphous, in veins, masses and as disseminated particles in rock. It has many uses and the supply from any one country is seldom varied enough in character for the several purposes. Physical properties and impurities differ greatly in graphite from different sources. The bulk of the world's supply comes from Ceylon, Madagascar and Korea.

Crude graphite ore of the disseminated variety must be subjected to a very elaborate milling treatment to prepare it for the market. It must be ground to such a degree of fineness as to detach the particles of graphite from the associated minerals. This grinding is not an easy matter, as the graphite cakes act badly in the machines. Following the grinding, the graphite is separated from the accompanying minerals either by a wet or dry process of concentration. The resulting concentrates are then graded into various sizes by screening and bolting. The graphite is further graded according to purity.

One of the most important uses of graphite is for the manufacture of refractory articles, such as crucibles, retorts, etc.



MILL OF WEST GORE ANTIMONY CO., WEST GORE, N.S.

Stove polishes consist essentially of finely ground graphite, usually 160 mesh, with which is mixed clay or some other material to act as a bond. Both the flake and amorphous varieties are used. The polish obtained with the flake graphite alone, or with the mixture of the two, lasts longer than the polish obtained with amorphous graphite alone.

The finishing step of the manufacture of gunpowder consists of polishing the grains with graphite. The powder is placed in a tumbling barrel with very fine flake graphite and thoroughly mixed and shaken for some time. The thin film of graphite enveloping each grain acts as a protection against the absorption of moisture.

Graphite, on account of its extreme softness and unctuousness, is admirably suited for use as a lubricant. It is used in two manners; namely, dry, or mixed with oil or grease. Flake graphite in various grades of fineness, from about 20 mesh to 200 mesh, is employed for this purpose and should be free from gritty matter.

Large quantities of graphite are used in the manufacturing of paints for special purposes, such as for covering structural steel work, iron and steel tanks, and steel stacks. It produces a good weather and fume resisting paint. For this purpose a very fine, air-floated flake graphite is used. It should be free from grit and sulphite minerals.

In the casting of iron, it is desirable to coat the inner surface of the mould with some material which will prevent the metal from coming in contact with the sand of which the mould is made, and at the same time give to the casting a smooth surface. Graphite possesses certain properties which suit it to this purpose, and large quantities are used by the foundry men. A fine grain flake graphite is used either alone or mixed with talc.

Lead pencils are made by encasing thin rods of prepared graphite in wood to give the necessary strength. These rods are formed by mixing very finely amorphous graphite with clay. It is then moulded into shape and packed. The hardness of the finished product depends upon the proportions of clay used and the time and duration of packing.

In electrical work graphite finds many uses on account of its conductivity, refractoriness and softness. For different uses various grades are employed, in all of which a high degree of purity is required, especially for the making of dynamo, and motor brushes, in which case, it must contain no grit.

Graphite is used by electrotypers for giving an electro-conductive service to the matrix, on which the electrotype is deposited. For this an extremely fine and pure grade of graphite is required.

The only deposits of graphite in Canada that are being worked are those in the Provinces of Quebec and Ontario.

In Quebec, the principal deposits of graphite are situated in the townships of Buckingham and Lochaver, Ottawa County, near the town of Buckingham; and in the township of Grenville, Argenteuil County. Mills for the refining of the materials are situated in all of these places.

In Ontario the operating mines are situated in the following townships: Brougham, Renfrew County; Cardiff and Monmouth, Haliburton County; Mont-eagle, Hastings, and North Emsley, Lanark County.

## Mineral Waters

**S**PRING waters containing minerals in solution, or as they are usually termed, mineral waters, occur in very many sections of the country. Many of them are utilized commercially, both for bottling works and for bathing purposes. At several of the springs where the water is found to possess curative properties, hotels and sanitariums are situated. Some of these are thermal or hot springs and are principally used for baths.

## Mica

**T**HE micas are a series of silicate minerals which are characterized by the readiness with which they can be split into thin flexible leaves. The colorless variety, muscovite, was formerly used in stoves, its transparency allowing a view of the coals and its heat resisting properties being great enough to successfully withstand the rather severe changes in temperature. This use has made mica very well known, even among those who are not ordinarily greatly interested in minerals.

Muscovite is the variety of mica most utilized in most countries. In Canada, however, it is quite secondary in importance to the brown colored variety known as phlogopite.

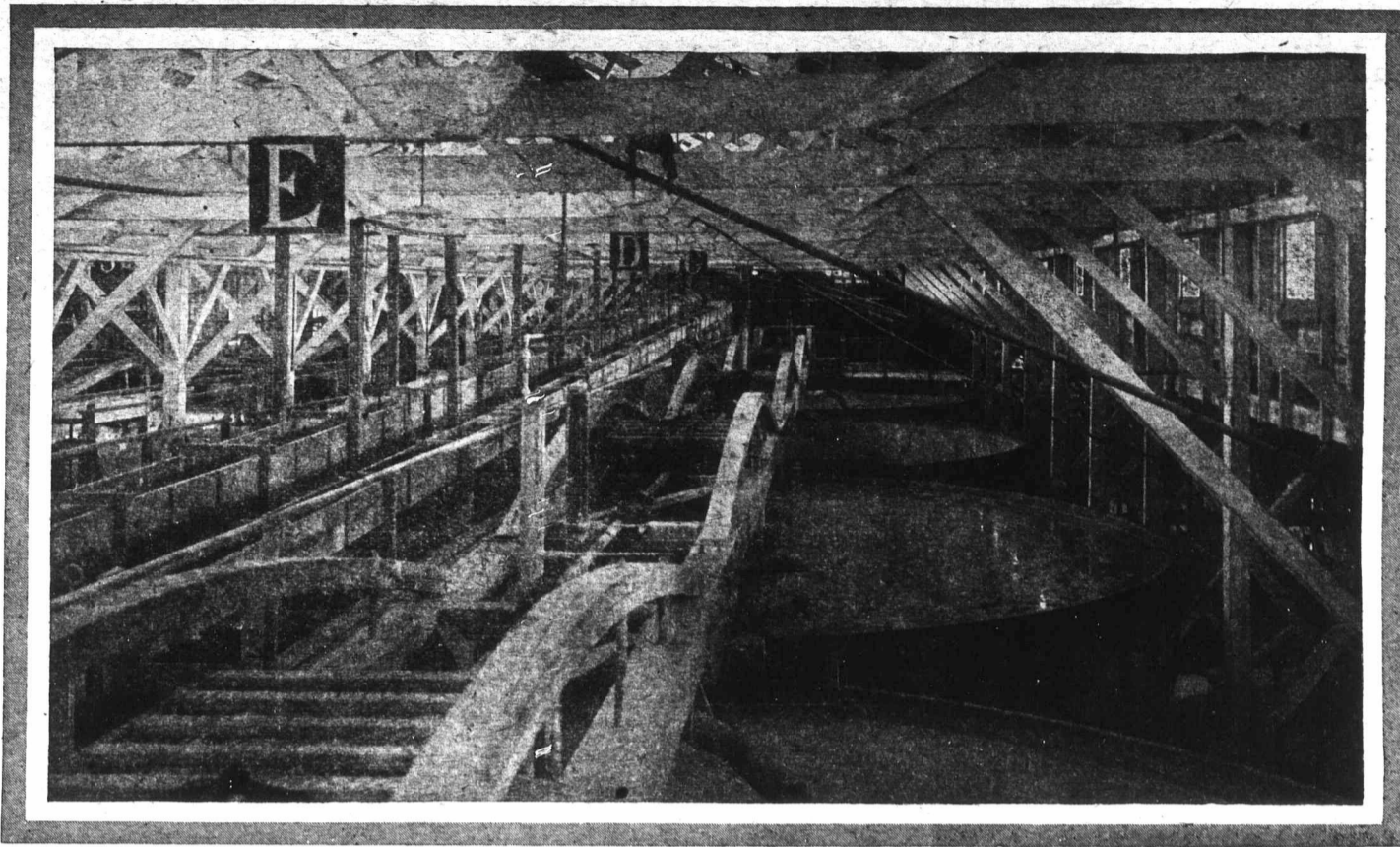
Canada is the chief source of the world's supply of phlogopite or, as it is sometimes called, magnesia mica or amber mica. There are several mines in operation, and from time to time many deposits have been worked. The deposits are usually very irregular in character, the mica occurring in scattered pockets, and it is difficult to mine it in a very systematic manner without doing a lot of waste work. Consequently, many deposits have been worked only for the mica which was quite near the surface and abandoned when all in sight was taken out.

Mica finds a number of uses in the electrical industry on account of its dielectric strength, the ease with which it may be split into thin, flexible sheets, and in some cases on account of its transparency.

The following is a partial list of its uses in this industry: Motor and dynamo winding—commutator ring and segment insulators; electric lights—discs for interior insulation of light sockets, covers for fuse boxes; telephones—long, narrow slips on which fuses are mounted; electric heaters—pieces on which the resistance wire is wound, forming the heating elements of toasters, etc.; spark plugs—the insulation of some gasoline engine spark plugs is made of mica.

The mica is furnished to the consumers split to the necessary thinness and sometimes cut to shape. It must be free from electrical defects; that is, free from electro-conductive inclusions and in perfect sheets.

For commutator insulation, amber mica is best, as it wears, under the action of brushes, at the same rate as the copper which composes the segments of the commutator. It must be free not only from elec-



SLIME VATS IN LOW GRADE ORE MILL OF NIPISSING MINING CO., COBALT, ONT.

tro-conductive inclusions, but also from quartz and garnet.

For electrical purposes micanite is being extensively used. It is made by cementing together very thin, small-sheets of mica into large sheets. For this purpose much of the small mica is used, which otherwise would be discarded as useless or else ground to powder.

Mica, on account of its transparency and resistance to the action of heat, is admirably suited to use as glazing for stove doors, furnace peep-holes, and chimneys for lamps, lanterns, and gas burners. Muscovite is generally employed, though phlogopite is frequently used. Transparency and freedom from stain are the prime requisites for these purposes.

Finely ground mica, free from quartz and garnet, is mixed with a heavy grease for lubricating purposes.

In order to produce a scintillating surface on wall paper very finely ground white mica is employed. For this purpose the mica is ground under water. It should be from 100 to 150 mesh and as nearly uniform in size as possible.

Coarsely ground mica is used in the surfacing of certain prepared roofings. Cheapness is the main consideration in selecting this material. Any variety of mica may be used.

The amber mica deposits of Canada are comprised with an area of approximately 1,200 square miles in the Province of Quebec, and 900 square miles in the Province of Ontario. The two districts are separated geographically by the Ottawa River. The City of Ottawa lies between the two producing areas, and is the seat of the mica industry. With the exception of the plant of the Loughboro Mining Company, which is situated at Sydenham, Ontario, and that of Kent Bros., which is situated at Kingston, all the important works engaged in trimming and otherwise preparing mica for the markets are located at Ottawa. The most important of these companies are as follows:

Blackburn Bros., Ottawa.  
Capital Mica Co., Ottawa.  
Kent Bros., Kingston.  
S. F. Fillion, Ottawa.  
Wallingford and Co., Ottawa.  
O'Brien and Fowler, Ottawa.

## Feldspar

**T**HE feldspars are very common rock forming minerals. They are silicates of aluminium with various percentages of potassium, sodium and calcium.

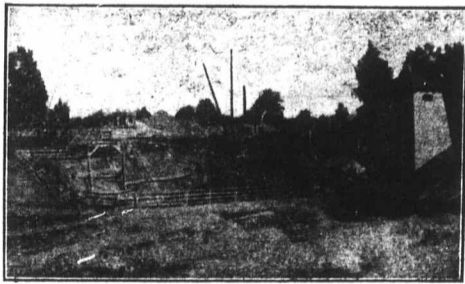
Of the many varieties of feldspars, orthoclase and microcline, potash feldspars, are the two most in demand, but the market for albite, sodium feldspar, is improving. While microcline is most commonly

used as flux in chinaware industries, a mixture containing 30 per cent microcline and 70 per cent albite has been found to have very desirable properties, notably a lower temperature of fusion.

While these feldspars are common constituents of many igneous rocks they usually occur in such small grains, and intermixed to such a degree with other minerals that their utilization is not economically possible. In some localities they occur in comparatively large masses in coarsely crystallized pegmatites along with quartz, tourmaline and mica, from which, in the course of mining, they may be fairly easily separated by hand.

The feldspars mined in Ontario are chiefly microcline intermixed with about 20 or 30 per cent albite. They are salmon and white in color, and as shipped are practically free of quartz.

The "spar," which comes from the mine or quarry in the form of lumps, must be crushed and ground to about 150 to 200 mesh to prepare it for most of the uses to which it is put. When the product is to be used for ceramic purposes, great care must be taken to avoid the introduction of particles of iron from the grinding machines. For this reason the grinding is usually done in special chaser



LACEY MINE OF THE LOUGHBORO MINING CO., SYDENHAM, ONT.

mills, or pebble mills. In the chaser mills the spar is ground under quartzite wheels running over a bed of quartzite blocks. The pebble mills are lined with quartz, while flint pebbles are used to effect the grinding. In some cases the crushing is preceded by calcining in kilns in order to shatter the mineral and thus facilitate the crushing and grinding.

Feldspar is graded as follows: No. 1, No. 2 (sometimes called "Standard"), and No. 3. No. 1 is carefully selected, free from iron-bearing minerals, largely free from muscovite, and contains little or no quartz, usually less than 5 per cent.; No. 2 is largely free from iron-bearing minerals and muscovite, but usually contains when ground from 15 to 20 per cent of quartz; No. 3 is not carefully selected and contains somewhat higher percentages of quartz, muscovite and iron-bearing minerals.

