

PAGES

MISSING

The Service of the Telephone —



THE KELLOGG SWITCHBOARD AND SUPPLY COMPANY HAVE BEEN IN BUSINESS SINCE 1897 — SIXTEEN YEARS. THIS IS A SURPRISINGLY SHORT, TIME JUDGING FROM THE REPUTATION OF "KELLOGG" APPARATUS.

OUR EQUIPMENT IS USED IN MANY FOREIGN CITIES AS WELL AS THOUSANDS OF PLACES IN UNITED STATES.

THE REASON OF THIS WIDE SPREAD POPULARITY IS SIMPLY THAT WE HAVE THE BEST ENGINEERING TALENT, THE MOST SKILLED WORKMANSHIP AND THE HIGHEST GRADE MATERIAL IN EVERY PIECE OF APPARATUS WE PUT OUT.

IF YOU ARE A TELEPHONE MAN YOU WILL BE INTERESTED IN OUR BULLETINS. LET US SEND THEM.

Proves the Worth of the Line.

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

MAIN FACTORY & OFFICE, - CHICAGO.

CANADIAN SALES OFFICES:

DEERING ELEC. Ltd., Regina, Sask.

HOUSTON & CO. Ltd., Winnipeg, Man.

B. C. HOLST & CO., Vancouver, B. C.

BUYERS' DIRECTORY

ACCOUNTANTS.

Gamble & Gladwell.
McIntosh & Hyde.
Ross, H. J.
Stein & Co.

AIR COMPRESSORS.

Belliss & Morcom.

ARTIFICIAL STONE.

Roman Stone Co.
Morrison Co., T. A.

AUTOMATIC TELEPHONES.

Canadian Machine Telephone Co.

BARRISTERS.

Lighthall & Harwood.

BATTERIES, DRY.

Canadian Independent Telephone Co.

BELTING.

McLaren Belting Co., J.C.

BOILERS.

Babcock & Wilcox.
Robb Engineering Co.
Waterous Engine Works Co.

BONDS, ETC.

Bank of Montreal.
Bank of Ottawa
Bank of Toronto.
Brent, Noxon & Co.
Canada Securities Corpor'n.
Can. Bank of Commerce.
City & District Savings Bank.
Dominion Bond Co.
Domion Securities Corp.
Imperial Bank.
Merchants Bank.
Ross, H. J.
Wood, Gundy & Co.

BRIDGES.

Canadian Bridge Co.
Cleveland B. & Eng. Co.
Dominion Bridge Co.

CABLES.

Brit. Insulated Co.
Can. Indep. Telephone Co.
Imperial Wire & Cable Co.
Phillips Elec. Works, E.F.
Standard Underground Cable Co. of Canada, Ltd.

CAST IRON PIPES.

Can. Iron Corporation.
Canadian Fairbanks Morse Co.

CEMENT.

Canada Cement Company.

CONCRETE STEEL DAMS.

Ambursen Hydraulic Const. Co.

CONCRETE MIXERS.

Canadian Fairbanks Morse Co.
London Concrete Machy. Co.
Mussens, Limited.

CONCRETE REINFORCEMENT

Can. Wire & Iron Goods Co.

CULVERTS.

Pedlar People.

DUST PREVENTIVE.

Barrett Mfg. Co.

ELECTRIC MOTORS.

Northern Elec. & Mfg. Co.

ELECTRIC WIRE.

Can. British Insulated Co.
Canadian Indep. Teleph. Co.
Canadian Machine Teleph. Co.
Imperial Wire & Cable Co.
Phillips Electrica Works, E.F.
Standard Underground Cable Co. of Canada, Ltd.

ELECTRICAL SUPPLIES.

Northern Elec. & Mfg. Co.

ENGINES.

Babcock & Wilcox
Bellis & Morcom.
Robb Engineering Co.
Waterous Engine Works Co.

ENGINEERS & CONTRACTORS.

Aqueducts, Limited.
Austen & Chapdelaine.
Barrow, E. G.
Bayfield & Archibald.
Beaubien, De Gaspé.
Bowring & Logan.
Bowman & Connor.
Brandeis, Charles.
Brown, W. M.
Burnett, Geoffrey K.
Can. Inspection and Testing Laboratories.
Cartwright, Mathieson & Co.
Chipman & Power.
Cleveland & Cameron.
Dietrich, W. N.
Dutcher, Foreman & Gregory
Fairchild, Jones & Taylor.
Francis, Walter J. & Co.
Frew, J. F.
Fuze & Scott.
Galt Eng. Co., The John
Higman & Doctor.
Isdale, John S.
Jacobs & Davies, Incp.
Keefer & Keefer.
Laurie & Lamb.
R. S. Lea and H. S. Ferguson
Leofred, A.
Mace, T. Harry.
Mather, Yuill & Co.
McConnell, B. D.
McCulloch, A. L.
Moon & Silverton
Murphy & Underwood.
Murray, T. Aird.
Phillips, Stewart & Lee.
Potter, Alex.
Ross & Co., R. A.
Smith, Kerry & Chace.
Surveyer & Frigon.
Topp, Charles H.
Wright, P. Mortin.
Young, C.R.

ENGINEERS, TELEPHONE.

Clement, Edw. E.
Dagger, F.
McMeen & Miller..
Zabel, Max. W.

ENGRAVERS.

Amer. Bank Note Co.

FIRE ALARMS.

Northern Elec. & Mfg. Co.

FIRE DEPT. SUPPLIES.

H. K. Martin.
Waterous Engine Works Co.

FIRE ENGINES.

Waterous Engine Works Co.

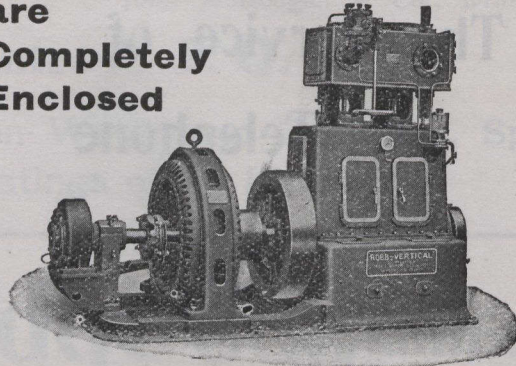
GAS ENGINES.

Can. Fairbanks-Morse Co.

For Cleanliness and the
Protection of Moving Parts

ROBB COMPOUND ENGINES

are
Completely
Enclosed



INTERNATIONAL ENGINEERING WORKS, Ltd.

Owners of works formerly of

ROBB ENGINEERING COMPANY

Works: AMHERST, N. S., CANADA
South Framingham, Mass.

SOLE CANADIAN AGENTS FOR

C. A. Parsons & Co., Newcastle-on-Tyne

Turbines, Turbo Electric Generators, Turbo Pumps, Blowers
and Compressors

39-17

THE DOMINION WOOD PIPE COMPANY LIMITED

New Westminster, B. C.

Manufacturers of

DOUBLE WIRE WOUND



AND

Cast Iron Specials, Valves, Hydrants, Etc.

WELL DRILLING

TOWN WELLS A SPECIALTY

We have the latest scientific instruments for locating subterranean
water courses before drilling.

If you need water, you need us.

SASKATCHEWAN WELL DRILLING CO.
ROULEAU, SASK.

Eugene F. Phillips Electrical Works,
LIMITED
MONTREAL, - - TORONTO

**Bare and Insulated Electric Wire,
Electric Light Line Wire,
Incandescent and Flexible Cords,
Railway Feeder and
Trolley Wire.**

Jail Cells



We are Headquarters for all Classes of
PRISON WORK
Our Village and Town cells are all equipped
with our Patented Automatic Locking Device
No Padlock to bother with.

Inquiries Solicited
Canada Wire & Iron Goods Co.
HAMILTON, Ont.

THE PRINTERS OF THIS JOURNAL

The MODERN PRINTING COMPANY

STUDY THE BUSINESS INTERESTS OF THEIR
CUSTOMERS

RING UP MAIN 111 OR 112

and their Representative will wait upon you at your
convenience, and it may be a few minutes of your
time will result in a marked improvement in
your Stationery or Advertising Departments.

UPON EVERY OCCASION
GET IN TOUCH WITH

The MODERN PRINTING COMPANY

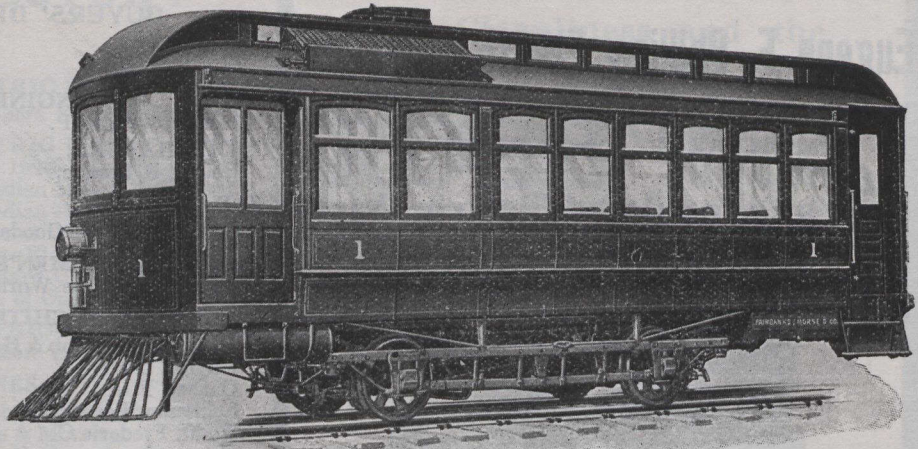
39 DOWD STREET, - MONTREAL

BUYERS' DIRECTORY.—Continued

- ILLUMINATING ENGINEERS.**
Morton-Wright, P.
- INCINERATORS.**
Heenan & Froude.
- JAIL CELLS.**
Can. Wire & Iron Goods Co.
- LADDERS, FIREMEN'S.**
Waterous Engine Works Co.
- LANDSCAPE ARCHITECTS.**
Dunnington-Grubb & Harries.
Haylor, Guy W.
Outhet, F. A.
Schlemm, Leonard E.
Todd, Frederic G.
- LAW BOOKS.**
Carswell Co., The.
- LEATHER BELTING.**
McLaren Belting Co., J. C.
- LITHOGRAPHERS.**
Amer. Bank Note Co.
- LUMBER.**
Naugle Pole & Tie Co.
Partridge-Dyer L. Co.
Valentine-Clark Co.
- METAL CULVERTS.**
Pedlar People, The
- METERS, WATER.**
Buffalo Meter Co.
- MUNICIPAL FORMS.**
Modern Printing Co.
- MUNICIPAL VAULTS.**
Office Specialty Co.
- NUMBERS.**
Davidson Mfg. Co., Thos.
Warminton, J. N.
- ORNAMENTAL IRON.**
Can. Wire & Iron Goods Co.
- PAVEMENTS.**
Canada Cement Company.
Carritte-Paterson Mfg. Co.
Paterson Mfg Co.
- PATENTS.**
Clement, Edw. E.
Munn & Co.
- PIPE, IRON.**
Can. Fairbanks Co.
Can. Iron Corporation.
Martin & Co., Jos. R.
- POLES.**
Naugle Pole & Tie Co.
Partridge-Dyer Lumber Co.
Valentine-Clark Co.
- POLICE SUPPLIES.**
H. K. Martin.
- PUBLIC ACCOUNTANTS**
Gladwell, Wilson & Co.
Ross, H. J.
Stein & Co.
- PRINTERS.**
Modern Printing Co.
- PUBLISHERS.**
Carswell Co., The.
- RAILINGS.**
Can. Wire & Iron Goods Co.
- ROAD MACHINERY.**
Amer. Road Mach'y. Co.
Morrison, T. A. & Co.
Mussens, Limited.
Waterous Engine Works Co.
Wettlaufer Bros.
- ROAD PRESERVATIVE.**
Carritte-Patterson Mfg. Co.
Patterson Mfg. Co.
- ROAD ROLLERS.**
Hamilton Mach'y Co.
Morrison, T. A. & Co.
Mussens, Limited.
Waterous Engine Works Co
- SCIENTIFIC INSTRUMENTS**
Isdale, John S.
- SEWER PIPE.**
Dominion Sewer Pipe Co.
Morrison, T. A. & Co.
- SEWER PIPE MOULDS.**
London Concrete Machy. Co.
Wetlanfer Bros.
- STAIRCASES.**
Can. Wire & Iron Goods Co.
- STEAM ENGINES.**
Babcock & Wilcox, Ltd.
Belliss & Morcom.
Robb Engineering Co.
Waterous Engine Works Co.
- STEAM FIRE ENGINES.**
Morrison, T. A. & Co.
Waterous Engine Works Co.
- STONE.**
Roman Stone Co.
- STREET NAMES.**
Davidson Mfg. Co., Thos.
Warmington, J. N.
- STREET SPRINKLERS.**
Mussens, Limited.
- STRUCTURAL STEEL.**
Canadian Bridge Co.
Cleveland Bridge & Eng. Co.
Dominion Bridge Co.
National Bridge Co.
Structural Steel Co.
Belliss & Morcom.
- SUCTION GAS PLANTS.**
Can. Fairbanks-Morse Co.
Mussens Limited.
- SUPPLIES & MACHINERY.**
Morrison, T. A. & Co.
Mussens, Limited.
Waterous Engine Works Co.
- TELEPHONES.**
Canadian Indep. Teleph. Co.
Canadian Machine Teleph. Co.
Garrioch, Goddard & Co.
Kellogg S. & Supply Co.
McMeen & Miller.
Northern Elec. & Mfg. Co.
- TURBINES.**
Belliss & Morcom.
Robb Engineering Co.
- VAULTS, SAFETY.**
Office Specialty Co.
- WATER WORKS SUPPLIES.**
Buffalo Meter Co.
Can. Fairbanks Morse Co.
Can. Iron Corporation.
Mussens, Limited.
Dom. Wood Pipe Co.
- WELL DRILLERS**
Sask. Well Drilling Co.
- WIRE, ELECTRIC.**
Imperial Wire & Cable Co.
Phillips Electric Works, E.F.
Standard Underground Cable
Co. of Canada, Ltd.
- WINDOW GUARDS.**
Can. Wire & Iron Good
- WOOD STAVE PIPE.**
Dom. Wood Pipe Co.

Saves the Cost of Poles and Power

The No. 24 Fairbanks-Morse Gasoline Motor Car shown here is a self-contained power plant, as easily controlled as an electric car, and far more economical. It is designed for passenger service and has a seating capacity for 35 people. The body is divided into two compartments, the rear having reversible seats upholstered in rattan, and the forward compartment containing engine and having ample room for light baggage and express, or can be used as a smoking compartment, as it is arranged with side drop seats.



FAIRBANKS-MORSE GASOLINE MOTOR CARS

Are very economical and efficient equipment for branch lines, feeders, etc. They are now in successful operation on many parts of the Continent. The cars we have in use in Winnipeg are giving splendid satisfaction.

In sparsely settled districts, or for connecting adjacent towns, the gasoline motor car is the most logical solution of efficient and satisfactory service. Not only is the first cost of the equipment low, but these cars will

operate on a fraction of the expense of the steam train. As compared to the electric line they require no poles, wiring, power house, or other expense except when actually running.

These cars are regularly equipped with air brake and hot water heating system. Maximum speed about 30 miles per hour.

Write us for specifications and catalogue.

The CANADIAN FAIRBANKS-MORSE COMPANY Limited

444 St. James St., Montreal

The Efficiency of Your Fire Department —

would be greatly improved if you had a modern fire alarm system.

¶ The importance of an efficient alarm system is recognized by the largest cities in the world, that have the best equipped and trained fire departments.

¶ If so much importance is placed on the signal system where the fire-fighting equipment is the best to be had, isn't it more important that a good call

system be installed where there is little or no equipment for fighting fires?

¶ Years of actual service have earned for our fire alarm equipment a reputation for reliability and efficiency.

¶ Ninety-nine per cent. of the municipal fire alarm systems installed throughout the country have been installed by us.

*Write to our nearest house
for prices and particulars.*

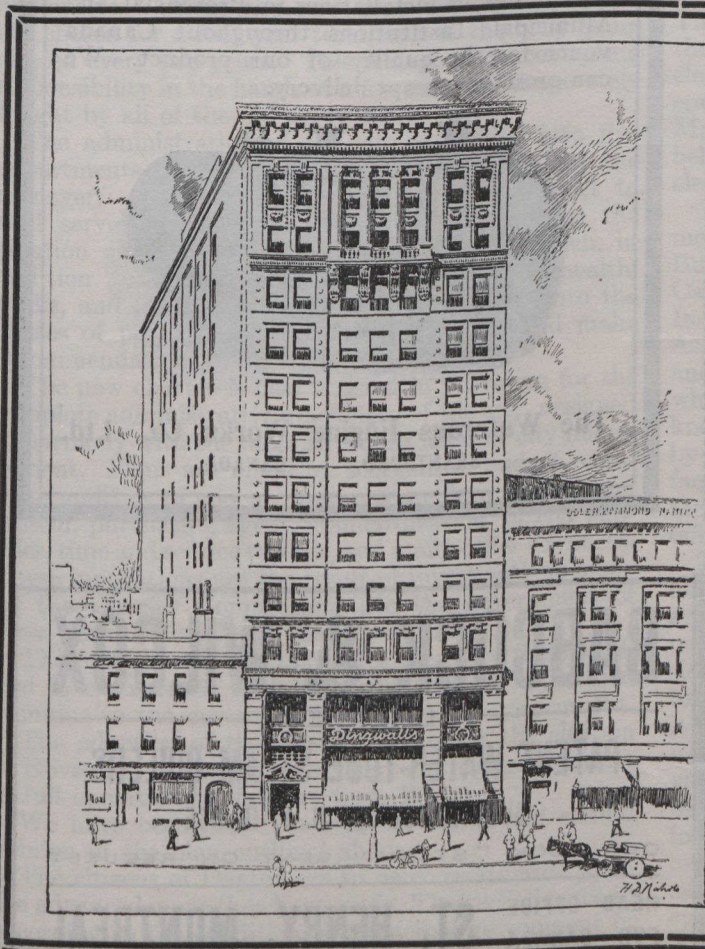
THE Northern Electric
AND MANUFACTURING CO. LIMITED

Manufacturer of Telephone and Fire Alarm
Apparatus and Distributor of Electrical
Supplies for every possible need.

MONTREAL HALIFAX TORONTO WINNIPEG
REGINA CALGARY EDMONTON VANCOUVER

ALPHABETICAL INDEX OF ADVERTISERS

	PAGE		PAGE		PAGE
Ambursen Hydraulic Cons. of Can.....	368	Dunnington-Grubb & Harries.....	379	Naugle Pole & Tie Co.....	367
American Bank Note Co.....	373	Dutoher, Maxwell & Co.....	377	Northern Electric & Mfg. Co.....	344
Aqueducts, Limited.....	376	Fairechild, Jones & Taylor.....	378	Office Specialty Co.....	346
Austen & Chapdelaine.....	377	Francis Walter, J. & Co.....	375	Outhet, R. A.....	379
Babcock & Wilcox, Limited.....	346	Frew, J. F.....	376	Partridge Dyer Lumber Co.....	367
Bank of Montreal.....	372	Fuce & Soott.....	376	Paterson Manufacturing Co., Limited.....	363
Bank of Ottawa.....	371	Galt, Eng., Co., The John.....	378	Phillips Electrical Works, Eug. F.....	343
Bayfield & Archibald.....	374	Gladwell, Wilson & Co.....	368	Phillips, Stewart & Lee.....	378
Beaubien, DeGaspé.....	376	Higman & Doctor.....	375	Potter, Alexander.....	377
Bellis & Morcom.....	369	Haylor, Guy Wilfrid.....	379	Robb Engineering Co.....	342
Bowman & Conner.....	370	Imperial Bank of Canada.....	371	Robertson Limited, J. M.....	377
Bowring & Logan.....	377	Imperial Wire & Cable Co.....	345	Roman Stone Co., Limited.....	370
Brandies, Charles.....	376	Isdale, John S.....	375	Ross, H. J.....	370
Brent, Noxon & Co.....	371	Jacobs & Davies.....	378	Ross & Co., R. A.....	374
Brit, Insulated & H. Cables Ltd.....	367	Keefer & Keefer.....	376	Royal Bank of Canada.....	372
Burnett, & McGugan.....	379	Kellogg Switchboard & Supply Co.....	341	Saint-Cyr, J. B.....	374
Canada Cement Co... Cover Page.....	2	Laurie & Lamb.....	374	Sask. Well Drilling Co.....	342
Canada Iron Corporation.....	380	Lea, R. S. & H. S. Ferguson.....	375	Schlemm, Leonard E.....	379
Canadian Bank of Commerce.....	372	Lighthall & Harwood.....	370	Smith, Kerry & Chace.....	376
Canadian Bridge Co., Ltd.....	380	London Concrete Machinery Co... Cover Page	4	Standard Underground Cable Co., of Canada.	367
Canadian British Insulated Co.....	367	Leofred, A.....	376	Stein Co., W. T.....	367
Canadian Fairbanks-Morse Co.....	344	Martin & Co., Jos. R.....	368	Surveyer & Frigon.....	374
Canadian Wire & Iron Goods Co.....	343	Mather, Yuill & Co.....	378	Todd, Frederick G.....	379
Can. Independent Telephone Co., Limited.....	366	McLaren Belting Co., J. C..... Cover Page	4	Topp, Charles H.....	374
Can. Inspection & Testing Laboratories.....	375	McMeen & Miller.....	378	Trussed Steel Concrete Co.....	369
Carswell Co., The.....	368	McCulloch, A. L.....	374	Valentine-Clark Co.....	367
Carritte-Paterson Manfg. Co.....	363	McIntosh & Hyde.....	346	Warmington, J. N.....	380
Cartwright, Matheson & Co.....	375	Merchants Bank of Canada.....	372	Waterous Engine Works Co., Limited.....	346
Chipman & Power.....	375	Modern Printing Co.....	343	Wood, Gundy & Co.....	373
City & District Savings Bank.....	371	Moon & Silverton.....	376	Wright, P. Morton.....	379
Cleveland Br. & Eng. Co..... Cover Page	4	Morrison & Co., T. A.....	370	Young, C. R.....	371
Clement, E. E.....	378	Murphy & Underwood.....	377		
Cleveland & Cameron.....	374	Murray, T. Aird.....	377		
Dagger, F.....	378	Mussens, Limited... Cover Page	3		
Davidson Mfg. Co., Ltd., The.....	380				
Dietrich, Limited.....	375				
Dominion Bridge Co., Limited... Cover Page	4				
Dominion Securities Corporation.....	373				
Dominion Sewer Pipe Co., Limited.....	380				
Dominion Wood Pipe Co.....	342				



Across Canada with the

**IMPERIAL
WIRE & CABLE
COMPANY
LIMITED**

Toronto - MONTREAL - Winnipeg

THIRD of a series of advertisements showing buildings of National importance which have been wired with the Imperial Wire & Cable Co.'s Limited wires.

This picture shows

THE McARTHUR BUILDING, Winnipeg

This building was wired with "30% PARA" Rubber Insulated Wire.

Architect: J. H. G. Russell, Winnipeg.
Engineer; Charles L. Pillsbury, Minneapolis, Minn.
Electrical Contractors: Mitchell-Gray Electric Co., Winnipeg.

Address enquiries to nearest office

MONTREAL TORONTO WINNIPEG

Enquiries from Alberta and British Columbia may be addressed to Northern Electric & Manufacturing Co., Limited, Calgary and Vancouver.

"ADANAC" "IMPERIAL HIGHGRADE" and "30% PARA"

TORONTO
85 Bay St.

CALGARY
Molsons Bank Chambers

WINNIPEG
173 Portage Ave. East

MACINTOSH & HYDE

Chartered Accountants

ESTABLISHED 1835

157 ST. JAMES ST., - MONTREAL

Municipal Accounts Organized, Reported Upon or Audited.



Modern Methods in Business

BUSINESS MEN are realizing more and more that successful results are only achieved by systematic effort. More particularly is this recognized in the matter of Filing and Record-Keeping duties.

Office Specialty Filing and Record-Keeping Systems pay dividends in the form of increased efficiency wherever they are installed. May we have the opportunity of convincing you of the value of Office Specialty Saving Systems?

Head Office:

97 WELLINGTON STREET WEST, TORONTO.

Filing Equipment Stores:

Montreal, Ottawa, Halifax, Winnipeg, Calgary,
Edmonton, Vancouver.

Factories: NEWMARKET, Ont.

