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Vol. 1. No. 10.

TORONTO, CANADA, DECEMBER, 1898.

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THE Railway and Shipping World

Devoted to Steam & Electric Railway, Shipping, Express, Telegraph & Telephone Interests.

VOL. I., No. 10.

TORONTO, CANADA, DECEMBER, 1898.

\$1 A YEAR.

The President of the C.F.A.

Chas. J. Smith was born at Hamilton, Ont., March 10, 1862, & was educated at Hamilton High School & Wentworth College. He entered the railway service in 1879, since which he has been consecutively, 1879 to 1880, clerk local freight office Hamilton & North-western Ry. at Hamilton; 1880 to 1882 with Audit & Purchasing Department Chicago & Alton Ry.; 1882 to May, 1885, in Construction Department C.P.R.; June, 1885 to 1886, in Traffic Department New York, Lake Erie & Western Ry.; 1886 to 1888 Chief Clerk to General Manager Chicago & Atlantic Ry.; Jan., 1888, to July, 1888, in Traffic Department Sault Ste. Marie Line; July, 1888, to Jan., 1890, in Traffic Department St. Paul, Minneapolis & Manitoba Ry.; Jan., 1890, to April 30, 1898, General Freight & Passenger Agent Canada Atlantic Ry., & appointed General Traffic Manager Canada Atlantic System May 1, 1898. Mr. Smith has for several years been a prominent member of the Canadian Freight Association, of which he is now President.

Politics & the Intercolonial.

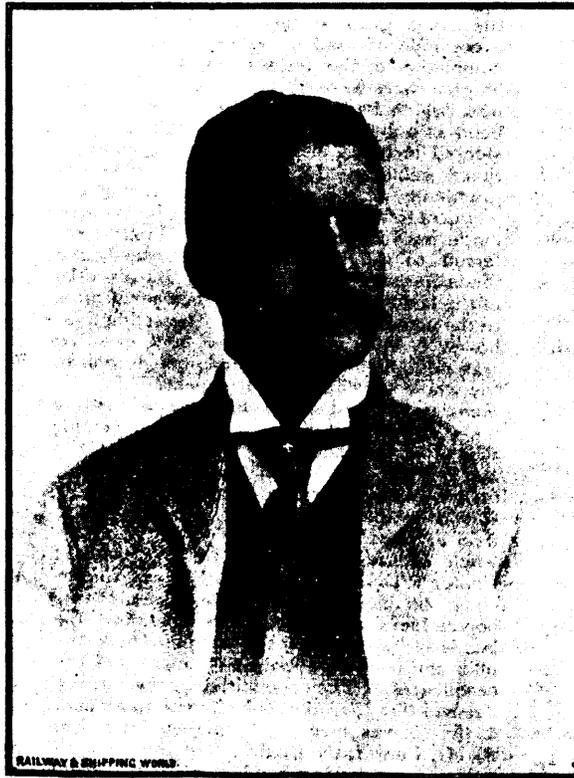
Mechanical Superintendent Joughins occupies a house at Moncton, adjacent to the General Offices, & owned by the Government. The fact that the plumbing is being replaced by a more modern system, is used by Opposition papers or political purposes, & it is gravely stated that if this is a specimen of Mr. Joughins' economy increasing deficits may be looked for on the I.C.R. We have no mission to defend the Minister of Railways, that is a matter that can be attended to by the Liberal newspapers, but as representing the railway interests of Canada we must protest against such a style of political warfare. Mr. Joughins went to the I.C.R. with an excellent record. We know that in the Master Mechanics' Association, composed of the chief mechanical officers of nearly every road in America, he stands very high as an authority, & we think he should get fair play from the political newspapers. If he is not hampered by political interference, he will, we are satisfied, make a good record on the I.C.R., & if given a free hand, as he should be, we think he would make a marked & much-needed improvement in the general condition of the equipment in a very short time.

Politics are the curse of Canadian Government railways. With the Liberals in power, the Conservative press attacks almost every act of the management. With the Conservatives in power the Liberal press followed a similar policy. As long as this state of affairs, aggravated by similar conduct of members in Parliament, continues, so long will the permanent officials be hampered in their work & prevented from making the service as efficient as it should be. A Government

which would have the courage to change the present system, to clothe the officials with full powers, & to remove them from the sphere of political interference, would perform a service of unbounded importance. That such a step will be taken this side of the millennium is, however, very unlikely.

Alberta Railway & Coal Co.

At the recent annual meeting in London, Eng., the following directors were re-elected: E. T. Galt, Lethbridge, Alta., President; Col. K. R. B. Wodehouse, London, Vice-President; W. Burdett-Coutts, M.P., E. Crabb, Hon. T. C. Farrer, & E. Waterhouse, Lon-



CHARLES J. SMITH.

don; Sir R. W. Cameron, New York, W. M. Ramsay, Montreal. T. Davidson, Montreal, having declined re-election, H. Joseph, Montreal, was elected in his place. Following are extracts from the annual report:

The Lethbridge-Dunmore section of the railway was taken over Dec. 31 last by the C.P.R. Co. in terms of agreement, & the purchase money received. Out of the purchase consideration the Canada Life loan of \$550,000 was repaid, & £82,907 15s. 6d. appropriated towards paying off a portion of the "B" debenture stock.

The business of the Co. during the year was satisfactory. The coal sales in Canada

reached 96,964 tons as against 76,371 the previous year. The Montana coal sales amounted to 38,735 tons compared with 39,809 tons, but the general freight earnings, apart from coal traffic, of the Montana railway were \$64,383.77 against \$38,138.15. This increase of business is mainly attributable to the improved commercial conditions prevailing in the Northwest.

There is a net credit balance in the balance sheet of £6,453 19s. 8d. By a resolution of the "A" debenture stockholders, passed in 1896, it was provided that "during the period of 5½ years ending June 30, 1900, the interest on the 'A' debenture stock shall be non-cumulative, & shall only be payable in respect of each year, exclusively out of the surplus net revenue of the Co. for that year," & it was further provided that subject to the provisions in the resolution, "the Co.'s auditors shall each year certify the amount of the surplus net revenue applicable for payment of interest in respect of that year to the 'A' debenture stockholders, & the same shall be paid to them pro rata forthwith." The auditors have certified that £6,453 19s. 8d. can now be divided amongst the "A" debenture stockholders, or equivalent to £2 11s. 6d. % on the £250,000 of "A" stock. Warrants in payment of interest at that rate have been sent to the "A" holders.

Coal sales since June 30 last, both in Canada & Montana, are better than for the same period last year. The general freight earnings are also larger.

The Crow's Nest Pass extension of the C.P.R., now about completed, will bring Lethbridge into direct communication with the Nelson, Slocan & Rossland mining districts. The President reports that the Co. has not benefited to any great extent from the construction of this extension, for the reason that it has not yet reached these mining districts; but he is of opinion that upon its completion increased passenger business on the Montana railway may reasonably be looked for, as there should be considerable travel between Montana & B.C., both being important mining countries.

For a considerable time past the directors have given their closest attention to projects having for their object the irrigation & colonization of the lands. Their efforts have met with a measure of success. The Alberta Irrigation Co. was some time ago incorporated by the Dominion Parliament, with a capital of \$400,000, & of this \$200,000 have within the last few months been issued & subscribed for in cash. After a special inspection & report by J. Head & Son, a contract has been entered into between the Alberta Co., the Lethbridge Land Co., & the Alberta Irrigation Co., whereby the 2 first-named companies have in effect sold to the last-named Co. 100,000 acres of land at \$1.25 an acre, payable in instalments, with the right to the Irrigation Co. to purchase up to an additional 150,000

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TORONTO, CANADA, DECEMBER, 1898.

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NEXT ANNUAL MEETING at Toronto, Sep. 20, 1899.

Canadian Ticket Agents' Association.

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EXECUTIVE COMMITTEE, J. A. Macdonald, Arnprior, Ont.; W. H. Harper, Chatham, Ont.; C. E. Morgan, Hamilton, Ont.; T. Long, Port Hope, Ont.; A. Calder, Winnipeg.

NEXT ANNUAL MEETING at Winnipeg, Oct. 13, 1899.

acres at the same rate an acre, the right to be exercised on or before July 1, 1901. The Irrigation Co. has commenced operations, & it is anticipated that before the end of 1900 a large area of land will be irrigated & capable of raising good crops. The directors are of opinion that the Alberta Co.'s business should be considerably benefited by the work of the Irrigation Co., whose object it is to effect not only the irrigation but the colonization of the lands. It seems clear that with the successful irrigation & settlement of the lands sold to the Irrigation Co., the remaining lands be-

longing to the Alberta Co. & to the Lethbridge Land Co. should become more valuable & saleable, & the coal sales & traffic of the railway should be increased.

The revenue account for the year ended June 30, 1898, is summarized as follows:

By balance on following accounts.	£	s.	d.
Railway & colliery.....	21,409	4	0
House rents & water privileges.....	354	16	8

£21,762 0 8

To general expenses in Canada.....	£	s.	d.
" expenditure in London.....	3,656	10	10
" expense sale old rails & rolling stock & repairs to old rolling stock.....	1,183	13	10
" legal & other expenses re transfer to C.P.R. Co. of Lethbridge-Dunmore Ry.....	462	18	7
" taxes.....	425	10	5
" trustees' remuneration.....	1,013	6	11
" directors' fees.....	300	0	0
" exchange on cheques & bank charges.....	900	0	0
" interest on loan from Canada Life Co.....	164	6	6
" interest on prior debenture stock.....	3,107	17	6
" balance carried to balance sheet.....	4,000	0	0
	6,647	16	1

£21,762 0 8

Manitoba & Northwestern Bondholders.

