

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Industrial Canada

100.73

VOLUME I

TORONTO, FEBRUARY, 1896.

NUMBER 2.

CHARACTER SKETCH.

E. B. OSLER.

PRESIDENT TORONTO BOARD OF TRADE.

"Business makes men."—Proverb.

THE old notion that business tends to narrow men has long since been exploded. Nearer the truth is the saying of Arthur Helps that consummate men of business are as rare almost as great poets. The affairs

of business call forth the greatest powers of the greatest men.

In Mr. E. B. Osler is found one of the strongest types of the business man. His large undertakings, and the ability that has enabled him to rise equal to every occasion, is proof of this.

Mr. Osler was born in the Township of Tecumseth, County of Simcoe, in 1845. In 1857 his parents removed to the Town of Dundas and there Mr. Osler received his education at the Grammar School. After leaving school he took his first step in a business direction in taking a clerkship in the Bank of Upper Canada. He was attached to the head office of that institution when the disastrous collapse took place, an event not yet forgotten by many Canadians.

His already marked abilities were recognized by the retention of his services during the year of the winding up of the defunct bank's

affairs. In 1867 Mr. Osler formed a partnership with Mr. Henry Pellatt, under the firm name of Pellatt & Osler, as brokers and financial agents. In 1882 the present partnership of Osler & Hammond was established. Subsequently when the late Mr. Geo. Laidlaw was projecting his large railway schemes Mr. Osler became interested in them and contributed in a considerable measure to their successful completion. The result of this connection has been manifest in later life. It brought him in contact with railway men, where his business ability was again recognized.

He was induced to look after the large interests of Sir Geo. Stephen, now Lord Mountstephen. Out of these connections grew the building of the Ontario and Quebec system of railway, of which Mr. Osler was president, and for the work performed on it he dispensed all the monies. He represented the capitalists who built that section of the C.P.R., and when the amalgamation took place he became a director of the Canadian Pacific Railway and has since continued to be one.

In connection with these, as well as other large enterprises,

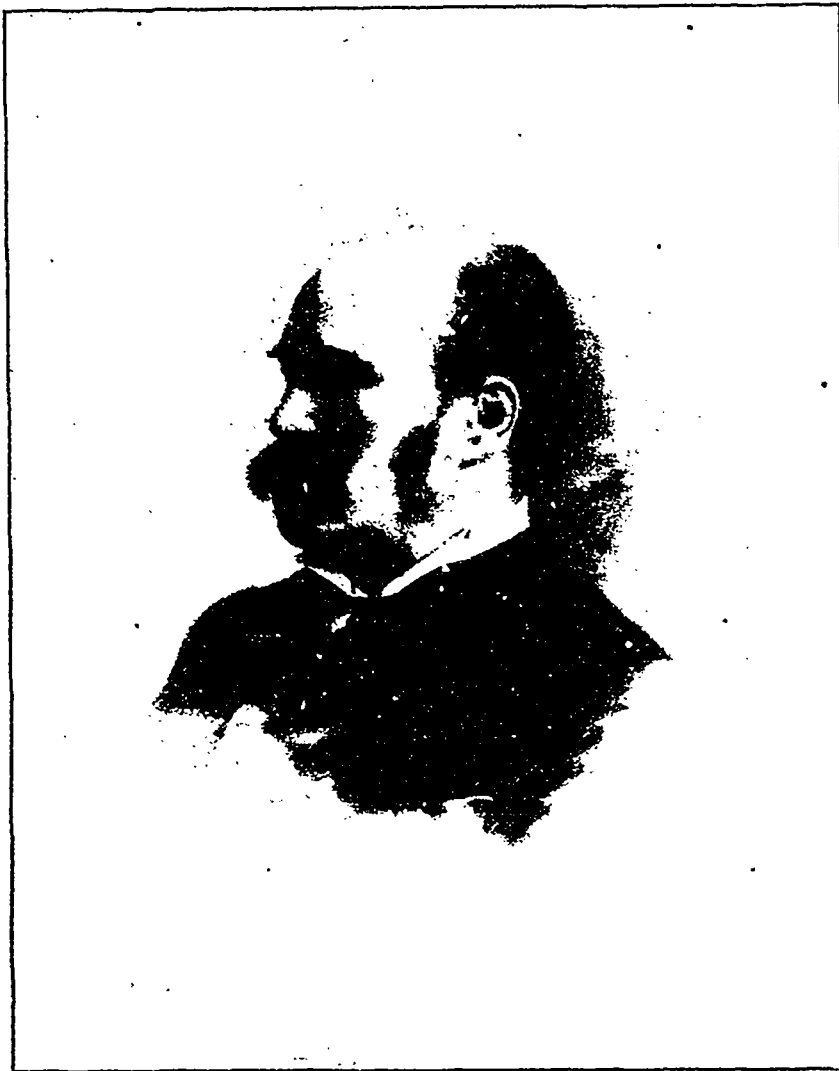
Mr. Osler has had much to do. He is a director of the Dominion Bank and manager of the North of Scotland Mortgage Co'y. His identification with the Board of Trade dates from 1869, but he never stood for any office until two years ago when he was elected second vice-president. Last year he filled the first vice-presidency, and this year was elected president by acclamation.

It hardly needs the remark that Mr. Osler will bring to the Toronto Board of Trade a large measure of business strength. His wide and successful experience makes this much sure. A man of energy and activity, he is certain to leave his impress on Toronto and Canadian commercial affairs, as so widely represented by this institution.

Mr. Osler has for many years been a leading figure in the financial affairs of Canada, but unfortunately for the country

his time until recently has been so taken up by the large interests he represented that he has been unable to offer the public the benefit of the great abilities and extensive knowledge of which he is the possessor.

Mr. Osler comes of a family, all of whom are distinguished in their particular callings. One brother is B. B. Osler, the eminent Queen's Counsel; another is Mr. Justice Osler, and a third brother holds a foremost position as a member of the medical profession of the United States.



MR. E. B. OSLER, PRESIDENT TORONTO BOARD OF TRADE, 1896.

CANADIAN AND UNITED STATES BANKING.

A CONTRAST.

AT the fifty-fourth meeting of the Bankers' Club of Chicago, Mr. B. E. Walker, general manager of the Canadian Bank of Commerce, was the guest of honor and delivered an address to which was given the title, "Lapses from Virtue in Finance." The American Banker in commenting on the address says of Mr. Walker: "We have no more earnest critic of our banking system than this able and urbane Canadian economist." Mr. Walker said:—

"If we compare banking in the United States with other prominent systems of the world we are struck with certain features in which your system differs. As these systems represent the two great classes of banks, those which are the result of compromise between the commercial needs of the people and the necessities of the Government, such as in England, France and Spain, and those which more nearly represent only the commercial needs, such as in Scotland and Canada, we may fairly conclude that any quality possessed by the five countries named is inherent in sound banking, and if not included in your system its lack is surely subject to careful study.

"Now, in all five countries the banks are few in number with large capital and branches, while the banks in the United States are numbered by thousands, have individual small capital and no branches. In the five countries the paper money is created almost altogether by the banks, and these are, of course, in constant touch with the business community. These are startling differences, and in my opinion are of paramount importance. I do not think I am wrong in saying that these differences are the cause of most of the present evils in the finances of the United States."

Mr. Walker declared that the United States Treasury was not in touch with the business community, but had been made by Congress to assume the terrible responsibility without having the power, except by such costly expedients as the last bond issue, of maintaining its stock of gold. If there was to be a reform in banking and currency it would involve the redemption of the issues of the Government and the retirement of the Government from the banking business. Mr. Walker outlined, as follows, the first reforms in banking which in his opinion the United States should undertake:

"1. The National banking system, including the bond-secured notes and the 10 per cent. tax on State bank issues, to continue, with such alternations in details as may be necessary. If the reforms proposed were shown by time to be successful, other measures looking to the extinction of the National banking system and the 10 per cent. tax could be considered when necessary.

"2. Any bank with a paid-up capital of \$1,000,000 or over to be allowed to issue notes, say to the extent of 75 per cent. of the paid-up capital, secured only by

being prior lien on the assets of the banking, including the double liability of stockholders, and of an insurance fund of say 5 per cent., and to be free from the 10 per cent. tax. Such banks to be allowed to establish branches within the State in which the head office is situated. If the franchise is granted by a State the Federal Government to approve of the regulations securing the note issue and to hold the insurance fund. I do not enter upon the question of what the minimum paid-up capital should be in the case of banks desiring to avail themselves of such bank issues, but not to open branches. I hope, however, it might be practicable to make it as high as \$500,000.

"3. Any bank with a capital of say \$5,000,000 or over to have the same privileges as to note issues and to be allowed to establish branches throughout the United States, limited, if they thought necessary, to cities of National and not local importance. Such a franchise would, I suppose, be granted by the Federal Government. In view of all that happened since the war, I presume it would not be too great a stretch of Federal power to grant such a franchise.

"4. Banks should have the undoubted power to buy and sell foreign bills of exchange, to issue letters of credit and to perform all of the functions usually performed by banks in Great Britain and Canada. In Canada, although we work under a general banking act, as the National banks of the United States do, we act on the theory that we may do anything within the scope of banking which is not expressly prohibited by the act. In the United States, while a few banks deal in exchange and letters of credit, others think they have not the power."

DE CARBON STEEL.

A REPUTED REMARKABLE DISCOVERY BY A CANADIAN.

AT a recent meeting of the Canadian Institute, Mr. T. Doherty, of the Doherty Manufacturing Co., Sarnia, Ont., read a paper on De Carbon Steel, which is provoking very wide interest among all interested in the manufacture of iron. The process has been fully protected by letters patent in Canada, United States and Europe, and Mr. Doherty is sanguine of a revolution in the iron manufacturing of the world.

Queried by an interviewer as to the peculiar benefits to be derived from the use of the process, Mr. Doherty said: "I know I have a casting much stronger, softer and of finer structure, that will stand heat better and not warp or crack, is much more readily machined and takes a finer finish than ordinary cast-iron. I know that such a metal cannot be melted from one part No. 2 foundry pig-iron and three parts low-grade scrap and sulphurous coke in the old way."

In regard to the difference in the cost of production, his words were:—"I know that the loss in melting is under 5 per cent. because I have weighed the charge in and castings out, and anyone doubting this statement can have the privilege of so weighing any day at our foundry in Sarnia or in any of the foundries who have adopted my patent in the United States and

satisfy themselves as to the truth of my statement. In a four-ton cast of scrap the loss would be 30 per cent. or 2,400 pounds, which at \$10 per ton would mean \$12. In my process the loss does not exceed 5 per cent. often not over 3 per cent., but say 5 per cent., which means a loss of 400 pounds or \$2, showing a balance of \$10 saved in the raw material alone aside from the superior quality of the metal, and this important fact is now made public for the first time. These are facts that can be proven, and it is facts, proved facts, the public wants now-a-days."

"You claim, Mr. Doherty, to be able to produce by your process a superior quality of iron; have you had it practically and thoroughly tested, for instance, as to its warping resistance?"

"I have fully tested the warping resistance of the metal during the past six months by making furnace doors, grate bars, etc., for steam boats of it, the result being the castings have stood the heat well. In cases where common cast-iron never lasted over two months before it has stood the whole season through and is apparently good for another season yet. We have been using it now in our foundry for nearly a year, and as a result we are making castings out of De Carbon Steel to be used in machinery, where cast steel had to be used before to get the strength required for the purpose."

He also stated that it has already been adopted by four large foundries in the United States, and others have made application for it. Being asked if he had objections to stating the nature of his discovery he at once said he had not, but that it was so difficult to put it into language understood by the average reader on account of the chemical terms which had to be used that he did not think it would prove interesting or of sufficient account to go into it, but if any person interested would like to have it explained and would write him or call at his foundry in Sarnia he would go into it fully with them. He further said: "You might also say that, in addition to the saving of 25 per cent. in the raw material, it affects a further saving in milling, mounting and shipping. In these various operations there is always a large loss through breakage in a stove foundry. Since we adopted the new way we have had very little loss from this source and have had to throw away no castings so hard that they could not be drilled or filed."

A CANADIAN STEEL INDUSTRY.

COMMENTING on an editorial in the Mail and Empire on the Canadian iron industry, Mr. Wm. Hamilton Merritt, who has shown a very active and intelligent interest in the subject, has written as follows concerning a Canadian steel industry, which he thinks has been sadly neglected, for, to quote his words: "With free steel rails a complete iron or steel policy is impossible." In Mr. Merritt's judgment the country is suffering a loss under our present iron (or free steel rail) policy, and as proof of this he produces the following figures, and comments:

To the railroads:—

On account of 2.4 tons of ore at 60c. from mine to lake port.....	\$1.44
On 1.5 tons of coke at 80c. from Suspension Bridge to furnace.....	80
On limestone .5 ton at 55c. from quarry to furnace.....	28
On .8 ton of coal at 80c. from Suspension Bridge to furnace.....	64
To the lake carrier:—	
2.4 tons of ore at \$1 from lake port to furnace.....	2.40
To labor:—	
On 2.4 tons of ore at mine at \$1.....	2.40
On limestone .5 ton at 35c. at the quarry.....	17
To laboring and manufacturing:—	
1 ton at \$3 per ton.....	6.00
Total.....	\$14.13

If we obtained our coal and coke from Nova Scotia instead of purchasing it from the United States, we would then add:—

On freight by vessel (allowing for lower railway rates)....	\$ 2.50
On coke and in mining 1.5 tons at \$1.50 at the ovens.....	2.25
On .8 ton of coal at \$1 at the mine.....	80
Total.....	\$19.68

Over and above this amount of, say, \$20 there are other expenses, and loss by wear and tear to be met; therefore it will be seen that, after allowing for any profit on the coke, coal, and ore, etc., no margin exists to work on while English rails can be landed on our shores for about \$24 a ton. The makers of the steel rails in the United States are now complaining that, even with their protection of \$7.84 per ton, the western part of their country has been given over to the English rail makers under "the iniquitous Wilson tariff."

