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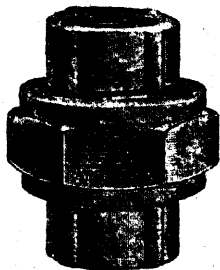
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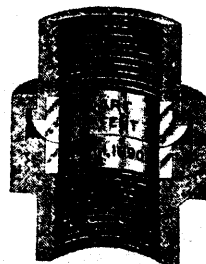


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on third page of cover. \* \* \*

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TORONTO, CANADA, JUNE, 1900.

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## RAILWAY FINANCE, MEETINGS, &c.

**Canada Southern.**—The report for 1899 shows that the net earnings were \$301,000, & that the total income was \$462,000, an increase of \$3,000 over 1898, while after payment of charges & dividend the surplus was \$9,000, an increase of \$3,000.

**Central Ontario Ry.**—At the annual meeting at Trenton May 16 the following were elected directors: S. Burke, H. S. Johnson, C. W. Bingham, T. G. Blackstock, H. P. McIntosh, G. G. Allen, G. Collins.

**Central Vermont & Rutland.**—At a recent conference of the Central Vermont & Rutland railroad officials at St. Albans, Vt., the joint use of the present railway bridge across Lake Champlain, from Rouse's Point, N.Y., to Alburgh, Vt., was agreed upon. The bridge is owned by the Central Vermont. The project of building a new bridge across the lake by the Rutland road will now be abandoned. This is the spot where, on Jan. 1 last, workmen employed by the different roads had a clash, in which the Rutland men captured a Central Vermont locomotive.

**Chignecto Marine Transport Ry.**—The annual general meeting will be held in London, Eng., June 6.

The Cuba Co. has been incorporated, with a capital stock of \$8,000,000, to develop the Island of Cuba by the building of railways & otherwise. The immediate purpose is to build a railroad from Santiago west to Havana. Among the subscribers to the capital are Sir Wm. Van Horne, L. P. Morton, of Morton, Bliss & Co., New York; J. W. Mackay, President of the Commercial Cable & Telegraph Co., & of the U.S. & Hayti Telegraph & Cable Co.; J. J. Hill, a director of the Baltimore & Ohio & the Great Northern Ry. All the capital has been subscribed for & arrangements have been made for an immediate working capital of \$2,500,000. At a meeting held in New York recently Sir Wm. Van Horne was elected President; W. R. Cross, Treasurer, & T. S. Beatty, Secretary. According to report the lines upon which options have already been secured, & which will come into the combination are the Sagua road, at a cost of \$3,000,000; the Caibarien, \$2,000,000; the Saviniala, \$5,000,000; the Cienfuegos, \$250,000, & the Jucaro, which it is estimated will cost over \$8,000,000. The Herrera Steamship Line, doing a coasting trade between ports on the northern shore, will also be acquired at a cost of \$1,500,000. This will give a system all over the island, with the important exception that it will not touch Havana. The syndicate has not as yet, so it is said, been able to secure options on the two trunk lines running into the capital.

Since the above was written it is stated that the Co. has bought from the Ponupo Mining & Transportation Co. a controlling interest in the Santiago de Cuba Ry. from Santiago to San Luis, 24 miles, with a branch 12 miles to Ponupo. It is to be used as a part of the trunk line from Santiago to Havana.

Following are extracts from a reported interview with Sir William regarding the scheme: "Not the least important feature of this new company is that it is the first investment on a large scale of American capital in Cuba. We propose to develop the provinces

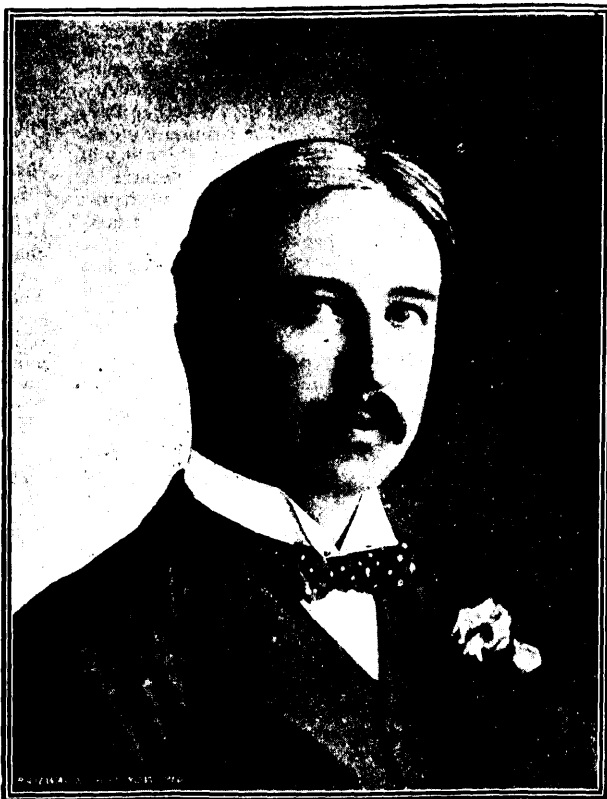
other. To-day Cuba's population is but 1,500,000. We shall develop the eastern half of Cuba. Our scheme does not contemplate an entrance into the western half of the island, but we nevertheless expect to benefit that part of the country by an increased trade. When the C.P.R. was built it traversed a territory of 2,700 miles that was unoccupied, save by the Indians. In order to prevent interest from eating us up, the road had to be constructed within a limited time & we were called upon to do that which railway companies do not ordinarily do—in order to build up the country we started all sorts of business enterprises, which ultimately passed into private hands. It is something of this kind that is contemplated for the rapid development of Cuba."

**Dominion Atlantic** gross earnings, 4 months to April 28, \$189,149, against \$162,446 for corresponding period.

**East Richelieu Valley.**—A Montreal despatch says this line has been sold to the Rutland Ry. for \$125,000. The road, which was built in 1898, runs from Iberville to Noyan Jct., 22.80 miles, & forms the connecting link for the Rutland Railway between Burlington, Vt., & other points south, & Montreal & Sorel on the north. It is expected that trains from Boston via the Rutland Ry. will be running into Montreal by Aug. 1.

**Erie & Huron.**—At the annual meeting, May 18, it was decided to change the head office from Toronto to Walkerville. The following were elected:—President, F. H. Walker; Vice-President, Dr. S. A. King; Treasurer, J. H. Walker; Secretary, H. Lye; other directors, W. Robins, W. Aikman, Jr., S. A. Griggs; General Manager, W. Woollatt. The matter of the proposed agreement for amalgamating with the Lake Erie & Detroit River Ry. Co., was left in abeyance pending the calling of a special meeting by the President.

**G.T.R. Government Loan.**—In the House of Commons recently, in answer to Mr. Morin, the Minister of Finance said:—"The loan mentioned on page xx. of the Public Accounts, made to the G.T.R., \$15,142,633.34, represents that amount of debentures issued for G.T.R. before Confederation & has stood unchanged at these figures since 1861. The rate of interest was 6% per annum. No portion of either principal or interest has been paid to the Government. The interest due as shown in the Public Accounts, is not compounded. No interest has been charged against the Co. since Confederation. One half year's interest to June 30, 1866, on \$243,406.33 balance found to be due by G.T.R. on settlement of old differences, is included in the special account, \$7,302.18, on same page. By the G. T. R. Act, passed in 1884, the claims of the Dominion were made to rank after the common



THOMAS TAIT,

Manager of C.P.R. Lines East of Fort William.

of Santa Clara, Puerto Principe & Santiago, which, in territory, are two-thirds the size of the entire island, but which as yet only hold a third of the population. They are wonderfully rich agriculturally, in minerals & in timber, & the first work in their development will be to build railways. We shall not stop there, but shall do any & everything that seems to us wise to do to promote development in agriculture, mining, timber & manufacture. To-day Santiago has practically no commercial intercourse with Havana, but this will all be remedied, & all parts of the island, we hope, will be brought in commercial touch with each

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NEXT ANNUAL MEETING at Montreal, Oct. 17 & 18, 1900.

## Canadian Ticket Agents' Association.

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VICE-PRESIDENT, W. Jackson, Clinton, Ont.; and VICE-  
PRESIDENT, M. McNamara, Walkerton, Ont.; 3rd  
VICE-PRESIDENT, W. H. C. McKay, St. John, N.B.;  
SEC.-TREAS., E. de la Hooke, London, Ont.; AUDITOR,  
S. H. Palmer, St. Thomas, Ont.

EXECUTIVE COMMITTEE, W. H. Harper, Chatham,  
Ont.; C. E. Morgan, Hamilton, Ont.; T. Long, Port  
Hope, Ont.; J. W. Tierney, Arnprior, Ont.; C. C.  
Young, London, Ont.

NEXT ANNUAL MEETING at Hamilton, Ont., Oct. 10, 1900.

## National Association Marine Engineers of Canada.

HONORARY PRESIDENT, O. P. St. John, Toronto;  
PRES., A. J. Woodward, Toronto; 1st VICE-PRES., R.  
Craig, Toronto; and VICE-PRES., E. Abbey, Toronto.

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J. Currie & S. T. Wilson, Toronto.

TREASURER, H. Brownley, Toronto; SECRETARY, S.  
A. Mills, Toronto.

## Track Supply Association.

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ers, Mich.  
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NEXT ANNUAL MEETING at Montreal, Oct. 16, 1900.

stock & securities of the Co. The present  
government are, therefore, precluded from  
enforcing these claims until after the holders  
of the Co.'s common stock have received a  
dividend. In the meantime the Co. is entitled  
to receive any money that may become due  
to it for any service rendered to the Govern-  
ment."

G.T.R. Suit.—The case of Macdonald vs.  
the G.T.R., recently before the Trial Court in  
Toronto, was an action for damages for value  
of certain goods shipped at Glasgow, Scot-  
land, to be delivered to defendant at Portland,  
Maine, & which were destroyed by fire on  
defendant's line in the State of New Hamp-  
shire. It was conceded that the loss is one  
for which, according to the terms of bill of  
lading & shipping receipt, defendant was not  
to be answerable, but it was contended that  
the loss, owing to the negligence of the ser-  
vants of the defendant, the provisions of the  
bill & receipt relied on by defendant are not  
binding on plaintiff by reason of sec. 246 of  
the Railway Act. Held, that the Railway  
Act is not applicable to a railway situate in a  
foreign country, though operated by a com-  
pany incorporated by or under the authority  
of the Parliament of Canada. Whether Par-  
liament has power to bind a company incor-  
porated by it, as to terms upon which it will  
carry goods delivered in a foreign country, it  
is not necessary to consider, because it has  
not by the Act assumed to exercise it. Look-  
ing at the various provisions of the Act, &  
especially sec. 3, it is manifest that it applies  
only to railways over which that Parliament  
has jurisdiction. Chief Justice Meredith dis-  
missed the action with costs.

Great Northern of Canada.—Some changes  
have been made in the official list, Hon. P.  
Garneau, Quebec, retains the Presidency;  
Hon. J. Sharples, heretofore Vice-President,  
becomes 1st Vice-President; Col. J. Mc-  
Naught, New York, has been elected 2nd  
Vice-President, & H. H. Melville, Boston, 3rd  
Vice-President. J. G. Scott continues as  
Secretary & General Manager. E. Ling has  
been appointed Treasurer. Fifty-year 5%  
gold bonds, to the amount of \$6,000,000, have  
been authorized at the rate of \$20,000 a mile.  
Bonds covering 171 miles from Quebec to a  
junction at Hawkesbury with the Canada At-  
lantic, have been deposited with the Central  
Trust Co., & will be sold on completion of the  
road. The authorized capital stock is \$3,000,-  
000, all common, of which \$2,000,000 has been  
issued. A 10 year contract has been made  
with the Canada Atlantic for interchange of  
traffic on a mileage basis. The Co. has been  
granted the use of the Government docks at  
Quebec, & all steamships run in connection  
with the road will be exempt from harbor, port  
& other dues for 5 years. See also under  
"Railway Development."

The appeal in the case of the G.N.R. Co.  
vs. Campbell came before the Supreme Court  
at Ottawa May 7. The appeal is against two  
judgments of the Court of Review at Montreal  
affirming judgments for \$14,700 in the Superior  
Court against the Co. on three promissory  
notes, of which payment is disputed on the  
ground that they were given without consid-  
eration or proper authority in connection with  
the construction of a line of railway from St.  
Andrews to Lachute by C. N. Armstrong, a  
contractor, who undertook the work in 1891,  
after the Co. had abandoned the scheme.

Great Northern, U.S.A.—The Co. has is-  
sued a circular which states that 10,000 shares  
of the Co.'s stock has been placed with a new  
company, to be known as the Great Northern  
Employees' Investment Association, Ltd. Em-  
ployees whose salary is under \$3,000 a year &  
who have been 3 years in continuous service  
with the railway may subscribe for not more  
than \$5,000 of this stock at par. This issue  
is the balance of the \$100,000,000 authorized  
issue.

Intercolonial Accounts with C. P. R. &  
G.T.R.—The Minister of Railways recently  
stated in the House of Commons that the  
C.P.R.'s share of passenger fares & freight  
charges collected off the I.C.R., & accounted  
for to the C.P.R., for the years ended June  
30, 1899, & June 30, 1897, is as follows: 1899,  
Passenger fares, \$178,534.89; freight charges,  
\$354,646.21. 1897, Passenger fares, \$111,-  
040.22; freight charges, \$323,467.18. The  
G.T.R.'s share of passenger fares & freight  
charges collected off the I.C.R., & accounted  
for to the G.T.R. for the same years, is:  
1899, Passenger fares, \$25,559.15; freight  
charges, \$404,838.60. 1897, Passenger fares,  
\$27,553.50; freight charges, \$525,240.15.

Lehigh Valley.—Wall Street recently re-  
vised the rumor that the Pennsylvania R.R.  
had acquired control of the Lehigh Valley R.  
R., & had purchased 66,600 shares of the lat-  
ter's stock, through outside parties, in the  
same manner that it obtained a controlling in-  
terest in the Baltimore & Ohio, the Ches-  
apeake & Ohio & the Norfolk & Western. The  
figure given on the stock purchase is \$32.50  
a share, the entire sum of the transaction  
amounting to \$2,464,000. Pennsylvania offi-  
cials declared as unfounded the reports of the  
purchase, & it is believed that if a sale of 66,-  
600 shares of Lehigh Valley stock was pur-  
chased, as rumoured, the real purchaser was  
the New York Central, not the Pennsylvania.  
A few weeks ago the 75,000 shares of the  
Lehigh Valley stock which J. P. Morgan pur-  
chased from the trustees of the Asa Packer  
estate were transferred to the Vanderbilts.  
The Vanderbilts, it is safe to assume, are  
now the controlling power in Lehigh Valley  
R.R. affairs. Whether or not the Pennsyl-  
vania has a joint interest in that control is not  
known, but to all outward appearances the  
New York Central will be the dominating fac-  
tor in the deal, since under the constitution of  
the state of Pennsylvania, the Pennsylvania  
R.R. cannot absorb a competing or parallel  
road. Through the Pennsylvania, Schuylkill  
Valley, the Northern Central, the Sunbury &  
Hazleton branches & the Nanticoke branch  
the Pennsylvania competes in Lehigh Valley  
territory on direct terms.—Railway World.

Massawippi Valley.—At a meeting of di-  
rectors May 10, J. G. Foster & C. W. Case, of  
Sherbrooke, Que., were elected directors in  
place of the late A. T. Foster & T. J. Tuck.  
J. G. Foster was elected Vice-President. S.  
Stevens, Stanstead, Que., was elected Secre-  
tary in place of J. E. Foster, resigned. This  
line is leased to the Boston & Maine.

The Montreal Incline Ry. Co.'s lease from  
the city expired on May 1, & has not been re-  
newed, but the Co. is still operating the line.  
The main point at issue is the question of  
fares, the City Council demanding a reduc-  
tion. (April, pg. 103.)

Newfoundland.—A Halifax despatch of  
May 17 said—"The Newfoundland Ry.,  
which is owned & controlled by R. G. Reid,  
may soon pass into the hands of a company,  
together with the fleet of coastal steamers &  
the telegraph service, which are also control-  
led by Mr. Reid. He owns also half interests  
in the electric railway in St. John's, & has a  
monopoly of the greater part of the minerals  
of the colony. He has exclusive lumber areas  
as well. Cable advices from St. John's, Nfld.,  
say that Mr. Reid is endeavouring to float a  
company with a capital of \$27,000,000 to take  
over all his belongings, rights & franchises, &

conduct & operate the same. It is understood that the greater part of the capital can be obtained in England, but before the scheme can be accomplished it is necessary for Mr. Reid to have the sanction of the Newfoundland Government. An effort is now being made to secure this." Being interviewed in Montreal, Mr. Reid said the report was not exactly correct. It was true that he was taking steps to consolidate his interests in the hands of his family to provide for future contingencies, but that was the only basis for the report.

**Quebec Central.**—Earnings for April, \$42,103.19 against \$41,009.47 in April 1899; working expenses \$24,655.84 against \$22,502.64; net earnings \$17,447.35 against \$18,506.83. Earnings Jan. 1 to April 30th, \$138,954.88 against \$125,856.21 for corresponding period; working expenses \$101,460.87 against \$91,872.45; net earnings \$37,494.01 against \$33,983.76.

The directors' report for 1899 shows that the net revenue amounted to \$169,145 against \$147,354 for 1898. After providing \$82,650 for the year's interest paid & accrued upon the prior lien bonds & debenture stock, there remains a net balance revenue of \$86,495 which, added to the \$12,203 brought forward, makes a total of \$98,698, out of which interest at the rate of 2 1/2% has been paid on the income bonds, leaving a balance of \$24,676. A proposal for the sub-division of the existing income bonds into two classes of security is being formulated by the directors, & will in due course be laid before the bondholders.

**Quebec & Lake St John** earnings for 3 months to Mar. 31, show an increase of \$20,238, as compared with corresponding period.

**South Shore.**—At a meeting of directors in Montreal, May 14, it was decided to issue \$1,000,000 4% debentures, payable in 10 years to complete the line to Point Levis. The railway, as its name implies, runs along the south side of the St. Lawrence, between St. Lambert & Chaudiere Jct. The terminus, however, will shortly be at Point Levis. When the Co. was incorporated in 1894 it took possession of the Montreal & Sorel Ry., & built the Sorel bridge at a cost of \$150,000, bringing the terminus of the system into the centre of the latter town. The Co. had not then received any subsidy from the Government, & the original intention of the extension to Point Levis was considerably upset by the purchase of the Drummond County Railway by the Government, and the extension of the I.C.R. into Montreal, for it had been the aim of the S.S. Co. to handle the business of the I.C.R. between Point Levis & Montreal. Last year the Co. was granted a subsidy of \$150,000 on the 3 bridges it had erected, & a further grant of \$3,200 a mile for the 93 miles between Sorel & Chaudiere Jct. The Quebec Government also made a grant of \$75,000 for bridge construction. With the assistance of these subsidies the Co. pushed on the extension of the road towards Levis. The railway is owned by the estates Tourville, Leduc, & J. M. Fortier & H. Beauchemin.—See also under this head in Railway Development department.

**Toronto, Hamilton & Buffalo.**—The city of Brantford has accepted \$12,500 preferred stock of this Co. in exchange for \$25,000 common stock previously held.

**White Pass & Yukon.**—We are officially informed that the press report, stating that the head offices have been removed from Seattle, Wash., to Skagway, Alaska, is not altogether correct. The General Auditing Department has been removed from Seattle to Skagway. The Traffic Manager is located at Seattle, but has a representative and office at Skagway. The General Manager retains Seattle as his residence, but maintains an office in Skagway, the business there, in his absence, being in charge of his chief clerk, I. W. Young.

**Grand Trunk Earnings, Expenses, &c.**

The following figures are issued from the London, Eng., office:

GRAND TRUNK RAILWAY.

Revenue statement for Mar., 1900:

	1900	1899	Increase	Decrease
Gross receipts.....	£360,000	£354,200	£ 5,800	.....
Working expenses.	256,000	238,100	17,900	.....

Net profit.....£104,000 £116,100 ..... £12,100

Aggregate Jan. 1 to Mar. 31, 1900:

	1900	1899	Increase	Decrease
Gross receipts ....	£1,032,200	£967,200	£65,000	.....
Working expenses.	749,900	688,200	61,700	.....

Net profit..... £282,300 £279,000 £ 3,300

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

Revenue statement for Mar., 1900:

	1900	1899	Increase	Decrease
Gross receipts.....	£16,200	£15,400	£ 800	.....
Working expenses.	14,300	13,100	1,200	.....

Net profit.... £ 1,900 £ 2,300 ..... £ 400

Aggregate Jan. 1 to Mar. 31, 1900:

	1900	1899	Increase	Decrease
Gross receipts.....	£44,200	£41,700	£2,500	.....
Working expenses..	38,400	37,200	1,200	.....

Net profit..... £ 5,800 £ 4,500 £1,300

NOTE.—Cable message adds, "Decrease in net on account of heavy snow storms."

TRAFFIC RECEIPTS OF THE SYSTEM.

Traffic receipts, Jan. 1 to Apl. 30:

	1900.	1899.	In-crease.	De-crease.
Grand Trunk.....	£1,389,272	£1,289,012	£100,260	.....
D., G. H. & M..	59,861	56,558	3,303	.....

Total.....£1,449,133 £1,345,570 £103,563

**April Railway Earnings.**

Railways gross earnings reports for April covering 117 railroads, aggregating 102,004 miles, show an increase of \$5,954,421 over the corresponding month last year, or 12.69%. The New York Central leads with a gain in gross earnings of \$503,116. Other roads making large gains are the Baltimore & Ohio, \$479,014; the Northern Pacific, \$373,491; the Chicago, Milwaukee & St. Paul, \$347,704; the Great Northern, \$329,760; the Mexican Central, \$269,371, & the Canadian Pacific, \$264,688. Only one of the larger roads shows a decrease, the International & Great Northern reporting a falling off of \$78,490, attributable to the floods in Texas. Of the entire 117 roads, only 16 show losses. The gains of the New York Central are partly based on some losses in the corresponding month a year ago due to the delay in the opening of lake navigation. They also include \$145,347 increase from the Fall Brook line taken over since the report of the year before. The increase of the 13 roads of the Northwestern & North Pacific group aggregates \$1,560,000; the 11 roads of the Southern group report gains of \$870,000; 18 roads of the Middle & Middle Western, \$760,000; 10 of the Southwestern, \$410,000, & 6 trunk lines, \$1,110,000. Aside from general activity of trade, three special advantages for the month are to be noted. The grain movement in the West was heavier than a year ago, there was a marked improvement in the live-stock movement, & there was not the delay of 1899 in the opening of lake navigation. Among the disadvantages are the falling off of the cotton movement in the South, due to bad weather & floods; & labor troubles in various sections of the country. In winter & spring wheat the receipts at Western primary markets for the four weeks ended April 28, were 11,000,000 bushels, against 9,750,000 bush. a year ago. Receipts of corn increased from 8,000,000 bush. to 16,573,000, a gain of 86%. The receipts of wheat, corn, oats, barley & rye together aggregate 40,000,000 bush. this year, against 28,333,000 for the corresponding

period of 1899. The contraction in the movement of cotton was directly the result of the smaller crop of this season. The shipments overland for the month were but 52,634 bales, against 97,693 in 1899 & 92,560 in 1898. The receipts at Southern outports for April, 1900, were 190,374 bales, against 201,214 last year & 262,420 the year before. The gains in railway earnings are cumulative for several successive years. The increase of \$5,954,421 for April this year follows an increase of \$1,818,638 in 1899, & \$5,967,869 in 1898, besides smaller increases in the years preceding.—Railroad Gazette.

**RAILWAY APPOINTMENTS, Etc.**

**Canada Atlantic & Plant Steamship Co.**—M. F. Plant, President & Manager, because of pressure of other interests, has relinquished the management of the Plant line service between Boston & the Maritime Provinces, & H. L. Chipman, of Halifax, has been appointed Manager of the Boston branch. For several years previous to the death of H. B. Plant, head of the entire Plant system, in 1899, Mr. Chipman had been agent of the line at Halifax. He became Superintendent at that place at the time of Mr. Plant's death.

**Canada Atlantic Ry., Canada Atlantic Transit Co.**—W. H. Burk, formerly contracting agent, has been appointed agent at St. Paul, Minn., with office at 184 E. Third Street, & E. W. Bennett has been appointed contracting agent at Minneapolis, with office in Grain Exchange, reporting to H. L. Moore, agent.

**Canadian Northern.**—D. B. Hanna has heretofore been General Superintendent at Winnipeg of this line from Gladstone Jct., Man., northwesterly, & Superintendent of the Manitoba & Southeastern, & of its subsidiary line the Minnesota & Manitoba from Winnipeg southeasterly through Manitoba & Minnesota to the Rainy River. The Manitoba & Southeastern having been amalgamated with the C.N.R., remains under his jurisdiction, & he has added to it the Ontario & Rainy River Ry., now under construction from Thunder Bay to Rainy River, which has also been amalgamated with the C.N.R. The Port Arthur, Duluth & Western has also been placed under him.

**Canadian Pacific.**—F. Walker, Train Dispatcher at Fort William, has been appointed Trainmaster of the Thunder Bay, Wabigoon & Rat Portage sections of the Western division, with headquarters at Rat Portage, W. A. Brown, who has been Trainmaster for some time, resuming his former position as a passenger conductor.

Jno. Promberger, who has had extensive experience in similar work, has been given charge of the docks & freight handling at Fort William, the agent having been relieved of these duties.

**Chicago & Grand Trunk.**—Roadmasters J. Hamilton & T. Fogarty being transferred to construction work, J. Mullen, Roadmaster, is transferred to 25th district, between Pt. Huron & Lansing, with headquarters at Durand, Mich. W. Lane is appointed acting Roadmaster 25th & 26th districts, between Lansing & South Bend, with headquarters at Battle Creek, Mich. J. Nolan is appointed acting Roadmaster on the 27th district between Detroit & Owosso, & the 25th district (C.S. & M.) between Durand & West Bay City, with headquarters at Pontiac, Mich.

**Duluth, South Shore & Atlantic.**—G. W. Hibbard, General Passenger Agent, has not resigned, as reported, to accept a similar position with the Rutland R.R. at Rutland, Vt. C. B. Hibbard is the Rutland appointee.

**Grand Trunk.**—J. Whitcher has been appointed Water Service Inspector, with headquarters at London, vice J. T. Eames, resigned.

# Enameled Iron Station Names.

Guaranteed not to fade or in any way to perish from exposure.

As used on the Canadian Pacific & Canadian Northern Railways. Sign 12 ins. high. Letters 9 ins. high. Length according to number of letters in name. The sign shown is 45 ins. long.



Style no. 1. White letters on blue ground.

Twenty-nine of these signs supplied the C.P.R. Co. for the Crow's Nest Pass Ry. averaged 6½ ft. in length, the longest being 11 ft. 2 ins. & the shortest 3 ft. 9 ins.

Mr. Wm. Whyte, Manager of the Canadian Pacific Railway Co.'s lines west of Fort William, writes,—“I have pleasure in stating that I am very well satisfied with the enameled iron signs supplied by the Acton Burrows Co. for station names on the western lines of this Company. They have now been in use for some time & have proved very satisfactory. The lettering is clear & distinct & the signs have proved to be impervious to the weather. They have a brighter & neater appearance & are very much more satisfactory than painted wooden ones, & considering their lasting qualities will be found more economical.”

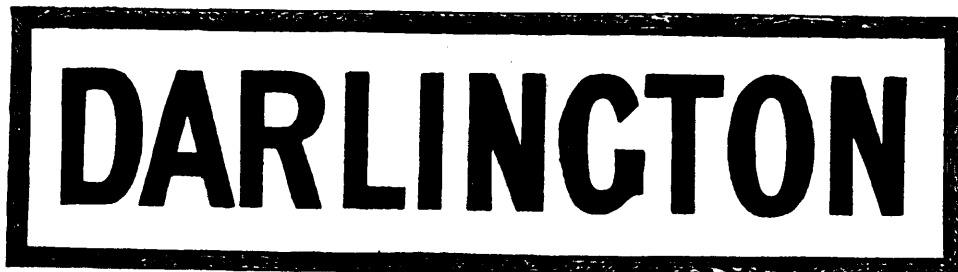
Mr. H. P. Timmerman, General Superintendent of the Atlantic Division of the Canadian Pacific Ry., writes,—“The enameled iron station names supplied by the Acton Burrows Co., in 1898, for a number of stations on this division, have proved very satisfactory. The letters are well formed & distinct, & the signs present a clean, bright appearance, being just as good now as when they were new.”



Style no. 2, as used on the Grand Trunk Ry. System. Black letters on white ground. This sign is 14 ins. high by 7 ft. long. Length varies with number of letters in name of station.



Style no. 3, as used on the Pennsylvania Railroad. White letters on black ground. This sign is 12 ins. high by 6 ft. long. Length varies with number of letters in name of station.



Style no. 4, as used on the Northeastern Railway of England. Dark brown letters on light ground, framed in wood. This sign is 6 x 18 ft.

These signs have long been used on most European railways, & for a number of years on the Pennsylvania R.R., the New York Central & Hudson River R.R., the Manhattan Elevated R.R., the Long Island R.R., & many other lines in the United States. They are also being extensively used in Canada & are giving complete satisfaction as the best outdoor signs produced. They can be made in any color, size, or shape. Estimates promptly furnished on application.

## The Acton Burrows Co., 29 Melinda Street, Toronto.

Sole Agents for Canada for The Imperial Enamel Co. of Birmingham, England.

G. A. Morency has been appointed chief clerk of the General Passenger & Ticket Agents' department in succession to H. G. Elliott, promoted. J. N. Melville succeeds Mr. Morency as excursion clerk. Lorne Macdonald has been appointed chief clerk in the freight traffic department. He was secretary to G. B. Reeve, General Traffic Manager, having been appointed to that position when J. E. Dalrymple became a division freight agent of the Co.

**Richelieu & Ontario Navigation Co.**—Capt. T. J. Craig, of Kingston, has been appointed to succeed the late P. McIntyre as freight agent at Toronto.

### Mainly About People.

D. D. Mann has removed from Montreal to Toronto, where he recently purchased a residence, 161 St. George St.

Wm. King committed suicide at Perth, Ont., May 28, by hanging himself in his stable. He was formerly C.P.R. freight agent.

G. B. Reeve, ex-General Traffic Manager of the G.T.R., & Mrs. Reeve, arrived at their new home, La Pomelo Ranch, La Mirada, Cal., May 9.

Mrs. Notman, wife of the Assistant General Passenger Agent of the C.P.R., & her family have removed from Montreal to Toronto to join Mr. Notman.

Lord & Lady Mount-Stephen have gone to Homburg, Prussia, where they have taken apartments formerly occupied by the Prince of Wales at Ritter's Park Hotel.