At a meeting of 1st mortgage bondholders in London, Eng., Nov. 11, Col. F. D. Grey, one of the trustees, who presided, gave a history of the Co. since their connection with it, showing that in 1896 the Co., under powers received from the Dominion Parliament, made an issue of mortgage bonds to the amount of £540,000. The Manitoba Legislature made the Co. a grant of 6,400 acres of land for every mile of road completed; thus, on the completion of the 1st section, 180 miles in length, there were 1,152,000 acres, less 74,000, which had previous to the bond issue been sold by the Co., which might be considered included in their mortgage as additional security. In 1893 immigration was practically at a standstill, & default in the payment of their interest on the bonds was made on June 1 of that year. He then referred to the litigation which ensued, the funds for which were raised by six-sevenths of the bondholders entrusting their certificates to the committee appointed. The action was, however, still pending. The land question was now, he believed, settled upon terms on the whole satisfactory. It appeared that the Railway Co. had sold some acres of land, & had received part of the purchase money for the same. It had been arranged that the Railway Co. should find the warrants for 1/2 of this land, & warrants for the remaining 1/2 should be found by the Trustees, they being paid \$2.30 an acre, the average at which the whole of the land was realized. Clients of Coates & Co., in Canada, had offered to purchase, en bloc, the certificates issued by the bondholders' committee, thus obtaining the bonds represented by the certificates, & the offer had been accepted by the owners of the certificates. The committee consequently deemed that their duties had come to an end, & that it was incumbent on them to retire. As Mr. Coates, the Chairman of the committee, was no longer a bondholder, it might be that this action would not be continued by him; at any rate, some of the bondholders—the outstanding one-seventh—might desire to be represented on those proceedings, & therefore he had thought it right to call them together, so that if they thought it desirable they might combine & take such steps as might be necessary for the purpose. They had instructed Ewart, Fisher & Co., their solicitors in Manitoba, to represent the matter properly to the court, but they might consider independent action desirable.

It was afterwards agreed that the bondholders who had not supported the committee in their action should meet & consider whether they should become parties in the suit, as suggested by the Chairman. They after-

wards met in private, & as a result, a circular signed "Randall Mercer, Chairman of the Committee," & marked "urgent" was issued on Nov. 22 to the English holders of the bonds. The circular says: "As an action is now pending in the Canadian courts for foreclosure & sale of the railway, it seemed to those of the holders of bonds in this country who attended the recent meeting that, unless the remaining English bondholders speedily arrange to be officially represented at this juncture, they may find when too late that the property which has been mortgaged to them in conjunction with the other holders of bonds has been parted with for such a sum as will yield an inadequate—possibly an infinitesimal—return for the moneys loaned by them to the Co. Under these circumstances, the bondholders who attended the meeting elected certain of their number to constitute a committee to watch over your interests & take such action at once & from time to time as, in their judgment, may appear desirable to protect them. The committee beg that you will, in your own interest, give them your support, & enable them to act promptly. It is hoped that when the purchasers of the majority of the bonds have the facts placed before them they may see their way to offer at least the same terms to the minority as were obtained by the majority, & every effort will be made to bring about an amicable settlement. At the same time the committee desire to be empowered to enforce their rights, should they deem it in your interests to do so, by taking legal proceedings. If you are still a bondholder, will you communicate to us, by return of post if possible, the amount of your holding & the distinctive numbers of your bonds; but, if you have already parted with your bonds, will you kindly communicate to us the name & address of the buyer, or of the banker or broker through whom they were sold?"

A Duluth S. S. & A. Suit.

A suit has been begun in the U.S. Circuit Court by J. E. Burwind, on behalf of himself & other stockholders of the North Star Construction Co., against the C. P. Ry. Co., the Duluth, South Shore & Atlantic Ry. Co., & Sir Wm. Van Horne, to compel them to make an accounting of their management of the North Star Construction Co. & other companies under its control, & to pay over all profits accruing from such management.

The plaintiff alleges that the N. S. Construction Co. was organized under the laws of New Jersey in 1888 for the purpose of constructing the Minnesota line of the Duluth & Winnipeg Ry. The construction company was to receive payment in the bonds & stock of the railway company. In 1892 a majority of the stock of the construction company was transferred or sold to the C. P. R. through Sir Wm. Van Horne, he agreeing to pay the debts of the construction company, & to hold the stock sold through him until bonds of the construction company could be marketed & the amount of the debts repaid with the proceeds.

The construction company gave a promissory note for \$710,000, secured by the assets, bonds & stocks of the Duluth & Winnipeg Ry., the North Star Iron Co. & the Duluth & Winnipeg Terminal Co. In Nov., 1894, a demand was made by the C. P. R. Co. for the payment of the note, in alleged violation of the agreement on the part of Sir William to hold the stock. The Board of Directors of the construction company, elected through the influence of the C. P. R. Co., the complainant alleges, notified the C. P. R. representative, who had demanded payment of the note, that they could not pay it, whereupon all the securities deposited by the construction company were sold & bought in by the repre-

sentative of the C. P. R. Co. at a price far below their value, the proceeds not being sufficient to defray the note in full.

The C. P. R. Co. instituted proceedings against the Duluth & Winnipeg Ry. Co. to compel it to pay a balance alleged to be due the construction company. Judgment was obtained, & the C. P. R. obtained control of the Duluth & Winnipeg road in the fall of 1896, & with it of the allied corporations. In the place of these the C. P. R. organized the Duluth, South Shore & Atlantic Ry. Co., & it is alleged, in the summer of 1898 the defendants transferred all of the original securities deposited by the construction company to persons under the defendants' control at a price more than sufficient to pay the entire indebtedness of the North Star Construction Co., & to pay to the stockholders of the construction company more than the par value of their stock.

Grand Trunk Earnings, Expenses, &c.

The following statement of earnings supplied from the Montreal office, includes the G. T. of Canada, the Chicago & G. T., & the Detroit, Grand Haven & Milwaukee Rys:

	1898	1897	Decrease	Increase
July.....	\$1,860,884	\$1,992,628	\$131,744	
August.....	1,992,802	2,091,235	98,433	
Sept.....	2,261,148	2,341,960	80,812	
Oct.....	2,260,573	2,348,463	87,890	
Nov.....	2,190,079	2,162,726		\$27,353
	\$10,565,486	\$10,937,012	\$371,526	\$27,353

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

GRAND TRUNK RAILWAY.

Revenue statement for October:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£382,258	£404,290		£22,032
Working expenses..	237,759	245,363		7,604
Net profit.....	144,499	158,927		14,428

Aggregate for 4 months to Oct. 31:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£1,407,861	£1,501,374		£93,513
Working expenses..	892,316	942,883		50,567
Net profit.....	515,545	558,491		42,946

CHICAGO & GRAND TRUNK RAILWAY.

Revenue Statement for October:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£63,674	£58,787	£4,887	
Working expenses..	54,018	49,838	4,180	
Net profit.....	9,656	8,949	707	

Aggregate for 4 months to Oct. 31:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£238,877	£226,731	£12,146	
Working expenses..	196,653	198,109		£1,456
Net profit.....	42,224	28,622	13,602	

DETROIT, GRAND HAVEN & MILWAUKEE.

Revenue statement for October:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£18,567	£20,982		£2,415
Working expenses..	13,059	13,932		873
Net profit.....	5,508	7,050		1,542

Aggregate for 4 months to Oct. 31:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£74,228	£80,172		£5,944
Working expenses..	51,469	54,347		2,878
Net profit.....	22,759	25,825		3,066

RECEIPTS OF THE SYSTEM.

From July 1 to Nov. 30, the receipts were:

	1898.	1897.	Increase.	Decrease.
Grand Trunk.....	£1,781,220	£1,877,950		£96,721
Chicago & G. T.	298,944	277,708	£21,236	
D., G. H. & M.	90,778	91,670		892
Total.....	£2,170,942	£2,247,328		£76,386

Mileage both years, G. T., 3,512; C. & G. T. 335; D., G. H. & M. 189. Total 4,036.

DETAILS OF GRAND TRUNK RECEIPTS.

	1898.	1897.
Passengers, number.....	2,757,432	2,553,628
amount.....	£421,485	£453,624

Immigrants, number.....	5,177	4,137
amount.....	£2,930	£2,654
Mails, express, &c.....	71,506	73,359
Freight, tons.....	3,031,750	3,364,994
amount.....	£86,617	£954,452
Miscellaneous receipts.....	42,327	18,287
Total.....	£1,407,865	£1,501,376
Decrease.....	93,511	

C. P. R. Earnings & Expenses.

The gross earnings, working expenses, net profits & increases or decreases over 1897 from Jan. 1, 1898, are as under:

	Earnings.	Expenses.	Net Profits.	Increase or decrease.
Jan. 1, 1898.....	\$1,672,372.04	\$1,156,744.45	\$515,627.59	\$142,284.49+
Feb. 1, 1898.....	1,494,595.98	1,070,929.62	423,667.36	38,844.28+
Mar. 1, 1898.....	2,079,479.06	1,326,245.55	753,233.51	233,020.67+
April 1, 1898.....	1,958,461.88	1,241,371.19	717,090.69	89,973.35+
May 1, 1898.....	2,252,999.16	1,326,336.85	926,662.31	51,092.47+
June 1, 1898.....	2,138,110.04	1,320,714.67	817,395.37	68,731.93+
July 1, 1898.....	2,051,363.27	1,320,674.48	730,688.79	183,670.08-
Aug. 1, 1898.....	2,210,865.29	1,327,838.41	883,026.88	121,380.23+
Sep. 1, 1898.....	2,396,385.29	1,303,871.63	1,092,513.66	32,622.62+
Oct. 1, 1898.....	2,688,730.39	1,432,884.90	1,255,845.49	158,092.79-

\$20,943,363.40 \$12,827,611.75 \$8,115,751.65 \$55,162.85+ + Increase. - Decrease.

The approximate earnings for Nov., 1898 were \$2,457,000.00, against \$2,537,000.00 in Nov., 1897, a decrease of \$80,000.00.

AUXILIARY LINES.

DULUTH, SOUTH SHORE & ATLANTIC.—The approximate earnings for Nov. were \$132,996, as compared with \$127,592 for the corresponding period, an increase of \$5,404.

The net earnings for Sep. were \$52,458, as against \$57,002, for corresponding period. The net earnings for the 9 months to Sep. 30 were \$477,549, as against \$383,580 for corresponding period.