Last year we imported free steel—

	Tons.	Value.
Locomotive and car wheel tires in the rough.....	769	\$ 41,858
Rails over 251 lbs. per yard.....	87,467	1,748,660
Steel for skates.....	141	9,768
Steel for hammers.....	67	3,042
Steel for saws and straw cutters.....	432	68,768
Crucible steel for reapers, etc.....	338	23,232
No. 20 gauge or less.....	191	20,109
Sheets for shovels and spades.....	34	2,298
Wire, Bessemer.....	144	8,998
Wire, crucible cast steel.....	277	28,253
Wire for ships.....	124	10,084
Total.....	89,987	\$1,965,070

We would very properly add to the above steel rails for tramways, about 12,000 tons, valued at \$265,334, which, however, paid duty. Therefore we see that about 100,000 tons of steel rails were imported last year—during hard times—the great bulk of which came in free. If we consider that \$20 per ton is lost to the country on transport and labor on every ton, we would be the richer by \$2,000,000 a year if we manufactured our steel rails in Canada.

Besides the steel rails there is also a considerable amount of free steel, as seen in the above list. When these are all added to the other iron and steel articles under the duty list, it will be seen that the amount of deficiency yet remaining to be filled by our own manufacture is very large.

Besides considering the indirect loss in labor which might be employed in the country, we are brought face to face with the fact that a very serious direct drain of from two to three million dollars in gold is going on year by year to pay for steel rails alone, to pay for labor in other countries instead of employing it in our midst, and then some political economists wonder why we have to go on borrowing.

ACETYLENE GAS: ITS POSSIBILITIES.

THE INVENTION OF A CANADIAN.

VERY complete and accurate information concerning the new acetylene gas is furnished in a recent report of the Ontario Bureau of Mines. The report states that the process of the economic production of calcium carbide and acetylene is the most promising discovery that has been made in recent years for the supply of light and fuel.

The inventor, Thomas Leopold Willson, is a Canadian, having been born at Princeton, Ont. The materials used are common lime and carbon—in any form—hard or soft coal, coal dust, petroleum, tar or

peat. These are treated in an electric furnace, and Mr. Willson is confident that where electricity can be generated with water-power, the cost of manufacturing calcium carbide brings it easily into competition with other materials from which fuel and light are obtained, and that a plant erected near a great water-power like that of Niagara Falls will supply a continent



THOS. L. WILLSON

at a figure with which coal gas cannot compete. The power of Niagara is ample for almost any conceivable requirement; while it is alongside a mountain of limestone, and coal dust or culm can be had at little more than the cost of hauling from the mines of Pennsylvania and Ohio. Arrangements are already being made to procure electrical energy for this purpose from the falls on both sides of the Niagara River from the company which controls the power franchise at the falls; so that it is probable that the carbide will soon be manufactured on a commercial scale in both Canada and the United States.

The carbide, containing 40 parts by weight of the element calcium, which is the basis of limes, and 24 parts by weight of carbon, will be cast direct from the electric furnaces into rods, or cylindrical cartridges. One of these, 12 inches long and one and a quarter inches in diameter, will weigh a pound, and render five cubic feet of gas when simply subjected to the action of water, which is allowed to drip upon it slowly from a pipette or dropping tube. The oxygen of the water combines with the calcium of the carbide to form lime, while the hydrogen of the water unites with the carbon of the carbide to form acetylene. Owing to the great richness of the gas, it can only be used in flat flame burners, in which it emits a light greater than any other known gas; its illuminating value, figuring on a consumption of five cubic feet per hour, being no less than that of 240 candles.

The possibility of liquifying acetylene by moderate pressure permits enormous volumes of gas to be com-

pressed into the liquid state in small wrought iron or steel cylinders, from which it may be fed slowly through burners. This quality promises to make it of the greatest possible value for floating buoys, and also for portable lamps, where there is no ordinary gas supply. In this way it would take the place of the illuminating product of petroleum, and thus offset the alleged exhaustion of the oil fields. In that event the value of the new discovery might be so great as to be beyond computation.

Recently an exhibition of the new acetylene gas was given in the city of Hamilton by Mr. G. Black. The following are the facts stated by him concerning this new illuminate:—

Acetylene gas is obtained from calcium carbide by the addition of water. This carbide, which readily decomposes water, is a combination of lime and carbon in the form of coal, coke or charcoal, fused together in an electric furnace.

Acetylene gas is not a new substance, but was one of the rare laboratory products until Mr. T. L. Willson accidentally discovered how to produce calcium carbide cheaply in large quantities. He was experimenting at his aluminum factory in North Carolina in 1888 with different forms of carbide, when he produced this substance, and not being what he was looking for, he dropped it into a pail of water standing near, when gas of a most peculiar odor was evolved. A lighted match completed the experiment and led Willson to follow up his discovery with golden results.

Acetylene gas (C. 2 H. 2) contains 92.3 parts of carbon and 7.7 of hydrogen in 100 parts.

Calcium carbide (Ca. C₂) has a specific gravity of 2.62 and contains 62.5 parts of calcium and 37.5 of carbon in 100. It requires 87½ lbs. of lime and 56½ lbs. of carbon to produce 100 lbs. calcium carbide. The residue, 43¾ lbs., is carbon monoxide. This latter contains 18¾ lbs. of carbon and 25 lbs. of oxygen.

100 lbs. calcium carbide, with 56½ lbs. of water will produce 115.62 lbs. of slacked lime and 40.62 lbs. acetylene.

Calcium carbide is not inflammable, and may be exposed to the temperature of a blast furnace without melting; but when placed in water each pound will generate over 5½ (5.592) cubic feet of gas.

The gas may be liquified by suitable pressure, and solidified by a pressure of 600 lbs. to the square inch. Carbonic acid requires 900 lbs. pressure to solidify.

Each pound of the liquid at 64° produces 14½ cubic feet of gas, or a volume 400 times larger than the liquid. This gas gives about 50 candle power per foot, or about 12½ times as much light as ordinary gas.

At Mr. Willson's factory in North Carolina he states that the carbide can be manufactured to cost about \$20 per ton, but as his power is limited and his limestone and coal have to be brought from a distance, he states that by manufacturing where he can get a large amount of cheap water power, as well as limestone,

and the carbon not too expensive, the carbide could be made cheaper.

A ton of calcium carbide produces 10,000 feet of gas, equal to 125,000 feet of ordinary gas.

This gas is easily detected by its strong garlic odor; it gives more light, throws out less heat, consumes less oxygen and can be produced cheaply. It may be stored as carbide, or as a solid or as a liquid, or as a gas. It may be used by itself, or mixed with ordinary gas as an enricher.

Calcium carbide is now manufactured at the General Electric Co.'s works at Peterboro'.

CANADA AND THE CANADIANS THROUGH SPANISH EYES.

QUIETLY and unostentatiously, but none the less effectively, says the Literary Digest, the great Dominion on our Northern frontier is taking its place among the foremost nations of the world. English writers have described it as the home of the rejuvenated Anglo-Saxon. Germans point to its stability, which makes it specially valuable to investors who care more for certain than for large returns on their capital. But the most flattering recognition of Canadian work comes from Spain. Among the Spaniards, who are just emerging from the lethargy of centuries, Canada is regarded as an instance of what a colony can become under proper management, and many writers of note advise the reconstruction of the government of Cuba on Canadian lines. Adolfo Posada, Professor of Political Economy at the University of Oviedo, has a paper on this subject in the *Espana Moderna*, Madrid. We summarize his article as follows:

Hasty persons persist in believing that social ills can be cured by the application of some political panacea, some form of government which they judge only by the excellent results obtained in the country of its origin. We have a typical case in the Cuban question. The difficulties of the situation in Cuba, in a great measure caused by our traditional errors and our backwardness, naturally call for a solution. "What is to be done," is the universal cry, "to furnish Cuba with a prosperous policy? What kind of rule will insure progress and peace effectively?" People are gradually convinced that Cuba must have some prudent measure of autonomy, with more or less liberty. But the idea of autonomy, easy enough to express in a theoretical way, is far less easy to carry out practically. In principle, political autonomy is expressed by the English self-government, and means the right of a certain social entity to administer its own affairs, while yet it remains within a larger and, in some respects, superior organization. Our eyes are naturally turned toward Canada. Rightly or wrongly, the impression has gone abroad that the Pearl of the Antilles must be governed like Canada. The idea is seductive enough. The Dominion is certainly a strong argument in favor of autonomy, a beautiful case in point.

Canada has passed through terrible crises, has had its internal dissensions, has not been free from bloody uprisings, and looks back upon periods when its political existence was in great danger. But Canada has now established herself as a state within a state, has become a semi-national power, is strong, prosperous, and a veritable school of parliamentary usages—all under autonomous government. Canada's progress dates chiefly since 1867, when its federal autonomy was established. Clearly, all this prosperity is not due solely to reforms in political organization. It could

not have been accomplished without the brave spirit within the race, fit to raise great empires. Much is due also to Canada's geographical situation and no less to the general progress of the world. But it cannot be denied that a government accepted by the people as satisfactory to their ideals, a government that sets no limits to the expansion of human activity, and whose establishment closed a period of dangerous crises, substituting a time of harmony and peace, seems very favorable to human progress.

While thus the writer showers praise upon our neighbors, he warns our countrymen and the Cubans that they must not expect to see all the outward benefits of Canada's autonomy in the case of the Havana as soon as that island is given self-government. Canadian prosperity, as well as Canadian autonomy and federation, are solid and stable because they are of slow growth and the result of much patient labor. He also explains that Canada, though semi-independent, is a source of strength rather than weakness to the mother-country.

GREAT CANADA.

Land of the beaver, elk, and moose,
And untamed life in various forms,
Whose plains and forests boundless are,
Lying serene in midst of storms;
Unknown to art and man's device,
Till lost in polar snows and ice.
Vast are thy lakes, immense thy streams,
Whose flowing waters never cease;
Dwellings of countless finny tribes,
Who live in undisputed peace;
Strong in all infinite supply,
Whose source and fountains never dry.
Thy mountains rise like bulwarks high,
As guardians of a nation's store;
Of untold minerals, unworked mines,
Products of nature, rich, galore;
Unfathomed is the wealth they hold,
In nickel, iron, coal, and gold.
Thy valleys like a fruitful field,
Rich is their soil, and green their sod,
Yield fruits and grain and lowing kine,
Treasures of earth and gifts of God;
And as an ever smiling land,
Nature's reward to toiling hand.
Thy towns and cities tell the tale
Of enterprise, and thought, and brain;
Science, invention, skill, and power,
And all that follow in their train;
Centres of action, learning, state,
The things that make a nation great.
Long may thy provinces remain,
Happy and prosperous and free,
Together in one common bond,
Holding their own from sea to sea;
In one great Federation's might,
Strong for the truth, for God, and right.

—Geo. W. Armstrong.



ON THE ST. LAWRENCE.

ONTARIO
QUEBECNOVA SCOTIA
NEW BRUNSWICKN.W. TERRITORIES
MANITOBABRITISH COLUMBIA
P. E. ISLAND

A THOROUGHLY REPRESENTATIVE JOURNAL.

INDUSTRIAL CANADA is devoted to topics of special interest and importance to men in all branches of Trade and Commerce, and is a consistent advocate of the Industrial—the Mining, the Lumbering, the Manufacturing, the Milling, and the Agricultural Interests of the Dominion.

LETTERS from practical men on topics connected with the industrial field of Canada are always welcome.

MANUFACTURERS, Dealers and others, are invited to send illustrations and descriptions of new articles; views and descriptions of mining locations, new industries, fields and forests.

SUBSCRIPTION One Dollar a year, payable in advance.

REMITTANCES should be made by Express, Postal Order, or Bank Draft, payable to the order of the publisher.

ADVERTISING rates quoted on application.

INDUSTRIAL CANADA PUBLISHING CO.

W. SANDFIELD JOHNSTON,
MANAGING EDITOR.

34 ADELAIDE ST., W., TORONTO.

TORONTO, CANADA, FEBRUARY, 1896.

PREFERENTIAL TRADE.