H. G. Elliott, who has been promoted to the position of Assistant General Passenger & Ticket Agent of the G.T.R. at Montreal, was born at Chambly, Que., & was for many years city ticket agent of the Central Vermont at Montreal, entering the G.T.R. service in May, 1897.

Alex. Fraser, contractor, Toronto, who died Feb. 27, left an estate valued at about \$68,000, of which about \$50,000 is represented by interests in the businesses of A. Fraser, contractor, G. P. Magann, contractor, the Magann-Fawke Lumber Co., & the G. P. Magann Air-brake Co.

D. G. Ross, who has been appointed Assistant Superintendent of the C.P.R. at Winnipeg, has been Chief Train Despatcher of the Manitoba & Northwestern Ry. for the past 5 years, previous to which he was a train despatcher on the C.P.R. at Winnipeg & other points.

Mrs. Broughton, wife of the late F. Broughton, formerly General Manager of the Great Western Ry. of Canada, died at Hamilton, Ont., May 16, aged 73. She was buried at Eastwood, Ont., the G.T.R. placing a special car at the disposal of the family. She left an estate valued at \$20,460, which will be divided among the sons & daughters.

G. W. Vaux, recently promoted to the position of Assistant General Passenger & Ticket Agent of the G.T.R. at Chicago, has been in the general passenger office of the G.T.R. at Montreal for 18 years, filling every office from junior clerk to chief clerk, holding the latter position for 7 years until 1899, when he was appointed Assistant General Passenger & Ticket Agent at Montreal.

W. Cross, recently appointed Assistant to the Manager of the C.P.R. Western lines in the Mechanical Department, was born in Birkenhead, Eng., in 1842. He entered the G.T.R. service at Montreal in 1863 as journeyman, afterwards becoming foreman of the erecting shops. In 1882 he was appointed Master Mechanic of the Eastern division of the C.P.R., & in 1887 Master Mechanic of the Western division at Winnipeg, subse-

quently becoming General Master Mechanic of the Western & Pacific divisions.

The two men who are nearest to the Czar of Russia, and who, perhaps, have a greater influence than any others in shaping the commercial policy of the present government of that empire, are M. de Witte, the Imperial Minister of Finance, who, 16 years ago, was a station agent at a small town on one of the railways of Russian Poland; the other is Prince Michel Hilkoﬀ, who, when little more than a boy, left St. Petersburg to seek his fortune, learned mechanical engineering in Philadelphia, & is now the Imperial Minister of Railways, and a member of the Czar's Cabinet.

Theodore Van Horne, a younger brother of Sir Wm. Van Horne, died at Bloomington, Ill., May 22. He was born in 1849, in Will County, Ill., where Sir William was born in 1843. In 1868 he went into the telegraph service of the Chicago & Alton Ry., continuing in it until his death. Of late years he suffered from kidney disease, his last illness being of three weeks' duration. Besides Sir William he leaves two sisters & another brother, Mrs. Leffler, of Hickory County, Me.; Miss Mary Van Horne, of Montreal, & A. C. Van Horne, an engineer on the Chicago & Alton. Sir William attended the funeral at Joliet, Ill.

George Turnbull Bell, recently promoted to the position of General Passenger & Ticket Agent of the G.T.R. system, was born at Montreal, Sept. 7, 1861, & entered railway service in 1878, since which he has been consecutively, 1878 to Nov. 1880 clerk of the car mileage office Great Western Ry.; Nov. 1880 to Nov. 1882 rate clerk & stenographer to General Passenger Agent, same road; Nov. 1882 to 1884 chief clerk to Assistant General Passenger Agent, G.T.R.; Jan. 1884 to April 25, 1892, chief clerk to General Passenger Agent; April 25, 1892, to 1899 Assistant General Passenger Agent; 1899 to 1900 First Assistant General Passenger & Ticket Agent at Chicago.

Wm. P. Fitzsimmons who has been appointed Division Freight Agent of the G.T.R. at Detroit, in charge of eastbound traffic from connections at Detroit & Port Huron, & all westward bound traffic from connections at the Niagara frontier destined to points west of the Detroit & St. Clair rivers, was born in Detroit, Oct. 27, 1868. He entered the service of the G.T.R. April 15, 1884, as office boy. In turn he occupied every desk in the general freight department, including that of travelling freight agent. In Jan. 1897 he went to Montreal as Secretary to General Freight Agent Loud. In Nov. 1898, he was made chief clerk in the general freight agent's office, the position he has recently vacated.

W. E. Davis, recently promoted to the position of Passenger Traffic Manager of the G.T.R., was born in Niagara county, N.Y., 1850. He began work as office boy in the Hannibal & St. Joseph R.R., now a part of the Burlington System, at the age of 18, & his early railway education was obtained on Western roads. He came to what is now part of the G.T.R. System (Chicago & Lake Huron R.R., now Chicago & Grand Trunk) Aug., 1877, in charge of the passenger business of that Co., which later on included the Detroit, Grand Haven & Milwaukee Ry., Toledo, Saginaw & Muskegon Ry., & Cincinnati, Saginaw & Mackinaw R.R.; & at the time of the consolidation of all the G.T. lines under the present management, he was removed from Chicago to Montreal April 1, 1896, as General Passenger & Ticket Agent.

Jno. Pullen, recently appointed General Freight Agent of the G.T.R., entered the Co.'s service in 1877 as a boy in the office of Assistant General Freight Agent, G. B. Reeve, at Sherbrooke, Que. In 1878 he was transferred to the general freight office,

Montreal, & in 1880 went to Chicago as secretary to Traffic Manager Reeve, of the Chicago & G.T.R. In 1890 he was appointed agent of the West Shore Fast Freight Line, & subsequently agent of the Reading Despatch in Chicago. On the reorganization of the G.T.R., under the present management, in 1896, he was appointed Division Freight Agent at Stratford; in 1897 Division Freight Agent at Hamilton, Ont., & when the Central Vermont Ry. passed under the control of the G.T.R. on May 1, 1899, he was appointed General Freight Agent of that company at St. Albans, Vt.

Wm. Woollatt, who has recently been promoted to the General Managership of the Lake Erie & Detroit River Ry., was born April 2nd, 1855, at Weeden, Hertfordshire, Eng. He came to Canada in April, 1872, & entered office of Mechanical Superintendent of the Northern Ry. at Toronto in May, 1872; in April, 1877, was transferred to the General Freight & Passenger Agent's office of same Co. as stenographer, & from 1879 to 1888 occupied position as Chief Clerk in the General Passenger Department & Audit Department. In consequence of the fusion of the Northern Ry. with the G.T.R., in June, 1888, he was transferred to the General Passenger Dept. of the G.T.R. at Montreal; remained with that Co. until end of that year; in Jan. 1889, was appointed General Freight & Passenger Agent of the Lake E. & D.R. Ry., title changed same year to Traffic Manager, Jan., 1891, appointed General Superintendent & Traffic Manager, & in May, 1900, appointed General Manager.

Thomas Tait, whose portrait appears on pg. 161, is a son of Chief Justice Sir Melbourne Tait, & was born at Melbourne, Que., July 24, 1864. He was educated at the High School, Montreal, & entered railway service in Sept., 1880, as a clerk in the Audit office of the G.T.R., Montreal, where he remained until July, 1881, from which date to Oct., 1881, he was clerk in the office of the Assistant to the President of the Chicago, & G.T. From Oct., 1881, to Apl., 1882, he was clerk in Solicitor's office G.T.R., Belleville, Ont., & from Apl. to Oct., 1882, clerk General Manager's office, G.T.R. In Oct., 1882, he went into the C.P.R. service, since which he has been consecutively, Oct., 1882, to Sept., 1886, private secretary to Vice-President & General Manager; Sept., 1886, to May 23, 1887, clerk General Traffic Manager's office; May 23, 1887, to Feb. 1, 1889, Assistant Superintendent at Moosejaw, Assa.; Feb. 1, 1889, to Mar. 12, 1890, Superintendent Ontario division at Toronto; Mar. 12, 1890, to Mar. 1, 1893, General Superintendent Ontario & Quebec division; Mar. 1, 1893, to May 1897, Assistant General Manager; & since then Manager of lines east of Fort William. Mr. Tait is an Anglican. In 1890 he married Emily St. Aubert, daughter of G. R. R. Cockburn, Toronto. He resides at 7 Ontario Avenue, Montreal, & is a member of the St. James', Toronto, Rideau & Union clubs.

**The N. L. Piper Railway Supply Co.** has been incorporated under the Dominion Companies Act, with a capital of \$40,000, to carry on the business of manufacturing, selling, purchasing & dealing in railway, ship & electric supplies, the purchase, selling & holding of patent rights in any way relating to such supplies, & the acting as agents for the patentees or owners of such patents, & for acquiring from the firm of Noah L. Piper & Son the business now carried on by them in Toronto.

The demand for lumber on the Pacific coast is as active as it is in the East, & it is likely that 50,000,000 ft. will be shipped from Vancouver alone before Nov. A large portion of this will go to Shanghai to be used in construction on the Trans-Siberian railway.



### Electricity in the Transportation Field.

In no branch of science has the century now fast nearing its end witnessed more rapid advances or remarkable applications than in electricity, which in a brief space of 100 years, has developed from a scientific curiosity to one of the most potent forces that enter into our industrial life. It is still but ill-understood, & not even adequately definable. So vast have been the changes which it has already wrought in chemistry & manufactures, & so powerful may be the influence which it is destined to exert over the arts, that one involuntarily looks into the future for a glimpse of its possibilities in the twentieth century.

Present developments give no reason to expect that electricity will ever completely supersede steam as a motive power of great railway systems. In the transportation of heavy loads through long distances, the use of electricity is accompanied with many inconveniences & disadvantages. The steam-locomotive, on the other hand, ever remarkable for its great tractive power & high speed, has, in late years, been so considerably improved that it will undoubtedly hold its own in the economical, long-distance haulage of freight. Improvements in smoke-consuming devices, in constructions for lessening vibration, & in arrangements for increasing the heating surface & boiler capacity, follow one another so rapidly that the merits of concentrated power, cleanliness & compactness are almost as characteristic of the locomotive as they are of the electric motor. But, although electricity may never be exclusively used as the motive power of our large railroads, there are certain conditions under which it may be far more satisfactorily employed than steam. Scarcity of coal & a superabundance of water-power, for example, may favor the construction of electric rather than steam roads. In Switzerland

& the Alpine regions of Italy, short trains of moderate speed, running at frequent intervals & carrying but few passengers, are chiefly employed, electric power being used for reasons of economy; while there is every indication that electricity will be exclusively used in the subway systems of the future.

For suburban travel & the street railways of large cities, electricity is admirably adapted to meet the requirements of punctuality, security, & speed. Electric power is eminently suited to the needs of the small road; the cars are small, the trains short, the superstructure light, & the system cleanly. Whether the over or the underground trolley or the storage battery will be the prevailing system, it cannot be doubted that for city & suburban service electricity will remain the best form of motive power. So widely is it now employed on tramways, that it practically monopolizes the field; & further advancement must be looked for only in intensive improvement, in increased efficiency & safety.

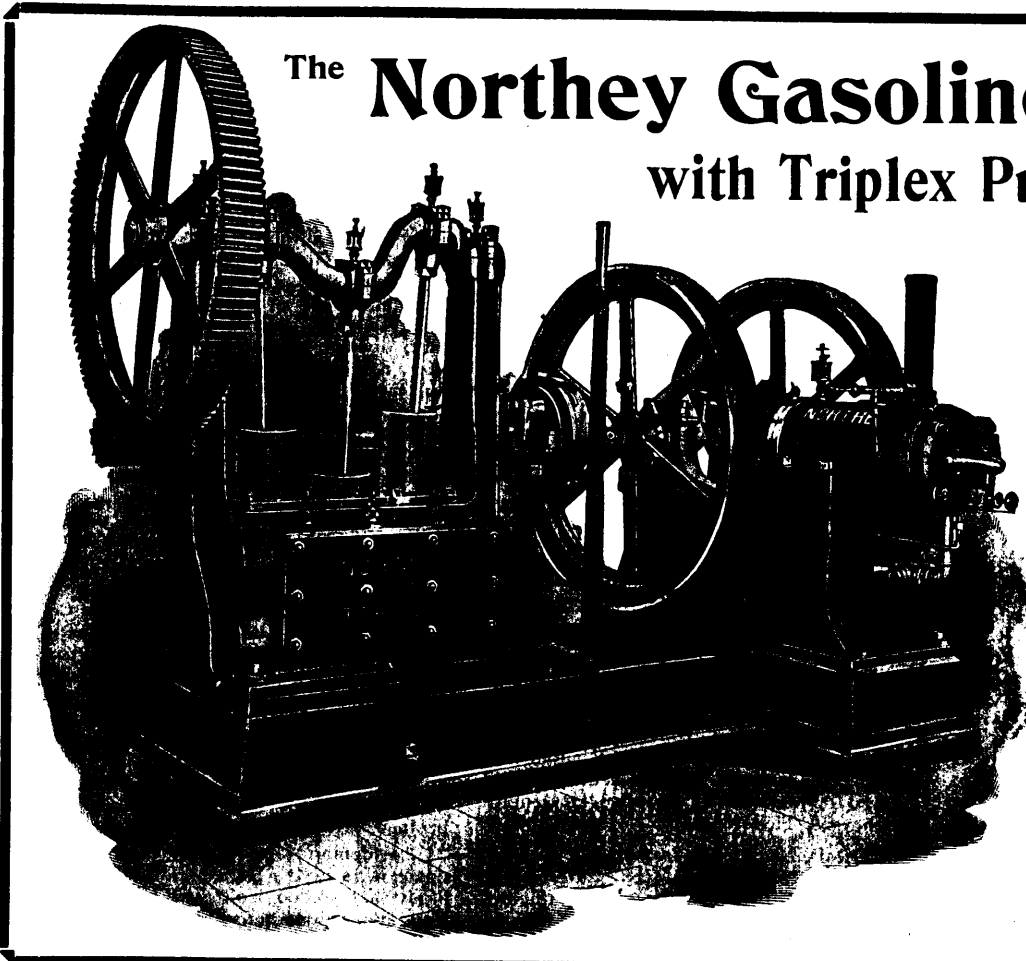
That electricity will actually supplant steam on short, industrial roads, such as those that connect mines with foundries, & factories with shipping wharves, is as certain as that it will be generally employed in city & suburban traffic. The small electric locomotive of great tractive power, easily controlled, ever ready for service, has proven itself of untold value, & to a certain extent, has already taken the place of the steam locomotive. The field which is here opened to electricity is not so limited as one might be inclined to imagine. The centralization noticeable in all branches of commerce, the combination of small factories to form giant industries, is becoming more pronounced with each succeeding year. Industrial plants, which cover acres of ground, & which swarm with workmen, require a quick means of transporting material from

building to building, & for this purpose electricity is the most convenient &, under many conditions, the cheapest form of energy that could possibly be employed. In many of these establishments large generating plants have been already built to drive the many motors, cranes, machine-tools, & labor-saving appliances, & the utilization of the same current employed in driving these machines, to operate short railways would be both practicable & economical.

Transportation by water will be affected by electricity less markedly than transportation by rail. The electric appliances which are now largely used on European canals have contributed much to increase the efficiency of these & other waterways. Electrically-operated cranes, elevating apparatus, & gates are multiplying; & the mule that now reigns supreme over the towpath is gradually giving way to the small, powerful, electric locomotive, capable of towing several barges at a time. On ocean-going steamers, electricity will occupy a minor place. At present it is employed in lighting & in operating the steering-gear & various auxiliary machines. On warships it will find a more extensive application. Although it will not supersede steam as a means of propulsion, it will be more widely used than at present in the manipulation of turrets, guns & ammunition hoists, & the operation of deck winches & boat cranes.

Electric communication on land, in spite of its phenomenal development, may still be vastly improved in economy. Our present system of rapid telegraphy is expensive; the sending of a message by wire is even yet far too costly for the ordinary affairs of mankind. If the twentieth century inventor will concern himself with increasing the efficiency & reducing the cost & expense of existing means of electric communication, he will confer

## The Northey Gasoline Engine with Triplex Pump, for Tank Duty.



We here illustrate one of our Triplex Pumps operated by the Northey Gas and Gasoline Engine for railroad tank pumping. The Northey Engine offers the best example of an easily operated—safe—inexpensive—handy power on the market. The pump used is an improved model of our Triplex Power Pump. This combination gives excellent results, and is built with a view to ensuring an ample margin of strength for heavy, continuous service. We have recently installed two such plants at Coteau Junction, Que.

Booklet and Catalogs on request.

**The Northey Co., Limited,**  
1032 King St. Subway,  
TORONTO, ONTARIO.

more solid benefit than by solving the problem of electrical vision or elaborating a system of wireless telegraphy.—Scientific American.

**Railway Equipment Notes.**

The Algoma Central has ordered 50 more pressed steel cars.

The Sydney & Louisburg Ry. recently received another large locomotive.

Rhodes, Curry & Co. are doing a very large business at Amherst, N.S. During the past 12 months they paid the I.C.R. about \$50,000 for freight.

The Great Northern of Canada is said to have bought 7 locomotives in Chicago. It is also reported to have bought 150 box, & 50 platform cars there.

The White Pass & Yukon has added 2 sleeping cars to its equipment. They were shipped from Seattle to Skagway, & others will be added later in the season. The Co. is building 200 freight cars at Skagway.

Northern Pacific locomotives are equipped with electric headlights, & incandescent lights are provided on the under side of the running boards & beneath the boiler, thus enabling the driver & firemen to examine any part of the machinery with ease.

The Ottawa & Gatineau Ry. is in the market for four 1st class passenger coaches, 1 baggage car, & 25 box & flat cars. The rumor that the Co. had ordered 4 cars for excursion purposes, mentioned in our last issue, was incorrect. The allied line, the Pontiac Pacific Jct., is also in the market for one 1st class passenger coach, & 15 box & platform cars. These lines lost 13 cars in the recent Hull-Ottawa fire.

Orders have not yet been placed for the 20 or 30 locomotives & 500 box cars which it is proposed to buy for the Intercolonial. The last of the order for 5 locomotives, placed in April, 1899, has been delivered. Of an order for 200 box cars, placed some time since, 80 have been delivered. Rhodes, Curry & Co., Amherst, N.S., have delivered 170 box cars out of an order for 280, & 103 platform cars out of an order for 200.

The diminution in the supply of lumber occasioned by the recent Hull-Ottawa-fire, interfered considerably with the work at the Canada Atlantic car shops, where operations were temporarily suspended. The employees, however, were not thrown out of work, but have since been engaged in equipping cars with air brakes & patent draw-bars. About 2,000 cars have to be thus equipped, & considerable time will be necessary to do the work. By the time it is completed, other operations will be resumed in the shops.

The White Pass & Yukon is having 4 locomotives built at the Baldwin Locomotive Works. Following are the general dimensions:—One of the consolidation type with cylinders 17" x 20", driving wheels 38", outside diameter, & weighing in working order about 100,000 lbs.; two 10-wheelers, with cylinders 17" x 20", driving wheels 42", outside diameter, & weighing about 87,000 lbs., & one 10-wheeler, with cylinders 17" x 22", driving wheels 44", outside diameter, & weighing about 96,000 lbs. In each case the tenders are of 3,000 gall. capacity.

In our last issue we mentioned that equipment for the Great Northern of Canada was being bought by Col. Jas. McNaught, of New York City, who has been elected 2nd Vice-President of the Co. It is now announced that the Great Northern Equipment Co., of New York City, has been incorporated in West Virginia, with a capital stock of \$200,000, to deal in railway equipment. The incorporators are, J. C. McNaught, A. F. Clark, F. E. Ling, L. V. Ripper, & R. H. McNaught,

all of New York City. It is said this Co. has been organized primarily to finance orders for motive power & rolling stock for the G-N.R.

All the C.P.R. shops are running full time on repairs & new equipment. The Montreal car shops have well under way 8 standard passenger cars, of the same design as the 2 recently placed on the Montreal-Detroit run,

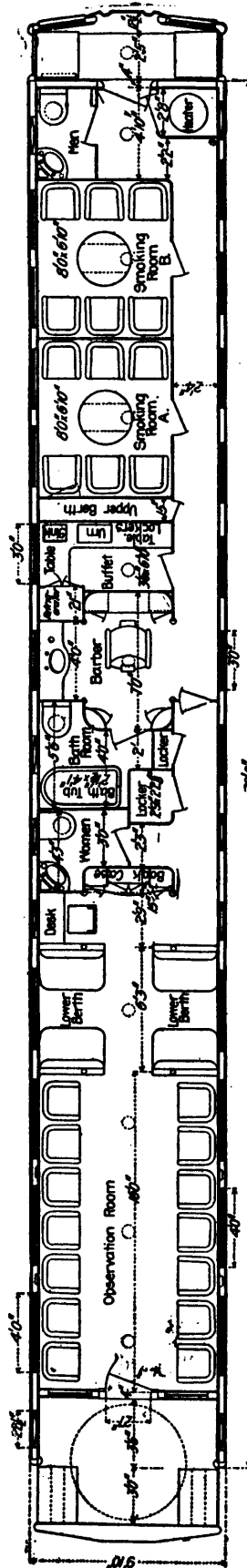
floor plan of which was given in our Feb. issue, pg. 45. These cars are 65 ft. long, 6-wheel trucks, high speed brakes, all finished in mahogany, both interior & exterior, & are considered the finest of their kind in the country. The Hochelaga shops have orders for ten 60 ft. express cars, & the Farnham shops have orders for 10 standard cabooses. The Perth shops are running overtime in the construction of 100 refrigerator cars, 400 box, & 200 flat cars, all of 60,000 lbs capacity.

There is now under construction at the Central Vermont shops an entire new observation train from an original design, to be put in service for the first time at the Yale-Harvard race on the Thames River, at New London, Conn., June 28. The entrance to the cars is in the centre of each car, passing up an aisle to the right & left of which are 4 rows of seats. The seats are all high back, with sufficient rise for the occupants of each seat to have a clear view over those in the seat below. A heavy plank floor between each seat gives a rest, and a dash-board at the back & bottom of each prevents injury to clothing. The arched roof of the cars is so supported that no obstruction exists to a clear view, both from the front & ends of the cars, while protection is given against showers. The train is handsomely painted & decorated with the crimson & blue college colors.

The Northern Pacific has had a number of observation buffet cars built for its North Coast Limited, which is now running daily between St. Paul & the Pacific Coast. By the floor plan given on this page it will be seen that each car contains an observation room, a sleeping section, 2 smoking rooms and a central portion containing the buffet, the barber shop & the bathroom. In addition there is the observation platform, the ceiling of which is in the shape of a large dome. This platform is enclosed with a polished brass railing. The chairs in the observation room are of wickerwork upholstered in plush. In the observation room there is a large oval centre table. The card tables in the smoking rooms have folding tops as indicated by the dotted lines. The car has a library & other accessories. All of the cars on these new trains are lighted by electricity, generated by a dynamo in the baggage car, & there are storage batteries for use in emergencies. The cars are finished in mahogany.

In the House of Commons recently, the Minister of Railways replied to an enquiry as follows:—"Sixteen cars were purchased from the Wagner Car Co., received on the road in May, 1899, & were of the following classes: 8 sleeping cars, 4 dining cars, 4 first-class cars. During the winter defects became apparent in some of the wheels. The cars have been taken into the shops & the wheels are being removed & replaced with new ones. The wheels which were supplied under the cars by the Wagner Co., & which failed, were made by Krupp, of Germany. The I.C.R. made a claim upon the Wagner Co., & it informed Krupp, who sent his agent to Moncton; after examination, Krupp assumed the responsibility & undertook to furnish new wheels without charge. Some Krupp wheels furnished the I.C.R. by the Crossen Co. & the Rhodes, Curry Co., under cars built by them about the same time, & some Krupp wheels bought direct from Krupp's Canadian agent about the same time, have also shown defects, so that it is probable a mistake has been made in the manufacture of a particular lot of steel, as the I.C.R. has used Krupp wheels & tires for many years & found them satisfactory."

A railway is to be constructed from Damascus to Mecca in order that pilgrims may be saved from a sea voyage. It is proposed that the line shall be built by soldiers.



FLOOR PLAN NORTHERN PACIFIC RAILWAY'S OBSERVATION BUFFET CAR.

**The Privy Council and Oil Rates.**

A summary of the decision of the Railway Committee of the Privy Council on the complaint against the railway rates on oil was given in our last issue. Following is the full text of the Order-in-Council:—

Extract from a report of the Committee of the Honorable the Privy Council, approved by His Excellency May 1, 1900.

"On a memorandum dated April 24, 1900, from the Minister of Railways & Canals, representing that under date of April 24, 1900, an order of the Railway Committee of the Privy Council recommends that the freight rates on oil as specified in the following schedule be submitted to your Excellency in Council for approval :

Miles.		In Car Loads.	
		Rate per ton per mile in cents.	Rate per 100 lbs in cts.
3	Port Huron to Sarnia.....	33.33	5
44	Suspension Bridge to Hamilton.	4.77	10½
59	Detroit to Sarnia.....	3.59	10½
69	Black Rock to Hamilton.....	3.00	10½
89	Suspension Bridge to Toronto.....	2.36	12
108	Black Rock to Toronto.....	2.22	12
129	Petrollea to Toronto.....	2.17	14
135	Sarnia to Hamilton.....	2.09	14
138	Port Huron to Hamilton.....	2.03	14
168	Petrollea to Toronto.....	2.02	17
169	Sarnia to Toronto.....	2.00	17
172	Port Huron to Toronto.....	1.92	17
186	Windsor to Hamilton.....	1.82	17
187	Detroit to Hamilton.....	1.81	17
225	Windsor to Toronto.....	1.60	18
226	Detroit to Toronto.....	1.59	18
415	Suspension Bridge to Montreal.....	1.10	23
440	Black Rock to Montreal.....	1.05	23
500	Petrollea to Montreal.....	1.00	25
501	Sarnia to Montreal.....	1.00	25
504	Port Huron to Montreal.....	.98	25
557	Windsor to Montreal.....	.93	26
558	Detroit to Montreal.....	.93	26

"The above mentioned rates are not to be exceeded to intermediate points, to which the rates are to be scaled proportionately to the basing rates given above, according to mileage as far as practicable, the shortest mileage of any one road to govern.

"The Committee, on the recommendation of the Minister of Railways & Canals, submits the same for your Excellency's approval accordingly."

As yet there is no indication of what action the railways intend taking. The matter concerns the G.T.R. more than any other line & it is not likely any decision will be arrived at

until after General Manager Hays returns from England.

**Trade Paper Advertising.**

Chas. Austin Bates says in Current Advertising:—

Nowadays the enterprising manufacturer cultivates his trade paper space & gets good crops.

He does not stop at printing his name & address together with the thrilling information that he makes certain lines of goods, but he goes ahead & tells what kind of hats he makes, why he makes them better than the other fellows, & what they cost.

He expects results & he gets them.

You can get results from your trade paper. There isn't the faintest shadow of a doubt about that.

There must be some reasons why you are in business.

There must be some points of superiority about your product.

If there weren't you wouldn't have any customers.

Now, it is perfectly evident that if the points about you, your product & your methods, are capable of holding your present customers they are strong enough to get the trade of people who are not your customers if they are properly placed before them.

Your trade paper space is one of the best ways in the world to place these points before the people whose custom you want.

But you must not expect to get new trade unless you get right down to the root of things & tell your story as it should be told.

Your trade paper cannot get business for you. You have to attend to that part yourself.

All it can do is to place before its readers the advertisements which you turn over to it.

If the advertisements are not good you must not expect results.

If you hired a farm & after signing the lease & paying the rent sat back & expected crops without doing anything more, you would score a very complete & comprehensive failure.

It is the same way with trade paper space.

If you hire the space & let it lie idle you can't expect to reap any benefit.

If you cultivate it properly—if you sow the right kind of seed & see that it receives the right kind of attention—you will get a satisfactory & profitable crop.

Do not make the mistake of doing just the things your competitors do & following along in their tracks. Do something different. Get out of the rut.

Try to make your advertising individual. Try to have it reflect your points of superiority & try to make your advertisements stand out above their surroundings.

Put the story of your goods before the public in a straightforward, simple, frank manner & study out methods of display which will make your advertisements the first things seen upon the pages where they appear.

It may cost you quite a little to have prepared for you advertisements which will be what they ought to be.

The money will be judiciously expended. When you come to think of it, it makes no difference what an advertisement costs. Results count not the cost.

If space that costs you \$10 can be made ten times as effective by spending \$20 or \$30 in properly filling it, it is plain to be seen that the investment is a wise one.

There are too many people doing good advertising nowadays for the comfort of the man who does poor advertising.

**The Chignecto Marine Railway.**

This is a subject that persists in bobbing up at every session of the Dominion Parliament. The intention of this scheme was the making of a short cut overland by means of which ships might be transported from the north-western end of the Bay of Fundy to the waters of the Gulf of St. Lawrence. The expenditure so far on this project has been enormous, estimated at over \$3,000,000, & the work has had the endorsement of leading engineers & the financial support of a number of British capitalists, who have not had any return for their expenditure. Some time ago, the Dominion Government refused to grant any further extension of time or to renew the charter of the company. This action, of course, has led to much protest among those who are interested, but whether the result of this further agitation will be of any practical benefit remains to be seen. Many of the best authorities who have examined the proposition from engineering & commercial standpoints, are of opinion that the ship railway is a practical proposition, only needing the necessary capital & assistance to make it a commercial success of inestimable value to the trade of Canada. Others equally authori-

**THE FAIRBANKS COMPANY.**

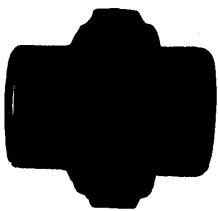
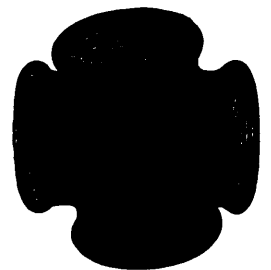
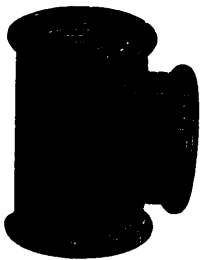
**Pipes, Valves and Fittings.**

We are Sole Agents for

**The Dart Patent Union Coupling.**

**PIPES, TOOLS, AND ENGINEERS' SUPPLIES.**

**749 Craig Street, = MONTREAL.**





KING STREET SUBWAY, TORONTO, LOOKING WEST.