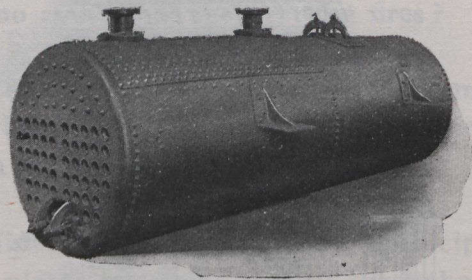
MAKERS OF HIGH GRADE FILING CABINETS
OFFICE SPECIALTY MFG. CO.
LIMITED
AND OFFICE FURNITURE IN STEEL AND WOOD
CANADA

WATEROUS BOILERS

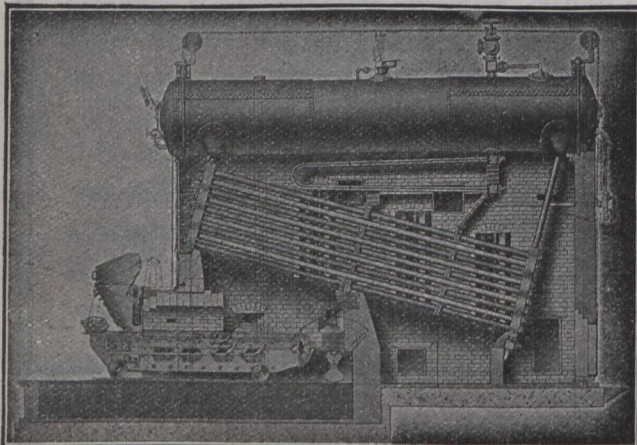
Waterous Return Tubular Boilers are unexcelled for use in Municipal Power and Pumping Plants, and for the production of steam for general heating purposes.

We build all sizes from 40" x 10' to 72" x 18', and can supply them complete for any kind of installation.

Our numerous installations in Provincial and Municipal Institutions throughout Canada vouch for the quality of our product. We can promise prompt delivery.



The Waterous Engine Works Co., Ltd.
BRANTFORD, CANADA.



BABCOCK & WILCOX

LIMITED

PATENT WATER-TUBE STEAM BOILERS

OVER 10,000,000 H. P. IN USE

OUR BOOK "STEAM" SENT ON REQUEST

HEAD OFFICE FOR CANADA **ST. HENRY, MONTREAL**

Branch Office: TRADERS' BANK BUILDING, TORONTO

THE CANADIAN MUNICIPAL JOURNAL

AND REVIEW OF CIVIC IMPROVEMENT

HARRY BRAGG, EDITOR

A Commission and a City Manager

On August 12th, the citizens of Dayton, Ohio, followed the example set by Galveston after its catastrophe and adopted a decidedly new type of municipal government. The new charter provides for the short, non-partisan ballot, a city manager, and a legislative commission, and is said to be the most advanced charter ever adopted by an American city. Dayton is the first city of any size in the country to acquire a city manager in place of a multitude of elected officers, and the first to combine the best features of the old commission plan with the manager idea.

The Dayton Charter provides for five commissioners who will have purely legislative functions; the administration of the city's business being left to a trained city manager employed by them. There is no diffusion of responsibility as seen in the straight commission plan where each commissioner is in active charge of a department. To complete the balance of power, the people are given the right of the initiative, referendum, protest and recall.

An integral part of the Dayton plan of government is the short non-partisan ballot and the elimination of ward lines. At the same time a long list of petty offices are taken off the ballot and made appointive. Under the new plan the commissioners are chosen for a four year term, half of the body being elected every two years. This feature of concentrating responsibility in the hands of a few men was desperately fought by all of the old party machines.

The administration of the city is divided into five departments, the heads of which are appointed by the manager. All remaining city officers are subject to civil service appointment. A unique feature is the creation of a department of social welfare, which, in addition to supervising the departments of health, parks, and playgrounds, must make inquiries into the causes of poverty and disease in the city, and make recommendations to the legislative body.

The new charter is also unusual in providing for the complete administrative machinery of the city, designed in harmony with the most advanced ideas of city management. Plans are made for a scientific budget, complete auditing of city accounts, a modern accounting system, purchasing agent, standardization of city supplies, time and service records, and many other advances. These innovations are the result of investigations made by the Charter Commission into the government of New York, Philadelphia, and Cincinnati.

The new charter will take effect January first, 1914, and it is expected that its results will be a decided stimulus to the movement for better city government.

The adoption of this charter will mean the election in November of five commissioners and the government in full operation by January first, 1914.

We have been asked to give our frank and candid opinion of the plan outlined above.

The citizens of Dayton are to be congratulated upon the advanced move they have made. That is "advanced" according to the condition of municipal government in sister cities in the United States.

But it is almost amusing to read of "new departures" in civic government which have always obtained on this side of the line.

The "short, non-partisan ballot" which is "an integral part of the Dayton form of government" has been in existence in Canada ever since votes were cast. No one here could even dream of any party emblems being seen on a ballot paper. And as for being "short," the case of the City of Montreal in the most complex election may serve as a sample of a "short ballot." Three separate ballot papers were handed to the voter. On one he chose one of two names for the Mayor. On a second, he chose four out of eighteen names for the Controllers. The third ballot paper was only necessary in those wards in which there was a contest for the seat as Alderman. There were, of course, no signs as to which party the candidate belonged. Only the names, in alphabetical order, with the candidate's business or profession under the name. And it seems ridiculous to think of the tyrannous ballot papers that have been in existence in Dayton until the present change, and which still keep so many of the cities of the United States under the control of party bosses.

Then the elimination "of a long list of petty offices" from the ballot! Why, of course this is a good thing. The only humorous part is that our friends across the line are only just wakening up to the absurdity of electing paid officials, who should naturally be permanent, entirely free from the caprices of an election. Many people in Canada could hardly be made to believe that any modern, civilized community would elect any petty officer, or even the head of a department.

The idea of a City Manager is novel, though Westmount, Que., has got ahead of Dayton by a few months. But there is far less need of a City Manager under our Canadian system of permanent heads of departments. In Canadian cities the Clerk, Treasurer, Engineer, Assessment Commissioner, Fire Chief, Police Chief, and other officials go serenely on with their work while the election for Council is proceeding, secure in the knowledge that no new Council will flout public opinion by disturbing them, if they are doing their work satisfactorily. Each of these is a manager of his own department, so there is not such a pressing need for the new office of City Manager.

The introduction of initiative, referendum, protest and recall seems to be necessary in the new Commission system. But if the citizens do their duty, and choose good men as Commissioners, these new forms of expression of the people's will are likely to become rusty for want of use. If the right men have been elected it would be a piece of impertinence for the citizens to initiate any piece of legislation. The idea of any individual suggested to the Commissioners, would certainly be examined, and if the men who have been elected for their judgment believe it to be good, they will certainly initiate it themselves. In the same way, the exercise of the recall is an admission that the voters chose the wrong man. In short, these parts of the

(Concluded on page 360.)

THE CANADIAN MUNICIPAL JOURNAL

OFFICIAL ORGAN
UNION OF CANADIAN MUNICIPALITIES.

Provincial Unions of
MANITOBA, BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN,
NOVA SCOTIA, NEW BRUNSWICK AND QUEBEC.

CANADIAN INDEPENDENT TELEPHONE
ASSOCIATION.

CHIEF CONSTABLES' ASSOCIATION OF CANADA.

MONTREAL, SEPTEMBER 1913

CONTENTS

	PAGE
RECENT CANADIAN MUNICIPAL PROGRESS...	352
Theo. A. Hunt, K.C., City Counsel, Winnipeg, Man.	
PHYSICAL CONSTRUCTION OF A CITY.....	376
Col. H. N. Ruttan, C.E., City Engineer, Winnipeg, Man.	
RECREATION SURVEY OF MONTREAL.....	358
Miss Julia Schoenfeld, New York.	
SUCCESS OF MUNICIPAL OWNERSHIP.....	355
INTERNATIONAL CITY IMPROVEMENT EXHIBITION.....	357
W. H. Atherton, Ph. D., Montreal.	
PARKS IN EDMONTON, ALTA.....	364
G. M. Hall, Industrial Commissioner.	
A COMMISSION AND A CITY MANAGER.....	347
TECHNICAL EDUCATION IN CALGARY, ALTA..	350
THE CREDIT OF SARNIA, ONT.....	348
ALMOST A CIVIC NUMBER.....	340
A MUNICIPAL STORES DEPARTMENT.....	351
REVIEW OF CIVIC IMPROVEMENT.....	361
NEW BOOKS.....	364
Civic Notes.....	368
Editorials.....	347
Engineering News.....	374
Financial Notes.....	373
Financial Echoes.....	371
Telephone News.....	365

Although the Canadian Municipal Journal is the Official Organ of the Union of Canadian Municipalities and other bodies named above, yet these are not responsible for any other matter published in it than what in each article or itself is stated to be authorized by either of these bodies.

PUBLISHED MONTHLY BY

The Canadian Municipal Journal Co., Limited.

G. S. WILSON Pres. and Mang. Director
H. BRAGG, M. J. I. Vice-Pres. and Mang. Editor
H. WISELY BRAGG, M. J. I. Assist. Editor and Secretary

CORISTINE BUILDING, MONTREAL

Telephone Main 4362—Cable address "Wilbrag".

WESTERN TRAVELLING REPRESENTATIVE: J. GRISDALE.

SUBSCRIPTION RATES

City of Montreal and United States \$1.25
Canada, Great Britain and Countries in Postal Union 1.00

NOTICE TO ADVERTISERS

Change of copy should reach this office on 18th of month preceeding date of issue, 10th if proof is wanted.

Entered according to Act of the Parliament of Canada, in the year 1913 by the CANADIAN MUNICIPAL JOURNAL COMPANY, LIMITED, at the Department of Agriculture

The annual Convention will be held in Detroit, Mich., September 29th to October 4th, the Exhibition being held in the Wayne Gardens, and the meetings in the Hotel Pontchartrain. The Ontario Good Roads Association will meet in Windsor, Ont., at the same time.

The Third Congress of the Canadian Public Health Association has its rendez-vous at Regina, Saskatchewan, on September 18, 19, 20. The Secretary is Major Lorne Drum, M.D., D.P.H., office of Public Health Journal, Lumsden Bldg., Toronto.

The Credit of Sarnia, Ont.

A despatch recently appeared in the "Globe", Toronto, which was unfortunately spread abroad and repeated with scare headings in papers in other parts of Canada, to the effect that the town of Sarnia, Ont., was insolvent — "Dead Broke" was the slangy way of putting it. The despatch further stated that the Bank of Montreal had refused to give any more credit to the town.

While fully aware that the statement was absolutely false, we wrote to the Mayor of Sarnia, Dr. J. Alex. Bell, M.D., and have had the reply which we expected.

Mayor Bell writes that the article is untrue and without foundation, and encloses a copy of a letter from the manager of the Sarnia Branch of the Bank of Montreal, which we give below.

The town of Sarnia, says Mayor Bell, was never in a more prosperous and healthy state, financially or otherwise. While the local Bank Managers say that towns of about the same size as Sarnia have overdrafts of from \$20,000 to \$40,000, Sarnia has one of only between \$2,000 to \$3,000.

The Mayor points out that as it is illegal for any Bank to loan money for permanent improvements, he advised his Council to stop any new permanent works such as sewers, curbs and pavements pending the sale of debentures. Petitions for new work are therefore not being granted meantime. But the work on a new water-works plant, costing over \$90,000, and a mile of concrete road is being carried on.

"No municipality has any better security of credit and is in any more healthy financial state than Sarnia is today", says Mayor Bell. "Municipal debentures (5 per cent.) in \$5,000 lots are being sought after by local citizens. In fact, I have no doubt that every dollar of our debentures could be subscribed for locally, were we to put them on the market here."

The serious character of the libel is shown from the letter which follows:

Bank of Montreal
Sarnia, Ont.

August 19th, 1913.

His Worship the Mayor,
The Town of Sarnia,
Sarnia, Ont.

Dear Sir:

I enclose a clipping taken from the Toronto "Globe" of a few days ago, which I cannot understand.

The article, dated 13th August, 1913, states that the account of the Corporation of the Town of Sarnia at this office was sadly overdrawn; on which date the exact overdraft was \$7,076.20 and at that time of writing is only \$2,666.

I think you should contradict the article mentioned, as it might materially injure the Town's credit.

You remember what happened was that I wrote to you and the Chairman of the Finance Committee, stating that the Bank could not advance money for Permanent Works or Local Improvements, as the advance now running was made for Current Expenses only, pending the water rates and general taxes.

I might add that the Town has had its account with us for over 12 years, and as far as I can judge, it has always been in the position to hold up its end.

Yours truly,

(Sgd) W. H. Norton-Taylor, Manager.

The Toronto "Globe" by inserting such a stupid and libellous paragraph has not only done harm to the Town of Sarnia, but incidentally to every municipality in Canada, by suggesting that any Canadian Town could be "Dead Broke."

Surely, before publishing a despatch containing news of what has never been known in Canada, namely the insolvency of a Canadian town, the editor who recorded it should have taken a little pains to verify it.

The "Globe" had seriously lowered its reputation for veracity by its political statements "which are not founded on fact." But when it publishes such a libel on a Canadian municipality, it is beyond the pale.

Almost a Civic Number

The way in which civic questions are being taken up in quarters not entirely devoted to them is well shown in the September number of that interesting and beautifully illustrated magazine, "The Craftsman." Quite frequently the Editor, Gustave Stickley, includes an article which comes within the wide boundaries of "Civics," but this issue might almost be a Civic Number.

"The frontispiece "Sea Power" depicts the entrance to New York harbour, but the artist, Reuterdahl, in choosing his title is evidently oblivious of the fact that the vessels entering the harbour, and which really represent "Sea Power", are practically all foreign-owned!

"The New Chicago" by Hamlin Garland, shows how a man with a vision could, and did, re-create a city on the lines of beauty. The author tells how Daniel H. Burnham laid a plan for the rehabilitation of Chicago before a coterie of artists, and admits their absolute belief that the idea would never become practical. And yet when Burnham died, his great plans had been so far accepted and commenced that he said: "I can now go in perfect faith that our great plan is about to be carried out. The beginning is made, the rest will follow."

The "Accidental Beauty of New York, born out of its civic needs," is a title which too truly points out that "its beauty has been evolved by accident, not because its inhabitants held high ideals of beauty which they have materialized." That New York, as a city, even possesses beauty, may be a matter of opinion. The towering skyscrapers, and the dingy canyons of streets between them, which form so large a proportion of the city proper, may appeal to some as possessing beauty. While to others, they may be immense and wonderful, but the reverse of beautiful. On the other hand, it is satisfactory to see what is being done in the beauty spots of the Parks, even downtown; in the style of architecture of the newest skyscrapers; in the beautification of Central Park; and the erection of handsome public buildings.

That even a destructive earthquake can be made to produce good is seen in the planning of the New San Francisco. The civic centre is described by Adolphus E. Graupner, the design being based upon a plan prepared by the late D. H. Burnham (of Chicago plan fame). Considerable progress has already been made with the plan, the City Hall being under construction.

Next comes "Progress in Civic Improvements in Boston," by Frank Chouteau Brown, which shows how the Report of Civic Improvements issued by the Boston Society of Architects some ten years ago, stimulated public opinion and led to the improvements which are now being carried out. One of the illustrations of special interest shows how the handsome old Doric building is retained as the base of a huge office building—proving the wisdom of adopting old, historic buildings to new conditions, rather than the more common

way of ruthlessly sweeping away all that is old, whether it be beautiful or not.

A lady, Ada Rainey, contributes an article on "Shade Trees for City streets; what they furnish in the way of Beauty, Health and Comfort. The initial sentence gives the key-note: "The connection between public well-being and the planting of shade trees on the streets of our towns and cities is yearly becoming more apparent." This is, however, an idea that needs a good of forcing upon the public; for while the beauty of shade trees in streets is generally admitted, yet the hygienic value is not so well understood.

Two short articles on "The Ragged Edges of the City," and "Backyards and Vacant-lot Gardens," the latter showing results in Indianapolis, conclude that portion of the magazine devoted to civics.

Ignorance of Canada

The August number of "The Fra" contains one of Elbert Hubbard's "Little Journeys", and this one is to Saskatoon. That part is discussed elsewhere. But the opening paragraphs touch upon a great and important truth, and that is the utter ignorance of the average citizen of the United States concerning Canada. And this, unfortunately, is largely due to the meagre and misleading information about the Dominion contained in the geographies used in schools in the United States.

Hubbard says: "I once heard Canada described by a high school sophomore as 'that tract of land just opposite Buffalo, New York.'"

Paraphrasing Kipling's line,
"They little know of England,"
"Who only England know."

he applies it, "they little know of the world who only the United States know," and he is perfectly correct.

He goes on to say that the "average American is too busy with his own affairs" to look at the North.

As a corrective, brief figures are given comparing Canada's area of 3,745,574 square miles with that of 3,026,789 for the United States exclusive of Alaska (with Alaska it is 3,560,922, or 184,652 smaller than Canada). Speaking of the emigration from the States to Canada, he says the reason is: "Americans in western Canada are making more money than they could make at home. Their exodus has been no error of judgment. If it were otherwise, you would find a tide of Americans going back to the States. But this is not the case."

He is not afraid to admit that, in some ways, Canada is greater than his own country. He says:

"Canada has a greater extent of wheat-producing land than the United States has; a greater grazing ground; greater potential mineral wealth; greater development possibilities as yet untouched; greater potential electric waterpower; greater fisheries, and perhaps ten to one."

Such a confession of advantages on this side of the line does credit to Hubbard's ideas—not only of truthfulness, but of candour.

It is to be hoped that Hubbard's discovery of the Canadian Northwest may considerably aid in making it known in his own country.

Municipal Engineers

Mr. R. O. Wynne-Roberts, who recently settled in Canada, is suggesting the formation of a "Canadian Institution of Municipal Engineers" on the lines of the British body, and proposes an informal meeting of those who attend the meetings of the Canadian Public Health Association in Regina, Sept. 18th to 20th. Mr. Roberts will be glad to receive the views of those who cannot be present; his address is Regina, Sask.

Technical Education in Calgary, Alta.

There were many things to study in Calgary, and the time was all too short; but one of the less common ones was a talk with Mr. T. B. Kidner, the Director of Technical Education, on the work under his direction.

Last winter was the second season of Evening Technical Classes, and the number of scholars was 1,040—a pretty good number of people willing to spend their leisure in the evenings by going to school. Classes for foreign-born citizens were taught by proficient linguists in their schools. The Technical Classes included the usual subjects, but brought up to date, Gas, Gasoline and Oil Engines being included. Fees varying from \$1.00 for apprentices and \$2.00 for journeymen, up to \$3.00 for apprentices and \$5.00 for journeymen were charged; but were returned to the student in proportion to his attendance at the classes; attendance at every lesson was rewarded by a return of the whole of the fee.

A reference library of text books for each subject was at the disposal of the students, as well as the City Reference Library.

Mr. Kidner expressed his pleasure at the generous way in which the necessary apparatus had been supplied by the manufacturers through their Calgary representatives. Every thing necessary was supplied "on loan", to be kept as long as the School Board wished to use it.

Calgary now possesses 30 school houses and 19 cottage schools. These latter are temporary ones, a building being erected that can be sold as a house afterwards, when the needs of the vicinity require a large school.

Every new school is being fitted up for manual training for girls as well as boys, laundries and cooking rooms being added, as well as carpenters' shops.

The ground floors of the new buildings are being made into Assembly Halls, and fitted to display moving pictures.

Supervised playgrounds have been adopted, with a superintendent and four assistants.

Calgary is to be congratulated upon her educational equipment, and our talk with Mr. Kidner, who is an enthusiast on the subject of Technical Education, made us feel how far the Western cities are realizing the tremendous importance of a practical education for the future citizens.

Town Planning

The Calgary, Alta, City Planning Commission has very wisely got out in pamphlet form two addresses on Town Planning and Housing by Mr. Henry Vivian, ex-M. P. for Birkenhead, Eng., and Mr. Thomas Mawson, Lecturer on Civic Art at the Liverpool, Eng., University; and we are glad to reproduce extracts on other pages.

The Calgary Commission states its aims as:

- Better Traffic Facilities;
- Better Housing Conditions;
- Equipped Playgrounds for Children;
- A System of Parks Connected by Drives;
- An Economical and Convenient Grouping of our Public Buildings.

In short:

"This Commission is endeavoring to make Calgary a Better City to live in, to come to, and to move about in."

In a foreword, with the booklet, the secretary of the Commission, Mr. G. Wray Lemon, points out that the two addresses are printed together by deliberate design, as while Mr. Mawson—the landscape architect—takes the aesthetic view point, Mr. Vivian—the housing

expert—lays stress upon that side of the question. Thus each is a complement of the other.

Double Decked Sidewalks

In his very interesting paper on the "Physical Construction of Cities" (which appears elsewhere), Col. Ruttan advocates what is a new departure on this continent—double-decked sidewalks in congested streets. That is, that above the original sidewalk on the street level, there shall be another sidewalk, level with the second stories of the buildings; with a glass pavement, so as to throw light on the foot passengers below.

Although the idea is, we believe, new to this side of the Atlantic, yet it has existed in the old city of Chester, England, for many hundreds of years. There the "Rows", as they are called, are familiar objects of curiosity to the many pilgrims from the new world who admire—or criticize—the old fashioned things to be seen in the walled city of Chester. Of these, Alfred Rimmer in his delightfully written and beautifully illustrated "Ancient Streets and Homesteads of England" says:

"The distinguishing features of Chester are "The Rows" as they are called. These are long covered arcades of unknown origin and antiquity. In familiar language, they resemble such a space as would be formed by removing the storey over the ground floor of a row of buildings through the entire length of the street, supporting the upper chambers with columns or piers at irregular distances".

The origin and reason for these Rows has been debated by antiquaries but nothing definite has been arrived at about them.

One obvious difficulty presents itself, and that is the loss of light to the stores on the lower sidewalks. But this might be largely overcome by having the upper sidewalk sufficiently high.

Tenements in Ancient Rome

It is the common belief that the tenement house is a development of recent times. This is not correct, for the tenement is one of the oldest types of buildings in the world. They were in Rome during its splendor and were so tall that many times they toppled over, killing the inmates and those in adjoining houses.

Emperor Augustus having been moved by the loss of several hundred people through the collapse of tenements ordered that in the future houses should not be taller than sixty-eight feet, which is equivalent to six stories. Up to that time tenements were run up 100 feet and more and on streets that were not much wider than alleys.

In the writings of one Roman he refers to a neighbor who had to climb 200 steps to his garret. A building of this type in New York a dozen years ago would have been spoken of as a skyscraper. Except apartment houses served by elevators there isn't a tenement of this height in the city. Six stories is as high as they are built. Few people could be induced to walk higher, and besides the law covering a building of more than six stories is such that it would be unprofitable to build.

Just when the first multi-family tenement was built is not known, but Roman history speaks of Emperor Otho being delayed in 69 A.D. by the ruins of tenements. There were twenty miles of ruins. Through bad construction the buildings had fallen down, row after row. This was a regular occurrence until Emperor Augustus limited their height.

There used to be companies in Rome for shoring up buildings that showed indications of falling. They were kept busy. Falling tenements were one of the great dangers of Rome in days of Otho.—Exchange.

A Municipal Stores Department

The City of Calgary, Alta., recently visited by the Municipal party who attended the Convention at Saskatoon, has many features of interest to the student of civics, and some will be discussed subsequently.

Meanwhile, a new feature of great interest is the Department of the Purchasing Agent and Storekeeper.

The City Council came to the wise conclusion that a stores Department, with some one person responsible for its proper conduct would be advisable for the City, for they saw that no matter what the size of a business concern is, the principle of stock-keeping is the same; and if the system is simple well arranged to meet the requirements of the business, the Department can be conducted economically, and the operation will result in economy of both money and time.

The City determined on getting a man capable of filling the position, and selected Mr. J. B. Chandler, who had been with the C. P. Ry.

At first Mr. Chandler's time was occupied in stock taking, and getting materials and tools from all over the City into the store house and yard, which are situated on a spur track of the C. P. Ry. In this work, it was discovered that of some materials no less than five years supply was on hand.

In 1910, under the late Mayor Jamieson, the Purchasing and Stores were united under one head.

The growth of the Department is shown by the increase in the stores issued.

Stores issued, June 1908, \$35,536.

Stores issued, June 1913, \$356,189

while the percentage of cost of handling by the Department decreased from 1.27 per cent. to .86.

The material handled consists of every thing required by and used for the city, including all public works, municipal and street railway, municipal electric light and power, and water works departments.