MINERAL RANGE, HANCOCK & CALUMET.—The approximate earnings for Nov. were \$35,600, as compared with \$33,070 for the corresponding period, an increase of \$2,530.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—The approximate earnings for Nov. were \$482,566, as compared with \$460,806 for the corresponding period, an increase of \$21,760.

The net earnings for the 3 months to Sep. 30 were \$234,080, as against \$264,703 for corresponding period.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1898	1897	1898	1897
Jan.....	22,044	9,443	\$7,924.00	\$33,872.00
Feb.....	20,650	8,163	66,399.00	27,573.00
Mar.....	33,421	8,727	109,010.00	29,080.00
April.....	43,145	10,785	140,275.00	37,145.00
May.....	43,148	18,802	137,825.00	51,508.00
June.....	49,203	18,964	160,199.00	63,160.00
July.....	59,512	17,083	123,011.00	55,949.00
Aug.....	19,449	9,460	63,911.00	30,209.00
Sept.....	18,007	16,066	59,926.00	54,314.00
Oct.....	17,026	25,273	55,570.00	85,932.00
Nov.....	25,979	38,772	82,828.64	129,559.84
Totals.....	331,584	178,538	\$1,068,898.64	\$598,301.84

Financial Notes, &c.

Calgary & Edmonton.—The net earnings for Oct. were \$8,476.18, as against \$23,346.90 for corresponding period.

Canada Eastern.—A special general meeting will be held at Fredericton, N. B., Dec. 22, to authorize the sale of the Co.'s railway, rolling stock & franchises to the Alex. Gibson Ry. & Mfg. Co.

The Central Vermont R.R. bill passed by the Vermont Legislature last month authorizes the reorganization of the corporation, the new body to take the old Central Vermont road after it is sold under decree of the U. S. Court. The capital stock is to be \$3,000,000 & the bonded debt \$12,000,000 in 4% gold bonds. If the bill is not accepted by the Grand Trunk and other interested roads within 60 days from its passage it will become void.

Dominion Atlantic.—The net earnings for the 10 months to the end of Oct. were \$456,833, as against \$428,362 for corresponding period.

Grand Trunk.—Rumor has been busy selling & leasing G. T. branch lines recently. A report was recently sent out from Burlington, Vt., that Dr. Seward Webb had about completed arrangements with the G. T. for 99 years' lease of the line between Massena, N. Y., & Howick, Que. The G. T. Management says there have not even been any negotiations. The Management also denies the report that the Co. proposes selling its 3 Michigan branches, the Detroit, Grand Haven & Milwaukee, the Toledo, Saginaw & Muskegon, & the Cincinnati, Saginaw & Mackinaw. These roads have a mileage in all of 369 miles, & were bought some years ago to act as feeders to the G. T.

Kingston & Pembroke.—The Sec.-Treas. gives notice that pursuant to Dominion legislation of last session, & a resolution adopted at a general meeting of shareholders Nov. 21, applications will be received until Jan. 9, 1899, for 20,000 shares of preference stock of the par value of \$50, which will be issued 1st pro rata to the holders of ordinary stock & 1st preference bonds or debentures, at the rate of 40c. in the dollar. If applications for the 1st preference stock by the persons first entitled, shall not be sufficient to take up the whole issue, the directors will allot any part of it to other persons as they may see fit. The preference stock will be entitled, in priority to all other stock, to dividends not exceeding 5% a year out of the net earnings of the Co., after the interest on all outstanding first preference debentures is paid. Debenture coupons past due & maturing Jan. 1 next will be accepted in payment for preference stock. The ordinary stock has been reduced to \$2,500,000. Stockholders are requested to forward their present scrip, to be exchanged for new scrip, for one half the shares held by them or for any fractional share.

Lake Erie & Detroit Wiver.—Application will be made to the Dominion Parliament next session by this Co., & by the Erie & Huron Ry. Co. for an Act authorizing the amalgamation of the 2 companies & to define the bonding & other powers of the amalgamated Co.

Lake Manitoba Ry. & Canal Co.—Application will be made to the Dominion Parliament next session for an Act to ratify & confirm a bond issue & a mortgage securing the same made by the Co.

The Michigan Air Line R. R. Co. has filed notice of the decrease of its capital stock from \$4,000,000 to \$1,000,000. The road is controlled by the G. T. R. system, which owns the entire capital stock. It runs from Lenox to Jackson, Mich.

The New York Central is said to have gained control of the Lebanon Springs Ry. This is a short line & has for the most part been in disuse for some years. It affords the Central, however, an important link in the direct route between New York & Montreal, for which the control of the Rutland Ry was the first step.

Manitoba & Southeastern.—Application will be made to the Dominion Parliament next session for an Act to ratify & confirm a bond issue & a mortgage securing the same made by the Co.

Qu'Appelle, Long Lake & Saskatchewan.—The net loss in operating for Oct. was \$1,976.85, as compared with net earnings of \$1,709.78 for corresponding period.

Quebec Central.—The traffic receipts for Nov. were \$34,214.51, as against \$33,149.45 for corresponding period. There was an increase of \$1,822.40 in freight receipts & a decrease of \$840.39 in passenger receipts.

DRIVING WHEELS.—Diameter outside	56 in.
" " of centre	50 in.
" " Journals	8 in. x 12 in.
ENGINE TRUCK WHEELS.—Diameter	33 in.
" " Journals	5 in. x 9 1/2 in.
WHEEL BASE.—Driving	15 ft. 3 in.
" " Total Engine	23 ft. 6 in.
" " Total Engine & Tender	49 ft.
ESTIMATED WEIGHT.—On Drivers	142,000 lbs.
" " Total	160,000 lbs.
TENDER.—Diameter of Wheels	33 in.
" " Journals	4 1/4 in. x 8 in.
" " Tank Capacity	4,000 gal.

In addition to 1 simple cylinder & 2 compound locomotives recently built in Canada for the I.C.R., an order has been placed for 5 passenger locomotives, cylinders 20x26" stroke, steel wheels 6 ft. diameter, pneumatic sanders & other improvements as specified for the freight locomotives. An order has also been placed for 2 narrow gauge locomotives for the P.E.I. Ry. These will have cylinders 15x20", wheels 48" diameter, & will weigh about 60,000 lbs.

Contracts have also been placed for the I.C.R. as follows:—6 sleeping, 3 dining & 3 first-class cars to be built in the United States & 6 first-class cars to be built in Canada. The Mechanical Superintendent informs us that these are to be the best that can be built.

A complete steam plant is being put in at Halifax for heating passenger cars & testing air brakes.

Repairs and renewals of Locomotives.	1898.	1897.	All repairing charges, including shops, waterworks, etc.	
	Cents.	Cents.	1898.	1897.
Cost per Mile				
Train	4.39	4.39	5.68	5.68
Engine	3.62	3.63	4.69	4.70
Car	0.275	0.28	0.36	0.37

The car ferry Huron, which was built nearly a quarter of a century ago at Buffalo, & which has been in commission between Port Huron & Sarnia since then, has been taken to Windsor to be refitted for service between that port & Detroit. The Co. has no further use for her in the St. Clair River since the tunnel was finished. The Huron has 3 seven-car tracks. Superintendent Morse reports that the wood-work is deteriorated & the engines require extensive repairs.

The Superintendent of the Car Department reports the following statistics for the 1/2 year ended June 30:

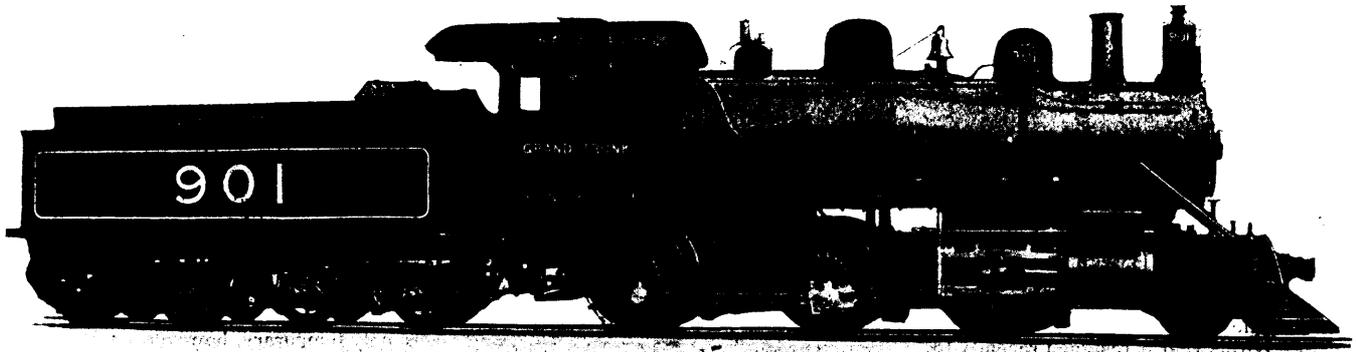
Cost of repairs and renewals	1898	1897
Miles run by cars, passenger	\$593,768	\$546,822
" " " freight	14,624,117	15,464,205
" " " total	124,965,419	113,428,806
Cost per mile, car	139,589,536	128,893,011
" " " train	0.425c.	0.424c.
" " " total	6.78 c.	6.57 c.

An increase in expenditure of \$46,946, or 8.6%, with an increase in car miles of 10,696,525, or 8.3%.

At cost of capital 104 passenger cars were equipped with air signals, 69 passenger cars

Customs Seizure of Rolling Stock.

The biggest seizure ever made by the Customs Department, involving 18 locomotives & 1,000 box cars, was recently made public. The rolling stock belongs to the Canada Atlantic, & O. A. & P. S. Rys. The seizures were made on 2 different occasions. The 1st was on Dec. 14, 1897, when 5 engines & 500 freight cars were seized for alleged non-payment of duty. The freight cars were marked V. & P. L., & the whole are valued in the customs books at \$350,000. The other seizure was made in July, 1897, of 13 engines & 500 freight cars, marked Canada Atlantic Ry., via Central Vermont Ry. The last seizure is entered as worth \$400,000, thus making the enormous total of \$750,000. The seizure was made for alleged non-entry of the engines & cars upon their arrival in Canada. The Customs Department requires that all new cars entering the country must be reported to the Customs Department. The officials of the railways mentioned have had several interviews with the Commissioner of Customs, regarding the disposition of the cars, but so far, it is said, a decision has not been given. It was asserted by the railway officials that the cars were for international traffic. The Customs Department is, however, in possession of a copy of the following order, issued



A RECENT GRAND TRUNK MOGUL TYPE LOCOMOTIVE.