**Engineering Records in the Railway Operating Department.**

*By C. E. Cartwright, M. Can. Soc. C. E.*

The following paper was read before the Canadian Society of Civil Engineers recently :

When, on completion of construction, a railway is turned over to the operating department, it is generally found that the maps, profiles & other records are far less complete than generally supposed. Even with very careful location, the unevenness of the ground, obstructions from trees & changes made during construction, introduce inaccuracies in distance, breaks in chainage caused by changes of alignment, increase or decrease length of line, & are difficult to keep account of. The profiles also have been made with differing datum & changes of grade made at the last moment are often unrecorded. Sidetracks, buildings, water tanks, &c., are seldom definitely located until construction is nearly complete, & not generally until after the general construction work is finished. Altogether, even at the best, the plans & records are more or less deficient.

Sometimes, also, a railway company acquires an old line from another company, or several short lines are amalgamated; in these cases it is often found that the records are almost altogether lacking, or are in a very incomplete & unreliable condition. Often the engineer in charge will find that he will have to get along the best way he can with the information available, making special surveys as the necessity arises; these surveys will be made in a hurry for some special purpose, & will be of little or uncertain value for other uses. Surveys of this kind accumulate, made by different parties for different purposes, with varying degrees of accuracy, & after a time it is seldom known how much reliance can be placed in them; in consequence it is often necessary to revisit the ground & make new surveys; a great amount of work has to be done, which would have been unnecessary if reliable plans existed. The remedy for this state of affairs is a complete re-survey of the whole road, especially when it is an important road in a thickly settled country, with towns & villages at short intervals.

On a railway in the Central States, with which the writer was employed, it was decided to make a complete re-survey, the line having been recently acquired from another company; the few existing plans were incomplete & disconnected, a great amount of uncertainty existed as to the company's title to right of way & other property, & it was also proposed to expend a considerable sum in improving alignment & grades, accurate plans & profiles being needed for this purpose.

The railway was first carefully measured from end to end, starting with zero at one terminus; a 100 ft. steel tape was used; each hundred-foot station was marked with white paint on the inside of the rail; every tenth station was referenced by an oak stake, 3 ins. square, set 7½ ft. from the centre line; stakes were also set at every mile, to be afterwards replaced by standard mile posts. After the measurement was completed, the line was gone over by the transit party. This party made a traverse of the line, not stopping to run tangents to intersection & put in curves, simply

ive have said that in place of a railway to carry ships & their cargoes bodily from one bay to the other, a canal would be far cheaper & more profitable in every way than the railway project. It has been pointed out that a river already parallels the railway, & it would only require deepening to enable it to offer a splendid waterway across the Isthmus of Chignecto. It is claimed that a railway constructed on the lines laid down by the old company, whilst practical, from an engineer's point of view, could not be operated cheaply enough to make it necessary for vessels to employ its aid, whereas a canal would be a natural pathway, inexpensive to maintain & of immense value in the development of interpro-

vincial trade. It seems certain that in time some proposition of the latter description will make its way by the process of natural selection & as the result of conditions which are now felt strongly by the coastwise trade of the Maritime Provinces.—Maritime Merchant.

On the new branch of the Northern Pacific up the Clearwater valley the water tanks will be of the submerged type. These tanks are the invention of Chief Engineer McHenry. Water is taken into the tender by admitting steam into a closed well, through a temporary connection with the locomotive, which forces the water out of the well through another pipe.

getting a record of the centre line of the track, as they found it on the ground. On tangents, a sight would be taken on the track ahead as far as visible, & a straight line run, any deflection in the track being noted.

The intersection of all township, section, quarter-section & property lines were obtained, the angles recorded, & distances measured to the nearest section or quarter-section corners, one member of the party being employed most of his time in looking up monuments.

Plusses to points of intersection were obtained from the stations marked on rails by the measuring party.

A record was made of the fences on each side of the right of way, & distance from the centre line, this being often important as a means of determining a disputed boundary, where the fence had been in existence for a long period, as many deeds did not state the width of the right of way.

In villages & towns, the streets & lots adjacent to the company's property were located; all important factories, with the tracks leading to them, even if on a foreign railway, & all sidings & structures on the company's property, particular attention being given to apparent encroachments, it being often found that buildings were wholly or partially on the company's property without any lease having been made. In making a survey through a village or town, the transit party was furnished with copies of the official plates, previously obtained at the county seat, to aid them in locating lines & streets.

The transit party measured all bridges, buildings, culverts & other structures, located all "Y" & railroad crossings, & public & private road crossings.

The level party followed, taking levels at every hundred-foot station, on top of tie, at ends of bridges, on railway crossings, of level of water in streams, & approximate levels of adjacent ground. Check levels were run & bench marks established at about half mile intervals, & oftener at places likely to be needed. Levels were connected with sea levels taken from U. S. Government surveys.

The plans were drawn on white drawing paper in sheets, on a scale of 400 ft. to an inch, each sheet showing the line across a square mile section of land, a whole section or two adjoining half-sections being shown on the sheet. The top of sheet was north in every case, all distance & angles obtained on the ground to section & property lines were recorded on the sheets. On top of each

sheet was a plain title giving number of section, township & range.

All deeds & agreements were carefully gone over & compared with the plans, right of way colored in red, with name of grantor, page & number of record book, & any conditions in deeds noted on plans. Villages & towns, where the scale of 400 ft. to an inch did not allow sufficient detail to be shown, were drawn also on a scale of 100 ft. to an inch, a large town often requiring several sheets, the same ground being covered, with less detail, on the smaller scale.

The sheets, when completed, were numbered & bound together by counties, the first page being devoted to title & the second to an index map of the county, showing the route of the railway. The centre line was drawn in red ink, all station numbers & plusses being also in red; distances & all lettering were shown in black. Before binding, all the plans were copied on tracing linen. The profiles were drawn on the usual scales of 400 ft. to an inch horizontal, & 30 ft. to an inch vertical.

In cases where the engineer is unable to have a complete re-survey made, it will be advisable, as time permits, to make accurate surveys of all yards & station grounds, depending for general details of alignment outside these limits on the existing right of way maps. If an accurate set of yard & station ground plans are obtained to start with, it will be a comparatively easy matter to keep them correct as changes are made.

A statement should be prepared, giving length of all sidings, spurs & "Y's," made from actual measurements, & not from foremen's reports. The form can be made with several blank columns to be filled in from time to time, with "Track laid during —," "Track taken up during —," "Total length on —." This statement will show at a glance length of track on any siding, & avoid a search on plans & profiles for the information.

A chart, showing graphically the different makes, weights & date when laid, of the rails in use, should be made, & corrected as new rails are laid.

A bridge book should be kept, devoting a page to each bridge or trestle, giving style, spans, size of stringers, when built, when repaired or rebuilt, conditions when inspected, etc.

A record should be kept of all leases of the company's property, a copy of lease & plat filed.

Detailed statements should be kept of the actual cost of all structures built, & on completion, plans made showing the structure actually as built, showing depth & character of foundations of bridges, retaining walls, etc., & all differences from the original designs. A condensed plan & profile may be prepared when time permits, showing a great amount of general information, useful in the track & operating departments. The scale will depend somewhat on the length of line it is desired to represent, but, even on a scale as small as one mile to an inch horizontal, & 100 ft. to an inch vertical, the principal grades, sections, mileage, water tanks, sidings, railway crossings, etc., can be shown.

The plan will probably have to be somewhat distorted in order to keep it on same paper as the profile, & lengths of sidings & size of structures exaggerated. The arrangement can be somewhat as follows:—

On top a series of lines showing number of telegraph wires; lines showing the fencing, the mileage & the track sections; below this, a plan or graphical chart of the line, showing general geography & alignment, degree of each curve being shown by figures. Then the profile, showing bridges, grades, stations, etc.; below the profile a series of lines showing rails, joints, ballast, & new rails, new joints, new ballast.

An important matter is a system of filing plans so they can be quickly found when needed. When blue prints are much used, it is best to file the tracings. When plans are numerous a card index will be found most convenient. A plan can be indexed on the cards under several headings, & new plans can be added & changes made without spoiling the index.

The tracings can be filed in small pigeon holes, designated by letters & numbers, at sides & top of case respectively. The objection to this method is that the tracings, being tightly rolled, are troublesome to get flat in the blue print frame; this can be avoided by filing them flat in drawers & indexing by letters & numbers in a similar manner.

The C.P.R. hotel at Banff was re-opened for the summer May 17.

It is said traffic arrangements have been made between the C.P.R. & the Bellingham Bay & B.C. Ry., under which the C.P.R. obtains a terminal at New Whatcom, Wash. Connection is made via the C.P.R. Mission Branch from Mission Jct., B.C.

# MICA BOILER AND PIPE COVERING.

Used after exhaustive competitive tests by the

**BRITISH ADMIRALTY on H. M. THE QUEEN'S YACHT.**

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For full particulars, prices, etc., apply to the Company's Head Office in Canada.

**The Mica Boiler Covering Co., Limited, 86-92 Ann St., Montreal.**

## OUR ENGLISH OFFICE.

We have much pleasure in announcing that we have opened a branch office of THE RAILWAY & SHIPPING WORLD at No. 44 Fleet Street, London, E.C., England, in charge of Mr. W. H. Boffey, who will represent us for the United Kingdom & for the European Continent, & who will make contracts for advertising in this paper, receive subscriptions, &c.

The transportation & allied companies whose interests are represented by this paper, buy largely many classes of goods in Europe, & especially in view of the fact that the Canadian customs duty on goods of British manufacture will, after July 1, be still further reduced to two-thirds of the duty levied on goods from other countries, we consider this an opportune time to place this paper prominently before British manufacturers, &c.

## CURRENT TOPICS.

### From Whiskey to Water.

The vagaries of government control of public works are well illustrated by the recent appointment of W. O'Brien, a Montreal restaurant keeper, to the Superintendency of the Lachine Canal, at a salary of \$2,500 a year.

### Halifax Ocean Passenger Travel.

The C.P.R. secures a marvellous proportion of the ocean-borne passenger business from Halifax. The Deputy Minister of Railways gives figures in his recent annual report showing that in the winter season of 1897 & 1898, 6,188 passengers were landed at Halifax, of which the C.P.R. carried 5,364 via St. John, 622 going via the I.C.R. & the G.T.R. In the winter of 1898-99 the arrivals were 7,641, of which the C.P.R. carried 7,180 via St. John, 461 going by the I.C.R. to Montreal. All of which speaks volumes for the enterprise of the C.P.R. Passenger Department.

### Rainy River Navigation.

The shipping interests on the Lake of the Woods are much handicapped by the delay in improving the navigation of the Rainy River. A vote of \$25,000 was provided by the Dominion Parliament last year, but was not used, & is again repeated in the estimates for the ensuing fiscal year. The upper stretch of the river is in bad shape & until it is improved it is of no use building large steamers to run from Rat Portage, as there is no certainty of sufficient water above the Sault Rapids for anything but small steamers. The acting Minister of Public Works should have the improvements started without delay & a further vote should be taken sufficient to complete the work.

### Red River Navigation.

There appears to be a serious hitch in regard to going on with the building of a dam & lock at St. Andrews rapids, between Winnipeg & Selkirk, which the people of Winnipeg have been strongly urging for many years. Two or three months ago it was announced that a contract for the masonry had been let. The contract has not been signed & there are no indications that it will be. It appears that after tenders were called for the Government introduced legislation respecting the rate of wages to be paid on public works, a contingency which was not taken into account in tendering. A simple solution of the difficulty would appear to be to ask new tenders & not to delay a work for which there is a very strong demand.

### Railway Operating Rules.

The remarks we have made from time to time, recently, about the efficiency of the standard code of train rules as framed by the

American Railway Association are emphasized by the fact just announced that the membership of the Association is 233 roads, operating 184,215 miles of line. Surely the Train Rules Committee of such an association must be superior to any commission of so-called experts such as the Dominion Minister of Railways has asked Parliament to empower him to appoint to frame operating rules which may be made obligatory on all Canadian railways.

At the recent meeting of the Association in Chicago, the C.P.R., was re-elected a member of the Committee on Train Rules. The Co. is represented in this connection by Manager Tait of its eastern lines.

### Grand Trunk Capital.

In speaking at the banquet tendered him recently by the Montreal Board of Trade, G. B. Reeve made two mistakes in referring to the early financial history of the G.T.R. He said the line was built by foreign capital, not by subsidies from the Dominion Government. Unless we are very much mistaken, the private capital put into the G.T.R. was almost entirely British, which is certainly not "foreign" in any sense of the word. The Co. may not have received any direct subsidies from Dominion or Provincial Governments, but it did get a loan of \$15,142,633.34 before Confederation, & which still appears in the Dominion Public Accounts, no portion of the principal or interest having been paid. As by the terms of an act passed in 1884, the Dominion's claim in regard to this loan was made to rank after the common Stock & Securities of the Co., the loan may now fairly be put down as a subsidy.

### Delinquent Railway Officials.

The following paragraph occurs in the recent annual report of the Chief Engineer of Government Railways:—"Great difficulty has been experienced, year by year, in getting out the annual report of the Department, owing to many of the railway companies failing to make the returns required by law and taking no notice whatever of the communications addressed to them from time to time, urging them to forward their returns. I suggest that in future legal proceedings be taken to compel the delinquent railway companies to comply with the law; the costs of the suits to be collected from them." Similar paragraphs have appeared in previous reports & there is no doubt the law should be strictly enforced. It is in the public interest generally that the returns referred to should be made promptly as required by the statute & officials who are too careless or too lazy to comply should be compelled to mend their ways.

### Recognition of Services.

The services rendered to the public by transportation officials are so seldom publicly recognized that it is a pleasure to read the Quebec press reports of the demonstration which recently took place at Chicoutimi in honor of J. G. Scott, the Manager & Secretary of the Quebec & Lake St. John Ry. Some 3,000 people were present from all parts of the district traversed by the line. Addresses were presented from the town of Chicoutimi & from the colonists of the Lake St. John district, as well as from several societies, &c., eulogizing the important work done for the district by Mr. Scott, to which he felicitously replied, making the following announcement in the course of his speech:—"The capitalists in London who furnished so large a share of the money to build the railway are ready to put in more money to improve it, to make it a better & more workable road, & to give it a larger equipment of rolling stock, so that we may give you a better train service. Unless we are disappointed we shall, within a few months, have the large sum of £170,000 sterling at our disposal for these

purposes. I think it is now no secret that the New York & Boston capitalists who have been associated with us in the Great Northern enterprise, are ready, if the conditions are favorable, to spend even a larger sum of money in industries near Chicoutimi, which will go far to make this town one of the most prosperous in Canada."

### British Columbia's Danger.

The position we have taken as to the danger to British Columbia's best interests, which is threatened by the existing political situation there, is being very generally endorsed, even by leading Liberal papers. The Montreal Witness says:—"Mr. Martin's policy is, of course, a demagogue one, appealing to the Provincial prejudices of the people of British Columbia as against the Dominion & Imperial interests, to the interests of the miners as against the mine-owners, & to the prejudices of the Europeans against the Asiatics. His policy includes Government ownership of railways, which is perhaps a good, but is as yet an impracticable measure; construction of a new railway from the coast to Kootenay mining districts, a policy intended to catch the electors of Kootenay district & the coast; exclusion of all Mongolian labor, which is in contravention of British treaties, & cannot, therefore, be enacted; resistance to encroachment on the Provincial rights of British Columbia by the Dominion Government, a declaration of war against the Imperial & Dominion Governments for keeping British Columbia legislation against the Japanese within the limits of the treaty obligations, & an eight-hour labor day to catch the mining vote. There can be no doubt that this policy is popular with the unthinking classes who are strong in numbers in B.C. And it is quite possible that with Mr. Martin as Premier serious trouble may be caused to all Canada by his rulership. It is one of the dangers of our system of appointing political partisans to governorships that now & then one of them occasionally, from political prejudices, uses the royal prerogative as the Queen herself or the Governor-General would not think of using it."

### Suspension of Coasting Regulations.

The position we took some months since that the Dominion Government's action in suspending the coasting regulations so as to allow U.S. vessels to run between Fort William & Port Arthur & other ports in Canada, was clearly ultra vires & illegal, has recently received emphatic endorsement from an unexpected source. A memorandum has been made public, which was sent to the Privy Council on Oct. 16, 1899, by the Governor-General's Secretary, as follows: "His Excellency, having consulted Hon. David Mills, Minister of Justice, as to the legality of the minute (re the coasting trade), was informed that the order is distinctly a nullity, & that it assumes a power which it does not possess to cancel an Act of Parliament. On the other hand, the object of the order in question is distinctly to assist public interests. There have been frequent precedents of Governments taking action which was undoubtedly illegal when necessity was pressing & when the public good appeared to them to call for immediate action. The Government taking such action would, of course, rely upon the support of Parliament. The penalties in this case rest with the Government, & there would be, of course, no risk of any objection being taken to the course pursued as long as the present Government remains in power. But the statute lays down that penalties can be enforced within a period of three years, so that it is within the bounds of possibility that a succeeding Government, taking exception to the line now pursued, might claim to enforce a penalty. But considering there have been precedents for the action in question, & that public necessity undoubtedly at present calls for such action, it would appear to his

Excency that he need have no hesitation in signing the Privy Council order in question."

But in the case in question "necessity was not pressing." It has been clearly established that there was plenty of Canadian tonnage to take out all the grain offering at Thunder Bay ports, & it has never been even contended that there was the slightest necessity for allowing U.S. vessels to take return cargoes from Georgian Bay ports to Thunder Bay, which under the illegal suspension they were allowed to do.

**The Manitoba Railway Situation.**

Another railway agitation has started in Manitoba. At the recent provincial elections the Conservatives, who were victorious, had a plank in their platform, favoring government ownership of railways, & a movement, with Brandon as the centre, is now on foot to secure the construction of some lines by the Province. At a recent meeting at Brandon, which is said to have been largely attended by delegates from municipalities extending north of the C.P.R. main line from east of Carberry to the western boundary of the Province, a resolution was unanimously adopted, calling on the Provincial Government to construct a line to serve the district between the M. & N.W. Ry. & the G.N.W.C. Ry., both of which lines have recently been acquired by the C.P.R., on the north, & the main line of the C.P.R. on the south, from Portage la Prairie to the northwest boundary of the Province. Another resolution was adopted, urging the Government to build lines northwesterly & southerly from Brandon & northwesterly from Portage la Prairie.

The peculiarity about the present agitation is that it follows so closely on the aid given to the section of the Canadian Northern Railway now under construction between Winnipeg & Rainy River, the first mortgage bonds of which on both the Manitoba & Minnesota sections have been guaranteed by the Province for 30 years to the extent of \$8,000 a mile. It might reasonably have been expected that the completion of this line through to Lake Superior would have been waited for, & its results ascertained, before looking for a third outlet, but the present movement does not stop at the building of local lines such as those above mentioned, but also aims at a Government line to Lake Superior, even Duluth being spoken of as an objective point.

Following the anti-disallowance agitation in the eighties, the Province bonused the Northern Pacific to extend its system to Winnipeg, Portage la Prairie & Brandon. Two or three years ago the Canadian Northern route from Winnipeg to Thunder Bay, passing south of

the Lake of the Woods, was started. If this is followed by the construction of a Government line to Lake Superior the Province will have made a pretty heavy investment to secure eastern outlets & it would appear that a good proportion of the money which this last proposal would cost could be used to good advantage by dealing with one of the existing companies & preventing unnecessary duplication of lines. The C.P.R. proposes to double track its line between Thunder Bay & Winnipeg & to improve its grades, &c., so as to be in a position to handle the traffic to the best possible advantage. Possibly, in return for assistance in this work, it might be prepared to give further reductions in grain rates, &c., which would satisfy those who are now so warmly advocating a Government line. Unnecessary duplication of lines should be avoided, or the disastrous results that followed the reckless policy pursued in the United States a few years ago will be repeated here.

**Quebec Central Railway Report.**

A brief summary of the annual report for 1899 is given on page 163. Since it was put in type the full report has been received by mail from London, Eng.

The following summary shows a comparison of the year's revenue account with that of the previous year:

1898.	1899.
\$450,249	\$502,409
303,908	334,238
\$146,341	\$168,171
1,013	974
£30,278 = \$147,354	\$169,145 = £34,756.

The above statement shows increases in the gross earnings of \$52,160, in the working expenses of \$30,330, & in the net earnings of \$21,830.

After providing \$82,650 for the year's interest paid & accrued upon the prior lien bonds & debenture stock, there remains a net revenue balance for the year of \$86,495, which added to the \$12,203 brought forward from 1898, makes an available balance of \$98,698, out of which interest at the rate of 2 1/2 % has been declared on the income bonds, payable May 1, 1900, absorbing \$74,022, & leaving a balance at the credit of net revenue account on Dec. 31, 1899, of \$24,676.

Appended to the report is a copy of an Act recently obtained from the Quebec Legislature to further amend the charter of the Co., & to remove some doubts which had arisen as to

the true intent of certain provisions of the Act submitted to and approved at the last annual meeting.

Up to Dec. 31, 1899, £200,600 of the new 4 % debenture stock had been issued. Of this £185,300 had been used in retiring a like amount of prior lien bonds, & £15,300 had been sold to provide funds for a portion of the requisite additional capital expenditure authorized by the Act of 1899. There remained £164,700 prior lien bonds unexchanged on Dec. 31, 1899. A proposal for the sub-division of the existing Income Bonds into two classes of security is being formulated by the directors, & will be laid before the bondholders.

EXPENDITURE.		1898.	1899.
\$	c.	\$	c.
54,549	23	58,183	18
77,371	51	88,351	97
22,236	28	21,514	75
82,050	64	93,342	58
30,188	48	33,259	61
37,511	86	39,586	03
\$303,908	00	\$334,238	12
146,341	69	168,170	95
\$450,249	69	\$502,409	07
67.49	.....	*Per cent. of gross earnings	.....66.52

RECEIPTS.		1898.	1899.
\$	c.	\$	c.
148,408	39	158,460	87
279,259	55	323,397	11
13,446	48	12,735	60
6,000	00	6,000	00
3,135	27	1,815	49
\$450,249	69	\$502,409	07

**Cattle Guards in Ontario.**—A deputation comprised of J. Wrigley, Ayr; J. Wallace, Galt; L. Kennedy, Agincourt; J. Thomson, Sharbot Lake; Y. Sutherland, Embro; & J. Laidlaw, jun., Guelph, recently represented to the Minister of Railways that the new system of cattle guards was not sufficient to prevent cattle from getting upon the railway tracks, & in consequence a greater number of cattle were either injured or killed than was the case even under the old system of guards. The farmers wish this to be remedied, so that if cattle strayed away they should not be thus exposed to danger. They also claimed that even when cattle were accompanied by drivers there was an opportunity for their getting into the property of the railway companies & becoming exposed to danger by passing trains. The Minister promised that their representations would receive consideration. (Feb., pg. 34, Mar., pg. 79.)

**THE BARRETT TRACK JACK.**  
 Recommended as a standard by the  
**Road Masters' Association of America.**  
 These Jacks are made with Malleable Iron Frames, Steel Pawls, Machinery Steel Bearings and Pivots, forged Steel Rack. The wearing parts are removable and readily renewable at slight expense. The rectangular base gives great lifting strength and fits into close quarters better than other shaped stands. Adaptable to either high or low set loads.  
 The Barrett Jack is the safest, best and strongest known to the railroad world to-day.  
 Lifting capacity 10 to 15 tons.  
 For Catalogue and Price List, apply to  
**THE DUFF MANUFAC. CO.**  
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**Edward L. Drewry**  
**REDWOOD BREWERY,**  
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 Fine  
**ALES, EXTRA PORTER**  
 ... AND ...  
**PREMIUM LAGER.**  
 Most Extensive and Complete Brewery and Malthouses in Western Canada.  
**CHOICE MALT FOR SALE.**  
 Manufacturer of the Celebrated  
**Golden Key Brand AERATED WATERS.**

**C.P.R. Earnings & Expenses.**

Gross earnings, working expenses, net profits and increases over 1899, from Jan. 1, 1900 :

	Earnings.	Expenses.	Net Profits.	Increase or Decrease.
Jan.	\$2,152,071.32	\$1,460,501.71	\$ 691,569.61	\$ 74,035.75+
Feb.	1,954,087.59	1,331,355.34	622,732.25	23,030.77+
Mar.	2,294,786.97	1,495,685.73	799,101.24	99,794.33-
Apr.	2,491,194.47	1,464,126.85	1,027,067.62	106,764.13+

\$8,892,140.35 \$5,751,669.63 \$3,140,470.72 \$174,036.32+  
+ Increase. - Decrease.

There was an error in the statement published in our last issue, the Mar. net earnings being given as an increase of \$67,272.19, instead of a decrease of \$29,794.33.

Approximate earnings for May, \$2,639,000, against \$2,375,000 in May, 1899; increase, \$264,000. Mileage increased to 7,130 miles.

**Canadian Pacific Railway Land Sales.**

	Acres.		Amount.	
	1900	1899	1900	1899
Jan.	31,486	14,718	\$ 100,857.85	\$ 46,411.35
Feb.	23,613	13,747	75,771.19	43,371.69
Mar.	31,183	24,045	97,777.79	75,400.76
April	58,457	36,626	181,775.78	116,855.84
May	66,057	26,584	214,851.09	88,928.98
	210,796	115,720	\$671,033.70	\$371,008.62

**Grand Trunk Earnings, Expenses, &c.**

The following statement of earnings supplied from the Montreal office, includes the G.T. of Canada, & the Detroit, Grand Haven & Milwaukee Rys., the earnings of the Chicago & G.T., which is in the hands of receivers, being omitted :

	1900	1899	Increase	Decrease
Jan.	\$ 1,819,988	\$ 1,606,065	\$ 213,923	.....
Feb.	1,587,923	1,505,549	82,374	.....
Mar.	1,830,834	1,798,968	31,866	.....
April	1,813,714	1,637,867	175,847	.....
May	1,974,773	1,750,090	224,683	.....
	\$ 8,925,232	\$ 8,299,139	\$ 626,093	.....

**C.P.R. Betterments, Construction, Etc.**

**Ontario & Quebec Division.**—Storage sidings are to be built at once at Guelph Jct. Houses for section men are to be erected at Embro & Crumlin, & alterations are to be made in the freight sheds & yards at Ayr.

**Ottawa Union Station & Yards.**—Excavation work was commenced May 15 for the erection of freight sheds to replace those recently burned. They will be on stone foundations, & made as fireproof as possible. The largest building will be 300x40 ft., & the second one 250x50 ft. Both will be finished with flat gravel roofs. The contract for the masonry has been let to T. Tomkins, of Brockville, & the frame work will be done by the Company. An outlay of \$25,000 will be made on the sheds. It is said the station will be built after the style of the Place Viger Station in Montreal. It will be a handsome structure, facing on Broad st., & about 600 ft. north of the burned buildings. It will be 289 ft. in length, & stone is to be used entirely in the construction. On the second floor the divisional offices will be situated. The cost is estimated at \$35,000. The train shed is to be between 645 & 800 ft. in length. Ten tracks will run into it, giving ample accommodation for the passenger traffic. Plans have been drawn for the enlargement & re-arrangement of the yards. The land recently acquired consists of about 10 acres between the aqueduct & Richmond road & the river front. On it 20 tracks will be laid, giving greater facility for the marshaling & storage of trains. On the completion of this work the passenger & freight yards will be entirely separate. The passenger yard is to be fitted with 10 more tracks, giving provision for the making up & dispatching of trains with a marked saving of time. There will also be ample accommo-

modation for the storage of passenger cars. A line will be built from the main line near the Mechanicsville crossing, connecting with the Prescott line. This will form a Y, & greatly facilitate the handling of trains entering & leaving the new station. (May, pg. 140.)

**Ottawa Connecting Line.**—It is said that in consequence of the heavy loss sustained by the Co. in the recent Hull-Ottawa fire it is not likely that the project to build a line across the city to connect the Co.'s present union station, near Chaudiere Falls, with the centre station near the canal basin, will be gone on with this year. (April, pg. 110.)

**Northwestern Branch.**—The M. & N. W. Ry., recently leased by the C.P.R. Co., & now known under this name, will have considerable work done on it this year. We are advised that the betterments will include about 25 miles of ballasting, 250,000 yds. of bridge filling, 20 miles of fencing, & 10 miles of ditching. A large amount of work will also be done widening banks & cuts & improving the grades.

**Rat Portage.**—Good progress is being made in enlarging the yard, taking out curves & reducing grades. The 12 tracks in the main yard will have a capacity of 400 cars. The roadmasters, trainmaster, yardmaster, dispatcher, operators & car checkers will have their offices in the old station building, now removed to opposite the new shops. (Feb., pg. 39.)

**Lac du Bonnet Branch.**—On May 30, we were informed that the grading of the first 10 miles was nearly completed & that work was being pushed on the remaining 13 miles to the lake. Track had been laid on the first 3½ miles from Molson & it was expected to reach the 10th mile shortly thereafter. The track will probably be completed to Lac du Bonnet in about 3 months. (April, pg. 110.)

The Acton Burrows Co.'s enameled iron plates are to be used for station names on this branch, instead of painted wooden signs.

**Snowflake Branch.**—The residents of the Mowbray district, township 1, range 8 west of the 1st principal meridian, are endeavoring to secure the extension of this branch from its terminus at Snowflake. (Jan., pg. 7.)

**West Selkirk Branch.**—Nothing definite has yet been decided upon in regard to the extension of this branch to the west shore of Lake Winnipeg, for which a survey was made recently. It is hardly probable that an extension will be built this year. (April, pg. 110.)

**Winnipeg Terminals, Etc.**—Work on the station & hotel buildings is not likely to start until arrangements satisfactory to the Co. have been made with the City Council. The Council's proposal is as follows:—The Co. to waive by agreement all questions as to its liability for taxes (municipal & school or hotel building & real estate). To pay school & business taxes on the hotel & its up-town telegraph office. To pay local improvement frontage taxes. To build sub-way under Main St., & settle all claims for damages from frontage owners. To raise tracks at least 1 ft. To keep sub-way clear from all surface drainage. Plans, specifications & consideration of subway to be subject to the approval of the Council. In consideration of the foregoing, & upon the Co. agreeing in respect of the hotel from the time of its construction to pay school, frontage & business taxes, the city will agree to exempt the hotel building & the real estate on which it will be situated from the ordinary municipal rate for 15 years, the city to apply for the necessary provincial legislation, giving effect to a by-law for the purpose. The Council estimates that 15 years' exemption from taxation would amount to about \$30,000, which is considered to be about half the probable cost of a sub-way. (April, pg. 110.)

**Banff Springs.**—J. De Woy, a U.S. landscape gardener, has been employed to superintend the extension & improvements of the grounds surrounding the Banff Springs Hotel.

**Arrowhead & Kootenay Lake Branch.**—An unconfirmed press report says that work has been resumed on the southern end of this line between Lardo & Trout Lake. (May, pg. 143.)