THIS question, which engages the attention of the people of Canada and Great Britain from time to time, has come immediately under notice just now through the speech delivered by Sir Charles Tupper, before the Montreal Board of Trade, on the 20th January. Having entered the Dominion Cabinet, it would be an easy matter to criticise the speech of the new Secretary of State as a political one, but it is fair to Sir Charles to say that the promise to address the Montreal Board of Trade on the question of preferential trade was given the president of that organization shortly after the High Commissioner's arrival in Canada, and as he says, "when he expected, and in fact hoped, very shortly, to return to England."

It is needless to say that Sir Charles Tupper is an enthusiastic advocate of preferential trade, which he believes will help the development of trade between the Mother Country and Canada, and the other colonies, and tend to bring them closer to each other. This is a sentiment that Canadians, of whatever political party, will appreciate. It is cheering to observe that the spirit that was entertained by a few people some little time since tending to estrange Canada from the Mother Country, and give creation to a spirit that pointed in some measure to commercial, if not actual, annexation with the country to the south of us, has rapidly died out. In fact, the men who boldly announced themselves as leaders in the annexation movement, find themselves carrying about the mark of Cain on their brow, that will militate against their influence in their own country for a long time to come. Canadians want to live in amity with their neighbors across the border, and it would be a mistake to say anything that would tend to create a different feeling between these two countries, but

Canadians will remain Canadians, and there is the best reason to believe they hold to-day as warm an attachment to the Mother Land, as they did in the earlier days of starting out in life for themselves.

Sir Charles Tupper at the outset of his address remarked that he was glad to know that the question of preferential trade was one that was outside the domain of party politics, and he quoted the great organ of the Liberal party in Canada as endorsing this view. The contention of the Secretary of State is that the present time is one singularly favorable for the consideration of the question of preferential trade between Great Britain and her colonies. The trade position of England at present was not a very satisfactory one. They were face to face with the very important fact that since 1890 there had been a decline in British exports of £47,700,000 sterling. There was also a condition of agricultural depression that was felt most seriously throughout the United Kingdom. Since 1870 no less than three million acres of land had gone out of wheat cultivation. Sir Charles contended that the reason for this state of affairs was that while Great Britain admitted the products of all other countries of the world, these countries, instead of reciprocating, as Mr. Cobden had hoped when he advocated free trade, had built up their tariffs higher and higher, especially against Great Britain. Quoting from Lord Salisbury he remarked: "Great Britain had deliberately stripped herself of her armour."

The remedy of this condition of affairs, in Sir Charles' opinion, was the expansion and development of trade between Great Britain and her colonies. Statistics for the period between 1870 and 1895 showed that the self-governing colonies had taken a great deal more from England per capita, than foreign countries, while the exports of the latter showed a decrease. The average exports to colonies were: 1870-74 £60,455,797; 1875-79 £66,622,886; 1880-84, £80,755,741; 1885-89, £79,311,416; 1890-94, £78,522,405; or an increase of 30 per cent. over the period from 1870 to 1894. "These figures," said Sir Charles, "showed the immense importance of cultivating and developing the colonies, and increasing their population, and the means of trading with them in preference to foreign countries. If England wished to expand her trade she must look to the expansion of her colonial possessions and thus secure a market independent of foreign countries, which were building up tariff walls against her."

It was freely admitted that there were difficulties in the way of bringing about preferential trade. There was point in the remark of the Globe, that in England, and not in Canada, was Sir Charles Tupper's missionary work in this direction most needed. And yet it was pointed out that the idea of preferential trade was growing in the United Kingdom. A few years ago the question could not have got two hours discussion, while at the great trade congress, held in

1893, it occupied the attention of that body for two whole days. He strongly urged that the Boards of Trade in all parts of Canada send their best men as representatives to the approaching congress to be convened in England. The vigorous manner in which Mr. Chamberlain was laboring to promote trade between the United Kingdom and her colonies was another hopeful sign.

One of the great difficulties in the way, freely admitted by Sir Charles, was the German and Belgian treaties, which made it impossible to give preferential consideration to the products of the colonies without giving a similar privilege to Belgium and Germany. He believed, however, that if England said to Germany and Belgium that it was anxious to eliminate from the treaties merely the colonial clause, these countries would agree to it for the sake of the other privileges given by the treaties. Whilst, having no fears of a war between Great Britain and the United States, yet quoting from the Saturday Review, there was little doubt but that this clamouring for war in the United States would lead to England drawing closer the bonds between herself and the colonies, and this could easily be done by a differential duty.

Expressing an opposite view of preferential trade it may be well to quote here Sir Charles Dilke, who a few weeks ago said that an imperial union was an impracticable idea. Lancashire, he said, would not favor import duties on American cottons for the benefit of the West Indies; Yorkshire would not favor duties on South American wool for the benefit of Australia. In a dispatch from the British Government to our own, dealing with the Intercolonial Conference, it was declared that "a differential duty is open to all the objections, from the consumer's point of view, which can be urged against a general duty, and while it raises necessarily the same restrictions on trade, it has additional disadvantages of dislocating trade by its tendency to divert it from its regular and natural channels."

EDITORIAL NOTES.

WITH the advance of civilization there comes to us many improvements that the people of the 19th century would hesitate to part with, but along with these losses, the extent of which will only be rightly appreciated after they have been finally made. In Ontario the rapidity with which the forests are being depleted of their timber tells of a period, not far distant, when this valuable source of wealth will have departed, unless we take the bull by the horns and give a measure of attention to reforestation, that is not seriously considered at the present time. As the interior of the country is being settled the fur bearing animals, that were the rich stock in trade of the Hudson Bay district not many years past, are becoming almost extinct. Attention is being called to the fact that the beaver, the mention of whose name ought to stir up Canadian patriotism, is among the animals fast disappearing. The cultivation of the

beaver is a subject that has given rise to no small amount of controversy in European countries. Stringent laws are in vogue in Germany, France and Russia for the protection of this valuable fur bearing animal and various experiments looking towards their increase under artificial conditions have been made. In Scotland an extensive experiment was carried out by the Marquis of Bute, and a considerable space set apart and stocked with beavers. Unfortunately the experiment was not a success. It has been remarked that, apparently, the only means by which the beaver can be saved from extinction is the preservation of large areas where they can live in complete freedom and under absolutely natural conditions. There is such a spot in the United States at the Yellow Stone National Park and there the beavers are still plentiful. It is suggested that in Ontario and other provinces where large areas of land have been set aside for the purpose of forming national parks, as the Algonquin in Ontario, that means should be adopted that would tend to the perpetuating of this widely known fur bearing animal, and one which has played so important a part in Canadian history.

* * *

PERHAPS no more important news item appears in the department of Industrial Progress this month, than that which tells of the starting of the fires in the first iron smelter in Ontario, at Hamilton, within the past month. The growth of the iron industry in any country is one that works in a large degree to the development of that country. Ontario has advantages favorable to the development of the iron industry, and the surprise on many hands is that we have allowed our efforts, like the fires of the smelter, not simply to slumber, but deaden for so many years. Hamilton deserves all the congratulations it is receiving for its enterprise in giving encouragement to the establishment of this industry, and it is not too much to hope that its success will stimulate the extension of the iron trades in Canada in various ways. Possessing a close relationship to this subject is a letter on the steel industry, from the pen of Mr. Wm. Hamilton Merritt which is published in another column.

* * *

THE recent failure of a large manufacturer of boots and shoes in Quebec presents an immediate, though not single, illustration of the folly and curse of cutting prices. Mr. Jas. Leggat, the insolvent in question, had been doing a large business, but when his affairs were investigated, after trouble had come upon him, it was found that he had been pursuing the foolish practice of cutting the life out of his profits. By underselling he had done a large trade, until he had run the length of his tether. A recent extensive mercantile failure in Toronto points the same lesson. Will business men profit by these examples? Manufacturers and business men cannot note too carefully in fixing prices how close they are selling to the profit line.

QUEBEC CROWN LANDS AND MINERAL WEALTH.

PERHAPS it is the case that in Ontario and some of the other provinces, there is not felt that interest in the Province of Quebec that might be expected. In some particulars that province is not as rich in natural resources as other provinces of the Dominion, and yet in its crown lands, if nothing else, it can be easily demonstrated that much wealth exists. It is in Quebec that spruce is found in large quantities, and with the almost marvellous development that is taking place in the manufacture of paper from pulp wood, Quebec must become an important district, not alone for the securing of the raw material, but likewise as a manufacturing centre in this particular line.



HON. E. J. FLYNN

The report of the Crown Lands department, for instance, which more than any other illustrates in its work the progress being made in the country, shows a substantial advance in the settlement of public lands, and considerable activity in many of the other branches beneath its control. Much of this energy is due to the administration of Mr. E. J. Flynn, the commissioner. He is

a man who has had a long experience in the science of government, and it is not too much to say that under his management the department has done better service than at any previous time in the history of the province. The actual area of lands and forests available in the provincial domain is 107,520,000 acres, and of this there is at present over 7,000,000 acres ready for colonization, surveyed and divided into farm lots and accessible by good roads. For the information of the immigrant the department issues a "Settlers' Guide," which gives exceedingly clear information concerning every portion of the province. The rules governing the settlement of public land are very simple; the price of a lot is merely nominal, varying from 20 to 60 cents per acre, one-fifth cash. Of course, this is subject to conditions as to residence; the purchaser must take possession within six months from date of sale; he must reside on it, either personally or by proxy, during two years; and he must clear land and erect a building. Under these conditions it appears from the 1894 report of the department that in the previous year 147,122 acres were sold, for the sum of \$52,032.87. Another feature of the Quebec administration which is unique, is the hundred acre grants to heads of families of twelve children, and the same blue book says that in the previous year 30,300 acres had been given away under this provision.

Another department of which little is known in Ontario is the Mines branch; it, however, has been of late years somewhat inactive, owing to complications

arising out of unsettled questions as to who has a title to the minerals in the land. The first real mining law of the province was passed by Mr. Flynn, the present commissioner, in 1880, and by it all mines were made the property of the Crown. Previous to that the baser metals had been transferred with the land, though gold and silver had remained with the Crown. Even in the grants to the early seigneurs this latter provision was made, except in one instance, that of the De Lery seigneurie. At one time the gold mines in Beauce attracted considerable attention, but their prosperity was greatly hindered by disputes to title. It appears that, under the law of 1880, the resident farmers who bought their land from the seigneurs or Government have the preference in the purchase of mining rights, and this they continually attempted to use or abuse, the result being that capital at length withdrew from the field, and the mines were closed. Mr. Jules Cote, the efficient secretary of the branch, said recently in an interview that it was intended to bridge over these difficulties by arbitration, and settle the titles to the minerals on some more permanent and satisfactory basis. It was also, he said, the intention of the Government to issue an invitation to the mine owners of the province to make such suggestions as they might deem advisable in order to promote their interest, and encourage the business of mining. By this means it is hoped to revive interest in the mineral resources of the province, and to arouse those who own properties to greater efforts in their development.

A BUSINESS BAROMETER.

MORE gratification is taken in a study of the successes of individuals and countries, than in their failures, though none the less necessary is a study of the latter. The real progress made during the year 1895 will be learned, not only by a glance at the satisfactory business done, but also by an examination of the business failures as recorded by the mercantile agencies, and a comparison of these with other years. Bradstreets reports the total number of business failures from the Dominion of Canada and Newfoundland for the year 1895, as 1,923, or fifty more than in 1894, while the aggregate liabilities are \$15,793,559 as compared with \$23,985,283, a decrease of 60 per cent., which can only be constructed as a remarkably favorable exhibit. The corresponding falling off in assets of failing trades in the Dominion and in Newfoundland is a little more than 50 per cent. The total number of failures in the United States in 1895 as reported to Bradstreets is 13,013 contrasted with 12,721 in 1894, an increase of 2.2 per cent. This is the largest number of failures ever reported since the record was begun with the single exception of 1893, two years ago, when the aggregate was 15,560, compared with which year the falling off in 1895 is 16 per cent.

About 22,000 ounces of gold were raised from the Nova Scotia gold mines last year. Several new mines are to be operated the coming year which were closed last.