Grand Trunk Equipment.

The Co. is building at Point St. Charles, Montreal, 200 platform cars, 35 ft. long, 9 ft. wide & 60,000 lbs capacity. They are being equipped with G.T. axles, & standard draft rigging, diamond trucks, 33-in. cast iron wheels & Westinghouse brakes.

It is said the Co. will soon introduce a number of double-deck cattle cars.

The illustration on pg. 257 shows 1 of 6 mogul type locomotives, built for the G.T.R. by the Baldwin Locomotive Works, this year. Full particulars of the general dimentions were given in our April issue, pg. 32.

The report of the Superintendent of Motive Power for the 1/2 year to June 30, recently issued, states that the total expenditure for that period was \$2,055,474, an increase over the corresponding period of \$98,302, or 5%. The train mileage was 8,753,823, an increase of 430,171, or 5.2%. The average number of cars moved per train was

	1st half 1898.	1st half 1897.
Passenger trains	4.3	4.5
Freight " "	23.5	23.3
Mixed " "	10.5	13.4

During the 1/2 year 16 locomotives were scrapped or sold & 20 were purchased. The actual stock on June 30 was 811.

The comparative cost of repairs per train, engine and car per mile was:—

were fitted with steam-heating apparatus, 1,449 freight cars were equipped with automatic couplers and air brakes. In addition to above, 3 day coaches, 10 refrigerator & 500 box cars were built in Montreal shops at cost of revenue.

Rhodes, Curry & Co. of Amherst, N.S., have had a very successful year in car building, their output including the following:—200 box, 100 platform, 10 cattle, 4 baggage & 3 postal & baggage for the I.C.R.; 10 platform for the Canada Eastern; 5 platform for the Lotbiniere & Megantic; 50 coal for the Broad Cove Coal Co.; 115 coal for Dominion Coal Co.; 10 coal for General Mining Association; 20 box & 15 cattle for Quebec & Lake St. John; 10 coal for Crow's Nest Pass Coal Co.; 1 snow plow for Dominion Atlantic; 2 motors for Sherbrooke, Que., St Ry.; 4 motors for Halifax Tramway Co. They have also done a large business in car wheels, castings & forgings.

The Northern Ry., of N.B., recently bought a locomotive from the I.C.R.

The rolling stock of the Manitoba & Northwestern Ry. has recently been valued by R. Miller, Superintendent of Motive Power & Equipment of the Michigan Central, & Division Master-Mechanic Hennessey, of the same line.

by General Superintendent Donaldson of the Booth lines, Aug. 4, 1898:

"Order no. 619. Circular to all agents. —V. & P. L. cars from now on must not be loaded off the C.A. They must be used entirely between the elevators at Depot Harbor & Coteau. Agents will, for the present, be guided by this order."

Most of the cars have been released & are now in use, but the seizures are still in effect. It is said the railway companies claim that they have acted within their rights, there being a clause in their charters authorizing them to borrow or rent cars. This they claim to have done, the clause not specifying that the railway from whom they rent shall be a Canadian railway.

On leaving Donald, B.C., recently to take charge of the district west of Revelstoke, C.P.R. Roadmaster W. S. Newman was tendered a complimentary dance by the trackmen & presented with a gold watch, a chain & a locket.

F. S. Rathbun died suddenly at Deseronto, Ont., Nov. 26, aged 42. He was Sec.-Treas. of the Rathbun Co., Treasurer of the Bay of Quinte Ry. Co., President & Treasurer of the Oshawa Electric Railway, Treasurer of the Thousand Islands Ry. Co. & Treasurer of the North American Telegraph Co.

RAILWAY APPOINTMENTS, &c.

Canada Atlantic & O. A. & P. S. Rys.—Traffic Manager Smith issued the following circular Nov. 1: R. A. Carter is appointed Travelling Freight & Passenger Agent of these companies, with office at Ottawa, vice G. H. Phillips, resigned. Mr. Carter will also continue to discharge the duties of Contracting Agent at Montreal until further notice.

J. E. Conner has been appointed New England Travelling Passenger Agent, with headquarters at 196 Washington street, Boston, Mass.

Canadian Pacific.—Manager Whyte, of the Western Lines, issued the following circular Nov. 15: "M. H. Macleod has been appointed Superintendent of the Crow's Nest Branch, having charge of the line between Macleod & Kootenay Landing, with headquarters at Macleod, Alta. G. Erickson has been appointed Trainmaster."

Roadmaster W. S. Newman, of the Selkirk & Arrowhead sections of the Pacific Division, has been transferred to the district west of Revelstoke.

Grand Trunk.—Superintendent Herbert, of the Eastern division, issued the following circular, Nov. 1: "The following changes & appointments are effective this date. The office of acting trainmaster, 1st district is abolished, & J. Irwin, trainmaster 2nd & 3rd districts, is assigned to other duties. C. S. Cunningham, Trainmaster 1st, 2nd & 3rd Districts, office, Island Pond, Vt. J. Munday, Assistant Trainmaster 1st District, office, Island Pond, Vt."

The position to which Mr. Cunningham has been appointed is the one formerly occupied by Mr. Herbert.

On the Western Division, Trainmaster F. L. Corwin having resigned has been succeeded by J. Irwin, transferred from districts 1 & 2 to districts 27, 28 & 29, with headquarters at Detroit, Mich. Mr. Corwin, who was formerly Superintendent of the Breckenridge Division of the Great Northern, went to the G.T.R. early this year & resigned recently to become Superintendent of the Union Stock Yards Co. at Omaha, Neb.

J. D. McDonald, City Passenger Agent of the G.T.R. at Buffalo, N.Y., has also been appointed City Ticket Agent of the Western New York & Pennsylvania there, succeeding E. J. Quill.

J. C. Talmage, who was recently appointed General Agent of the Passenger Department of the G.T.R. at Los Angeles, Cal., is a son of the late Col. A. A. Talmage, for many years Vice-President and General Manager of the Wabash, St. Louis & Pacific. Mr.

Talmage has been General Agent of the Grand Trunk at Chicago for some time, but owing to ill health was compelled to resign to go to California. He has been identified with the Wabash & G. T. systems for many years, & is responsible for some of the important changes made in the operation of the G. T. at Chicago within the past year. His many friends will earnestly hope that he may completely regain his health in the mild climate of Southern California.—Railway Age.

Great Northern.—A recent circular reads: "F. E. Ward is appointed General Superintendent, vice R. Harding, resigned to accept service elsewhere. Mr. Ward will have full charge of the operation of all the Co.'s lines, his duties being defined by the Co.'s code. Mr. Ward will continue, as heretofore, General Superintendent of the Montana Central Ry., with headquarters at St. Paul, Minn., instead of Great Falls, Mont."

C. Shields, Vice-President of the Spokane & Northern, has been appointed also as Assistant General Superintendent of the Western Division of the Great Northern, with headquarters at Spokane, Wash., vice F. H. Britton, appointed Division Superintendent of the Dakota Division. Mr. Shields' district includes also the Montana Division, of which J. M. Davis, heretofore Division Superintendent at Breckenridge, Minn., has been appointed Division Superintendent at Havre, Mont., succeeding L. B. Button, resigned.

Intercolonial.—B. C. Gesner has been appointed General Air Brake Inspector, with headquarters at Moncton.

V. F. Farrell has been appointed Ticket Agent at Hollis St., Halifax.

White Pass & Yukon.—The officers of this line, as recently announced, are, President, S. H. Graves, Chicago, Ill.; Purchasing Agent, W. L. Wilson, Skaguay, Alaska; Traffic Manager, L. H. Gray, Skaguay; Chief Engineer, F. C. Hawkins, Seattle; Master Mechanic, W. H. Garlock, Skaguay; General Storekeeper, J. W. Young, Skaguay; General Agent, C. C. Figgins, Seattle.

F. W. Morse, Superintendent of G.T.R. Motive Power, is to be married shortly to Miss Grace Bass, daughter of a well-known iron manufacturer of Fort Wayne, Ind.

E. J. Traverse, Chief Clerk for District Freight Agent Hanna, of the G.T.R. at Stratford, has been appointed Western Freight Agent at Toronto of the Leyland steamship line, which runs from Portland in connection with the G.T.R. He was formerly in the Canadian Freight Association Office.

Personal Mention.

M. Van Harligan is in charge of the Coast Ry. office which has been opened in Halifax, N.S.

C. J. Wiggin has been appointed General Baggage Agent of the Boston & Maine, succeeding O. W. Greely.

D. E. Brown, General Agent for the C.P.R. in China & Japan, is returning to his post after extended leave of absence.

W. Mackenzie, President of the Toronto Ry., returned from Europe Dec. 3, having left his daughters in Florence.

R. Archibald, General Manager of the Canada Coal & Ry. Co., at Joggins, N.S., was married at Oxford, N.S., recently to Miss Minnie Robbs.

Miss M. M. Colclough, daughter of the Superintendent of the International Bridge & Agent of the G.T.R. in Buffalo, will appear upon the concert stage shortly.

R. S. Logan, Secretary to the General Manager of the G.T.R., was married at St. Louis, Mo., Nov. 10, to Miss Annie Ranken. Mr. Hays was among the wedding guests.

Hartley Gisborne, M. Can. Soc., C.E., of Winnipeg, has been appointed by the Council of the Institution of Electrical Engineers, London, Eng., their local Hon. Sec. & Treas. for Canada.

Sir C. Rivers-Wilson, President of the G.T.R., is Chairman of the British Electric Traction Co., which has a subscribed capital of £300,000, preference shares of £100,000 & £100,000 5% debenture stock.