Feldspar, either No. 1 or No. 2 grade, is one of the principal ingredients of the body and the glaze of porcelain. In the body it fuses during the firing and forms a firm bond between the particles of

quartz and clay. In the glaze it fuses and combines with the other ingredients to form an opalescent, glassy covering to the ware on which it is applied. Thus it will be seen that the temperature of fusion is an important factor in selecting a feldspar for these purposes. The melting point depends largely upon the percentages of potash in the spar. The higher the percentage of potash the lower will be the point of fusion. Where a small part of the potash is replaced by soda it will be found that the point of fusion is still lower.

Feldspar, usually No. 2 grade, is used in enameling brick and metal. The spar is one of the fluxing materials which goes to form the porcelain-like coating of the ware. For this purpose, also, the spar should be as free as possible from the dark-burning minerals.

In the manufacturing of abrasive wheels feldspar is one of the bonding materials used. On firing the wheels, the feldspar fuses and firmly cements the grains of emery, corundum or carborundum together. For this purpose No. 3 grade is employed, and, since the color is not of importance, small quantities of foreign minerals are not objected to.

The addition of alumina to the mixture for glass-making causes opalescence. Since feldspar contains alumina in a readily fusible form it is used in manufacturing opal glass. White mica in very small quantities, and free silica are permissible, but the spar should be as free as possible from iron-bearing or other minerals which would tend to color the finished product.

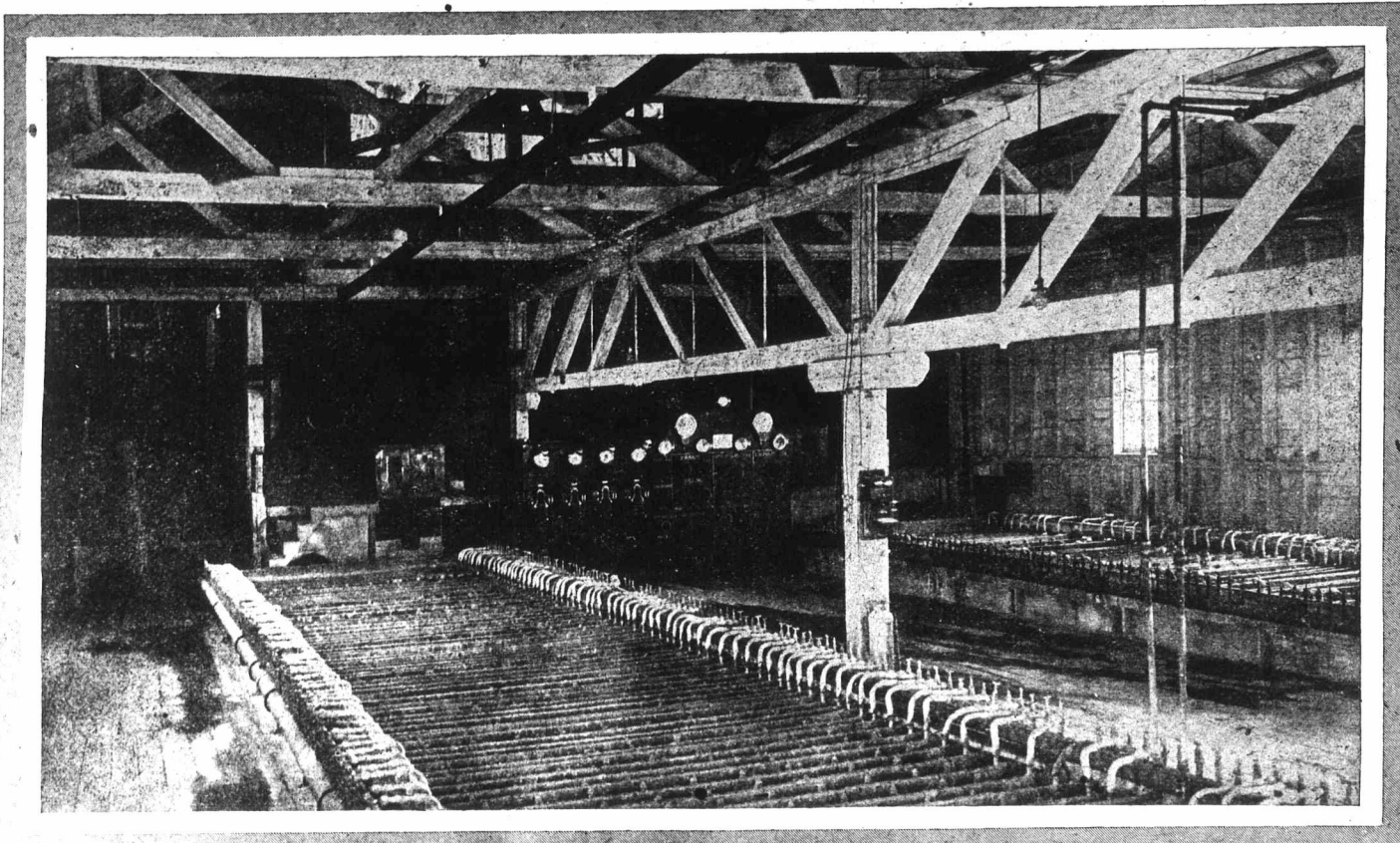
Feldspar is found in a number of places throughout Canada. But the only regularly producing district is situated on the Kingston and Pembroke Railway, about 20 miles north of Kingston. The most important mining company in this district, and the biggest producer is the Kingston Feldspar and Mining Co., Kingston, Ont. The spar from this district is shipped in the lump to the potteries of the United States at Trenton, New Jersey, and East Liverpool, Ill.

## Ochre

**O**CHRE is the name applied to the earthy variety of iron oxide. Its color varies from brilliant yellow to dull yellowish brown.

The presence of manganese oxides in ochre gives a brown or reddish color. This manganiferous ochre is called umber, after Umbria, in Italy, where it was first mined. Sienna is like umber in composition, but contains less of the oxides of manganese and is lighter in color.

The principal uses of ochres are in the paint industry, where they are employed as pigments. True-ness and depth of color are the prime requisites. They should be very finely ground, and free from grit. They are used either raw or calcined, according to the color desired.



SLIME FILTER PLANT IN LOW GRADE ORE MILL OF NIPISSING MINING CO., COBALT, ONT.

In the case of some ochres, they must be washed to remove contained sand and grit. This is done by thoroughly mixing with water to a very thin sludge. The fine particles of the ochre are held in suspension, while the coarse sandy matter rapidly settles to the bottom. The sludge is then conveyed to settling tanks, and the ochre allowed to settle. The water is drawn off and the ochre dried. It is then ready for the market, or it may first be calcined.

### Talc

**T**ALC is a very soft mineral. In color it varies from white to greyish green, usually being pale apple green. The mineral is characterized by its softness and unctuousness. It occurs generally in foliated masses. It is also sometimes granular or fibrous.

The massive granular or crypto-crystalline variety is known as steatite, while the fibrous variety is called agalite.

Soapstone is a rock consisting very largely of talc and gets its name from its soapy feeling. It is also called potstone.

In addition to the foregoing, the following names are applied to talc, by the trade: asbestine, French chalk, mineral pulp, talclay and verdolite.

The particular properties of talc which make it useful in the industries are its softness, slipperiness, refractoriness, non-conductivity of heat and electricity, and its resistance to the action of most chemicals.

The principal use of talc in this country is as a filler for paper. For this purpose it should be very finely ground, free from grit, and as nearly white as possible for the better grades of book paper. It is used as a filler to be added to the pulp to produce a white opaque paper and also in the coating of paper. Agalite, on account of its fibrous nature, is the variety most desired by the paper trade because of its greater "retention" and the somewhat stronger paper resulting from its use.

Powdered talc is used in large quantities in the manufacture of talcum powder and other toilet preparations, and also as a filler or loader in the cheaper grades of toilet soap. For toilet powders a very pure grade is employed. It should be white and very free from grit. For soap the color is not so important a matter, but freedom from grit is insisted upon.

For filling and dressing cotton cloth white, grit-free powdered talc is largely used. It is also used in the preparation of cloth for window blinds, and to a lesser extent for other textile purposes.

A low grade of powdered talc is used as a foundry facing. That prepared from the foliated variety is best. In the manufacturing of rubber goods talc finds two uses. In the preparation of the rubber,

talc is added as a filler, for which purpose it should be finely ground and free from grit. It is also used to dress the moulds used in forming the rubber goods to prevent sticking.

Very fine powdered talc is used in the making of enamel and other paints. In most cases pure white stock is specified.

Talc enters into the composition of magnesite flooring. For this the cheap grades are usually employed. Agalite, the fibrous variety, is sometimes specified.

In order to prevent "ready roofing" papers and felts from sticking when rolled for shipment and storage, some manufacturers dust the prepared surface with talc. The lowest grades may be used for this purpose.

Talc is used sometimes in the insulating composition for electric cables. Among other lesser uses of powdered talc are the following: dressing of fine leathers and kids, as a lubricant, and as a powder for gloves and shoes.

In the making of gas burners, slate pencils, tailor's chalk, and white pencils, pure grades of massive talc are used.

Such soapstone as is used in Canada is purchased already manufactured into the desired sizes and shapes. Among the many articles which may be made from soapstone are the following: electric switchboards, laboratory table tops, wash tubs, sanitary fittings, hot plates, griddles, stove linings, furnace linings, acid tanks and lining for causticizing chambers in sulphate pulp mills.

The quarrying of soapstone is carried out by the usual open quarry methods, the material being cut out in solid blocks, which are later sawn into slabs of various dimensions.

Talc which is to be ground is won either by open-cut or underground methods. Underground methods are preferable for the reason that the product may be more easily kept clean.

The lump talc is first crushed, by means of jaw, or gyratory crushers or rolls, to about one-quarter inch size. It is then very finely pulverized in a buhr mill, ball or tube mill, cyclone mill, or some such pulverizer. The pulverizing is carried on until a large percentage is reduced to 200-mesh size. The product is graded by size, by means of bolting, or air-floating, or a combination of the two methods.

Talc or bodies of talcose mineral—in part steatite, or soapstone—have been found at many places in the Dominion, but with the exception of the mines near Madoc, Ont., they have not been mined to any great extent.

Near the village of Madoc, in Hastings county, a large body of talc has been worked for several years, and lately a second deposit has been opened up in this district at Eldorado. Two mills are in operation grinding crude talc and preparing it for the trade, viz., George H. Gillespie and Co., Madoc, Ont., and Canadian Talc and Silica Co., Ltd., Eldorado, Ont.

### Grindstone

**S**TONE suitable for grindstone is quarried in Nova Scotia and New Brunswick. The producing quarries and works are situated at Lower Cove and Quarry Island, in Pictou County, N.S., and in New Brunswick at Wood Point, Rock Port and Beaumont, in Westmoreland County, North Haven and Clifton in Gloucester County, and at Quarryville, in Northumberland County.

### Corundum

**C**ORUNDUM, which is practically pure alumina, is, next to diamond, the hardest mineral found.

It occurs in a rock matrix from which it must be separated by crushing and concentration, after which it is ground and sized according to the demands of the markets, great care being taken to obtain uniform grading as regards the size of the grains.

Owing to its hardness and to the fact that it is not brittle it is admirably suited for use as an abrasive. It is employed for grinding and polishing both in the form of powder and wheels. In the making of wheels the grains of corundum are mixed with clay and fluxes and moulded into shape, after which the wheels are "fired" at such a temperature as to establish a strong bond between the particles.

The corundum mines of Canada are situated in the eastern portion of the Province of Ontario, in the townships of Carlow and Raglan. Mining operations here have been in progress since 1900. At present, mining is being conducted solely by one corporation, namely, the Manufacturers Corundum Company, Head Office, Toronto, Ontario; and mills at Burgess Mines, Ontario. This company has acquired the mines and mills formerly operated by the Ontario Corundum Company of Carlow Township, and the Canadian Corundum Company, of Raglan Township.

### Molybdenite

**OLYBDENUM** occurs chiefly as molybdenite ore. It is a dark colored mineral, resembling graphite, from which it is sometimes distinguished by a bluish color. Like graphite, it commonly occurs in flakes, but is sometimes massive. The amorphous variety is scarcely distinguishable from graphite except by chemical tests.

Owing to its softness and flaky form, molybdenite is with difficulty concentrated by the ore washing methods. Oil flotation methods are being used at some properties.

Molybdenum, like tungsten, is greatly in demand for the manufacture of high-speed tool steels. With tools made from these alloys, one man can do as much work as four using the ordinary tempered carbon steels.

During 1915 there has been a lively interest in molybdenite, and several properties are being developed in different parts of Canada. One of the most notable is the Molly Mine, near Salmo, B.C.

There are many occurrences of molybdenum in Ontario, and all that are at all promising are being worked at the present time. The Orillia Molybdenum Company has recently put into operation a concentration plant at Orillia, Ontario. The company has treated several shipments of ore successfully.

## Tripolite

**T**RIPOLITE, or as it is also called tripoli, infusorial earth, diatomaceous earth, fossil flour, or kieselguhr, is an earthy material composed of the minute siliceous shells or fossils of diatoms. It usually contains such impurities as sand, clay, carbonate of lime, iron, oxide, etc.

Owing to the finely divided and angular silica, which is the main constituent of tripolite, it is very useful as a polishing material for metal. For this purpose it is prepared in three forms:

(1) Dry powder, to be moistened or otherwise prepared by the user. (2) Mixed with about one-third its weight of tallow or other hard grease and moulded into bricks or stocks. This is used on buffing wheels. (3) Mixed with some cleansing liquid in the form of the well known liquid metal polishes.

In those industries where there is much polishing of metal work large quantities of tripolite are used in the form of grease bricks. Much is imported into the country already manufactured and some manufactured here.