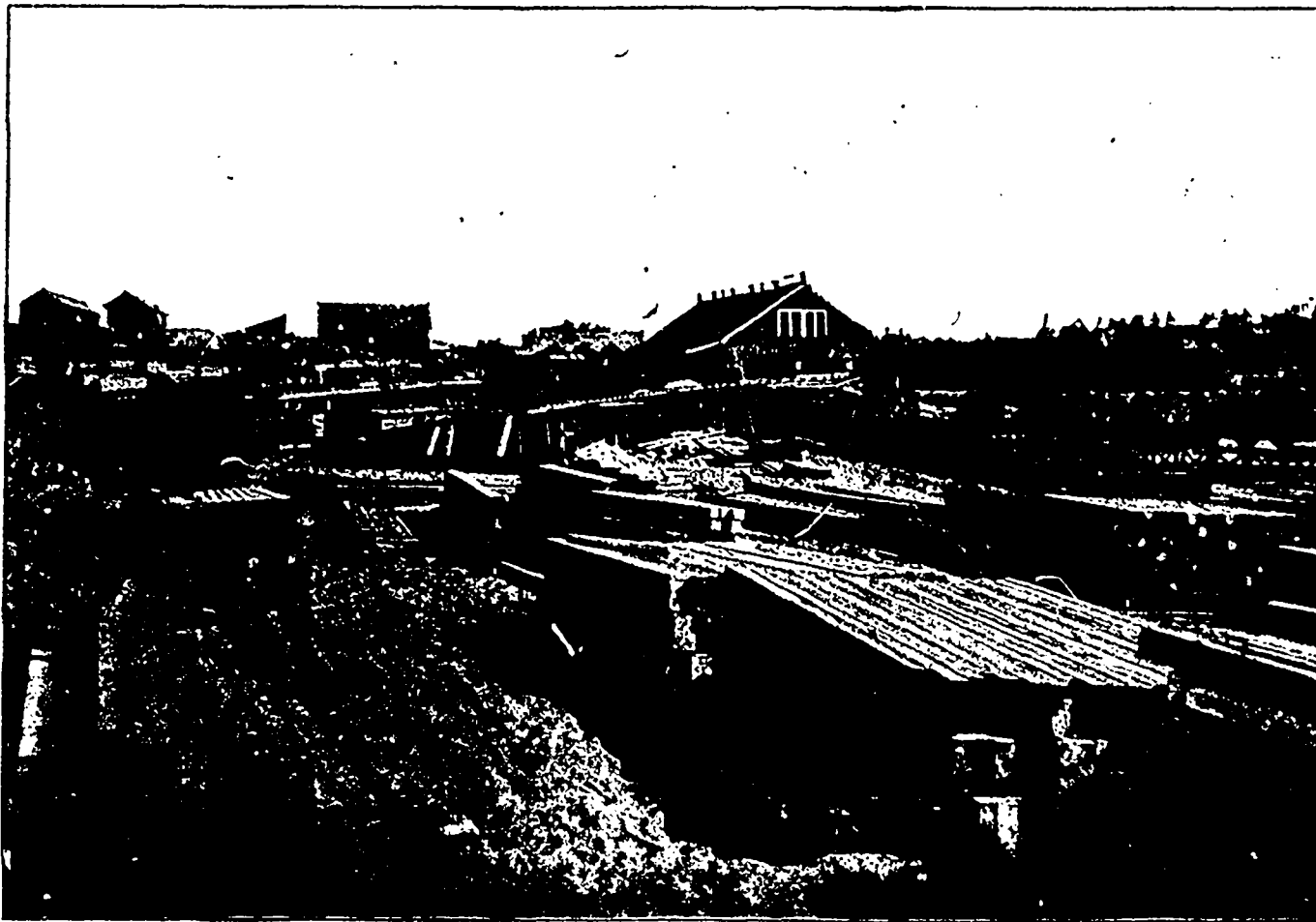
HIDDEN RESOURCES.

ONE of the interesting developments of these later days is the attention being given by thoughtful Canadians to the progress of their country in directions, hitherto unrecognized, if indeed, not unknown. Recent explorations in what has been termed Northern Ontario, serve as an illustration in point. It has been discovered that there is a large body of salt water almost in the centre of the continent of North America. It is as large, if not larger, than the Baltic or Black seas. It is surrounded on all sides by Canadian territory and it is under Canadian jurisdiction. On its western shore are the remains of a magnificent fort, Fort Prince of Wales, dismantled by the French navigator, La Perouse, years ago. All along its southern, western and eastern shores are the forts and posts of

awaken interest in this district, whilst the publication of a valuable pamphlet by the Ontario Government and the study that has been given to the mineral and agricultural lands in that district by Mr. Blue has gone a long way to spread information.

In the opening out of this territory the proposed James Bay Railway, which has been brought prominently before the people of Ontario within the past year, will help largely, and the Sentinel-Review urges that the Ontario Government take steps to see that no further delay in this respect takes place. This journal says:

"We think it is the duty of the Ontario Government to ascertain the cause of the delay. When they induced immigration they ought to see that the settlers are supplied with the means of easy access. Besides no more effectual means could be taken to dispose of the public lands. If the present James Bay Railway Company are unable to push the line there they ought to



KIEWATIN LUMBER COMPANY'S MILLS AT KIEWATIN.

the Hudson Bay Company. One of them, Moose Factory, is only one or two days journey from the northern settlement in Ontario and would be only one day by rail from Toronto. \$5,000 of Canadian customs were collected at Moose Factory last year, and \$3,000 at Fort Churchill on the western shore. This grand body of water has heretofore been called Hudson Bay after its discoverer. It is suggested by the Woodstock Sentinel-Review that in view of the knowledge that has come into our possession that henceforward this body of water should be called the Canadian Sea.

Who had dreamed that there was within the Province of Ontario not alone an undiscovered sea of this size, but in the same district acres of fertile land? The settlement of a number of French Canadian people from Michigan in the territory has done something to

be assisted, or a charter should be given to another company. The Toronto Board of Trade tried recently, when Sir Charles Wilson was in Toronto, to induce him to build an extension of the Northern into the Northern territory, but he more than hinted that the finances of the Grand Trunk would not admit of it. The policy of the Ontario Government at the present time ought to be northern development, and we feel assured that if Mr. Hardy can have his way we shall see a great change in this respect in the immediate future. We should never lose sight of the fact that every mile of extended settlement to the north draws nearer the fact of a northern sea port for Ontario and a northern base for Canada. Moose Factory is only 500 miles from Toronto, and a railroad is already built to North Bay, 200 miles, leaving only 300 miles to be constructed."

Canadian Mining Interests

BRITISH COLUMBIA'S MINERAL WEALTH.

DISTRIBUTION OF GOLD.—POSSIBILITIES OF SILVER MINING.— OUTPUT OF COAL.

TO speak of the Dominion of Canada from the standpoint of any of its several provinces is to tell of a country rich in industrial wealth, as well as picturesque and beautiful to a degree to win the admiration of the world's widest tourists and most intelligent observers.

INDUSTRIAL CANADA has marked as an important item of its programme the telling of the story of the wonderful resources the Dominion possesses, which await alone capital and effort to give to them complete and successful development.

In a paper contributed to the Journal of the Canadian Bankers Association by Mr. F. M. Black, some valuable information is recorded touching the mineral resources of the Pacific Coast province.

Mr. Black prefaces his paper with a short historical sketch of the province. He remarks:

"When, in 1871, the Province of British Columbia was added to the Dominion of Canada, immediate benefits to each beyond political considerations were but uncertain. That great factor in unity—ease of communication—was lacking, and not supplied for fifteen years. Till then the Dominion had as little practical evidence of the possession of a Pacific Province as if the latter had been situated in South Africa, and the province, in its turn, had to look to San Francisco as a base of supplies, and to expect mails and settlers to be conveyed by way of the United States or Cape Horn. No adequate and inviting means of communication with the interior existed and the country, beyond its borders, was regarded as fit for little but a field for the adventurer and sportsman. But when the Canadian Pacific railroad was successfully completed, a new era began, and, for practical purposes British Columbia as a Province of the Dominion came into existence.

"One hundred years ago the country had just been discovered. Cook and Vancouver had made exploratory voyages along its coasts, to be followed by a few adventurous trading vessels in search of furs. On the same mission came representatives of the North-West and Hudson's Bay Companies, who made their way through dangers and hardships from the east, and have their memories perpetuated in the rivers bearing their names, which brought them to the coast. The territory later came under the permanent occupation of the Hudson's Bay Company, with their headquarters at Victoria, on Vancouver Island, and was named "New Caledonia," and had reached the initial stage of development—that of a "fur country."

"In shape the province, thus first settled, is an irregular parallelogram, lying on the Pacific Coast between 49 degrees and 60 degrees of north latitude, and having an average width of 400 miles. Its area, including that of Vancouver Island—which shelters for 250 miles the more southerly portion of the coast of the mainland—is estimated at 383,300 square miles—a larger area than that of any country in Europe except Russia. The coast line on both island and mainland is sinuous and indented to a remarkable degree. The interior of the country is described by geologists as belonging to the Cordillera belt of the west coast, and comprises the Rocky, Gold and Coast ranges of mountains. The existence of Vancouver Island is due to the appearance of a fourth and submerged range. Between and through these ranges flow the other distinguishing features of the province, its rivers—the Fraser and Skeena and Stickeen, with part of the Columbia and Peace. Separating the basins of the Columbia and Fraser rivers, and extending northward lies an elevated table land: the rest of the province consisting, generally speaking, of alternations between mountain and valley.

"Considerations of and criticisms upon, the state and prospects

of British Columbia must have regard to the fact that accurate knowledge of the country is confined to its southern and coast districts. Much of the northern portion has not yet been surveyed. In consequence of this, and of its present-time inaccessibility, not only has no development there taken place, but its very possibilities are but guessed at. If they prove as great as those in districts already known, no adequate computation of the prospective wealth of the province has yet been made.

"Transition from the standing of a fur country to that of one yielding gold was of a somewhat sudden and unexpected nature, but was what first awakened interest in its possibilities. The gold excitement of 1849, which had brought a motley crowd of adventurers to California, and had scarcely passed its height when a report was spread of gold discoveries on the Fraser river, and in a few weeks thousands were camped at Victoria. Considerable reduction was, however, soon made in their numbers when the difficulties of penetrating beyond the coast were realized. But to the pioneers who remained, British Columbia owes the recognition of that mineral wealth which, from the very configuration of the country, must ever remain its chief resource. While nature has not afforded inducements for settlement in the way of a general and unstinted productiveness, she has laid up—now proved beyond a doubt—vast stores of gold and silver, coal, iron, copper and other minerals, as the reward of enterprise. Her gifts in the matter of forests have been lavish in the extreme, and these are destined in the future to serve as a store for half the world. She has filled the waters with fish, affording most palatable and nutritious food, and has altogether so neutralized the rugged, forbidding features of the country as to fit it for the home of an industrious, wealthy race.

DISTRIBUTION OF GOLD.

"In seeking to trace the progress that has been made towards development of the mineral wealth of the province, gold, the original attractive feature, first claims attention. Its distribution is general—so general that there are few districts which do not show evidence of its presence in at least a small degree. Previous to the great gold excitement it had been discovered and worked in the Queen Charlotte Islands; but from 1858 interest was almost entirely confined to the Fraser river, and the district drained by it. The early prospectors, believing that the fine gold discovered on the "bars" of the lower Fraser was only an indication of richer deposits in the interior, made their way in face of great hardships to the Cariboo districts, some four hundred miles from the sea, and there found their anticipations of rich deposits more than realized. Less primitive methods than those previously in use were adopted, shafts were sunk, tunnels were run, and pumping machinery introduced, with the result that the output of gold of the province for the years 1862-3 was estimated at something over \$1,200,000. The output for 1864 alone was estimated at \$3,735,854, since which year figures have shown a gradual but steady decrease, rising slightly in 1894. Already, however, the province has contributed gold of an approximate value of \$50,000,000 to the stock of the world. For the purpose of comparison the following figures may be taken:

Year.	Value of Gold.
1870	\$1,336,956
1880	1,013,877
1890	491,435
1892	399,526
1893	379,535
1894	456,000

"So far all has been produced by alluvial or placer gold mining, with light appliances, and with supplies and labor commanding almost prohibitive prices. "The cheapening of these essentials," says Dr. G. M. Dawson, of the geological survey, "produced by improved means of communication, and by the settlement of the country, coupled with the attendant facilities for bringing heavy machinery and appliances into use, will enable the profitable working of greatly extended areas."

The increased yield for 1891 may be ascribed to the adoption of heavier plant and systematic methods by a few mining companies which have in the last two or three years been preparing the way for hydraulicizing operations on a large scale, and the season about to open should witness a much greater output from these sources.

"As yet "quartz," or vein mining, has received no practical attention, though evolution in the future towards that from present methods will only be natural. The authority quoted above says the following on this point: "It becomes important to note and record the localities in which rich alluvial deposits have been found. . . . Their existence points to that of neighboring deposits in the rock itself, which may be confidently looked for, and which are likely to constitute a greater and more permanent source of wealth than that afforded by their derived gold." This has been verified in California and Australia, while the Treadwell mine in Alaska pays richly at the rate of \$3 for every ton of quartz mined, and is situated in rock formations identical with those of the coast region of British Columbia.

POSSIBILITIES IN SILVER MINING.

When the Cariboo excitement had waned considerably, and

16th, 1895, 4,641 tons of ore, valued at \$173,000, were shipped from this district alone; while for 1891 the entire value of silver ore shipped from the province was \$793,160, against a yield of silver for the years 1889 and 1890 of an estimated value of \$17,873 and \$73,891, respectively. Hitherto there has been no adequate and permanent means of treating ores in the province, all having to be sent to smelters at Omaha or Tacoma; but a smelter on Kootenay lake commenced operations so lately as the 14th of March, 1895. British Columbia's first export of base bullion ever made was from this smelter on the 17th day of the same month.

"It is a very significant fact that these important developments in silver mining have taken place at a time when silver has commanded an abnormally low market price, and when the industry elsewhere has been exceptionally depressed. It is also remarkable that the majority of the mines are worked by American capitalists and miners with experience brought from the silver mining States, and that the entire products pass directly over the boundary line. Physical features and railroad connections favor this last result.

OUTPUT OF COAL.