On Thanksgiving Day the Montreal Herald published a symposium, "What we have to be thankful for." Among the contributors was Sir William Van Horne, who gave the laconic answer, "The Dingley Tax."

W. W. Dawson, of New York, is acting as District Superintendent of the Wagner Car Co., at Montreal, with headquarters at Bonaventure Station. It is said the appointment is only temporary, however, as M. C. Garey expects to resume his duties shortly.

C. R. Hosmer, Manager of the C.P.R. Telegraphs, & Mrs. Hosmer, returned to Montreal Dec. 9, after a 6 weeks' trip to London & Paris, having left their daughter Olive in the latter city to pursue her studies. On Dec. 12 a cable was received stating that she was very ill & Mr. & Mrs. Hosmer started for Paris again immediately.

A daughter of J. Lake, engineer of the St. Catharines Niagara Central Ry., narrowly

STEEL

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Pittsburgh, Pa.

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FINE TOOL STEEL
For Railway Purposes
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Drills, Magnets, etc.

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

W. G. BLYTH,
Agent for Canada,
29 Melinda St., - Toronto

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.



No. 2 Automatic Lowering.

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.
Marion and Martin Avenues,
ALLECHENY, PA.

Stock carried by
JAMES COOPER, Agent,
299 St. James St., Montreal.



No. 1 Trip.

escaped death during a recent storm about midnight. A telephone wire was attached to a large chimney, & under the great weight of snow on the wires the chimney fell, crashing through the roof into the bedroom where she was sleeping. The bed was covered with debris, & she was struck, her head being badly cut & her body badly bruised.

P. F. Hodgson, who for the past 5 years has been Signal Engineer for the G.T.R., with headquarters at Toronto, has resigned to accept the position of Secretary & Manager of Saxby & Farmer, Ltd., manufacturers of railway signals & safety appliances, Kilburn, London, Eng., & will leave for England this month. During Mr. Hodgson's term of service on the G.T.R. he has carried out a lot of important work, particularly the interlocking switch & signal system at the Toronto Union Station yards. He will be succeeded by W. H. Patton, of Montreal.

At the recent Canada Club dinner in London, Eng., Sir C. Rivers-Wilson, President of the G.T.R., made an earnest appeal to the Dominion Government to seriously grapple with what he regarded as the most vital problem of immigration. Canada could not rest content while three & a half millions of square miles were occupied by less than six millions of people. Hon. Mr. Dobell retaliated by imploring Sir Rivers-Wilson's help to bridge the St. Lawrence at Quebec, & make the Ancient Capital what it must ultimately become, the great trans-shipping port of North America. He also urged a railway & steamship route via Hudson's Bay. "What is the population?" interjected Sir Charles Rivers-Wilson humorously; "A little off our line, I am afraid."

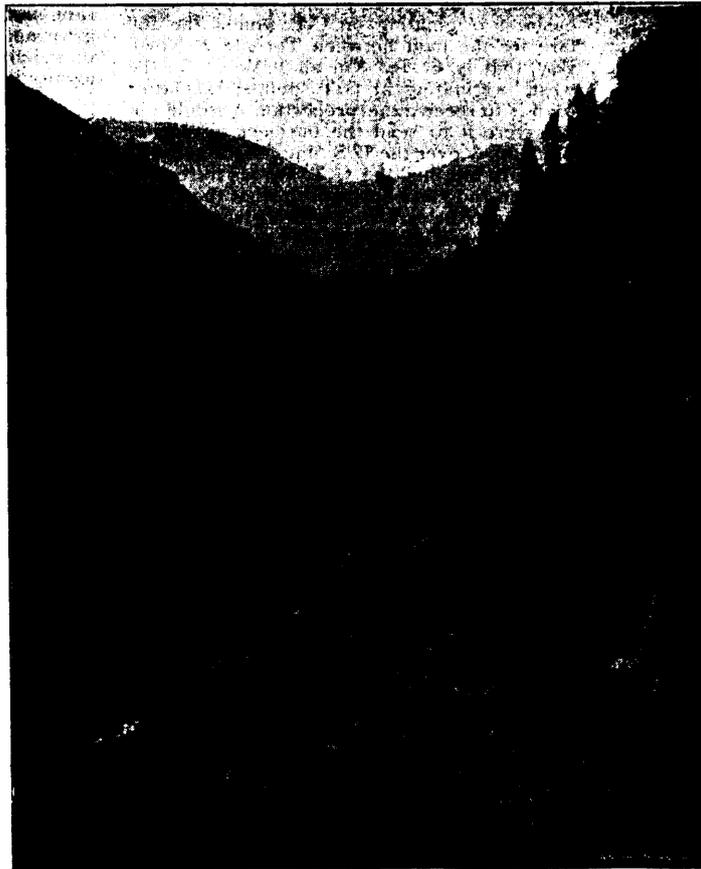
The Railway Agent recently published a portrait & interesting sketch of Jas. Charlton, General Passenger & Ticket Agent of the Chicago & Alton. He entered railway service April, 1854, as junior clerk in the Freight Department of the Newcastle & Carlisle Railway, Newcastle-on-Tyne, Eng. When he resigned his connection with that Co. he had attained the position of chief clerk & cashier in the freight department. He entered the Auditor's office of the Great Western Ry. of Canada April, 1857, as assistant to the Chief Clerk, & served as clerk in charge of statistics & freight accounts, Chief Clerk, Auditor & General Passenger Agent. He left the service of the Great Western Ry. in Mar., 1870, for the position of G. P. & T. A. of the North Missouri Co., which he held until he resigned in July, 1871, from which date he has occupied his present position with the Chicago & Alton, with headquarters in Chicago.

Geo. S. McKee, Master Mechanic of the Western Division of the Wabash at Moberly, Mo., has been transferred to the Eastern Division, & his supervision extended to include the Buffalo Division. His headquarters are at Fort Wayne, Ind.

Under the management of Archer Baker, European Traffic Agent of the C.P.R., a series of lectures, at which the cinematograph is used to illustrate Canadian Northwest life & farming in a realistic series of pictures, is being given in Great Britain. The idea is most cordially welcomed by the schools, colleges & clubs.

White Pass & Yukon Railway.

In previous issues (June, pg. 98; July, pg. 123; Aug., pg. 152) we gave very full particulars in regard to the construction of this line. Very few people, probably, have any idea that over \$1,200,000 have already been expended in construction from Skaguay to the summit of White Pass. In addition to what we have already published, supplied us from official sources, the following, condensed from the Railway Age, will prove of interest. This fall work was somewhat retarded by bad weather & the necessity of establishing & moving into winter camps & making trails & waggon roads connecting the new camps. Some 1,500 men were employed most of the summer, but towards fall the discovery of gold at Lake Atlin caused a large number to abandon railway work & become prospectors. Many have returned & some 1,200 are now employed. Notwithstanding these embarrass-



GRADING AT PORCUPINE HILL ON THE WHITE PASS AND YUKON RY.

ments, good progress has been made along the line, & all the heavy work, including that most likely to be retarded by bad weather, has been completed to the summit, & 2 miles of comparatively light work has been done beyond, finishing the line to the provisional international boundary. Work is still being pushed on beyond, & it is hoped to have the road ready for operation to Log Cabin, 15 miles beyond the boundary line, before Christmas, by which time it is anticipated the severe weather will cause a cessation of active operations, although it is the intention to keep somewhat of a force employed throughout the winter. In addition to the 1,200 men now employed, arrangements are being made to bring several hundred more from Dawson City to work on the grade.

The survey has just been completed from Cariboo Crossing to Ft. Selkirk, which shows a much better line than it was thought possible to obtain. No engineering difficulties

whatever have been encountered beyond Cariboo Crossing, & the principal items of expense will be a bridge about 350 ft. long over the Tahkeena River & a span 150 ft. over the crossing of the river at Five Fingers. The distance from Skaguay to Ft. Selkirk via the surveyed line is 312½ miles, & the distances from Skaguay to intermediate points between that place & Ft. Selkirk are as follows: To summit of White Pass, 20 miles; to head of Too-chi Lake, 40 miles; to head of Windy Arm, 56½ miles; to Cariboo Crossing by way of Windy Arm, 74½ miles; to crossing of the Tahkeena River, 144.6 miles; to the Hoochi River, on the Dalton trail, 186.9 miles; to point 5 miles west of Rink Rapids, 266.6 miles. A survey is being made for a branch from the main line at Log Cabin to the Lake Atlin gold fields & a preliminary reconnaissance shows that no engineering difficulties are presented. It is proposed to push the work on the branch line so as to accommodate the requirements of this new & extensive gold region.

From Log Cabin to Cariboo Crossing 2 routes are under consideration, one of which runs along the shore of Lake Bennett. If the latter line is decided upon, some heavy work will be necessary to cross the mountains, which cannot be undertaken until next summer. If the route to the east of Lake Bennett by way of Windy Arm is selected, the work will be comparatively easy. From Cariboo Crossing to Ft. Selkirk there is nothing but plow & scraper work, & the grade can be completed with great rapidity with favorable weather. The line passes through grass lands & small timber, & there is no work of a difficult nature. The Co. has not only been granted right of way & has its track laid on the main street of Skaguay, but it is also building a line to encircle the entire city, giving it control of the principal part of the water front. The passenger depot in Skaguay at the foot of Broadway is about completed, & work is in progress on the freight depot. The machine shop & blacksmith shop are completed & in operation, & material for 50 cars is on the ground ready to be put together. The principal part of the work on these cars is done at Seattle, & the various portions are shipped to Skaguay ready to be put together with little work.

The road from Skaguay to the summit of White Pass is a veritable shelf in the mountains, & in order to secure a line, the maximum curvature of which is but 16 degrees, & which has a maximum grade of only 3.9%, some very heavy work has been necessary to reach the summit, which is 2,850 ft. above sea level, with so light a grade. Another item of heavy expense on the first 20 miles has been the construction of 3 long, level sidings, where trains can pass—these in addition to a number of short sidings & switches. At the summit there is a mammoth granite cliff, which will have to be shot off into the canyon below to make way for the roadbed. The road has a gauge of 3 ft., & is laid with 56 lb. rails.