**Columbia & Western Ry.**—Of the extension from West Robson to Midway, the first 89 miles between West Robson & Greenwood is in the hands of the operating department. On the spur lines track has been laid & ballasted from Greenwood to Mother Lode mine, 5 miles, and turned over to the operating department. Track is also laid into Phoenix, thus reaching the following mines:—B.C., Brandon & Golden Crown, Winnipeg, Ironsides, Knobhill, Brooklyn & Stemwinder. This track will soon be ballasted & turned over to the operating department, when the line from Greenwood to Midway, 9 miles, will be ballasted. Trains are running through the long Bull Dog tunnel. About 500 ft. at one end of the tunnel was on a 10° curve, but the instrument work & chaining was so accurate that the transit lines from either end met within 1/16 of an inch. The levels came out with no appreciable difference. (April, pg. 111.)

**Pacific Division.**—A station will be built at once at Sandon, B.C., to replace the building recently destroyed by fire. A press report, stating that the stations at Revelstoke & Kamloops are to be replaced this year by improved structures, is incorrect.

It is expected that when the last of the Co.'s branch lines is completed in B.C. there will be no more ore shipped to the U.S. This was the prime object of the Co. in seeking power from the shareholders to spend money freely in the province, at once to occupy the whole field, & to give facilities to the miners, who had been loudly complaining that they had been neglected.

**Vancouver & Lulu Island Ry.**—Contracts for grading are reported to have been awarded to McDonald & Morrison & McQuarrie & Co., & work is reported to have commenced. (May, pg. 143.)

**Great Northwest Central Ry.**—At the annual meeting at the Union Station, Toronto, June 5, the following directors were elected: T. G. Shaughnessy, R. B. Angus, D. McNicoll, I. G. Ogden, T. Tait, W. S. Taylor, G. M. Bosworth.

**Canada Atlantic Grain Shipments.**—The following paragraph appeared in the Montreal Herald recently, headed: "Scarcity of Canal Boats"—"It is reported that the Canada Atlantic Ry. is experiencing great difficulty in procuring boats to handle the grain at Coteau Jct., that as a consequence it will bring down less grain from Parry Sound than was originally contemplated, & that fewer men will be required in its workshops to provide cars. About 20% of the men employed at the workshops are affected by the transportation difficulty."

The writer of the paragraph quoted evidently got mixed up in the matter. We are officially informed that the Canada Atlantic has no shortage of canal boats, in fact it has in its service enough to do twice the business that it has done to Montreal. There is, however, a shortage of ocean vessels coming to Montreal, which will probably curtail the output of that port this season. On the other hand, the Canada Atlantic has a larger fleet than ever, & could deliver more grain than it has ever delivered in Montreal, but owing to the shortage of ocean tonnage it will probably have to send a portion of its business to New England ports.



## RAILWAY DEVELOPMENT.

## Projected Lines, Surveys, Construction, Betterments, Etc.

**Algoma Central.**—Arthur White, Division Freight Agent of the G.T.R. at Toronto, who recently visited the Algoma district, said in an interview on his return: The Algoma Central has already constructed & in operation a division of its system running from Michipicoton Harbor to the Helen mines, where it taps a mountain of the purest hematite brown ore, calculated to contain many million tons. This ore is being mined for smelting at Sault Ste. Marie, Midland, Hamilton, Deseronto, & also at Collingwood when smelters are put up at the latter point. Another branch of the A.C.R. is being constructed from a point near Sudbury, tapping the nickel belt of the district with a view of supplying the nickel ore via the C.P.R. to the smelting works & rolling mills at the Sault & to the smelting works on the G.T.R. from Little Current by water to the ports of Midland & Collingwood. The main line of the A.C.R. is under construction & 25 miles of it will be completed by July 1, & an additional 100 before the opening of navigation next year. This line traverses through one of the best portions of New Ontario, & there are already being erected on its right of way large lumber mills to saw both hard & pine lumber. It will bring to the pulp & paper mills at Sault Ste. Marie the almost unlimited supply of pulpwood in the vicinity, & also bring down for reduction purposes the nickel & other ores found in the vicinity of the country it passes through. These vast enterprises will undoubtedly quickly populate New Ontario. (May, pg. 143.)

**B.C. Railways.**—At a meeting at Clinton, B.C., May 14, Premier Martin said that if his

Government was sustained in the pending elections it would borrow \$20,000,000 in England with which to build railways to compete with the C.P.R.

**British Columbia Southern.**—An act assented to by the Governor-General, May 7, provides that this Co. may complete on or before Dec. 31, 1904, the western section of its railway, between the western terminus of its central section on the Lower Kootenay River & the Pacific coast, by the most convenient route to a favorable place for crossing the Fraser River to New Westminster, thence to Burrard Inlet, including a branch line to Nelson via Salmon River, & also a branch line from its main line at or near the forks of Michel Creek, by way of Michel Creek to Martin Creek, provided that as to so much thereof as is not completed on or before that date the powers of the Co. shall cease. The Crow's Nest Pass branch of the C.P.R. is part of the B.C. Southern line & built under the latter's charter.

**The Canada Atlantic** has recently applied to the Montreal Harbor Commissioners for a grant of the middle pier which is being erected in the west end of the harbor on which the Co. is willing to build a grain elevator with a capacity of 2,000,000 bush., also large warehouses. The elevator to be so constructed as to take in grain either from the river or from rail. Permission was also asked to construct belt carriers to distribute grain to vessels lying at other docks. General Manager Chamberlin told the Commissioners that the Co. was willing to expend about \$500,000 on the elevator. As it will probably be a year & a half before the middle pier is built, & as the Co. wants to have an elevator ready for next year's trade an effort is being made to select some other site. The site of the old Island Wharf on Commissioner St. is considered a

good one, but it is not likely to be available for some time as the cribs have not yet been laid.

A building has been erected near the round-house in Ottawa for the employes, comprising reading, smoking & dining rooms & baths.

The Co. is negotiating with the Ottawa city council in reference to building a subway under the tracks at the Elgin St. yard.

A large coal chute has been erected at Depot Harbor.

**The Canada & Michigan Bridge & Tunnel Co.'s** bill, assented to by the Governor-General May 7, extends the times limited for the commencement & completion of the Co.'s works for 5 & 7 years respectively from the passing of the bill.

**The Canada Southern Bridge Co.'s** bill, assented to by the Governor-General May 7, extends for 10 years from the passing of the bill the time within which the Co. may construct a railway bridge across the Detroit River from Amherstburg, Ont., towards Grosse Isle, Mich.

**Canadian Northern.**—Track has been laid on the Ontario & Rainy River section on the first 40 miles west of Stanley to Lake Shebandowan, & is still going on. On the second 40 miles, about 90% of the grading has been completed, & it is expected that track will be laid on that portion & on a further 20 miles this season, making a total distance of 100 miles from Stanley. (May, pg. 143.)

Plans have been prepared in Mackenzie, Mann & Co.'s Toronto office for the bridge to be built over the Rainy River near Beaver Falls, & have been submitted to the U.S. Secretary for War. The river at that point is 1,200 ft. wide, & the bridge will probably consist of 5 or 6 spans. Under the act of

## C. P. R. LANDS.

The Canadian Pacific Railway lands consist of the odd-numbered sections along the Main Line and Branches, and in Northern Alberta and the Lake Dauphin District. The Railway Lands are for sale at the various agencies of the company in Manitoba and the North-West Territories at the following prices:

Lands in the Province of Manitoba average \$3 to \$6 an acre.

Lands in Assiniboia, east of the 3rd meridian, average \$3 to \$4 an acre.

Lands west of the 3rd meridian, including the Calgary District, generally \$3 per acre.

Lands in Northern Alberta and the Lake Dauphin District, \$3 per acre.

## TERMS OF PAYMENT.

The aggregate amount of purchase money and interest is divided into ten instalments, as shown in the table below; the first to be paid at the time of purchase, the second two years from the date of purchase, the third in three years, and so on.

Interest on the outstanding purchase money is payable in one year, except in case of an actual settler who breaks up at least one-sixteenth of the land within that time. No rebate of interest is allowed on hay or grazing lands.

The following table shows the amount of the annual instalments on a quarter section of 160 acres at different prices under the new conditions:

160 acres at \$3.00 per acre, 1st instalment \$71.90, and nine equal instalments of \$60.
160 acres at \$3.50 per acre, 1st instalment \$83.90, and nine equal instalments of \$70.
160 acres at \$4.00 per acre, 1st instalment \$95.85, and nine equal instalments of \$80.
160 acres at \$4.50 per acre, 1st instalment \$107.85, and nine equal instalments of \$90.
160 acres at \$5.00 per acre, 1st instalment \$119.85, and nine equal instalments of \$100.
160 acres at \$5.50 per acre, 1st instalment \$131.80, and nine equal instalments of \$110.
160 acres at \$6.00 per acre, 1st instalment \$143.80, and nine equal instalments of \$120.

**DISCOUNT FOR CASH.** If land is paid for in full at time of purchase, a reduction from price will be allowed equal to ten per cent. of the amount paid in excess of the usual cash instalment.

Purchasers paying any instalment, or more, one full year before the date of maturity, will be allowed a discount on the amount of the instalment or instalments so paid at the rate of six per cent. per annum.

Interest at six per cent. will be charged on overdue instalments.

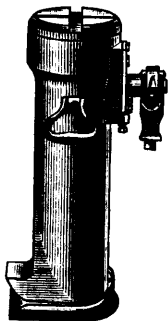
Write for maps and full particulars.

**L. A. HAMILTON,** Land Commissioner,  
**F. T. GRIFFIN,** - Asst. Land Commissioner,  
**WINNIPEG.**

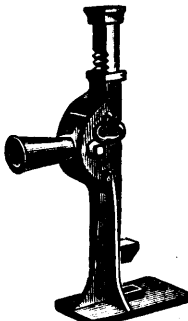
## Norton's Ball Bearing Jacks.

Standard Wherever Jacks are Used.

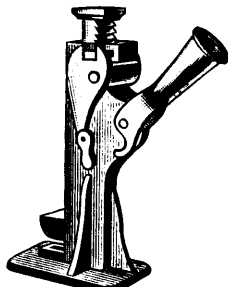
50 STYLES. 8 TO 70 TONS CAPACITY.



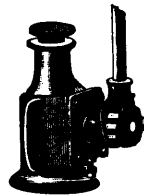
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10 Ton Automatic Lowering Jack.



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Congress it will have to be provided with a draw or draws over the main channel, leaving a clear water space of not less than 160 ft. at one side of the pivot pier. It is expected to cost about \$300,000. (Feb., pg. 42.)

On the Manitoba & Southeastern section, regular train service is being operated between Winnipeg & Sprague. Ballasting is being done between Sprague & Warroad, Minn., & train service will be extended to Warroad as soon as this work is completed. Construction is being pushed from Warroad easterly to the Rainy River. (May, pg. 143.)

On the section from Gladstone Jct. to the Great Saskatchewan work is being pushed as rapidly as possible. It was intended to carry the line to the Saskatchewan this year, but the policy in this respect may be changed, & instead of doing this a start may be made on the line towards Prince Albert. (May, pg. 143.)

An Act respecting the Ontario & Rainy River Ry., assented to by the Governor-General May 7, extends the time for the completion of 80 miles, extending from the junction with the Port Arthur, Duluth & Western Ry. towards Rainy Lake until July 30, 1901.

**Canso & Louisburg.**—We are informed that the management expects to be pushing the work of construction from several points on the line by June 15. (Mar., pg. 72.)

**Cape Nome & Port Clarence, Alaska.**—A press despatch says there has arrived at Seattle, Wash., a consignment of steel rails & several narrow gauge locomotives & freight cars in knockdown shape, which are destined for a railway to be built this summer between Cape Nome & Port Clarence. It is stated that Port Clarence has such an excellent harbor that it will be extensively used by vessels bringing heavy cargoes of freight for all that section of country. The new road will derive its revenue from hauling this freight inland & to Nome.

**The Edmonton, Alta., bridge over the North Saskatchewan,** erected by the Dominion Government for railway & vehicular traffic, has been completed. (Dec., '99, pg. 351.)

**Farnham to the Vermont Line.**—Steps are being taken by local people to secure the building of a line from Farnham, Que., some 20 miles, through Stanbridge East & Freleighsburg, to the Vermont line. The Montreal & Province Ry. operated over a portion of this route some years ago. It is probable the Central Vermont has something to do with the scheme.

**Grand Trunk.**—A handsome portico is being erected in front of the Bonaventure Station, Montreal, the interior is being decorated, & a fountain is being placed among the flower beds & in front. Work has started preparing for the extension of the yards & sheds, a number of old buildings on Albert & adjoining streets having already been demolished. (Feb., pg. 38.)

Improved stations are to be erected this year at Queen St. East (Toronto) & Grimsby. They will be equipped with the Acton Burrows Co.'s enamelled iron station names. It is not intended to replace the present station at Harriston this year, as stated in a press report.

On the Chicago & G. T., W. Riley, formerly general roadmaster of the Chicago & Alton, has been appointed general foreman of construction. He will have charge of cutting down grades between Durand & Port Huron, Mich., with office at Davis Hill. The work of double-tracking & cutting down grades between Thornton Jct. & Valparaiso, Ind., will be in charge of P. H. Loftus, with headquarters at Valparaiso. Both pieces of work will be under the supervision of H. A. Woods, engineer in charge. (Dec., '99, pg. 348.)

**Great Northern of Canada.**—It is expected the extension of this line to Hawkesbury,

Ont., will be completed early in Aug. (April, pg. 112.)

Work is being pushed on the Co.'s 1,000,000 bush. grain elevator at Quebec. It will have a marine tower for lake craft, capable of discharging 12,000 bush. an hour, so as to unload lake vessels as well as cars. It will be equipped to load three ocean steamers of the largest tonnage, as the conveyors will lead to three different docks of 600, 600 & 650 ft. frontage, having a depth of water of 30 to 40 ft. It is claimed that these shipping facilities are superior to any in America. (Jan., pg. 8.)

**Intercolonial.**—The Minister of Railways announces that it is the intention to relay portions of the line with 80-lbs. rails, & 20,000 tons of steel rails will be ordered for the purpose. The rails to be replaced are 56 lbs. The relaying is to be carried out mainly on the Cape Breton line, traffic on which has been enormously increased by the establishment of smelting works at Sydney.

The wharves at Mulgrave, N.S., are being extended at a cost of some \$30,000.

It is said that instead of enlarging the station at Levis, an entirely new building will be put up on the river side of the track & that large wharves will be built.

The station at Sydney is to be remodelled & the yard is to be enlarged.

**Interprovincial Bridge, Ottawa & Hull.**—

On May 28 we were officially informed as follows: Work is progressing very satisfactorily. The iron work is practically completed on two truss spans on the Quebec side of the river, also the south anchor arm of the cantilever with the exception of the waggon road bracketing at side of same, some of the riveting & diagonal bracing. Owing to high water, they were obliged to block this span on the piers, but are now letting it down & expect to get it into place in a couple of days. (This has since been done.) There has also been several hundred feet of trestle laid on the Hull side. We are pushing the south approach to completion, including work on a very heavy dry masonry retaining wall & an under crossing on the road for vehicular traffic in masonry & excavated out of the solid rock. We are also engaged in cutting through the abutment of Sappers' Bridge, a rather interesting piece of work, as it was built in 1837 when Col. By first reached Ottawa. The total thickness of the abutment is 24 ft., the outside walls in some places being only 2 ft. thick, apparently laid in water line, which is now about the consistency of sand. The filling between walls is composed of earth & some small broken stone. The stone is in fairly good condition with the exception of about 2 ins. on the outside, which the weather has had a chance to work at. (April, pg. 113.)

**Inverness & Richmond.**—Track was laid last year from Port Hastings to 2 miles beyond Port Hood, a distance of 30 miles. The grading of the second 30 miles to Broad Cove is about completed & track laying is expected to commence about July 1. The whole 60 miles is to be in operation this year. (April, pg. 113.)

**Kootenay Ry. & Navigation Co.**—This Co.'s Kaslo & Lardo-Duncan branch, on which grading was nearly completed last year from Argenta to Duncan City, B.C., is located to strike the Lardeau district on the south-east along the east side of the Lower Lardeau, following the east shore of Trout lake to about a mile & a half from Trout Lake City, when it will branch off & head for Ferguson through an easy pass. At Ferguson the line will branch up both the north & south forks of the Upper Lardeau, so as to tap every mine in the district & open up the section thoroughly. (Feb., pg. 41.)

An Act respecting the Kaslo & Lardo-Duncan Ry., assented to by the Governor-General May 7, extends for 5 years from the passing of the Act the time within which the Co.

may complete the railway authorized by its Act of incorporation passed in 1897, viz., from Kaslo via Kootenay Lake to or near Lardo, thence to or near the southern end of Upper Kootenay Lake, thence along the shore of that lake to or near the mouth of Duncan River, thence along that river to its head water, with a branch from or near the mouth of the Lardo River via Trout Lake to or near Lardeau on Arrow Lake. Power is given the Co. to convey or lease its lines to the Kootenay Ry. & Navigation Co.

**Lake Erle & Detroit River Ry.**—The question of the route of the extension between Ridgetown & St. Thomas is still in abeyance from Dutton east. The people of Fingal, a small village with some 400 or 500 inhabitants, are agitating to get the line deviated so as to pass through that place. It is said that this deviation would mean an additional expense of \$100,000, which the Co. thinks would be of no benefit to any section of the country, as Fingal would in any event only be between 2½ to 3 miles from the line, & the Co. does not consider it fair that it should be forced into spending practically all of the Dominion subsidy to benefit the village in question. If the deviation is insisted upon, it will require another large steel bridge of 1,000 ft., besides several smaller bridges & culverts. (May, pg. 144.)

About 4 miles of 75 lbs. steel rails are being laid between Blenheim & Ridgetown, replacing lighter rails, which are being taken up to be used in connection with the extension of sidings.

**Manitoba Cement Co.**—A bill before the Manitoba Legislature to incorporate S. Walker, W. Blackwood, W. Whyte, A. M. Nanton & J. A. M. Aikins, of Winnipeg, as a company under this name, provides that the proposed company may build & operate a railway & telegraph or telephone line from the Pembina Mountain branch of the C.P.R., at or near Morden, to or near the International Boundary Line in range 3, 4 or 5, west of the first meridian in Manitoba.

**Montreal & Ottawa Ry.**—An Act respecting this Co., assented to by the Governor-General, May 7, extends the time for the completion of the line for 4 years from the passing of the Act. This Co.'s line, already built from Vaudreuil to Ottawa, & from Rigaud to Point Fortune, is leased to the C.P.R. The line yet to be completed is from Point Fortune towards Hawkesbury.

**Nipissing & James Bay.**—A bill to extend for a further period of 2 years the date for the commencement of this line, the charter of which is controlled by Mackenzie, Mann & Co., was opposed before the Railway Committee of the House of Commons by counsel for the City of Toronto, but was carried by a vote of 70 to 7. It is said the portion from North Bay to Lake Temagaming will be proceeded with if a Dominion subsidy can be obtained.

At its last session the Ontario Legislature voted a cash subsidy of \$3,000 a mile for a railway from the town of Parry Sound to connect with the Canada Atlantic Ry., not exceeding 5 miles in length. No company was named as the recipient of the bonus, so that it can be given to the Nipissing & James Bay Ry., or to any other company. (Dec., pg. 352.)

**Niagara Grand Island Bridge.**—The Act respecting this Co., assented to by the Governor-General, May 7, extends the time limited for the commencement & completion of the work to 5 & 10 years respectively from the passing of the Act.

**Northern Pacific.**—No decision has been arrived at in regard to the rebuilding of the Manitoba Hotel at Winnipeg, & it is not probable that it will be done. (Apl., pg. 115.)

In a recent interview President Mellen said: "We have no intention to withdraw from

Manitoba. We will, however, build no extension or no new lines. We are on the friendliest terms with the Provincial Government, & the Dominion Government, which has given the C.P.R. the right to parallel all our lines in Manitoba. We do not wish to further arouse the ire of the C.P.R. by extending our lines, which are now a paying property, even though not an extremely profitable one."

A later press despatch credits Mr. Mellen with saying that the Co.'s Manitoba lines would be sold to the highest bidder. (Apl., pg. 115.)

Members of the Manitoba Government are said to have recently visited St. Paul, to confer with the Co.'s management as to these 3 propositions: The purchase of the N.P. Manitoba lines by the Government. The operation by the N.P. of all lines which the Government may build. The building by the N.P. of a new road direct to Lake Superior, with a guarantee of a rate of 10c. per 100 lbs. for wheat from Manitoba to Duluth.

**Parry Sound to Canada Atlantic Ry.**—See under head of Nipissing & James' Bay Ry.

**Pontiac Pacific Jet.**—The Act respecting this Co., assented to by the Governor-General, May 7, empowers the Co. to construct & operate a railway from its present line, in or near Shawville, Que., across the Ottawa River to or near Pembroke, Ont. So soon as the line is completed to Pembroke the Co. is to proceed with the construction of its line from its present terminus at Waltham, Que., 80 miles from Ottawa, to or near Ferguson's Point. (April, pg. 115.)

**Port Dover, Brantford, Berlin & Goderich Ry.**—The Act to incorporate this Co. was assented to by the Governor-General, May 7. The incorporators & provisional directors are J. Ellis, Port Dover; S. Snyder, Waterloo; C. H. Waterous, Brantford; J. S. Clark, Ayr; D. W. McNair, New York; W. H. Breithaupt, F. Colquhoun, Berlin; D. A. Bowlby, C. A. Austin, Simcoe. The capital is placed at \$4,000,000. The head office is located at Galt, the directors having power to change it. The Co. may construct & operate a standard gauge railway from Port Dover via Simcoe, Waterford, Brantford, to Berlin, & thence through the counties of Perth & Huron to Goderich, with branch

lines from Berlin to Elora, from Waterloo to Listowel, & from Berlin to Stratford. The Co. is given power to own & operate vessels, elevate grain, construct & operate telegraph & telephone lines, as well as other powers.

**Prince Edward Island.**—What is known as the shipyard & Mutch's Point site has been decided on for a bridge across the Hillsborough river at Charlottetown. Specifications have been prepared, & tenders are likely to be invited at an early date.

Work has started on the construction of the branch from Charlottetown towards Murray Harbor, the contract for the first 11 1/2 miles of which has been given to J. W. McManus, of Memramcook, N.B. Reid McManus, C.E., is in charge. (May, pg. 144.)

**Quebec Bridge.**—It is said the contract for the superstructure is based on a sliding scale dependent on the market price of steel when the work shall be built. The bridge will require about 27,000 tons of steel. So far as the plans have been decided, the bridge will be 150 ft. above the river, & will be 67 ft. wide. The bridge proper & approaches will be nearly 3,300 ft. long. The middle span of the cantilever will be about 1,800 ft. The two end spans are each about 500 ft. long & 84 ft. deep at the ends. The middle span will be the longest of the kind in the world, exceeding that of the Forth bridge in Scotland by 100 ft. The bridge will carry 2 steam railway tracks, & 2 electric railway tracks, a roadway, & walks. It will require about 2 years to finish the foundations, the contract for which, as already noted, has been let to Wm. Davis & Son, Cardinal, Ont., & the steel work need not be begun for 18 months. (May, pg. 144.)

**River St. Clair Ry. Bridge & Tunnel.**—By an Act, assented to by the Governor-General, May 7, the statute of 1882, chap. 70, sec. 2, has been repealed, & this Co. is empowered to construct & operate a railway bridge across, or a tunnel under, the river St. Clair, from the township of Moore, Lambton County, to St. Clair, Mich. The times limited for the commencement & completion of the works are extended for 5 & 10 years respectively from the passing of the Act. H. B. Ledyard & F. W. Vanderbilt are appointed provisional directors, instead of J. Tillinghast & C. Vanderbilt, deceased.

**The Rutland R.R.** has abandoned the idea of building a bridge over Lake Champlain. It will use the Central Vermont bridge, which extends from Rouse's Point to Alburgh. (Jan., pg. 9.)

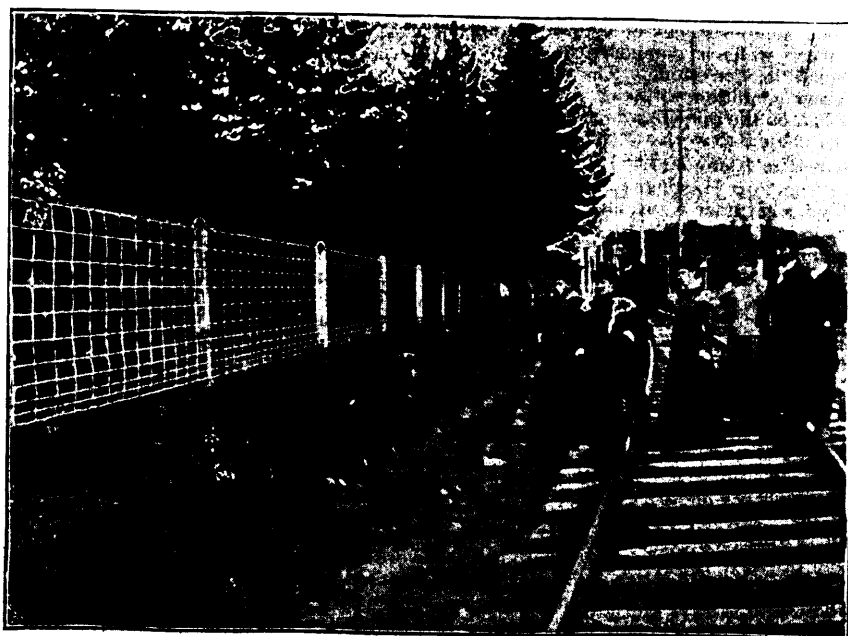
**Shore Line.**—A despatch from St. John, N.B., says, "Superintendent McPeake, of the Shore Line Ry., is authority for the statement that a company is endeavoring to purchase the railway, & if consent can be obtained from the Canadian & U.S. Governments, a bridge will be constructed across the St. Croix River at St. Stephen, thereby enabling the road to connect with the Washington County R.R. in Maine, & eventually to establish a through line to the West. Speaker Hill, of the N.B. Legislature, states that he is in favor of assisting the road financially to construct a bridge."

**The South Shore Ry.,** from St. Lambert to Sorel, Que., 44.67 miles, was extended last year 10 miles further to Yamaska & it is said to be the intention to continue it to Point Levis, opposite Quebec. Particulars as to the financial arrangements are given under the head of "Railway Finance" on page 163. It is also said to be the intention of the Co. to build a branch eastward to Valleyfield. (Mar., pg. 74.)

**Toronto, Lindsay & Pembroke.**—At its recent session the Ontario Legislature voted a subsidy of \$3,000 for not exceeding 36 miles, for a line between a point 15 miles east of Bancroft to or near Golden Lake. The first 15 miles from Bancroft was subsidized previously. The line is to connect Bancroft, the terminus of the Irondale, Bancroft & Ottawa, with Golden Lake, the junction of the Canada Atlantic & Pembroke Southern lines. R. A. Campbell, M.P., T. Murray & A. Foster, Pembroke, are among those interested.

**The Vancouver Northern & Yukon Ry. Co.** will apply to the B.C. Legislature for an act extending the time within which it may complete its undertaking, to empower it to extend its proposed railway from or near Vancouver, or some other point on Burrard Inlet, to the north or south shore of the Fraser River near New Westminster, & to change its name to the Vancouver, Westminster Northern & Yukon Ry. Co.

**White Pass & Yukon.**—General Manager Hawkins was in Victoria, B.C., May 22, returning from a trip to White Horse, & ex-



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pressed himself as greatly pleased with the progress of the work on the extension of the railway & the mining & business prospects. The first 14 miles of the extension along the shore of Lake Bennett is very heavy rock work, & it will be Aug. 1 before trains can run over it. The section from Caribou to White Horse will be operated shortly after June 1, a ferry service being maintained between Bennett & Caribou until the section along the lake has been completed. The distance from Skagway to Bennett is 27 miles; from Bennett to Caribou is 27 miles; from Caribou to White Horse 44 miles, so that the railway will be close on 100 miles in length. Mr. Hawkins expressed himself as greatly pleased with the work done, & said that with the roadbed provided trains between Caribou & White Horse could travel 40 miles an hour. "Within 8 days after Lake Bennett opens so that we can get the barges carrying our steel into Caribou," he said, "the extension will be completed into White Horse. The two 600 ft. trestles are finished, & track laid to a point several miles beyond. We have steel there to complete the track to within 20 miles of White Horse, where tracklaying will stop until we can get our rails to the front. With the Heney barge, we have three barges in Bennett that we will send to Caribou with rails as soon as the lake opens. By Aug. 1, trains will be running through from Skagway to White Horse without change." The Co. has greatly increased its facilities for handling freight at both Bennett & Skagway, & can handle four times the amount it could last year.

