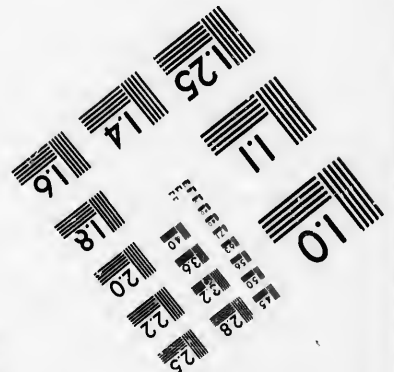
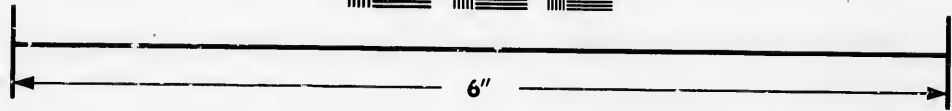
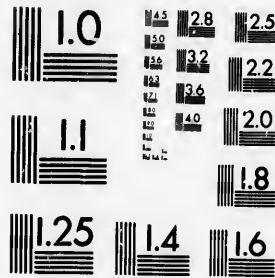


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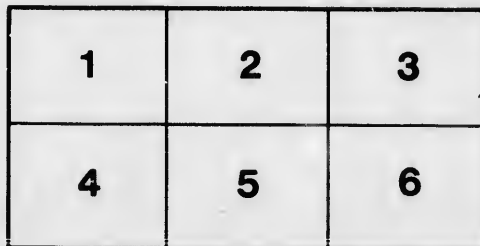
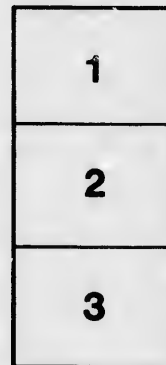
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COMMERCIAL

How it would affect the Mining

Meeting of the Toronto Club—An able Paper read by T. D. Ledyard—The Obstacles in the Way of its Development Pointed Out—Ontario—The Expansion of the Iron Trade Under Com

The subject of mining in Ontario is at present attracting increased attention, and the public will read with interest whatever throws light on the subject. The following paper was read by Mr. T. D. Ledyard, a Conservative citizen of Toronto, before the Commercial Union Club of that city, upon the advantages unrestricted Reciprocity would bring to the development of our mineral resources :

A meeting of the Toronto Commercial Union Club was held on Friday evening in Association hall, when the following paper on the mining interests of Canada was read by Mr. T. D. Ledyard. After a few introductory words, Mr. Ledyard said : In considering the mining interests of a country, coal and iron are by far the most important. These minerals are at the foundation of England's greatness, and nature favors any country in which they are found in abundance. They do not enrich any individual or set of men so much as they benefit the whole community. Coal, however, except in the case of coke, undergoes no change until it passes into consumption, requiring only mining and transporting before it reaches the consumer ; but iron requires the labor of many hands at every stage, and its value is multiplied many fold before it reaches its consumer. Take steel rails, for instance, which is only one case out of many ; one and a half tons of high grade iron ore are required to make a ton of steel rails. This ore costs, say, \$3 to mine, but the ton of steel rails is worth at least \$30. That is, the value of steel rails is ten times the value of the ore which made them, showing that nine-tenths of their cost is distributed in the labor of smelting the ore, the cost of fuel and of transportation, and in the different processes they undergo until the perfect steel rails are produced. By far the greater proportion of this is expended in labor, and therefore it is that iron and steel manufacture benefits a country more than any other. For this reason the state of the iron trade is the financial barometer of a country's prosperity ; if the iron trade is prosperous wages are good and freely distributed, and other lines of business take their cue from it. My remarks will, therefore, be chiefly confined to our iron interests.

THE SPANISH MINES NEARLY EXHAUSTED.