During the summer the Co. was able to keep 2 shifts at work 11 hours a day each, without the use of artificial light. The workmen received 30c. an hour & board, & the Co. has its own tents, hospitals & physicians. Although the present year will close with not over 35 miles of road constructed, it is the hope of President Graves to build the line

through to Ft. Selkirk next year, as all of the heavy work is practically out of the way.

The company is now operating a pack train from White Pass to Bennett, having a train of 64 mules, & more are being purchased for this service. There is a large, warm warehouse at Log Cabin, & another at Bennett, with agents stationed at each. Every shipper sending freight over the line will have his goods cared for in these warehouses, storage free for any reasonable length of time.

Canadian Freight Association.

The following circulars have been issued :

"In order to overcome the difficulty existing at present in connection with the cartage in Canada on business to & from U.S. points, the rates upon which are governed by the official classification, the railways in Canada have decided that in the application of the cartage arrangement the Canadian Joint Freight Classification shall govern, excepting articles taking 6th class rates as per official classification which will be entirely exclusive of cartage. Also that the rates to & from U.S. points on commodities which classify 5th class or higher (official classification), but upon which 6th class or lower basis of rates may be authorized, shall be entirely exclusive of cartage. Also that the present arrangement covering a minimum charge of 25c. to or from the junction point on any shipment of freight consigned to or shipped from points in the U.S. shall continue, as also the exaction of a minimum cartage charge of 10c. for each cartage service performed. This to take effect Jan. 1, 1899."

MINIMUM CARLOAD WEIGHTS.

"The Canadian railways have agreed that on & after Jan. 1, 1899, the minimum carload weight of 5th & 6th class freight will be 24,000 lbs. instead of 20,000 lbs. as at present, with some exceptions of light & bulky goods as provided for in classification. This arrangement will apply on standard cars of 35 ft. long or under. The present improved car equipment of Canadian railways are capable of carrying this & greater weights, & the business public will no doubt appreciate this change, which will enable them to ship larger quantities in one car & thus extend their business in many directions."

Freight Notes.

The G.T.R. is making a change in its rates on pulpwood, basing the rate on weight instead of bulk, as at present.

The Dominion Atlantic Ry. has carried this year from different points of the Annapolis Valley to Halifax over 100,000 barrels of apples, which have gone to the English market.

One of the conditions under which the C.P.R. received a subsidy of \$3,500,000 from the Dominion Government for constructing the Crow's Nest Pass Ry., was a reduction of 3c. a bus. in the rate of freight on grain. This went into effect Dec. 5.

The Ways & Means Committee of the U.S. Congress has authorized a favorable report upon a bill to remove the restrictions which at present prevent the shipment of goods in bond to interior points in less than carloads. Under the terms of the bill, goods can be shipped in less than carloads under regulations to be prescribed by the Treasury.

The new Parry Sound route, may or may not "revolutionize" grain transportation from the Northwest to the seaboard, but when, as we are informed was the case, a shipment of grain to Montreal from Toledo recently took that route in preference to the Buffalo route, it is clear that Parry Sound cannot be ignored by the routes which have questioned its ability to compete with them.—American Elevator.

The Lumbermen's Association of Ontario has asked the railways for the equalization of freight rates on hardwood & pine lumber. There is a difference of from 1c. to 2½c. per 100 lbs. in the rates charged from different points in Canada, & as the export trade in hardwood is increasing, it is contended that it would be a distinct advantage to the country generally to have all hardwood worked up closely, in place of being often wasted. Lumbermen think that the discrimination against hardwood in freight rates should be done away with.

The Rate War Settlement.

The G.T.R. & C.P.R. having settled their differences, rates were restored Nov. 26, & C.P.R. northwest traffic was resumed between Toronto & North Bay. The officials will not give the text of the agreement, but enough is known of it to give a fair idea of how the difficulty was settled. The C.P., it is understood, agrees to pay the G.T. on all business originating on C.P. points the full fare for the haul between Toronto & North Bay, that is, \$6.85. On all business for the west, originating at G.T. points, the latter road is to receive the proportion it would obtain were it to send the business by way of Chicago, & over the U.S. lines into Manitoba. In return for this, the G.T. agrees to restore rates on 2nd-class business to what they were previous to the rate war, which gives the C.P. its old differential of \$5.45 over the U.S. route. By this means the C.P. forces the business over the Canadian route, which, it has always claimed, is the way it should go, while the G.T. obtains as much out of the haul as it would had it routed the business by way of Chicago. The extra the C.P. pays the G.T. in this way is expected to be made up by the increased business the line will receive. The losers under the new arrangement will be the Chicago-St. Paul lines, & the Northern Pacific & Great Northern Rys. The G.T. routing its Manitoba business over the C.P. will deprive those lines of a large amount of 2nd-class business which they enjoyed while the rates were equal.

Under the previous arrangements, the C.P. paid the G.T. about \$80,000 a year for passenger business over the North Bay route; under the new agreement the latter road will receive very much more than this. It is under-

stood also that the G.T. agrees to give C.P. agents the privilege to issue tickets over the North Bay line, so that they will be able to sell through tickets from all C.P. points to the West, an arrangement that will facilitate business. Under the old arrangement the C.P. was required to send all its transcontinental business from points east of Peterboro' by way of North Bay, instead of sending their passengers round by way of Smith's Falls. Some such division of territory is probably included in the new agreement which also includes the running of freight trains again over the North Bay line.

A number of railway men from the U.S. met the officials of the C.P.R. & Grand Trunk in Montreal, Dec. 14, for the purpose of adjusting a number of matters, some action in reference to which was necessitated by the recent re-arrangement regarding traffic by the G.T.R. & C.P.R. upon the termination of the rate troubles between those two lines. All the details dealt with were of a technical character & were satisfactorily arranged. Several of the Western officials gave an unqualified denial to the report that their lines had charged the G.T. with disloyalty in connection with the recent resumption of traffic relations with the C.P.R. A Star reporter in the course of an interview with P. S. Eustis, General Passenger Agent of the Burlington System; A. F. Merrill, Assistant General Ticket Agent of the Milwaukee System, & J. W. Lee, representing Mr. Caldwell, the Chairman of the Western Passenger Association, was informed that the recent newspaper reports that the Western lines were charging the G.T. with disloyalty, were entirely unfounded, that there was not now nor had been at any time any lack of confidence in the present relations heretofore existing between the G.T. & the Western lines, & the amiable settlement of grievances between the G.T. & the C.P.R. had their full approbation. The reports arose out of the fact that by the new arrangement with the C.P.R., considerable Western traffic originating on the G.T.R. is now handed over to the C.P.R. at North Bay, instead of being handed over to the Western roads at Chicago.

L. L. Stenseth has been appointed Route Agent of the Western Express Co., with headquarters at Marquette, Mich., vice H. E. Gilmore, resigned.

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Bridge at Edmonton, Alberta.

Edmonton is on the north side of the north branch of the Saskatchewan river, situated on the high table land above the deep valley of the river. On either side of the river, the higher plateau is at an elevation of about 190 ft. above the river level, & the slope toward the lower plateau, or narrow valley, is very sharp. On the south side of the river is South Edmonton, the terminus of the Calgary & Edmonton Ry., from which all freight for Edmonton & the northern districts has to be taken by waggons using ferries to cross the river.

In 1892, a survey was first made by the Dominion Government to select a site for a traffic bridge across the Saskatchewan at Edmonton. The location of the bridge was fixed nearly opposite the centre of the town, where roads, leading to the foot of the hills, existed, or could easily be built. It was first intended to build a highway bridge for general traffic only, & the location was made with this end in view. Subsequently the town of Edmonton offered a contribution of \$25,000 on condition that the Government would build a combined railway & traffic bridge. After some delay this was accepted & plans ordered. Tenders were called for the substructure & the contract awarded in Aug., 1897, to F. Lemoine, of Montreal. The contract for the superstructure has not yet been given, but it is expected it will be shortly.

The superstructure, as designed, consists of 4 through steel spans of the riveted type of girders, resting on 3 piers & 2 abutments. The length of each span is 170 ft. 11 in., the distance

yards. capacity daily, was used in removing the material. The caissons are built of British Columbia red fir. Piers no. 1 & no. 3 are founded on piles driven in the caissons, & cut off 5 ft. below low water level. The caissons were then filled in solid with Portland cement concrete from hard pan foundation.

After some borings & tests at pier no. 2, it was decided not to drive any piles there. The material underlying the gravel was found to be much harder than at piers nos. 1 & 3. Tests as to its bearing capacity showed that under a load of 350 lbs. to the sq. in., or 25 tons to the sq. ft., no signs of yielding were apparent. Concrete was deposited under water in the caissons, with a specially constructed box. When 2 or 3 ft. had been deposited in this way, the caissons were pumped out & the concrete continued in the dry up to low water level. From that level the body of the pier proper was started in a timber casing which was built up as the work progressed. A service bridge was built for piers nos. 1 & 2. For pier no. 3 the materials were brought by scows, a steel wire having been strung across the river for the handling of the scows.

As regards the materials used in the substructure, which, as mentioned before, is entirely built of concrete, the cement employed is the best Portland, finely ground. The tensile strength for most of the briquettes made, after 9 days' immersion in the water, was over 500 lbs. to the sq. in., the briquettes having been previously allowed to set 18 hours before immersion. Quite a number of tests gave a strength of over 650 lbs. to the sq. in. at that age. The weight per struck bushel was between 115 & 120 lbs., with a residue for several tests of not more than

resumed Mar. 27, 1898. From that time the work was pushed rapidly & completed June 20, 1898.