### Quebec Central Railway Meeting.

At the annual meeting in London, Eng., May 23, the annual report, which is given on pg. 172, was submitted. The President, E. Dent, said: You will see by the report that the gross earnings for 1899 amounted to \$502,409, as compared with \$450,249 for 1896, an increase of \$52,160. The working expenses were \$334,238, against \$303,908, an increase of \$30,330. The net earnings were, therefore, \$168,171, as compared with \$146,341 for the previous year, which shows an increase of \$21,830, to which must be added \$974 for interest on temporary investments, making a total net revenue of \$169,145. After providing \$82,650 for the year's interest paid & accrued on the prior lien bonds & debenture stock, there remained a net revenue balance of \$86,495, which, added to the \$12,203 brought forward from the year 1898, made an available balance of \$98,698, out of which interest at the rate of 2½% has been paid on the income bonds, leaving a balance of \$24,676 to be carried forward to the current year. The percentage of working expenses to gross earnings was 66.52, against 67.49. The improvement in the gross earnings is owing to increases in both passenger & freight traffic. The passenger earnings were \$158,460, against \$148,408, or an increase of \$10,052. Local travel was regular & good throughout the whole year. Business was prosperous, especially with the lumber & mining industries, & altogether the local passenger receipts increased by \$4,700. Foreign passenger traffic, consisting of through travel between the U.S. & the Quebec districts, also showed the satisfactory increase of \$5,352. The through drawing-room buffet-car service between Quebec & Portland was well patronized & found to be more appreciated than the night train service of previous years. The general tourist travel, of which the city of Quebec is the great attractive point, increases every year, & the Q.C.R. gets its full share of the improvement. The average earnings per passenger were \$1.04, against \$1.06. This decrease is due to the fact that local passenger traffic increased more in proportion than the foreign, & so the general average was slightly reduced. The

total freight traffic carried was 309,900 tons, against 245,267, yielding additional gross earnings of \$44,137. The improvement in business which commenced about the middle of 1898 continued & increased throughout the year 1899. The asbestos mines at Thetford were worked to their full capacity, & mines at Black Lake which had not been worked for some years were reopened. The demand for lumber in the U.S. & the better prices, made our lumber shipments very extensive. The increase of pulpwood sent to the pulp & paper mills was also large, & the same may be said with regard to dairy products. In fact, business was generally prosperous, indicating that the section of the country served by the Q.C.R. shared fully in the general prosperity of the Dominion. The average earnings per ton of freight carried were \$1.04, against \$1.13 — a small decrease. This was not, however, owing to a reduction in the freight rates, but because there was a larger increase in the low grades of freight, such as lumber & pulp wood, than in the higher grades, such as general merchandise, flour, grain & supplies, & as the low grade freight, particularly pulpwood, was carried shorter distances, & at considerably lower rates than the higher grade of traffic, the result was an average reduction of 9c. a ton. During the year the permanent way received the usual attention & necessary repairs, & was kept in good condition; 18 miles of old steel rails laid in 1877, weighing 56 lbs. to the yard, were replaced by new 70-lb. steel rails. Over 52,000 ties were replaced on the main line & Chaudiere Valley branch, in addition to over 6,000 for sidings. About 64,000 tons of ballast has been used on 30 miles of the road. The freight & passenger cars have been kept in good condition, & 2 1st-class new locomotives have been purchased. Annexed to the annual report will be found a copy of an Act recently obtained to further amend the charter of the Co. Some doubts having arisen as to the true intent of certain provisions of the Act 62 Vict., chapter 74, it was thought desirable to remove them. The new Act definitely fixes the number of directors to be appointed by the bondholders & shareholders, & also enables the directors to repay & redeem, at any time after the expiration of 20 years, from the date of issue, any new bonds or securities to be issued in exchange for the income bonds. The powers conferred by the Act of 1898 enabled the holders of prior lien bonds to exchange their securities for new 4% debenture stock, & up to the present this offer has been accepted by the holders of £195,500 out of a total issue of £350,000 bonds. The directors hope shortly to issue a circular to the holders of the income bonds setting forth a proposal for the subdivision of their bonds into two classes of security, & I might mention that the offer will probably be for each £100 of existing bonds to receive 50% of a new 3% debenture stock or bond & 50% new income bonds, which would be entitled to interest up to the rate of 7%, if earned in any one year, so that the combined interest on the new securities would be equivalent to the interest on the existing 5% income bonds. Referring now to the current year, the gross earnings up to the second week in May have been \$158,262, as compared with \$141,693, while the net earnings for the first 4 months have been \$37,493, against \$34,687. I have to report an unfortunate accident we have had. Last month, owing to a sudden exceptional flood, the iron bridge at St. Anselme over the Etchemin river was carried away by an accumulation of ice & logs. This bridge was built in 1896 to replace one that was carried away in April of that year. It was a single span bridge of about 120 ft. & 25 ft. above the water, & it was placed 8½ ft. higher than the highest water which had ever been known, so it was considered absolutely safe even by the Government Inspector. The floods must, therefore, have been very excep-

tional, & I hear that other railways have suffered in the same way as ourselves. The General Manager immediately took steps to convey passengers over by a road bridge lower down the river, & we hear by the last mail that a temporary bridge has already been completed, & the regular service of trains resumed. It took only 18 days to build this temporary bridge. In spite of this misfortune the traffics have continued good, & this is owing to the promptness & energy displayed by Mr. Grundy, our General Manager, & his officials in arranging for the transfer of the traffic, & as the cost of the new bridge can be met out of the reserve contingent fund, we think that the loss of the bridge will not have much appreciable effect on this year's net earnings. Before moving the adoption of the report & accounts, the board wish to congratulate the bondholders on the satisfactory earnings for last year, which enabled them to pay 2½% interest on the income bonds, the highest rate which has yet been paid since the Co.'s affairs were reorganized. The directors also feel sure the bondholders will join with them in congratulating Mr. Grundy & the staff generally in Canada on the good results of their efforts during the past year. I may mention that directly we heard of the Ottawa fire we cabled Mr. Grundy to send \$500 towards the relief fund, which I hope will meet with your approval.

The President moved the adoption of the report & statement of accounts. In answer to an inquiry he stated that when the St. Anselme bridge was last rebuilt it cost \$7,500, but now would probably cost more, owing to the rise in price of materials. The resolution was unanimously adopted.

E. Dent, A. Bremner, F. H. Norman, J. Price & S. G. Sheppard, London, Eng., & F. Grundy, Sherbrooke, Que., were re-elected directors. The other director, L. A. Carrier, of Levis, Que., is appointed by the Quebec Government.

### Manitoba & State Railways.

The Canadian Gazette, London, Eng., says: The new Manitoba Government & Legislature have lost no time in assuming a decisive attitude in the matter of the State ownership of railways. On April 4 the Legislative Assembly adopted a resolution, introduced by Mr. Campbell, as a declaration of ministerial policy, memorialising the Dominion Parliament to give effect to what the resolution declares to be the pronouncement of the electors of the Province in favour of the Government ownership of railways as soon as practicable. The memorial asks that in pending & future legislation provision be made for the complete & effectual control of rates on such railways, including the fixing of maximum charges for both freight & passengers, & that the Province be given the right to acquire such railways on equitable terms based on the cost of construction, disputes as to value to be settled by arbitration. It is also asked that the Province be given the right to use such railways, for an equitable rental, in connection with any lines of railway that may be hereafter owned or operated by the local Government, & shall have first option of purchase on all such lines of railway. The Manitoba electorate have in their short career favoured many revolutionary proposals, & we do not suppose this latest venture is to be taken too seriously. Even if they got their way, they would find it one thing to reserve a right & quite another to exercise it. As far back as 1844 Mr. Gladstone induced the British Parliament to empower the State to take over the railways of this country after an interval of 21 years at 25 years purchase of the average yearly divisible profits for 3 years preceding such action; yet the British railways are still private property, & are likely to remain so. The Manitoba Legislature takes no

thought of intervals; it would have the power of immediate purchase; & in the matter of price, instead of 25 years' purchase, it suggests "equitable terms based on the cost of construction," a phrase the value of which depends upon the definition of the very elastic word "equitable." As a piece of legislative oratory the resolution sounds well, no doubt, in the ears of the electorate, but we do not imagine that it has real political weight. The control of railway rates & operations the Dominion Parliament is most unlikely to surrender to any Province, & as the Toronto Globe justly points out, the situation calls rather for an impartial tribunal that will not be affected by the political influences that sway the Dominion authorities in one direction & the Provincial authorities in another. "A railway commission that could assume a judicial attitude on all disputes as to rates & fares, & could thoroughly investigate all charges as to discrimination & other illegal practices, would be better qualified for the work than any Parliamentary committee, Federal or Provincial." Investors interested in Manitoba railways need not, we fancy, feel alarm—at all events, just yet.

### Michigan Central Report.

The accounts for 1899 are as follows;

	1899.	1898.
Passenger .....	\$3,600,025	\$3,215,296
Freight .....	11,000,685	9,939,553
Mail, express, &c. ....	903,352	891,300
<b>Total gross earnings</b> .....	<b>\$15,504,062</b>	<b>\$14,046,149</b>
Expenses & taxes .....	12,004,116	10,535,973
<b>Net earnings</b> .....	<b>\$3,499,946</b>	<b>\$3,500,176</b>
Income from investments .....	44,678	44,678
<b>Total income</b> .....	<b>\$3,544,624</b>	<b>\$3,544,854</b>
Rentals paid .....	\$184,310	\$184,310
Interest on debt .....	2,229,975	2,235,625
Canadian Southern share .....	300,574	300,667
New second track .....	65,000	70,000
Miscellaneous .....	10,326	—
<b>Total</b> .....	<b>\$2,790,185</b>	<b>\$2,790,602</b>
Surplus for dividends .....	\$754,439	\$754,252
Dividends (4 per cent.) .....	749,520	749,520
Surplus .....	\$4,919	\$4,732

The share capital of the company is \$18,738,000 & the bonded debt \$19,101,000. The balance at credit of income account is \$7,232,855.

The length of road operated in 1899 was 1,658 miles (same as in 1898); the number of passengers carried, 2,878,008 (against 2,600,032); and the average rate per passenger per mile, 2.811 cents (against 2.225 cents); the quantity of freight carried, 10,212,988 tons (against 8,682,110 tons); the average rate per ton per mile, 0.564 cents (against 0.597 cents); the ratio of expenses to receipts, 77.43 per cent. (against 75.08 per cent.).

**Toronto, Hamilton & Buffalo Ry.**—At the annual meeting at the Queen's Hotel, Toronto, June 5, the directors were re-elected as follows:—W. K. Vanderbilt, S. R. Callaway, C. F. Cox, New York; J. N. Beckley, Rochester, N.Y.; T. G. Shaughnessy, Montreal; S. E. Peabody, Boston; H. B. Ledyard, Detroit.

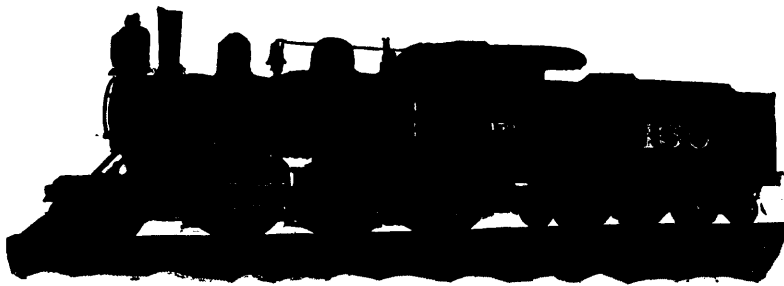
**Central Vermont & Boston & Maine.**—A Bellows Falls, Vt., despatch, of May 29, says: "An important arrangement has been made between the Grand Trunk & Boston & Maine railways. A traffic contract has been agreed upon, taking effect June 25, whereby the B. & M. is to run its freight trains over the 14 miles of track owned by the G.T. between Windsor & White River Jct. & connect with the Passumpsic road, a B. & M. leased line. In return the G.T. is to run its through New London boat freights over the B. & M. from Brattleboro to Windsor. This move will effect a considerable reduction in the operating expenses of both roads. The transfer station now maintained at Windsor will be abolished, & the force moved to White River Jct."

The arrangement referred to, if it existed, would be between the G.T.R.'s subsidiary, the Central Vermont & the B. & M. We are informed by a C. V. official that the dispatch has no foundation, no such arrangement having been entered into.

**The Cramp-Ontario Steel Co., Ltd.**, has been incorporated under the Ontario Com-

panies Act, with headquarters at Collingwood, Ont., & an authorized capital of \$5,000,000, to carry on a mining, reduction & development Company. The incorporators are C. D. & W. M. Cramp, Philadelphia; A. H. O'Brien & H. M. E. Evans, Ottawa; A. McL. Macdonell, F. A. Anglin, J. A. Currie, & N. McLean, Toronto, Messrs. Macdonell, Anglin & McLean being the provisional directors. It is said the Co. will erect a blast furnace & steel works at Collingwood, the town having granted a cash bonus of \$115,000 & a free site of 50 acres on the harbor, together with other privileges as to taxation & water front on the harbor. The following announcement is made as to the Co.'s intentions: The plant will consist of a blast furnace of 250 tons daily capacity, casting machines, three 30-ton open-hearth furnaces, to be operated on the basic system, so as to take care if necessary of the Canadian phosphoretic ores, also a blooming mill & a large rolling mill capable of producing steel rails, structural steel for buildings & shipbuilding purposes, & steel sheets for ship-building, bridges, tank & boiler purposes. The Co. will also produce nickel-steel ingots & castings, thus taking advantage of the market offered for this class of goods by the British Admiralty & fostered by recent legislation of the Ontario Legislature. The Co. has secured a promise of sufficient first-class Ontario iron ore to keep it in operation for five years. The new steel shipyard at Collingwood, it is said, will take at least one-third of the product of the plant annually.

The Wabash road has issued a circular announcing slight advances in the wages of enginemen & firemen. It does not appear from the published accounts whether all of the men on the road are affected, or if not, what divisions the order applies to. Certain passenger enginemen have their pay increased from \$3.35 per 100 miles to \$3.40. Freight conductors & brakemen receive increases of 10 & 5c. per 100 miles. Advances at about the same rates are granted to freight enginemen & firemen & to men on switching engines at



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a number of important stations. The Chicago, Rock Island & Pacific has increased the pay of passenger brakemen on certain branch lines from \$45 a month to \$47.50, & a similar advance is granted to brakemen on work trains. The request of switchmen at certain cities to have their pay put on a parity with the rate at Chicago has been denied. The Central of New Jersey has dispensed with the services of brakemen (flagmen) on helping engines used on mountain grades, & on certain freight trains the number of brakemen has been reduced from two to one.—Railroad Gazette.

### THE ST. LAWRENCE ROUTE.

A St. John's, Nfld., correspondent writes:—It will be a matter of exceeding regret to every well-wisher of Canada that the opening of navigation in the gulf this season should have been marked by a serious misadventure—the loss of the Elder-Dempster Line steamer *Montpelier*, near Cap Ray, on May 4. The steamer was inward bound from the Canary Islands for Montreal, in ballast, & went ashore on Duck Island in a dense fog at 4 a.m., she going at half speed, & the captain supposing himself 15 miles to sea. The ship became a total wreck, but the crew escaped with their lives. A strong current, varying in its force & direction, & in this instance likely setting in on the land, is assigned as the cause of this shipwreck, & is probably the correct solution.

The disaster is regrettable for many reasons, but chiefly because the enemies of the St. Lawrence route will seize upon it as another argument in support of their contention that the gulf waterway is unsafe, & because the marine insurance underwriters will use it as an excuse for still further increasing their tariff of rates, already almost prohibitory. It will be remembered that when the *Scotsman* was lost in the Strait of Belle Isle last Sep. the catastrophe was made a peg on which to hang all sorts of adverse criticisms of the route, & it was openly threatened that any attempt to navigate that channel during the season of 1900 would be followed by an advance in the rates of insurance for ships & cargoes which would oblige steamer-owners to abandon the Belle Isle channel altogether. The Dominion Line, stricken by two losses, the *Labrador* in the spring & the *Scotsman* in the fall, did decide to abandon it, & use Cabot Strait, the southern waterway, instead, & it was thought the other leading lines would follow their example. The *Montpelier* shipwreck in Cabot Strait may now be held to prove that as dangerous an entrance as the other, though it should need but little argument to demonstrate the fallacy of any such reasoning.

There is no comparison between Belle Isle & Cabot Straits as to their relative degrees of safety, & people who use the one as an argument against the other show a very lamentable lack of knowledge of the subject. As a matter of fact, there are very strong and conclusive reasons against the use of Belle Isle; there are none whatever against Cabot Strait. Belle Isle Strait possesses every disadvantage possible to such a route. It is a channel between 40 & 50 miles long, & not more than 10 to 15 miles wide. Its narrowness is accentuated by the fact that the approaches to

it are by long and gradually converging coasts, creating tempestuous currents, which sweep into it from each end, & cause such a conflict of waters that there is no charting them. The region is almost constantly enveloped in fog, the rugged shores are but insufficiently lighted, the charts & sailing directions are necessarily imperfect, & the width of the waterway does not allow room for shipping to manoeuvre properly, nor for navigators to make the allowances essential to a safe passage of such a land-bound channel. Furthermore, the Strait is altogether unsuited for the high speed which transatlantic steamers have to maintain, the jealousies of rival lines, & the desire to make record passages spurring shipmasters to disregard precautions which would otherwise be taken, for besides the dangers from the fogs & the currents there are the no less serious risks from collisions with bergs & floes of ice, which are ever found floating in the Strait of Belle Isle & adjacent waters. These, indeed, constitute an even greater danger to shipping there than any other cause, for to the one ship which goes on the rocks two or three are damaged or sunk by collision with ice, as not a year pas-

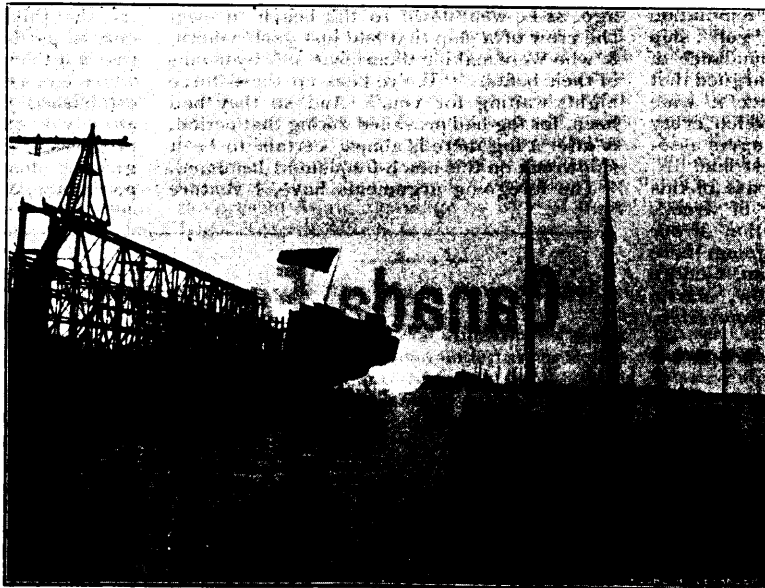
proaches & compare them with Cabot Strait, & you must be convinced of the strength of the foregoing contentions, as well as of the one which follows, viz., that there is such an expanse of ocean east of Cabot Strait, & the trend of the coast is so easy & gradual, that there is less danger to the mariner in making a landfall than on any other part of the American continent. This is explained by the fact that almost everywhere else along the Atlantic seaboard a ship runs head on to the land, & if her speed is miscalculated the first thing known may be her telescoping her bows on the rocks, but in the case of Cabot Strait, the Newfoundland & Cape Breton coasts run almost parallel with her course, & should be sighted abeam, under all ordinary circumstances, & any deviations from the course rectified before she could possibly go ashore, unless the navigation was inexcusably deficient.

Analyzing now the matter of wrecks, it is our experience in this island that 90% of the shipping disasters on our south coast is in shipping plying to & from U.S. ports, & not Canadian ports, as is popularly supposed. The percentage of losses via Belle Isle is large, it is true, but we will disregard that route for the purposes of this argument, the writer's view being that Canada, to uphold her commercial supremacy, should abandon Belle Isle altogether & utilize Cabot Strait. Therefore, it is stated definitely that the shipwrecks via Cabot are very few, all things taken into account. In five years only two laden east-bound steamers have gone ashore, the *Texas* in St. Mary's Bay, which became a total loss, though most of her cargo was saved, & the *Arcadian*, which took the ground near Codroy, but was got off after a week's pounding on the rocks. Other ships have stranded, but were refloated with little damage, & it may be said that for ships coming out the gulf this route represents the maximum of safety.

For ingoing steamers the risk is little, if at all, greater. The *John Knox* some years ago, the *Prudence* later on, the *Montpelier* the

other day, are the most conspicuous examples. The reasons before cited as showing the difficulty of striking the shore if ordinary precautions are taken must have applied, for disasters only occur when the currents, always variable, acquire an accession of force which sets at naught the best calculations of the most skilful navigators. In the case of the *Montpelier* the captain had sighted St. Pierre-Miquelon at noon the previous day & corrected his position accordingly, but the force of the current was so great that in a few hours it had set him in on the rocks, whereas the course he had laid should have brought him 15 miles south of Cape Ray & well towards the middle of the strait. This shipwreck is only one such as is reported daily from some part of the world, & implies no reflection of necessity on either captain or ship, not to say the route.

Most of the wrecks on our coast occurs on the southern spits of Avalon peninsula, the land-mass forming the south-east portion of this island, & of which Cape Race is the best known point. All transatlantic shipping makes Cape Race a base for sighting or departure, & as the gulf stream sweeps round this headland on its way to the north it has a



LAUNCHING OF THE CANADA ATLANTIC TRANSIT CO.'S STEAMER OTTAWA  
AT TORONTO, MAY 23.

ses without one or more making this port to effect repairs from collision with bergs, while the crews of others which have gone down reach our coast in their boats & relate an all too familiar tale of disaster.

But with regard to Cabot Strait no such arguments hold good. To put forward an isolated case of shipwreck within its confines as an evidence that it is unsafe, is about as senseless as to argue that the English Channel is unsafe because the *Elbe* sank through a collision, or the *Mohegan* was lost on the *Manacles*. As a matter of fact, in point of sea-room & navigability Cabot Strait is superior to that of any of the approaches to the leading British commercial seaports. The width of Cabot Strait is 60 miles, greater than the average width of the English Channel, much greater than that of the St. George's Channel, & very much greater than the North Channel, & it is by these passages that we westerners obtain access to London, Liverpool & Glasgow. The neck of Cabot Strait is 54 miles across; from Dover to Calais is but 28, yet nobody ventures to question the safety of the latter passage in spite of all the British & Baltic trade which goes through it. Take a map of the United Kingdom, study the ap-

tendency to create minor currents which rush in towards the coast. These catch in their grip the west-bound steamers, & lure them to destruction on the stretch of shore which runs north from Cape Race towards St. John's, while St. Mary's Bay is ever open to receive the east-bound freighters which are cast into its gaping maw. The existence of these currents has been demonstrated by too many ghastly marine disasters the past 50 years for any doubt to be entertained as to their existence. Only 4 months ago a tragedy as appalling as any gave point to this fact. The oil-tank steamer Heligoland, from Philadelphia for Hamburg, was swept into St. Mary's Bay & on the rocks at Gull Island, & her crew of 35 men perished in full sight of the shore-folk, who were powerless to attempt to rescue them. The very week last Sept. that the Scotsman struck Belle Island & went to pieces, two ocean steamers, the Bay State, from Liverpool for Boston, & the Prozano, from Baltimore for Leith, went ashore on opposite sides of Cape Race, & both became total wrecks. Dense fogs & north-setting currents put them miles out of their course, & they piled themselves up, the first near Ferryland & the second near St. Mary's, within 24 hours of each other. Yet neither was a St. Lawrence router, & therefore, was free from the temptation to shave round the cape which a "gulf" ship might be open to, for, having abundance of sea-room, it might reasonably be argued that they would have given Cape Race a wide berth in view of the knowledge which every seafarer must possess as to the dangers associated with that section of our coast line.

It is impossible within the compass of this article to enumerate the number of wrecks which have taken place in this section of our coast; but, in addition to the foregoing, there may be mentioned the Anglo-Saxon, George Washington, Lantana, Robert Low, Martin Luther, Murchison, Capulet, Hanoverian,

Scottish King, Herdet, Grasbrook, Daniel Sternman & Texas. Of these not more than two, the Texas & Herdet, were gulf ships, the remainder hailing to or from ports farther south. Ships from U.S. ports make a board northward, skirting the Nova Scotia coast & passing inside Sable Island, thence continuing on an arc of a great circle towards Cape Race, & from it, after sighting the signal station, proceeding across to their destination. Ships from Europe reverse this route, but they all approach Cape Race as a landfall. The comparative immunity which the St. Lawrence shipping enjoys from these disasters is due to the fact that almost all the steamers on that route belong to regular lines, the officers of which are thoroughly drilled into the conditions of its navigation, the existence of the currents & the dangers to be avoided. It is the skipper of the tramp freighter, therefore, unfamiliar with the region & believing he can pick up Cape Race light by dead reckoning when no other means serves, who finds his ship with her bows beaten in on the rocks before he has properly realized that disaster has come to him. It is from such as these the wreckers reap their harvest.

"You're welcome, captain," said a grey-haired old settler near Cape Race a few years ago, as he went down to the beach to meet the crew of a ship that had just gone ashore, & who were making themselves safe by means of their boats. "We've been up these three nights waiting for you." And so they had been, for fog had prevailed during that period, & after a fog there is almost certain to be a shipwreck on this much-frequented headland.

The foregoing arguments have, I venture

to think, served to show that there is no warrant for decrying the St. Lawrence route via Cabot Strait, because of the supposed dangers attached to it. The last contention to be met is the one which condemns it because it is so much more frequented than Belle Isle. But if this is to be agreed to, what becomes of New York & Boston? Each of these ports has immense shipping interests & large fleets of merchant steamers. And yet collisions are rare. They are rarer still in Cabot Strait, & with a channel 54 miles wide at the narrowest part, there is no reason why, if all the St. Lawrence traffic was conducted by this waterway, they should become so frequent as to represent a serious menace to its safe transit. With proper tidal surveys, more lighthouses & fog alarms & better signal service, this Cabot route should be as safe as the middle of the Atlantic.

Now that the season's great water-borne traffic is beginning, Canada should review its position on this all-important problem of transportation. The commercial prominence of the Dominion depends in the main upon its providing a regular, efficient & perfectly secure means of conveying freight & passengers to the old world. It is essential to Canadian prestige, & as an advertisement of the country, that this route should be an all-Canadian one, & patronized as such. Equally imperative is it that it should possess every economy which can assist it in competing with the well-established routes & the steamship lines already in existence, while at the same time progressive enough to grapple with the ever-growing demands of the fertile west for export space, & to inaugurate features of utility

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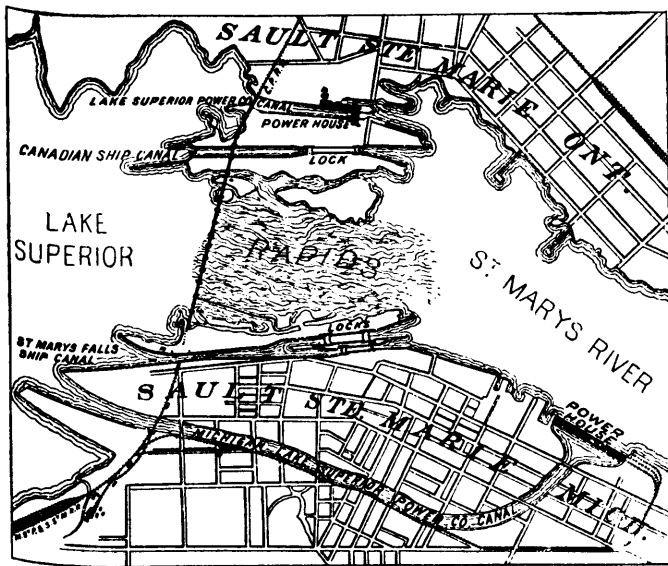
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MAP OF SAULT STE. MARIE SHOWING RAPIDS AND LOCATION OF POWER PLANT.

& convenience peculiar to itself. Montreal has by the advantages, natural & acquired, which it possesses, been established as the base for the successful development of these ventures; its port is to-day recognized as one of the world's great shipping centres, & during the six months it is open for marine enterprise, digests a volume of trade that is growing larger & more valuable every season. The decision of the Connors syndicate to make the port its headquarters, the building of large grain elevators & the amazing expansion of the western trade flowing to it, all indicate the advantageous position which Montreal occupies as the deep-water outlet for Canada's produce.

Unfortunately, however, the reputation of the St. Lawrence route will be discounted while the Strait of Belle Isle continues to be used instead of Cabot Strait. The one lacks the chief elements of a safe & navigable waterway, yet it is used because it is 160 miles shorter than the other, although Cabot Strait forms an ideal ship channel. The insecurity identified with Belle Isle will not compensate for the shortening of the distance, while the rarity of fogs in Cabot Strait will enable the voyage by that passage to be made as rapidly, on an average, as by way of Belle Isle, where the detentions from this cause are much longer. Furthermore, the underwriters have set their faces against Belle Isle, & have increased the rates by that route to a figure altogether out of proportion to those ruling for other ports on this side of the Atlantic. Shippers, as well as shipowners, are losers by this restriction, as well as by the clause recently included in policies by Lloyds, discriminating against British North American ports. There is no reason why the St. Lawrence route should suffer from this treatment, save that the evil reputation of Belle Isle has injuriously affected its standing with capitalists; & it behooves the people or Parliament of Canada to take steps ere long to remove from their country's chief waterway this stigma, which is not alone discrediting its prestige, but is crippling its legitimate development as a great producing country.

Canada needs to adopt Cabot Strait as the regular line of the St. Lawrence route, instead of using it only until the Belle Isle passage is free from ice. Making such strenuous efforts as Canada is to improve her canal system, & to provide ample & expeditious railway transport of other portions of her western products to tidewater, it is a pity that her efforts towards the creation of a substantial commercial prestige should

be frustrated in a large measure by the lack of a proper ocean highway, when one is available at her very doors in the shape of Cabot Strait, & without the expenditure of an extra dollar, save what would be called for to provide the necessary arrangements for diverting the traffic from Belle Isle. With the great Northwest absorbing thousands of settlers every year, & increasing its grain output by leaps & bounds, we are within measurable distance of the time when the present facilities for export will have to be largely supplemented along Canada's eastern waterfront. That will never be done while the antagonism to the St. Lawrence route which now prevails, continues to affect the financial world. Much of the traffic will be driven south to the U. S. seaboard, as is now the case, though there is no valid reason why it should be so; & Canada should make it a national matter, a stepping-stone to future prosperity & ultimate commercial greatness, to enforce the substitution of Cabot Strait for the present Atlantic passage by way of Belle Isle.—Toronto Globe.

**The Sault Ste. Marie Power Canal.**

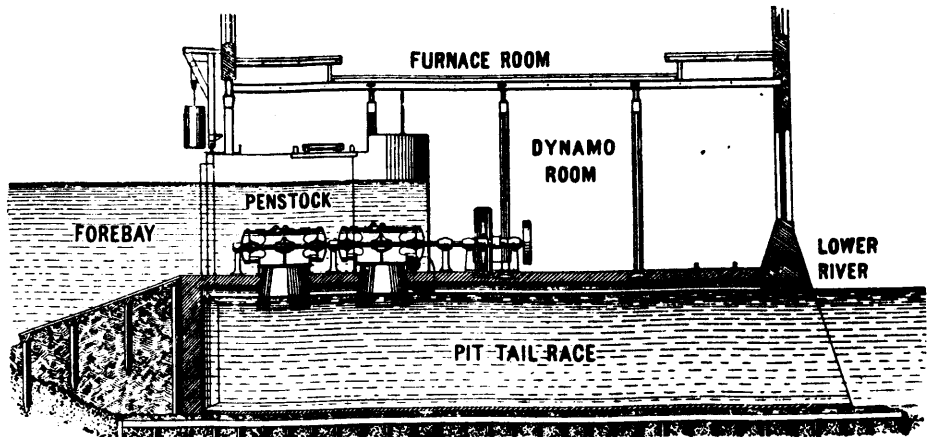
In this era of universal utilization of water power it must be no mean undertaking that is accounted the greatest hydraulic development ever attempted in America, & yet this superlative designation is precisely applicable to the great project which has been undertaken by the Consolidated Lake Superior Co. in the construction of a power canal at Sault Ste. Marie, Mich. The sister cities of Sault Ste. Marie, Ont., & Sault Ste. Marie, Mich., are situated on either side of the St. Mary's River which connects lakes Huron & Superior & through which passes the bulk of the enormous commerce of the great lakes. The river at a point opposite the cities takes a tremendous drop by means of rapids, & it was to obviate this obstacle to navigation that the Canadian & U. S. Governments expended millions of dollars in the construction of a number of canal locks, one of which is the largest in the world.