In Nova Scotia and New Brunswick the bottoms of many of the small lakes are covered with tripolite. The more important deposits, some of which have been worked, from time to time, are situated in Victoria, Cumberland, Cape Breton and Inverness counties, Nova Scotia, and in Kings and St. John counties, New Brunswick.

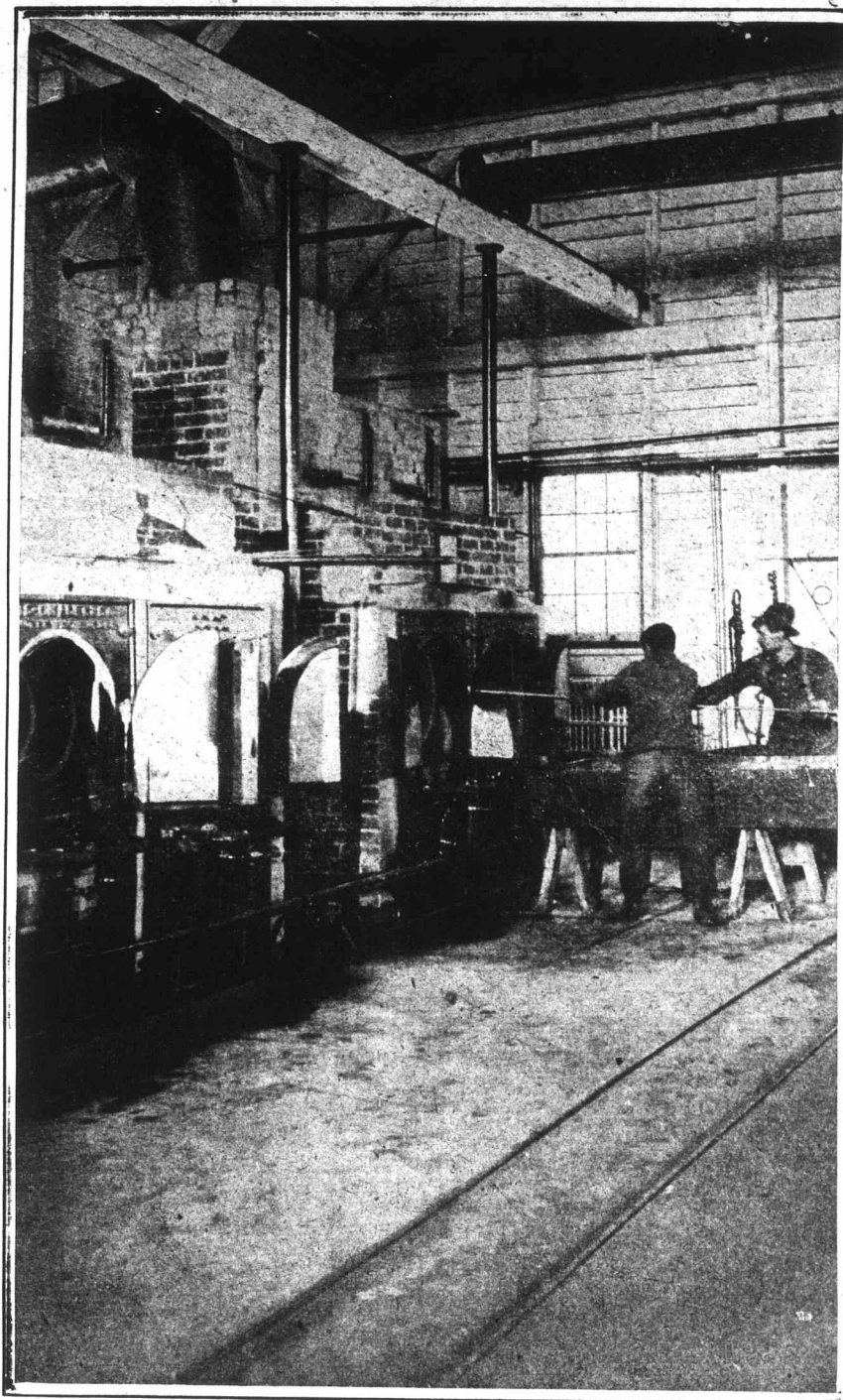
At the present time there are two companies in Canada producing tripolite, namely, Oxford Tripolite Co., Limited, Oxford, N.S., and Premier Tripolite Co., Ste. Anne's, N.S.

## Barytes

**B**ARITE is a natural sulphate of barium. It is of high specific gravity—4.5. It is usually white or nearly so when pure, but it often found stained by iron oxide and other impurities. This mineral is also known by the following names: barytes, heavy spar, lead bloom, and cawk.

Barite is used for three purposes by paint manufacturers: (1) As a "filler" for white lead and other paints. It was first employed purely as an adulterant both on account of its weight and its cheapness as compared with the white lead with which it was mixed. Later it was recognized that it had properties which gave to the paint certain advantages. For example, the fine angular grains were found to give to the surface of the paint a "tooth" which offered a good bond to subsequent coats. It also adds to the life of the paint, since it is unaffected by weather and chemical fumes. (2) As a vehicle for color in paint making. (3) For putty making. Putty is often made by simply mixing whiting and linseed oil to the consistency of dough. By substituting barite for part of the whiting a lesser quantity of oil may be used to produce the same bulk, thus saving on the price of oil.

For the above three purposes the barite is ground to the fineness of flour, and in the case of the first



REMOVING AMALGAM SPONGE FROM RETORTS FOR SUBSEQUENT TREATMENT IN REVERBERATORY FURNACE IN HIGH GRADE MILL OF NIPISSING MINE CO., COBALT, ONT.

two it is also lixiviated, as described later, in order to remove any stain.

In rubber manufacturing, barite is used for "weighing" or "filling." For this purpose the mineral is very finely ground, but need not be lixiviated as the color is not of much importance. The presence of barite, it is claimed, is desirable in rubber up to a certain percentage, as it adds to the resiliency and durability of the product.

Barite is used in the preparation of certain pigments employed in the printing of wall paper. The colors are precipitated on barite. For this purpose the mineral is finely ground and lixiviated. Absence of color is essential.

In the finishing of some leathers barite enters into the composition of the dressing. For this it is finely ground, but need not be lixiviated.

Barite is used as a source of barium in the manufacturing of various chemicals.

Barite is prepared for the market in the following manner: It is first crushed to about ½ inch, by jaw crushers, then, if it is to be lixiviated, it is boiled in dilute sulphuric acid in order to remove such impurities as calcite and iron oxide, the acid is drawn off and the barite thoroughly washed with water. It is dried and then ground to the fineness of flour in a buhr mill. It is graded by color, the whitest material commanding the highest price.

The only producing barite mine and mill in Canada is that of Barites Limited, Lake Ainsley, Cape Breton, N.S. The product of this Company is being used entirely in the paint manufacturing trade.

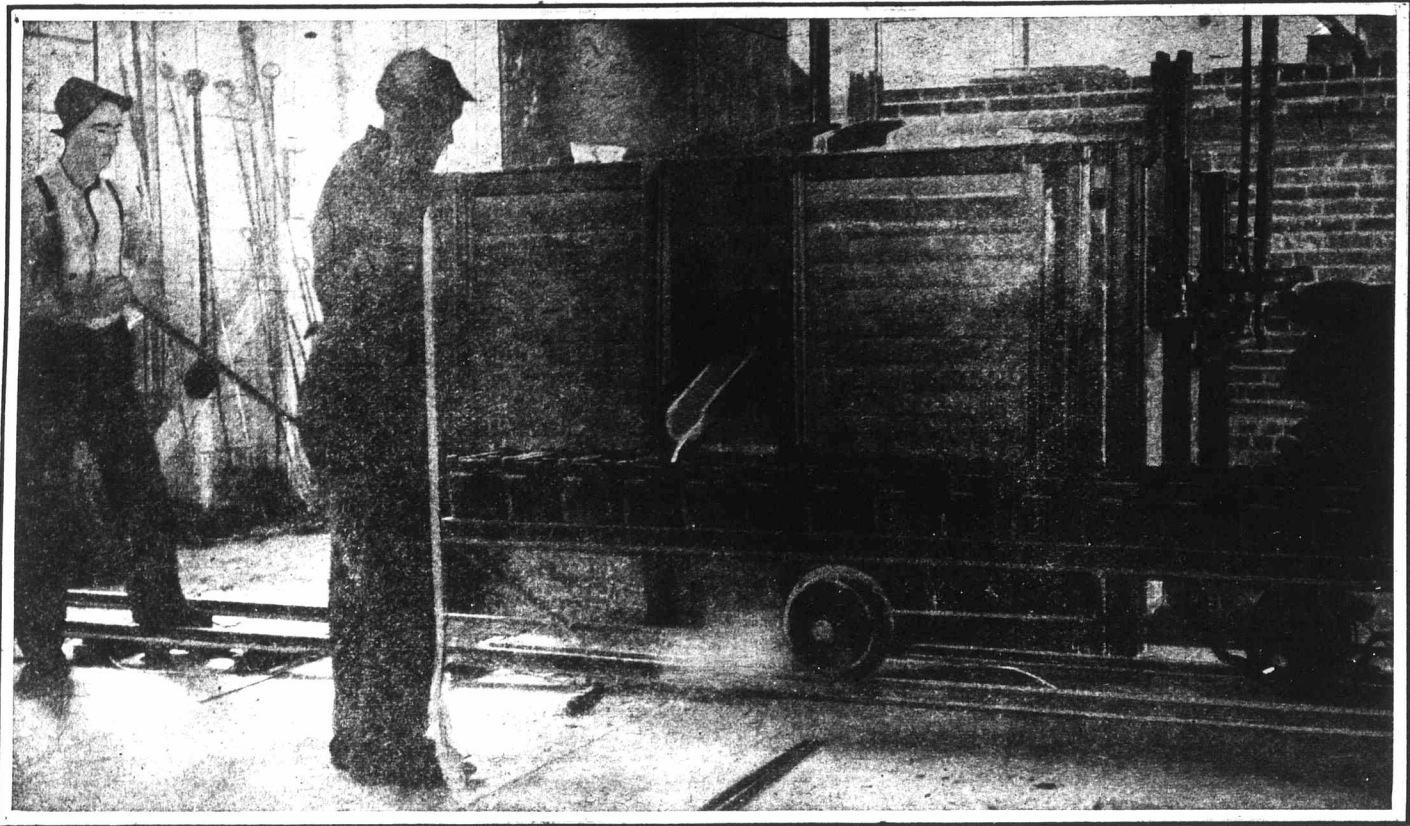
## Manganese

**M**ANGANESE is much in use in the steel manufacturing industry and there is a good market for the ore. American steel companies depend largely on foreign countries for their supply. Russia, India and Brazil are the chief producers.

Manganese ores have been mined in Canada at Loch Lomond, Cape Breton; Tenycap, Walton and Cape Leverie in Hants County; Eastern Inslow and Londonderry in Colchester County, N.S. In New Brunswick there are numerous occurrences and production has been obtained from Markhamville and Jordan Mountain, in King's County; Ouacco Head, St. John's County; Shepody Mountain and Dawson Settlement, Elbert County. Considerable deposits have been found on the Magdalen Islands, in the Gulf of St. Lawrence.

## Phosphate

**T**known as apatite, was for some years a mineral of considerable commercial importance, owing to its uses in the manufacture of fertilizers, and Canada was among the world's principal producers, there being very important deposits of this mineral in the Eastern part of Ontario and Western and Southern Quebec. But in recent years there has been very considerable falling off in the mining of this mineral in Canada and at the present time only a small amount is being taken from the grounds.



REVERBERATORY FURNACE FOR REFINING AMALGAM SPONGE TO BULLION IN HIGH GRADE MILL OF NIPISSING MINING CO., COBALT, ONT.

At present there are about half a dozen streams of silver, such as the above, in Canada, each pouring their wealth into the lap of the country, continuously, day and night.

This is manufactured at Buckingham, Quebec, partly into phosphorous by the Electric Reduction Company, and partly into fertilizers by the Capelton Fertilizer Company, also at Buckingham.

The falling off in production of phosphate, or apatite, in Canada was not owing to the exhaustion of the deposits, but to the development of enormous deposits of phosphate rock in the southern United States, particularly the State of Tennessee; and in Northern Africa, which is much more easily worked up into fertilizers.

In fertilizer manufacturing, phosphate rock is ground and then treated with sulphuric acid, giving acid phosphate. Some phosphate rock is utilized without the acid treatment, being simply finely ground before spreading on the fields.

Phosphorous is manufactured from phosphate rock by a process of reduction in an electric furnace.

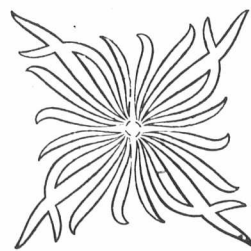
## Slate

ROOFING slates have been quarried in Danville, Coris, Brompton, Melbourne and New Rockland, in Southern Quebec. The quarries at New Rockland have been almost continuously worked since 1868. In the Province of Ontario, some development work has been undertaken on a slate property near New Liskeard, in Hudson Township. Roofing slate has also been obtained on the West Coast of British Columbia.

Slate is nothing more than a very hard and compact variety of shale or clay. It is easily split into thin sheets and trimmed to convenient dimensions. There is only a small market in Canada for slate shingles as they are not nearly so durable as the shingles made from asbestos or metal. Slate is also used to make electric switch-boards, and blackboards for schoolrooms.