Some idea of the Stores operations may be obtained from the following figures for the year 1912.

	millions (approx)
Assets (whole City Dec, 31, 1912..	\$22,500,000
No. of orders filled.....	79,000
Invoices passed for payment.....	17,000
Invoices rendered (dept.).....	23,500
No. of cars of material unloaded..	2,117
Weight of same in tons.....	67,774
Freight charges on same.....	\$528,096.36
Total issue.....	\$1,870,909.00

In addition to the foregoing this Department handles the Municipal shops, wherein all repairs for Machine, Blacksmith, Wood working and Horse-shoeing are done. The results have been very favorable, particularly in the latter; the City owns 211 horses and the average cost of shoeing for the month of May was \$1.53 per head against \$2.40 under the former contract rate.

The cost accounting for all the electric trucks and Gas autos (6 of the former and 25 of the latter) is handled through this department, the City owning its Garage and charging station.

The following figures will be of interest, viz:—

- Size of warehouse 66'x 166' 3 floors,
- Size of shop 48'x 96' 1 floor
- Size of cement shed, capacity 17,000 Blds.
- Size of yards 15 acres.
- Size of trackage capacity 39 cars.
- Size of oat bin, capacity 12,000 Bus.
- Stock carried (about) \$300,000.00.

The system adopted is the "card system and perpetual inventory," and easily shows exactly how the stock of everything stands. The visit to the Department proved very interesting, and Mr. Chandler explained every thing to the satisfaction of every one.

It is easy to see how Calgary pays the cost of the Department, and at the same time saves both in purchasing properly, and in taking care of what is bought.

NEW BOOK

American Syndicalism

The I. W. W.

JOHN GRAHAM BROOKS

(The Macmillan Co., 264 pp. \$1.50 net.)

This book naturally follows the author's previous one, "The Social Unrest," and deals more closely with the causes of that unrest, and its latest results in the I. W. W. or "Industrial Workers of the World," which he describes as "strictly a revolutionary uprising against that part of the present order which is known as capitalism." Mr. Brooks has the great advantage of being practically acquainted with his subject, for his is not the result of speculation in a study chair, but the knowledge gained by personal contact with the workers themselves. And, as the result of such first-hand knowledge, it is a sufficiently serious presentation of social conditions as to merit deep study. For, as he says, of this new movement, if in whole or in part, it is to be opposed "it should be understood."

Mr. Brooks points out that the articles in the leading magazines are awakening the public to abuses that arouse a desire for change; and that "socialism has no such personal friend as the capitalist possessing power and inclination to crush labor organization."

The results of unwisely handled capital in arousing public enmity is fully dealt with—"People have learned that if trades unions have bothered capital, so has capital the public." "Capital could gain no victory over labor associations that left its pang of felt injustice, without throwing the door wider still to socialism."

The I. W. W., argues Mr. Brooks, is the outcome of the suppression of trades unionism, and says "The I. W. W. taps labor strata not only lower than those of trades union, but still lower than that from which socialism generally gets recruits. It appeals to youth . . . to those who rebel at the discipline of the trade union. It easily becomes a brother to the tramp and the outcast." "It is strictly a revolutionary uprising against that part of the present order known as capitalism." "Like every revolution, it attracts the most unselfish and courageous, together with the self-seeking and the semi-criminal."

The hopeful sign in the midst of such a black outlook is "that the public has come to feel that these (larger businesses) are social as well as private affairs."

American Society of Municipal Improvement

The 20th Annual Convention will be held in Wilmington, Del., October 7th to 10th, the Committees meeting on Monday, Oct. 6th. Full particulars can be had from the secretary, Mr. A. Prescott Folwell, 50 Union Square, New York.

Recent Canadian Municipal Progress

THEO. A. HUNT, K.C.,

Corporation Counsel, Winnipeg, Man.

(Read before the Convention of League of American Municipalities.)

Municipal Legislation for the various provinces of Canada is to a great extent borrowed from Ontario, or a parallel therefor can be found in the legislation of that Province, and therefore the development of municipal administration in Canada can best be shown by sketching briefly the history of municipal legislation in Ontario.

Prior to 1791 what is now the Province of Ontario was divided into four districts. In 1782 these districts were, for parliamentary representation and for militia purposes, divided into a number of counties. From 1788 to 1841—a period of about 53 years—the management of local affairs in each district (including most of the powers afterwards assigned to the municipal councils) was committed to the several district Courts of General Quarter Sessions of the Province, composed of magistrates appointed by the Governor or Lieutenant-Governor-in-Council. In some portions of the districts these Courts sat twice a year and sometimes quarterly.

The Courts of General Quarter Sessions had jurisdiction over the erection and management of court houses, goals, and asylums; the laying out and improvement of highways; the making of assessments; and provided for the payment of wages of members of the Houses of Assembly. They also could make regulations to prevent accidental fires; could appoint district and township constables; fix the fees of goalers, town or parish clerks, or pound keepers; could appoint street and highway surveyors and inspectors of weights and measures; could regulate ferries and establish and regulate markets in various ways; could grant licenses to sell liquor; and to ministers and clergymen of dissenting congregations, authorizing them to solemnize marriages.

You will thus see that in the Province of Ontario, the people, so far as the municipal institutions were concerned, were governed by an oligarchy—an appointed body not responsible to the people.

The "Parish and Town Officers" Act was passed which enabled any two of His Majesty's justices of the peace by their warrants to authorize the constable of any parish, town or place to assemble the ratepaying inhabitants of the parish or township, to be convened in the parish church or chapel or some other place convenient within the parish, to vote for the year, the parish clerk, town or township clerk, two assessors, a collector, a certain number of overseers of highways and fence viewers, a pound keeper, and two town wardens. If there was a properly constituted church within the letter of the English law at that time, the duly appointed minister appointed one warden and the town men elected the other. These were styled "church wardens."

This meeting called had no legislative power whatsoever, except to determine the height of a lawful fence; to ascertain and determine "in what manner and for what period horned cattle, horses, sheep and swine or any of them, should be allowed to run at large, or to resolve that they or any of them should be restrained from so doing."

The two wardens (referred to above) became a corporation to represent the whole of the inhabitants of the town or parish, with power to sue, prosecute and defend on behalf of the said inhabitants, and except

for the matters specifically stated above, they had no legislative power. In contrast with this, the justices of the peace for the districts in their Quarter Sessions had all the authority; if the ratepayers did not elect or appoint any officer, they filled the vacancies.

As the Province became populated, the Quarter Sessions were empowered to make for the towns that sprang up, "such prudential rules and regulations as they might deem expedient, relating to watching, paving, lighting, keeping in repair, closing and improving the streets; regulating the assize of bread, slaughter houses, nuisances, firemen and fire companies." They also were to enforce the laws respecting weights and measures, and with respect to cattle, etc., running at large.

Towns gradually obtained increased powers, while the rural municipalities continued under the old order of things. A fair measure for those times of local self-government was accorded to the towns, whereas the rural municipalities were considered as incapable of governing themselves. The magistrates built jails, levied taxes, prescribed the prisoners' fare, set the fees for district officers, doled out charity, and continued to give licenses to ministers to marry. All this work was done by life appointees of the Government.

In 1841 the "District Councils" Act was passed, which constituted the inhabitants a corporation which could pass by-laws relating to roads, bridges, public buildings, schools, the administration of justice, remuneration of officers, and could levy the taxes. Under this act all the powers that had heretofore been exercised by the Courts of Quarter Sessions were transferred to the Councils. This was the beginning of the greater control by the people of their local affairs. The Act was improved and amended, and we finally have the act of 1849, which may be considered the Magna Charta of municipal government in Canada. This act is now the basis of the municipal acts in nearly every province in the Dominion of Canada.

This new system of responsible self-government proved successful and popular. Less friction was engendered under the new system than under the old autocratic system. If the ratepayers were badly governed, it was their own fault; if the highways were out of repair, they had nobody to blame but themselves; if governmental conditions were not satisfactory throughout the district, all they had to do was to change their representatives. Stupidity, cupidity or indifference all produce bad government, and I really believe that indifference is about the biggest enemy to good government that can be found. No government, as a rule, is successful if the ratepayers are indifferent, and there is a larger percentage of indifference amongst ratepayers than there is of either of the other causes mentioned above.

There was one great mistake in the old Municipal Act that was later remedied, and that was the licensing of the liquor traffic. It had to be taken away from the municipalities owing to influences that were exerted and the necessary friction and bickering that resulted. It is now vested in the Provincial Government, but a municipality by local option acts can rid itself of licensed places within its borders. As a matter of revenue, in some instances license fees are paid both to the Province and to the municipality.

It is hardly necessary for me to sketch the history of development along special lines, but I do wish to refer to one thing which is a large factor in the physical improvement and development of a city, and that is what is called the Local Improvements. Prior to 1882, improvements could be done upon the initiative of the ratepayers affected. After that date it could be done

upon the initiative of the Council or its officials without a petition from the ratepayers, the ratepayers, of course, having the right to petition against any local improvement within a stated period. The local improvement system enables a progressive or aggressive body of ratepayers to improve their city or town; and now the same law is applicable to districts in rural municipalities.

About 1884 the female voter appeared upon the scene. One learned writer refers to this as a great moral force.

The early municipal Councils were somewhat reckless in granting franchises and bonuses. The granting of bonuses about 35 years ago was made subject to the regulation that the assent of the ratepayers must be given. Later, public utility franchises were made subject to the approval of the ratepayers. Improper exercise of franchises by many corporations led to municipal ownership and municipal ownership has in many instances directed attention to the ineffectiveness of the old administrative system.

If we contrast the powers formerly vested in municipal Councils, and the subjects dealt with by them enumerated in the previous pages of this paper, with the big problems involved in providing an adequate water supply for a city, the installation of an electrical development, providing harbor facilities, laying out and maintaining sewer systems, planning anew the lay-out of cities, providing proper sanitary arrangements both within and without buildings, proper housing for people, good pavements and roads, construction of bridges and viaducts, street car and omnibus franchises and traffic, hospitals, entrance of railways into cities, adequate grade separation,—any one of which is a subject of magnitude and importance if approached from the right angle,—it will be observed that the municipal business has now become highly specialized and important, and in many respects concerns the citizen more intimately and more directly than some of our great national problems.

To quote from a leading Toronto daily, "The Globe", a portion of an editorial made use of by the mayor of Toronto, which is as follows:

"When the late Dr. Goldwin Smith, a keen critic of public affairs, was asked why he did not take an active part as a municipal representative, he said he had to confess his lack of ability. He went on to point out that while honesty and common sense were sufficient in a small municipality, the great city's management called for a special knowledge in a multitude of problems in such matters as finance, engineering, sanitation, hydraulics, transportation and traffic management.

Everyone must be impressed with the importance of the task of local self-government, and the most important change in respect of municipal administration took place in 1896 when the Board of Control was first provided for in the Province of Ontario. Even legislators of that day did not expect much from their Controllers, for they limited the salary to \$700. It might be less.

It was thought that a municipality could not do things as efficiently and give as good public service as cheaply or economically as a private corporation. The greed of private corporations, excessive charges for public services and inefficiency in those services, caused some enterprising municipal idealists to think of a remedy, and now we find many undertakings controlled and managed by municipalities which a few years ago would never be dreamed of, and I remember even as late as 1906, distinguished lecturers from England cast considerable doubt upon whether a municipally owned enterprise could be made successful.

One feature of the municipalities branching out into large undertakings has necessarily had an effect upon the constitution of the governing powers in the municipality. There was a time when anybody was supposed to be endowed with sufficient knowledge to administer the affairs of the municipality, but now, when there is much at stake, to render efficient service to the municipality the legislators (or, in other words, the mayor, controllers and aldermen) must be men of ability, and all the better if they have a certain amount of municipal training. Even with the very best intentions to serve the ratepayers, the average citizen is not capable of handling the big problems that are now the subject of municipal administration. The work is, however, allocated to departments, and the municipality which is prepared to pay as high a price for heads of departments as any other institution, will get the best service. When it is considered that some of our large cities in Canada disburse more money every year than is handled by the provinces in which they are situated, it is at once apparent to the most casual thinker that a trained mind must direct the affairs of the departments under the guidance of a governing body responsible to the people.

These large affairs of the municipality called for some better system of administration than was to be found through the old committee system, where a few men at bi-monthly meetings disposed of the committee business pertaining to this or that department and reported to Council. Someone, therefore, devised the scheme of having what is known as a Board of Control, elected at large by the people in the same manner as the mayor had heretofore been elected, who should devote if not all their time, the major portion of their time to the administration and detail work of the affairs of the municipality. This system is working with a fair degree of success in most of the larger cities of Canada, and as men become more and better trained in municipal administration the system of a Board of Control will be more efficient.

The Boards of Control have not been uniform in the administration of their affairs, although they all work under practically the same form of legislation. In some cities the supervision of the departments is divided amongst the individual members of the board, and they become responsible to the people for the success or failure of the work of the department, and they are the link between the department and the ratepayer, and it is up to them to explain any shortcomings in the work of the departments under their control. There are good features about this method, but it sometimes leads to a jockeying amongst the members of the Board of Control for funds for the departments which are under their supervision. In some cities this method has not been adopted, and the responsibility for errors in the working of the department or departments has been charged to the Board of Control as a whole, and each member, seeking to escape criticism, endeavors to shift the responsibility on a fellow member. The ratepayer in the confusion very often does not find out where the real trouble is, and the wrong man is just as liable as not, to go down to defeat at the polls.

I have heard complaints that lodge influences and party politics are a detrimental factor in the election of members of the Board of Control and Council in some cities, but an efficient body of administrators can be obtained if the electorate is alive to its needs, and the life of members were made more pleasant and so much ignominy were not attached to the public service, so that the best and brainiest would offer themselves. Any Controller would be all the better for serving a term or two as Alderman in the Council before he becomes

a member of this Board. As between a brilliant Controller and a Controller not so brilliant but with the experience, I am inclined to the view that the man with the experience can render more efficient service to the ratepayers in the vast majority of cases.

One writer has intimated that the Board of Control may be the means of developing the Commission system, and he states:

1. That the people should be educated to realize that municipal government is a profession, not a business;
2. That it is a difficult profession, requiring special preparation;
3. That a man should devote his life to it.

There may be considerable truth in such a statement, but it seems to me that you must preserve the link between the ratepayer and the administrative office of the corporation, and this can only be done satisfactorily by an elective board. The Board of Control is the cabinet which is responsible to the people, and as such must keep in touch with the needs and requirements of its constituents. The official end of it, so far as the technical training is concerned, can have an equivalent result by the appointment of heads of departments trained in municipal matters.

The Commission form of government that has been reported such a success on the other side of the line is due, I think, as near as I can size up the situation, to two things: 1, a great public awakening to the importance of proper municipal administration amongst ratepayers; 2, the abolition of a number of elective offices, and the more or less separation of national politics from municipal politics. I am not such a firm believer in form as I am in men, and even with the general power vested in the municipalities to appoint all the head officers of the municipalities, there can, I am inclined to think, be evolved by by-laws, even under the present municipal system in Canada, a city administration under the control of a general manager appointed by the council. While the mayor is the legal head of the corporation, there are scarcely any men who have the time to devote to the detailed management and administration of corporation's affairs, involving as they now do, such a wide range of subjects; but there is nothing to prevent the creation of a general manager who would have supervision over the entire detailed administration of the municipal affairs, responsible, say, to the mayor, Board of Control, or the Council direct.

The Commission form of government that is in vogue in Edmonton is of a type that would seem to indicate that there are three managers performing this work. It is not, in a strict sense, Commission government at all. The same results may be accomplished through the payment of large salaries for efficient administrative heads of departments.

The City of Westmount has appointed a General Manager who is intended to manage the city's business as any man in like office would manage the affairs of a large private corporation.

Some cities strive for an ideal by appointing commissioners, which is really not the Commission form of government, but merely the appointment of highly paid officials to the responsible supervision of several departments. Even where commissioners sit with the mayor as an administrative body, yet in the council they have no right to vote. The same result is attained

by the appointment of efficient heads of departments who will be directly responsible to the Board of Control and Council, as in the case of the majority of the larger cities in Canada.

Another development in municipal administration is the appointment by the provincial authorities of a Commission to control public utilities and supervise certain municipal works. Such commissions are found in the Provinces of Quebec, Ontario and Manitoba. This is government by appointed officers. The efficiency of this class of supervision over municipal affairs depends upon two things: 1, the amplitude of the powers conferred by the act creating the commission; 2, the efficiency and the progressiveness of the member or members appointed to the commission.

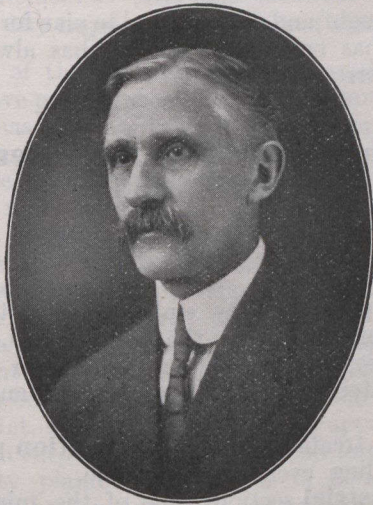
There is no doubt in my mind but that the public dissatisfaction with some of such boards has been due, to a large extent, (1), to the limited powers conferred upon the Commission by the legislature, and (2), to the lack of breadth of the members of the Commission, who did not reflect the progress of this rapidly moving age. Commissions must be less technically legal and more ideally just. Such a commission to be successful under the second heading, must have men appointed to it who are determined to see that the public get what is coming to them in the way of rates and services, irrespective of foul legislation which has been lobbied through the legislature of the Province or Parliament. Even with poor legislation, an aggressive Commission can do a very great deal to alleviate the troubles of the public, but nothing to my mind cripples or interferes with efficient municipal administration so much as the interference of outside influences and special interests.

One city has adopted the Commission form of government in vogue in Des Moines, but even that form, which has taken such a hold on the American side of the line, is liable to fail unless there is a good, active, healthy public sentiment amongst the ratepayers. Eternal vigilance alone is the price of good government, municipal or otherwise.

In Manitoba a public utility commissioner has been appointed, the act having been passed in 1912. The Commissioner's powers are very wide, even going to the extent of modifying franchise contracts if a utility corporation does not administer its affairs in such a manner as to properly serve the public. In one particular alone the work of this commission has been important; the unsightly poles and wires which are strung all over the city, in many cases duplicating lines, will, under the order of this commission be more or less eliminated; instead of dual sets of poles, one set will serve both the city's distribution system and that of the rival companies.

A further element of administration is the creation of the Dominion Railway Board, which has charge and supervision of all the Dominion railways of Canada. It has also a number of other public services. This board also has done very effective work, but its jurisdiction is so wide and the territory it covers so great that I often think municipal interests have not had as much attention as they might have. This Board could, by the supervision of agreements between corporations and municipalities, prevent many injustices that are burdening the latter. I often think they are remiss in their duty to the public when they stand aside and allow a municipality and a railway to make a bargain manifestly unfair to the former. Most municipalities have been easy marks for the railways.

The Success of Municipal Ownership in Regina



HIS WORSHIP MARTIN,
Mayor of Regina.

To build a street railway—owned by the city—without burdening the people with heavier taxes, is what has been accomplished by the city of Regina. The city of Regina has done other things of a similar nature, with a view to keeping the tax rate low, without going to the people for the money required. The fact is that when the city was first laid out, the townsite trustees provided large tracts of land for parks, exhibition grounds, etc., in addition to reserving considerable land for sale when the proceeds were required by the municipality. The city sold considerable of this land several years ago, when the first start was made for municipal ownership of utilities. When it was considered necessary that the city should have a street railway, the question of the advisability of granting a franchise was considered but was quickly turned down. Then the Commissioners set to work to devise ways and means for raising sufficient money to instal a street railway without having to issue debentures chargeable against the general credit of the city.

The first step taken was to ascertain whether or not bonds could be issued chargeable against the street railway system direct, and not against the city's general credit. This was impossible. Then the commissioners decided in favor of the only possible way—to use the proceeds of property sales. The city council considered the idea a good one, and accordingly proceeds from the sale of various city properties were diverted to the street railway coffers, and used to build the street railway. At the time the construction of the railway was undertaken, the city had a very extensive programme of works to provide for, owing to the very rapid growth of the city. In addition to relieving the rate-payers of the extra taxation, the city was able to conserve its borrowing power to provide for other much needed works.

Being relieved of this heavy expenditure, the commissioners immediately devised a means of making the railway pay the city from the start. The year before the railway was built, it was found necessary to extend the city limits. The residents of the district included within the city limits would consent to the extension only on condition that only one tenth of the general rate of taxation be charged for the first year, one-tenth additional being charged each year thereafter until the full

rate was in force. The city succeeded in having a clause inserted in the agreement providing, that as soon as any property was served with street cars, within two blocks in length or three blocks in width, the property would pay for the full taxation. Although it is but two years since the construction of the street railway system was first started, by far the greater portion of the area included within the city limits is now served with street cars within the distance outlined, and by the end of the present year, practically all of this property will be so served. As the property in question is valued at about \$15,000,000, the extent to which this clause has benefited the city at large may be readily seen. The increase in the amount of taxes that would have been derived from this property had not the street railway been constructed, will far more than pay the cost of construction of the lines out into the annexes.

Had the system been owned by a private corporation many of these extensions might not have been built, and the city's revenue largely affected thereby. The street car lines too have affected the value of the property considerably within the past year, and a larger assessment has resulted.

The street railway system was first put in operation at the time the Dominion Fair was held in Regina—July, 1911. At that time there was but seven or eight miles of track. By the end of that year 10½ miles of track had been constructed. During last year but very little was laid, only about 15 miles all told being in operation at the end of the year. During the present year about 14 miles of lines will be laid, making almost 30 miles of track in service by the end of the year. The rolling stock has also been increased considerably during the past year, over 30 cars now being in operation in addition to flat cars required in construction work.

Another way in which the industrial interests of Regina are likely to benefit as a result of the street railway system being owned by the city, is by the shunting and interswitching of cars of freight by street cars. The city has not definitely decided to shunt all cars of freight within the city, but there is every likelihood that such action will be taken within the near future. Considerable discussion has already resulted with regard to the matter.

The street railway, though but a big baby utility, as it were, is already paying a good dividend, and it is expected during the present year the surplus of receipts over expenditures, including debenture payments and interest, will amount to about \$50,000. As was to be expected the cars were operated at a loss for about a year. The loss in 1911 was considerable. For about five months in 1912 the city continued to lose money on the operation of the cars, but at the end of one year's operation the city was able to announce that the cars were more than paying their way. The deficit was gradually wiped out, and at the present time there is a considerable margin of earnings over expenditures.

The street railway is the baby utility of the three utilities owned by the city of Regina. The city is truly a supporter of municipal ownership, owning street railway, electric light and power plant, and the water-works. It is expected that during the present year the revenue above all charges from the three utilities will amount to about one fifth of the entire amount of money required to carry on the general business of the city. The power plant is by far the largest revenue producer of the three. During last year the actual surplus of revenue over all charges from this source was about \$70,000. During the year a substantial reduction was made in the charges for light and power, but

still the earnings were very large. For large consumers of power a special rate of 1.1 is now available.

At the time the city of Regina purchased the electric light plant from a private concern, the charge made for power was 25 cents per k.w.—an almost prohibitive price. Now the rate ranges from $1\frac{3}{4}$ cents to 7 cents, with special rates as stated above for large consumers. When the power plant came under the control of the city, the capacity was but 65 k.w. whereas at the present time the maximum load is 2,200 k.w. With the increased equipment the present power house is now inadequate, and the city has undertaken the construction of a new power house at a cost of \$425,000. The excavation for the new structure has already been completed. Provision is made for future extensions. In the new power house it is proposed to instal suitable coal carriers and bunkers, and other devices which will further reduce the cost of production. The extent to which the citizens patronise the power plant may be seen when it is stated that almost 5,000 services are connected up. So numerous were the applications for power and light service, that the city early in the year provided \$250,000 to provide for extensions.

From the time the power plant came under the control of the city it has been a paying proposition. The surpluses of revenue over expenditures yearly have been as follows:

1907—	\$20,833.75
1908—	\$16,062.40
1909—	\$27,844.03
1910—	\$38,436.60
1911—	\$56,297.34
1912—	\$71,200.00

After making a reduction of 20 per cent. in the existing rates for light and power at the commencement of the year, Mr. E. W. Bull, the superintendent of light and power, to whom considerable credit is due for economic management, estimated that there would be a surplus of revenue over all charges for the year 1913 of over \$70,000.