About the time of the construction of the

government locks the city on the U. S. side experienced a distinct boom, but it died out, after the fashion of booms, more than a decade ago. Now there appears to be opening for the little city of 10,000 people a wonderful future as a manufacturing centre. All the claims which have been made for the possibilities of development at Niagara Falls apply with equal if not greater force to Sault Ste. Marie. A water power canal half a mile in length is already in operation on the Canadian side, & a canal with a length of a mile & a quarter is under construction on the U. S. side. The canal on the U. S. side alone will supply a row of mills upon its banks more than a mile in length & will give each a fall of water of 18 ft. & an ample quantity. In short, the whole scheme is designed, as it has been aptly expressed, to turn the twin cities into one vast water mill, with Lake Superior as a mill pond.

The summary given, too, is but an elementary outline of the project, for there is in contemplation a plan whereby the generation of electricity will enable factories of various kinds to secure power over an area fully 15 miles in diameter. Senator McMillan, of Michigan, recently stated that he saw no reason why the water power should not be applicable to the mines & saw mills scattered so thickly throughout the adjoining territory, & a clue to the ultimate purposes of the master movers in this novel project may be gained from the fact that the same capital that is constructing the power canal is building a railway from Sault Ste. Marie towards Hudson's Bay, tapping unlimited storehouses of iron, nickel & copper.

The syndicate of U. S. capitalists which is responsible for the hydraulic improvements at Sault Ste. Marie first acquired a right of way on the Canadian side of the river. The Lake Superior Power Canal Co. was then formed & built a water power canal which developed 20,000 horse power. From the Lake Superior Power Co. as a parent organization there was formed on the Canadian side the Sault Ste. Marie Pulp & Paper Co., which operates the largest pulp mills in the world, & other manufacturing corporations. On the U. S. side the sub-organization took the name of the Michigan Lake Superior Power Co., & upon it devolved the development of the water power on that side of the river. Within the past year the Consolidated Lake Superior Co., with a capital stock of \$20,000,000, was formed to absorb the interest of all the original companies engaged in the development of the industries of the two new industrial centres. An incidental organization also recently perfected was the incorporation of the American Alkali Co., which will use a considerable proportion of the power provided by the U. S. canal. The last mentioned company, which will manufacture chemical products by electrolytic methods, has an authorized capital of \$30,000,000.



POWER HOUSE AT SAULT STE. MARIE. TRANSVERSE SECTION.



Measured according to the ordinary rules of hydraulics, the actual physical energy to be developed by the canal now under construction on the U.S. side will amount to fully 60,000 horse power. The power house within which this power will be transformed into electrical energy will be nearly 1,400 ft. in length, 100 ft. in width, & will rise 75 ft. above the water level. The building contains 81 turbine chambers, each being about 16½ ft. in width & containing four American turbines, installed in tandem fashion, & all connected to one shaft, at the end of which, outside of the turbine chambers, an electric generator is coupled. One of the turbine chambers, located in the central part of the building, will not be equipped with turbines, but will be utilized instead as a spillway through which accumulations of ice & debris may be discharged into the river without the possibility of the turbines sustaining any injury.

To facilitate description, the building may be divided into the component parts of foundation, substructure or pit, superstructure comprising pen-stocks & dynamo floor, mill floor & roof. The foundation consists of 10,000 20-ft. piles. The substructure consists of 81 pit walls, each 100 ft. long, 20 ft. high, & 3 ft. thick, being closed at the up-stream end by arch-shaped forebay walls of the same height & thickness. A concrete floor is laid between each two walls in the shape of an inverted arch, & the top is also closed by a concrete arch. The pit & forebay walls are formed from concrete blocks fabricated in imitation of cut stones.

It will thus be understood that the substructure consists of 81 concrete tunnels, each 100 ft. long, 15 ft. wide, & 18 ft. high, & open only at the downstream ends. Above these the superstructure is raised, consisting of 81 penstock partitions, each about 20 ft. high, 40 ft. long, & 17 inches thick. The downstream end between each two partitions is closed by a semicircular steel plate bulkhead. By this arrangement the turbine chambers proper remain open, of course, on the up-stream side & top. Here the turbines will be installed, receiving the water from the front & top & discharging it through the steel penstock tubes into the pit below, whence the water escapes into the river. The installation of electric dynamos will occupy that portion of the pits not devoted to the penstocks. For this there will be provided a continuous floor about 40 ft. wide & fully 1,400 ft. in length. The mill floor will be of the same length by 75 ft. in width.

Perhaps the best idea of the size of this great power house may be conveyed by the statement that there will be required for its construction 250,000 linear feet of piles; 100,000 linear ft. of 12 in. logs, 40,000 cubic yards of concrete, 3,000 tons of structural steel, & 10,000 cubic yards of stone masonry. The installation will consist of 320 turbines & 80 electric dynamos. The estimated cost of the building is in the neighborhood of \$500,000, & it is expected that the equipment will necessitate an additional expenditure of fully \$750,000.

Lake Superior has an area of about 30,000 square miles, & its mean outflow through the

rapids at Sault Ste. Marie is about 90,000 cubic feet per second the year round. The mean elevation of the lake is 601 ft., & the elevation of St. Mary's river below the rapids 582 ft., giving a vertical fall of 19 ft. The quantity of material to be moved in the construction of the canal on the U.S. side, amounts to more than 500,000 cubic yards of rock & considerably over 2,000,000 cubic yards of other material.

The manufacturing interests to be developed at the Sault will undoubtedly be of a most extensive character. Mention has already been made of the pulp mills, which give employment to a force of over 1,000 men. The Canadian Electro-Chemical Co., on the Canadian side, is the first in the Dominion to manufacture caustic soda & bleaching powder. The development of the nickel mines of New Ontario will be another ultimate result. These mines, which are about 120 miles distant from the Sault, are now capable of yielding 500 tons of ore a day, all of which will be utilized in the reduction works just constructed. These works will produce daily 250 tons of nickel steel, perfectly adapted to the requirements of armor plate manufacturers. It is claimed also that the process to be introduced at the Sault will so reduce the cost of production of nickel steel as to make it available for shafting & all other similar uses where severe strain is encountered. The Co. has already secured a contract to supply the Krupp plant in Germany. Then there is the general reduction works, intended to reduce to the most perfect purity ores of all kinds, & at so low a cost as to make of practical value

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many ores formerly considered useless. A calcium carbide works will be another feature.

The project for the establishment of the power canal at the Sault was proceeded with so quietly that the work was well under way before the general public learned much of anything regarding the scheme. It is now expected that the canal on the U.S. side will be in operation late in the present year, & those persons most thoroughly conversant believe that the Consolidated Lake Superior Co. will not be much behind its rival at Niagara Falls in the development of 100,000 horsepower.

During the early part of the present year the Lake Carriers' Association, comprising its membership all the principal U.S. vessel owners on the great lakes, became aroused lest the power canal project would affect the level of Lake Superior & the ship canal, & thus work serious injury to navigation interests on the inland seas. Representatives of the vesselmen's association declared before a committee of the U.S. House of Representatives that if the power canal lowered the level of the government ship canal around the rapids at the Sault so much as one inch, it would entail a loss of \$1,250,000 to the vessel & iron ore interests every year. Engineering experts have disagreed regarding the influence which the power canal will exert. Just what action will be taken is problematical, but that some legislative limitations will be exacted ultimately seems highly probable. Meanwhile, the excavation of the canal goes actively forward, & upward of 1,500 men are engaged in the work.—Waldon Fawcett.

### THE CONNERS SYNDICATE.

#### Montreal, Duluth & Minneapolis Elevator Systems.

Towards the end of April the Syndicate submitted to the Montreal Harbor Commissioners plans for a 1,000,000 bush. grain elevator to be erected in Montreal, upon which the Harbor Engineer reported as follows:—"The plans indicate that the elevator is to be erected on the lower portion of the Windmill Point pier, between the Windmill Point basin & the canal basin, & that it is to be of a capacity of 1,000,000 bush. The site is according to the stipulations of the contract between the Commissioners & W. J. Connors & associates, but the capacity of elevator required by the contract is 3,000,000 bush., instead of 1,000,000, as shown by the plans. It is explained in conversation by G. T. Smith, on behalf of Mr. Connors & associates, that a detached storehouse of 2,000,000 bush. capacity is to be afterwards erected between the canal lock & the Windmill Point basin, & that the two buildings will be so arranged & so connected by conveyors as to act as one elevator with a total storage capacity of 3,000,000 bush. It is, however, to be noted that Mr. Smith's letter does not mention the proposed storage house nor do the plans show any provision for future connections between the two buildings.

"The following are the chief characteristics of the elevator shown upon the plans:

"The building is to be 274½ x 90½ ft. at the ground line, & 121½ ft. in height, from the level of the edge of the Windmill Point basin wharf to the top of the main building, & 191 ft. to the top of the cupola. It is to be placed at 24 ft. clear distance from the face of the canal & wharf, & about 79 ft. from the face of the harbor wharf, Windmill Point basin, & so as to extend 260½ ft., or the length of a canal boat, along the upper part of the canal basin. Its upper end will, therefore, be 12 ft. beyond the head of the basin. The car tracks which are on the first floor will be at a level 120.25 above harbor datum, or 13¼ ft. above the edge of the harbor wharf, which makes them above winter water level, & therefore acces-

sible by cars all winter, provided the tracks on the wharf to the southwest of the elevator be raised to the same height, as has been recently proposed. The marine legs for receiving from canal boats & the conveyors for delivering to vessels in the harbor are not shown on the plans, but the connecting spouts are indicated. The receiving & delivering speeds are not marked on the plans, but the sizes & arrangements of the elevating legs, conveyors, etc., indicate that the rate of handling will be very fast. The elevator will have 101 bins of about 9,500 bush., & 24 of about 3,200 bush. capacity each, making an aggregate of fully 1,000,000 bush."

The Commissioners decided that the plans submitted could not be entertained, on account of showing only one-third of the capacity agreed on. The Syndicate was notified accordingly & made a reply from which the following are extracts:—

"Supplementing the detailed information given to the Harbor Engineer, relative to the plans already submitted, we beg to say that the policy of procuring large storage capacity for grain by the construction of storage tanks, operated in connection with what is known among transportation people as a 'working house,' is so well established elsewhere that it was adopted here as a matter of course. Moreover, site 'A' being the only property covered in the allotment that was ready to receive improvements, it became rather a complicated engineering problem in what manner the buildings could be so distributed as to meet the immediate necessities of the port, & at the same time give economy & despatch in the operation of the plant. The accompanying ground plan, showing how, as it seemed to us, this could be accomplished best, contemplates:

"1. A 'working house' of 1,000,000 bush. capacity, plans for which are now in the possession of the Commissioners. This building would have a capacity for weighing & storing grain, at a rate not less than 25,000 bush. an hour, & probably much in excess of that amount; & of discharging at the rate of 1,000 bush. a minute. If worked to its capacity, during the season of navigation, it would handle twice the present business of the port.

"2. A 'storage house' of 2,000,000 bush. capacity, connected by conveyor belts with the 'working house.' Grain for this building would pass in & out through the 'working house,' the mechanical equipment of which is designed for 3,000,000 bush. capacity.

"3. Freight warehouses, covering all of the property not occupied by the other structures.

"This scheme of construction gives 272 ft. of warehouse room upon the canal basin, 1,170 ft. upon Windmill Point basin, & 260 ft. at the northerly end of the pier; & by the use of carriers & conveyor galleries along the roof of the warehouses, it would be possible to receive 3 canal & 2 ocean vessels at a time, & to unload grain & package freight upon the canal side, & discharge grain & package freight upon the ocean side simultaneously. It enables us also to utilize for the 'storage house' a portion of the property along the lower deck, which could not otherwise be used to advantage. The interior construction would be such that cars could be loaded & unloaded independently of the operations outside.

"The terms of sect. 9 of the agreement give the Commissioners such complete authority, not only over all plans, but over the specifications of all structures, that we saw no impropriety in sending those for the 'working house' in advance of the others, for the simple purpose of facilitating the work & making more rapid progress. We do not believe it will be held by the Commissioners that since the capacity agreed upon is supplied, it must necessarily be under cover of one roof. A 'working house' of 3,000,000 bush. capacity

would occupy all the space along the canal basin, & extend so far upon the ocean side of the pier as to seriously cripple the usefulness of the freight warehouses. The first cost would be large, & the amount of power necessary to operate it & the proportionate increase of operating expenses in other directions would make it a perpetual burden upon the business of the port. Its capacity would be so far in excess of the limitations of Windmill Point pier that it would, in this respect also, represent a useless waste of energy. The plans submitted are the best that engineering skill, united with experience, can produce; & we say that if the elevator is built here, following those plans, there will be no better structure anywhere in the world."

Engineer Kennedy gave his opinion that the arrangement proposed would be satisfactory, & that the building would cost over \$1,000,000. In a subsequent report he said—

"The space allotted to the Syndicate has a canal frontage along the whole length of basin no. 1, of 544 ft., & on its opposite side it has a harbour frontage on the Windmill Point basin of 1,170 ft. The canal frontage is just long enough to berth 2 canal boats of the full length, which the enlarged locks will admit, & the harbor frontage is enough for 3 ships, of 390 ft. average length, or for 2 ships of much greater length. It is proposed to occupy one-half the canal frontage, that is one boat's length, by the 1,000,000 bush. elevator, of which plans were formerly sent in, & the other half by a 1 story warehouse. Beyond the warehouse, & clear of the canal basin, there is to be a grain storage house of 2,000,000 bush. capacity. In other words, the elevator, instead of being a single building, is to be divided in 2, & a package warehouse placed between them, & the whole to be so located that one-half of the canal basin will face one part of the elevator, & the other half will face the warehouse. The part of the elevator fronting on the canal basin will be the working house, & will contain all the motors & machinery & storage room for 1,000,000 bush.; the other part will be merely a storage house, with capacity for 2,000,000 bush., but no machinery, except belt & conveyors for connecting it with the working house & carrying grain backward & forward between the two.

"On the harbor front there is to be a large 2-story warehouse, 1,072 ft. in length, & of widths varying from 35½ ft. at the upper end to 249 ft. at the lower. Between & through the two ranges of buildings there are to be railways & roadways. The Connors' contract provides that there shall be erected on the Windmill Point site 'a 1st-class modern steel or combination elevator of 3,000,000 bush. capacity, & 1st-class modern warehouse, so that the full space will be required & actually used in their operation.' I am requested to say whether, in my opinion, the elevator & warehouses shown on the plans, & described in the letters thus far received from the Connors Syndicate, conform to the requirements of the contract. The plans received do not, in themselves, conform to the requirements of the contract, inasmuch as they are not complete, & are not accompanied by specifications. They show the structural features, & arrangements of machinery of the 1,000,000 bush. elevator buildings more fully, but show only the outlines & locations of the warehouses. Only the main features of the scheme of the buildings, & the proposal to provide the requisite elevator capacity by two buildings, instead of one, can, therefore, be dealt with at present. As regards the general scheme of the buildings, I am of opinion that in their location, dimensions & general arrangement, they do conform to the conditions of the contract. As regards the elevator, the contract uses the word 'elevator' in the singular, but that does not, in my view, require that it shall consist of a single building. What is proposed by the

present plans is essentially one elevator, divided into 2 buildings. The 1,000,000 bush. part is in itself a complete elevator, but the 2,000,000 part is not another such elevator. It is not complete in itself, but is merely a detached part of the other, & the two buildings make what is virtually one elevator of the stipulated capacity. I am, therefore, of opinion that the proposed elevator will, in respect of capacity & working, conform to the terms of the contract."

The Commissioners then decided to request the Syndicate to furnish details & specifications. Subsequently the Commissioners visited Duluth & Minneapolis to inspect the elevators there, & on their return the Syndicate plans were approved. Their report on their Western trip contains some interesting information about elevators, from which the following is extracted:

"The grain business of Duluth harbor mainly consists of the receiving of wheat by rail from the states of the West, & of storing it, and shipping it by vessels to the East, & the purpose of the elevators is, therefore, to make economical trans-shipment from cars to vessels, & to store such quantities as may be requisite from time to time. The shipment of wheat from Duluth harbor last year was 78,000,000 bush., & the aggregate capacity of elevators for this trade, apart from that used in the milling trade, is about 24,000,000 bush. As regards situation & mechanical equipment, the Duluth elevators are, of course, suited to their chief purpose of receiving grain from cars, & reshipping into vessels, & in this respect they furnish an example of what may be suited to Montreal, but on the other hand, the Duluth elevators lack the equipment for receiving from boats, which

must be provided for those in Montreal. As regards the storing of grain, as distinct from the handling of it, the conditions of trade & climate are so nearly alike in Duluth & Montreal that what suits one place will probably suit the other. In making our examination these points of difference & resemblance between the conditions of Montreal & those of Duluth were therefore kept in mind.

"We first visited a group of elevators belonging to the Consolidated Elevating Company, consisting of a series of buildings, two of which are what is known as working-houses, & two as storage-houses or annexes, stretching along a wharf frontage of nearly half-a-mile, & connected by belt conveyors. The first building, or that on the outermost end of the wharf, called elevator H, is a working-house equipped with a full set of elevator machinery for receiving grain from cars & delivering it into either boats or cars, & having a capacity of 1,200,000 bush., that is, it is a complete elevator of 1,200,000 bush. capacity, substantially the same as one of the C.P.R. elevators in Montreal, except that it is of larger size, & is situated close to the edge of the wharf. In line with elevator H, & about 400 ft. distant, is elevator F, another working-house also of 1,200,000 bush. capacity & similar equipment of machinery.

"Between the two is a belt conveyor, at ground level, by which grain is carried in either direction, & by which either elevator may be filled or emptied from the other. In the same line, & some 300 or 400 feet distant from elevator F, is annex E, a storage-house of 2,000,000 bush. capacity. It is, as its name implies, a storage annex to the working house. It has storage bins similar to those of the working-house, except that they are much

higher; but it receives & discharges grain only through the working-house, by means of the conveyor running between the two buildings, & it neither receives or discharges from or into the cars or boats direct, although within reach of both. On a pier by itself, & some 600 or 700 ft. distant from annex F, is annex G, also of 2,000,000 bush. capacity, & practically a duplicate of annex E. Between the two is a belt conveyor, which carries grain backward & forward as desired.

"There is thus a chain of 4 elevator buildings of an aggregate capacity of 6,400,000 bush. capacity, situated on 2 different piers occupying half-a-mile of wharf frontage, & all connected by a line of conveyors, but only 2 of them capable of receiving or shipping direct, & as we were informed, only one, elevator F, is ordinarily used. The group is of much interest in respect to the Montreal case, as showing that it has been considered best to divide the storage capacity into buildings of moderate capacity, rather than risk very large quantities of grain in one; & also as showing that although all the 4 buildings are accessible to cars and boats, it was not considered necessary that all should be fitted with machinery for receiving & shipping direct, or even that as a matter of convenience full advantage should be taken of all the direct shipping & receiving machinery, which is provided.

"The next visited were the Globe elevators, belonging to Mr. Peavy, consisting of 1,000,000 bush. working house, & two annex or storage houses of 2,000,000 bush. each, placed at distances of about 400 ft. apart. The working house is on a wharf at the end of the group, & it is of the usual construction, & has the usual machinery equipment for receiving

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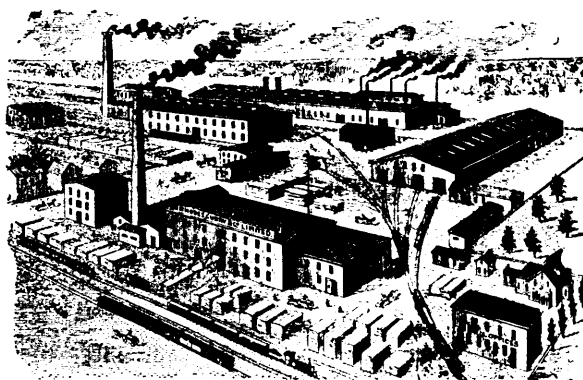
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from cars & discharging into boats or cars, & for charging the grain in its bins. The two storage houses are similar in size & equipment to those of the Consolidated Elevator Co., above described, & they are placed, not one opposite each end of the working house, but one beyond the other at the same end. Between the working house, & its nearest storage annex there are 2 belt conveyors, one at high level for connecting the tops of the bins; & the other at ground level for connecting their bottoms. Between the two annexes there is only one conveyor, & it is placed at ground level. The group is instructive as having an elevator & a storage annex of capacities respectively the same as those proposed for Montreal, & it is notable as being the only instance we saw in which two buildings are connected with more than one conveyor.

"Another group visited was the Great Northern elevators, consisting of a working house of 1,500,000 bush. capacity, & a storage house of 2,000,000, &, in course of erection, another working house of 3,000,000 capacity. The existing working house is of the usual construction & is accessible to both cars & boats. The storage annex is placed diagonally inland at about 800 ft. clear distance, quite out of reach of boats & without direct connection with cars. Between the working & storage houses there is a conveyor of 2 parts, of about 800 ft., & about 100 ft. in length, respectively, placed at right angles to each other, & at ground level. The interest of the example is in the very considerable distance of 900 ft. to which the grain is carried inland from the existing working house to the annex. The new working elevator under construction is remarkable, not only in that it will be of the great size of 3,000,000 capacity, but that it is being built wholly of steel, & with rectangular bins.

"Of elevators with circular steel bins there are several examples elsewhere than in Duluth, but we are informed that this is the first trial of steel bins of rectangular shape, & that it therefore remains to be seen whether they will prove satisfactory or not. On the same basin, but on the opposite side, is a package freight warehouse, 1,600 ft. long, 120 ft. wide & 2 stories high, for the trans-shipping & storing of freight exchanged between cars & boats, which is of interest as being provided with both high & low level tracks so that cars may unload or receive at either story, or at both together.

"Another group is the Peavy, 700,000 bush. working house, & an 1,800,000 storage annex; & the Cargill working & storage houses, of the same capacities, at Old Town near Duluth. The two plants are on adjacent piers, are exact duplicates of each other, were built at the same time & just finished. The working house of each is placed on the outer end of the pier, accessible to cars & deep draught vessels, & the storage annexes are about 200 ft. distant from their respective working houses, on the inner ends of the piers, where the water is shallow. The case is of interest as being a very recent repetition by different experienced grain operators of the same arrangement of what may be considered the standard one in Duluth. Other examples might be described, but those given are considered sufficient.

"The following general observations may be added: All the elevator buildings of Duluth & Superior, so far as we saw, or could learn, are built of wood, covered with sheet iron, except the large Hill elevator under construction, which will be entirely of steel. No existing building is of over 2,000,000 bush. capacity, & all of such capacity are storage houses. No working house is of over 1,500,000 capacity, & the average sizes are about 1,000,000 for working houses, & 1,500,000 for storage houses. The difficulty of placing insurance on grain in very large quantities, & the higher premiums charged, were given us

as the chief reasons why preference is given to buildings not exceeding 1,500,000, or, at most, 2,000,000 bush. capacity. It is, however, to be noted that this applies especially to wooden elevators, & that it yet remains to be seen what the practical effect of fire-proof construction will be in allowing of larger capacities in one building. The Great Northern's steel tank elevator at Buffalo, & its new one, with rectangular steel bins, being built at Duluth, show that it at least has adopted 3,000,000 as an admissible size for fire-proof working houses.

"The elevators of Minneapolis present greater variety of fire-proof construction than do those of Duluth & Superior, & although the service for which they are built differs materially from that required in Montreal, we deemed it of importance that they should be visited, & especially so as there is there an experimental bin of new fire-proof construction, which we were informed it is proposed to adopt for the storage house in Montreal. In Minneapolis we found that the same practice prevails as regards the dividing of elevators into working houses & storage houses, & that when enlargements to existing capacities are needed they are invariably added in the form of detached annexes. We found several examples of cylindrical steel bins, & one elevator under construction having rectangular steel bins & wholly steel framing similar to those of the largest elevator being built at Duluth. We examined with much care & interest the experimental fire-proof bin, of the construction under consideration for the storage house for Montreal. It is a cylindrical bin, 20 ft. in diameter & 60 ft. in height, built of 2 thicknesses of glazed cellular tiles, with steel bands between to give the necessary strength & stiffness. It is proposed that those for Montreal shall be 32 ft. in diameter & 80 ft. in height, & that the spaces between the cylinders, as well as inside them, shall be used for storage."

A steamer was stopped at the mouth of the river owing to a dense sea fog. An old lady asked the captain the cause of the delay. "Can't see up the river," replied the captain. "But I can see the stars overhead," continued the old party. "Yes, but until the boilers bust, we ain't going that way," said the captain.

It is suggested that it will be profitable to try the experiment of using gas engines for driving ships, the gas being generated on the vessel itself. Coal will be roasted in retorts aboard the ship in order to drive off the gas for the engines. The coke thus produced, will furnish the fuel needed to roast the coal. The purpose of the experiment which is to take place is to ascertain whether the saving of weight of the gas-producing plant & gas-consuming engines over the ordinary plant of steam boilers & engines, & the saving of space, are sufficient to warrant the adoption of a new system.

The U.S. weather bureau has adopted an iron storm warning tower, which being constructed in sections, can be extended to a greater or less height, in accordance with the visual conditions of different ports. Near the top of the tower two powerful lens lamps are located, & above the lamps is the flagstaff from which day signals are to be displayed. The old inferior marine lantern, which consumes oil, & which has been displayed only from wood staffs, will be discarded & the display of danger warnings more efficiently made by the introduction of the new iron towers. Congress made an appropriation sufficient to equip one-half of the 300 display stations of the bureau during the coming year. The new towers will be distributed as equally as possible between the lake & sea ports, as only one-half of the service can be equipped during the coming year.

## SHIPPING MATTERS.

### Richelieu & Ontario Navigation Co.

The Co. began the operation of its mail line between Montreal & Toronto May 29.

Good progress is being made on the Co.'s new hotel, the Manoir Richelieu, at Murray Bay, which will very soon be opened for business.

The pursers appointed for the western route are as follows: str. Toronto, J. Tinning, Toronto; Bohemian, W. R. Tandy, Kingston; Algerian, H. M. Nimmo, Kingston; Hamilton, Capt. Baker, Cornwall; Corsican, J. D. Devlin, New York; Spartan, G. E. Hall, Napanee. H. Dubois, who has been purser on this route for many years, is transferred to the Saguenay route.

During the winter many improvements have been made on the vessels of the fleet. The str. Quebec has had new feathering wheels put on, & in place of large paddle boxes formerly used, small ones have been introduced. This gives 12 additional staterooms, besides improving the lighting & ventilation facilities of many more. New fittings for the staterooms, beds, etc., have also been put in all rooms. The dining-room has also been refitted. The str. Montreal has had her staterooms refitted & the dining-room & other portions have been redecorated. The str. Hamilton has received new feathering wheels, which will make her time between Montreal & Hamilton much faster than before. The Hamilton & the Algerian have been put on the Hamilton route, leaving Montreal on Mondays and Thursdays, at 7 p.m., in place of 4 p.m. as in previous years. The leaving time at Toronto & Hamilton has also been changed. The str. Spartan has been refitted throughout & will run between Montreal & Toronto. The str. Bohemian has been lengthened about 18 ft., making her 198 ft. over all. She will run in connection with the Toronto. The Corsican will also run on this route. The str. Longueuil has been completely rebuilt, improving her facilities to a great extent. The str. Carolina, Canada & Saguenay have been overhauled & will operate as usual on the Saguenay line. The running time between Montreal & Toronto has been shortened by 3 hours, owing to the improved steamers & the new Soulanges canal, which will be used.

### Maritime Provinces & Newfoundland.

The Sydney Ferry Co. has placed a new & larger boat than heretofore on the route from Sydney to North Sydney. The str. Hygeia has been put on a new route between Sydney, the west side & the International pier.

A recent despatch from Sydney, N.S., mentioned a rumor that one of the largest shipbuilding concerns in Europe was represented in Sydney by agents who were making enquiries with a view to the establishment of a shipbuilding plant on the west side of Sydney harbor.

A Sydney, N.S., despatch says:—"The management of the Plant Line of steamers has definitely decided to open communication directly between Boston & Sydney, the initial trip commencing at the former port on June 15. The str. Florida, which has been running between Boston & Southern ports for some years, has been engaged on the new line, & it is proposed to leave Boston Friday & Sydney Monday each week. The Florida is about the size of the str. Halifax, elegantly fitted up for passenger service, & is capable of carrying a large volume of freight. J. A. Young has been appointed agent at Sydney."

S. C. Brookfield, of Halifax, is endeavoring to interest Canadian & U.S. capitalists in a project for establishing large steel shipbuilding works. It is understood that leading members of the Dominion Iron & Steel Co. have been approached with a view to enlist

ing their financial interest in the enterprise. Such an industry would consume iron & steel produced at their Sydney works. The probable capital of the company is placed at \$20,000,000. Nova Scotia has never been reconciled to the loss of the great shipbuilding industry that once flourished in its numerous ports, an industry which perished when iron & steel took the place of wood. That a shipbuilding plant will eventually be a development of Canadian enterprise is a certain sequence of the iron & steel industries. Sydney, Halifax & Dartmouth are spoken of as locations for the works.

### Province of Quebec Shipping.

Hon. R. R. Dobell visited Levis, May 2, & conferred with the Town Council on harbor improvements. The Dominion Government is going to spend considerable money at Levis, & the town has decided to make a free gift to the Government of the necessary water frontage for the construction of a wharf 800 ft. long. Mr. Dobell is also considering the erection of a grain elevator at Levis.

In a recent interview in Montreal, Traffic Manager C. J. Smith, of the Canada Atlantic Ry., said that although it took to Montreal last season 10,000,000 bush. of grain, it actually handled 20,000,000, & it was only the lack of vessels to carry the produce across the Atlantic that prevented it taking to it the other 10,000,000. "There were no ships in Montreal," added Mr. Smith, "to receive those 10,000,000 bush., & we had to ship them from Buffalo & other Lake Erie ports. Our greatly improved & enlarged lake fleet will bring down another 5,000,000 bush. this year, & we are anxious to ascertain how much of the 25,000,000 bush. of grain, or its equivalent in weight of other traffic, can be shipped by steamer from Montreal. If Montreal can only ship 10,000,000 bush., the same as last year, we shall have to take 15,000,000 elsewhere."