Preceding the discovery of gold was the recognition of the



GOLD MINING.

the more profitable diggings had all been worked, some adventurous spirits pushed their way eastward to the wild region in the neighborhood of the Bend of the Columbia, meeting with considerable success, but with more importance attached to ultimate results than to their actual profits. From this district another band, prospecting to the southward, in 1886 accidentally stumbled across an output of ore, which proved to be rich in silver associated with copper. From this discovery dates the opening of the Kootenay district and the development of silver mining therein.

"For a time satisfactory progress was retarded by the exaggerated values placed on claims by their discoverers, themselves without means of opening them up, and by the difficulty in local transport of large quantities of ore. The first obstacle has removed itself naturally, the second is being overcome in construction of trails and short lines of railroad connecting the natural waterways. As late as 1892 3 discoveries of silver ore, phenomenally rich, were made in what is known as the Slovan group of mines, a trustworthy assay of seventeen specimens from which giving a silver average of 178 oz. per ton and a lead average of 61 per cent. From September 13th, 1894, to March

existence of coal on Vancouver Island in the year 1835, from which date small quantities were used for smithy and other purposes by the Hudson Bay Company's agents. In 1850 well defined and extensive deposits were discovered at Nanaimo, and in 1852 actual work began. Further discoveries have since been made, and the coal measures on Vancouver Island alone are estimated as covering 500 square miles. The industry has made steady advances to the present time, the last few years alone showing fluctuations. From 1852 to 1859, 25,400 tons were shipped from Nanaimo, comparative productions since being as follows:

YEAR.	TONS.
1860	14,250
1870	29,850
1880	268,000
1890	678,140
1891	1,029,697

"The output for 1891 has not since been equalled, the nearest approach to it being that of 1891, 1,012,953 tons. In quality the Nanaimo coal is superior to any worked on or near the Pacific coast, and even with price heightened by duty, commands a better market in San Francisco than any duty free

competitor. Diminution in production is not regarded as permanent, being due to trade depression; and the industry has for many years been a staple one, having long been established on a most satisfactory financial basis.

"Coal occurs in many districts throughout the province, ranging in character from anthracites to lignites, but, as far as interior beds are concerned, the difficulty and expense of shipment are so great that little has yet been done toward development. Just beyond the eastern boundary, and on the main line of the Canadian Pacific Railroad, is a valuable anthracite mine in active operation. The survey for the alternative railway line through the Crow's Nest pass proved the existence there of beds phenomenal thickness, while other deposits are elsewhere recognized in proximity to indications of iron.

"Gold, silver and coal, though ever likely to remain the chief factors of mineral wealth to the province, do not by any means constitute all. Large deposits of iron—already worked to some extent—copper, mercury, iron pyrites, plumbago, mica and asbestos are known to exist. Platinum has lately been produced in more considerable quantities than in any other part of North America, and as the province becomes more thoroughly explored, "it seems probable," says Dr. Dawson, "that few minerals or ores of value will be found to be altogether wanting."

THE NICKEL MARKET.

PROSPECTS are encouraging for a heavy demand for nickel in the near future. A cablegram from Germany a fortnight ago asking for quotations on 200 tons of nickel is illustrative of the extent to which nickel will certainly come into use in the manufacture of steel. Armour plates are now being made of nickel steel, and have proven so satisfactory that this material will go into use for this purpose in all countries. The Engineering and Mining Journal of New York says that the demand in the United States for nickel would be larger in the future than in the past as that country has received contracts for armour plate for several Russian vessels and the United States will require a good deal of the metal for the construction of its own new war ships. The Russians have decided on nickel armour plate, and the German cablegram tells that that empire will adopt nickel steel for its war vessels. The World, in an editorial on the question, expresses the conviction that Canadian nickel will probably enter into the construction of nearly every war ship that is built in the future. Do Canadians realize the wealth they possess in the nickel mines in Ontario? The production of nickel in Norway and Sweden, it is claimed, has practically ceased, which leaves a larger field for Canada. The production of nickel in the Sudbury district in 1895 was 4,966,942 pounds, of which 3,138,400 pounds were exported to the United States by the Canadian Copper Co., for refining. The principle part of the remainder was exported to Europe. Recently this metal has declined in price, and current quotations are 24 cents a pound. The position of the mining interests in Canada is of that encouraging character that it warrants the governments of all our provinces putting forth their best thought and energies to lead to their development.

CURRENT OPERATIONS.

Since the 1st of August last to the end of 1895, \$872,947 worth of ore was shipped from Nelson, B. C.

The New Glasgow Gold Co., propose erecting a crusher at their new mine in Country Harbor, N. S.

The mine of the New Glasgow Co., Nova Scotia, gave 59 ounces of gold for the month's mining and crushing and quite a good profit over cost of production.

W. R. White, of Pembroke, Ont., is showing the first result of the milling of one ton of ore from the mine situated at Wahnapitae, in the shape of a nugget 95 per cent. pure gold, weighing 9 oz. 15 dwt., 9 grains, being at the rate of \$100 to the ton. This is the product of the free milling ore, there being an addition for concentrates, tailings, etc., of about \$27 worth more. The milling was done at the Kingston School of Mines.

The Empress gold mine, located at Jackfish Bay, Ont., will be in operation early in February, a ten-stamp mill being on the way from Chicago. It is claimed that this mill is ahead of anything that has been discovered in the district of Algoma to date.

At Trail Creek, B. C., during 1895, there were 2,000 rock claims and 4 placer claims, or an average of one to every unit of the population. Previous to that date there were but 100 recorded. Two hundred and fifteen of these claims have been worked this year.

Gold nuggets continue to be plentiful in the mining regions of British Columbia. A \$160 nugget was recently brought down from Stanley, Cariboo and an \$80 nugget was found in the same district about the same time. It was in the same section that a \$480 nugget was found by a Chinaman, and one for \$400 by a prospector in the bottom of Williams Creek.

A. P. Dickie, of Upper Brookfield, brought to Truro, N. S., recently several samples of quartz containing fine sights of beautiful yellow gold. These specimens were taken out of rock at South Branch, Middle Stewiacke, and there are said to be quite a number of very valuable lots of quartz already mined. From appearances and from reports, the probabilities are that a thoroughly well developed mining district will be located at the Branch.

An interesting pamphlet of nearly 100 pages comes to us from the Secretary of the Northwest Mining Association, of Spokane, Wash., giving a report of the first annual convention held in October last, and telling of a convention and banquet to be held on Feb. 22nd. A healthy business ring runs through the public addresses that augurs well for the future of the mining industry in Washington Territory.

Wm. Scranton, of New York, who has been prospecting on the Island during the past year, is authority for the statement that there are gold bearing leads in Cape Breton, the same having been discovered by him. He has also discovered a vein of ruby silver which shows rich. A correspondent has seen specimens of both. If we are not mistaken this is the first discovery of ruby silver in the province. Mr. Scranton intends returning next year, when he will be prepared to make his discoveries more fully known.

A big mining deal has been concluded by a number of prominent mining men of Ottawa. Messrs. J. W. McRae, Hector McRae, George P. Brophy, John Brophy and S. H. Fleming have purchased what is claimed to be a valuable plumbago property, paying therefore a sum of about \$30,000. The property is located about eight miles from Calabogie, and about 13 miles from Renfrew. It is on the farm of Thomas Moore, on the south shore of Norway Lake, about two miles distant from the Kingston & Pembroke Railway. It was formerly owned by Senator McKenzie. The new owners believe they have a valuable deposit of plumbago and are making arrangements to begin operations early next spring. They intend shipping direct to the English markets.

The estimated shipments of the Dominion Coal Company, of Cape Breton, for 1895 are 767,000 tons (from 1st March, which is the commencement of the company's financial year,) and for the corresponding year of 1894, 920,195 tons, which leaves a decrease this season of 153,195 tons.

		1895.	1894.	Increase or decrease.
Caledonia	Pier	47,602	112,608	65,006 D
Glace Bay	"	38,545	131,355	92,810 D
Gowrie	"	26,741	119,450	92,708 D
International	"	447,176	222,073	225,094 I
Reserve	"	89,243	210,809	121,565 D
Victoria	"	79,984	120,901	40,917 D
Louisbourg	"	37,719	—	37,719 I

Increase—262,822; decrease, 416,066; net decrease, 153,184. At the International pier in 1895, the coal was shipped into 154 cargo steamers, 93 sailing vessels, and 56 bunker boats, making a total of 303 vessels.

= THE ONLOOKER =

THE delight some United States papers take in twisting the tail of the British lion is most laughable were it not childish and silly. Even the religious papers have gone to talking Jingoism, and forgetting the precepts of the Prince of Peace, whom they make pretence to serve, are doing their prettiest to stir up strife and discord. One of the worst offenders in this direction is the Interior of Chicago, the organ of the great Presbyterian church, and the Onlooker admits to enjoying very thoroughly the clever rebuke administered this fire-eating religious editor by the Globe a few days ago. The Interior having in its childish innocence retailed the foolish canard that Great Britain had violated the treaty between the two powers by allowing war vessels on the lakes, having "built six ships of war, rams, with their armaments conveniently disposed on shore, so that they could be armed and commissioned on 24 hours notice," with much dramatic effect asks the question: "Who are these ships, stealthily set afloat on our great lakes intended for?" The Globe's answer merits quotation: "Intended for! Why, bless your innocent heart, they were intended by the newspaper Ananias who built them—armor, guns, rams and all—out of his own teeming imagination, for the delectation of the fighting editors of religious weeklies."

* * *

Another clever rebuke to another silly attack of an American newspaper is before the Onlooker. A week or two since the Buffalo Express, a paper that has a considerable street sale in Toronto, if no where else, published a map showing the British and American possessions on this continent, and to offset the quarter of a million odd square miles that the British exceed the American in extent it describes the former as "largely Arctic wilderness," and the latter as "mostly habitable and fertile." How far wide the statement is of the facts is known to every school boy of either country, and it is a libel on the intelligence of the juveniles, to say nothing of the prevarication of the truth, for this Bison city editor to give it publicity in its columns. But then this is another way some of these fellows have of feeding an ignorant Anti-British feeling that unfortunately has an existence in some quarters of the States.

* * *

Let a brightly written article in the Aylmer Sun deal with this Buffalo newspaper. The Onlooker quotes: "What does it (the Express) think of the vast American desert a thousand miles across in places, and stretching from north to south the whole length of the United States, to say nothing of the granite hills of New England, whose barrenness has driven the Yankee farmer to seek his fortunes in other fields? Did the Express ever look across the river and see Canada? It is quite unnecessary to point out the vast extent of Canada's agricultural domains, but we might indicate some of her resources not so well known to the uninstructed scribe of the Bison city. He talks about Arctic wilderness, but has not our own Dr. Bell, of the Geological Survey, shown us that the whole basin of the 'Nile of the North,' which he has just discovered, may be utilized for the support of a large population, and some day when the Florida farmer grows tired of raising alligators, and the Arizona rustler desires to escape tarantulas or to miss the sight of the strange fruit that sometimes hangs upon western trees, they may settle down to a life of peace and quietness in the inner recesses of the Labrador peninsula."

* * *

"Suppose," continues the Sun, "Canada does possess a few granite rocks among her Laurentide hills. They are only in our back yard, and we keep them along with a few stone-hammers against the day when the vast army of American tramps shall threaten to cross the border. And then in the line of summer residences what more could be desired than Canada

possesses? If President Cleveland had had a cavern chipped out in one of the icebergs of our Polar sea, his hot blood might have been kept below the point of effervescence, and an icicle down his back might have given him as effective a chill as a British gun-boat. What denizen of the Carolina swamps, the morasses of the Gulf states, of the low lying malaria infested states of the Missouri or Mississippi would not rather have a genuine chill from an occasional northerly blast than have his teeth rattled loose, or his spine disjoined by a little mean contemptible ague?"

THE IRON TRADE.

THE Iron Trade Review says:—"Market prospects rather than current transactions are occupying the iron trade of the country to-day. Prices named in connection with late transactions in Bessemer pig and steel billets are not encouraging as to the future; but there are well known circumstances in connection with them that make them no gauge of what may be looked for one month, two months or three months hence. The \$2 coke price is a reality, as has been demonstrated the past week, and it would appear that the circular announcement and contracts agree this time. The diversion occasioned by the statement of the Connellsville interest, second in size, that it would cost at \$1.25, has less significance in view of the fact that 85 per cent. of the Connellsville output is controlled by the Frick Company. The week's developments in finished material are of little import. Some buying of bar iron is promised in inquires already received. Shipments in January are being made to the advantage of the buyer. There is nowhere any great tonnage of business on the backs of the steel mill recently shut down that was not taken before they went out for repairs. Prices have gone still lower on nearly all classes of material. The rail and nail trade stand alone in the maintenance of a figure out of relation to the general readjustment."