## Peat

THE peat deposits of Canada are quite extensive and constitute an important reserve of fuel that has as yet been but little utilized. The most important areas so far as known are those found in the provinces of Quebec and Ontario. A number of these have been systematically examined and surveyed by the Mines Branch with a view to determining their character and extent. The Branch has also carried out a comprehensive investigation of fuel values of peat, having built a plant in Ottawa for demonstrating the feasibility of the manufacture and use of peat gas in gas engines. During the past two years aid dried peat fuel from the Government bog at Farnham, Que., and Alfred, Ont., was disposed of in Montreal and Ottawa. In both cases the fuel was in considerable demand for use in open grates and in kitchen ranges. The Alfred bog is now being operated as a private enterprise.





# CANADIAN INDUSTRY, COMMERCE & FINANCE

By J. J. HARPELL

431 Pages

Issued Annually

A comprehensive and authoritative Review of Industrial, Commercial and Financial Methods and Terms of Canadian Business.---Including a Complete Directory of Marketable Commodities produced in Canada, with information concerning each, and by whom they are manufactured.

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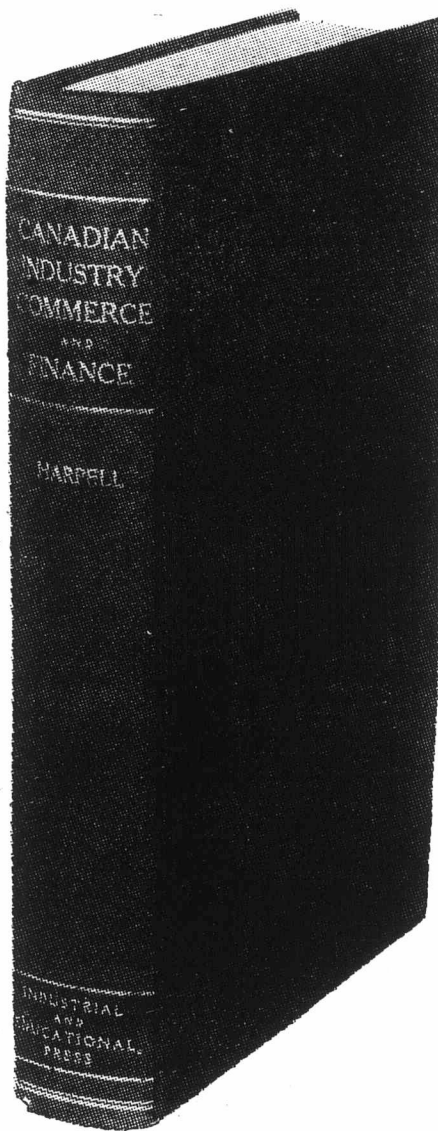
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Foreign Manufacturers of Special Machinery and Supplies Necessary to Canadian Industry, Textile Machinery and Supplies, Pulp and Paper Makers Machinery and Supplies, Mining Machinery and Supplies, Printers Machinery and Supplies, Fishermen's Supplies — Importers and Manufacturers' Agents — Wholesale Houses: Dry Goods, Men's Wear, Woolens, Linings and Trimmings, Hats and Caps, Millinery; Boots and Shoes, Leather, Groceries, Glass and China, Sporting Goods, Hardware, Flour and Feed—Wholesale Dealers and Exporters: Apples, Bacon and Hams, Bran and Shorts, Butter, Cattle, Cheese, Eggs, Fish, Fruit, Furs (raw), Hay, Hides, Hogs, Honey, Horses, Lard, Maple Syrup and Sugar, Milk (Condensed, Evaporated, and Powdered), Oils (Fish), Pork, Potatoes, Poultry, Produce (General), Pulpwood, Seeds, Wool.

#### VI. Institutions Necessary to the Business Interests of the Country:—

Banks — Trust Companies — Stock and Bond Brokers — Life Insurance Companies — Fire Insurance Companies — Accident and Casualty Insurance Companies — Consulting Engineers — Consulting Chemists and Analysts — Leading Canadian Technical and Specialized Periodicals.

This book has been compiled and published as a Companion Volume to the Journal of Commerce, and is included with each subscription to the JOURNAL OF COMMERCE at the regular Price of Three Dollars per year.

The Book is Published and Distributed by

## THE INDUSTRIAL & EDUCATIONAL PRESS

LIMITED

35-45 St. Alexander St.

Montreal, Canada

# IMPERIAL BANK OF CANADA

*Proceedings of the Forty-first Annual Meeting of the Shareholders held at the Banking House of the Institution, in Toronto, on Thursday, 25th May, 1916, at 12 noon*

The Forty-first Annual General Meeting of the Imperial Bank of Canada was held in pursuance of the terms of the Charter at the Banking House of the Institution, 25th May, 1916.

## THE REPORT.

The Directors beg to present to the Shareholders the Forty-first Annual Report of the affairs of the Bank, with Balance Sheet as on the 29th April, 1916, together with statement of Profit and Loss Account showing the result of the operations for the year ended on that date.

The net profits after providing for bad and doubtful debts and for interest on bills under discount not yet matured amount- ed to .....	\$1,003,960.85
being at the rate of 6.687 per cent. on the combined paid-up Capital, Rest and Profit and Loss Account.	
The balance at credit of Profit and Loss Account brought forward from last year was .....	1,012,989.23
Making total at credit of Profit and Loss of .....	\$2,016,950.08
This amount has been applied as follows:—	
Dividends at the rate of 12 per cent. per annum .....	\$ 840,000.00
Annual contribution to Officers' Pension and Guarantee Funds .....	7,500.00
Contribution to Canadian Patriotic Fund (being balance of subscription of \$25,000) .....	15,000.00
Contribution to British Red Cross Fund .....	2,500.00
War tax on bank note circulation to 29th April, 1916 .....	57,293.79
Auditors' fees .....	5,000.00
Balance of account carried forward .....	1,089,656.29
	\$2,016,950.08

During the year branches have been opened at Newmarket, Ont., and Invermere, B.C. The following branches have been closed:—In the Province of Ontario, Elk Lake and West Side Branch, Welland; in the Province of Quebec, St. Lawrence Boulevard Branch, Montreal, and Upper Town Branch, Quebec; in the Province of Alberta, Lethbridge Branch; in the Province of British Columbia, Athalmer Branch, and Douglas Street Branch, Victoria.

Your Directors deeply regret to have to advise the death on 14th January last of Mr. J. Kerr Osborne, who had been a member of the Board since 15th June, 1901, also on 6th April, 1916, of Mr. George Hyde, one of the Auditors of the Bank.

The vacancy on the Board has been filled by the election of Mr. J. W. Woods.

The Bank has received notice from shareholders of the intention to nominate Mr. G. T. Clarkson, of Toronto, to replace the late Mr. Hyde.

In addition to the amount already paid a further subscription of \$25,000 to the Canadian Patriotic Fund has been made which will be required probably during the current year.

All the Branches of the Bank have received the usual careful inspection during the year. The Auditors appointed by the Shareholders have made their examinations as required by the Bank Act and the certificate of the surviving Auditor is attached to the Balance Sheet.

Your Directors have much pleasure in testifying to the loyalty, faithfulness and efficiency of the staff.

All of which is respectfully submitted.

PELEG HOWLAND, President.

## LIABILITIES.

Notes of Bank in circulation .....	\$5,944,439.00
Deposits not bearing interest .....	\$11,253,426.11
Deposits bearing interest, including interest accrued to date of Statement .....	48,965,201.86
	60,218,627.97
Balance due to other Banks in Canada .....	\$ 38,095.14
Due to Banks and Banking Correspondents in the United Kingdom .....	7,370.12
Due to Banks and Banking Correspondents elsewhere than in Canada and the United Kingdom .....	313,222.34
Acceptances under Letters of Credit (as per contra) .....	90,346.96
	449,034.56
Total Liabilities to the public .....	\$66,612,101.53
Capital Stock paid in .....	7,000,000.00
Reserve Fund Account .....	7,000,000.00
Dividend No. 103 (payable 1st May, 1916) for three months, at the rate of 12% per annum .....	210,000.00
Balance of Profit and Loss Account carried forward .....	1,089,656.29
	8,299,656.29
	\$81,911,757.82

## ASSETS.

Current Coin held by the Bank .....	\$1,620,161.34
Dominion Government Notes .....	8,422,186.00
	\$10,042,347.34
Deposit with the Minister for the purposes of the Circulation Fund .....	338,272.66
Notes of other Banks .....	665,352.00
Cheques on other Banks .....	2,161,925.36
Balances due by other Banks in Canada .....	333,043.72
Due from Banks and Banking Correspondents in the United Kingdom .....	2,196,471.60
Due from Banks and Banking Correspondents, elsewhere than in Canada and the United Kingdom .....	6,352,289.15
	\$22,089,701.83
Dominion and Provincial Government Securities, not exceeding market value .....	\$4,920,185.56
Canadian Municipal Securities, and British, Foreign, and Colonial Public Securities other than Canadian ..	4,947,074.69
Railway and other Bonds, Debentures and Stocks, not exceeding market value .....	884,321.71
	10,751,581.96
Loans to Provincial Governments .....	\$ 65,793.99
Loans to Cities, Towns, Municipalities and School Districts .....	6,548,023.70
Call and Short Loans (not exceeding thirty days) in Canada on Bonds, Debentures and Stocks .....	4,127,322.78
Call and Short Loans (not exceeding thirty days) elsewhere than in Canada .....	4,049.31
	10,745,189.78
	\$43,586,473.57
Other Current Loans and Discounts in Canada (less rebate of interest) .....	\$34,646,351.02
Liabilities of Customers under Letters of Credit (as per contra) .....	90,346.96
Overdue Debts (estimated loss provided for) .....	226,839.86
Real Estate (other than Bank premises) .....	259,629.86
Mortgages on Real Estate sold by the Bank .....	440,673.58
Bank Premises, at not more than cost, less amounts written off .....	2,621,945.84
Other Assets, not included in the foregoing .....	39,497.13
	\$81,911,757.82

PELEG HOWLAND, President.

E. HAY, General Manager.

## AUDITOR'S REPORT TO SHAREHOLDERS.

I have compared the above Balance Sheet with the books and accounts at the Chief Office of Imperial Bank of Canada, and with the certified returns received from its Branches, and after checking the cash and verifying the securities at the Chief Office and certain of the principal Branches on 29th April, 1916, I certify that in my opinion such Balance Sheet exhibits a true and correct view of the Bank's affairs according to the best of my information, the explanations given to me and as shown by the books of the Bank.

In addition to the examinations mentioned, the cash securities at the Chief Office and certain of the principal Branches were checked and verified by me during the year and found to be in accord with the books of the Bank.

All information and explanations required have been given to me and all transactions of the Bank which have come under my notice have, in my opinion, been within the powers of the Bank.

R. J. DILWORTH, F.C.A., of-Clarkson, Gordon and Dilworth.

The customary motions were made and carried unanimously.

Mr. R. J. Dilworth, F.C.A., Toronto, and Mr. G. T. Clarkson, F.C.A., Toronto, were appointed Auditors of the Bank for the ensuing year.

The Scrutineers appointed at the meeting reported the following Shareholders duly elected Directors for the ensuing year: Messrs. Peleg Howland, Elias Rogers, William Ramsay (of Bowland, Stow, Scotland), Cawthra Mulock, Hon. Richard Turner (Quebec), William Hamilton Merritt, M.D., (St. Catharines), W. J. Gage, Sir Jas. A. M. Aikins, K.C., (Winnipeg), Hon. W. J. Hanna, M.P.P., John Northway, J. P. Michie, J. W. Woods.

At a subsequent meeting of the Directors, Mr. Peleg Howland was re-elected President and Mr. Elias Rogers, Vice-President, for the ensuing year.

PELEG HOWLAND, President.

E. HAY, General Manager.

## Impregnable

During 1915, assets of the Sun Life of Canada increased 16% to \$74,326,423 -- much the largest resources held by any Canadian Life Company.

Sun Life of Canada Policies are SAFE Policies to buy.

SUN LIFE ASSURANCE  
COMPANY OF CANADA  
HEAD OFFICE - MONTREAL

## They are Popular

The Seal of Public Approval is stamped upon North American Life Policies.

During 1915, Policies were issued for over \$9,100,000—the largest single year's Business in the history of the Company, and a 15 per cent increase over that for 1914.

Liberal, up-to-date policy contracts, backed by a Company of unquestioned strength and integrity, make it an ideal one for any agent to represent.

Some good agency openings are available.

Correspond with E. J. Harvey, Supervisor of Agencies.

## NORTH AMERICAN LIFE ASSURANCE COMPANY

Home Office, Toronto, Ont.  
EDWARD GURNEY, President. L. GOLDMAN, 1st Vice-President and Managing Director.

## Burglary Insurance

STORES, OFFICES,  
CITY RESIDENCES,  
SUMMER RESIDENCES.

Accident, Health, Plate Glass Burglary, Fidelity  
Judicial and Contract Bonds, Employer's  
and Public Liability.

## The Provident Accident and Guarantee Company

HEAD OFFICE - - - MONTREAL  
160 St. James Street. Tel. Main 1626.

## The Independent Order of Foresters

Policies issued by the Society are for the protection of your family and cannot be bought, pledged or sold.

Benefits are payable to the beneficiary in case of death, or to the member in case of his total disability, or to the member on attaining seventy years of age.

Policies Issued From \$500 to \$5,000

TOTAL BENEFITS PAID.....\$42,000,000

FRED J. DARCH, S.S.,  
ELLIOTT G. STEVENSON, S.C.R.,  
Temple Bldg., Toronto, Can.

## CITY OF TORONTO BONDS.

Tenders are being called for \$3,669,000 five per cent serial bonds of the city of Toronto. The proceeds of the loan are to go to hydro-electric, water-works, school and street railway pavement purposes. Tenders will be received until 12 o'clock noon, May 31st.