Here is one very important point in considering the Canadian ore question. While our grain markets are being cut off by Indian and Russian wheat, our ores are likely to be required at an early date. England derives most of her Bessemer ore from Spain, from whence also the United States gets the greater part of their imported ores. For some time past reports have appeared showing that the Spanish ore deposits cannot last much longer. Recently a statement has been

freight to Montreal is high, still higher to Toronto and prohibitory to Winnipeg. The natural market for Nova Scotia coal and iron is, of course, in the Eastern States, and the market for British Columbia coal and iron is in the Pacific States, and did not the tariff prevent it a great trade would be done, to the mutual benefit of both countries.

RICHNESS OF CANADIAN IRON ORE.

During the year 1887 the United States used 13,250,000 tons of iron ore, of which 12,000,000 was produced from their own mines, and one million and a quarter imported mostly from Spain, but very little from Canada. The ores imported from Spain are of Bessemer quality, and very free from impurities, but are not so rich in iron as some of our Canadian ores, the average Spanish ore not yielding more than 50 to 55 per cent of iron, while some of our ores run as high as 62 to 67 per cent of metallic iron. Under reciprocity with the States a great part of these Spanish ores would be replaced by Canadian to the great advantage both of our neighbors and ourselves. The advantage to the United States blast furnaces in importing Spanish and other Bessemer ores from Europe is that at certain points on the Atlantic coast, or contiguous to Atlantic ports, these ores can be laid down cheaper than Lake Superior Bessemer ores. The advantage is simply in the cheapness of these foreign ores ; they give employment to no one in the United States, either in mining or in transportation to the Atlantic ports, as they are generally brought over as ballast in foreign vessels. Whereas, if the duty were removed from Canadian ores, these could be delivered from the Ontario iron districts to good distributing points on the lakes, such as Charlotte, Fairhaven, Buffalo, Cleveland, Fairport or Ashtabula, cheaper than Spanish ores can be imported and American cars and railways would have the carrying of them.

CONVENIENT LOCATION OF ONTARIO'S MINES.

Ontario has large deposits of excellent Bessemer ore so situated that it can be delivered at Buffalo very cheaply. Go down to the Esplanade and walk from the Don to the western boundary of the city along the railway tracks, and any day you will see hundreds of coal cars which come here from the coal regions of the United States laden with coal, some of which go east to Belleville, perhaps further, and some north-east to Lindsay, but after unloading their coal they mostly go back empty. Now, when these cars are at Belleville or Lindsay they are not far from our Bessemer iron ores, which they could take back as return freight, and deliver at furnaces in Pennsylvania close to their destination. A large trade would be done in this way if there was no duty ; our iron mines that are now lying idle would be developed, benefitting our back country more than anything

a whole country as Canada. The natural market for Nova Scotia coal and iron is, of course, in the Eastern States, and the market for British Columbia coal and iron is in the Pacific States, and did not the tariff prevent it a great trade would be done, to the mutual benefit of both countries. The subject of mining in Ontario is at present attracting increased attention, and the public will read with interest whatever throws light on the subject. The following paper was read by Mr. T. D. Ledyard, a Conservative citizen of Toronto, before the Commercial Union Club of that city, upon the advantages unrestricted Reciprocity would bring to the development of our mineral resources : A meeting of the Toronto Commercial Union Club was held on Friday evening in Association hall, when the following paper on the mining interests of Canada was read by Mr. T. D. Ledyard. After a few introductory words, Mr. Ledyard said : In considering the mining interests of a country, coal and iron are by far the most important. These minerals are at the foundation of England's greatness, and nature favors any country in which they are found in abundance. They do not enrich any individual or set of men so much as they benefit the whole community. Coal, however, except in the case of coke, undergoes no change until it passes into consumption, requiring only mining and transporting before it reaches the consumer ; but iron requires the labor of many hands at every stage, and its value is multiplied many fold before it reaches its consumer. Take steel rails, for instance, which is only one case out of many ; one and a half tons of high grade iron ore are required to make a ton of steel rails. This ore costs, say, \$3 to mine, but the ton of steel rails is worth at least \$30. That is, the value of steel rails is ten times the value of the ore which made them, showing that nine-tenths of their cost is distributed in the labor of smelting the ore, the cost of fuel and of transportation, and in the different processes they undergo until the perfect steel rails are produced. By far the greater proportion of this is expended in labor, and therefore it is that iron and steel manufacture benefits a country more than any other. For this reason the state of the iron trade is the financial barometer of a country's prosperity ; if the iron trade is prosperous wages are good and freely distributed, and other lines of business take their cue from it. My remarks will, therefore, be chiefly confined to our iron interests. THE SPANISH MINES NEARLY EXHAUSTED. Here is one very important point in considering the Canadian ore question. While our grain markets are being cut off by Indian and Russian wheat, our ores are likely to be required at an early date. England derives most of her Bessemer ore from Spain, from whence also the United States gets the greater part of their imported ores. For some time past reports have appeared showing that the Spanish ore deposits cannot last much longer. Recently a statement has been