At the recent meeting of the South Staffordshire Institute of Iron and Steel Works, Manager Thomas Morris presented some interesting facts about the remarkable achievements that have been reached in the manufacture of fine wire. He pointed out that the Warrington wire manufacturer who presented him with many of the specimens got \$1.32 per pound, or over \$8,600 per ton, for the specimen of drawn wire, which was largely used in the construction of piano and other musical and mechanical instruments. For the pinion wire he got \$21.60 per pound, or \$43,200 per ton. It took 754 hair springs to weigh an ounce of 43½ grains. It took 27,000,000 of them to weigh a ton, and, taking one to be worth a cent and a half, the value of a ton of these apparently cheap little things ran up to over \$400,000. The barbed instrument used by dentists for extracting nerves from teeth was even more expensive, representing a rate of \$2,150,000 per ton. A mile length of No. 19 size wire only weighed 21 pounds, and many of the ingots were 12 to 14 hundred weight each, and after allowing for all waste they could get 50 miles of wire from one ingot.

CANADIAN LUMBER AFFAIRS.

So far as the January Canada Lumberman contains any distinctive feature it is, probably, found in an interesting sketch, with portrait, of the Hon. E. J. Flynn, Minister of Crown Lands for Quebec, in which is given particulars of Mr. Flynn's efforts to develop the timber and mineral resources of that province. In another column we have occasion to give some account of this work ourselves. We ought not to except, as a new and novel feature in class journalism, the publishing of a cartoon on the dressed lumber question, by J. W. Bengough. The point of the question at issue is well made by the cartoonist. A Maritime province correspondent gives some account of the manufacture of chemical pulp in that section of the Dominion, and a pen sketch with illustrations is published of lumbering at Rat Portage.

The town of Goderich is to be credited with a healthy and vigorous desire to add to its manufacturing industries. The Goderich Organ Co., which is an old established concern, is increasing its business widely. Among recent additions to the industries of the town is the Goderich Knitting Co., the outlook of whose business is promising. Goderich has participated in the growing demand for the bicycle by the establishment of the Henderson Bicycle Co., with a model plant, and lots of push behind it. The municipality is also endeavoring to interest capitalists in the manufacture of sodas. The centre of a capital salt district conditions are favorable. It is not unlikely that at an early date the town industries will also be increased by the establishment of a furniture factory.

Industrial Trade Review.

The aim in this department will be to give concisely written reviews of those articles of the month, appearing in the leading industrial journals of the country, that are deemed of most importance to our readers. The busy manufacturer and business man cannot read all the class journals that are published, or even those to which he feels it necessary to subscribe. In this department the plan will be to save his time by doing his reading, giving him the meat and kernel in lines in which he is directly interested.

PROBLEMS IN SANITARY ENGINEERING.

A VALUABLE paper on some sanitary problems connected with the Chicago canal, delivered by Dr. P. H. Bryce, M.A., secretary Provincial Board of Health, before the Engineering Society of the School of Practical Science, Toronto, is published in full in the January Canadian Engineer. Dr. Bryce enters with detail into the character of the Chicago canal. He says: "Lake Michigan has a height of 579.60 feet above sea level at Sandy Hook and is some two feet higher than Lake Huron. The waters of the lake at Chicago are separated from those of Des Plaines River, which flows into the Mississippi River by some two miles only of a water shed. The elevation of this land between the two greatest water systems of the continent is only some 6 or 8 feet, and is, indeed, so little that in the construction of the canal a spill-way on the river Diversion works, has had to be planned, whereby the lower portion of the valley of the Des Plaines will, during flood time, be relieved of the flood waters in the upper reaches of the river, when they exceed 600,000 feet per minute by their being turned into the lake through this aqueduct, some twelve miles long, and 200 feet wide, and having a fall of 6 feet to the mile." Noting the remarkable growth and development of Chicago, remembering that fifty years ago it was a great marshy tract at the head of the lake, with only a few Indian huts here and there, Dr. Bryce suggests that the problem that has naturally asserted itself is how can the sewage of so great a city be diverted, so as to maintain proper sanitary conditions. This is the main point of the paper, and its writer goes on to draw parallels between conditions in Chicago and in other American and Canadian cities, in a measure somewhat similarly placed. He remarks that over 90 per cent. of the cities of over 10,000, of the United States and Canada are situated on navigable waters. Quoting from Dr. Bryce's paper: "At Pullman, 40 miles away, the sewage has for years been purified by irrigating the land; could Chicago have done the same? There were, so it was stated by statistics, during the winter of 1894, 150,000 people unemployed. Everywhere outside of the city, and notably in the valley of the Des Plaines, great tracts of prairie lands are lying uncultivated or nearly so. Is it not a practical question to discuss, whether with some of the engineering skill utilized in making the canal, a system of dealing with sewage by a sewage farm, as at Berlin, Germany, could not have been instituted, which by irrigation would have given employment and homes to many thousand of people now supported by charity, or for public safety by the municipality. The utilization of the waste organic products of cities have become the characteristic work of the great municipal engineers of Britain and Germany, and their labors have made of them philanthropists to a degree which, perhaps, has not to any other class been possible. Should we apply it to the case of Toronto, what would be possible? The utilization of land which bountiful Nature seems to have supplied especially for our needs! Hundreds of acres are lying around Ashbridge's Bay, and acres more forming every year, and demanding our attention. Our beautiful bay is increasingly a cess-pool. Surely when we have thousands of unemployed, permanent employment to hundreds can be given by allowing them to labor at the work of cultivation on a great sewage farm. This is one among many of our unsolved municipal problems. In the other work of the purification of water, we have in Ontario an equally great need, and are, perhaps, at a more doubtful stage. The principles underlying each work are the same, but the reasons urging work forward are different. Each town hopes to be able to dispose of its own sewage cheaply, by simply turning it into the nearest stream, but is often prepared to spend much to purify water polluted by another town. It seems very clear, then, with these facts before us, that as sanitary engineers our energies will be directed with the greatest effect towards designing schemes comprehensive in character, and which, like township drains and irrigation works, are instituted on the assumption that the common need, and not that of some individual, or individual town or city, has interests apart from those of the general community. With the cultivation of such a spirit, it becomes easy to see how, not only intermunicipal and inter-state interests may be provided, but also how the questions of international importance will be found of easy and simple solution."

The Canadian Engineer presents a portrait, perhaps the first that has appeared in print, so the editor suggests, of Thos. Lepold Willson, whose name is prominent in the scientific and mechanical world in connection with the acetylene gas, a description of which is given in another column. Mr. Willson is a Canadian, and deserves prominence for making his country famous in scientific circles. The question of whether gas engines will supercede steam power is discussed, suggested by the remarkably economical results developed in the working of gas engines of from 40-horse power to 500-horse power run by Producer gas. In an economical sense, it is said, steam in comparison, is not "in it." No less an authority than George Westinghouse is seriously looking into this matter. A number of valuable papers dealing with technical phases of engineering will call for careful study by readers directly interested.

CANADIAN BUILDING INTERESTS.

The publisher of the Canadian Architect and Builder is to be complimented on the very handsome January number. Always creditable, and in keeping artistically with the interests it represents the present number far surpasses anything before produced during the nine years existence of this journal, and it will take rank among the best of special issues of class journals published in Canada, or for that matter, elsewhere. A variety of special contributions are published, dealing with, for example, reminiscences of the architecture of Sicily; office methods for architects, what a country builder should know, and points for young contractors.

The annual trade review of the past season's operations in building in Canada possesses a permanent value. We are told that the hopeful feeling that existed at the beginning of the year has not been realized to the extent which could be wished. Business has not experienced that revival which was anticipated and as a result neither corporation nor individuals have felt justified in launching out into enterprises which involved an expenditure of considerable sums of money. Certain individual localities show an increase in the season's operations, compared with 1894, but these are the exception, and like Toronto, which had its big fires, the circumstances that created this extra trade were exceptional. In Toronto 371 permits were issued from the city commissioner's department, representing building to the amount of \$1,316,810. These figures were swelled in the main by the Simpson building, the McKinnon building, the new Globe building, and Jamieson's building, the Foresters' Temple, and several other large contracts. The year 1895 was an exceptionally poor one in Montreal for those engaged in building operations, being even worse than 1894, which was unusually dull. In 1894, 382 permits were issued, representing a value of \$1,634,900, while in 1895 only 109 permits were issued, representing an aggregate value of about \$900,000. Ottawa about kept pace with 1894, the outlay for building being about \$325,000. Hamilton shows a considerable decrease in the value of the buildings erected, the figures of the year totalling \$293,465, a decrease over 1894, of \$113,000. Beyond the new station and freight shed of the Toronto, Hamilton and Buffalo railway and the Hunter St. tunnel for the same line, there is nothing calling for special mention. London had something of a boom in building. 150 buildings were erected at a cost of \$420,000. These included two large Methodist churches, taking the place of two destroyed by fire within a short time of each other, though residences, we are told, predominated a healthy sign. Kingston expended only \$70,000 in building. Belleville made a spurt over 1894, nearly double the amount having been expended on new building, in 1895. Brockville has done better than for some years, the outlay being about \$200,000. St. Thomas had a falling off in the year's operations. Stratford expended \$85,000. Building was brisk in Chatham, probably \$150,000 representing the outlay. \$35,000 was spent in building in Sarnia. Quebec, like its sister city Montreal, showed a further retrograde movement, only some \$350,000 having been expended, of which \$125,000 was on a new city hall. During the last eighteen or twenty years building operations have been very brisk in the principle parts of the Lower Provinces, particularly in the smaller towns and villages of Nova Scotia and New Brunswick. The number of building permits issued in St. John for the year was 82, being one third more than in 1894, and the outlay on the same \$178,475. Halifax reports a considerable increase in the total value of buildings erected, but a larger number of cheap dwellings. About \$650,000 will represent the building done in Winnipeg the past season, \$200,000 of which was expended on putting stone foundations under old buildings with the necessary plumbing, heating and drains. At Brandon the season's building represented some \$20,000; at Minnedosa, \$32,000; at Carberry \$22,000 and at South Edmonton, a four year old town, \$75,000. 1895 was an exceedingly dull year in British Columbia, except, perhaps, in some of the mining centres, and in common with the rest of the country the citizens have not progressed to any marked degree. Vancouver can show new buildings to the

amount of \$100,000, and these are chiefly small cheap dwellings of a speculative class. Only two new buildings of any consequence have been erected at New Westminster, a drill hall of wood costing about \$7,000, and additions to the provincial lunatic asylum, principally for a doctor's residence, cost \$6,000. In Victoria, operations on business and residential properties have been restricted as in other British Columbia towns. A large sum has been expended on government buildings.

THE FIELD OF ELECTRICITY.

In some respects the most valuable paper in the Canadian Electrical News for January is one dealing with central station book-keeping, by Geo. White-Fraser, E.E. The writer is a well-known electrical engineer, and his contributions usually have the hall-mark of business sense. At some length, on other occasions, he has discussed the various problems connected with the management of electrical plants at central stations throughout the country, and his opinion is that there is a lack of good management with many, due to the rapidity with which electrical science has jumped forward, and men lacking the necessary training have been placed in positions of management. He prefaces the present paper, which is one of some length, with the remark: "The keeping of an exact system of accounts is absolutely necessary in any kind of business, if it is to be intelligently followed as a means of livelihood and not as a mere means of passing the time." The electrical field is no exception, and "it behooves every person interested in electricity as a business to keep records, as much for his own guidance as for the advancement of the science." With some degree of fullness Mr. White-Fraser goes on to observe that the application that is of most practical interest to electrical readers "is, of course, to the requirements of public and domestic lighting and to the supply of power both for stationary purposes and for the purposes of locomotion. Putting it differently, it is proposed to show for how little, under favorable circumstances, current may be generated and light or power produced; and next, what method of central station book-keeping will most clearly show how much it costs any individual station to produce current and therefore, how much improvement can be introduced into the operations; what economy can be made and what extra income earned." To illustrate his meaning he says: "Of the coal you buy by the car load some will be wasted by going to dust; a very large proportion of the heat contained in it will go up the chimney without doing any good under the boiler; more will be radiated from steam pipes and cylinders; some condensation of steam in pipes will waste heat; valves may get out of adjustment and allow more steam to be used than is absolutely required for the work to be done; belts will slip; shafting will absorb power; the best dynamo ever made will only give back about 95 per cent. of the power given to its pulley at full load; lines, leaks, transformers, dampers, and consumers will all waste current, and they cannot help wasting some; but the amount thus lost may easily be kept within reasonable limits, if you only know who or what is wasting too much and in what particular way. Book-keeping is necessary not only to show you how much you are making or losing, but to show you where you are losing; where you are not doing as well as you might; what particular piece of apparatus is of poor quality; what particular class of business is worth working up; and until a system of records is kept, not only of wages, coal, and gross receipts, but of wear and tear, leaks, lamps, renewals, etc., no electric lighting business can possibly be intelligently managed." To give instruction how to keep tally of these important matters is the practical purport of Mr. White-Fraser's paper.

An account is given in the same journal of the success of the experiments made in the operation of a 96-ton electric locomotive for hauling freight on the Baltimore and Ohio railway. This locomotive has been running since August last, and the tests made are encouraging to a more extended use of electric locomotives. Arthur W. White, of London, Ont., of the firm of Geo. White & Sons, manufacturers of engines, boilers, etc., was one who enjoyed a ride on the winning moto-cycle in the late Chicago race and he gives some particulars of the event. Mr. White is building an electro-moto-cycle in London and will give it a test at the proposed races in that city on the 24th of May next.