## NORTH AMERICAN LIFE.

### Honor Roll.

Capt. J. F. Anderson, Regina; Dr. T. D. Archibald, Toronto; R. S. Armstrong, Regina; W. F. Bowes, Edmonton; W. L. Clarke, Calgary; A. E. Rundle, Toronto; Jas. D. Daniel, Fenelon Falls; F. R. Duminy, Pembroke; H. Evans, Toronto; O. J. Farmer, Winnipeg; Geo. Greig, Brandon; Capt. J. Handley, Sudbury; H. G. Hawken, Toronto; L. H. Holman, Toronto; J. S. Kerr, Toronto; Lt.-Col. D. McCrae, Guelph; Major A. E. G. McKenzie, St. John; P. S. McLean, Toronto; T. D. McLeod, Brandon; Sergt. F. McCrae, Regina; W. Macklin, Toronto; A. Mandelson, Stratford; Sergt. J. W. Mills, Toronto; W. B. Murray, Edmonton; Geo. F. Neale, Regina; J. Newlands, Edmonton; Jas. Paterson, Edmonton; B. W. Roscoe, Halifax; Wm. Salmon, Toronto; H. Sampson, Sherbrooke; H. C. M. Vanderfeen, Toronto; F. Whillier, Toronto; Lieut. E. F. M. Williams, Regina; Lieut. J. Wilson, Regina; Charles F. Martell, Halifax; F. T. Samuel, Regina.

## WORKMEN'S COMPENSATION IN BRITISH COLUMBIA.

A delegation of insurance men waited on the Government of British Columbia some time ago with a number of arguments against the plan of State insurance which, it is understood, will be included in the proposed Workmen's Compensation Act for that province. The insurance men offered numerous concessions, including a provision that agents would retain only 5 per cent of the premium as commission, paying the balance of 7½ per cent to the Government for the administration of the Act. They argued that private insurance could be carried on as cheaply as insurance by the State, and requested a year's trial of the private insurance system under the new Act. On the other hand, it was stated at the conference that investigations had found only one large employer of labor who favored private insurance over the State system. It was also contended that the employes would receive larger liability payments for the same expenditure on the part of the employers. It is probable that the system of State insurance will be operated in connection with the new act. — Industrial Canada.

## WAR'S EFFECT ON INSURANCE.

"One of the most notable instances of the prosperity of the British Isles during the past generation," says the Liverpool "Courier," "has been the striking expansion of the principle of insurance. The growing strength of the chief insurance offices has been taken as an indication of the steadily increasing wealth of the nation. It is, indeed, one of the most gratifying features of our recent history that insurance is filling such a large and popular place in our national life. The war has brought this method of thrift more than ever before the public, and there is no doubt that the growth of insurance, instead of being checked, will be greater than ever. The question is brought into some little prominence by remarks made at the annual meeting recently of the London and Lancashire Fire Insurance Company.

"While the future will undoubtedly show a greater business in insurance, companies will have to face an increased ration of expense, due primarily to increased taxation, for while heavier income tax will have to be paid on profits, the revenue from interest on investment will be reduced by the same cause."

## ATLAS ASSURANCE CO.

The 108th annual statement of the Atlas Assurance Company, Limited, presented to shareholders at their annual meeting held in London on April 28, shows that during the twelve months ended December 31st last, 768 life assurance policies, assuring £463,108, at annual premiums of £18,878, were written. Claims by death number 298, for £214,119, including bonuses, were paid. Premiums income amounted to £215,386, and total revenue to £323,775.

The sum of £120,018 was added to reserves. Dividends of eight shilling per share, or 33 1-3 per cent on paid-up capital, were paid, and £51,862 carried forward, against £45,546 a year ago.

## PERSONALS.

The late Thomas Kinnear, the Toronto wholesale grocer, whose death occurred a few days ago, was a director of the Merchants' Fire Insurance Co.

## Correspondence

### THE BILINGUAL SCHOOL QUESTION.

Montreal, Que., May 22nd, 1916.

To the Editor of The Journal of Commerce:

Sir,—On the first page of your issue of May 16th, you state, in connection with the Bi-lingual question, that the Ontario Education Department aims to insure all children instruction in English.

Have you been in Ontario before Rule 17 was passed, if so, how many children from the ages of 10 to 15 years have you met, who could not speak English? Do you take French Canadians for fools? Don't you think they know enough that if their children do not learn the English language that they will not be able to make their living in Ontario?

Here in Quebec French Canadians are in the majority and they could in many cases make a good living without English, but all the boys and girls that are living in the city by working in stores or offices are learning English. Again, there is not a day passes that we here have to refuse to employ English boys for the reason that they do not understand French, and both languages are necessary in our business.

While you say the desire of French parents to have their children instructed in French is only natural, Rule 17 forbids it. If you don't believe it, I can send you the correspondence from the Secretary of Bilingual Schools at Windsor to the Ontario Government, asking that French be taught for one hour a day when 85 per cent of the children were French. Dr. Colquhoun replied that the schools having been erected after the passage of Rule 17, that they had no such right. Still, it is the parents of those children who are paying the taxes to support those schools.

I really don't understand how English papers in Montreal, knowing how the minority in Quebec are treated, would try to excuse the "Prussian" of Ontario.

Another proof that French Canadians learn English is that from the 50 or more French Canadian representatives of Quebec, I don't think there is one in the Federal Government that does not understand English enough to follow discussions in English. Many French can make speeches in Parliament in both languages and some of them speak English better than English born. Now, how many among the English can understand a French speaker?

I can tell you this of the French minority of Ontario — they would allow the children to learn French as well as English, and instead of trying to excuse them, you should try to show them, that what they are doing is not Christian.

Yours very truly,

CHS. LANGLOIS.

Of Gunn, Langlois & Co., Montreal.

(Mr. Langlois' letter is referred to in the editorial columns).

## BUYS MONCTON BONDS.

Hew R. Wood and Co., bond dealers of this city, recently purchased an issue of the City of Moncton, N.B., bonds. These are \$82,000 5 per cent of which \$60,000 are serial and \$22,000 20 year issues. They are being offered at a price to yield over 5 per cent. There were several tenders for the bonds showing that the financial standing of the city of Moncton is regarded as being exceptionally good.

## INDIA AND THE EMPIRE.

(Concluded from page 3).

fraction of one per cent has been unfriendly to England. The people as a whole are profoundly loyal and devoted to Britain's ideals and the British cause. They have proved their right with heroic fortitude on the field of battle to a larger share in their own government, and to a greater voice in the affairs of the Empire. Never again can the Indians be considered merely as a foreign and subject race. Their disaffection to England would have been a more fatal blow than the loss of a naval battle; their loyal co-operation assures, to the Empire, success over all its foes. England, indeed, might even go down to ruin in this war, conscious of the fact that she has won an imperishable place in history as the saviour of more than one-fifth of the human race. She has taught India well the value of justice and the sacredness of liberty. These ideals, through her mighty power, she will continue to carry to the ends of the earth.

**WESTERN ASSURANCE COMPANY**  
 INCORPORATED 1851  
 Fire, Explosion, Ocean Marine  
 and Inland Marine Insurance.  
 Assets Over - - - \$4,000,000.00  
 Losses paid since organiza-  
 tion, over - - - 63,000,000.00  
 HEAD OFFICE - - - TORONTO, ONT.  
 W. R. BROCK, President. W. B. MEIKLE, Vice-Pres. & Gen. Man.  
 QUEBEC PROVINCE BRANCH:  
 61 ST. PETER STREET, MONTREAL  
 ROBERT BICKERDIKE, Manager

**UNION ASSURANCE SOCIETY LIMITED**  
 OF LONDON, ENGLAND  
 FIRE INSURANCE SINCE A.D. 1714  
 Canada Branch, Montreal:  
 T. L. MORRISSEY, RESIDENT MANAGER.  
 North-West Branch, Winnipeg:  
 THOS. BRUCE, BRANCH MANAGER.  
 AGENCIES THROUGHOUT THE DOMINION

**The London & Lancashire Life and General Assurance Association, Limited**  
 Offers Liberal Contracts to Capable Field Men  
 GOOD OPPORTUNITY FOR MEN TO BUILD UP A PERMANENT CONNECTION  
 WE PARTICULARLY DESIRE REPRESENTATIVES FOR CITY OF MONTREAL  
 Chief Office for Canada:  
 164 ST. JAMES STREET, MONTREAL.  
 ALEX. BISSETT - - - Manager for Canada

**British America Assurance Company**  
 FIRE, MARINE AND HAIL.  
 Losses paid since organization over \$38,000,000.  
 W. R. BROCK - - - President  
 W. B. MEIKLE, Vice-President and General Manager  
 PROVINCE OF QUEBEC BRANCH:  
 Lewis Building, 17 St. John Street  
 MONTREAL  
 THOMAS F. DOBBIN - - Resident Manager  
 HAVE VACANCIES FOR A FEW GOOD CITY AGENTS

Founded in 1806  
**THE LAW UNION AND ROCK INSURANCE CO. LIMITED**  
 OF LONDON  
 ASSETS EXCEED \$48,000,000.  
 OVER \$12,500,000 INVESTED IN CANADA.  
 FIRE & ACCIDENT RISKS ACCEPTED  
 Canadian Head Office:  
 57 Beaver Hall Hill, MONTREAL  
 Agents wanted in unrepresented towns in Canada  
 J. E. E. DICKSON, Canadian Manager.  
 W. D. AIKEN, Superintendent Accident Dept.

**Commercial Union Assurance Co. LIMITED**  
 OF LONDON, ENG.  
 The largest general Insurance Company in the world  
 [AS AT 31ST DECEMBER, 1915]  
 Capital Fully Subscribed..... \$14,750,000  
 Capital Paid Up..... 1,475,000  
 Life Fund and Special Trust Fund..... 72,629,385  
 Total Annual Income Exceeds..... 45,000,000  
 Total Funds Exceed..... 133,500,000  
 Total Fire Losses Paid..... 174,226,575  
 Deposits with Dominion Government.. 1,208,433  
 Head Office, Canadian Branch:—Commercial Union Bldg.,  
 232-236 St. James Street, Montreal.  
 Applications for Agencies solicited in unrepresented districts.  
 W. McGREGOR - - - Mgr. Canadian Branch  
 J. S. JOPLING - - - Asst. Manager

**THE APRIL BANK STATEMENT.**

An abnormal gain in deposits, amounting to over \$92,000,000 is the outstanding feature of the April Bank Statement. Total deposits now amount to a new high level at \$1,340,000,000. The large gain noted in April can be traced to the recent loan placed by Canada in New York. A cheque for approximately \$71,000,000 was drawn early in April in connection with that transaction, and the gain for the month in deposits abroad was \$71,362,932.

However, deposits with the banks in Canada also showed satisfactory increases within the month, savings deposits rising more than 10 millions to a new high record total of \$748,359,957, while there was an increase of nearly 13 millions in demand deposits.

All the leading features of the April return were favorable. A more active demand for money in connection with Canadian trade is shown in an increase of about 7½ millions in current loans in Canada — the third successive monthly gain.

Leading figures of the April return, and the changes from March in each case, follow:

	April, 1916.	Change in month.
Circulation .. . . .	119,233,330	+ \$4,428,726
Depos. dem. . . . .	402,060,955	+ 12,895,567
Do. notice. . . . .	748,359,957	+ 10,190,745
Do. abroad . . . . .	192,041,591	+ 71,362,932
Curr. loans. . . . .	777,764,682	+ 7,625,156
Do. abroad . . . . .	57,008,965	+ 4,303,138
Call loans. . . . .	82,527,448	+ 779,936
Do. abroad . . . . .	147,146,443	+ 5,256,454
Specie. . . . .	66,336,559	- 36,347
Dom. notes . . . . .	147,479,821	- 3,723,672
Tot. liab. . . . .	1,583,923,584	+ 121,098,668
Total assets. . . . .	1,825,381,642	+ 119,544,750

In March current loans in Canada rose for the first time on a long period above the level of the corresponding month of a year ago. The change was only about \$1,000,000. April comparisons show this increase lengthened out to about 15 millions. Deposit comparisons continue impressive. A summary of the changes in the year follows:

	April, 1916.	Change in year
Circulation .. . . .	\$119,233,330	+ \$22,944,932
Depos. dem. . . . .	402,060,955	+ 54,735,018
Do. notice . . . . .	748,359,957	+ 62,284,833
Do. abroad . . . . .	192,041,591	+ 87,830,971
Curr. loans . . . . .	777,764,682	+ 14,832,831
Do. abroad . . . . .	57,008,965	+ 19,303,926
Call loans . . . . .	147,146,448	+ 13,928,353
Do. abroad . . . . .	147,146,443	+ 25,623,472
Specie. . . . .	66,336,559	+ 2,199,842
Dom. notes. . . . .	147,479,821	+ 10,762,188
Tot. liab. . . . .	1,583,923,584	+ 262,285,042
Tot. assets . . . . .	1,825,381,642	+ 261,277,927

**HORSES IN DEMAND.**

Since the outbreak of the war, the British Remount Commission has purchased in Canada 15,000 horses. 8,000 have been bought by French contractors and 25,000 by the Canadian Department of Militia. The Department of Militia is now engaged in buying an additional thousand head. The British Remount Commission has purchased over 700 since March and is buying daily in Montreal. French contractors are anxious to obtain supplies and are arranging to buy all that are available both in the East and in the West. It is understood that, as a result of the purchases already made, army buyers are finding it increasingly difficult, both in United States and in Canada, to readily secure the number of horses which they require, particularly of the type suitable for heavy cavalry or heavy artillery.

In addition to the purchase for army account, commercial activity from two distinct quarters has exerted a very evident influence upon the Canadian horse market during the past three or four months. Since the beginning of the year, 6,000 horses reached the Winnipeg Stock Yards from Eastern Canada, and 5,917 were shipped from the same yards westward, mostly to Saskatchewan. During the months of January, February and March, 1,805 horses were exported to the United States. A few hundred more went forward to the same market in April. The horses exported were good farm chunks weighing from 1,300 to 1,500 lbs. As high as \$500 a pair was paid for animals possessing extra quality and conformation. This new movement in the horse market is having its effect upon prices all over Canada.