The Montreal floating elevator charges have been increased 20% this year over last. Last season when it became evident that better elevator facilities must be provided at the port the Co. reduced its rates 20%, but as the Conners syndicate will not have its elevator ready for

some time the floating elevator has restored the old rate. The difference in the charges amounts to \$100 instead of \$80, upon a barge load of grain of 50,000 bush. Upon a season's business at the port of, say, 5,000,000 bush., the addition would amount to \$50,000. The advance in rates took the grain trade completely by surprise. One of the chief companies interested—the Canada Atlantic—only learned it when its bills came in this morning for elevating done. One of the hardships connected with the advance of the rate without notice is that contracts had already been made on the basis of former rates for the purchase & transportation of millions of bushels of grain from Montreal, & considerable loss will be suffered in some cases. The Canada Atlantic Co., which has a three years' lease of the barges & floating elevators of the former Kingston & Montreal Forwarding Co., will most likely take its floating elevators from Kingston if the high rate is maintained, as the advance means quite a large item of increased expenditure for it. Andrew Allan, President of the elevator company recently stated to the Department of Public Works that it was understood when the cost of elevating was lowered that the reduction was only for one year. The quantity of grain handled at the port was likely to be less than last year owing to the scarcity of tonnage through so many vessels being engaged in the South African trade, & with the decrease in the amount that was likely to be handled the elevator company felt that it would not pay it to continue last year's rate.

### Ontario & the Great Lakes.

The str. Marie Louise, owned by J. Parkin, was completely destroyed by fire at Lindsay, Ont., May 5.

The Minister of Railways recently announced that P. Daly, of Kingston, will be appointed General Inspector of the Rideau Canal at \$1,000 a year.

The Canada Atlantic Transit Co.'s package freight steamer Ottawa, which was fully described in our Mar. issue, pg. 89, was launched at Toronto, May 23. She will run between Parry Sound & Upper Lake ports.

The Canada Atlantic Transit Co. has invited tenders for 4 package freight steamers of 6,000 tons capacity, but in view of the high prices prevailing it is hardly likely that the contract will be given this year.

It is said the Rideau Navigation Co. will have a sister boat to the str. Rideau Queen built at Kingston this summer. The str. James Swift will then be used for excursion purposes after being altered for that business.

The International Navigation Co., of which A. B. Waloni, of Duluth, is President, is having 6 steamers constructed, designed to carry 5,000 tons of wheat each from Chicago to Europe via the Welland Canal. Four are to be ready before next winter.

This season the lake steamers of the Montreal Transportation Co. will not carry any passengers, as they have done in past years. The dredge Nipissing will remain at Kingston for at least part of the present navigation season, & will be employed in enlarging the channel.

It is expected that the Hamilton & Fort William Navigation Co.'s new steel steamer Strathcona will sail from England by June 10. The Strathcona & her sister vessel the Winona will be 255 ft. long, 42½ ft. beam, & 23 ft. 8 ins. deep, with a carrying capacity of 110,000 bush. each.

The Penetanguishene Navigation Co. recently incorporated under the Ontario Companies Act, with a capital of \$40,000 & head office at Penetanguishene, proposes doing a freight, passenger & towing business between Penetanguishene & Manitoulin Island. It owns 2 tugs, the John Lee, senr., & the Masonic.

The first of the fleet of ore carriers to be put on the upper lakes by the Lake Superior Pulp & Power Company, of Sault Ste. Marie, arrived at Montreal from England May 5, where she discharged a cargo. She proceeded to Toronto, took on a cargo of brick, & left for Lake Superior. The other three boats are expected shortly.

A London, Eng., cablegram says: "The shipping people here are making contracts for steamers in view of the opening of the 14 ft. channel through Canadian canals. There are

## MANITOBA

The Government Crop Bulletin issued Dec. 12th, 1899, gives the following statistics for the year:

### CROPS.

ACRES.	AVERAGE YIELD.	TOTAL.
Wheat.....1,629,995	17.13 bus.	27,922,230 bus.
Oats..... 575,136	38.80 "	22,318,378 "
Barley.... 182,912	29.4 "	5,379,156 "
Potatoes.. 19,151	168.5 "	3,226,395 "

### STOCK.

Beef Cattle exported during the year	12,000
Stockers exported.....	35,000
Total value dairy products.....	\$470,559 09

### 10,500 FARM LABORERS

Came from Eastern Canada to assist in the harvest fields of Manitoba in 1899—and the demand was not fully satisfied.

### MANITOBA FARMERS ARE PROSPEROUS.

Farmers erected, last year, farm buildings valued at one and one-half million dollars.

**MANITOBA LANDS**—For sale by the Provincial Government. Over 1,600,000 acres of choice land in all parts of the Province are now offered at from \$2.00 to \$5.00 per acre. Payments extend over eight years. **Special Attention** is directed to 500,000 acres along the line of the Manitoba and Northwestern Railway at \$3.00 and \$3.50 per acre.

**FREE HOMESTEADS** are still available in many parts of the Province.

For full information, maps, etc., **FREE**, address J. A. DAVIDSON, Minister of Agriculture and Immigration, Winnipeg, Manitoba. Or C. H. JEFFERYS, Manitoba Emigration Agt., Union Station, Toronto, Ont.

### THE FAVORITE ROUTE

To New York and  
.....Philadelphia

### GRAND TRUNK RAILWAY

in connection with the

### LEHIGH VALLEY RAILROAD

Route of the "Black Diamond Express," handsomest train in the world.

Leaving Toronto daily, (except Sunday) at 9 a.m., Hamilton 9.55 a.m., arrive New York 10.08 p.m.

Fast Night New York and Philadelphia Express, leaving Toronto 6 p.m. daily, arrive New York 9.13 a.m., Philadelphia 8.56 a.m.

Pullman Sleepers from Toronto, Hamilton and London to New York and Buffalo to Philadelphia.

Call on Grand Trunk Ticket Agents for tickets and further information, or address

Robt. S. Lewis

Canadian Passg'r Agent, 33 Yonge Street  
Toronto.

Chas. S. Lee

Gen'l Passg'r Agt.  
New York.

A. A. Heard

West'n Passg'r Agt.  
Buffalo, N. Y.

All C.P.R. Agents in

MANITOBA,  
ASSINIBOIA,  
ALBERTA and  
BRITISH COLUMBIA

sell through tickets to the Old Country, cheaper than if passengers bought railway tickets to New York or Montreal, and then re-booked.

They also sell prepaid tickets to passengers coming from the old country, cheaper than the rate obtainable in Europe, and on favorable terms.

Apply to any agent Port Arthur and west, or to

**WILLIAM STITT,**

C.P.R. Offices,  
WINNIPEG.

great expectations of increased trade, especially in grain via the St. Lawrence, although some doubt exists whether the channel will be available upon the opening of navigation."

J. H. McLauchlan, of Owen Sound, has purchased from the Hamilton Steamboat Co. the str. Mazeppa, which has heretofore run between Hamilton & Burlington Beach. She was built at Toronto in 1884, her dimensions being, length 101 ft., breadth 20 ft., depth 5 ft. 7 ins., tonnage, gross 146, register 87. Mr. McLauchlan will run her between Owen Sound & Balmy Beach.

The str. Bannockburn ran past Port Dalhousie May 8 in order to shorten consort's tow lines before entering the harbor, as the wind was blowing strong from the west. After entering the harbor an exceptionally heavy squall carried the barge Dunmore to leeward so far that she struck the end of the east pier, breaking her stem at the water line & damaging her to such an extent as necessitated her going into dry-dock.

The Dominion Government str. Bayfield cleared from Owen Sound May 3 under Lieut. Stewart, to continue the hydrographic survey of Lake Huron. The season will be spent in making a survey of the east shore of Lake Huron from Stokes Bay to Goderich. When this section is finished the work on Lake Huron will be practically completed, as the remaining part of the coast to the St. Clair River requires little attention. Lake Erie & Georgian Bay have also been surveyed.

A Chicago despatch of May 23 says: "Lake rates on grain have broken, & there is a strong impression that they will continue to drop until conditions will necessitate a reduction in the present all-rail rates to eastern territory. Water tariff on corn, Chicago to Buffalo, is down to 1 1/4 c. a bush., on wheat 1 1/4 c., & on oats 1c. The lack of demand in the east is attributed by local shippers as the cause of the weakness in rates, & it is believed that within a week corn will be carried from Chicago to Buffalo for 1c. a bushel."

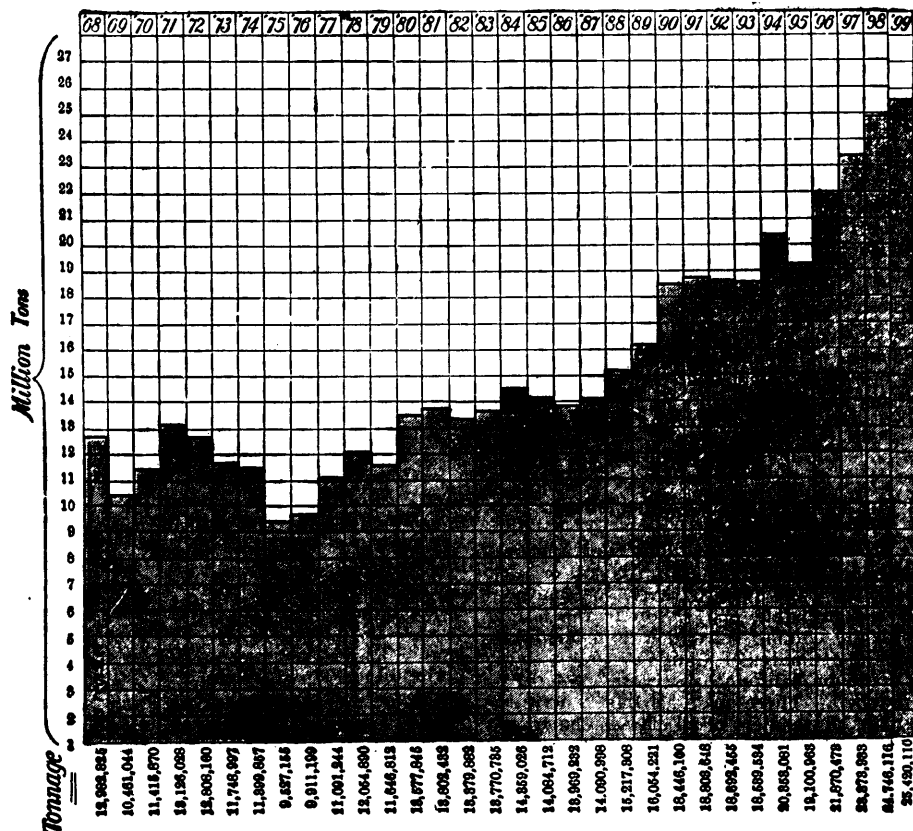
The owners of the str. Garden City & Argyle are at variance as to which shall have the monopoly of the Oshawa wharf. The Garden City was not allowed to tie up at the wharf recently unless a toll of 20c. a ton were paid. Many passengers were ready to board the boat to go to Toronto, but were disappointed, the Mayor of Oshawa declaring that the wharf was leased to T. G. Jackson of the Argyle Navigation Co. The Garden City steamed on to Toronto. Her owners say they will establish a stage line from Oshawa to Whitby.

The contract for Port Colborne harbor works has been awarded to M. J. Hogan, & A. R. Macdonell. The contemplated works aggregate about \$1,000,000, & consist of submarine rock excavation, dredging, cribbing & concrete piers. The work is to be completed in about two years. H. T. Dunbar, of Buffalo, an expert in submarine rock blasting & dredging, will most likely be associated with Hogan & Macdonell. Large orders for plant & material are being placed, & the works will be pushed vigorously day & night. The exposed position of the submarine blasting in the open Lake Erie will compel the contractors to take advantage of every calm moment in order to complete the work on time.

The U.S. House of Representatives Committee on Foreign Affairs have acted favorably on the joint resolution authorizing the President to invite Great Britain to join in the formation of an international commission, four from each Government, to consider the diversion of waters along the boundary of Canada & the U.S. The inquiry is designed principally to ascertain the effect of the level of the great lakes caused by improvements at the Welland canal, Sault Ste. Marie canal, & the Chicago drainage canal. The inquiry is to

SHIPPING AT CANADIAN PORTS.

The following diagram shows the total tonnage of vessels, British & foreign, sea-going & inland, exclusive of coasting vessels, which arrived at & departed from Canadian ports in each year ended June 30, commencing with June 30, 1868.



cover the entire lake region, including all the waters of the lakes & rivers whose waters flow by the River St. Lawrence to the Atlantic ocean. The joint resolution had previously passed the Senate.

The plans of the proposed buildings of the Dry Dock & Steel Ship Building Co., of Collingwood, have been completed. At first 3 buildings, a punch shop, & moulding loft, a furnace & blacksmith shop, & an office will be erected. The 1st, which will stand on the east side of the dry dock, will be 220 by 50 ft., with an addition for a boiler & engine room. The greater portion of the heavy machinery will be on the ground floor & for a moulding-room on the 2nd floor. The 2nd will stand at the east side of the lot & south of the freezer of the Dominion Fish Co. It will be 120 by 50 ft., & will contain the plate & bar furnaces, the hammer & the blacksmith shop. The 3rd, or office building, will be erected on the west side of the dry dock near the railway, & will be 24 by 60 ft., 2 stories high with a large garret, which will be used for a blue print room. The ground floor will be occupied as a store-room while the 2nd will contain the general offices & a draughting room. This building is now under construction. A carpenter shop will be erected later, also on the west side of the dry dock.

Water was let into the Soulanges Canal May 1. Owing to the electric lighting the canal can be used at night as well as by day. The advantage of the new canal, with its greater draught of water, is shown already by the fact that the Canada Atlantic Ry. has increased the size of its barges' cargoes from 25 to 50%. Moreover, its vessels leaving Coteau at noon arrive at Montreal at night, a saving of time of 50%, compared with the time taken formerly by way of the Beauharnois Canal. The barge G. T. Dave, owned by the Co., upon her first trip this season

through the Beauharnois Canal took down 34,000 bush. of wheat, the draught of the loaded barge being 9 ft. Upon her second trip she went through the Soulanges Canal, carrying a load of 48,000 bush. of wheat, or 1,440 tons. This cargo was a record breaker, being the largest ever taken down the Lachine Canal. Her draught upon this occasion was 11 1/2 ft. On a draught of 1 ft. additional she would carry her limit, about 53,000 bush., or 1,590 tons. A further illustration of the advantages of the new locks compared with those now to be abandoned is the fact that this barge could be lengthened by 50 ft., her present length, 181 ft., having been laid down to suit the old lock.

Notices to Mariners.

The Dominion Department of Marine has issued the following notices:

No. 15, Apl. 10, Quebec, 1. Change in gas buoys. 2. Fog-horn at Pointe aux Originaux discontinued.

No. 16, Apl. 10, British Columbia, 1. Halibut Bank, Strait of Georgia. 2. Japan, colored sectors in lights.

No. 17, Apl. 10, Ontario, 1. Buoyage of the approaches to Midland Harbor. 2. Changes in lighting the approaches to Midland Harbor. 3. United States, Erie Harbor entrance. 4. Sandusky Bay & vicinity. 5. Sandusky Bay, outer range light station. 6. Detroit River. 7. Lake St. Clair. 8. River St. Mary. 9. Lake Superior, life-saving station at Grand Marais Harbor.

No. 18, Apl. 12, Nova Scotia, 1. Little Lorraine, light. 2. Hand fog-horns at Nova Scotia light stations. 3. Lunenburg, whistling buoy sunk.

No. 19, Apl. 17, Ontario, 1. Pelee spit light-house and fog-alarm destroyed by fire. 2. Ranges for ascertaining compass errors at

Port Dalhousie discontinued. 3. United States, Detroit Marine post-office regulations. 4. Buffalo Harbor, general information. 5. Niagara River, improvements in channel.

No. 20, Apl. 19, Ontario, chart of Bay of Quinte.

No. 21, Apl. 27, Ontario, Seguin Bank, buoy.

No. 22, May 1, Nova Scotia, Government rifle ranges, MacNab Island.

No. 23, May 4, New Brunswick, 1. Flewelling landing light increased in intensity. 2. Hand fog-horns, New Brunswick light stations. 3. United States, Maine, Little River light station.

No. 24, May 5, British Columbia, 1. Enterprise Reef, beacon. 2. Depth of Benwohr rock. 3. Empire of Japan—Formosa, Kelung lighthouse.

No. 25, May 9, New Brunswick, 1. Fog-bell at St. John Harbor light station. 2. Change in position of Quaco bell-buoy. 3. Conical buoy marking Quaco shoal. 4. Quaco ledge, bell-buoy placed.

No. 26, May 14, Ontario, lighthouse on Green shoal rebuilt.

**The Emigration to Cape Nome.**

An attempt has been made by the transportation companies interested in Alaska, & particularly in Cape Nome travel, to approximate the probable emigration to the latter port for the coming season, & the conclusion is that the estimates of 30,000 or 50,000 persons made by sanguine observers will hardly be reached. There are, as this is written (May 26), 58 steamers of all classes chartered for Cape Nome, to sail before June. 1. The capacity of all these vessels is not beyond 15,000 travelers, & probably not more than 13,000 will take passage on the first trip. As far as learned, every steamer has been sold up; but, as is always the case, many persons will defer the trip & await further advices before making the uncertain venture. It is estimated that 5,000 tickets have been sold from San Francisco, & 8,500 from ports of Oregon & Washington. If all of these are used, the full capacity of all vessels now char-

tered will be appropriated. Estimating at 2,000, the number of people who wintered at Cape Nome, & the same number going from other Alaskan points, added to the 15,000 estimated to arrive from the south, would give 19,000 as the number likely to be found on the peninsula by July 1, 1900. The early arrivals are likely to experience great hardship in landing. In 1899 the ice disappeared on June 21. How those who arrive about June 1 are to land is a problem of infinite difficulty. The steamers will delay not a moment, & landing over the ice will be accompanied by great exposure & many uncertainties. The fatality is likely to be great. The subsequent voyages will be eminently easy. The crowd is out of the way & the difficulties of landing will all disappear.

**British Columbia Shipping.**

The Ship Drummair Co., Ltd., has been incorporated under the B.C. Companies Act to acquire & run the ship Drummair, registered at Liverpool, Eng.

Another tug has been added to the C.P.R. fleet by the launching of a 71-ft. boat at the C.P.R. shipyard at Nelson. She was built in about 6 weeks & is 71 ft. long, 14 ft. beam & 6 ft. draught. She went into the water with her engines & boilers already installed, ready to make steam at once.

The Dominion Government is securing parliamentary authority to continue the subsidy to the C.P.R. for its steamship service between B.C. & China & Japan for a further period of not more than 10 years, the subsidy not to exceed £15,000 a year for a monthly service or £25,000 for a fortnightly service.

According to San Francisco papers the Pacific Coast S.S. Co. is contemplating the construction, for the San Francisco, Victoria & Alaska run, of another passenger steamship. She is expected to be 270 ft. in length over all, with a breadth of 40 ft., or a trifle smaller than the str. Queen. Modern equipment is, however, to be her main feature, electricity being a special characteristic, & an observatory occupying the entire after portion of the hurricane deck. Electric freight & passenger elevators are a decided novelty in

the equipment plan, while the furnishings of the craft are to be luxurious.

A special committee appointed by the Victoria Board of Trade to consider the question of the improvement of Victoria Harbor has reported as follows: "To enable the steamers that are owned and operated to and from this port to safely enter and leave the harbor, a uniform depth of 16 ft. at low water is necessary. To obtain and maintain this depth it would be necessary to commence by deepening the entrance to the harbor, where a bar stretches across the harbor, and the depth in places is only 12 ft. of water. This bar forms a dam across the mouth of the harbor, preventing an outflow which would carry off a large quantity of the sediment. The whole of the harbor should then be dredged to a depth of 16 ft. of water at least up to the wharves and along their fronts, to enable the steamers when loaded to lie afloat. To maintain the depth of water required it would be necessary to dredge the upper harbor, which has filled up with an accumulation of soft silt, which, if not removed, would flow with the current into the excavations made in the lower harbor and fill them up."

**Yukon & Northern Navigation.**

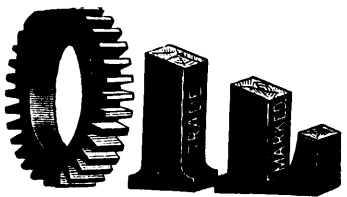
The Yukon Flyer Line, Ltd., has been incorporated under the B.C. Companies Act, with a capital of \$60,000, & head office at Victoria. Among its very general powers are the right to own, charter & operate steamships on the lakes of Northern B.C. & elsewhere.

The str. Ameer, from Skagway, arrived at Victoria May 26 with news that the Yukon was open from Bennett down, excepting on Lebarge, which was still filled with ice. Five steamers reached Dawson. Cook's Inlet was free of ice. There is a combination of the Alaska Exploration Co. & A. C. Co. steamers to carry passengers from Bennett to Cape Nome for \$200.

General Manager Hawkins of the White Pass & Yukon route, recently made the announcement that upon the opening of navigation, about June 1, the operating system of

**THE QUEEN CITY OIL CO. LIMITED**  
SAML. ROGERS PRES. TORONTO

**SPECIAL**  
**STEAM-BOAT**  
**LUBRICATING**



**Greases. &c.,**  
**Raw Linseed,**  
**Boiled Linseed,**  
**Spirits Turpentine,**  
**"Sarnia" Benzine,**  
**"Sarnia" Gasoline,**  
**Castor Oil,**  
**Cotton Waste,**  
**Lubricators, &c., &c.**

**A Popular Route**  
**to New York**

Canadian Pacific, and Toronto, Hamilton and Buffalo Railways in connection with the **New York Central & Hudson River Railroad.**

Leaving Toronto in the evening at 5.20 p.m. in one of the through sleeping cars of the Wagner Co., you are landed at Grand Central station, in the very heart of the City of New York, 4th Avenue and 42nd Street, at 8.15 next morning, adjacent to all hotels and business houses and avoiding the annoyance of transfer.

This is also the route of the famous **"EMPIRE STATE EXPRESS"**  
Fastest Train in the world.

Call on nearest ticket agent of the C.P.R. or T.H. & B. for further information, or address  
**GEORGE H. DANIELS,**  
Genl. Passr. Agent, Grand Central Station,  
NEW YORK.

**LOUIS DRAGO,** H. PARRY,  
Can. Passr. Agent, Genl. Agent,  
TORONTO, ONT. BUFFALO, N. Y.

**UNIFORM CAPS**  
For Steam and Electric Railway, Steamboat, Yacht, Express and Telegraph Officials, Messengers, etc. Also Hats and Helmets.

Embroidery in Gold and Silver Bullion,  
As Letters, Badges, Wreaths, &c., &c.

**W. H. CODDINGTON,**  
Hamilton, Ontario.

**LELAND HOTEL, Winnipeg Man. W.**  
D. Douglas, Proprietor. Rooms en suite with baths and all modern conveniences. Rates \$2 to \$4 a day. Special rates for families and large parties, according to accommodation and length of time. Though moderate in price the Leland is first-class in every respect. It is especially adapted to please the commercial trade. It is in the centre of the wholesale and retail district. It is in direct communication with all parts of the city by car lines. It is supplied with the purest spring water from flowing well on the premises.

**Back Numbers for Sale.**  
THE RAILWAY AND SHIPPING WORLD:  
March to December, 1898, price . . . . \$1.00  
January to December, 1899, " . . . . 1.25  
including postage.

Address  
THE RAILWAY AND SHIPPING WORLD,  
33 Melinda St., Toronto, Canada.

the White Pass & Yukon route would be extended to Dawson & Yukon River points. This was effected through a traffic arrangement with the Canadian Development Co., which operates a number of steamers from White Horse to Dawson. The understanding is that one of the C.D. Co.'s steamers is to leave the northern terminus of the road each day, & handle all the freight offered by the railway. The steamers which will be engaged are the Australian, Anglian, Canadian, Victorian & Columbian. Work on the extension of the railway from Bennett to White Horse is proceeding as rapidly as men & money can push it. By the opening of navigation it is expected that rails will be laid into White Horse & trains in regular operation. Then the worst difficulties of the trip from Skagway to Dawson will have been overcome. Mr. Hawkins says he expects to have a daily train & boat service from Skagway to Dawson, & to reduce the time of a through trip from Seattle to Dawson to an average of between 6 & 7 days. By the traffic arrangement goods will be billed & tickets sold through to Dawson from Puget Sound & B.C. points, saving the shipper the trouble of looking after his stuff en route. A terminal station will be established by the railway at Dawson. R. T. Elliott has been appointed Assistant Superintendent of the river division, & C. M. Chambers, General Agent at Dawson. By the new arrangement through contracts for shipment of goods may be made.

#### Telegraph & Cable Matters.

Toronto City Council has memorialized the House of Commons in favor of the Government acquisition of telegraph lines.

A storage battery of the latest & most improved type is being installed in the G. N. W. T. Co.'s office at Ottawa to replace 630 cells of Cellaud battery.

In our Feb. issue, pg. 59, we gave a full description of the C.P.R. Co.'s Telegraphs' new building on Hastings St., Vancouver. An illustration of it is given on this page.

The G.N.W.T. Co. reports brisk & increasing business throughout the country, & anticipates heavier business during the coming season than it has had for a great number of years.

For some time past rumors have been afloat respecting a proposed amalgamation of the Western Union & the Postal Telegraph companies. It is said, on what should be reliable authority, that they have no foundation in fact.

The G.N.W.T. Co.'s London office, which was totally destroyed by fire last Feb., is now fitted up in permanent shape, pending erection of the new building now being put up to replace the old one, & which the Co. will occupy when completed.

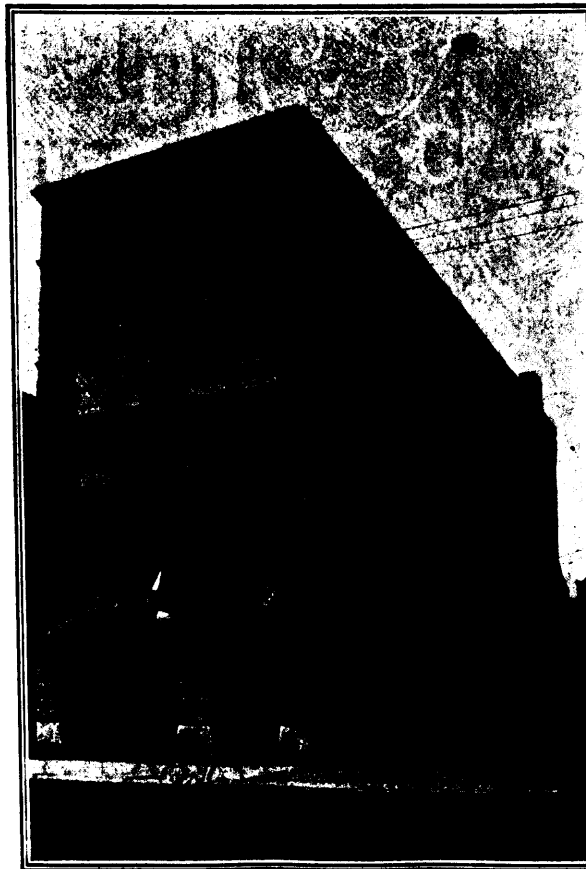
The G.N.W.T. Co. has placed a large order for enameled iron signs for its offices with the Acton Burrows Co., Toronto. They will be 10 x 19½ inches, including a flange, so that they will project from buildings, poles, etc. They will be lettered on both sides "G.N.W. Telegraph Co.," in white letters on blue ground.

The Pacific Cable Board has held a further meeting without being able to announce a solution of the difficulty with New South Wales & Victoria regarding landline concessions. The Eastern Co. Board, however,

still expresses confidence that Mr. Chamberlain, who is now in direct correspondence with Sydney & Melbourne, will secure the end it has in view.

The Canadian Northern Ry., which operates its own commercial telegraph, has placed an order with the Acton Burrows Co., Toronto, for enameled iron signs for its telegraph offices. They will be 22 x 8 inches, lettered on both sides "C.N.R. Telegraph," in white letters on dark blue ground, & will be made with a flange so as to project from the buildings at right angles.

The G.N.W.T. Co. is about to erect a new wire over the whole line of the I.C.R. between Moncton & Montreal, the business of the road since the Drummond County Ry. has been taken over having increased to such an extent as to make additional facilities necessary. A new line is also to be erected in the near future between Quebec & St. Flavie in



C.P.R. TELEGRAPH BUILDING, VANCOUVER.

order to provide additional facilities for the shipping interests.

On May 7 the C.P.R. Co.'s Telegraphs moved from the premises it has occupied in Montreal since its inception, 4 Hospital St., to 49, 51 & 53 St. Francois Xavier St., where it will remain till the new building is erected on the old site. Preparatory work was commenced early in April under Superintendent Camp. First of all, the switches were established in position. After this the cables were connected by temporary cables through the new office with the former quarters. When the actual moving time came three tables were first arranged in the new office, & as soon as the wires intended for them were released the connection with the old office was cut, & the new connection established, a matter of five minutes' work. Then the three cables released in the old office were brought over, so that the work was not interrupted, & the offices in Vancouver, Winnipeg, Halifax, St. John, New York, Chicago, Canso & the

other places with which the Montreal office has direct connections never knew that any change was going on, & business was uninterrupted. The work of moving the busiest lines was performed on a Sunday, outside of office hours, so that no possible encumbrance to business could be caused.

In the U.S. Senate May 1 Senator Lodge moved to substitute in the bill on appropriations for the establishment of a military telegraph with Fort Egbert, Cape Nome & other military points in Alaska, a paragraph in these words: "For the purpose of establishing a military telegraph & cable lines to Alaska, \$450,550." The original bill provided for a similar appropriation, but designated the route, & the Senate Committee on Appropriations had recommended striking it out. Senator Lodge said that his amendment did not bind the Government to any route, but left the matter open to be arranged in conference, & he spoke of the importance of keeping absolute control of the cable route from Alaska to Asia. It would be a great mistake, he said, to allow a foreign Government or company to establish such a line, & he understood that there was a Canadian company established with a Government subsidy of \$250,000 a year. The amendment was agreed to, & Senator Lodge moved to add to it these words: "Provided no telegraph or cable line, owned wholly or in part, or operated or controlled by persons not citizens of the U.S. or by any foreign corporation or Government, shall be established in or permitted to enter Alaska." Senator Bacon asked Mr. Lodge whether that would also keep land telegraph lines from running into Alaska, & Mr. Lodge said it would. The proviso was agreed to.

#### General Telephone Matters.

The Bell Co. is extending its underground system in Winnipeg.

The Bell Co. has installed a double line between London & Strathroy.

The Bell Co. has issued a new edition of its telephone directory of Eastern Ontario.

The name of the Callander Telephone Exchange Co., Ltd., has been changed by supplementary letters patent under the Dominion Companies Act to that of the American Machine Telephone Co., Ltd.

Telephone connection is being established between Beaumont & Edmonton, Alta., 15 miles, the Dominion Government supplying line material & instruments, & the local residents putting in the poles & supplying labor for construction work.

Daly & Hamilton, solicitors, Rossland, give notice of application to the B.C. Legislature to incorporate a company to construct & operate telephone & telegraph lines within & throughout all the cities, towns, municipalities & districts of the mainland of B.C.