Mr. A. W. Congdon, of the engineering department of the Canadian General Electric Co., at Toronto, was one of the pioneers in the introduction of electricity for lighting purposes in Japan, and he gives some interesting experiences in the land of the Mikado. There are at present in operation throughout that empire about 16,000 lights. The Japanese are very much prejudiced against foreigners and a good deal of business has to be done

through agents. Mr. Congdon says that in cases where it is obligatory upon the Japanese to employ a foreigner their policy is "to pump all the information possible out of him and when the supply is exhausted replace him by a native whose services can be had at a comparatively trifling cost." The average wage for unskilled labor is 15c per day and skilled workmen, such as carpenters, receive 50c. A Jap can live comfortably on 10c a day.

In an editorial note of the News the remark is made that although electricity is very much more widely used for all industrial purposes in the United States than in Europe still the methods of its application in Europe are very far ahead of those in America and the results very much more carefully worked out. In Germany, for instance, it is stated that 80 per cent. of the central stations have auxiliary storage battery plants that were installed at the recommendation of engineers in the employ of central stations themselves, while the storage battery in America is never even thought of in connection with actual practice, and in the Dominion there is even less recognition of its value. Is there an auxiliary storage battery plant in Canada? Again the gas engine is brought into practical and valuable use in England and Germany, where it plays a very small part in electrical operations on this side of the Atlantic.

An interesting description is given of the Winnipeg Electric Street Railway, together with a sketch of its capable manager, Mr. Geo. H. Campbell. This Company operates 16 miles of track, one and a half miles of which is double, laid with 56 pound T rails. The rolling stock consists of 24 motor cars, 10 trailers and 7 excursion cars. The equipments are made up of 15 of the No. 10 Edison double motor type, 4 No. 3 Westinghouse, and 5 improved Sprague.

THE CANADIAN MANUFACTURER.

The current issue of The Canadian Manufacturer might in some sense be termed a political campaign number. It opens with a somewhat lengthy editorial in strong advocacy of Sir Chas. Tupper for Premier. We are told that the High Commissioner "is peculiarly fitted at the present moment by his distinguished record, his great reputation, and his devotion to Canadian interests, to act as leader of the Conservative party. And this is said without any desire to injure the position or minimize the services of Sir Mackenzie Bowell. He is the last active, powerful survivor of the men who made the National policy a fact; who trained this country in the principles of protection; who formed the legislation, which has been so fruitful of good." Following this strong plea for a Tupper-cabinet is an editorial on the fiscal outlook of the country in which the manufacturers of Canada are warned that they "cannot afford to take the present situation quietly or indifferently. They have too long been under the impression that Conservatism and protection, and the people are and must remain united. The crisis at Ottawa shows that other questions than the guarding of Canadian industries may come to the front and perhaps wreck the only party which is prepared to protect the manufacturer and the workmen against hungry competition of our American neighbors. It is an unpleasant thing to say, but this is one that every thinking man knows—one cannot, dare not, trust the Liberal party." Imperial policy absorbs another two columns of our contemporary, whose special mission, we are told, on its title page, is "devoted to the manufacturing interests of the Dominion." It is suggested that Mr. Laurier might find it the part of wisdom to embrace an Imperial policy. To quote: "We are of no party or faction. We support the National Policy as do thousands of Liberals throughout this country, and the Conservative party so far as it carries out the fiscal principle embodied in the National Policy. Mr. Laurier unfortunately seems absolutely pledged against the maintenance of Protection, but he has never denounced, and we hope he never will, the Imperial policy, which is now being commenced by Mr. Chamberlain in England long after its inception in the brain and speeches of the late Sir John Macdonald. This, therefore, is a great opportunity for the Liberal leader. Let him at this critical period proclaim his belief in a general British policy and clear the air for a fair fight upon the direct fiscal issue in which the masses of our people are at this moment most interested." "Cecil Rhodes and South Africa" and "War and Politics," together with some editorial comments and news jottings complete this issue of the Manufacturer.

The Smoke Preventer Company (Limited), with a total capital stock of \$10,000, headquarters at the city of Montreal, is applying for incorporation.

INDUSTRIAL PROGRESS

◀ Gleanings from all parts of the Dominion ▶

Goods valued at \$1,500,000 were exported through Vancouver to the States from the port of Vancouver last year.

The salmon trade in British Columbia is said to have commenced the new year with the advantage of having on hand a stock only sufficient for local requirements.

The new schooner under construction at the Montreal Transportation Company's yards will have three masts, and will have a carrying capacity of 60,000 bushels of grain. When completed the schooner will have cost in the neighborhood of \$50,000.

The agricultural department of Ontario gives the following statistics. The total clip of wool in 1894 was 6,235,036 pounds, valued at \$1,953,721. In 1893 the clip was 5,896,891 pounds, valued at \$1,073,234. The average annual clip for 13 years was 5,560,608 pounds, valued at \$1,035,439.

The people of Winnipeg are interesting themselves actively in the development of the dairy industry, and a meeting was held a fortnight ago in Winnipeg for the purpose of organizing a dairy exchange. The success of dairying in other parts is proving a source of encouragement to Manitoba.

A new produce firm has been established in Winnipeg under the style of Robt. I. Crisp & Co. Premises have been secured at 547 Main St. Mr. Crisp, the head of the firm, who resides at Souris, in this province, has been handling grain and produce for some years, and he has decided to open in Winnipeg in order to conduct the business on a more extensive scale.

Robt. Scott, proprietor of the Shoal Lake Creamery, has gone to Japan with the object of introducing Manitoba butter in that market. It is Mr. Scott's intention to greatly enlarge his factory on his return from Japan in May next, and among other improvements he contemplates putting in a plant for the manufacture of hermetically sealed butter tins with the express object of putting up butter for the trans-Pacific trade.

Statistics for Vancouver, B.C., for the year 1895 show in every instance the increase over the returns of 1894 are large: Following are statistics for 1895:

Imports.....	\$985,452
Exports.....	897,035
Duty Collected.....	300,477
Inland Revenue.....	107,849

Under the provisions of the Ontario Act respecting joint stock companies incorporation by letters patent has been granted to the following:—The Niagara Falls Metal Works Company, with a total capital stock of \$95,000; the persons incorporated being Reuben Cadwell Eldridge, John Alexander McRae and James Barry, contractors; Alex. Fraser, barrister-at-law, and Hubert Marian Eldridge, machinist, all of the town of Niagara Falls.

The opening of the magnificent smelter of the Hamilton Iron and Steel Co., is the occasion of much congratulation by the people of Hamilton. The situation of the works is on the south side of Hamilton Bay, about two miles east of the city limits on a neck of land projecting into the bay, known as Huckleberry Point. Here the Company have 92 acres, 75 of which were given them in fee simple by the corporation of Hamilton, and the remainder of which they acquired.

R. P. Rithet & Co., the extensive British Columbia shipping agents, in their last circular say: "The inquiry for lumber coastwise steadily improves. Tonnage for immediate loading is much wanted and rates are stiffer in consequence, in fact, as regards this branch of the trade the conditions are better than for years past. Practically all of the coast mills both British and American, have combined to control the output and it is expected that prices will be advanced very shortly.

Letters patent of incorporation have been granted to the New Richmond Lumber Co., Ltd., with a total capital stock of \$10,000, headquarters at New Richmond, Que. Powers are given to acquire and own mills, timber lands, and licenses and to acquire and own licenses, cut timber on government and other lands, etc. Those incorporated are as follows: Wm. H. Yuile, manufacturer, John Wyner Wardrope, accountant, David George Wardrope, accountant, W. F. T. Storey, clerk, all of the city of Montreal, and Wm. Lough, lumber merchant, of Ottawa.

The British ship Moulton, 1615 tons, sailed during January from Vancouver for Adelaide with a load of lumber. The Norwegian barque, Crown Prince, also left Vancouver about the same time for the United Kingdom with a cargo of 776,772 fresh rough lumber, valued, at \$13,181. Her destination has been previously advised as Volgaster on the Baltic.

The cargo is said to comprise many long timbers, some being 120 feet and over. The ship Janet Cowan, 2,498 tons, which was chartered to load at Vancouver for South Africa, is reported a total wreck on the West Coast.

A number of Woodstock citizens are applying for incorporation as "The New Barnes Bicycle Co., Ltd., of Woodstock," for the purpose of manufacturing and selling the New Barnes wheel. The capital stock of the company will be \$25,000, all of which is fully subscribed. They have secured the rights for manufacture and sale in the Dominion of Canada of the inventions of Lucien Barnes, of Syracuse, N. Y., and of the armoured tire, the invention of Martin L. Warson, of Buffalo, N. Y. The company will begin manufacturing at once, and will thus provide a new industry for this town.

Letters of incorporation have been granted to the Deschenes Electric Company (Limited), with a total capital stock of \$60,000; to build and operate works to manufacture and produce electricity for lighting, heating and power, and to distribute and sell the same in the town of Aylmer, and other places in the county of Ottawa, in the Province of Quebec, and in the township of Nepean and city of Ottawa, in the Province of Ontario, and also to the Brantford Bicycle Supply Company (Limited), with a total capital stock of \$25,000, headquarters at the city of Brantford; to deal in all kinds of bicycle, tricycle, carriage or other supplies.

At the meeting of rolling-mill men and makers of wire, etc., held in Toronto during the month, no change was made in prices of bar iron. Barbed wire was, however, lowered in price from \$3.50 to \$3.25 per 100 pounds. This was done by Canadian manufacturers, doubtless, to meet the competition of American houses in this article. Some of the discounts of small goods, such as tacks, were altered, the changes being slightly downward. This will, perhaps, serve to ward off competition of United States makers who have been fighting among themselves over list prices, and were the more disposed to attempt Canada as a slaughter market.

Lumber conditions are being helped in British Columbia by the recent combine, and the Central Lumber Co., under which name this is operated, have, it is said, called upon all the mills in the new combine to name the carriers for all cargo orders now in hand. As a result of this action all the available tonnage near by and even some a long way off has been fixed to fill this unusual demand. A general advance in prices being the principal object of the combine, they have taken this measure to guard against any of the members defeating the end in view, by afterwards stating they have orders in hand which were contracted for at the old figures.

Under the management of Mr. Halton, who took over the business in July last, the Dominion Stained Glass Co., of Toronto, is fast regaining rank as the leading stained glass works of the Dominion. During the past season their contracts have been both extensive and numerous, among them being the glass work for churches at Norwood, Schomberg, Whitechurch, Carleton, Fergus and St. Joseph's Convent, Toronto, while the work supplied to domestic dwellings covers a very large range. The firm have in their work shops at the present time a large contract for supplying the glass for St. Michael's Church at Cobourg, which is probably the best glass contract let last year. It includes sixteen figured windows, in which the artistic skill of the firm will be well displayed.

The Finance Minister has laid on the table of the House of Commons a statement showing moneys expended in payment of a bounty on steel billets manufactured in Canada, from pig-iron made in Canada from Canadian ore. It appears that from 31st of March, 1895, to 31st of December, 1895, the Nova Scotia Steel Company, of Pictou, N. S., produced 26,419 tons, and were paid \$52,838. Between the 4th of April, 1895, and January 9th, 1896, the following other amounts were produced and paid for:—Canada Iron Furnace Co., Three Rivers, 4,920 tons, amount paid \$9,840; John McDougall & Co., Drummondville, Que., 629 tons, amount paid \$1,259; Londonderry Iron Co., Acadia Mines, N.S., 14,530 tons, amount paid \$29,061; Nova Scotia Steel Co., Ferrona, N. S., 16,263 tons, amount paid \$32,527. Grand total, 36,344 tons, \$72,688.

The annual statement of the Toronto Street Railway submitted shows a net profit of \$301,310.30, as against a net profit of \$250,695.18 for the previous year. From the profits of this year two dividends at the rate of 1 1/4 per cent. each have been declared, amounting to \$210,000, leaving, after the deduction of an allowance for paving charges amounting to \$60,000, the sum of \$31,310.30 to be carried forward. The directors call attention to the fact in the four years the gross earnings have increased \$172,702.31, while for the same period the operating expenses have decreased \$100,418.50, so that the net earnings show the most gratifying results, having more than doubled within four years, or namely, 118 per cent. of increase. The assets of the company have increased from \$9,562,317.42 last year to \$9,775,511.70 this year.

Jos. Chamberlain, Secretary of State for the colonies, has sent a despatch to the governors of the different colonies with a view of investigating thoroughly the extent to which in each colony foreign imports have displaced or are displacing similar British goods, and the cause of such displacement. Mr. Chamberlain asks them to furnish a tabulated report showing the value and price for 1884, 1889, and 1894, of foreign articles imported, and the reason why they are preferred to British imports. He also desires to receive a return of any products of the colonies that might with advantage be exported to the United Kingdom or other parts of the British Empire, and he asks for information as to the quality, prices, and freight charges that would be useful to British importers.