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COMMERCIAL UNION.

The Mining Interests of Canada

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a whole country, and especially such a mineral country as Canada, where the ore districts extend for hundreds of miles, because objectionable ore is found in some parts. There is bad ore in almost every iron district. Titaniferous ore is found in Minnesota, on the north shore of Lake Superior, not far from the district where "The Minnesota Iron Co." produces the very best Bessemer ore, and similarly, ores too high in phosphorus and sulphur are found in the Marquette and Menominee districts, not far from the most celebrated mines of pure ore. It is most unfair, therefore, to give our ores a bad name, because in some parts of our vast mineral districts are to be found some objectionable matters. Not only owners of American mines have spread these reports, but some of our own people are much too quick to condemn the products of their own country. People who know nothing about the subject have told me that our ores are no good, but strangely enough these are generally the opponents of Commercial Union, who claim to themselves all the loyalty in the country. It is a queer loyalty which refuses to recognize whatever is good among our own productions.

Within 110 miles of Toronto, both close to the Midland branch of the Grand Trunk, and also near the Canadian Pacific Railway, are deposits of Bessemer ores of excellent quality. An analysis of ore from a large bed

IN THE TOWNSHIP OF BELMONT

shows sulphur, only a slight trace; phosphorus, 0.002, or one-thirtieth of the permitted limit for phosphorus in Bessemer ore; metallic iron, 65.36; the chemist remarking on the exceptional purity of this ore. Another analysis of average ore taken from all over this deposit gives metallic iron, 66.29 manganese 0.42; phosphorus, 0.024; silica, 3.19; titanium, none; sulphur, practically none. These analyses were made by chemists of large blast furnaces in the States, and have fully confirmed the first analysis made by Professor Chapman, of "The Toronto School of Science," from surface samples of this ore, who remarked:—"This is an exceedingly good ore, not too close in texture, rich in metal, quite free from titanium and practically free from phosphorus and sulphur, while the rock matter would be almost self-fluxing. It is well adapted for final treatment by the Bessemer process." Dr. Chapman's opinion has been fully confirmed by practical iron men. One prominent man in Cleveland writes, "I can sell all the ore of this quality that I can get." Professor Thomas Heys, of this city, who examined this ore bed, makes a similar report regarding the quality of the ore, and estimates there are at least one million tons of ore within one hundred feet of the surface.

THE SNOWDEN IRON DISTRICT.

in the preparation of charcoal a number of men, and would make a good local market for the farm produce of the surrounding country.

AN ERRONEOUS IMPRESSION CORRECTED.