The waterworks also showed a substantial surplus of revenue over all charges during last year, the nett revenue from this source being approximately \$25,000. It is expected that the revenue over expenditures for the present year will be about \$30,000.

While municipal ownership of utilities has been more or less of a hobby with Regina, it has been a big paying proposition. Despite the fact that the city has had exceptionally large programmes of civic improvement works during the past three or four years, the revenue derived from the various utilities has gone a long way toward keeping down the tax rate. During the last year the rate was 15.88 mills, which included Collegiate, Library and School taxes. This year it is expected that the rate will not exceed 14 mills. What such a low tax rate means to a western municipality can be readily recognized.

The citizens of Regina have reason to be pleased with the results obtained by municipal ownership. In fact when the city recently undertook investigations with respect to the installation of a municipal gas plant, it was decided to refer the matter to the ratepayers for their consent. Hardly a vote was cast in opposition to the expenditure of \$25,000 for the laying of mains for gas where new pavements were being put down, and for investigation work.

While municipal ownership has proved a paying proposition for Regina, it would have been a costly thing, if the city's borrowing power had been

crippled by securing funds to pay for these utilities, as Saskatchewan municipalities are only empowered to borrow to the extent of 20 per cent. of the full rateable assessment. However the civic councillors exercised good forethought, and endeavoured to plan for the future. The result has been that the city has always had a margin of borrowing power.

International City Improvement Exhibition

(Concluded from page 357.)

ing of city planning, city embellishment, the care of the roads and highways, the open spaces, the water, drainage, fire protection, the purification of a city's drinking water system, the scavenging and sewerage farms.

A section treats of the **transportation** problems of cities including even the aeroplane.

The **industrial** sections treat of the mining, metal, mechanical, textile, leather industries and there is a special section on industrial hygiene with all the modern protection for the health and safety of our working population. The various trades and arts are also exemplified; jewellery, watch making, dainty sculpture, engraving, the decoration arts, architecture, horticulture, photography, &c. The **police** systems of cities has another section and the problems of reformation are therein exhibited.

Public hygiene has sections on infectious maladies, disinfection, the organization of National, Provincial and Municipal boards of health. The departments of public and private philanthropy review all the known schemes of assistance and hospitals of every kind that modern civilization needs in city life to tend to the citizens from the cradle to the grave. These are followed by sections figuring the world fight against antituberculosis and alcohol, with the all modern machinery of prevention exemplified.

The **literary** life of a city is provided for by a section on the output of a book, journal or newspaper from the beginning of the making of the paper to the circulation through the city public libraries.

The **civic postal** and **telephone system** also is figured as well as the lighting, ventilation and heating of the city thoroughfares and homes.

Finally the city's outlook upon its **amusements** is given in a section on physical culture and sports. This will be supplemented by an athletic stadium for contests and displays on the ground.

Canada has much to learn from such an exhibition. We are a young nation and it is our business to inherit the wisdom of the older peoples, learnt often by sad experience. To such an exhibition as that projected we trust that many of our municipal administrators will send zealous city engineers, medical officers and other representatives to bring back the glad tidings of advanced and beneficial methods of alleviating and preventing many avoidable evils of city dwellers.

We trust too that Associations of public spirited citizens who also are working so keenly for the right formation of our ever growing cities will see to it that they too share in this inspiration offered by such an exhibition.

One immediate lesson for us, is to organize small exhibitions on any one of the particular sections above outlined, for the education of our people, and at some future day we may be so far advanced as to be able to hold an International City Exhibition in Canada.

An International City Improvement Exhibition

W. H. ATHERTON, Ph.D.,

Sec. City Improvement League of Montreal

The day of the old fashioned Universal Exhibition seems to have passed, so great is the amount of development that has gone on, in each of the component parts usually figured in such exhibitions, each of which now claims space to fill an Exhibition itself. Thus specialization has now come to be necessary owing to the increase of scientific knowledge, the vast growth of industrial activity and to the ever daily widening of our international relations. Universal expositions have thus now become **particular**.

Thus the announcement of an International City Improvement Exposition (Exposition Internationale Urbaine), to be held at Lyons in 1914 from May 1st to November 1st, comes with interesting appropriateness but not with surprise. For we have had lately an international city planning exhibition in London, and an **international** exhibition of general hygiene at Dresden and what more necessary and reasonable than the one now in preparation?

The time is ripe; for the student of our world-city life sees how the same grave problems of urban existence are confronting all the municipal authorities of the world—the needs of city hygiene, the regulation of labour, the cure and the prevention of the many diseases fostered and exaggerated by congested conditions—and are pressing for solution everywhere; and the city, that does not face but seeks to elude its problems, is doomed to decadence and to ignominy.

To ignominy, because ignorance cannot be pleaded as a sufficient cause for neglecting to adopt the remedies that are being so freely demonstrated in the press, in the scientific journals and in local and partial exhibitions now being so frequently held.

But how much less excuse will there be when these problems shall have been dramatically staged, and drastically revealed in an international exhibition, forcing the most unthinking to realize the situation, but at the same time offering reasonable solutions of a scientific, industrial, economic and social character arrived at by the process of comparison and the merciless criterion of experiment, and deduced reasonings translated into calm convincing statistical charts and clearly defined conclusions. The possibilities of the value of such an instructive International City Improvement Exhibition for the civilized world are apparent enough to any one who has been privileged to visit even such a partial method of attacking urban ills as that of the very successful Child Welfare Exhibitions held in the principal cities of the United States and in Montreal last October. In this latter case only a few of the city problems were lightly touched upon and those only which most directly affected the life of our city infants; but this partial show was so exceedingly valuable as an educative force, teaching us to probe more deeply into the study of the laws of cause and effect governing the health and happiness of the citizens at large, and thus arrive at a solution of social evils in one generation that would perhaps otherwise take very many, that we foresee untold good coming from the new venture at Lyons.

It will be a dignified and complete undertaking seeing that it is placed under the high patronage of the President of the French Republic and of his Government. Its size will admit of a very full treatment for civic problems. The site chosen is the new buildings of the

abattoirs before their definite utilization for the purpose destined.

These buildings, admirably suited for an exposition, cover more than * 120,000 metres square in an enclosed space of 50 hectares situated on two sides of the Rhone fronting its junction with the Saone. A magnificent hall, a great covered avenue, around which are grouped sixty pavillions, will permit justice being done to every section of the exhibition.

The French are always gay and there is added a considerable space for the "attractions" provided as a rest for mind and body after too much "Exhibit" gazing. There will be fifty-two sections of the Exhibition. The first is devoted to demographical statistics as the necessary preface to a city exhibition. There the facts of city life can be seen scientifically arranged, dealing with the life of the child even before birth and reaching to the last breath of the old man or woman.

A section is devoted to **Puericulture** or the protection of childhood, and treats of infantile mortality, its causes and its prevention; the protection of the mothers and maternal breast feeding; the "gouttes de lait" or milk depots, creches, day nurseries, consultation bureaus on child welfare; Mothers' Insurance; sterilization of milk in the house, milks for children, feeding bottles and the industries in connection with suckling infants (baby incubators, &c.).

The **school** has a section to itself comprising school buildings, school furniture, the matter taught in schools, arts in the school, and school hygiene, medical inspection, etc.

A section is devoted to **primary and secondary education** which includes the treatment of the abnormal child, outdoor schools, vacation classes and camps, school bands, and continuation classes.

Higher education is treated with subsections on law, letters, sciences, medicine, pharmacy, veterinary medicine, the Beaux Arts, and the higher social studies. **Technical, professional, and domestic economy** training also have their section.

Social economy and social works, another division, has the following subsections: Insurance, fraternal and obligatory, chambers of commerce, schools of commerce and industry, hygienic and cheap habitations.

Housing, as a separate section has the following subsections: the modern house, hygienic and cheap dwellings, garden cities and suburbs, building materials, paints and varnishes, decoration, sculpture, wall papers, (painted and washable), hygienic appliances, crockery, glassware, hygienic flooring, antidust contrivances, baths and the toilette, the locksmith and the ironmonger's section, marbles, stones, granite, &c.

The **furniture** section will treat of artistic and hygienic furniture, with a model hygienic room, textile fabrics for furnishing, carpets, etc.

Clothing and its accessories treats of the history of costume, the clothing of the man and woman, skins and furs, hatmaking, costumes, shoes, gloves, perfumery, brushmaking.

Food and drinks have six sections, such as animal foods, milk and its derivatives, vegetable foods, hygienic drinks, adulteration of foods, mineral waters and thermal establishments.

These are followed by a section on the **chemical industries**.

City Engineering has several sections all fully treat-

* A metre is 1.0936 yards; a hectare is 2 acres, 1 rood, 35 perches.

A Recreation Survey of the City of Montreal.



MISS JULIA SCHOENFELD,

Field Secretary,

Parks and Playground Association of America.

(The Parks and Playgrounds Association, of Montreal, of which Sir Alexandre Lacoste is President and Miss Watt, Hon.-Sec., recently secured a survey of the city of Montreal, and secured the services of Miss Schoenfeld for this purpose. The suggestions contained in this digest of the report are not of interest only to Montrealers, but to every municipality of large size in Canada, we believe will interest our readers generally.—Ed.)

Montreal is fortunate in having a Report on City Planning by Frederick Law Olmstead, prepared under the direction of the Metropolitan Parks Commission. In this report he states: "In any city closely covering a large area, well-distributed public playgrounds and neighborhood parks become one of the urgent needs, if the health and vigor of the people are to be maintained. The most important classes to be provided for are the women and children of wage-earning families, because of their numbers, and of the direct influence of their health and vigor upon the efficiency of the coming generation."

Mount Royal has so filled the need of the city in the past that those interested in public welfare have come to look upon it as supplying every recreational need in Montreal—forgetting that the city has grown very rapidly, until to-day there is a population of 550,000. There are few women and children who can daily travel a mile from their homes for outdoor pleasure. The question of car fare is an item that must be considered in the budget of a working class family and in Montreal there is not only a lack of recreational facilities for both children and adults, but present facilities are badly placed.

Montreal, with a population of 550,000, has a total park area of 827 acres,—accordingly 666 people to an acre of park. The entire area of the city is 28,451 acres; the percentage of park area is 2.83. The amount that a city should allow for parks and playgrounds is 5% of the total area, and so placed that there are parks and playgrounds within a half mile limit of every home. Compared with many other cities of almost similar size, Montreal makes a very poor appearance. A comparison is made in the following table

City	People to Acre of Park	Percentage of Park to Total Area.
Montreal.....	666	2.8
Toronto.....	265	3.7
Winnipeg.....	303	3.9
St. Louis.....	259	6.7
Boston.....	278	8.8
Pittsburg.....	403	5.1
Rochester.....	138	10.4

Montreal has had no City plan, and thus building space has been utilized without much thought being taken for reservations for parks and playgrounds. In the crowded districts of St. Lawrence, St. Mary, Papi-neau, St. Cunegonde and St. Joseph Wards, homes are built close to the streets, with little space in the rear, just enough for clothes lines. Thus the houses, built back to back, not only provide little air space, but absolutely no play space. From the seven hundred selected papers that were written by children from every school district, on what they do in their leisure hours, only ten children reported that they play and had back yards in which they played. Street play is prevalent. In any part of the city, from the less congested to the most thickly populated wards, children are playing after school hours until nine o'clock at night in the streets and the alleys. The streets with their danger from traffic, and the unpaved alleys, lined with garbage cans or with litter, are quite unfit for play.

Some idea of what children in Montreal actually do for amusement was gathered from the pupils of the second class in the High School and from the 7th and 8th of the English Grade Schools.

The girls did not report as great a variety of sports and games as the boys. For outdoor sports and games, they reported only roller-skating and street games. The boys spoke of baseball, football and running games of various sorts. Those games took place, for the most part, at Fletcher's Field, or on the streets. Several boys wrote that they wished Fletcher's Field could be given to them at definite hours, since there were always such crowds of fellows who wanted to play, and a constant interference of games. The stronger and bigger boys crowded out the little fellows. Many boys and girls stated that one of their favorite forms of amusement was to go down to the railroad stations and watch the trains pass. Very few of the papers spoke of indoor gymnasium work. Twenty-five boys reported going to the Young Men's Christian Association gymnasium. The boys and girls were about equally divided on the question of going to moving picture shows. It is a favorite method of spending leisure time on Saturday and Sunday. The percentage of attendance at these Shows would have been even greater had papers come from the children of all the schools.

An investigation made for the Child Welfare Exhibition showed that the children in eighteen schools spent nearly \$5,000 on Moving Picture Shows in six months. Moving pictures have real recreative value, but investigation showed that no attention is paid to ventilation, therefore the benefit derived from watching the pictures is not enough to counterbalance the two hours spent in a vitiated atmosphere.

It is interesting to note that going to the ice-cream parlors was spoken of as a part of the afternoon entertainment, and 5 per cent. of the girls mentioned this form of amusement; 74 per cent. of 288 girls spoke of

helping with the house-work at home, and attending to errands, and after that was done, the rest of the time was spent in either reading, talking with friends, going down town to look in shop windows, or walking.

There is great opportunity for the development of outdoor sports for girls. The Camp Fire movement for girls, which was recently organized in the United States, would be received with great joy by many who have the desire for outdoor sports, but lack initiative and direction.

The children who wrote these papers were from the ages of eleven to fourteen,—at the time when the leisure should not be spent indoors, but out in the open.

Careful enquiries were made regarding the numbers of children and young people who were reached through private organizations. The Boy Scouts, Young Men's Christian Association, Young Men's Hebrew Association, the Boy's Club, and Mr. Dawson's Club in Point St. Charles, have various recreational pursuits, and reach 3,100 boys and young men. The Montreal Amateur Athletic Association has an enrolled membership of 4,187, of which 479 are junior members. The Young Women's Christian Association, Catholic Girl's Club, Holiday House, and Laurel Club, with their entertainments and parties, meet the needs of about 375 girls and young women. Iverley Settlement and the University Settlement together appeal to about 500 boys and girls.

These were practically the only social centres that made recreation an important issue in their work. Some few churches have snowshoe clubs, but no church has laid any special emphasis on the social life of its members.

The dancing season had hardly begun when this study was made. There are six licensed dance halls. The responsibility of conduct is at all times thrown on the lessee of the hall. No liquor is sold, and the halls I visited ranked higher in conduct and social effectiveness than those in cities of similar size in the States. It was noticeable that the dance halls were really giving their patrons social training. The dancing was graceful and in good taste. There is no supervision from the parents, but the managers are keenly alive to their responsibility, and maintain order. The hours are from eight to twelve o'clock on the usual assembly nights, and from eight o'clock till four in the morning on special occasions. The halls are large, and, with one exception, are well kept. The ages of patrons vary from fourteen to twenty-five. At one dance hall on Notre Dame Street East we noticed many girls under sixteen. At another, we were in time to see a fight between some fellows who were drunk. We were keenly interested to see how quickly order was restored, and the unruly members turned out. No doubt, the general shaking-up of the dance halls in this city two years ago, through the efforts of the Dominion Alliance Association, has had a wholesome effect. The average attendance on a winter's night is somewhat over 2,000.

Four of the seven indoor skating rinks were open and the average attendance is 2,500 in an evening,—with the exception of Saturday and Sunday nights, when the attendance runs to 4,000. It is interesting to note that in all the indoor skating rinks, children under fourteen years were found. They remain until ten o'clock, the hour of closing. The law which forbids children going to moving picture shows in the evening, unless accompanied by parents or guardians, should also be enforced at the skating rinks and at the dance halls.

The Moving Picture Show is, by far, the dominant type of amusement in the city. It is to be found in all districts, and has become an integral part of the neigh-

borhood life. It is the family theatre, and parents go night after night, taking with them their children. No form of dramatic representation has ever appealed so greatly to the general public, and the number of houses, their capacity and attendance, show the hold that this kind of amusement has taken in this city. A conservative statement of the average attendance per week is 375,000.

In spite of the regulations, investigations in a few of the show places and the papers written by the children of the public schools, show that many children under fourteen go unaccompanied, and a stricter surveillance is needed.

The Vaudeville of the shows that I visited was poor and crude. It is far better to urge the management to have music between the pictures, than to present the vaudeville features that are now given.

Investigations were also made in regard Penny Arcades, Burlesque Theatres, the large recreational Parks, Billiard and Pool Rooms, and Bowling Alleys.

In 1903 two school yards were opened by the Parks' and Playgrounds' Association of Montreal. In 1904 two more playgrounds were opened on pieces of land granted by the city. Since that time four playgrounds have been kept open each summer, although their location was changed from year to year. During the winters of 1911 and 1912 slides were put on Fletcher's Field and Hibernia Road Playground. All the playgrounds have been well attended, in fact, they have been crowded at all times. On account of their size, however, they can only reach one thousand children or one and three quarter per cent. of the children in the city.

A large recreational movement has the greatest effect in welding people of different languages, national and social traditions, together. However different people are in their attitude on public issues, they can come together on those things that affect the health and welfare of the child. The best and most patriotic citizenship comes as a result of the practice of right ethical relations to each other, irrespective of nationality or class. In working out the kind of recreation that is helpful for both boys and girls, one must consider:

1. A real recreative standard;
2. An educational standard;
- and 3. A moral standard.

Climatic conditions of Montreal make outdoor sport unusually attractive, and while at present a large number of boys and girls have opportunities for Parks sports, still one must not lose sight of the fact that there is a much larger group which is neither physically able to travel great distances daily, nor has any incentive to start out for sport that is both wholesome and recreative.

Playgrounds teach self-control and self-government. The supervised playgrounds give to the children ideals which will be followed outside. It gives them new and worth-while play interest and games, so that native resourcefulness is fostered. The results of work on directed playgrounds are so superior to that which is accomplished on grounds undirected, that a return to the old way is never considered by cities that have had both experiences. On the undirected playground, the play is uncontrolled, and the vicious habits of the street are simply transferred.

The playground director is a member of one of the most useful professions. His field is the right shaping of the lives and character of boys and girls at susceptible ages, and under peculiarly potent conditions. He is not necessarily a teacher, but he is a leader. By mixing with boys and girls in their plays and games, he guides them by suggesting instead of by teaching.

Playgrounds rightly belong to the City. It is a preventive work, and far less costly than the Reformatory and the Juvenile Court. Experience shows that it is not desirable to establish playgrounds or athletic fields any faster than adequate supervision can be provided. Such supervision is the only guarantee to equal participation by all who are entitled to it, and the only safeguard to the tendency toward disorder and selfish aggression of the strong upon the weak, and the immoral influence which may make a playground an offence instead of a beneficent influence in the Community.

The cities in the United States have long been studying the problem of play and many of them are far advanced in public facilities for recreation and also in the supervision of the commercialized amusements such as dance-halls, moving picture shows, pool rooms, etc. In 1910 Montreal spent on 4 playgrounds the sum of \$3,051.43 or a per capita expenditure of .005½. The following table shows the amounts spent by cities in playgrounds, where the citizens are keenly alive to the value of preventative measures.

	No. of Playgrounds	Popu- lation	Expenditure	Per Capita
Montreal.....	4	550,000	\$ 3,051.43	.005½
Toronto.....	13	376,240	16,694.00	.05
Winnipeg....	13	135,430	12,000.00	.09
St. Louis.....	12	687,029	18,358.66	.03
Cleveland....	39	560,663	23,245.24	.04
Detroit.....	24	465,766	19,214.55	.04½
Los Angeles..	15	319,198	49,528.79	.15
San Francisco	18	416,912	75,500.00	.18
Pittsburg....	52	533,905	96,797.55	.18
Buffalo.....	12	423,715	92,545.30	.22

The following plan will take years to develop, but because Montreal is just entering upon a new era in civic improvement, it will be well to have a plan, and thus be saved from the many mistakes that the cities of the United States have made.

The entire development of the playground and recreational life of the people should be placed under the care of the Metropolitan Parks Commission. This civic body, recently created, has the power to make, execute, and carry out plans for the establishment of public parks, squares, promenades, recreation grounds and playgrounds in the City of Montreal.

In starting a recreation system, it is a wise economy to begin by employing a capable trained man as Recreation Secretary. His work will be the organization and executive management of the outdoor playgrounds; organization and direction of evening recreation centres; the promotion of school athletic lectures; of boys' and girls' recreational club activities; the studying of the amusement needs in the different wards, and helping in the solution of special conditions; the organization of a training class for playground workers; and the general supervision of the commercial forms of recreation.

Playgrounds should be established by converting many of the unused squares and open spaces. Where this is not possible land should be bought so that playgrounds in the congested wards at least would be within one half mile of each house. Field houses should be built in Fletcher's Field and Lafontaine Park; and later in those wards where the school houses are not adapted for neighborhood needs.

A broad policy should be followed in opening the schools for evening recreation, free public lectures, concerts and other entertainments.

Other needs of the future should be the development of St. Helen's Island as a recreational centre with the establishment of a free municipal ferry, the extension of public baths, floating bath and recreation piers.

To handle such a multiplicity of activities, Montreal will need a director, assistant director and teachers for the playgrounds and school centres, who should be qualified for their work through the establishment of a training class for playground workers.

Against Skyscrapers

The Council of the Municipal Improvement Association of Toronto, has passed the following resolution:

"Resolved that we (the Council of the Municipal Improvement Association) place ourselves on record in favor of limiting the height of the main portion of any building to twice the width of the street, but that we are not opposed to a portion of the building rising higher, providing that the upper storeys above the main portion are set back sufficient distance to allow light and air to circulate freely; that a copy of this resolution shall be sent to the members of the City Council with a request that the opinions of all other municipal and rate-payers' associations should be secured before definite action is taken by the civic authorities; that this is a question which affects the health and other interests of the whole business community, and involves points on which the advice of town-planning, transportation and civic health experts might reasonably be sought."

American Road Builders Association

The American Road Builders Association will hold its Tenth Annual Convention and Fourth American Good Roads Congress in Philadelphia, December 9th to 12th.

The Convention and Congress will be held in the First Regiment Armory, at Broad and Callowhill Streets.

As usual, there will be in connection with this meeting an exhibition, or rather exposition, of road and paving machinery, materials, etc. This feature, which is also under the auspices of the Association, is a most important part of the meeting and is invariably participated in by the leading manufacturers of the industry. The main floor of the Armory will be devoted to the exhibition feature, this floor being strong enough to hold the largest and heaviest machinery.

(Concluded from page 347)

plan should prove to be only rods, ready for use, but never used.

The adoption of a purchasing agent is following the example of Winnipeg, Man., and other places in Canada.

The Department of Social Welfare is new in name, and is evidently more extensive in its scope that is to be found, under other names, elsewhere. The enquiry into the cause of poverty has, we think, always been left to non-official bodies. There may be a question as to whether the civic officials will not antagonize the sweat-shops and some factories from economic reasons, and not from hygienic ones alone.

But it is very pleasant to record the awakening of another city to the fact that the citizens ought to govern their own city, and not leave it to the tender mercies of party bosses, or franchise-grabbers. Dayton is to be congratulated, and although it will not be easy to resist the insidious attacks of those who prefer the old order, yet if her citizens remember that a reform must be supported after it has been adopted, there is no doubt about the ultimate success of the new plan.

REVIEW OF CIVIC IMPROVEMENT

Conducted by

W. H. Atherton, Ph. D. (Sec. City Improvement League of Montreal) in conjunction with the Editor.

City Improvement League of Montreal

PRESIDENT :

J. GEORGE ADAMI, M.D., D.Sc., F.R.S.

HON. VICE-PRESIDENTS :

THE PRESIDENT OF THE BOARD OF TRADE.
LE PRESIDENT DE LA CHAMBRE DE COMMERCE.

VICE-PRESIDENTS :

MRS. J. B. LEARMONT, HON. J. J. GUERIN, M.D., LL.D., J. V.
DESAULNIERS, U. H. DANDURAND, FARQUHAR ROBERTSON.

HON. TREASURER :

J. F. BOULAIS, La Banque Nationale Building.

HON. SECRETARIES :

C. H. GOULD, B.A., and J. U. EMARD, K.C.

EXECUTIVE SECRETARY :

W. H. ATHERTON, PH. D.

402 Coristine Building. Phone Main 4362

The following are the rates of subscription:

Patrons, donors of \$100;

Honorary Members, \$25.00 yearly;

Sustaining Members, \$10.00 yearly;

Contributing Members, \$5.00 yearly;

Ordinary Members, \$2.00 yearly.

All communications to be addressed to Dr. W. H. Atherton, Secretary of the City Improvement League, office of the "Canadian Municipal Journal," 402 Coristine Building, Montreal.