It is said the New Brunswick Telephone Co. is about to extend its system by building a long distance line from St. John by way of Bonny River & St. George to St. Andrew's, thence on to St. Stephen & Calais, Me., to connect with a U.S. line at the latter point.

The telephone has proved very successful in the Western States in places where different farm-houses are connected by wire, as it enables them to give each other timely warning of the approach of tramps. It is also useful in cases of fire & sickness. The possibilities of the telephone in rural districts are very great.



ASSESSMENT SYSTEM.



**THE BEST FRATERNAL BENEFIT SOCIETY IN THE WORLD.**  
**THE SPLENDID RECORD OF THE I. O. F.**

**Cost to Join the I.O.F.**

(For \$1,000 Mortuary Benefit.)

Initiation fee (minimum).....	\$1 00
Certificate fee.....	1 00
Registration fee.....	1 00
Medical Examination fee.....	1 50
<b>Total minimum cost.....</b>	<b>\$4 50</b>

(For more than \$1,000 Mort. Benefit.)

Cost to take \$2,000 Mort. Benefit..	\$6 00
" " \$3,000 " " "	7 00
" " \$4,000 " " "	9 00
" " \$5,000 " " "	10 00
Sick benefits, when required, cost extra.	

**Benefits given by the I.O.F.**

- 1.—**Social and Fraternal Privileges** of the Court Room.
- 2.—**Free Medical Attendance** by Court Physician where not dispensed with by Court by-law; also trained nurses in certain cases.
- 3.—**A Sick Benefit** of \$3 to \$5 per week, subject to provisions of the Constitution and Laws of the Order; optional, and when taken costs extra.
- 4.—**A Total and Permanent Disability Benefit** of one-half of face value of policy, with exemption from further payment of premiums or Court Dues.
- 5.—**An Old Age Benefit** consisting of exemption from payment of premiums and Court dues after age 70.
- 6.—**An Old Age Disability Benefit** of one-tenth of face value of policy payable yearly for ten years, on being declared totally and permanently disabled by infirmities of age after the seventieth birthday.
- 7.—**An Old Age Pension** payable during disability, which may be taken as a substitute for the Old Age Disability Benefit.
- 8.—**A Burial Benefit** of \$100 at death of a Pensioner.
- 9.—**A Funeral Benefit** of \$50 at death of a member enrolled in Sick and Funeral Benefit Department.
- 10.—**The Mortuary Benefit** of \$500, \$1,000, \$2,000, \$3,000 \$4,000 or \$5,000.

**The Members, the Benefits, and Their Assurance**

At 31st December Each Year.

Year.	Total Membership.	Benefits Paid.	Total Surplus.	Surplus per Capita.	Death Rate per 1,000.
1881	1,019	\$ 1,300 00	\$ 4,568 55	\$ 4 48	4.50
1882	1,134	12,058 86	2,967 93	2 61	11.00
1883	2,210	9,493 68	10,857 65	4 91	4.73
1884	2,558	13,914 31	23,051 85	9 01	4.23
1885	3,642	26,576 99	29,802 42	8 18	7.76
1886	5,804	28,499 82	53,981 28	9 30	4.85
1887	7,811	59,014 67	81,384 41	10 44	5.78
1888	11,800	89,018 16	117,821 96	9 98	6.43
1889	17,349	116,787 82	188,130 36	10 84	5.85
1890	24,604	181,846 79	283,967 20	11 54	5.18
1891	32,303	261,436 21	408,798 20	12 65	6.40
1892	43,024	344,748 82	580,597 85	13 49	6.25
1893	54,484	392,185 93	858,857 89	15 76	5.47
1894	70,055	511,162 30	1,187,225 11	16 94	5.47
1895	86,521	685,000 18	1,560,783 46	18 03	5.67
1896	102,838	820,941 91	2,015,484 38	19 60	5.50
1897	124,685	992,225 60	2,558,832 78	20 52	5.56
1898	144,000	1,176,125 14	3,186,370 36	22 12	5.67

For Further Information Respecting this Great Fraternal Benefit Society, Apply to

Oronhyatekha, M.D., S.C.R., Toronto, Ont.

James Marshall, 24 Charing Cross, London, Eng.

John A. McGillivray, O.C., S.S., Toronto, Ont.

A. E. Stevenson, 6436 Kimbark Ave., Chicago, Ill.

Or Any Officer or Member of the Order.

The Bell Co. is about to build its first long distance lines in Manitoba, running westerly from Winnipeg as far as Brandon, connecting Portage la Prairie, McGregor, Carberry & other intermediate points. A line will also be built from Carberry to Neepawa, thence to Minnedosa. It is said connection will be made with U.S. lines.

The recently completed Dominion Government telegraph line between Kamloops & Nicola, B.C., has been changed to a telephone line, & offices have been opened at Quilchena, Nicola Lake & Lower Nicola, with a rate of 25c. for a 10 words message. For conversation the charge is 50c. for 3 minutes, & 10c. for each additional minute.

At the recent annual meeting of St. Martin's Telephone Co. in New Brunswick the following were elected: President, J. McLeod, M.P.P.; Vice-President, W. H. Allan; Secretary Treasurer, A. W. McMackin; other directors, C. M. Bostwick, C. D. Trueman, W. E. Skillen. It is said the line will be considerably improved this season.

At the recent Napanee, Ont., assizes, the case of Shanks vs. the Bell Telephone Co., a claim for injuries sustained by plaintiff's eight-year-old boy, was settled, defendant paying \$2,250 into court for the child, & \$600 for the father. The child lost hearing & sight on the left side through the upsetting of a forge containing red-hot coals, placed by Co.'s employes on a street at Smith's Falls.

In the Bell Co.'s Ottawa exchange, the bell-ringing system has given place to automatic signalling telephones, the interesting feature of which is that instead of ringing the bell as formerly, the subscriber has only to put the 'phone to his ear. The act of removing it from the hook flashes a signal lamp at central, & a prompt response is made. When the 'phone is replaced on the hook, another signal is given which notifies central that the conversation is ended.

What is said to be the longest submarine telephone cable in the U.S. has been laid through the Straits of Mackinac, on a line connecting Marquette with Detroit, & other cities to the eastward. The length of the submarine portion of the line is not stated in the press despatches, which are the source of our information. This cable was laid by the Michigan Telephone Co., & tests of it are said to have been highly satisfactory. It is said that at the time of the tests conversation was carried on between Marquette, Mich., & Pittsburg, Pa.

The Bell Co. has, until recently, on its long distance lines had a time unit of 3 minutes for business east of Toronto, & 5 minutes on business west. A three-minute unit has now been adopted throughout Canada in harmony with the most common practice in other countries. The Michigan Co. has, however, adopted a one-minute unit. Experience shows that a very great proportion of conversations do not extend beyond 2 or 3 minutes. On 5-minute unit business the overcharge was formerly charged at half the initial rate for each period of 5 minutes or fraction thereof. Now, overtime is charged per minute.

A cheap fence telephone system for farmers has been in use in Texas for a long time. At Midland, on the southeastern foot of the great Staked Plain, a large number of outlying cattle ranches are connected with the city telephone system in this manner. Some of the lines are 25 to 50 miles in length, & one is said to be 100 miles long. The distance, owing to the angles, is usually twice the air line length. During ordinary weather they render perfect service, in damp weather they work rather poorly, owing to lack of insulation. The practicability of this plan has been known in that section for some years. It is said to have had its origin in Australia.

The Erie R.R. is equipping a large number of its block signal stations with telephones. On the Erie, electrical communication between block signal cabins is had by means of bells, with the usual English bell code, so that, except where the signal cabin is at or near a station where the Morse telegraph is established, the signalmen have no way of communicating with one another over the wire except by the limited vocabulary of the bell code. The telephones are introduced to make up for this deficiency. They are worked over the same wire which is used for bell signals. The report that the Erie would abandon the bells in some or all of its cabins, & use nothing but telephones for block signalling, is untrue.

The Nova Scotia Telephone Co. has been extending & improving its service for some time past. The whole of that part of the province through which the wires of the Co. are laid now enjoys the benefits derivable from a metallic circuit. The Co. has spent so much money throughout the province in its improvement works, that it has not hitherto had as much funds available for the city of Halifax as the users of the service there could have wished. However, they will have the reward of their patience soon, as the Co. now proposes to install very extensive improvements, one item alone being a \$40,000 switch board at the exchange which will greatly facilitate the handling of the growing traffic over the Co.'s wires.—Maritime Merchant.

New subscribers to the Bell Co.'s exchange outside of the mile limit in Toronto, are being charged an increased rate. The Co.'s agreement with the city, providing for specified rate, having expired, the Co. has reinstated the old extra mileage rate for 'phones over a mile from the exchange. The Co. is not increasing its rates to old subscribers, it is only the new ones that are charged the higher price. In a recent suit against the Gas Co. in Toronto, Judge MacLennan decided that the Co. need not sell gas to everyone who applied for it, even although they were willing to pay the price asked by the Co. Under this precedent the Bell Co. may not be obliged to rent a telephone to anyone who applies for it, unless he is willing to pay the Co.'s rate.

**Dominion Government Telegraph Lines.**

The following table shows the various telegraph lines comprising the Dominion Government Telegraph service :

Points Connected.	Land Lines. Miles.	Cables. Knots.	No. of Offices.
<b>Newfoundland.</b>			
Port au Basque—Cape Ray .....	14		2
<b>Nova Scotia.</b>			
North Sydney—Meat Cove (with loops) .....	147½		13
Across Bras d'Or Channel .....			
St. Ann's Harbour .....			
Ingonish Harbour .....			2
Meat Cove—St. Paul's Island .....		20	
On St. Paul's Island .....			7
Mabou—Cheticamp .....	63		
Barrington—Cape Sable .....	16		Leased.
Across Bear Point Channel .....		1½	
Lt. House Channel .....		1	
<b>New Brunswick.</b>			
Chatham—Escuminac .....	42		5
<b>Bay of Fundy System :</b>			
Eastport—Campobello .....		1½	8
On mainland, Eastport .....			
On Campobello Island .....	7½		
Campobello—Grand Manan .....		7½	8
On Grand Manan Island .....	25½		
Grand Manan—Cheney's Island .....		1	
On Cheney's Island .....		1	
Cheney's Island—Whitehead Island .....		1	

Points Connected.	Land Lines. Miles.	Cables. Knots.	No. of Offices.
<b>Quebec.</b>			
Bay St. Paul—Chicoutimi .....	92		6
Branch St. Alexis to L'Anse St. Jean .....	40		1
Murray Bay—Big Romaine .....	628½		40
Across Saguenay River .....		1½	
Bersimis to Manicouagan .....	12		
Manicouagan to Godbout .....	26		7
Quarantine System :			
Quebec—L'Ange Gardien .....	13		7
L'Ange Gardien Orleans Island .....		2	
On Orleans Island .....	29½		2
Orleans Island—Isle Réaux .....		2	
Isle Réaux .....	2½		2
Isle Réaux—Grosse Isle .....		2	
On Grosse Isle (all told) .....	3½		10
Anticosti System :			
Gaspé—L'Anse à Fougère .....	28		
L'Anse à Fougère—Anticosti .....		44½	10
On Anticosti Island .....	223½		
Anticosti—Long Point, Mingan .....		21	9
Meat Cove (C.B.)—Magdalen Islands .....		55½	
On Magdalen Islands .....	83		
<b>Ontario.</b>			
<b>Pelee Island System :</b>			
Leamington—Point Pelee .....	12		10
Point Pelee—Pelee Island .....		9½	
On Pelee Island .....	12½		
<b>North-west.</b>			
Qu'Appelle—Edmonton and St. Albert .....	607½		15
Moosejaw—Wood Mountain .....	903		2
<b>British Columbia.</b>			
Ashcroft—Barkerville .....	276½		8
Kamloops—Lower Nicola .....	67		*
Alberni—Cape Beale .....	57		*
Victoria—Cape Beale .....	118		7
Nanaimo—Comox and Alberni .....	110½		8
Ashcroft—Lillooet .....	62		1
<b>Yukon.</b>			
Lake Bennett—Dawson & Atlin .....	639		*
<b>Total .....</b>	<b>3,514½</b>	<b>207½</b>	<b>164½</b>

\* The number of offices on these lines are not given.  
† Not including lines marked thus \*.

The line from Port au Basque, N'f'd., to Cape Ray is operated under agreement with the Anglo-American Telegraph Co. The Ashcroft-Barkerville line & the Victoria-Cape Beale line in B.C. are operated by the C.P.R. Co.'s telegraphs, which retains the revenue, the Government reimbursing the excess of expenditure over revenue.

Work is going on on the completion of telegraph communication all around the coast of Cape Breton, by filling in the gap of about 40 miles between Cheticamp & Meat Cove.

On the north shore of the St. Lawrence the line from Murray Bay to Big Romaine, 628½ miles, is being extended to Chateau Bay opposite Belle Isle, a further distance of 315 miles, the contract calling for its completion by June 30.

During the past fiscal year, the following lines were built: Alberni to Cape Beale, Vancouver Island, 57 miles; Kamloops to Lower Nicola, B.C., 67 miles. This line has since been converted into a telephone line.

The expenditure on the various lines during the past fiscal year was \$88,503.59, & the revenue \$10,472.99.

The line now being built from Quesnelle, B.C., to Atlin, to connect with the line to the Yukon, is expected to be completed by Nov. J. B. Charleson, who is in charge of construction, stated at Vancouver recently, that he had inspected the line as far as constructed, to 90 miles beyond Quesnelle and 45 miles beyond Blackwater, or 310 miles from Ashcroft. There were 50 men engaged on the Ashcroft end, besides packers. Two lines have been strung across the Fraser River 3 miles above Quesnelle. They stretch 1,200 ft. from shore to shore, without supports.

The last report from the Atlin end, on May 3, said the 50 men engaged at that end had wires up 75 miles from Atlin, and had spanned the Nakeena with 2 wires. That chasm is 700 ft. high, & 2 heavy cables had to be strung to get supplies across. The report said the Teslin trail would be reached in 10 days. Mr. Charleson says that after Teslin is passed very rapid progress will be made to Telegraph Creek, but the Ashcroft end will be completed to Hazelton before the men on the Atlin end can reach there, though he believes that the circuit will be completed at Hazelton quite within the specified time. There are about 800 miles of country yet to cover.

**Among the Express Companies.**

Both the Canadian & Dominion Ex. Co.'s staffs have contributed liberally to the Canadian Patriotic Fund.

The Dominion Ex. Co. has opened a route on the extension of the C.P.R.'s Pipestone branch, between Menteith Jct., Man., & Antler, Assa.

Plans are being prepared for additions to the Union station, Toronto, to give the Dominion & Canadian Ex. Co.'s more room for their rapidly increasing business.

The Dominion Ex. Co. has opened the following offices: Antler, Assa.; Erickson, B.C.; Fort Frances, Mine Centre, Hammond, Melville Jct., Niagara, Queenston, Ont.

The Dominion Ex. Co. has re-opened for the navigation season its routes on the Niagara Navigation Co.'s steamers between Toronto, Niagara & Queenston, Ont., & on the Rainy River Navigation Co.'s steamers be-

tween Rat Portage, Fort Frances & Mine Centre, Ont.

The Dominion Ex. Co. has placed another large order with the Acton Burrows Co., Toronto, for enamelled iron signs. They will be lettered "Office, Dominion Express Co.," in white letters on blue ground, on both sides, & will be made with a flange so as to project from buildings.

An Havana correspondent writing of advertising in Cuba, says: "The Cuban & Pan-American Ex. Co. fills large space in the Havana Herald telling of its facilities to handle goods in all parts of Cuba. The Southern Ex. Co. advertises that it will 'Pawn and Redeem Goods in All Parts of the World,' & send money by order & guarantee that 'you can get your money back if the order is lost.'"

# ENAMELED IRON PLATES

For Doors, etc., in Stations, Steamships, Ferries, Hotels, Offices, etc., carried in Stock for Prompt Delivery.

Any of these Plates can be shipped on the day an order is received.

## SMOKING ROOM

Size 23 x 3 1/2 inches. Oblong, fancy ends, white ground, blue letters, lined & tipped:

Agent's Office.	Waiting Room.
Express Office.	General Waiting Room.
Freight Office.	Ladies' Waiting Room.
General Offices.	Men's Waiting Room.
Private Office.	Dining Room.
Ticket Office.	Lunch Room.
Telegraph Office.	Restaurant.
Baggage Room.	Ladies' Toilet.
Smoking Room.	Men's Toilet.
Smoking Prohibited.	No Admittance.
	Trespassers Prosecuted.

## STICK NO BILLS

Size 18 x 3 1/2 inches. Oblong, square ends, white ground, blue letters, lined & tipped.

Furnished Apartments. Stick no Bills. Please Shut the Door.



Oval, size 2 x 3 inches, white ground, blue letters, tipped, hollowed, lettered **Push, Pull**, as above.

Oblong, square ends, size 3 x 1 1/2 inches, white ground, blue letters, tipped, lettered **Push, Pull**, as above.

Perpendicular, square ends, size 12 x 3 inches, white ground, blue letters, lined & tipped, lettered perpendicularly, **Push, Pull**.

Oblong, square ends, size 12 x 3 inches, white ground, blue letters, lined and tipped, lettered horizontally, **Push, Pull**.

Oblong, fancy ends, size 3 x 1 3/8 inches, white ground, blue letters, lined and tipped, lettered **Push, Pull**.

## NO ADMITTANCE

Size 10 x 2 1/2 inches. Oblong, oval ends, white ground, blue letters, lined & tipped, hollowed:

Bar Room.	Men.
Luggage Room.	Private.
Office.	No Admittance.
Refreshments.	No Road.
Exit.	Boarding House.
Fire Escape.	Private Board.
Lavatory.	Dressmaking.
Ladies.	Fresh to Day.
Women.	Teas Provided.
Gentlemen.	Please Shut the Gate.

Size 14 x 3 inches. Oblong, oval ends, white ground, blue letters, lined and tipped.

No Admittance.

## ENAMELED IRON SIGNS.

For Steam & Electric Railways, Steamship, Express, Telegraph, Telephone & Advertising Purposes, of every description, size & color, made to order.

Railway Station Names, Switch Targets, Semaphore Arms, Whistle & Diamond Crossing Signs, Numbers for Railway Bridges, Sections, Mileage Signal Houses, etc.; Street Car Route Signs; Steamship & Ferry Signs; Express, Telegraph & Telephone Office Signs; Agency, Office, Store, Wagon, Cart & Advertising Signs; Street Names & Numbers; Door Numbers.

These signs last practically for ever, they never fade or tarnish, they are ever bright and attractive, they are absolutely impervious to heat or cold, they are the only signs that will withstand the effects of weather in all climates.

For Prices, Illustrated Catalogues, etc., address

## THE ACTON BURROWS COMPANY,

29 Melinda Street, - - Toronto, Canada.

# STEEL

## LaBelle Steel Co.

Pittsburgh, Pa.

MANUFACTURERS OF  
**FINE TOOL STEEL**  
For Railway Purposes  
Track Tools,  
Punches, Dies,  
Drills, Magnets, etc.

And all purposes where requirements are exacting.  
Steel Forgings. Case Hardening Steel.

**W. G. BLYTH,**  
Agent for Canada,

31 Melinda St., - Toronto

Sale One Hundred Millions a year.

# RIPANS

THE WONDERFUL MEDICINE

They relieve Distress from Dyspepsia, Indigestion and Too Hearty Eating: are a perfect remedy for Dizziness, Nausea, Drowsiness, Bad Taste in the Mouth, Coated Tongue, Pain in the Side, TORPID LIVER.

They regulate the Bowels. They Cure Sick Headache. A Single One Gives Relief.

**WANTED**

A case of bad health that RIPANS will not benefit. RIPANS, 10 for 7 cents, or 12 packets for 48 cents, may be had of all druggists who are willing to sell a low-priced medicine at a moderate profit. They banish pain and prolong life. One gives relief. Accept no substitute.

Note the word RIPANS on the packet.

Send 5 cents to Ripans Chemical Co., No. 10 Spruce St., New York, for 10 samples and 1,000 testimonials.

# The Purchasing Agents' Guide

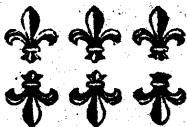
To the Manufacturers of & Dealers in Steam & Electric Railway, Steamship, Express, Telegraph & Telephone supplies, &c.

<b>Accident Insurance</b> Travelers' Insurance Co. .... Montreal.	<b>Grain Elevators</b> John S. Metcalf Co. .... Chicago, Ill.	<b>Shipbuilders' Tools &amp; Supplies</b> Rice Lewis & Son. .... Toronto.
<b>Aerated Waters</b> E. L. Drewry ..... Winnipeg.	<b>Groceries</b> The Hudson's Bay Company. ....	<b>Ships</b> Polson Iron Works ..... Toronto.
<b>Air Brakes &amp; Fittings</b> Westinghouse Mfg. Co. .... Hamilton, Ont.	<b>Half Tones</b> Acton Burrows Co. .... Toronto.	<b>Shovels</b> James Cooper ..... Montreal. The Fairbanks Co. .... Montreal. The Hudson's Bay Company. .... Toronto. Rice Lewis & Son. .... Toronto.
<b>Ales</b> E. L. Drewry ..... Winnipeg.	<b>Hand &amp; Push Cars</b> F. E. Came ..... Montreal. The Fairbanks Co. .... Montreal.	<b>Signal House Numbers</b> Acton Burrows Co. .... Toronto.
<b>Anchors</b> Rice Lewis & Son. .... Toronto.	<b>Hardware</b> Rice Lewis & Son. .... Toronto. The Hudson's Bay Company. ....	<b>Signals</b> Noah L. Piper & Sons. .... Toronto.
<b>Axles</b> James Hutton & Co. .... Montreal. Rhodes, Curry & Co. .... Amherst, N.S.	<b>Headlights</b> Noah L. Piper & Sons. .... Toronto.	<b>Signs</b> Acton Burrows Co. .... Toronto.
<b>Rabbit</b> Rice Lewis & Son. .... Toronto.	<b>Hose</b> Rice Lewis & Son. .... Toronto.	<b>Snow Ploughs</b> Rhodes, Curry & Co. .... Amherst, N.S.
<b>Beams</b> Canada Foundry Co. .... Toronto.	<b>Illustrations</b> Acton Burrows Co. .... Toronto.	<b>Spikes</b> Rice Lewis & Son. .... Toronto.
<b>Blankets &amp; Bedding</b> The Hudson's Bay Company. ....	<b>Iron</b> Canada Foundry Co. .... Toronto. Rice Lewis & Son. .... Toronto.	<b>Station Name Signs</b> Acton Burrows Co. .... Toronto.
<b>Block &amp; Tackle</b> Rice Lewis & Son. .... Toronto.	<b>Iron Signs</b> Acton Burrows Co. .... Toronto.	<b>Steamboats</b> Polson Iron Works. .... Toronto.
<b>Boat Fittings &amp; Hardware</b> Rice Lewis & Son. .... Toronto.	<b>Japans</b> McCaskill, Dougall & Co. .... Montreal.	<b>Steamboat Signs</b> Acton Burrows Co. .... Toronto.
<b>Boiler Covering</b> Mica Boiler Covering Co. .... Montreal.	<b>Lager Beer, &amp;c.</b> E. L. Drewry ..... Winnipeg.	<b>Steam Shovels</b> James Cooper ..... Montreal.
<b>Boilers</b> Polson Iron Works. .... Toronto.	<b>Lamps &amp; Lanterns</b> Rice Lewis & Son. .... Toronto. Noah L. Piper & Sons. .... Toronto. The Hudson's Bay Company. ....	<b>Steel</b> W. G. Blyth ..... Toronto. James Hutton & Co. .... Montreal. Rice Lewis & Son. .... Toronto.
<b>Bolts</b> Rice Lewis & Son. .... Toronto.	<b>Launches</b> Polson Iron Works. .... Toronto.	<b>Steel Castings</b> F. E. Came ..... Montreal.
<b>Brake Shoes</b> F. E. Came ..... Montreal.	<b>Life Insurance</b> Independent Order of Foresters ..... Toronto. Travelers' Insurance Co. .... Montreal.	<b>Switch Targets</b> Acton Burrows Co. .... Toronto.
<b>Canada Foundry Co. .... Toronto.</b>	<b>Linoleum and Floor Coverings</b> The Hudson's Bay Company. ....	<b>Switches</b> F. E. Came ..... Montreal. Canada Foundry Co. .... Toronto.
<b>Bridge Numbers</b> Acton Burrows Co. .... Toronto.	<b>Locomotives</b> Baldwin Locomotive Works. .... Philadelphia, Pa. Richmond Locomotive & Machine Works. .... Richmond, Va.	<b>Telegraph Office Signs</b> Acton Burrows Co. .... Toronto.
<b>Brackets</b> Rice Lewis & Son. .... Toronto.	<b>Lubricators</b> Rice Lewis & Son. .... Toronto.	<b>Telegraph Spoons</b> Rice Lewis & Son. .... Toronto.
<b>Carpets</b> The Hudson's Bay Company. ....	<b>Matches</b> The Hudson's Bay Company. ....	<b>Telephone Office Signs</b> Acton Burrows Co. .... Toronto.
<b>Cars</b> Rhodes, Curry & Co. .... Amherst, N.S.	<b>Milepost Numbers</b> Acton Burrows Co. .... Toronto.	<b>Tires</b> James Hutton & Co. .... Montreal.
<b>Car Wheels</b> Rhodes, Curry & Co. .... Amherst, N.S.	<b>Mohair</b> The Hudson's Bay Company. ....	<b>Tobacco and Cigars</b> The Hudson's Bay Company. ....
<b>Castings</b> Canada Foundry Co. .... Toronto. Rhodes, Curry & Co. .... Amherst, N.S.	<b>Numbers</b> Acton Burrows Co. .... Toronto.	<b>Toilet Paper</b> The Hudson's Bay Company. ....
<b>Chains</b> Rice Lewis & Son. .... Toronto.	<b>Oakum</b> Rice Lewis & Son. .... Toronto. The Hudson's Bay Company. ....	<b>Tools</b> Rice Lewis & Son. .... Toronto.
<b>Gross Arms, Top Pins &amp; Slide Blocks</b> The Firstbrook Box Co. .... Toronto.	<b>Oils</b> Galena Oil Co. .... Franklin, Pa. The Queen City Oil Company. .... Toronto.	<b>Track Jacks</b> Duff Manufacturing Co. .... Allegheny, Pa. A. O. Norton ..... Coaticook, Que.
<b>Curtains</b> The Hudson's Bay Company. ....	<b>Office Signs</b> Acton Burrows Co. .... Toronto.	<b>Track Tools</b> F. E. Came ..... Montreal. James Cooper ..... Montreal. Rice Lewis & Son. .... Toronto.
<b>Cuts</b> Acton Burrows Co. .... Toronto.	<b>Packing</b> The Fairbanks Co. .... Montreal.	<b>Trucks</b> The Fairbanks Co. .... Montreal. Rice Lewis & Son. .... Toronto.
<b>Door Signs</b> Acton Burrows Co. .... Toronto.	<b>Pipe Covering</b> Mica Boiler Covering Co. .... Montreal.	<b>Uniform Caps</b> W. H. Coddington. .... Hamilton, Ont.
<b>Drills</b> The Fairbanks Co. .... Montreal.	<b>Pipes</b> Canada Foundry Co. .... Toronto.	<b>Union Couplings</b> E. M. Dart Manufacturing Co. .... Providence, R.I.
<b>Dry Goods</b> The Hudson's Bay Company. ....	<b>Plinths</b> The Hudson's Bay Company. ....	<b>Varnishes</b> McCaskill, Dougall & Co. .... Montreal.
<b>Electric Car Route Signs</b> Acton Burrows Co. .... Toronto.	<b>Pneumatic Tools</b> F. E. Came ..... Montreal.	<b>Vessels</b> Polson Iron Works ..... Toronto.
<b>Emery Wheels</b> The Fairbanks Co. .... Montreal.	<b>Porter</b> E. L. Drewry ..... Winnipeg.	<b>Waste</b> Rice Lewis & Son. .... Toronto. Noah L. Piper & Sons. .... Toronto. The Queen City Oil Co. .... Toronto.
<b>Enameled Iron Signs</b> Acton Burrows Co. .... Toronto.	<b>Portland Cement</b> Rice Lewis & Son. .... Toronto.	<b>Water Meters</b> Westinghouse Mfg. Co. .... Hamilton, Ont.
<b>Engines, Stationary &amp; Marine</b> Polson Iron Works. .... Toronto.	<b>Printing</b> The Hunter, Rose Co. .... Toronto. The Mail Job Printing Company. .... Toronto.	<b>Water Tanks</b> The Fairbanks Co. .... Montreal.
<b>Engraving</b> Acton Burrows Co. .... Toronto. Toronto Engraving Co. .... Toronto.	<b>Pumps</b> Rice Lewis & Son. .... Toronto.	<b>Wheelbarrows</b> James Cooper ..... Montreal. The Fairbanks Co. .... Montreal. Rice Lewis & Son. .... Toronto.
<b>Express Office Signs</b> Acton Burrows Co. .... Toronto.	<b>Rails (New)</b> James Cooper ..... Montreal. Rice Lewis & Son. .... Toronto.	<b>Window Blinds</b> The Hudson's Bay Company. ....
<b>Fencing</b> Page Wire Fence Co. .... Walkerville, Ont.	<b>Balls (for relaying)</b> James Cooper ..... Montreal.	<b>Wines and Liquors</b> The Hudson's Bay Company. ....
<b>Ferry Signs</b> Acton Burrows Co. .... Toronto.	<b>Rail Saws</b> F. E. Came ..... Montreal.	<b>Wire &amp; Wire Rope</b> Rice Lewis & Son. .... Toronto.
<b>Flags</b> Rice Lewis & Son. .... Toronto. The Hudson's Bay Company. ....	<b>Rivets</b> Rice Lewis & Son. .... Toronto.	<b>Yachts</b> Polson Iron Works. .... Toronto.
<b>Foghorns</b> Rice Lewis & Son. .... Toronto.	<b>Rope</b> Rice Lewis & Son. .... Toronto. The Hudson's Bay Company. ....	
<b>Frogs</b> Canada Foundry Co. .... Toronto.	<b>Scales</b> The Fairbanks Co. .... Montreal.	
<b>Gas &amp; Gasoline Engines</b> The Fairbanks Co. .... Montreal. Northey Manufacturing Co. .... Toronto.	<b>Semaphore Arms</b> Acton Burrows Co. .... Toronto.	
<b>Gas</b> Page Wire Fence Co. .... Walkerville, Ont.	<b>Shafting</b> Rice Lewis & Son. .... Toronto.	
<b>General Supplies</b> The Hudson's Bay Company. ....		

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