The Canadian market is too small to induce capitalists to put up the expensive works necessary to make iron and steel, but if the whole North American market, were open to us there are many points where furnaces would be erected. And here let me correct an erroneous impression with regard to the amount of fuel necessary for smelting iron. It was stated recently in a Restrictionist paper that it required two tons of coal to smelt one ton of ore. This is not the case, the fact being almost the reverse of this. Mr. John Birkinbine, of Philadelphia, editor of the *American Journal of Charcoal Iron Workers*, a very high authority, in a letter to the *Iron Age*, computes one ton of coke only to make one ton of pig iron. A correspondent of the *Buffalo Commercial Advertiser* last fall stated that 1,900 lbs. of Pennsylvania coke smelts $1\frac{1}{2}$ tons of Lake Superior 66 $\frac{2}{3}$ per cent. iron ore, which yields one ton of pig iron in the furnace. An account appeared recently in the *Iron Age* of a run at the Union steel works, Chicago, where only about half the weight of fuel was used in smelting a quantity of ore, the proportion being about 1,750 lbs. of fuel to 3,500 lbs. of ore.

FURNACES SHOULD BE CONVENIENTLY SITUATED.

This makes a vast difference in considering the favorable locality for a blast furnace. If we had free trade with our continent, why should not Toronto be an excellent point for a blast furnace and a good distributing point for its products? We have the best of ores within 125 miles of us and are much nearer to the fuel than many furnaces in the States. Connellville coke is carried 600 miles to the Chicago blast furnaces, and still they do an immense and very increasing business.

A BENEFIT TO THE WHOLE COMMUNITY.

Although the manufacture of iron and steel benefits a community more than any other, one impressive fact may be stated to show the apathy of Canadians in these matters. Take the C. P. R. east from Toronto, and when you get a little more than 100 miles down the line you will be in the mineral district and close to deposits of Bessemer ore suitable for making steel rails. This mineral district extends for hundreds of miles, the C. P. R. traversing a great portion of it. Were the steel rails over which you are travelling made from Canadian ore? Not a bit of it. These rails were bought in England, probably made from Spanish ore, and in their manufacture did not contribute one dollar's worth of benefit to any Canadian, although similar ore from which the rails are made lies almost alongside the railway track. Is

and deliver at fur- this quality that can get." Professor Thomas Heys, of this city, who examined this ore from Canadian ore? Not a bit of it. These

be required at an early date. England derives most of her Bessemer ore from Spain, from whence also the United States gets the greater part of their imported ores. For some time past reports have appeared showing that the Spanish ore deposits cannot last much longer. Recently a statement has been published that the Campanil district, one of the most important, has very much reduced its production, and that before long it will cease altogether. The exhaustion of Spanish ores will produce far-reaching consequences; if England were deprived of these ores she could no longer produce the cheap steel she now manufactures, and a great and radical change must take place. When the Spanish ores are exhausted (and a very few years must see the end of them) no part of the world will offer greater inducements for the manufacture of steel than our own Canada, and if a sufficient market is opened to her, there is no reason why this country should not become a large producer of iron and steel, and obtain a share of that prosperity which naturally follows. In that case it would not be at all surprising to see some of the large English iron manufacturers transplanting their works to Canada. We should then have an opportunity of seeing how far their loyalty goes; the boot would then be on the other leg. I am very much mistaken if these same English manufacturers, having transplanted their business to Canada, would not be the most enthusiastic Commercial Unionists of us all. This is no visionary dream, for already English manufacturers are looking towards Canada; within the last few months I have had several enquiries from England regarding our ores and iron mines.

EFFECTS OF THE UNITED STATES DUTY.

There is at present a duty of 75c. per ton on all iron ore entering the United States; this, of itself, is a handsome profit on mining iron ore, and even 50c. per ton is a good profit on the whole output of a large iron mine. The duty of 75c. per ton then prevents many iron deposits from being worked. There are some large beds of very pure ores so favorably situated that they will pay in spite of the duty, but these are comparatively few. The opponents of Commercial Union tell us that we have the Canadian market; this is true, but the Canadian market does not amount to much; 300,000 tons of pig-iron is about the annual consumption of Canada, requiring about 500,000 tons of ore; half a dozen good mines would produce this, in fact two of the leading mines in Michigan would easily do it. The Chapin mine on the Menominee Range last year produced over 330,000 tons, and the Cornwall mines in Lebanon County, Penn. put out in 1887 the enormous quantity of 700,000 tons, or over 2,000 tons a day for every working day throughout the year. One single furnace company in the States, "The North Chicago Rolling Mills Co.," uses 1,700 tons of ore a day, as much as would supply the whole of Canada.