The Value of a Civic Improvement League

The value of co-operation in a league cannot be estimated in dollars and cents. A league's influence, being spiritual cannot be submitted to any mechanical or material test. It cannot be weighed, measured, photographed or counted up, but it is a being to be reckoned with, for it effects results and rules public opinion.

Good City Government

The forces for good government at Montreal are being marshalled by the Citizens' Association in preparation for the coming municipal elections. The present dual arrangement between a Board of Controllers and a body of Aldermen may receive some modification. Students of the Commission form of Government will watch the coming developments with the greatest interest.

The Montreal Citizens' Association which was formed for the specific work of securing Good Municipal Government both in the execution of civic administration and through the watchful provision of promoting good candidates for election and rejecting the unfit, has issued, through its Executive Secretary, Mr. E. Montet, 7 Place d'Armes, the following invitation to the leading Civic Associations interested in civic betterment through Good Government, viz; The Board of Trade; Canadian Manufacturers' Association; (Montreal Branch); La Chambre de Commerce du District de Montreal; the Business Men's League; L'Association Immobiliere; the Trades and Labour Council; La Federation St-Jean-Baptiste; The Local Council of Women; La Bourse Immobiliere; the Housing and Planning Association; the Builders' Exchange; and the City Improvement League.

"I am directed by the Special Committee on Municipal Affairs of our Association to inquire if it will be agreeable to your Board to have a similar Committee from your Association take part in a joint meeting of the various public bodies of our City—a list of which is attached, to confer upon municipal matters".

The City Improvement League welcomes such effort at co-operation as a powerful element in citizen life.

The First Play Festival in Montreal

To any observer the Play Festival on Fletcher's Field, August 21st, was a most significant display.

The Board of Control of the City of Montreal in the month of June granted \$10,000.00 with which to make a beginning in the matter of supervised Playgrounds. The few short weeks that followed left no time for preparation of a detailed programme for exhibition. It was determined, therefore, by those in charge, to attempt to show to those uninformed just what is done on the Playground from day to day, and what it means to supervise properly the children's play.

Accordingly the children were gathered together, with their teachers, from nine different Playgrounds. Each group was allotted a certain space for their "Playground," and here they played at games chosen from a specially prepared list. There were games for small children, for girls, for boys; the roly-poly games and hard competitive games; active games and quiet games; singing and dancing games; not to mention two games of lacrosse, two of baseball and one of cricket. In all there were over 2,500 children participating in the games, exclusive of the hundreds who swarmed over the new gymnasium apparatus recently installed on Fletcher's Field, which, together with Parc Lafontaine, has been blessed by the above mentioned act of Municipal progressiveness, with excellent modern equipments such as are found in the best Playgrounds elsewhere.

In the grove an improvised stage gave opportunity for the telling and dramatization of some of those beautiful old folk and fairy-tales so dear to the hearts of the children.

On the band-stand was found a surprisingly large exhibit of the hand-craft, in sewing and raffia, of the Playground children.

Most significant of all was the interest and enthusiasm in the games. There was no disorder—simply a riot of pure fun. The children played the games as they had been taught them—so much better than those games picked up on the streets and alleys. They played the games for the fun that was in them, and the resultant happiness was a delight to see.

The programme closed with a vigorous shouting of "God save the King," and many were the smiles and comments from the spectators when they noted the reluctance with which the children left the grounds, even though the hour was long past.

These play festivals and modern gymnasia are an indication of the increasing interest in the future citizens of Canada. Other cities, not yet acquainted with them, have an opportunity to enquire from the Secretary of the Parks and Playgrounds Association of Montreal, Miss. Edith Watt, or from the Play organizer, Mr. T. McC. Black.

Parks and Playgrounds Activities

We beg to refer our readers' attention to the report prepared under the auspices of the Parks and Playgrounds' Association of Montreal by Miss Schoenfeld for the Controllers of Montreal, which appears in another section. We shall be glad to receive such communications from other associations which may wish to use this Journal as their official press bureau.

The Vacation Bible School Movement

The Montreal Vacation Bible School movement, noticed in last number, has been a very gratifying success. It was confined to three centres this year but it will be extended next summer. In preparation for this, a course of instruction will be given during the winter to workers.

The name given to the movement seems to be hardly wide enough. They were Bible schools in the sense that the moral instruction imparted consisted largely of scriptural stories and lessons, but the curriculum also included manual training and kindergarten methods in regard to work and supervised games. The work is worthy of being undertaken by the various churches under their own denominational auspices.

The movement at Montreal was directed by a committee of which the Rev. Mr. Burgess, assistant pastor of Emmanuel Church, was the chairman and Mr. John Bradford, community secretary of the Y. M. C. A., was the chief director.

Mr. Bradford explained the need of this neighborhood work thus: "In view of the fact that it is impossible for any city to supply enough playground space to meet the needs of its child population, some such work in neighborhoods removed from playground centres is absolutely necessary. The utilizing of churches in such sections offers a solution of the problem. It is possible to get plenty of volunteer help combined with trained paid leadership.

"It is an acknowledged fact that the street is not a desirable school for the child-life of any city. By being taught handiwork, games and so forth in these schools in the morning, the children are enabled to go out and carry these games to other children in their neighborhood. It is a well-known fact that children do not invent games, for the same games which were played by the grown-up generation are the games which are handed on to our children. They are the heritage of the past, and this is the reason for the supervision of the play-life of the child. Then the fact that these buildings can be used in this way with practically no rental expenses makes this form of work desirable."

The Cartier Memorial

The Cartier Memorial will be placed in Fletcher's Field and its site has been promised as the official entrance to the Mountain Park. The site desired by the Architects' Association of the Province of Quebec was in the centre of a circus formed on the central roadway on Park Avenue close by, and was in harmony with the preconceived plan already promoted by them for the future development of the lower part of Fletcher's Field as a worthy city entrance, as well as one to the park. The present site is a compromise, largely effected by delay caused in the negotiations and the urgent need of fixing the position in time for arrangements to be completed for the anniversary celebration.

The City Improvement League has always favoured the Architects' original plan.

An International City Improvement Exhibition

Under this heading there will be found in the present number a description of an exhibition which should appeal to the readers of this Journal. Incidentally the wide scope of the Exhibition indicates the breadth of view contained under the outlook of our own "Review of Civic Improvement."

The Metropolitan Parks' Commission of Montreal

The Metropolitan Parks' Commission, advocated, and finally put through the Quebec Legislature, by the City Improvement League, has not yet been put on a financial basis. It has been authorized to apply for a tax on real estate of one twentieth of one per cent on all Municipalities on the island of Montreal that will accept it. The City Council has long delayed its adhesion, although the controllers have recommended it. Finally the City Council is ready to make the grant necessary to begin the much needed City planning movement by taking the sum of one hundred thousand dollars annually out of the City loan fund. This move means nothing more or less than adding still further to the seventy millions debt and increasing the interest charges, which are now close upon three millions a year. It is stated that the Metropolitan Parks' Commission does not approve of this "act of folly" as a leader to the "Star" of Friday August 26, stigmatizes it.

It appears that the Provincial Legislature, after seeing the blocking methods used which are delaying the inception of a worthy preconceived scheme of development for Montreal, will be forced to order the levy of the tax on real estate. The cry will then be raised that the city is being robbed of its autonomy.

Moving Pictures in the Parks

These have run for ten weeks before immense crowds during the summer season, thrice weekly in five or six central parks. The Associations combining to provide the entertainments and to supervise the park arrangements, took the name of "The Childrens' Outdoor Moving Pictures." The principal source of financial aid was a grant of \$300.00 from the city. Other aid was voted by the Parks and Playgrounds Association, the Baron de Hirsch Institute, the Dental Association of the Province of Quebec, the St-Jean-Baptiste Association, and Montreal Women's Club. Other associations largely granted personal service and needed financial assistance, including the University Settlement, the City Improvement League, the Central Y. M. C. A., the Montreal Women's Club, etc.

A Belgian Civic Exhibition

There is at present going on at Gand in Belgium, from July to October, a comparative Exhibition of Towns.

It deals of 1. The building up of Towns and 2, the organization of Municipal Life. It is held under the high patronage and with the active co-operation of the town of Gand, on the occasion of the Universal Exposition being held in Gand this year, and it is further being promoted under the auspices of the Union of Belgian Municipalities.

It is also of an international character and the adhesions number most of the Governments of the world.

The forty-first Annual Meeting of the American Public Health Association (the United States of America, the Dominion of Canada, the Republic of Cuba, the Republic of Mexico) will be held at Colorado Springs, Col., from September 9th to 13th.

Among others, the following Canadians present papers: Drs. Peter H. Bryce, H. W. Hill, Chas. J. Hastings.

The Secretary is Prof. Selskar Gunn, 755 Boylston Street, Boston, Massachusetts.

Tarvia

*Preserves Roads
Prevents Dust~*



Russell Hill Road, Toronto

Overcomes Washing on a Heavy Grade

THE above cut shows Russell Hill Road in Toronto, a water-bound macadam road with a heavy grade. Formerly great damage was done to the surface of this roadway by washing, and incessant repairs were required to keep it in satisfactory condition.

In June, 1912, a coat of "Tarvia B", at the rate of one-third gallon per yard, was applied. The Tarvia penetrated into the road surface and hardened, thus reinforcing the natural binder, cementing the surface together and making the surface shed water like the proverbial duck's back. The torrents which formerly had destroyed the surface now ran off harmlessly, and the road showed no further signs of washing. In addition, the surface remained practically dustless and gave superior resistance to automobile traffic.

Water torn roads are as unnecessary in these days as dusty roads. The up-to-date engineer knows how to prevent water damage and dust by the use of a bituminous binder. The best and most economical binder is Tarvia, a coal tar product especially prepared for road work.

There are three kinds of Tarvia:—"Tarvia X," very dense, for the large voids of new construction; "Tarvia A," for thorough resurfacing work; "Tarvia B," which was used in the above contract, for dust prevention.

In all cases the function of Tarvia is the same—to seal the surface against water, to give it an element of plasticity enabling it to resist automobile traffic, and to bind the stone together to prevent internal movement and attrition by traffic. Booklets on request. Address our nearest office.

THE PATERSON MANUFACTURING COMPANY, LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE-PATERSON MANUFACTURING CO., LIMITED
ST. JOHN, N. B. HALIFAX, N. S. SYDNEY, N. S.

Parks in Edmonton, Alta.

By G. M. HALL, Industrial Commissioner

Seventeen tracts of land, ranging from $1\frac{1}{4}$ to 200 acres each, with a total of 801 acres, have been set aside for park purposes by the City of Edmonton, capital of the Province of Alberta and gateway to the north Pacific and Peace River districts, which has the land tax and public ownership of utilities in practical operation. Several of the parks are only a few steps from Jasper Avenue, the principal business thoroughfare, while others are reached by the municipal electric street cars.

Here is a city capable of high development along lines of landscape art. It is the most truly scenic city in the prairie provinces, having a wealth of river bank, wooded ravines, hills, valleys and plain, richly clad with forest and field foliage and vegetation. Edmonton is in the way, through natural advantages and the embellishment of landscape art, to become the most beautiful city in all western Canada.

The working out of the public parks system will do much toward such an end. All the public service plans are new, because the city itself is new, and is but a few years removed from the small town stage of existence. As lately as 1901 Edmonton had only 3,167 people and today there are 67,243 souls within the city limits. This sudden and remarkable growth has had the effect of making Edmonton a place where everybody is working over-time to keep up with a procession of progress that goes forward on the double-quick. Keeping pace with such rapid growth is no easy task, and the best efforts are often a good deal behind the demands.

However, in dealing with public parks, Edmonton is striving nobly and has done exceedingly well in quantity and quality of the work accomplished. The public parks system was a department of the City Engineer's office and was handled in connection with the city's boulevards and nurseries; but the need of a specialist in park work was felt, and a Superintendent of Parks was appointed in the person of Paul A. von Aueberg. Under his administration, public parks' work has made excellent progress. In a few months the parks area almost doubled; work has been done that makes the parks real recreation resorts; band concerts are made a part of the regular program; a first-class athletic field has been established and playgrounds equipped. Permanent structures, such as a swimming pool, shelter halls, band-stands, and other buildings suitable for park purposes, are being added to the parks' equipment, and Edmonton will soon have public parks in quality and quantity as good as any city of its size any where.

The policy of the parks department is to acquire land that is not suited for residential or industrial purposes, especially ravines and land that slopes toward the river. The North Saskatchewan flows in a deep and jagged course through the heart of the city, and lesser streams pour and purl through ravines that lead to the river. These ravines and the river banks are covered with birch, spruce, jackpine, tamarac, willow, alders, saskatoon bushes, high-bush cranberries and spiraeas. The trees and shrubs have foliage so dense and luxuriant that even small trees cast a vast deal of shade and do much to beautify the country. Wild flowers are abundant and grass grows green and lush on land enriched by centuries of heavy growth and decay. Nature through soil, climate and other conditions, has made of the Edmonton district a place eminently fitted for park purposes.

Having laid strong hold on the policy of public ownership, Edmonton takes care to have a look ahead before going into any plan of public improvement. Following

this plan, Edmonton is building up its park system solidly, if swiftly. All the buildings are constructed after approved methods, and each branch of park work is done with a view to lasting results—to purity of art and permanence of the product.

Among other recent developments of park work in Edmonton is the athletic field on the south side of the river. This valuable adjunct of city life was adopted from a former exhibition ground, and has been laid out in first class style as an athletic field, where games and meets may be carried on at a spot convenient to the center of the city. This plot of land contains 19 acres, and has as complete an arrangement for outdoor sports as most athletic fields in older countries. The field is fitted for playing a greater variety of games than is usual, because western Canada is the gathering ground of the nations, and each set of men bring their home games along with them to their new home.

The Edmonton field has a baseball diamond, two football pitches, a cricket crease, three lawn tennis courts, a half-mile track, 100-yard and 220-yard straight-away stretches for sprints, lawn bowling greens and apparatus for pole vaults, jumps and field sports generally. The enclosure has been sodded and well cared for, so that the grounds are neat and attractive to the eye, as well as practical for use. There is also a good building on the grounds, with dressing rooms, lockers and shower bath. Outdoor sports make up an outstanding feature of western Canadian life; the air is cool and bracing and the summer days so long that base-ball and football matches and many other games are played in the evening. This gives those who work even so late as 6 o'clock an opportunity to see the games or to play them.

New Book

EDUCATIONAL HANDWORK

T. B. KIDNER

Director of Manual Training, Calgary, Alta.

(The Educational Book Co., Toronto. Illus., 200 pp., \$1.25.)

The addition of technical education to the ordinary school lessons is being adopted in the Western schools, and in Calgary, Alta., the new schools are all being fitted up for such work, for both girls and boys. This is now in the charge of the author of this very practical book, in which is embodied his practical experience in Great Britain and later as Director of Manual Training for New Brunswick. The book has been authorized for use in Normal Schools in New Brunswick, British Columbia, Alberta and Saskatchewan, and opens with a foreword by Dr. Jas. W. Robertson, who says: "This work has been prepared by a teacher who has proven his merit by ten years of leadership in educational handwork in schools in Canada." It is "a contribution of real value to our present needs." "I welcome it as another aid to teachers in their peerless calling."

The book is well illustrated with cuts of actual work done, as well as of patterns, and the whole is so practically written and so well illustrated that any teacher can have no difficulty in following out the scheme of the author to grade the work for the smaller children so as to bring out their own intelligence. The final chapters show how the work done in paper and raffia can lead up to basket work and modelling.

If every school had at least a copy for the elementary teacher it would "help to preserve and develop the love of manual labor and to foster the habit of being happy at lessons in school" as Dr. Robertson says.



TELEPHONE NEWS



OFFICIAL INFORMATION
OF THE
CANADIAN INDEPENDENT TELEPHONE ASSOCIATION
& C, & C, & C,

AUTOMATIC TELEPHONE SYSTEMS

We take pleasure in announcing to all the municipalities throughout the Dominion that our automatic telephone systems have proved, and are proving to be, very successful, both from the standpoint of operation, and from the great satisfaction given to the telephone subscribers and users.

We are manufacturing in Canada, employing Canadian labor and capital, complete automatic telephone systems, switchboards, substations and supplies of a very superior type. We are prepared, and offer, to supply on reasonable notice, complete automatic telephone equipment for any size of exchange from 100 lines up to 10,000 lines or more, and at reasonable cost.

Our automatic telephone system lends itself to any desired subdivision desired for the purpose of saving in trunk line installation, cheapening of service and installation, and for flexibility, adaptation to conditions, economy in operation, durability, positive contacts and superior talking circuits, automatic party line telephone service where required, together with all of the other advantages and savings afforded by the superiority of automatic over manual telephone apparatus and operation.

We take this occasion to again inform the officers and all municipalities throughout the Dominion, as well as the general public, that the Canadian patents owned and controlled by our company, cover the essential principles of automatic telephony, and that it is our opinion and belief that no system of automatic telephones or semi-automatic telephones of any considerable size can be operated without infringing upon the claims of our Canadian patents, and that we are manufacturing in Canada under our patents and are selling and offering for sale automatic telephone equipment in accordance with the rules and practice and Patent Laws of Canada and that we will hold all infringers, both public and private, responsible.

The great saving in cost of installation and operation of automatic telephone systems over manual telephone systems is becoming generally recognized both by the public and by telephone engineers and experts generally. The superiority and general desirability of automatic telephone service over that of manual telephone service has been so thoroughly demonstrated that it is now recognized generally, and we will be pleased to correspond with any and all municipalities and individuals, corporations and associations desiring further information or contemplating the installation of telephone apparatus.

All of our telephones and telephone equipment, both manual and automatic, are fully guaranteed both as to quality and workmanship.

Canadian Independent Telephone Co.,
LIMITED

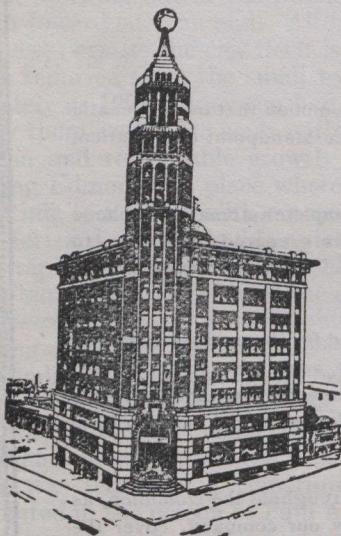
18-20 Duncan St., TORONTO, Ont.

TELEPHONE LOCKING SYSTEM.—The invention provides a telephone locking system by means of which a subscriber, when calling central will automatically lock all telephones on the line. It also provides a locking system for telephone whereby a subscriber, when calling central, will lock the remaining phones on the line out of service and wherein the calling subscriber may unlock the remaining phones on the line so that he may have talking communication with the called subscriber subsequent to the central operator "ringing" such subscriber.
Walter Alden Morse, North Grosvenor Dale, Conn. 1,069,458

The oldest established firm of Chartered Accountants in British Columbia

W. T. STEIN & COMPANY
CHARTERED ACCOUNTANTS

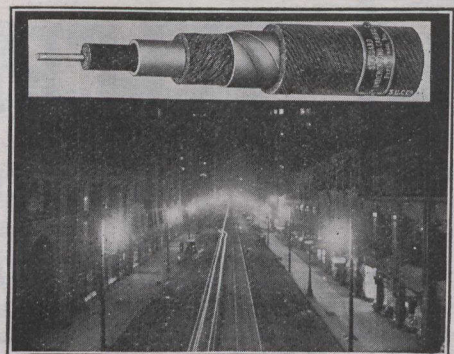
Chartered Accountants, Edinburgh, 1889
"
"
British Columbia, 1905
Canada, 1909



**MUNICIPAL
AUDITING
A SPECIALTY**

With our staff of trained experts, we are prepared to handle any Municipal work, and submit complete and accurate Reports before the elections for the ensuing year.

319 Pender Street, Vancouver, B. C.
P. O. BOX 816 PHONE 461



Illumination of Dearborn Street, Chicago, Ill., — "Standard" Steel Tape Armored Cable Installed.

Have You Considered

the advantages of installing steel tape armored cable directly in the ground without conduits or manholes? There are many ways in which such cables can be employed with great economy.

"STANDARD" Steel Tape Armored Cable

has been tested by many years of service and millions of feet of it are now in successful operation.

We are the only company in Canada able to manufacture and install cable systems of this type in rubber, paper or varnished cloth insulations, complete with joint boxes, junction boxes and terminals.

Write for our new Bulletin on Steel Tape Armored Cable.

Standard Underground Cable Co. of Canada, Limited

Montreal, Que. Hamilton, Ont. Winnipeg, Man.
Boston, Mass. Seattle, Wash.
Manufacturers of Electric Wires and Cables of all kinds, all sizes, also Cable Accessories.

MICHIGAN WESTERN
CEDAR POLES
SHIPPING FROM MAIN YARDS ASSURES OUR CUSTOMERS PROMPT DELIVERY AND SELECTED STOCK AT LOWEST PRICES CONSISTENT WITH QUALITY AND SERVICE
THE VALENTINE-CLARK CO.
MINNEAPOLIS MINNESOTA

NAUGLE POLE & TIE CO.
5 SO. WABASH AVE.
CHICAGO, ILL.
The Trinity in Poles
"Service"-"Price"-"Quality"
POLES

PARTRIDGE-DYER LUMBER CO.
Dealers in White Cedar Products.
POSTS, POLES, PILING.
WRITE FOR PRICES
BEAUDETTE, Minneapolls

Head Office : PRESCOT, England

PAID UP CAPITAL \$8,500,000.00

Works : PRESCOT, HELSBY and LIVERPOOL, England

British Insulated & Helsby Cables
LIMITED

ELECTRIC LIGHT AND POWER CABLES

Sole representatives for Canada

CANADIAN BRITISH INSULATED COMPANY LIMITED

MONTREAL, QUE.

**CANADIAN INDEPENDENT
TELEPHONE ASSOCIATION
OFFICERS FOR 1912-13 :**

President: G. W. JONES, Clarke, Ont.

Sec.-Treas.: F. DAGGER, 21 Richmond St. W., Toronto.

**Abstract of Telephone Patents
granted in the United States**

Prepared for *The Canadian Municipal Journal* by

Edward E. Clement,
Telephone Patent Expert, Washington, D.C.

ELECTRICAL CONNECTING APPARATUS.—This is an electromagnetically operated switching mechanism in which the movable contact member is given two motions for connection with any one of a number of fixed contacts and in which both motions are effected by the same electromagnet. G. A. Betulander, Sodertorns Villastad, Sweden. 1,064,957.

TELEPHONE TRUNKING SYSTEM.—This invention relates particularly to two-way trunks for use in automatic telephone exchange systems, as, for example, for trunking between two automatic exchanges, although in certain respects, is not limited to either a two-way or a one-way trunk.

E. D. Fales, La Grange, Ill., Assignor to Automatic Electric Co., Chicago, Ill. 1,064,719.

TELEPHONE RECEIVER SUPPORT.—This is a receiver support which is hingedly connected to the diaphragm supporting casing of a transmitter and adjustably carries the receiver in operable position at all times to the ear of the operator, the support being normally held in position with the transmitter and receiver disconnected from the line to permit the call-up alarm to be rung, but which due to the positioning of the ear to the receiver will move the support slightly against tension, the support acting similarly to the usual receiver hook to place the transmitter and receiver in the line during the calling of the exchange, the answering of a call and during conversation. C. D. Wightman, Glenwood Springs, Col. 1,065,570.

SIGNAL-SENDING DEVICE.—This invention relates to signaling systems, and has for its object the provision of new and improved devices to be used at a central station for calling a number of stations connected to the same line wires, which are preferably of the step-by-step or impulse type.

Harry O. Rugh, Sandwich, Ill., Assignor, by Mesne Assignments, to the Hall Switch & Signal Co., Corporation of Maine. 1,065,628.

TELEPHONE ATTACHMENT.—This invention provides means for supporting the telephone receiver in proper position with relation to the transmitter mouth piece.

Simon J. Heimbuecher, Jr., Pittsburgh, Penn. 1,065,805.

SANITARY TELEPHONE ATTACHMENT.—This is a covering for telephone transmitter mouth pieces. It consists generally of a piece of cardboard or other sheet material having a semi-circular tongue cut in the centre thereof and perforated so that when the opening, formed by the cutting of the tongue, is placed over the mouth piece, the perforated tongue will cover the opening.

George Washington Downs, New York, N.Y. 1,066,388.

ELECTRIC CAB SIGNALING SYSTEM.—This is a third rail cab signaling system in which a signaling device, a source of current and a circuit breaker, in each cab of two approaching trains, are connected in series and operated to affect each other within a predetermined distance.