THE  
**Dominion Savings AND Investment Society**  
 Capital - - - \$1,000,000.00  
 Reserve - - - 225,000.00  
 T. H. Purdom, K. C. Nathaniel Mills  
 President Managing Director  
**Dominion Savings Bldg.**  
 LONDON, CANADA.

**AN IDEAL INCOME**  
 can be secured to your Beneficiary with Absolute Security by Insuring in the  
**Union Mutual Life Insurance Company, Portland, Maine**  
 on its  
**MONTHLY INCOME PLAN**  
 Backed by a deposit of \$1,688,902.65 par value with the DOMINION GOVERNMENT in cream of Canadian Securities.  
 For full information regarding the most liberal Monthly Income Policy on the market write, stating age at nearest birthday, to  
**WALTER I. JOSEPH, Manager**  
 Province of Quebec and Eastern Ontario.  
 Suite 502 MCGILL BLDG., MONTREAL, QUE.

**You can Improve Your Position**  
 Have you heard of the Sales and Intelligence Departments of the Canada Life?  
 They give special assistance to the Company's representatives.  
 They teach a man the insurance business by correspondence and personal assistance free of charge.  
 Then they place him in a position and help him to make good.  
 The first two lessons of the Company's correspondence course will be sent to anyone interested. It will pay young men who desire to get on in the world to look into this. All correspondence strictly confidential.  
  
 CANADA LIFE ASSURANCE CO.  
 Head Office, Toronto.

**IF BRITAIN "WENT DRY."**

(The Independent, New York.)  
 Their (the British) drink bill for last year was \$909,790,000, and probably they are now spending a billion dollars a year on something which many people in the United States and England manage to get along without. The war has cost Great Britain about \$7,500,000,000. If we subtract from this the loans to other countries, which will presumably be repaid, and the money spent on feeding the soldiers, who would have had to be fed and clothed anyhow, though not so well in time of peace, we should have left, using the estimate of Sir George Paish, a net loss to the country of about \$2,500,000,000. If, then, Great Britain should go dry, as Russia has, its total war losses could be paid up within the next three years, not allowing anything for the gain in industrial efficiency and the saving from the crime and impaired health which incidentally results from the consumption of a billion dollars' worth of liquor a year.

## BLACK DIAMOND

FILE WORKS

Established 1863

Incorporated 1897

Highest Awards at Twelve International Expositions. Special Prize, Gold Medal, Atlanta, 1895

## G. & H. Barnett Co.

PHILADELPHIA, Pa.

Owned and Operated by  
NICHOLSON FILE COMPANY



### DIVIDEND NOTICES

#### BANK OF MONTREAL

NOTICE is hereby given that a Dividend of Two-and-one-half Per Cent upon the paid up Capital Stock of this Institution have been declared for the three months ending 30th April, 1916, also a Bonus of One Per Cent, and that the same will be payable at its Banking House in this City, and at its Branches, on and after Thursday, the FIRST day of June next, to Shareholders of record of 29th April, 1916.

By order of the Board,  
FREDERICK WILLIAMS-TAYLOR,  
General Manager.

Montreal, 18th April, 1916.

#### The Bank of Nova Scotia

##### DIVIDEND NO. 186.

Notice is hereby given that a Dividend at the rate of Fourteen per cent. per annum on the paid-up Capital Stock of this Bank has been declared for the quarter ending June 30th, and that the same will be payable on and after Monday, the 3rd day of July next, at any of the offices of the Bank. The Stock Transfer Book will be closed from the 16th to the 30th proximo, inclusive.

By order of the Board,  
H. A. RICHARDSON,  
General Manager

Halifax, N.S., May 19th, 1916.



A SESSION OF THE COURT OF KING'S BENCH (Crown side), holding criminal jurisdiction in and for the DISTRICT OF MONTREAL, will be held in the COURT HOUSE, in the CITY OF MONTREAL, on FRIDAY, THE SECOND DAY OF JUNE NEXT, at TEN o'clock in the forenoon.

In consequence, I give PUBLIC NOTICE to all who intend to proceed against any prisoners now in the Common Gaol of the said District, and all others, that they must be present then and there, and I also give notice to all Justices of the Peace, Coroners and Peace Officers, in and for the said District, that they must be present then and there, with their Record, Rolls, Indictments and other Documents, in order to do those things which belong to them in their respective capacities.

L. J. LEMIEUX,  
Sheriff.

Sheriff's Office,  
Montreal, 12th May, 1916.

#### CONSOLIDATED SMELTERS.

W. D. Matthews, president of the Consolidated Smelters, is quoted as saying that while the labor crisis in the company's plant, like all labor troubles, was serious enough it would nevertheless be settled satisfactorily. So far, of course, the men have not quit work, but have simply made certain demands which the board of directors have considered. J. J. Warren, managing director, has gone west and is now due at the plant in connection with the matter.

### PROFESSIONAL

THE REV. M. O. SMITH, M.A., WILL ADVISE with fathers concerning the instruction and education of their sons. No. 544 Sherbrooke St. West. Or telephone Main 3071, and ask for Mr. Kay.

HOWARD S. ROSS, K.C. EUGENE R. ANGERS

### ROSS & ANGERS

BARRISTERS and SOLICITORS

Coristine Building, 20 St. Nicholas St., Montreal

#### "THE CANADIAN CONSTRUCTION COMPANY, LIMITED."

Public notice is hereby given that, under the Quebec Companies' Act, letters patent have been issued by the Lieutenant-Governor of the Province of Quebec, bearing date the 6th May, 1916, incorporating MM. J. Antonio Beaudry, publisher; J. Ernest Valin, accountant; Edmond T. Sayers, advertising agent; Uldege Beaudry, solicitor; G. E. Coulard, accountant, all of the city of Montreal, for the following purposes:

To purchase, own, hold, obtain, print, design, receive, exploit, develop, sell, convey and lease lots of land, quarries, water powers, water works, transmission lines, aerial conveyers, railway sittings, works, or plants of all kinds, machinery, rolling stock, patents, trade marks, publications, newspapers, reviews, copyrights of all kinds, the whole upon the property of the company, or upon any property whereon it may have obtained the permission from the proprietors to do so; to deal in materials and goods of all kinds, moveable and immovable properties, hypothecate, exchange, build upon and improve the same, and especially to carry on any business incidental to that object;

To carry on any business which may appear to the company capable of being conveniently carried on in connection with the above, and calculated directly or indirectly to enhance the value of, or render profitable the company's property or rights;

To acquire or take over the whole or part of the business property and liabilities of any person or company, carrying on any business which the company is authorized to carry on or possessed of property suitable for the purpose of the company and to pay for the same in paid up shares of the capital stock of the company

To take or otherwise acquire and to hold and sell or dispose of shares in any other company having objects in whole or in part similar to those of this company, or doing any business capable of being directly or indirectly carried on for the benefit of this company;

To sell, lease, or otherwise dispose of the property, rights, franchises and undertakings of the company or any part thereof for such consideration as the company may deem fit, and in particular for shares, debentures, bonds or other securities of any other company having objects in whole or in part similar to those of this company;

To consolidate or amalgamate with any other company having objects wholly or partly similar to those of this company and to enter into any agreement for the sharing of profits, union of interests, co-operation, joint adventures, reciprocal concession or otherwise with any person, firm or company carrying on or engaged in or about to carry on or engage in any business transaction capable of being directly or indirectly carried on for the benefit of this company, and to take or otherwise, acquire shares or securities of any such company, and to pledge, sell, issue or re-issue with or without guarantee as to principal and interests or otherwise deal with the same;

To purchase, lease or otherwise acquire, hold or own the whole or any of the property, franchises, good-will rights and privileges held or owned by any person or firm or by any company or companies carrying on or formed for the carrying on of any business similar to that which this company is authorized to carry on, and to pay for the same wholly or partly in cash, or wholly or partly in paid up shares of the company, or otherwise and to take over the liabilities of any such person, firm or company;

To draw, make, accept, endorse, discount and execute bills payable or receivable, checks, bills of exchange, warrants and other negotiable and transferable instruments;

To make advance of money to the customers and others having dealings with the company and to guarantee the performances of contracts by any persons;

To remunerate in cash, stocks, bonds or in any other manner any person or persons, corporations for service rendered or to be rendered in placing or assisting to place or guaranteeing the placing of any shares of the capital stock of the company, or of any debentures or other securities of the company, or in or about the formation or promotion of the company or the conduct of its business;

To do all or any of the foregoing acts as principals, agents or attorneys, under the name of The Canadian Construction Company Limited, with a capital stock of ninety thousand dollars (\$90,000.00), divided into nine hundred (900) shares of one hundred dollars (\$100.00) each.

The principal place of business of the corporation, to be in the city of Montreal, in the Province of Quebec.

Dated from the office of the Provincial Secretary, this sixth day of May, 1916.

C. J. SIMARD,  
Assistant Provincial Secretary.

4 ins.

### RAISE MORE HOGS.

In a circular sent out to the company's agents in this Province, Mr. Guy Tombs, General Freight Agent of the Canadian Northern Railway, urges upon them the necessity of doing everything possible to encourage farmers in Quebec to raise more hogs. Mr. Tombs, who is doing good work in connection with the increased production movement, apparently wants the farmers of this Province to emulate the Kansas farmer—"who bought more land, to grow more corn, to feed more hogs, to buy more land," etc.

Mr. Tombs' circular to the agents follows:—

Quebec Province has never produced enough hogs suitable for export bacon; in fact, the total quantity of hogs produced has been very small. It is estimated that 500,000 hogs are marketed annually out of the Province of Quebec, whereas Ontario markets over 2,000,000. (In 1915 only 68,898 Quebec hogs reached stock yards in Montreal, whereas the Toronto market received 458,210 from Ontario points). The "Yorkshire" and "Tamworth" breeds are particularly good for the export trade. There is a good return to the farmer in the raising of hogs under normal conditions, and with the extraordinary prices now current there is a big profit.

Pamphlets on the hog industry have been sent you. Please read them over and try and get your farming patrons interested.

There is a great opportunity at present for the farmers along our road to get started in a profitable industry, prices are high, and there is a growing demand at home and abroad.

We are anxious that our patrons share in the good markets offering, and also that they do their part at home and abroad.

We are anxious that our patrons share in the good markets offering, and also that they do their part towards increasing the food supplies of Canada and the Empire.

The production of more swine is only one item; more cattle, butter, cheese, poultry, eggs, etc., are equally important and profitable.

#### READY-MADE FARMS FOR SOLDIERS.

The New Brunswick government is giving consideration to the personnel of the advisory board to be appointed in connection with the scheme to provide ready-made farms for returned soldiers, provision for which was made at the last session of the legislature. When this board has been named, the work of selecting suitable lands will be entered upon, and the project pushed to a conclusion. It has already been recommended by the Provincial Superintendent of Immigration that public lands for this settlement scheme be chosen along the Transcontinental Railway near Moncton, or along the C. G. R. between Harcourt and Kent Junction. It was his estimate that, with an investment of a million dollars, one thousand families, representing about five thousand souls, could be provided with comfortable farm homes.

#### TUNGSTEN MINES IN N. B.

St. John. — Development work has been begun upon the tungsten mines near Burnt Hill, Northumberland County. There is a great demand for this valuable ore.

#### TRUST AND LOAN COMPANY OF CANADA.

Net profits of the Trust and Loan Company of Canada for the six months ended March 31st, were £58,802 as compared with £61,087 for the corresponding period last year.

The Statutory Reserve Fund has been increased by £17,121, and the Special Reserve Fund by £5,000—these two funds now amounting to £583,533.

The directors recommend a dividend at the rate of 10 per cent per annum (less income tax).

#### CAMAGUEY ELECTRIC CO.

The postponed meeting of the Camaguey Electric Company to consider an offer from interests in Montreal for the purchase of the company was held recently and the offer of 51½ per cent for the million dollars of common stock was withdrawn by the Montreal interests which had been negotiating for the purchase. This was the third meeting which had been called for the purpose.

# COMMODITY MARKETS

## Week's Wholesale Review

The holiday last week interfered somewhat with the volume of trade done, but general conditions continue most satisfactory. In spite of advancing prices in most commodities wholesalers generally report a most satisfactory increase in the volume of sales for the past five months of the current year, and placings for fall are considerably better than at this time last year. The April bank statement, just issued, reveals the most substantial increase in commercial loans in Canada that has accrued in many months, and reflects a general prosperity throughout the country. Eastern Canada is in good conditions, and the West is showing remarkable improvement. Crop reports show a backward tendency in seeding, but the seed-bed is good and conditions are reported fair.

Wholesale markets in Montreal reflect these conditions. Dry goods business on fall placing continues good, although prices on bath cotton and woolen goods are unsteady and show a rising tendency. The leather trades are up against advancing prices and boots and shoes and other lines are advancing steadily. Domestic business is fairly satisfactory, and this with army business is maintaining activity in the factories. Grocers report satisfactory business. The opening of the tea crop year shows prices firm, with green tea very strong. Spices are higher, owing to the high freight rates. Sugar is steady with a drop of 15c per hundred by one of the refineries. Flour is steady and prices firm under a fair demand.

Dairy produce continues strong. Butter prices advanced one cent a pound during the week. Cheese is firm locally, but sales at country points were easier during the week. Eggs are easier under larger receipts and prices are lower. The live stock market held firm at last week's sales.