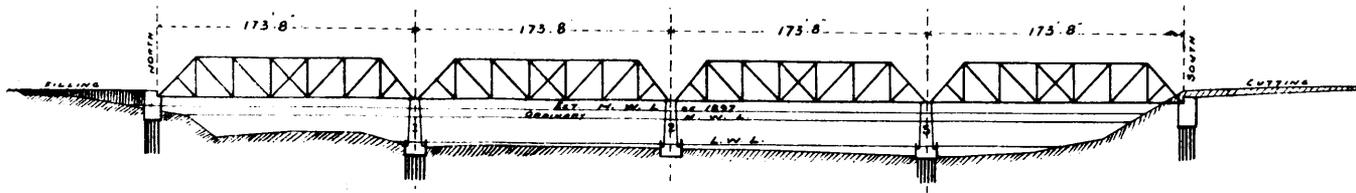
The work done & forming the nature of the contract was as follows: Building of 3 concrete piers & 2 abutments; excavation in foundations; piling in foundations; three caissons for piers; rip rapping; filling north approach; cutting south approach.

The illustration on this page shows a section of the river & side elevation of the bridge, scale 80 ft. to in.

Surveys, Construction & Betterment.

Brandon & South western.—It was recently stated that surveys had been completed from Brandon southwest to Waskada, 90 miles, & that construction would begin at the southern end before Nov. 1, the date by which the extended charter required that it should be started. We have been unable to confirm these statements. The promoters & the reputed contractor do not answer enquiries addressed to them. We do not think any construction work has been done. If it has it was simply infinitesimal, to make a show of holding the charter. (Aug., pg. 156.)

Brockville, Westport & Sault Ste. Marie.—This line, which extends from Brockville, Ont., to Westport, 45 miles, has been considerably improved this season. The whole line has been relaid with cedar ties & largely reballasted. Cattle guards & culverts have been renewed with new timbers, several bridges have been entirely rebuilt, & the frame work of all water tanks has been reconstructed. (Nov., pg. 237.)



from centre to centre of piers being 173 ft. 8 in., & the total length of the bridge 694 ft. 8 in. The roadway is 18 ft. in width, & 2 foot passenger ways, each 4 ft. 4 in. wide, supported on brackets, are provided on both sides of the bridge. The same flooring is used for both trains & waggons. The clear height under the bridge at low water is about 30 ft.

The piers, which are made entirely of concrete, are of rectangular section, & at the top carry a cap of cut stone for the bridge girder plates. At the base, both up-stream & down-stream ends are rounded, & the ice cutter brought up with a slope of 1 to 1. The smallest section of the pier at the top is 7 ft. x 24 ft., & the largest section at base is 9.4 ft. by 35.4 ft. The caissons have a width of 14.6 ft., & an extreme length of 52.6 ft., the foundation area being 656 sq. ft.; the average total height of the piers from the foundation bed is 38 ft. The piers are not founded on rock, nor is there any available rock to be found in the location close to the surface. They are founded below the alluvial gravel deposit made by the river, on indurated clay, permanent in character, which is the same material as forms the foundation of the bluffs adjoining the river. This material is called by the miners hard pan or country rock. It varies very much in hardness, some spots being found relatively soft, some other places as hard as shale. Generally it crumbles to pieces when exposed to the air, excepting the hardest variety. At the bridge location the depth of the drift gravel is from 1 to 6 ft., the foundation bed level for the three piers averaging 8 ft. below low water level. A small dredge built for gold washing on the Saskatchewan, of about 150

1.7% after passing through a sieve of 2,500 holes per sq. in. The concrete is composed of 1 part of Portland cement by measure, $1\frac{3}{4}$ part of sand & 5 parts of stone; a special finer concrete for the surfaces being composed of 1 part Portland cement, $1\frac{1}{2}$ part of sand, 4 parts of broken stone. Some gravel was also mixed with the broken stone, but it required so much washing to get it free from silt & coarse coal particles, that very little of it was used. Mortar composed of 1 part of cement & 1 part of sand was used to flush all the surfaces along the timber casing. The facing was very successful, showing after the removal of the timber work a smooth dense surface without pits or irregularities.

As it was necessary to complete the piers before the high water in June, work on the 3 piers was pushed simultaneously & with rapidity. For this reason a great number of iron rods passing through the body of the pier were used to keep the casing from bulging out under loads of fresh concrete. After stripping off, these rods were cut flush with the face of the concrete & the ends painted over to keep them from rusting. The abutments were built well up into the river banks, the foundation bed being about 16 ft. above the river level. Piles were driven down to firm stratum & cut off 6 ins. above the formation level. A strong grillage was laid & well spiked on top of piles, & then the concrete was started, rammed around the head of the piles & between the pieces composing the grillage. No timber was left exposed. The abutments are rectangular in shape with short wing walls. Work, which had been started early in Sep., 1897, was stopped Nov. 9, 1897, on account of freezing weather, &

Canada Atlantic.—President Booth states that plans are being prepared for a Union Station in Ottawa to cost about \$130,000, & to accommodate the 3 lines now running into Ottawa. The station will extend from the present building at the canal basin over the vacant lot of land to Rideau St., with an entrance from Sapper's bridge. There will be a train shed in the rear. The lower floor will be used for waiting rooms, ticket offices & dining hall, & the upper floors will be devoted to railway offices. The building will be of stone & brick, & it is expected the work will be commenced early next spring.

The announcement was recently made that the New York Central had purchased the Lebanon Springs Ry. from Bennington, Vt., to Chatham, N.Y., 60 miles. The plan, as stated by a prominent railroad man, is to operate a road from the Canada Atlantic line to New York, by a route over the road for which a charter has been procured by the Canada Atlantic line to Burlington, thence to Rutland by the Rutland road, now controlled by the Central, thence over the Bennington & Rutland & Lebanon Springs Ry. to Chatham, & from there to New York by the Harlem road, owned by the Central.

In connection with the foregoing, General Manager Chamberlin of the C.A. says:—A survey party is at work on the C.A. right of way at Swanton, & the new road will connect with the C.A. system either at that point or at Alburg Springs. When this road is completed the route from Ottawa to New York, via the C.A. & connections, will be shortened by about 20 miles, & the running time, which is now 14 hours & 50 minutes, will be reduced considerably.

Cassiar Central.—In our last issue, pg. 238, we gave from a Fort Wrangel, Alaska, paper a reputed interview with E. D. Self, who was spoken of as General Manager of this Co., in which it was stated as the purpose of the Co. to build a line from Glenora, B.C., to Dease Lake in the spring, & that surveys were being made for a continuation of the line from Dease to Teslin. The interviewer, no doubt, meant to speak of E. W. Self, who is the Co.'s Consulting Engineer, who has been in charge of the examination & exploration, & whose report thereon to the directors in London, Eng., has not been made public. C. P. Woolley, one of the directors, who spent a good deal of the past summer in the country to be traversed by the projected line is reported to have stated at Wrangel, recently, that the road would be built as soon as the directors were satisfied the country would justify them in building it & not before, & added that they were satisfied as far as they had gone. The B.C. Review, of London, Eng., says:—"H. Cohen, who purchased the Cassiar Ry. charter from Warburton Pike, the concessionaire, & transferred it to the African B.C., corporation, has postponed railway construction until satisfactory assurances are received of the existence of payable mineral. It is probable that, without more definite assurances as to the advantages to be derived from a railway, the Corporation will hesitate before entering upon so expensive an undertaking. . . . The land grant & mineral rights are extensive, & should the concessionaires, by undue delay, forfeit their charter, there is little likelihood of the Government again granting such foolishly liberal terms."

Great Northern (U.S.).—A rumor has been current in Vancouver, B.C., that this Co. wants to secure the site of the recently burned Hastings mill for station purposes. It is said the Co. has engineers at work at New Westminster & Vancouver. The G.N. now reaches the south bank of the Fraser River, opposite New Westminster, by the New Westminster Southern Ry., which runs thence 23 miles to the International Boundary at Douglas, B.C., where it connects with the G.N. branch to Seattle, 120 miles farther south. It is rumored the G.N.'s schemes include a bridge over the Fraser at New Westminster, & an extension to Vancouver.

A recent despatch from Tacoma, Wash., says the G.N. is preparing to build a 200 mile extension from the main line at Wenatchee, Wash., through the Okanagan mining district, into British Columbia, with a branch to the mining camp at Eureka, Wash. The proposed line would follow the Columbia River from Wenatchee north to Lake Chelan & thence along the Okanagan River to B.C.

Kootenay Ry. & Navigation Co.—Mention was made in our Nov. issue, pg. 238, of the letting of a contract to Foley Bros. & Guthrie, of St. Paul, Minn., for some 50 miles of line from Bonner's Ferry, Idaho, to Kootenay Lake, B.C. Work was started Nov. 26, & it is said the line is to be completed by July 1, 1899. As explained in our last issue, the line on the Canadian side will be built under the charter of the Nelson & Bedlington Ry. Co. In this connection the Nelson, B.C., Miner says: "The stakes of the proposed route of the Nelson & Bedlington Ry. are alongside the C.P.R.'s Crow's Nest Pass road from the eighth siding to Kuskanook siding. The N. & B. railway is anxious to be allowed running rights over the other line for that portion of the route, or at any rate to be allowed to lay its track in the C. N. P. right of way. This would mean that the new line would not only avoid an expensive piece of construction, but also that all the tracklaying it would have to do this side of the boundary would be from the boundary to the eighth siding, about 13 miles, & from Kuskanook siding to Kuskanook, 8 miles. It is doubtful whether, under the charter, the C.P.R. could grant these privileges, & permission will probably have to be obtained from the Railway Committee." We venture the opinion that the privilege is not likely to be granted by the C.P.R.

A party under J. A. Gray has returned to Kaslo after being in the field some two months surveying for the proposed Lardo-Duncan branch of the Kootenay Ry. It is said excellent grades have been secured.

The K. V. R. & N. Co. is an English organization working in connection with the Great Northern Ry (U.S.) Full particulars of its organization were given in our Aug. issue, pg. 181.

Lake Erie & Detroit River.—The bridge over the Thames river on the Erie & Huron division is to be replaced with a through girder, with 2 spans of 75 ft. each, with a draw span resting on a centre pier, each arm being 64 ft. in length. The total length of the bridge will be 278 ft. The base of the rail will be 74 ft. above low water level. The piers and abutments will be made of concrete masonry on pile foundation. The contract for the substructure has been let & plans for the superstructure are completed. The Co.'s engineer is Owen McKay, Windsor, Ont.