James W. Tatum, of Angier, North Carolina, Assignor of one-sixth to B. N. Duke and one-sixth to W. Fuller, of New York, N. Y., and one-sixth to E. J. Parrish, one-sixth to John W. Smith, and one-sixth to Robert B. Boone, of Durham, North Carolina. 1,066,681.

LOCKING DEVICE FOR TELEPHONES.—The object of the invention is to supply a simple form of locking device which will not have to be removed from the instrument when the same is unlocked and which will nevertheless not be in the way when the instrument is being used.

Charles C. Bielitz, Brooklyn, N.Y. 1,066,786.

TELEPHONE REGISTER AND LOCK-OUT DEVICE.—This is a combined register and lock-out system and has for its chief object the provision of means whereby the transition from one system to the other may be readily effected by an unskilled person.

Charles V. Richey, Washington, D.C., Assignor to Phone Call Recorder Co., of Delaware. 1,067,274.

TRAIN TELEPHONE CONNECTION POLE.—This invention relates to improvements in train telephone connection poles and its objects are to simplify and improve the construction of such poles in order to enable connection to be rapidly made and unmade with the line wire, and further to provide means

whereby the connecting members may be generally held on the pole until they are properly attached to the line wire.

W. Leach, of Moose Jaw, Saskatchewan, Canada. 1,067,354.

TELEPHONE RECEIVER CASING.—This invention provides a construction in which the receiver casing is greatly strengthened by the use of a resistant body of metal, embedded therein, and in such manner that any electrical disturbance thereby is prevented.

Levi Swanson, New York, N.Y. 1,067,561.

SIGNALING SYSTEM.—The invention relates to signaling systems for selectively signaling any one of a plurality of substations, and is directed to systems in which a pole changer is provided, and also alternating currents, an object being to provide such a system in which a single vibrating contact is adapted, by co-operation with two stationary contacts in combination with a master key, to supply such currents of the above character.

C. A. Larson, Highland Park, Ill., Assignor to Kellogg Switchboard & Supply Co., of Chicago, Ill. 1,067,527.

TELEPHONE SYSTEM.—The invention relates to electrical distributing systems and particularly to underground systems of distribution for telephone cables. An object of the invention is to provide such a system that shall be simple and inexpensive to install and maintain, relative to the number of telephone subscribers served.

M. E. Gronvigh, Bergen, Norway, Assignor of one-half to Thomas S. Pukerud, Wilkinsburg, Pa. 1,067,606.

TELEPHONY.—This invention has reference to telephonic relay systems of the kind in which the association of relay apparatus with the line is made with a view to obtaining a balance of electrical conditions in the two parts of the system on opposite sides of the relay.

S. G. Brown, London, England. 1,067,715.

TELEPHONE TRANSMITTER.—The invention relates to improvements in telephone transmitters. One object is to form the vibratory diaphragm so as to permit its being quickly assembled and disassembled, providing an even tension upon the entire circumference and doing away with the usual soft rubber cushioning band.

J. Collins, Quaker City, Ohio, Assignor of one-half to W. K. Collins, Cripple Creek, Colorado. 1,067,718.

AUTOMATIC SWITCH FOR TELEPHONE SYSTEMS.—This invention relates to automatic switches for telephone systems in which a movable wiper is adapted to co-operate with a bank of contacts divided into groups and in which the wiper is moved in a primary direction to select a group of contacts and thereafter in a secondary direction to select a contact in a group, the object being to provide such a switch which is simple in construction and most positive in its operation.

George E. Mueller, La Grange, Ill., Assignor to Kellogg Switchboard and Supply Co., Chicago, Ill. 1,068,521.

COOLING DEVICE FOR TELEPHONE TRANSMITTERS FOR STRONG CURRENT.—The characteristic feature of this invention consists in the cooling medium being inclosed in a receptacle, with the bottom part of which the transmitter is so connected, that at the heating of the cooling medium, effected by the medium absorbing the heat generated in the transmitter, circulation of the medium is effected, by the heated part of the same ascending in the receptacle and the cooler part passing in opposite direction. Consequently the cooling device acts entirely automatically.

Carl Emil Egner, Stockholm, and Johan Gunnar Holmstrom, Saltsjostorangen, Sweden. 1,068,871.

TELEPHONE DISINFECTANT ATTACHMENT.—The invention comprises a pair of housings, for holding the rolled ends of a strip of paper, connected by a yoke member which supports them on either side of the telephone mouthpiece in such manner that the strip of paper can be unrolled out of one housing across the opening of the mouthpiece into the other housing.

Joseph Tichy, Chicago, Ill. 1,068,949.

REGISTER FOR TELEPHONE CALLS.—An object of this invention is to provide a register to be actuated by the operator but at the same time be under the control of the subscriber. Another object is to provide a register of this character with means, under the control of the subscriber, whereby the operator will be permitted to actuate the mechanism. A further object is to provide a register, at the telephone, operable only by the operator at the exchange, and operable by the operator at the exchange only when the subscriber at the telephone has necessarily adjusted the mechanism to permit of such operation.

Henry S. Brewington, Baltimore, Md. 1,068,972.

TELEPHONE RECEIVER HOLDER.—This invention relates to telephone receiver holders; and it has for its object to provide means whereby the receiver of a telephone may be firmly and conveniently held in position for use while the user of the telephone is facing and talking into the transmitter.

Andrew Wetzel, Los Angeles, Cal. 1,069,307.

CIVIC NOTES



EASTERN PROVINCES

AYR, ONT. The Hydro-electric by-law was carried by a large majority.

DRUMBO, ONT. The by-law in favor of Hydro-electric was carried by a good majority.

GANANOQUE, ONT. A by-law to purchase power from the Electric Light and a Water Supply Company, was passed.

HAMILTON, ONT. The C. P. R. is proposing to build a fast electric line from this city to Niagara River.

LINDSAY, ONT. The corner-stone of the new armories was laid by General Sir Ian Hamilton.—The Byrger Industrial by-law was carried.

MONTREAL, QUE. Practically the entire business section was without a telephone, when the main exchange was burned recently.—The Harbour Commissioners, will erect a new 3,000,000 bushel grain elevator, to be built where river boats may unload on the one side and ocean liners may be filled on the other.—The latest directory gives a population of 568,033 for the city proper, or 652,538 including the suburbs.—The proposed new bridge to the South Shore will be commenced early next spring; it will have accommodation for railway lines, electric cars, horse and vehicles and pedestrians.—The Council decided not to accept the offer of the owner to cede the ferry service to St. Helen's Island, in exchange for a ten years' exclusive franchise to provide refreshment and amusements to visitors to the Island Park.—The memorial statue to Sir George Cartier is to be on Fletcher's Field.—There is a proposition to hold a universal exhibition here in 1917 on St. Helen's Island.

ORILLIA, ONT. The Government will build a dam and power house at Swift Rapids, the new site, and pay the town a lump sum to cover the cost of the removal of the present plant, a new roadway and a transmission line.

OSHAWA, ONT. The Canadian Bank of Commerce has opened a branch here.

OTTAWA, ONT. The new directory gives the population as 102,234, an increase of over 5,000 during the past year.

QUEBEC, QUE. The Board of Trade is asking the Government to build a ship-building plant in connection with the graving dock at St. Joseph de Levis, the contract for which has been awarded.

ST. CATHARINES, ONT. The Bank of Montreal has opened a branch here.

ST. JOHN'S, QUE. The Canadian Marble Company is commencing to build a plant for the manufacture of marble for interior decorations.—A plant manufacturing electrical supplies will be built here shortly.

STRATFORD, ONT. The Council is considering the report of the Fire Chief asking for a new fire engine, hook and ladder truck, combination chemical engine and horse waggon, etc.—The Metropolitan Bank has opened a branch here.

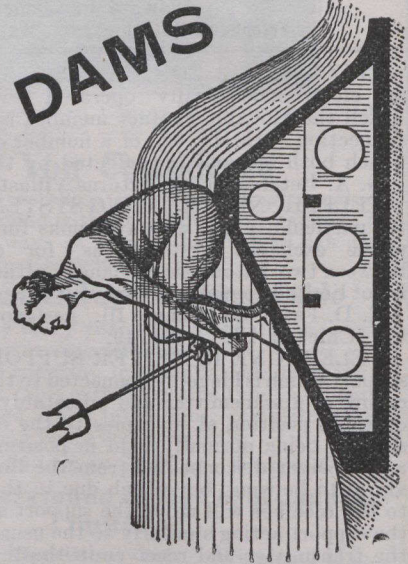
SHERBROOKE, QUE. A concern manufacturing steel and brass forgings by electricity, will commence operations here shortly; it is the first plant of the kind in the Dominion.

TORONTO, ONT. The City Council has decided to spend a million dollars for a mechanical filtration plant on the Island; there are plans for duplicate plants for the eastern and western sections of the city.—Work on the new Union station will be commenced in the spring.—The Dominion Railway Board has ordered work on the viaduct to begin at once.—Plans for a garbage and refuse disposal plant are being prepared; it is expected that the plant will be completed in two years and the city will then have the most modern garbage disposal works in the Dominion.

TRENTON, N.S. The Bank of Nova Scotia has opened a branch here.

WELLAND, ONT. has granted a fixed rate to the Electric Steel and Metals Company, which has purchased a site for works to treat steel and iron ores by electric power.

**AMBURSEN
HYDRAULIC
CONSTRUCTION
COMPANY
OF
CANADA,
Limited.**
405 Dorchester St., West,
MONTREAL, Que.
**TIGHT, PERMANENT
and inexpensive**



Cast Iron Water Pipe
SEND YOUR ENQUIRIES
TO
JOS. R. MARTIN & CO.
Board of Trade Bldg., Montreal

**DALY'S CANADIAN CRIMINAL
PROCEDURE
1911**
The model work for Magistrates
in every Province
HALF-CALF, \$6.50
The Carswell Company, Limited
TORONTO, Canada

OVER 65 YEARS' EXPERIENCE

PATENTS

TRADE MARKS
DESIGNS
COPYRIGHTS & C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. **HANDBOOK** on Patents sent free. Oldest agency for securing patents. Patents taken through **Munn & Co.** receive special notice, without charge, in the **Scientific American.**

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms for Canada, \$3.75 a year, postage prepaid. Sold by all newsdealers.

MUNN & Co. 361 Broadway, New York
Branch Office, 625 F St., Washington, D. C.

The Oldest Established Accountant Firm
in Saskatchewan

GLADWELL, WILSON & CO.

Successors to GAMBLE, GLADWELL & CO.
Chartered Accountants
Auditors, Liquidators and Trustees
MUNICIPAL AUDITING A SPECIALTY.
Dominion Trust Building, Regina.

CHAS. V. GLADWELL, C. A. Auditors.
Offices at Weyburn and Swift Current

City of Regina.
Towns of Moosomin,
Arcola, Melville,
Lumsden, Estevan,
Swift Current,
Carlyle,
North Battleford.

F. J. WILSON,
C. A.



CONCRETE PAVEMENTS

ARE HERE
TO STAY.



Kahn Steel Expansion Joints

INCREASE THE LIFE OF CONCRETE PAVEMENTS.

WRITE FOR INFORMATION.

Concrete Bridges, Retaining Walls, Silos and Buildings are strongest and most economical when reinforced **ACCORDING TO THE KAHN SYSTEM.**

OTHER PRODUCTS. Hy-Rib—for Concrete Walls, Partitions, Floor and Roof slabs. Rib Metal—for Concrete Sewers, Floors, etc. Trus-Con Chemical Products—for Waterproofing and finishing concrete. Kahn System Sash—for Strength, Fireproofness and Maximum Light. All Sizes of Lights and Ventilators.

LET US QUOTE YOU

TRUSSED CONCRETE STEEL Co.

OF CANADA, LIMITED

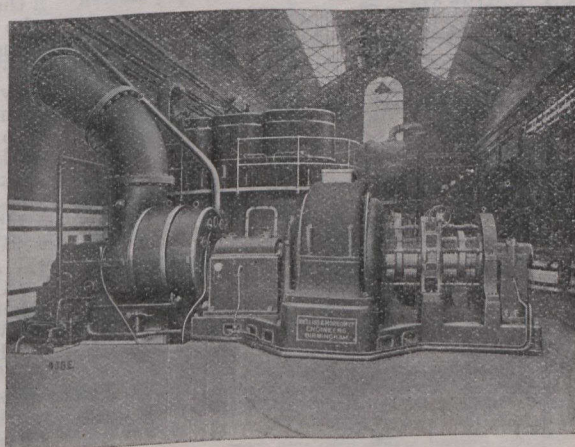
HEAD OFFICE AND WORKS, - WALKERVILLE, Ont.

BRANCHES: 23 Jordan St., Toronto. Coristine Building, Montreal. Union Bank Building, Winnipeg. Hutchinson Bldg., Vancouver. Chronicle Bldg., Halifax.

BELLISS & MORCOM

ENGINE AND EXHAUST TURBINE
PLANTS FOR MUNICIPAL USE

INCREASE THE CAPACITY
OF YOUR PLANT 50% BY
INSTALLING AN EXHAUST
TURBINE WITH CON-
DENSER.



A BELLISS RECIPROCAT-
ING ENGINE COMBINED
WITH AN EXHAUST
TURBINE GIVES UNPAR-
ALLELLED ECONOMY. . .

RECIPROCATOR AND EXHAUST STEAM TURBINE
DARLINGTON CORPORATION

MANUFACTURED BY MESSRS. BELLISS & MORCOM
BIRMINGHAM, Eng.

REPRESENTED BY

LAURIE & LAMB

211-212 BOARD OF TRADE

MONTREAL

NEWS—NEWS

Boom your "Town".
Advertise in the "Civic Notes."
There is no charge.

ROMAN STONE

is specified by the most fastidious Architects and recommended by the most careful Engineers. Made from pure white marble and machine tooled after casting, Roman Stone has proven itself a building material worthy to be used in the finest structures.

Send your plans for an estimate and write for descriptive literature.

The ROMAN STONE CO. LIMITED

50-100 Marlborough Avenue. TORONTO

Montreal Representatives:

T. A. MORRISON & CO.
204 St. James Street

H. J. Bowman, D.L.S., M. Can. Soc. C.E.
A. W. Connor, B.A., C.E.,

BOWMAN & CONNOR

Consulting Municipal and Structural Engineers
Concrete and Steel Bridges and Buildings

Cement Testing | 36 Toronto St., TORONTO
Branch Office: BERLIN

A VENDRE

"TAMCO" Pierre Concassée,
de toutes dimensions. Gravois
pour couvertures. Pierre arti-
ficielle "Roman." Briques pressées
"Milton." Concasseurs de pierre.
Pompes à Incendies, etc.
T. A. MORRISON & CIE,
204 Rue St-Jacques,
Tél. Main 4532. Montréal.



W. D. Lighthall, K. C., M. A., F. R. S. L., etc.
C. A. Harwood, B. C. L.

CABLE ADDRESS: "LIGHTHALL"

LIGHTHALL & HARWOOD

BARRISTERS, SOLICITORS,
ADVOCATES, ETC. . . .

CHAMBERS

New York Life Building,
Place d'Armes, - Montreal

H. J. ROSS,

ACCOUNTANT TRUSTEE

(Member, Special Committee of the U.C.M. on
Uniform Municipal Accounting)

Municipal Audits a Specialty.
Municipal Bonds Negotiated.
Estates Managed.

180 St. James St., Montreal

SEND
TENDERS
NEWS
SUBSCRIPTIONS

TO

CANADIAN MUNICIPAL JOURNAL

CIVIC NOTES

WESTERN PROVINCES

BAWLFI, ALTA. The town was incorporated nearly seven years ago and has a population of almost 400.—The fire protection consists of a chemical engine of 100 gallon capacity and two concrete cisterns, each holding 800 barrels.—Natural gas has been discovered, which will provide light and heating.

BOW ISLAND, ALTA. A contract with the drilling company for the first municipal gas well has been signed.

BRANDON, MAN. The telephone exchange was gutted by fire recently, causing a loss of \$100,000.—The Carnegie corporation has offered a donation to the city for a library, on condition that a certain sum is raised annually towards the maintenance.—The municipal street railway has proved a great success; during the recent Dominion Fair an average of 14,000 passengers daily for ten days, were carried.

BROADVIEW, SASK. While testing for water for a well contractors struck a strong flow of gas.

BROOKS, ALTA. The population has jumped from 200 to nearly 800 in the last two years.

CALGARY, ALTA. A by-law is to be submitted for a permanent tuberculosis hospital.—The Canadian Flaked Potatoe Company is the name of a new corporation; this concern will consume the entire potato crop of all the producing centres in the Province.

EDMONTON, ALTA. The civic census just completed gives a population of 67,342 in the city proper.

MELFORT, SASK. In August 1914 a pageant will be held to commemorate the 160th anniversary of the initial attempt at agriculture made near here at Fort La Corne by the French explorer, Chevalier de la Corne.

NELSON, B. C. The local gas company and the local street railway are in financial difficulties; the city is thinking of municipal ownership as a possible solution of a rather serious situation.

NORTH VANCOUVER, B.C. Tenders have been called for the construction of the new Drill Hall in Mahon Park.

PORT COQUITLAM, B.C. The city's new waterworks system was formally opened by the Mayor, who was presented with a silver key.

PORT MOODY, B.C. The C. P. R. plans for a line along the north shore from this town to North Vancouver, have been approved by the Railway Board.

PRINCE RUPERT, B.C. The Grand Trunk Pacific will build a grain elevator with a capacity of 10,000,000 bushels.

QU'APPELLE, SASK. It has been decided to dredge the Qu'Appelle River from this town to Lebrét Lake.

REGINA, SASK. A local company has been organized to erect a flax mill, elevators and oil storage tanks,

ROSTHERN, SASK. The Council has decided to submit a by-law to purchase a 50 horse-power gasoline fire engine, and equipment necessary; also for the building of two 30,000 gallon tanks, and probably two smaller ones for water reservoirs.

SASKATOON, SASK. Work on the Dominion Government interior storage elevator will commence this fall; the elevator will have a capacity of 3,000,000 bushels.

SOUTH VANCOUVER, B.C. The Board of Trade is planning the building of public market.

VANCOUVER, B.C. The Amalgamated Dry Dock and Engineering Company of this city, is applying for a subsidy for the construction of a floating dry dock.

WINNIPEG, MAN. The seventeenth annual convention of the League of American Municipalities was held here last month.

NOTHING DOING

A certain Western City has an invaluable asset in a City Engineer who is not only very clever technically, but absolutely honourable. He is also a man of few words.

To this city came a smart contractor from south of the line, intent on getting a certain contract. He met an Alderman who has a sense of humour, and told him that there was two thousand dollars to be divided among "the boys" if the contract came his way, and asked who was the right man to see. The humorous Alderman told him that the only man who could work it was the City Engineer. So off he went to "fix it" with the Engineer.

In a very short time he was back again, evidently a mad and disgusted man, and broke out, "What sort of an Engineer have you got here anyway? He must be a blithering idiot."

"Why, how did you get on?" enquired the Alderman.

"Get on"—indignantly said the contractor, "I didn't get on; I got out."

"What did the Engineer say?"

"He didn't say anything, confound him", said the U.S. man; "that's the worst."

"Well, what did he do?" persisted the Alderman.

"Well, when I got into his private office, I told him that there was a couple of thousands for some one if the contract came my way, and explained that he could have it to divide as he liked. He just stared at me, and I did some more explaining. When I stopped, he never said a word—only just stared, and touched a button. Then a burly looking man came in, and Mr. Engineer said rather savagely, "Show this person outside, and don't let him come in again. That's all he said".

Needless to say that American tenderer did not get that contract. The humorous Alderman enjoyed the joke, but the other man failed to see it.

ECHOES FROM MUNICIPAL FINANCE

WE BUY
AND SELL

MUNICIPAL DEBENTURES

If YOU wish to dis-
pose of this class of
bonds do not fail to
write us.

Brent Noxon & Co.
Canada Life Building,
TORONTO, Ont.

PORT COQUITLAM, B.C. A local syndicate is establishing a municipal telephone system.

NORTH BAY, ONT. There is a deficit of \$2,300 in the tax department.

SCOTT, SASK., has sold \$8,000 6 per cent. 20-year debentures to the Flood Land Company.

SOUTH VANCOUVER, B.C. The followings three by-laws were defeated:— school \$450,000; hospital \$35,000; and fire halls \$85,000; the following three by-laws were passed:—to raise \$57,500 for roads; \$30,000 for sidewalks; and \$130,000 for waterworks.

ST. CATHARINES, ONT. The tax rate has been struck at 22½ mills.

STRAFORD, ONT. The by-law was passed to guarantee the \$30,000 bonds of the Stratford Mill Building Company, and fix the assessment at \$12,000 for ten years, in return for the Company erecting a plant valued at \$60,000, and employing fifty hands the first year, increasing to one hundred hands by the third year.

ST. THOMAS, ONT. The Ontario Municipal and Railway Board has confirmed the by-laws to raise \$100,000 for the extension of the waterworks system.

THOROLD, ONT., has sold \$9,527 5 per cent. 10-year debentures.

TILLSONBURG, ONT. The by-law to grant \$25,000 and a free site to the Snedcor-Hathaway Shoe Company, was passed by a big majority.

REVELSTOKE, B.C. A new industry is coming in the form of a foundry for the manufacture of cast iron stoves and heaters, also brass and iron castings; a trackage site has been sold and the factory will be ready in the fall.

LOANS MADE TO:
BONDS BOUGHT FROM:

Municipalities

A. P. LESPERANCE
MANAGER
City and District Savings Bank
MONTREAL

Advertise Your

BONDS and DEBENTURES

IN
The CANADIAN MUNICIPAL JOURNAL

THE BANK OF OTTAWA

ESTABLISHED 1874

HEAD OFFICE, - OTTAWA

Capital Authorized	\$5,000,000
Capital Paid Up	3,500,000
Rest	3,900,000

The Bank transacts every description of banking business and gives the most careful attention to any business entrusted to it.

BRANCHES AND AGENTS

THROUGHOUT THE DOMINION

IMPERIAL BANK OF CANADA

Capital Authorized	\$10,000,000.00
Capital, paid-up	6,925,000.00
Reserve and undivided Profits	8,100,000.00

DIRECTORS:

D. R. WILKIE, President, Hon. R. JAFFRAY, Vice-President, Wm. Ramsay of Bowland, Elias Rogers, J. Kerr Osborne, Peleg Howland, Sir Wm. Whyte, Winnipeg; Cawthra Mulock, Hon. Richard Turner, Quebec; Wm. Hamilton Merritt, M. D., St. Catharines; W. J. Gage.

HEAD OFFICE, - - - TORONTO.

Ontario	Quebec	Alberta
Amherstburg	Montreal	Athabaska Landing
Belwood	Quebec	Banff
Bolton		Calgary
Brantford		Edmonton
Caledon East		Red Cliff
Cobalt		Rocky Mountain
Cottam		House
Cochrane		Lethbridge
Elk Lake		Red Deer
Essex		Strathcona
Fergus		Wetaskiwin
Fonthill		
Fort William		British Columbia
Galt		Arrowhead
Hamilton		Chase
Harrow		Cranbrook
Humberstone		Fernie
Ingersoll		Golden
Jordan		Kamloops
Vineland		Michel
Kenora		Nelson
Listowel		New Michel
London		Revelstoke
Marshville		Vancouver
		Victoria
		Wilmer

SAVINGS DEPARTMENT.

Interest allowed on Deposits at all Branches of the Bank throughout the DOMINION OF CANADA. Drafts, Money Orders and Letters of Credit Issued Available in Any Part of the World.

Agents in England and Scotland.—Lloyds Bank Limited, and the Commercial Bank of Scotland, Limited, and Branches with whom money may be deposited for transfer by letter or cable to any part of Canada.

Agents in United States.—New York, Bank of the Manhattan Company; Chicago: First National Bank; San Francisco: Wells, Fargo Nevada National Bank.

Agents in France.—Credit Lyonnais.

Agents in Germany.—Deutsche Bank.

BANK OF MONTREAL

(Established 1817)

INCORPORATED BY ACT OF PARLIAMENT.

CAPITAL Paid-up \$16,000,000.00
 REST \$16,000,000.00
 UNDIVIDED PROFITS \$802,814.94

HEAD OFFICE—MONTREAL

BOARD OF DIRECTORS

Rt. Hon. Lord STRATHCONA AND MOUNT ROYAL, G.C.M., G.C.V.O.
 Honorary President.