Manitoba produced a crop of 1,281,354 bushels of flax last year, which the Free Press suggests another great possibility in the future for Manitoba. Flax has only been cultivated a few years. It was first introduced to Manitoba by the Mennonites and their success with it induced a few of the other farmers to experiment on a small scale, the results being highly satisfactory. The quality of flax produced in Manitoba is excellent and its manufacture into oil and meal should become an important branch of industry. The manufacture of linen is also a proposition worthy of serious consideration. It is the opinion of experts that there is no country in the world better suited to the successful manufacture of linen than Manitoba, and there is no reason why the industry, once established, should not become extensive and profitable.

The total traffic of the St. Mary's canal for the year that has just closed is 15,062,580 tons of freight, which is an increase of 14 per cent. over the preceding year, and 16,806,781 tons register, which is an increase of 28 per cent. The canal in preceding years has passed freight as follows:

1894.....	13,195,860
1893.....	10,796,572
1892.....	11,214,333
1891.....	8,400,685
1890.....	9,041,213
1889.....	7,516,022
1888.....	6,411,423
1887.....	5,494,649

In 1895 17,956 craft passed the canal, of which about 96 per cent. were of United States build and ownership. Over 12,490 of these were steamers, many of them the largest size and strongest build. The chief items of freight were as follows: Iron ore 8,062,209 tons, increase 23 per cent.; lumber 749,700,000 feet, increase 2 per cent.; flour 8,902,392 barrels, decrease 1 per cent.; wheat 46,218,250 bushels, increase 33 per cent.; coal 2,574,362, decrease 9 per cent.; pig iron 100,337 tons, increase 65 per cent. Nearly all other commodities handled have shown an increase in some proportion. These comparisons include the traffic of the Canadian "Soo" canal, which was opened for business in September for the first time.

THE MARITIME PROVINCES.

A SERIES of interesting letters on the Maritime Provinces, dealing with that section of the Dominion historically, and also from an economic standpoint, has been written by the Rev. R. F. Dixon. In one of his latest he treats specially of the city of St. John.

"To-day St. John," he says, "is beyond all comparison the most progressive city in the Maritime Provinces. It is admirably laid out in wide, straight streets, and the buildings are good, quite up to the average of any Ontario city. To judge from the crowded and business streets and wharves and places of business, St. John enjoys a large measure of prosperity. But to judge again the doleful accounts of several citizens whom I met, the condition and prospects of the place are anything but reassuring.

"In the first place it is asserted that St. John has never really recovered from the great fire of 1877. The net loss on that occasion is placed on good authority at twenty-five million dollars, another twenty-five million being covered by insurance. This, of course, includes everything, stocks, etc., as well as buildings.

Then there is the decay, and, in fact, the almost total extinction of shipbuilding, to which the following facts, gathered by myself in the course of conversation, very powerfully witness. Twenty-five years ago at least one million dollars per annum was distributed in shipping dividends to St. John; to-day the shipping dividends do not exceed ten thousand per annum. Twenty-five or thirty years ago there were some five hundred shipwrights in the city, and from twenty five to thirty ships were annually built; this year not a single ship was built. And this on a smaller scale has been the experience of scores of places in the Maritime Provinces — of Liverpool, Lunenburg, Shelburne, Parrsborough, Windsor, N. S.; Charlottetown, Georgetown, Souris, P. E. I.; Chatham, Newcastle, N. B., and dozens of other towns. It is the same dreary story everywhere. Towns that once were hives of industry — the homes of scores of prosperous mechanics and hundreds of laborers are now half dead, their wharves rotting away, their work-shops silent and deserted.

"In view of all this, the result of the operation of inexorable economic laws, the wonder to me is not the relative decline of the population of the Maritime Provinces during the past two decades, but the fact that they have preserved themselves from virtual depopulation. No one who hasn't travelled these provinces and seen and heard for himself can form any adequate idea of the terrible drain on their prosperity occasioned by the decay of shipbuilding. I repeat, therefore, that under the circumstances, the fact that during the past ten years there was an actual increase in our population proves the existence of otherwise remarkably healthy conditions.

"And I think this explains the existence of that dissatisfaction with Confederation that undeniably pervades almost all classes in the Maritime Provinces. With Confederation came the rise of the iron steamship and sailing vessel and the decay of wooden shipbuilding. And so the two things have somehow or other got associated in the minds of the average Maritime Canadian. He blames Confederation for what Confederation is no more responsible for than the failure of the lobster or mackerel fisheries."



CUTTING TIMBER.

New Stewart Range

4 HOLES AND 6 HOLES

Twenty-four Sizes and Styles

Perfect Operators

Warranted in every respect

THE JAMES STEWART MFG. CO. LTD.

WOODSTOCK, ONT.

Sold by Leading Dealers in Canada

GODERICH

High Grade
Fine Tone

ORGANS

FOR FAMILIES, SCHOOLS & CHURCHES

The Goderich Organ Co.

GODERICH, ONT.

Send for Catalogue.

BAND SAW MILLS



Do not longer put off enquiring thoroughly into the advantages of the Band over Circular or Gang. They are many and great, and mean a handsome profit, where with circular there is little or none.

We build the new "Allis" Band and everything needed in a modern saw mill. Write us to-day.

WATEROUS, BRANTFORD, CANADA.

ELECTRIC SUPPLIES

LAMPS, WIRES,
CORDS, SWITCHES
and Fittings Generally

GET OUR PRICES BEFORE BUYING

REPAIRS MADE QUICKLY AND AT REASONABLE PRICES

Toronto Electrical Works

33, 35 and 37 Adelaide Street West - TORONTO

DON'T COUGH YOUR LUNGS AWAY

USE EBYS'.....

German Breast Balsam

AND BE CURED OF THE COUGH

Sold by Druggists at 25 and 50 Cents

GORDON, MACKAY & Co.

COR. BAY AND FRONT STS., TORONTO

WOOLLEN DEPARTMENT

Samples on application of our Venetian Worsteds and Serges, which are said to be the best value in the trade

GORDON, MACKAY & Co.

STRENGTH

in Wrapping Paper is what the Storekeeper appreciates—Ours is noted for its long and strong fibre; it will stand more than ordinary wear and tear

The E. B. Eddy Co., Ltd.

HULL, CANADA



DOMINION STAINED GLASS CO.

ESTABLISHED 1881

MANUFACTURERS OF **Ornamental Glass** FOR **CHURCH OR HOME STORE**

Deal direct with manufacturers and save intermediate profits

Correspondence Solicited Estimates with designs on application to the works

94 ADELAIDE ST. WEST,

Telephone 933

TORONTO

Elliott Illustrating Co.

PHOTOGRAPHERS

PHOTO-ENGRAVERS

DESIGNERS

WOOD-ENGRAVERS, ETC.

Illustrations of all kinds for advertising purposes.

25 Years' Experience

Satisfaction Guaranteed

If you require anything in our line, write for prices and suggestions, which will be cheerfully given. Best methods. Low prices.

31 KING ST., EAST,

TORONTO.

DON'T REMAIN IDLE.

Many good men out of employment are anxious to earn an honest living. We want live, energetic and reliable men in every city, town and district in Canada. References required. Write for particulars to "Agents," care of INDUSTRIAL CANADA.

MACHINERY FOR SALE

For saw mills, flouring mills, or machinery for manufacturing purposes of any kind, advertised in INDUSTRIAL CANADA, will be more likely to find purchasers than by any other medium published. It reaches the people interested, and that's what the manufacturers want.

MANUFACTURERS

will find that INDUSTRIAL CANADA will, before three months, reach five times as many of the general public interested in their products than any class journal published. There is no other journal covering the same field, and none that Canada and Canadians will appreciate so much. Use its columns and advertise where your advertisements will do you most good.

INDUSTRIAL CANADA BICYCLE OFFER



**Here's a Chance for any Young Man or Young Woman
to Get a High Grade Wheel for Nothing.**

WITH this number INDUSTRIAL CANADA will have been before the public for only two months. The reception accorded our first issue from one end of Canada to the other has been so spontaneous and so hearty that our most sanguine expectations have been more than realized. We have received letters of congratulation from many readers and from many places. The press of the country from the Atlantic to the Pacific have said many good things about it, and commend our efforts, and along with all these come cheerful and prompt remittances for a year's subscription.

ITS IMMENSE WORTH.

These evidences of appreciation, and of the immense worth of the journal to Canada and to Canadians, prompt us to greater efforts. Last month we issued five thousand copies. This month that number has been increased. We want to make our list ten thousand within a few months, and before we are a year old to raise it if possible to twenty five thousand.

IT IS NOT SECTIONAL.

INDUSTRIAL CANADA is the only journal of its kind in the Dominion. It is not sectional; it covers every province and every territory. It is the only journal devoted to the dissemination of information concerning not only the settled portions but the explored and unsettled districts—the resources and development of the country, and the upbuilding of its industries.

PATRIOTIC CANADIANS.

We are convinced that to secure 10,000 subscribers promptly it will merely be necessary to bring INDUSTRIAL CANADA to the attention of that number of live, wide-awake, patriotic Canadians—and there are tens of thousands of them in this country if they would only wake up to the fact that they are Canadian, that this country belongs to Canadians, and that it is the grandest and best country under the sun.

A REMARKABLE OFFER.

It should be enough to show a copy of INDUSTRIAL CANADA, point out its aims and objects, and mention the annual subscription price, one dollar, in order to secure a subscriber. Realizing this we have determined to make a remarkable offer with a view to enable any young man or young woman who is willing to put in a few days persistent effort, to assist us in securing a list in every community in Canada.

A HIGH GRADE WHEEL.

We offer to any one sending us the names of one hundred and fifty yearly subscribers to INDUSTRIAL CANADA, accompanied by one dollar for each subscription, a high-grade lady's or gentleman's GREYHOUND BICYCLE, manufactured by the well-known Canadian manufacturers, the Central Machine Works, Toronto. The Greyhound wheels are designed and made by as accomplished bicycle experts as there are in Canada. They are the highest of high grades, and are never sold under one hundred dollars.

A LIST OF ONE HUNDRED AND FIFTY.

One hundred and fifty subscribers seems like a good many, and it would be if you were taking orders for a two-dollar or three dollar publication, or for one where every third or fourth person you called upon was already a subscriber, but with INDUSTRIAL CANADA at one dollar, containing timely and well written reading matter and illustrations every month, a list of one hundred and fifty names is indeed small, and should be secured in a short time.

BY THE FIRST OF APRIL.

Any popular young lady or young man who will begin at once will soon find their friends assisting them, and by the first of April or before the opening of the wheeling season, can have a wheel of her or his own for nothing, outside of the brief effort required to get up the list. Two six months subscriptions at 50 cents will count as one yearly. Bear in mind the wheel we will supply you will be high grade and up to date.

DON'T SAY YOU CAN'T.

As we mean business and make you a great big offer, we want immediate responses from each person who decides to go to work. Don't say you can't do it, but make up your mind that after all it will require but a determined effort and but a few days labor. Sample copies for canvassing and instructions will be supplied on application. Address INDUSTRIAL CANADA, Toronto, and write us at once.

If through any circumstance any canvasser should fail to secure the required list of 150 subscribers, we will give a Bicycle for 125 subscriptions and \$15.00 cash; 100 subscriptions and \$30.00 cash; 75 subscriptions and \$45.00 cash, or 50 subscriptions and \$60 cash. If you prefer to canvass for INDUSTRIAL CANADA for a Cash Commission, write us for terms.

ASSESSMENT SYSTEM **1884=1896** MUTUAL PRINCIPLE

SOUND LIFE INSURANCE AT LESS THAN HALF OF USUAL RATES



**DEATH AND DISABILITY PROVIDED FOR
AN ACCUMULATING RESERVE FUND LIMITS ASSESSMENTS
EXPENSES DEFINITELY STATED**

POLICIES IN FORCE, OVER . . . 8,000
PAID IN DEATH CLAIMS . \$500,000.00

Incorporated under R.S.O. Cap
165, 1877. Registered under Dominion
Insurance Act. Registered under
Insurance Corporation Act.
Registered under Manitoba Insur-
ance Act.

INSURANCE IN FORCE, over \$13,000,000.00
SURPLUS OVER LIABILITIES, 120,000.00

The

PROVINCIAL PROVIDENT INSTITUTION

ST. THOMAS, ONTARIO

...Managing Officers...

GEORGE K. MORTON	<i>President</i>	JOHN BAIRD	<i>Treasurer</i>
HENRY LINDOP	<i>Vice-President</i>	G. R. PENNINGTON	<i>Director</i>
COLIN MACDOUGALL, Q.C.	<i>Solicitor</i>	DUNCAN McLARTY, M.D.	<i>Medical Director</i>
E. S. MILLER			<i>Secretary</i>



...AGENTS WANTED...

We want reliable men to handle our work throughout the Dominion. The popularity of our plan enables an agent to profitably write very much more business than can be secured, with the same effort, for any other company. We give **Liberal Contracts to Good Men** that will permanently retain their loyal services. No experienced agent, open for engagement, can afford to neglect such opportunities as are presented by our organizing work in new territory.

Apply to

E. S. MILLER, Secretary,

P. O. Box 2000, St. Thomas, Ont.

CIRCULARS AND INFORMATION FURNISHED ON APPLICATION