A LIMITED HOME MARKET.

Our market, besides being so small, is very much scattered, and distance tells heavily in the transportation of iron. In Nova Scotia iron and coal occur in close proximity, and there is every facility for cheap iron manufacture, but where is their market? The

our Bessemer iron ores, which they could take back as return freight, and deliver at furnaces in Pennsylvania, close to their destination. A large trade would be done in this way if there was no duty; our iron mines that are now lying idle would be developed, benefiting our back country more than anything else, giving employment to numbers of miners, a good market to the farmers in the neighbourhood, as well as business to the storekeepers.

COMMERCIAL UNION DISCUSSED.

This trade would also benefit the United States, for in consideration of the great question of Commercial Union we should not look at it only from our own standpoint, but should see how it will affect our neighbours. Buffalo is now becoming an important distributing point for iron ores, and will be still more so in the future; ores are delivered there by vessels from Lake Superior and distributed by rail to furnaces in Pennsylvania. Lake Superior ores are taken from the mines to Marquette, Ashland or Two Harbours on Lake Superior, or to Escanaba on Lake Michigan, and then shipped by boat a distance probably of over 1,000 miles to Buffalo, whence they are again transhipped to railways which carry them to the furnaces, thus necessitating three different handlings, and this route being open only during the season of navigation. But our ore districts in Central and Northeast Ontario are within 250 miles of Buffalo, from whence our ores can be delivered by rail all the year round in returning coal cars, which can be run direct to the mines without going much out of their way, and from thence run through to the furnaces without transhipment and with only one handling. The return freight of ore is so much additional business to the American cars and railway companies, as well as to our own railways, and the furnaces can get cheaper Bessemer ore much closer to them than Lake Superior.

THE DUTY THE CHIEF DIFFICULTY.

I have been endeavouring for some time to find markets for our ore in the United States, but it has been very up-hill work, the duty being the chief difficulty. There has also been in the past considerable prejudice against Canadian ore; for this, I will freely admit there has been some ground. While we have excellent ores, we have also some poor ones containing objectional matter. Through ignorance partly, and perhaps sometimes through dishonesty, these bad ores have been sent to the other side; there are places through some parts of our mineral districts where the ore contains titanium, the worst enemy to iron ore. These ores should never have been touched, but in some instances they have been sent to American furnaces for trial, only resulting in their condemnation and in giving the furnace men the impression that our ores are titaniferous.

UNFAIR STATEMENTS ABOUT OUR MINES.

Sulphur is also an objectionable element, and some of our mines, as in nearly all iron districts, contain too much sulphur. Injury has been done to our interests by ores too high in sulphur having been shipped. Some of the United States mine owners have not been slow to circulate the statement that all Canadian ores contain titanium and sulphur, but nothing is more unfair than to condemn

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THE SNOWDEN IRON DISTRICT,

40 miles north-east of Lindsay, contains good Bessemer ore, very free from impurities. Analyses show 62 to 63 metallic iron; phosphorus, trace; sulphur, 0.025; titanium, none. In order to be of Bessemer quality, the amount of phosphorus must be very small, the limit in a sixty per cent. ore being 0.06. When the analysis shows a trace only, this means less than 0.005 per cent. phosphorus, or less than one-tenth of the allowance for Bessemer ore. These analyses therefore, show our ore to be more than usually free from impurities even for Bessemer ore.

To be convinced of the benefit of working an iron mine, a person should go to the neighborhood of an active mine and judge for himself.

THE BLAIRTON MINE,

in Peterborough County, at one time employed between 300 and 400 men, at wages from \$1 to \$1.25 per day, paying out from \$1,800 to \$2,500 weekly for wages alone. There was employment for every able-bodied man and boy for miles around. The farmers from surrounding townships found ready sale for produce at prices equal to the Peterborough market.