R. B. ANGUS, Esq., President.

H. V. MEREDITH, Esq., Vice-President.

E. B. GREENSHIELDS, Esq.,	SIR WILLIAM MACDONALD
JAMES ROSS, Esq.,	HON. ROBERT MACKAY,
SIR THOMAS SHAUGHNESSY, K.C.V.O.	DAVID MORRICE, Esq.,
C. R. HOSMER, Esq.,	A. BAUMGARTEN, Esq.,
C. B. GORDON, Esq.,	H. R. DRUMMOND, Esq.

D. FORBES ANGUS, Esq.

H. V. MEREDITH, Esq., General Manager.

A. MACNEIDER, Chief Inspector and Superintendent of Branches.

C. SWRENY, Supt. British Columbia Branches.

A. D. BRAITHWAITE, Supt. Ontario Branches.

F. J. COCKBURN, Supt. Quebec Branches.

E. P. WINSLOW, Supt. North West Branches.

D. R. CLARKE, Supt. Maritime Provs. and Nfld. Branches.

BRANCHES:

At all Important Cities and Towns in every Province in the Dominion of Canada.

IN NEWFOUNDLAND:

ST. JOHN'S BIRCHY COVE GRAND FALLS

IN GREAT BRITAIN:

LONDON, - - 47 Threadneedle St., E. C.,

SIR FREDERICK WILLIAMS-TAYLOR Manager.

IN THE UNITED STATES:

NEW YORK, R. Y. HEBDEN, W. A. BOG, and J. T. MOLINEUX,
 Agents, 64 Wall Street.

CHICAGO, ILL. SPOKANE, WASH.

IN MEXICO:

MEXICO, D. F.

THE ROYAL BANK OF CANADA

Capital Authorized - - - - - \$ 25,000,000
 Capital Paid up - - - - - 11,560,000
 Reserve and Undivided Profits - - - - - 13,000,000
 Total Assets - - - - - 180,000,000

Head Office - MONTREAL.

BOARD OF DIRECTORS:

H. S. HOLT, President. E.L. PEASE, Vice-President.
 E. F. B. JOHNSTON, K.C. 2nd Vice-President.

Wiley Smith	D. K. Elliott	Wm. Robertson
Hon. D. MacKeen	W. H. Thorne	A. J. Brown, K. C.
Jas. Redmond	Hugh Paton	W. J. Sheppard
G. R. Crowe	T. J. Drummond	C. S. Wilcox
	A. E. Dymont	

OFFICERS

E. L. Pease, General Manager
 C. E. Neill and F. J. Sherman, Asst. Gen-Managers
 W. B. Torrance, Supt. of Branches

Branches in every Province of the DOMINION OF CANADA and in NEWFOUNDLAND; in HAVANA and throughout CUBA, Porto Rico and Dominican Republic; BAHAMAS, Nassau; BARBADOS, Bridgetown; JAMAICA, Kingston; TRINIDAD, Port of Spain and San Fernando; BRITISH HONDURAS, Belize.

LONDON, ENG., OFFICE — Princes St., E. C.

NEW YORK AGENCY — Corner William and Cedar Sts.

SAVINGS DEPARTMENT AT ALL BRANCHES

The Canadian Bank of Commerce

PAID-UP CAPITAL - \$15,000,000
 REST - - - - - 12,500,000

HEAD OFFICE - TORONTO

BOARD OF DIRECTORS:

Sir Edmund Walker, C.V.O., LL.D., D.C.L., President.

Z. A. Lash, Esq., K.C., LL.D., Vice-President.

Hon. George A. Cox.	William McMaster, Esq.
John Hoskin, Esq., K.C., LL.D.	Robert Stuart, Esq.
J. W. Flavelle, Esq., LL.D.	G. P. Galt, Esq.
A. Kingman, Esq.	Alexander Laird, Esq.
Sir Lyman M. Jones.	William Farwell, Esq., D.C.L.
Hon. W. C. Edwards.	Gardner Stevens, Esq.
E. R. Wood, Esq.	G. G. Foster, Esq., K.C.
Sir John M. Gibson, K.C.M.G.,	Charles Colby, Esq. M.A., Ph.D.
K.C., LL.D.	A. C. Flumerfelt, Esq.

ALEXANDER LAIRD - - General Manager

JOHN AIRD, Asst. General Manager

BRANCHES IN EVERY PROVINCE OF CANADA AND IN THE UNITED STATES, MEXICO AND ENGLAND

Montreal Office, H. B. WALKER, Manager

London (England) Office, 2 Lombard Street, E. C.

H. V. F. JONES, Manager

New York Agency, 16 Exchange Place,

WM. GRAY and H. P. SCHELL, Agents

This Bank transacts every description of Banking Business including the issue of Travellers' Cheques, Letters of Credit and Drafts on Foreign Countries, and will negotiate or receive for collection bills on any place where there is a bank or banker.

THE MERCHANTS' BANK OF CANADA

HEAD OFFICE - - - - - MONTREAL

Capital paid-up \$6,758,900. Reserve Fund and Undivided Profits \$6,820,189

Pres.: Sir H. MONTAGU ALLAN; V.-P.: K. W. BLACKWELL.

E. F. HEBDEN, General Manager.

LIST OF BRANCHES AND AGENCIES:

Quebec—Montreal (Head Office St. James St.), 1255 St. Catherine St. E., 320 St. Catherine St. W., 1330 St. Lawrence Boul., 1366 St. Lawrence Boul., 672 Centre St., Beauharnois, Huntingdon, Lachine, Quebec, Rigaud, Shawville, Sherbrooke, St. Agathe, St. Jerome, St. Johns, St. Jovite, St. Sauveur, Three Rivers.

Ontario—Acton, Alveston, Athens, Belleville, Berlin, Bothwell, Brampton, Brantford, Chatham, Chatsworth, Chesley, Creemore, Delta, Eganville, Elgin, Elora, Finch, Ford City, Fort William, Galt, Gananoque, Georgetown, Glencoe, Gore Bay, Granton, Guelph, Hamilton, Hanover, Hespeler, Ingersoll, Kincardine, Kingston, Lancaster, Lansdowne, Leamington, Little Current, London, Lucan, Markdale, Meaford, Mildmay, Mitchell, Napanee, Oakville, Orillia, Ottawa, Owen Sound, Perth, Prescott, Preston, Renfrew, Sandwich, Stratford, St. Eugene, St. George, St. Thomas, Tara, Thamesville, Tilbury, Toronto, (Wellington St., Dundas St., Parliament St., Parkdale), Walkerton, Walkerville, Wallaceburg, Watford, West Lorne, Westport, Wheatley, Yarker.

Manitoba—Brandon, Carberry, Gladstone, Hartney, Macgregor, Morris, Napinka, Neepawa, Oak Lake, Portage la Prairie, Russell, Souris, Winnipeg, (ditto, Bannerman Avenue.)

Alberta—Acme, Brooks, Calgary, (do. 2nd Street E), Carstairs, Castor, Coronation, Chauvin, Dayalnd, Delburne, Donald, Edgerton, Edmonton, (do. Namayo Ave., Alberta Ave., Athabaska Ave.), Edson, Hanna, Hughenden, Islay, Killam, Lacombe, Leduc, Lethbridge, Mannville, Medicine Hat, Munson, New Norway, Okotoks, Olds, Pincher Station, Redcliff, Red Deer, Sedgewick, Strome, Stettler, Tofield, Trochu, Vegreville, Viking, Wainright, Wetaskiwin.

Saskatchewan—Antler, Arcola, Battleford, Carnduff, Frobisher, Gainsborough, Gull Lake, Kisbey, Maple Creek, Melville, Moose Jaw, Oxbow, Regina, Saskatoon, Unity, Whitewood.

Nova Scotia—Halifax.

New Brunswick—St. John.

British Columbia—Elko, Chilliwack, Nanaimo, Sidney, New Westminster, Victoria, (do. North End.), Vancouver (do. Hastings St.)

SUB-AGENCIES—Quebec—Bury, Napierville, Quyon; **Ontario**—Addison, Calabogie, Frankville, London South, Lyndhurst, Muirkirk, Newbury, Newington, Pelea Island, Williamstown; **Manitoba**—Austin, Griswold, Oakville, Sidney; **Alberta**—Botha, Czar, Rumsay; **Saskatchewan**—Forbes.

A general Banking Business transacted. Savings Department at all Branches. Interest paid at best current rates.

New York Agency: 63 and 65 Wall St.

The accounts of Municipalities kept and advances made in anticipation of the collection of taxes; also, loans for improvement purpose in anticipation of the issue of debentures.

FINANCIAL NOTES

DEALERS IN
HIGH GRADE
**BONDS &
DEBENTURES**
CORRESPONDENCE
SOLICITED

**DOMINION
SECURITIES
CORPORATION, LIMITED**

MONTREAL, LONDON, TORONTO
P.Q. ENG. ONT.

AURORA, ONT. The following by laws were passed recently:—to raise \$16,000 for the purchase of electrical machinery and apparatus, and its installation; and \$5,000 to be spent in the purchase of electric pumps.

BATTLEFORD, SASK. Two money by-laws have been passed; they were as follows: to raise \$40,000 to aid the Laurentia Milk Company and \$50,000 for waterworks and sewers.—The by-law to raise \$35,000 for the erection of a new fire hall was defeated.

BAWLW, ALTA. The village assessment is \$60,000 and the school assessment is \$15,000; the total debenture debt is \$1,950.

BRANDON, MAN., has sold \$45,000 5% debentures at 88, to the Canadian Phoenix Insurance Company.

BREDENBURG, SASK. The by-law to raise \$5,000 to be expended on fire protection, was defeated.

BROOKS, ALTA. The taxable property is assessed at \$800,000; last year the figures were only \$184,800.

CALGARY, ALTA. The City Council has passed a by-law to provide \$350,000 for a public abattoir and a site for the same.—It is claimed that the municipal paving plant is saving the city \$1000 a day.—The City Council, on the recommendation of the finance committee, has set aside \$7,000 for the South African monument.

CHATHAM, ONT. The tax rate is fixed at 24 mills, a reduction of $3\frac{1}{2}$ mills.

DUNDAS, ONT. A by-law to raise \$15,000 as a guarantee of the bonds of the Canadian Abrasive Wheels Company, Limited, was carried.

EDMONTON, ALTA. The Council has passed by-laws to authorize the issuance of \$2,340,400.69 debentures for municipal expenditures.—The city's credit is so good that it can now borrow \$1,000,000 a month.

GANANOQUE, ONT. The by-law to grant a bonus of \$20,000 to the Gananoque and Arnprior Railway to assist them in building a line of steam railway from this town to Perth, was carried.

GLENWOOD, MAN. A by-law to raise \$30,000 for building an addition to the school, was passed.

MONTREAL, QUE. The City owns real estate assessed in excess of \$46,000,000, which is made up as follows: aqueducts (whose annual rental value is \$1,200,000), worth \$14,000,000; public works \$26,000,000; civic properties, including fire halls, etc., \$6,500,000.—The present indebtedness stands at \$62,000,000; the city is expecting to issue a further authorized regular loan of \$11,904,000 and a special aqueduct loan of \$2,300,000.

MOOSE JAW, SASK. The tax rate was struck at 17 mills, which includes one mill covering collegiate, school and library.

NELSON, B.C. A by-law to guarantee the bonds of the Nelson Street Railway Company to the extent of \$40,000, has been defeated.—The tax rate is 37 mills on land and 2 mills on 50 per cent. of improvements, a reduction of half a mill on land.

NEW GLASGOW, N.S., has sold \$60,000 5 per cent. debentures to the Eastern Securities Company.

NORTH BATTLEFORD, SASK. The assessment for 1913 is \$10,034,137, as compared with \$5,579,397 for 1912.—It is said that the city will have finally adopted the single tax system within two years.

ORILLIA, ONT. The by-law to give a loan of \$25,000 to the C. N. W. Shoe Company, of London, Ont., was carried.

PORT ARTHUR, ONT. The City Council made a grant of \$1,000 to the Board of Trade to carry on publicity work.

REGINA, SASK. The tax rate is 10 mills on the dollar in a \$60,619,695 property assessment; this is the lowest general tax rate the city has yet levied.

RIVERS, MAN. The by-law to raise \$8,000 by debentures, for additional fire protection for the town, was passed.

SANDWICH, ONT. The following by-laws were passed: to raise \$9,000 to repair town dock; \$5,000 to extend the concrete sidewalks; \$3,000 to complete payment on new Town Hall.

SASKATOON, SASK., has sold debentures to Messrs. Wood, Gundy and Company.—The assessment, figures are \$56,295,217 for this year, as compared with \$39,867,335 for last year.

WOOD, GUNDY & Co.

6 KING ST. WEST, TORONTO

Purchasers of

**MUNICIPAL
DEBENTURES**

We especially invite correspondence.

SOUTH VANCOUVER, B.C. A by-law to raise \$50,000 for the acquiring and improving of park sites, was passed.

STANLEY, ALTA. The municipality has appropriated \$6,000 for improvements on roads and bridges.

ST. CATHARINES, ONT. A by-law to raise \$2,000 to acquire a site for the Canadian Flax Mills, Limited, was passed.

ST. STEPHEN, N.B., has sold \$12,000 5 per cent. debentures, to The Eastern Securities Company.

STETTLER, ALTA. The Town Council has granted a 10-year franchise to Calgary capitalists, who intend to prospect for, and operate gas wells within the town limits; the operations are to begin within a year.

THORNBURY, ONT. A by-law to help in the establishment of an apple evaporator, has been passed.

TORONTO, ONT. The Board of Control has authorized the expenditure of \$12,000 for expert advice on a garbage disposal plant.

WALKERVILLE, ONT. The tax rate has been fixed at 13 mills, a decrease of 2 mills.

WESTON, ONT., has sold \$2,000 debentures for the purchase of a public library site.

WINDSOR, ONT. The by-law to borrow \$45,000 to purchase two lots of land to be used as parks, was defeated.

WINNIPEG, MAN. The tax rate has been fixed at 13 mills, an increase of one mill over last year's rate; the total estimates for the year are \$4,325,450.96.

BUSINESS FOUNDED 1795

American Bank Note Company

ENGRAVERS and PRINTERS

Municipal Debentures and Cheques

A SPECIALTY

Head Office, 224 WELLINGTON STREET, OTTAWA.

Branches: HALIFAX, MONTREAL, TORONTO, WINNIPEG.

R. A. ROSS & CO.

CONSULTING ENGINEERS

MECHANICAL STEAM ELECTRIC HYDRAULIC
EXAMINATIONS REPORTS VALUATIONS

80 ST. FRANCOIS XAVIER STREET, - - MONTREAL

211 BOARD OF TRADE BUILDING

LAURIE & LAMB

CONSULTING & CONTRACTING ENGINEERS

STEAM & GAS POWER INSTALLATIONS
FILTERING & WATER SOFTENING PLANTS
REFUSE DESTRUCTORS & BOILER INSTALLATIONS
REPORTS, TESTS & APPRAISALS

MONTREAL

A. L. McCULLOCH, M. Can. Soc. C. E.

CONSULTING ENGINEER

Hydro-Electric Power Installation.
Water-Works. Sewerage and Sewage Disposal.
Examinations. Plans. Estimates and Reports.

NELSON, B. C.

BAYFIELD & ARCHIBALD

Consulting & Constructing Engineers

Plans, Reports, Estimates for Machinery.

Plants for Electric Light, Water Works, Road Making, Etc.

MOLSONS' BANK BUILDING,

VANCOUVER, B. C.

Tel. Uptown 6771

Room 41 Merchants Bank

J. B. SAINT CYR
Quebec and Dominion Land Surveyor

GENERAL LAND SURVEYING

Subdivision, Staking of Lots, Public Highways, Mining Claims, Timber Limits, Etc.
364 University Street, Corner St. Catherine, Montreal

E. A. CLEVELAND

DONALD CAMERON

CLEVELAND & CAMERON

CIVIL, HYDRAULIC AND MUNICIPAL ENGINEERS AND SURVEYORS

1001 TO 1010

ROGERS BUILDING

VANCOUVER, B. C.

GORE & MCGREGOR
LAND SURVEYORS
AND ENGINEERSWATERWORKS AND SEWERAGE
EXAMINATIONS AND REPORTS
MUNICIPAL WORK A SPECIALTY**CHARLES H. TOPP**

M. CAN. SOC. C. E. M. PAC. N. SOC. E.

CONSULTING ENGINEER

P. O. Box 152
Phone L 504

Chancery Chambers, Langley Street,

VICTORIA, B. C.

TELEPHONE:
BELL UPTOWN 3808**SURVEYER & FRIGON**

CONSULTING ENGINEERS

EXAMINATIONS SURVEYS ESTIMATES AND DESIGNS
TECHNICAL AND FINANCIAL REPORTS

56 BEAVER HALL HILL

MONTREAL.

Engineers—And

Refuse and Refuse Destructors

Chas. A. HODGETTS, M.D., D.P.H., Etc.

Medical Adviser, Commission of Conservation

(delivered before Stratford, Ont., Board of Trade.)

(Concluded.)

This is an economic point at which the total cost per ton of refuse burnt is at a minimum, and any increase in labour beyond that point results in an increased cost per ton of refuse burnt.

It must also be remembered that the calorific value of refuse differs in different districts.

In making a comparison of results obtained by various destructor plants regard must be had to the cost of labour in firing and clinking.

The systems of discharging the refuse into the cell vary; the earlier installations having a top feed down an inclined chute, others a front feed, in which the refuse is shovelled in the front of the furnace, others again a back feed in which it is shovelled into the back of the furnace. There are also various mechanical devices as that of Boulnois and Brodie's patent, where wrought iron trucks are provided 5 x 3 feet, each truck being divided into compartments containing sufficient refuse for one charge of the furnace. These trucks run on rails placed over the cells and are arranged with a tipping floor at such a level that the refuse can be shot direct from the carts into the trucks. When it is desired to charge a cell, a truck is moved until one of the compartments is directly over the feeding hole of the cell, the sliding door at the base of the compartment is moved away and the refuse falls direct from the truck on to the drying hearth.

The advantages of this system are that the storage of the refuse is in a portable form and cool, and the process is cleanly and sanitary; it also requires less labour in handling the refuse.

In the Horsfall Direct Charging system, a large bin or hopper is arranged at the top of the cells, the top of this bin or hopper being on a level with the tipping floor, its base being formed by an extended table above the drying hearth. The refuse is tipped direct into the hopper and fed from the bin on to the drying hearth. To prevent the refuse in the bin from catching fire, troughs of water are arranged around the feed openings. This system involves the use of long rakes for the purpose of dragging the refuse forward from the drying floor on to the grate and in the process cold air passes into the cell, thus tending to reduce the temperature of the furnace.

The same firm have introduced a tub feed system in which the refuse is discharged from the carts into covered storage tubs, the refuse being discharged direct from the tubs into the cells through a water-sealed changing door.

The Marten patent changing apparatus consists of a travelling wrought iron hopper placed on the top of the cell and immediately over the drying hearth. This hopper can be moved to any cell required, and the refuse tipped into the cell. The cell itself is so arranged that the refuse can be readily raked forward and levelled. This portion of the system appears to lessen the cost of working but on the other hand it means additional carts in which to store the refuse.

In the Heenan system a modification has been

what they are doing

introduced with a view to lessen the cost of spreading the material over the grate, a ram being placed in such a position that the refuse can be pushed from the hopper on to the grate. The action of the ram has, however, to be supplemented by hand labour.

In the Meldrum system the whole volume of hot gases, after leaving the boiler, is carried through a system of pipes somewhat similar to an ordinary economizer. In the Heenan destructor a somewhat similar system of air heating has been adopted.

The introduction of the air blast is effective in reducing the quantity of moisture in the refuse, and has rendered practicable the omission of the drying hearth.

Again, in determining the type of destructor to be used, the question of what kind of a boiler to be adopted must be considered, and this in turn depends upon the use to which the steam is to be put.

Two types are in general use,—the Lancashire and water-tube boilers. The former provides large steam and water spaces, which are of the greatest utility when the steam is taken irregularly, as in electric lighting, while tubular boilers have the advantage in a greater amount of heating surface on a given space, and a greater absorption of radiant heat. The latter, perhaps, are more easily cleaned.

Low Temperature Incinerators

Advantages:—Diminished wear and tear on the fire brick sides of the cells and the consequent saving in upkeep.

Disadvantages:—Both inlet for refuse and the outlet for gases are, as a rule, at the rear of the cell, and therefore the noxious vapours and fumes given off, both during the drying of the refuse and before it is in active combustion, escape before being burnt—and the cremator is necessary.

As the cells burn less refuse per cell per day (6-8 tons) more cells are required.

High Temperature Incinerators

Disadvantages:—Chiefly in the cost of maintenance by wear and tear of fire bricks.

Advantages:—Wear and tear offset by the large quantity of refuse burnt per day (10-16 tons) requiring fewer cells.

The destruction of noxious fumes without the additional expense of the coke cremator. The outlet for the gases is at the front of the cell and the vapours pass over the hottest part of the fire to reach the exit. As the cell is raised to a very high temperature by forced draught (steam blast or fans) such gases are destroyed within the cell itself.

New Partnership

Mr. Geoffrey K. Burnett, C.E., B.C.L.S., who succeeded the firm of Hill and Burnett, Civil Engineers and Land Surveyors, of New Westminster, B.C., has taken into partnership Mr. D. J. McGugan, B.A.Sc., B.C.L., Ass. Mem. Can. Soc., C.E. The new firm will be known as Burnett and McGugan, and will not only act as Civil Engineers and Land Surveyors, but will attend to surveys of mining and timber lands, sewerage, water supply, irrigation and drainage.

R. S. LEA, M. Can. Soc. C. E.; M. Inst. C. E.
M. Am. Soc. C. E.; Hydraulic & Sanitary Engineer

H. S. FERGUSON, M. Can. Soc. C. E.
M. Am. Soc. M. E., M. Am. Soc. C. E.
Engineer, Pulp, and Paper Mills, Power Plants

R. S. LEA and H. S. FERGUSON
ENGINEERS

Specialties: Water Supply, Sewerage, Water Power Development and Transmission, Steam Power Plants, Pulp and Paper Mills, Examinations and Reports

Birks Bldg. Long Distance Tel. Up. 751. MONTREAL

WALTER J. FRANCIS, C. E.,
M. Can. Soc. C. E.,
M. Am. Soc. C. E.,
M. Inst. C. E.

FREDERICK B. BROWN, M. SC.
Mem. Am. Soc. M. E.,
Mem. A. I. E. E.

WALTER J. FRANCIS & COMPANY
CONSULTING ENGINEERS

HEAD OFFICE—232 ST. JAMES ST., MONTREAL,
LONG DISTANCE TELEPHONE—MAIN 5643
CABLE ADDRESS—"WALFRAN, MONTREAL."—WESTERN UNION CODE

WILLIS CHIPMAN

GEO. H. POWER

CHIPMAN & POWER
CIVIL ENGINEERS

TORONTO WINNIPEG

CANADIAN INSPECTION & TESTING
LABORATORIES, LIMITED

INSPECTING AND CONSULTING ENGINEERS AND CHEMISTS

Inspection and Tests of Waterworks and Municipal Supplies.

TORONTO WINNIPEG VANCOUVER Head Office: MONTREAL

DIETRICH LIMITED
CONTRACTING ENGINEERS

REPORTS, ESTIMATES, PLANS, SUPERVISION, ETC.
CONSULTING CONTRACTING.

300 READ BLDG., MONTREAL.

Telephone 5256 P. O. Box 1695

JOHN S. ISDALE
ELECTRICAL ENGINEER AND SCIENTIFIC
INSTRUMENT MAKER

Engineers and Surveyors Instruments. Nautical Instruments.
Electrical Instruments. Electro-Medical Work. Fine Electrical
Work and special Apparatus for Scientific Work. :: :: ::

527 Dunsmuir Street, : : : VANCOUVER, B. C.

CARTWRIGHT, MATHESON & Co.
CONSULTING ENGINEERS

PLANS, SURVEYS, REPORTS,
SuperIntendence of Construction for Railways, Wharves, Foundations,
Bridges, Buildings, Water Supply, Power Plants and Irrigation.

601 ROGERS BUILDING VANCOUVER, B.C.

ORMOND HIGMAN, Jr. B.Sc. WILLIAM A. DOCTOR, A.I.A.

HIGMAN & DOCTOR
ENGINEERS, SURVEYORS AND ARCHITECTS

Hydraulic, Electrical, Mechanical and Municipal Engineering. Steel and Reinforced
Concrete Construction. Arbitrations, Estimates and Reports.

31, 32, 33, 34 WILLIAMS BUILDING, VANCOUVER, B. C.