### DAIRY PRODUCE.

**BUTTER:** During the past week a considerable quantity of fresh creamery butter was exported which cleaned up the market to some extent. Prices are higher than last week, city selling prices having advanced one cent a lb. It is predicted that supplies of rennet for cheese making may be short, and some cheese firms may be obliged to manufacture butter instead, which will tend to increase the production of butter, and bring about lower prices.

**CHEESE:** As the result of accumulation of stocks at country points, receipts of cheese in Montreal are increasing steadily, last week's figures being the highest for the season. A weaker export demand and liberal supplies of American cheese coming forward this way for export account has caused a general drop in prices of 1c and more at country boards. St. Hyacinthe reports sales at 16½c, being a drop of 3c under last week. Pastures are now at their best and a heavy production of cheese is expected from now on.

### DRIED FRUITS AND NUTS.

The dried fruit market though quiet at present is characterized by a firm undertone, there being hardly any article throughout the entire line in which stocks may be said to be excessive. Stocks in general are trifling for this season of the year. It is the opinion of some dealers that there will shortly be a higher market for spots. The currant market is firm. It is too early yet to consider the new crop for which prices are now entirely speculative.

The price of Oregon prunes was named last week which resulted in a certain amount of business in spite of the high figure quoted. Valencia raisins are not yet on the market, but it is expected that the price will be named shortly. It is felt that the English embargo on raisins will result in more attractive prices in this market. The bulk of our candied peels is now coming from the United States, although a certain small amount of English peel is being disposed of at the higher prices asked.

### U. S. EXPORTS SOAR.

Preliminary returns show that the United States foreign trade was greater in March than in any other month in history. Exports totaled \$401,000,000 and imports \$214,000,000.

## COUNTRY PRODUCE.

**EGGS:** There is a considerably easier feeling in the egg market. Receipts are quite equal to last year in Montreal. Storing is being carried on only by the larger operators, as there is no surplus on the market. Most houses are waiting for lower prices as the general feeling is that eggs are too high and difficult to obtain considering the season of the year. Country prices for eggs are 22c to stores. There was some export enquiry during the past week, but comparatively little business was consummated. The higher cost of storing eggs and abnormal freight rates this year are curtailing exports of Canadian eggs. Exports of eggs from Montreal have been chiefly through American ports with American eggs.

**POULTRY:** The feature of the past week was heavier deliveries of old fowls and turkeys and spring broilers. Owing to the scarcity of frozen stock all poultry on the market is meeting with a ready sale. Prices are expected to remain steady for a week or two at least.

**BEANS:** This market is likely to go higher. Prices are quoted at \$4.50 to \$4.75 per bushel.

### WINNIPEG GRAIN RECEIPTS.

The receipts of grain at Winnipeg for the week ended May 27, 1916, compared with the previous week and the corresponding week a year ago were as follows:—

	May 20, 1916.	May 27, 1916.	May 29, 1915.
No. 1 hard .....	0	4	....
No. 1 northern .....	2,478	3,147	....
No. 2 Northern .....	812	932	....
No. 3 Northern .....	622	684	....
No. 4 Northern .....	319	278	....
No. 5 Northern .....	98	109	....
No. 6 Northern .....	30	40	....
Other grades .....	255	230	....
Winter grades .....	16	23	....
Total .....	4,675	5,452	1,475
Oats .....	1,166	1,197	128
Barley .....	104	125	22
Flax .....	123	189	31

### CHEESE SALES.

Stirling, Ont., May 23.—775 boxes at 19½c.  
Campbellford, Ont., May 23.—545 boxes at 19½c and 19¼c.  
Woodstock, Ont., May 23.—1,285 boxes boarded, highest bid 18¼c; no sales.  
Brockville, Ont., May 25.—4,092 boxes at 17½c to 18½c.  
Kingston, Ont., May 25.—568 boxes white and 634 colored, at 18½c.  
Gould's Cold Storage, Montreal; May 26. 3,000 boxes wester, at 18c to 18¼c.  
Cornwall, Ont.—1,808 boxes at 18c to 18½c.  
Perth, Ont., May 26.—600 boxes white, and 300 colored, at 18c.  
Iroquois, Ont., May 26.—380 boxes colored and 407 white; 17c bid; no sales.  
Napane, Ont., May 26.—96 boxes white and 995 colored, 17c bid; no sales.  
Picton, Ont., May 26.—1,585 boxes colored at 17½c.  
Alexandria, Ont., May 26.—676 boxes white at 18 3-16c.  
Vankleek Hill, Ont., May 26.—915 boxes at 17½c.  
St. Hyacinthe, May 27.—600 boxes at 16½c.  
London, Ont., May 27.—1,304 boxes, 16½c bid; no sales.  
Belleville, Ont., May 27.—2,500 boxes offered at 17 to 17½c.

### FLOUR, CEREALS AND MILLFEED.

The flour market remained quiet during the past week, especially as regards export trade. There is an easier feeling in the Ontario flour market as receipts of grain are coming in a little more freely. Prices remain unchanged.

The outstanding feature in the millfeed market last week was a decline of \$1 per ton of bran, as the demand is slackening off. Millers are catching up with their orders for bran, but shorts and middlings are still oversold.

## LIVE STOCK.

The continued scarcity of good beef and the brisk demand characterizing the local market has week was evinced in the strong tone of Monday's live stock sales. The better grades of cattle were scarce and prices showed a rise of 25c a hundredweight. In general the quality of the offerings at the Wednesday sale was not high grade which brought prices down again to last week's levels, although dealers feel that had there been a larger volume of better grade offerings Mondays' prices would have been firmly maintained.

The market for hogs showed a decline of 25c hundredweight, \$12 being the top price obtained for select stock. The calf market was very firm as supplies of calves coming in are only fair and mostly of an inferior grade. The Montreal demand has been very brisk, and some exports for American account are reported. The trade in sheep and lambs continues unchanged with a fairly good demand for local consumption.

Quotations for round lots were as follows:—

	Montreal.		Toronto.	
	Per cwt.			
Butcher sters, best	8.75	9.25	9.25	9.75
Do., good .....	8.45	8.70	8.75	9.10
Do., fair .....	8.15	8.35	8.40	8.60
Do., medium .....	7.50	8.50	8.00	8.25
Do., rough .....	7.00	8.00	7.50	8.00
Butcher bulls, best	7.00	8.00	7.75	8.50
Do., good .....	6.75	7.00	7.00	8.00
Do., medium .....	5.50	6.50	6.75	7.50
Canning bulls .....	3.75	4.50	....	....
Butcher cows, best	6.75	7.50	7.75	8.50
Do., good .....	5.50	6.50	6.50	7.25
Do., canners .....	3.75	4.50	....	....
Do., common .....	5.00	5.75	6.50	....
Sheep .....	8.50	9.00	9.00	10.00
Lambs .....	5.00	8.00	10.00	14.00
Hogs, selects, weighed	....	....	....	....
off cars .....	11.75	12.00	11.00	11.90
Do., roughs and mixed	....	....	....	....
lots .....	10.75	11.25	11.15	11.25
Do., common .....	9.75	10.00	....	....
Calves, choice ..	0.08½	0.09	9.50	10.00
Do., medium ..	0.06½	0.07½	7.50	9.50

### SUGAR PRICES LOWER.

In sympathy with the easier market in New York the Atlantic Sugar Refineries have reduced their price of sugar 15c, and are now quoting \$8.00 per 100 lbs. in bags. None of the other refiners have lowered their prices as yet.

Strikes, bad weather, dullness in domestic granulated, and the absence of the British Commission as a buyer for export have all combined to produce a very quiet sugar market in New York. The smaller European countries are still in the market to some extent, but export enquiry is light. According to the New York Journal of Commerce, advices from New Orleans state that prospects for a large crop are still excellent.

### RECEIPTS OF BUTTER, EGGS AND CHEESE.

The following table shows the receipts of Canadian butter, cheese and eggs in Montreal on the dates mentioned:

	Butter,	Cheese	Eggs
	pkgs.	boxes.	cases.
Week end, May 27, 1916.	9,387	67,617	15,962
Week end, May 20, 1915.	7,765	54,971	19,774
Week end, May 29, 1915.	13,377	71,612	16,681
Total receipts May 1st.	....	....	....
to date, season 1916...	31,099	172,268	80,886
Total receipts May 1st.	....	....	....
to date, season 1915 ..	42,102	187,235	83,268

### MONTREAL PRODUCE RECEIPTS.

The receipts of the principal commodities at Montreal for the past two weeks follow:

	Week end,	Week end,
	May 27,	May 20.
Wheat bushels ..	1,643,148	1,397,225
Oats, bush. ....	235,660	364,673
Barley, bush. ....	378,147	2,689
Flour, barrels ..	102,670	44,696
Eggs, cases .....	15,959	19,774
Butter, packages ..	9,387	7,765
Cheese, boxes .....	67,617	54,971
Potatoes, bags .....	13,663	23,760
Hay, bales .....	31,409	18,138

# Conditions in the West

**Crop Acreage Ten Per Cent Over 1914. Present Condition Considered Good. Export Produce Possibilities. Live Stock and Other Markets**

Special Correspondence by **E. CORA HIND**, Commercial and Agricultural Editor, Free Press, Winnipeg, Man.

Winnipeg, May 26.

The Manitoba Free Press, during this week received its first crop report of the season. This was twelve days later than the first report of 1915. All things considered it was very satisfactory as 124 points were heard from in the three provinces, and when the data was compiled it showed that there would be a reduction in wheat acreage of about 20 per cent. This reduction seems very large, but it must be borne in mind that it is a 20 per cent reduction from the acreage of 1915, which was just 12,000,000 acres, or roughly a 30 per cent increase on the acreage of 1914, so that while there is a big reduction from 1915, there is an increase of about 10 per cent over the acreage of 1914.

With three exceptions the points heard from reported the soil in good condition to receive the seed, that is, from the standpoint of moisture. Of course, a very large area has been seeded on stubble without ploughing; the percentages running all the way from 2 to 90, but considered district by district it is evident that where the large areas have been seeded on unploughed stubble the bulk of this land had been summer-fallow in 1914. With a reasonable supply of moisture this should give very fair results, especially where they were able to get a good burn on the stubble.

With regard to the lateness of the season, the reports indicated that taking the West as a whole the season was rather more than three weeks later than the season of 1915, but as 1915 was fully two weeks earlier than 1914, the present season is not so abnormally late as it might appear.

### Only Small Acreage Re-seeded.

The average height of the early seeded wheat is three inches. This is about the same height as the wheat was at the first report of 1915, which came out on the 11th of May, while the one for this season was issued on the 23rd. Owing to the very high winds during the latter part of April, and the beginning of May, a very great deal of apprehension was felt as to damage from drifting. On this point the reports were very reassuring. A very great number of points reported that no re-seeding had been necessary, and twenty-three points reported on considerable areas re-seeded only amounting in all to 21,950 acres.

The question had been asked as to the increased acreage of coarse grains, but it proved a little too early to secure very definite information. However, the reports indicated an increase of from 10 to 15 per cent in oats and 15 to 20 per cent in barley. This will be contingent on the weather for the last part of May, and as we have had general rains over the entire West during the last three days delaying farm work, the coarse grain areas may be somewhat reduced.

As was said at the beginning the report as a whole is very satisfactory, and given anything like normal conditions from now on there should be an excellent average crop. Growth above ground has certainly been slow, but the wheat has an excellent root, which as stated in a previous letter, will enable it to stand a good deal of adversity later in the season.

### Labor Conditions.

Another question asked in connection with this report, was as to the supply of labor, and also the amount of wheat still in the farmers' hands for sale. The supply of labor seems to be on the whole quite sufficient, only twenty points report any shortage at all. Wages, however, are high, running from \$30 to \$60 per month for the seven month season, and the average being between \$40 to \$45.

### Wheat and Oats on Hand.

Wheat on hand. Eighty-eight points out of 124 reported definitely the quantity of wheat in the farmer's hands, and these included 3,000,000 bushels tributary to Regina; 3,100,000 tributary to Swift Current, and 8,000,000 in an area of 100 miles around Calgary. The 88 points heard from gave a grand total of a little over 20,000,000. A very great many points reported no wheat at all for sale, or too little to be of any moment.

Rather significant was the report on oats in the

farmers' hands. 32 points reporting absolutely no oats for sale, and 55 points only reported 1,581,000 bushels available for sale. At the present time the oats in store at the head of the Lakes are under three million bushels, and in store in country elevators slightly over six million, and it is the opinion of the trade that sales have been made for June delivery that will much more than account for all these oats, and that we may see some fireworks in the oat market before June is out.

### Cut Worms.

The cutworms were bad last year and reports are beginning to come in of very serious damage from them this year. They are, of course, especially bad on the summerfallows, but the recent rains should be helpful in destroying them. Active campaigns for the destruction of both cutworms and gophers are being waged, and the Provincial Governments are doing all they possibly can to assist.

### The Wheat Market.

The market has been a narrow one for a week, largely professional, and with a very limited export-trade. On May 26th, however, there was a sharp reaction to higher values, apparently due to cumulative reports of damage to the winter wheat crop of the United States, and it is noticeable that within the past four days one or two of the big exporting houses that had been on the bear side of the market have experienced a change of heart and are now among the bulls.

### Export Produce Trade.

During the week Winnipeg has had a visit from Mr. Horrocks, of Geo. Little, Ltd., of Manchester, England. Montreal has probably had a visit from Mr. Horrocks this week, as he left Winnipeg, via Chicago, for that point on Monday. His object in visiting Canada is to look into the possibility of supplies of butter, eggs and cheese for Britain. In 1903 Mr. Horrocks was in charge of a Government creamery in the then territory of Assiniboia, and remembering the dairy conditions of those days it was only after strenuous urging on the part of the produce men of Winnipeg that he consented to come West. He quickly acknowledged his surprise at finding the difference in conditions, and while he found that our egg prices were too high for him to do any business, there is every likelihood that some business in butter will result from his trip.