With many of our iron deposits the duty of 75 cents per ton simply prevents their being worked; it makes all the difference between a profit and a loss. It is a question of existence, to be or not to be. Yet some restrictionists have asked, "Cannot you work your iron mines at a profit and pay the 75 cents per ton duty?" After inspecting the Belmont mine, before referred to, an American expert stated that within a short time after commencing work on it he would be taking out 400 tons of ore a day; the duty on this would be \$300 a day. Perhaps the restrictionists will kindly tell us how they would like an unnecessary tax of \$300 a day on any one of their businesses.

The points that I have endeavored to prove are that we have first class ores; that in many cases the duty of 75 cents per ton prevents these ores being mined; that the removal of the duty would benefit both Canadians and Americans alike.

SMELTING FURNACES

I have so far only noticed the question of exporting ores to the United States, but there are large quantities of poorer ore which would not pay to export, but which could be very profitably smelted on the spot if we had a market large enough to induce capitalists to put up the necessary works. A blast furnace takes considerable capital both to erect and run it. There are many suitable points for blast furnaces in our mineral country where ore and charcoal can be had at the lowest cost and where there is every facility for making iron, the market only being wanting. There are numerous deposits of bog ore or brown hematite containing 35 to 45 per cent. of iron, which are suitable for a local furnace, but are of no value otherwise. One ordinary-sized furnace would employ in its own work and

from Canadian ore? Not a bit of it. These rails were bought in England, probably made from Spanish ore, and in their manufacture did not contribute one dollar's worth of benefit to any Canadian, although similar ore from which the rails are made lies almost alongside the railway track. Is this loyalty to ourselves, to send money out of the country for articles which we can manufacture ourselves, four-fifths of the value of which would be distributed to pay for the labour of our own miners and mechanics? Instead of doing this, our money has gone to pay Spanish miners and English labourers, who care nothing for us and could not, probably, point out our country on the map.

CONSUMPTION OF IRON PYRITES AND OTHER MINERALS.

The consumption of iron pyrites for making sulphuric acid is rapidly increasing in the United States. In 1886, 112,000 tons were consumed. The duty of 75c. per ton is a heavy tax on this article, as pyrites is only worth about \$4.50 per ton in New York, but if there was no duty a large trade would be done, as we have many deposits of pyrites suitable for this purpose. Large quantities of copper ore would be shipped to the States were it not for the duty. In the Nipissing and Algoma districts new and important discoveries of copper have lately been made, but here again the tariff bars the way. The United States duty on lead ore is prohibitory, and there is little encouragement to develop our galena veins, although, no doubt, we have abundance of this useful mineral, and the same remark applies to several other minerals, notably to the salt industry, which suffers greatly through restriction.

ABSURDITY OF OUR PRESENT TRADE RELATIONS.

Let any unprejudiced man of common-sense, either American or Canadian, stand before a map of North America, and, after carefully tracing the boundary line between us, say why the inhabitants of this great continent, who are of the same race, the same language, the same religion, and who have the same interests, should interpose hostile tariffs against each other. Did nature ever intend that artificial barriers should be placed where only an imaginary line separates us? I would suggest that the Commercial Union Club hang on its walls a map of North America, on which there should be a black line, drawn broad and deep along the boundary line between Canada and the United States, so that the absurdity may clearly appear of trying to keep apart two portions of the same continent which nature intended to be commercially one. Then if you like, run a red line round the outside boundary of both showing the vastness of the country we should have to trade in were the barriers thrown down, and on the heading of the map place this motto, which should also be the motto of our club, "Let us have free trade with our own continent, our natural market."

At the close of the paper an interesting discussion took place on the views presented. Those taking part being Messrs. J. N. Blake, W. H. L. Gordon, Samuel D. Mills, H. C. Jones, Mercer Adam and C. M. Dobson.