CHARLES H. KEEFER, C.E.,
Consulting Engineer

THOS. C. KEEFER, JR.,
Late Licut. Royal Engineers

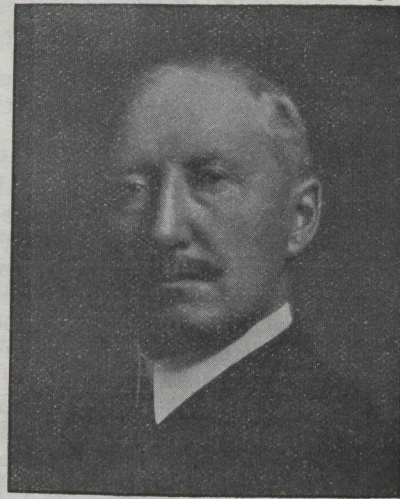
KEEFER & KEEFER
CIVIL ENGINEERS

Reports and Construction Water Powers, Waterworks, Sewerage, Bridges and Railways

METROPOLITAN BUILDING, OTTAWA, ONT.

Engineers—And

Construction of Cities



COL. H. N. RUTTAN, C.E.,
City Engineer, Winnipeg Man.

The Physical Construction of Cities the title covers a very wide field, and it will be necessary to limit this paper to a few of the most important features, namely: Buildings, sewers, waterworks, pavements, street railways, surface traffic and electrical distribution.

Buildings

In regulating the physical development of a city it is necessary to provide laws governing the materials of construction, the location, dimensions and sanitation of buildings. The forms and details of construction being purely architectural need not be considered here. Limits should be fixed in which only fire-proof materials should be used. As the difference in cost between fire-proof material and wood is rapidly lessening, the fire-proof limits should be ample, and should include in addition to business areas, all first and second class residence districts. Nothing could be more conducive to a terrible fire catastrophe than the long lines of closely built wooden residences, which may be seen in almost all North American cities. Few, if any, of the fire departments are equipped with the necessary explosives and apparatus, and the skilled men to use them, to enable them to deal with conflagrations on such streets. It is absolutely inexcusable today to build schools which are not fire-proof. School houses with wooden floors, window and door frames, and furniture, are not in any sense fire-proof.

With regard to the dimensions and locations of buildings with reference to the street lines, owing to the improvements which have taken place in the past 20 years in facilities for passenger traffic in cities, the necessity for extremely congested centres and high buildings no longer exists, particularly in cities where there is no limit to lateral expansion.

It seems, therefore, only reasonable that laws should be enacted to regulate and limit the height of buildings and the distances from the street lines. A simple method is to determine the vertical angle at the centre of the street above which no structure shall project. In residence districts this angle should be sufficiently flat to prevent injury to ordinary dwellings by the erection of high and massive apartment blocks, or tenements which obstruct the sun and interfere with the freshness and spaciousness which should be characteristic of all residence districts.

Sewers

Sewers are generally of either the separate or the combined system. The separate system is intended to take the house drainage only, sometimes including the rain which falls on the roof. As a rule the separate system consists of the sanitary sewers only, the rainfall being left to find its way to the natural water courses, on the surface of the ground, or through surface ditches. Sometimes, however, two systems of sewers are constructed, one for sanitary and the other for surface drainage. This is an expensive method, both in first cost and in operation.

CHARLES BRANDEIS, C. E.
A. M. C. A. N. S. O. C. E. E.
CONSULTING ENGINEER
TO PROVINCIAL GOVERNMENT, MUNICIPALITIES, ETC.

Estimates, Plans and Supervision of Hydraulic and Steam Electric Light, Power and Railroad Plants, Waterworks and Sewers. Arbitrations, Reports and Specifications.

4 PHILLIPS PLACE - - - MONTREAL

SMITH, KERRY & CHACE
ENGINEERS

HYDRAULIC, STEAM, ELECTRIC, RAILWAY, MUNICIPAL, INDUSTRIAL
W. U. Code used. Cable Address "Smithco".

TORONTO VANCOUVER BOISE (IDAHO) PORTLAND (OREGON)

CECIL B. SMITH. J. G. G. KERRY. W. G. CHACE.

DE GASPÉ BEAUBIEN
B. Sc. McGill, Ass. M.C.S.C.E., Ass. M.A.I.E.E.
CONSULTING ENGINEER
ELECTRICAL, HYDRAULIC, MECHANICAL AND CIVIL

28 ROYAL INSURANCE BLDG., MONTREAL.

J. F. FREW
A. M. INST. C. E.
CIVIL AND MECHANICAL ENGINEER

PHONE 4698 19 FAIRFIELD BLDG.
445 GRANVILLE STREET, VANCOUVER, B. C.

A. LEOFRED CONSULTING ENGINEER
AND LAND SURVEYOR

PRESIDENT AQUEDUCTS LIMITED

REPORTS, PLANS, CONSTRUCTION
WATERWORKS, SEWERS, WATER POWERS, ETC.

QUEBEC, 39 ST. JOHN. PHONE 545

E. O. FUCE, A. M. Can. Soc. C. E.
Hon. Grad. Univ. Toronto S. P. S.

W. A. SCOTT, B. A. Sc
A.L.S., D.L.S., S.L.S.

FUCE & SCOTT
CONSULTING ENGINEERS

Sewers, Sewage Disposal, Waterworks, Roadways, Reinforced
Concrete Bridges and Buildings.

115 Seventh Ave. W., - - - Calgary, Alta.

C. G. MOON FRANCIS SILVERTON

MOON & SILVERTON
MUNICIPAL ENGINEERS

518 HASTINGS ST. WEST VANCOUVER, B. C.

what they are doing

The combined system is designed to carry off a certain maximum rainfall which is generally fixed at a figure well within the limits of the heaviest rainfalls, which occur only at long intervals. The sewers are not designed for the heaviest falls, for the reason that it is better to put up with occasional inconvenience than to adopt a system of which the capital cost would be excessive.

In new or growing cities full allowance should be made in computing the sewer sizes, for an extended paved area, bearing in mind that it is much better to have the sewers turn out too large than too small. It is recommended that in all cases except of the smallest towns, that the combined system be used. A town that can afford a system of any kind, can well afford the extra cost of the combined system.

Sewage Purification

Some measure of sewage purification is universally admitted to be desirable. Unfortunately very few surface supplies of water are in their natural state fit for domestic use. Only after thorough filtration can they be considered safe. This being the case, and it being further a fact that surface streams have many sources of contamination apart from the sewage of towns, it becomes a question in view of the fact that all public water supplies from such streams must in any case be filtered, how far it is necessary to go in purifying sewage which is to be discharged into an already polluted stream.

Expert opinion appears to be focusing itself on the following solution of this problem.

First, that all water supplies from surface streams should be filtered, except those from a few mountain streams, before use for drinking purposes.

Second, that all sewage should be purified to the extent that (a) practically all solid matter be removed from it before it is discharged into a stream or lake, (b) in most cases the effluent should be filtered or chemically treated if such treatment is necessary to prevent putrefaction or to destroy pathogenic germs.

Water Supply

The following are among the most common uses of water in a community: 1, Drinking, cooking and washing; 2, sprinkling roads, grass, etc.; 3, flushing sewers and sanitation; 4, fire protection; 5, manufacturing, boiler use, etc.; 6, laundry work.

The first requisite for drinking water is purity. A considerable degree of hardness is not a fault; a hard water is more palatable than a soft water. While a hard water suitable for drinking is also suitable for the second, third and fourth uses above specified, it is not suitable for the fifth and sixth. On the other hand, a soft water, though it may not be absolutely pure, is suitable for all purposes except the first.

It would seem that in some cases a dual system of pipes would be the practical solution of the difficulty in obtaining good and sufficient supply for all purposes—one system for house supply and another for the remaining uses of the community. By a further differentiation of the systems one might be made high and the other low or moderate pressure, the low pressure serving dwellings, lawns, etc., the high pressure being used for fire extinguishers, manufacturing, commercial uses in high buildings, etc.

Duplicate distributing systems are becoming quite common, the high pressure systems being constructed for fire protection purposes. There has been considerable objection on the part of those operating the fire service systems to allowing those systems to be used for any other purpose.

There is, however, no objection to using the high pressure system for any purpose for which it may be suited, provided that such use does not interfere with the requirements of fire protection.

In Winnipeg a considerable revenue is made by the sale of water from the high pressure plant without in the least affecting its usefulness for fire service. The sale of water might be very much extended by adding to the pumping plant and distribution system.

One of the most attractive features of any city is the ornamental or aesthetic use of water by ample supplies to fountains of artistic design. In most cities quantities of water are used for flushing sewers. Without any additional expense this water may, before being run into the flush tanks, be used to supply fountains.

While ample water for all purposes, including ornamental uses, should be provided to the citizens, waste should be carefully checked, as what is wasted by one consumer must be paid

J. M. ROBERTSON, LIMITED

CONSULTING ENGINEERS

Mechanical, Electrical, Hydraulic, Steam Gas.

Plans, Specifications, Estimates, Tests, Reports, and Supervision.

SUITE 101 BOARD OF TRADE BUILDING,

MONTREAL, QUE.

ALEXANDER POTTER, C.E.

SPECIALIST IN

HYDRAULIC AND SANITARY ENGINEERING
WATER SUPPLY AND PURIFICATION. SEWERAGE AND SEWAGE DISPOSAL.
WATER AND ELECTRIC POWER.

Special Facilities for the Sanitary Investigation and Analysis of Water Supplies for Municipal and Manufacturing Plants.—Plans, Estimates and Specifications.

50 CHURCH STREET,

NEW YORK CITY

C. R. YOUNG

B. A. SC., A. M. CAN. SOC. C. E.

CONSULTING STRUCTURAL ENGINEER

Steel and Reinforced Concrete Bridges and Buildings, Foundations,
Tanks, Towers and other Structures.

318 CONTINENTAL LIFE BUILDING

TELEPHONE, MAIN 3476

TORONTO

PHONE 5488

DUTCHER, MAXWELL & CO.

ENGINEERS AND SURVEYORS

319 Pender Street W.,

VANCOUVER, B. C.

BRANCH OFFICE: CALGARY, ALTA.

Telephone Main 2560

T. AIRD MURRAY

M. CAN. SOC. C. E.

Consulting Engineer to the Saskatchewan Government, and Municipal Consulting
Engineer for Sewerage—Sewage Disposal—Water Supply and Purification.

303 LUMSDEN BLDG., TORONTO, CAN.

BOWRING & LOGAN

CONSULTING ENGINEERS

MUNICIPAL POWER PLANTS

332 DONALD ST

WINNIPEG, MAN.

R. G. Austen

E. M. Chapdelaine, P.L.S.

AUSTEN & CHAPDELAIN

ENGINEERS, CONTRACTORS & LAND SURVEYORS

Dams, Waterworks, Sewers, Roads, Surveys
Subdivisions, Timber Limits, Etc.

New Birks' Building,

MONTREAL

MURPHY & UNDERWOOD

CONSULTING ENGINEERS

SASKATOON, SASK.

"SPECIALISTS IN ALL MUNICIPAL WORK"

A. A. MURPHY, B. SC.

J. E. UNDERWOOD, D.L.S.

ELECTRICAL

A. M. CAN. SOC. C. E.

AND

SASK. LAND SURVEYOR AND

MECHANICAL ENGINEER

CIVIL ENGINEER

WINNIPEG CALGARY VANCOUVER
THE JOHN GALT ENGINEERING COMPANY, LTD.
 CONSULTING CIVIL ENGINEERS
 SPECIALISTS IN ALL KINDS OF MUNICIPAL
 ENGINEERING WORK
 Waterworks, Sewerage, Electric Lighting, Steam and Water Power,
 Concrete Construction.
 JOHN HADDIN E. L. MILES

MATHER, YUILL & CO., LIMITED
 CONSULTING AND CONTRACTING
 ENGINEERS
 Design and Construction of Complete Power, Lighting
 and Pumping Plants for all Municipal and Industrial
 Purposes
 810 London Building, VANCOUVER, B.C.

CHARLES M. JACOBS, J. V. DAVIES, JAMES FORGIE
 Members Inst. C. E., Can. Soc. C. E., Am. Soc. C. E.
JACOBS & DAVIES, INC.
 CONSULTING ENGINEERS
 MONTREAL. LONDON, NEW-YORK
 Foundations, Subaqueous and Land Tunnels, Subways, Railways, Harbours, Water-
 power Development, Examinations, Reports Montreal Office: Eastern Township Bank Bldg.

FAIRCHILD, JONES & TAYLOR
 CONSULTING ENGINEERS
 AND LAND SURVEYORS.
 STEAM AND ELECTRIC RAILWAYS. ELECTRIC AND WATER POWER
 SEWERAGE AND WATERWORKS.
 LAND, TIMBER AND MINE SURVEYS. TOWNSITE SUBDIVISIONS.
 ROOM: 608-609 TEGLER BLOCK. EDMONTON, ALTA.

DOMINION AND SASKATCHEWAN LAND SURVEYORS
PHILLIPS, STEWART & LEE
 CIVIL ENGINEERS
 Waterworks, Sewers, Roads and General Municipal Engineering Subdivisions
 25-28 CENTRAL CHAMBERS SASKATOON, SASK.

TELEPHONE ENGINEERS

SAMUEL G. McMEEN KEMPSTER B. MILLER
McMEEN & MILLER
 ELECTRICAL ENGINEERS
 PLANS ESTIMATES REPORTS
 Investigations of Public Service Systems of Telephones,
 Electric Light, Power and Gas.
 1454 Monadnock Block, CHICAGO. 333 Grant Avenue, SAN FRANCISCO

FRANCIS DAGGER
 TELEPHONE ENGINEER & EXPERT
 1905. Technical Adviser to Select Committee on Telephone Systems, Ottawa
 1906-7. Expert to Government of Manitoba.
 1907-8. Expert to Government of Saskatchewan.
 21 Richmond Street W. TORONTO

EDWARD E. CLEMENT
 ATTORNEY AND COUNSELLOR AT LAW
 Solicitor of Patents.
 ELECTRICAL EXPERT
 MCGILL BUILDING WASHINGTON, D. C.

Engineers And

for by the others. The old argument that water should be free as air and that, therefore, it may be wasted, has almost disappeared. Water is as free as air if you dip it out of river or spring, but it is a costly matter to pump and distribute water under pressure to individual citizens, and it is decidedly worth while to prevent its waste. A universal meter system is the only sure and economical means of waste prevention.

In order to insure the use of sufficient water for sanitary purposes, a flat rate should be charged the consumers for what is determined upon as a sufficient quantity for each size of houses and the meters used to determine the excess, if any. This excess should be charged at a substantially higher figure than the flat rate.

Pavements

There is a clear distinction between requirements of pavements in business, residence and suburban districts.

Business streets should be paved full width between the sidewalks, and should be capable of carrying loads of five tons on one wheel, or, say twenty tons on a four-wheeled truck.

While on residence streets, full traffic facilities will be afforded by pavement 24 feet in width, with a carrying capacity of five tons on a four-wheeled truck, or a ten ton road roller.

No hard and fast rule as to the selection of business and residence streets can be laid down.

In all growing cities the business district will gradually grow with the residence districts. By forethought in laying out the original pavements they can be so arranged that they may be readily widened and increased in thickness, without discarding the original pavement.

Where it is necessary to haul heavy loads of building material, etc., through residence districts, a heavy traffic road can generally be arranged so that the heavy traffic can be kept off the light roadways.

On residence streets the most pleasing arrangement of street improvement is that where the pavement in the centre is flanked by two broad grass plots, with the sidewalks on the property lines.

The curbs on street crossing corners should have a large radius, say, at least 15 feet. This has a much more pleasing effect and offers much less obstruction to vehicular traffic than sharp corners.

The pavements in the line of sidewalks should be kept as nearly as possible on the same level as the walk; 6 or preferably 4 inches, should be the maximum height of steps.

In order to enable this to be carried out, the sewer catch basins must be placed in the centre of the blocks, and not at intersections. Of course, these remarks do not apply to steep side hills where special arrangements must be made to suit each case. Any proposed modification of the above described arrangement of pavements, boulevards and sidewalks, should be carefully scrutinized before adoption.

Many property holders, realizing that if the sidewalks are placed next to the curbs instead of at the property lines, their properties will appear to much greater advantage, frequently make that request; nothing is more fatal to the appearance and comfort of the district as a whole than such an arrangement. The streets look narrow and insignificant; the walks are unshaded, and pedestrians are covered by dust in hot weather, and splashed with mud in wet weather, while children are subject to the risk of injury by vehicles.

The system under which the grass and trees on the streets are kept in order by a public department, is much to be preferred to any plan which looks to the fronting property owner to take care of them.

A Suggestion

To avoid the crowding on sidewalks in business districts where pedestrians, sandwich men and perambulators jostle each other and are jostled, and where all are a menace to, and menaced by vehicle traffic at street crossings, it is suggested that the sidewalks be made double decked, that is, that an additional sidewalk at the level of the first story of the buildings be constructed.

In addition to relieving the traffic on the lower level and cutting out street crossing dangers, some of the advantages would be:

(1) The protection of the lower sidewalks, by the upper one, from heat of the sun or the inclemency of the weather. The upper floor would be of glass, so that the light on the lower level would be sufficient.

(2) The added value for business purposes of the floor at the level of the new walk.

what they are doing

(3) Enhancement of the uniformity and beauty of the streets. The access between the two decks would be by stairways or elevators at convenient points and through the business premises fronting on them.

Access to buildings at different levels would be by convenient steps or inclines.

Protected by a substantial railing on the street side the upper deck would be an ideal promenade.

Street Railways

Owing to delays in operation, single track systems are quite unsatisfactory for operation in cities. Where street railways are owned and operated by private corporations, they may generally be relied upon to locate their lines where the results will be best for themselves and the users, but forced locations for the exploitation of real estate should be discouraged.

Street railway rolling stock should be so designed that it will handle the largest number of passengers having regard to their safety and convenience.

The pay-as-you-enter cars, with exits at both ends and sometimes in the centre as well, are the most expeditious in handling passengers and certainly the most profitable for the operators. Gates at the exits and entrances, under the control of the motor-man, are an added safety.

Electrical Distribution—Conduits and Pole Lines

While the distribution by underground conduits leaves the streets above the surface practically clear of poles, it must be remembered that it is extremely expensive and that it requires a large revenue to meet its interest and maintenance charges. Care should be taken not to extend conduit systems beyond points where the revenue is sufficient to meet the extra cost of this system of distribution. It is estimated that only one-tenth to one-fifth of the distribution area will stand the cost of conduits.

An ideal system in large cities would be to carry the sewers, water and gas mains, electric cables, etc., in large conduits occupying the spaces under the sidewalk. Not only would they be accessible but this system would put a stop to most of the now necessary cutting up of the street surfaces in making connections and in similar work.

Methods of Road Making

We find the same old methods still used in road making and repairing lately going on in the district. The farming community never seems to learn anything about roadmaking. If a certain piece of road needs grading they plow up the sides and throw the sods, roots, stones or whatever is in the way into the middle of the road, making it almost impassable for the remainder of the season. In like manner when they conclude that a certain length of highway requires to be gravelled, they pile the gravel six or more inches deep in the centre of the roadway, treating all parts, high or low alike and compelling travellers to take to the ditches till the gravel finally settles down.

The system is entirely wrong. Of course, between seeding and haying is the most convenient time for farmers to do their road work, but it is also the worst season of the year for permanent roadmaking. This year the rains helped some, but usually the hot, dry weather, coming on about the time the work is done, prevents the packing of the materials necessary to make a good road bed. One of the worst things about it, however, is that it puts portions of the highways practically out of commission for driving upon during the summer, when driving is such a delight. It would be a great advantage if the farmers would commute their roadwork and have the money, along with other appropriations spent in the autumn. Better still would it be to hire one or two men with a team, all the year round, supply them with the necessary tools, including grader and split log drag. Such an outfit on the road every day from early spring till sleighing comes on, attending promptly to the weak spots, making outlets for standing water, filling up holes and ruts, putting a little gravel here and there where most required, cleaning out ditches, repairing culverts, etc., would do more good than the whole outfit of a township of road-workers on present lines. It is very strange, after all that has been said about the split log drag and the benefits to be derived from its use, together with the simplicity of its make up, that no use is made of it in this part of the country, so far as we know. The fact is that the immense importance of good roads has not yet impressed itself on the people generally or there would be more personal effort directed to the end of getting them established.



FREDERICK G. TODD
 LANDSCAPE ARCHITECT
 MUNICIPAL PARK SYSTEMS AND TOWN PLANNING
 Birks Building, MONTREAL.

RICKSON A. OUTHET
 LANDSCAPE ARCHITECT
 Fel. Am. Soc. Landscape Architects
 PLANS FOR CITY DEVELOPMENT AND LAND SUBDIVISIONS.
 Beaver Hall Hill, MONTREAL.

DUNINGTON-GRUBB & HARRIES
 LANDSCAPE ARCHITECTS
 Consultants on all matters relating to Park and Garden Design, Real Estate and Suburban Development, Civic Art and Town Planning.
 24 Adelaide St., East - - TORONTO.

LEONARD E. SCHLEMM
 LANDSCAPE ENGINEER
 Consultant on Landscape Engineering in connection with all matters relating to Town Planning
 43 ST. FRANCOIS XAVIER ST. MONTREAL

GUY WILFRID HAYLER
 Landscape Architect, Town Planner and Municipal Engineer
 Member, Institution of Municipal Engineers Member, Royal Sanitary Institute
 Exhibitor, Royal Academy International Town Planning Exhibition.
 Town Planning in all its branches, Real Estate, Civic and Suburban Development
 384 Notre Dame Avenue, WINNIPEG, MANITOBA

BURNETT & MCGUGAN
 (Successors to GEOFFREY & BURNETT)
 CIVIL ENGINEERS AND B.C. LAND SURVEYORS
 PLANS, SURVEYS, REPORTS.
 NEW WESTMINSTER, BRITISH COLUMBIA
 P. O. BOX 886

LIGHTING ENGINEERS

P. MORTON-WRIGHT
 ILLUMINATING ENGINEER
 16 University Street MONTREAL.

The Canada Iron Corporation, Limited

CAST IRON PIPE

SUCCESSORS TO:

Canadian Iron & Foundry Co., Limited
Canada Iron Furnace Co., Limited
Annapolis Iron Co., Limited
John McDougall & Co., Drummondville

Head Office : Montreal, P. Q.

Iron Ore, Pig Iron, Car Wheels, Cast Iron Water and Gas Pipe, Specials,
Valves, Hydrants, Etc. Castings of All Kinds.

The Canadian Bridge Co., Limited

WALKERVILLE, ONT.

Manufacturers of Railway and Highway Bridges

Locomotive Turn Tables, Roofs, Steel Buildings, and Structural Iron Work of all descriptions.

SEWER PIPES

CHIMNEY TOPS
FLUE LININGS
WALL COPINGS

Ask for Price Lists
and Discounts



SALT-GLAZED and VITRIFIED
True to size
Impervious to water
Will never disintegrate

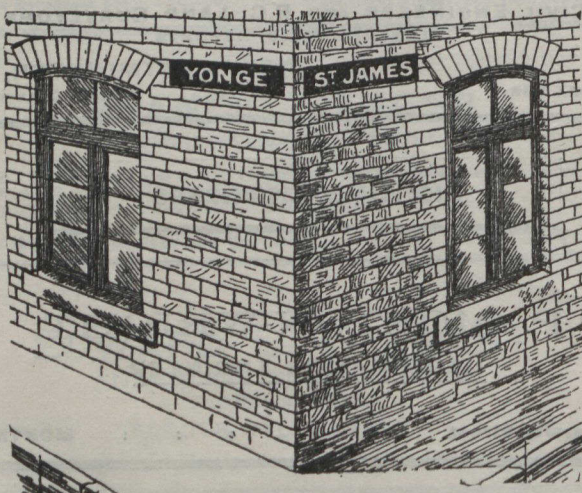
Sizes manufactured and always
in stock, 4 in. to 24 in.

TELEPHONE (Toronto connection) PARK 1809
Post Office: SWANSEA

THE DOMINION SEWER PIPE CO., Limited

The INDEPENDENT
COMPANY

Works and Office :
SWANSEA, near Toronto



The Principal Cities in Canada
are using our

ENAMEL STEEL STREET NAMES AND HOUSE NUMBERS

THEY LAST A LIFETIME

MADE IN CANADA BY

The THOS. DAVIDSON MFG. Co., Limited

Selling Agent, J. N. WARMINTON,

207 St. James St., Montreal, Que.
Write for prices and samples

Can a Stranger find his way around your City or Town
without difficulty?
Are all Streets named and houses numbered up to date?