The recent decision as to uniform grading of butter for the three Western Provinces will help in this very materially. Mr. Horrocks also laid great emphasis on the opening that there was for good Canadian cheese in England. The West, unfortunately at the present time has only 15 cheese factories and does not make enough for her own requirements. Mr. Horrocks pointed out that at present prices there were more money in cheese than there was in butter.

The Winnipeg Produce Association has become identified with the Winnipeg Board of Trade with J. M. Carruthers as chairman of this section.

### Livestock.

Livestock, especially anything like choice butchers, held very steady all through the week until Friday when prices weakened 25 per cent. There were a number of sales around 9 1/4 cents. The hog market has been experiencing some very hard pressure from the bears. Of course, packers are not saying so, but to the outsider it looks as if there was an organized determination to establish a 10 cent hog. Packers do not hope to keep the price at that, especially when the July short shipments begin, but evidently they figure that if they can get it down to 10 cents now it would not be likely to advance more than \$1.00 per hundredweight, even under the pressure of very light receipts in July; whereas, if the price remains at its present high level it would be quite as likely to shoot up another \$1.00 when the season of scarcity begins.

### Wool Traders.

Word has been received from Ottawa that a sufficient number of wool graders has been secured and they will be on the job at the opening of the season.

**SMART WOODS**  
LIMITED CANADA

Manufacturers of

**Jute and Cotton**  
**Bags, Tents,**  
**Clothing, Etc.**

FACTORIES IN

**MONTREAL, TORONTO,**  
**OTTAWA, WINNIPEG**

### GRAIN AT THE HEAD OF LAKES.

Statement of stocks in store in terminal elevators at Fort William and Port Arthur on May 26th, 1916, with receipts and shipments during the week.

Elevator.	Wheat.	Oats.	Barley	Flax
C. P. R. . . . .	1,325,057	414,316	97,113	.....
Emp & Th.				
Bay . . . . .	1,118,952	355,576	38,535	190,223
Consol. . . . .	782,587	153,102	35,658	120,600
Ogilvie. . . . .	1,088,010	107,633	34,998	.....
Western . . . . .	800,752	193,433	19,150	187,723
G. G. G. Co. . . . .	1,223,317	340,407	38,590	.....
Fort William . . . . .	709,495	288,529	53,312	20,938
Eastern . . . . .	585,432	150,471	22,628	.....
G. T. P. . . . .	1,520,934	380,270	47,519	127,024
Can. Nor. . . . .	2,124,960	612,325	126,357	129,191
Horns. . . . .	133,162	39,671	24,614	216,023
Can. Gov't. . . . .	1,183,246	437,750	48,680	69,086
<b>Total . . . . .</b>	<b>12,595,909</b>	<b>3,473,487</b>	<b>587,160</b>	<b>1,069,811</b>

A year ago . . . 2,739,493 1,382,178 353,584 1,435,733

Receipts . . . . .	6,053,975	2,028,763	156,899	171,077
Ship. Lake . . . . .	4,935,587	2,037,972	306,478	292,397
Ship. Rail . . . . .	124,143	17,057	4,483	2,630

### Stocks by Grade.

Wheat.		Oats.	
One Hard. . . . .	75,202	1 C. W. . . . .	33,496
One Nor. . . . .	5,330,243	2 C. W. . . . .	1,708,415
Two Nor. . . . .	2,045,951	3 C. W. . . . .	799,109
Three Nor. . . . .	1,415,103	Ex. 1 Fd. . . . .	247,377
No. Four . . . . .	1,468,772	Others. . . . .	685,088
Others. . . . .	2,260,636	<b>Totals. . . . .</b>	<b>3,473,487</b>
<b>Total. . . . .</b>	<b>12,595,909</b>		
Barley.		Flax.	
3 C. W. . . . .	256,977	1 N. W. C. . . . .	891,732
4 C. W. . . . .	199,068	2 C. W. . . . .	113,340
Rej'd. . . . .	57,381	3 C. W. . . . .	30,581
Reed. . . . .	32,203	Others . . . . .	34,148
Others . . . . .	41,469	<b>Total. . . . .</b>	<b>1,069,811</b>
<b>Total . . . . .</b>	<b>587,160</b>		

### NEW GOLD FIELD.

Some spectacular samples of ore showing free gold were received in Toronto recently, and, with odd exceptions, the exhibit excels anything yet brought into Toronto from Northern Ontario.

The find was made within eight miles of Dryden on the C. P. R., and the property bids fair to rival the famous Croesus Mine. The lucky prospector was Ernest G. Rognon, who spent some years in the Nome Gold Camp.

One assay shows the enormous figure of \$67,000 to the ton, but in order to get a fair estimate of the value of the containing quartz about 1 1/2 tons of ore free from visible gold were tested and the gold contents assayed \$99 to the ton.

### MINING DIVIDENDS.

Tabulation made by the Engineering and Mining Journal shows that forty-seven United States mining companies paid dividends totaling \$9,632,083 in April, against \$4,248,185 paid by twenty-seven companies in April, 1915.

**CANADIAN PACIFIC**

TICKET OFFICES:  
741-143 St. James Street. Phone Main 8125.  
Windsor Hotel, Place Viger and Windsor St. Stations.

**Railway News****LARGE RAILROAD EARNINGS.**

The Financial Chronicle shows that gross railroad earnings in the United States for nine months from July, 1915, increased \$354,000,000 over the corresponding period of last year. Of this \$249,000,000 was saved for net. This is reason enough for the strength and activity of the railroad stocks.

**CANADIAN PACIFIC RAILWAY EARNINGS**

Weekly ending May 21st, 1916 . . . . .	\$2,610,000
Same Period, 1915 . . . . .	1,575,000
Increase . . . . .	\$1,035,000

**GRAND TRUNK RAILWAY SYSTEM.**

Traffic earnings from May 15th to 21st, 1916.	
1916 . . . . .	\$1,088,679
1915 . . . . .	938,386
Increase . . . . .	\$ 150,293

**ST. JOHN VALLEY RAILWAY.**

The contract for the construction of the St. John Valley Railway from Gagetown to Westfield has been awarded to the Nova Scotia Construction Company of Sydney, N.S. The contract provides that the road shall be completed in safe condition for operation by February 1st, 1917, and the work fully performed August 1, 1917. This section of railway is to be employed in bringing Transcontinental Railway freight to St. John, the C. P. R. track being used temporarily between Westfield and the city. Until the East St. John terminals are completed, export freight will be shipped from West St. John.

**EXCURSION TO NEW YORK.**

On Tuesday June 6th, 1916, the Grand Trunk and Central Vermont Railways will have an excursion to New York with the low fare of \$12.90 for the round trip. Tickets good to return until Saturday, June 17th, 1916. A special train with through coaches and electric lighted sleeping cars will leave Bonaventure Station at 7.35 p.m. on that date, arriving New York 9.00 a.m. next morning. Excursion tickets will also be good on regular trains leaving at 8.45 a.m. and 9.00 p.m. on June 6th. For all information, sleeping and parlor car space apply to Grand Trunk Ticket Office, No. 122 St. James St., opposite Post Office, Phone Main 6905, or Main 574, or at Bonaventure Station and Windsor Hotel.

**ABNORMAL RISE IN FREIGHT.**

The increase in the rates on grain, one of the principal exports from Canada to the United States, from New York to Liverpool in the last two years has been about 900 per cent, while the increase in the rate on flour has been 500 per cent, and the increase on provisions 400 per cent.

The more rapid increase on grain is accounted for by the fact that in ordinary times grain is carried at especially low rates because of its desirability at ballast and because it can be easily taken on and discharged.

The shortage of ships that has led to the remarkable increases in shipping rates is attributed to the following causes in the letter to the committee. (1) The elimination of the merchant ships of Germany and Austria-Hungary; (2) the withdrawal of merchant ships for military and naval purposes; and (3) the loss of ships through submarine and mining operations.

In January, 1914, the rate on grain from New York and Boston to Liverpool was 4.1 cents per bushel; one year later the rate from New York to Liverpool was 18.3 cents and from Boston to Liverpool was 13.2 to 15.2 cents per bushel. In January, 1916, the rate from New York to Liverpool was 40.6 cents per bushel and from Boston to Liverpool it was 34.5 to 36.5 cents. From these data it appears that the rate on grain from New York to Liverpool was, in January, 1916, about ten times as high as in January, 1914, while the rate from Boston to Liverpool was only about nine times as great. In January of the present year grain could be shipped from 6 to 6 cents per bushel less from Boston than from New York. The higher rate from New York is probably due to the long delays and high demurrage charges resulting from the present congestion at the port of New York.

The advances in rates from New Orleans to European ports have been fully as pronounced as the increases from New York to the same ports. As both New York and New Orleans, the rate on cotton shipments to Liverpool has been increased about 900 per cent in the past two years, but it is still far cheaper, as far as the ocean rate is concerned, to ship cotton from New York, in spite of its congested condition, than from New Orleans. On January 1, 1916, the rate per 100 pounds of cotton was \$2.25 from New York and \$3 from New Orleans — Industrial Canada.

**TONNAGE TAX TO ENCOURAGE U. S. SHIPPING.**

A tonnage tax to build up United States shipping, with prohibitive rates assessed against foreign-built and owned merchantmen is proposed in Senator Gallinger's bill before the United States Congress. It also proposes 10 per cent discriminating duty against imports in foreign bottoms; tax would be three cents a ton, not to exceed 15 cents a ton in any one year, on inbound vessels from ports in western hemisphere where ships are American built and owned.

"Ennuui," said the club cynic, "is the polite society name for laziness. It means doing nothing and feeling too tired to stop."—Boston Transcript.

**DONALDSON LINE****GLASGOW PASSENGER SERVICE**

From Glasgow	From Montreal
May 13 . . . . . (x) T. S. S. ATHENIA . . . . .	May 28th
	(Cabin Only.)
May 27th . . . . . (x) T. S. S. CASSANDRA . . . . .	June 13th
	(Cabin Only.)

Steamers marked (x) Cold Storage.  
For information apply local agents or  
THE ROBERT REFORM CO., LIMITED,  
20 Hospital Street, Montreal.

**CUNARD LINE**

Canadian Service

**MONTREAL TO LONDON**

T.S.S. AUSONIA (Cabin Only) (Cold Storage and Cool Air) . . . . .	June 6
x.S.S. NUCERIA . . . . .	June 14

**MONTREAL TO AVONMOUTH DOCK (Bristol.)**

x.S.S. URANIUM . . . . .	about June 3
x.S.S. PRINCIPELLO . . . . .	about June 10

Steamers marked (x) freight only.  
Passenger steamers call at Falmouth.  
For information apply The Robert Reform Co., Limited, 20 Hospital Street, Steerage Branch, 23 St. Sacramento Street, Montreal.

**Shipping News****HARBOR DEVELOPMENT AT ST. JOHN.**

St. John.—Special.—Tenders are being asked by the Public Works Department for crib-work and back filling on Pier 16, West St. John, N.B., the intention being to have this pier ready for next winter's port business. During the season just ended there was an occasional shortage of pier accommodation. With another pier built, this shortage will be to some extent removed. A temporary wooden warehouse will be erected on this pier. Three dredges are now operating at East St. John, preparing new terminals for the Canadian Government Railways.

**"SCOTIA" TO BUILD SHIPS.**

Steel shipbuilding on a large scale is being inaugurated in Nova Scotia. Work on the erection of the shipyard has already begun near New Glasgow, where so many sailing vessels were constructed years ago. The site is below the plant of the Eastern Car Company's works, on the East River of Pictou.

The first steamer to be built will be for the Nova Scotia Steel and Coal Company, under whose auspices the industry is being inaugurated. "Scotia" is in great need of shipping tonnage, and this enterprise is calculated to meet that want.

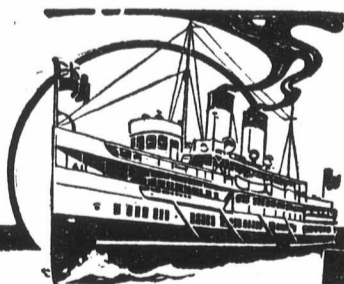
It is believed the action of the Nova Scotia Steel Company will be the means of causing other sections of the Province also to engage in steel shipbuilding. New Glasgow has the honor of starting and successfully carrying on a number of industries connected with steel, and there seems a good prospect that the building of steel ships will be made a success at that point.

**SHIPS FOR SOUTH AMERICAN TRADE**

Two new steamship lines, involving \$14,000,000 or \$15,000,000 and running nine vessels of 34,000 aggregate tonnage, for South American trade, and 14 vessels of 75,000 aggregate tonnage, for European service, will start sailings within two months, according to Richard Kaufman, New York promoter. Vessels will sail under American flag, and European line will limit itself to coal carrying. A large bank and a trust company are said to be interested in this promotion.

**NEW TONNAGE IN U. S.**

The statement of the United States commissioner of navigation that there are more than 1,000,000 tons of vessels under construction in American yards is declared to be too conservative by the International Marine Engineering, which says there are approximately 1,300,000 tons under construction in 66 yards, including three battleships.

**CANADA STEAMSHIP LINES LIMITED****Take the Water Way**

Travel in comfort and enjoy a full night's sleep on our palatial steamers.

**Montreal—Quebec Line**

Daily service (except Sundays) at 7 p.m.

**Saguenay Line**

Steamers leave Quebec Wednesdays and Saturdays at 8 a.m.

**North Shore Service**

Steamers leave Quebec fortnightly for Harrington Harbor and intermediate points.

For full particulars and tickets apply

**Canada Steamship Lines, Limited.**  
91 R. & O. Building, Montreal.