The slip dock at Sarnia is not expected to be ready until the opening of navigation next year.

Lake Manitoba Ry. & Canal Co.—Work for the season was closed early in December. Practically all the grading done this season has been laid with rails, 56 miles having been laid from Sifton Jct., carrying the line to the edge of the Swan Lake district.

The country between the Dauphin Valley & that of Swan River & the accompanying streams is said to be one vast muskeg threaded by the sandy ridge upon which the railway is constructed. This is nothing less than the old sandy beach of the glacial Lake Agassiz. The whole country is heavily wooded with tamarac, spruce & some Jack pine, & will be in the future a valuable source of wood supply. Fire has done great damage to the bush, but where the forests have escaped the ravages of fire the trees are of gigantic size.

Mr. Armstrong, C.E., who has been engaged in locating the line, has completed his work for 50 miles beyond Swan River, to the base of the Porcupine Hills. The line, after passing through the Swan River Valley, skirts the Porcupine Hills until it reaches the valley of the Red Deer River, one of very similar formation to that of the Swan River, only much greater in extent. It runs westward between the Pasqua Hills and the Porcupine Mountains, about 100 miles. Thirty miles beyond the Red Deer Valley the Carrot River Valley is reached. Between this river & the Saskatchewan is said to be a rich plateau. The valley of the Carrot River, near the western end of which Prince Albert is situated, contains, it is estimated, about 1,500,000 acres of land. The original location of the C.P.R. was through the Swan River country. The intention was to strike the rich valley of the Saskatchewan, in which Prince Albert, Battleford & Edmonton are situated, following it westward to the mountains.

It is the intention to continue the line to the Great Saskatchewan River, in the vicinity of the Pas Mission, next year, & the Co. expects to reach Fort Churchill, Hudson's Bay within 4 years.

Manitoba & Southeastern.—Track has been laid this season from St. Boniface southeast 46 miles. Temporary arrangements have been made with the C.P.R., under which the M. & S. E. Co. gets the use of the former's tracks from St. Boniface to Winnipeg, & of its Winnipeg passenger station & freight sheds. The M. & S. E. is running 2 trains a week from Winnipeg to the end of track, & the indications are that a good business will be done throughout the winter, & that it may be necessary to increase this temporary service. The line traverses a splendid farming district through Springfield, Tache & Labroquerie municipalities, from which there is a good deal of wheat to be brought out. In the Cypress Hills, near the end of track, there is a large amount of timber. It is expected to do a large wood trade with Winnipeg. These hills are only about 80 ft. above the surrounding country, & the road will run along them

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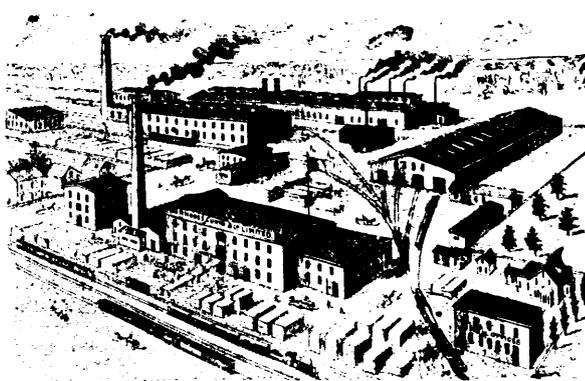
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for some 30 miles till it strikes the Roseau River.

Mention is made on another page of a rumor in Winnipeg that the C.P.R. has bought a large block of land, much nearer the centre of the city than its present station, for station purposes. Another rumor says this block, which lies east of Rorie Street, between Banatyne & McDermott Streets, on the Winnipeg Transfer Railway, has not been bought by the C.P.R. but by the M. & S.E., & that it will be used by the latter for station purposes.

At the last session of the Manitoba Legislature the Government was authorized to aid the M. & S.E.R. Co. by guaranteeing the principal & interest of the Co.'s 1st mortgage bonds for \$8,000 a mile, the bonds bearing 4% interest & maturing in 30 years, & by exempting the Co. from taxation for the same period (see May issue, pg. 65). This aid is for the 1st link of the road from Winnipeg, southeasterly 80 miles to near Whitemouth Lake, thence to Lake of the Woods or to near the mouth of Rainy River. Whitemouth Lake was selected as a common point from which the line can run either across the narrows of the Lake of the Woods, entirely within Canadian territory, or go round the southwest corner of the lake, passing for some 35 or 40 miles through Minnesota, & entering Canadian territory again near the mouth of Rainy River. From Whitemouth Lake to Lake of the Woods is about 25 miles & to the mouth of Rainy River about 60 miles, making the distance from Winnipeg to the Lake of the Woods by the Canadian line 103 miles & by way of Minnesota 140 miles. The decision as to which route is to be adopted rests with the Manitoba Government & has to be given by Jan. 1 next. We have every reason to believe that the route through U.S. territory will be chosen. The Government has the power to similarly bonus the portion of the line in U.S. territory, taking as security a mortgage on the line within Manitoba. Surveys of both routes have been made by Mr. Bruce, C.E., & it is urged against the all-Canadian line that the bridging of the narrows of the Lake of the Woods would be too expensive & that a considerable distance of unproductive country on each side of the lake would be traversed. For the U.S. route it is contended that a better country would be passed through in the southeast corner of Manitoba & on entering Ontario, the Rainy River district being splendid farming land & already well-settled along the river front all the way from the mouth of the river to Fort Frances. There are numerous swamps on some portions of the route, but they are shallow & do not present any great difficulties in the way of construction.

Michigan Central.—It is rumored this Co. will ask the Dominion Government to deepen Kingsville harbor with a view to run coal boats from Sandusky, Ohio, to that town, the M.C.R. promising to extend its railway from Essex to Kingsville, some 15 miles.

Midland of Nova Scotia.—Construction, on which good progress was made from the Windsor end during the summer, has been delayed owing to a disagreement as to the route from the crossing of the Shubenacadie River to Truro. The latter town voted a bonus of \$30,000, & the adjoining municipality voted \$6,000 additional on condition that the road be built via Clifton. On the other hand, the people of Windsor, New Glasgow & the Stewiacke district want it to go via Brookfield & the Stewiacke Valley. It is said that the Clifton route has been decided on & that M. J. O'Brien has received a sub-contract for the section between the Shubenacadie River & Truro. (Sep., pg. 184.)

Musquodoboit.—At the last session of the Nova Scotia Legislature a charter was granted for a railway from the Musquodoboit Valley to some point on the I.C.R., it being pro-

posed for the road to run from Parker's Corner to Windsor, about 40 miles. A survey made during the summer by W. Yorston, C.E., did not prove satisfactory, as part of the line would be very expensive to build & unremunerative locally. Another survey will be made which will take the shore route, as it has been proved from an old survey that this line can be much more easily built than was expected, & there is a strong probability that this route will eventually be adopted. (June, pg. 99.)

The Northern Pacific has this year built the Souris River branch in Manitoba, starting from its Brandon branch, about midway between Belmont & Hilton stations, running southwesterly to the head of Pelican Lake, thence easterly on the centre line of sections from sec. 22, tsp. 5, r. 17 west to the west boundary of sec. 20, tsp. 5, r. 19 west, thence northwesterly to the s. w. corner of sec. 31, tsp. 5, r. 20 west, thence west on the line between tsps. 5 & 6 to the west boundary of range 22. The distance built this year is 46½ miles, but it will most likely be extended next year to a connection with the C.P.R. at Hartney or Lauder, or a point between them, the extension having been postponed this year on account of some difficulty in regard to right of way. The route traversed is through one of the best parts of Manitoba, well-settled by prosperous farmers. The work through Lang's Valley is exceptionally heavy for prairie work, in the way of cuts & fills, though bridging is light. The town sites are Dunrea, 14 miles from the junction; Minto, 27 miles out; & Elgin, 38½ miles out. The contractors were J. D. McArthur, of Birtle, Man., for the grading & tracklaying; C. Chamberlin, Winnipeg, for the buildings. The survey was commenced in the middle of April & construction at the beginning of June. (May, pg. 65.)

Norton Bay & Yukon Ry.—The Anglo-Alaskan Syndicate of London, Eng., whose U.S. officers are at Seattle, Wash., has completed arrangements for building the Northern Bay & Yukon Ry., & is inviting tenders for rail & rolling stock of U.S. builders. This line is to run from Norton Sound above Fort St. Michael, Alaska, east about 120 miles to Yukon River, cutting off some 400 miles of difficult river navigation.—*Railroad Gazette.*

Ontario & Rainy River.—E. F. Fauquier, who has the contract for the first 20 miles of this line, from its starting point at Stanley, on the P.A.D. & W., has completed the grading up to the heavy rock work which is now under construction. Ties will be taken out this winter all along the route & work will also be gone on with on the Kaministiquia bridge. Several survey parties are in the field between the end of the first contract & Rainy River. (Sep., pg. 184.)

Ottawa & New York.—An Ogdensburg, N.Y., despatch says: Engineers investigating the cause of the collapse of the pier which allowed 2 sections of the Cornwall bridge to fall into the St. Lawrence River, while in course of erection, report that the pier was built on hardpan of insufficient strength to stand the huge weight. A diamond drill operated in the bottom of the river at the base of the fallen pier bored through 2 ft. of hardpan, then struck into a muddy deposit of clay formation. Through this the drill sank 14 ft. without striking hard bottom. Further investigation is being made.

A Cornwall despatch of Dec. 2 says:—The anchor span of the north bridge on the north side of the channel, has been completed & cleaned up, & the false work removed. Nothing now remains to finish the bridge but to throw the cantilever span across a gap of 200 ft. or so to connect with the work already done on the south side. Mr. Hendershot, who has the contract for rip-rapping the piers of the Cornwall railway bridges, has

nearly completed his work on pier no. 8, in the north channel.

Air was pumped into some of the pontoons attached to the wrecked span in the south channel, & it moved down 300 or 400 ft. & stuck there. Capt. Leslie has been working at it since to get the rest of the pontoons filled, & expects to have the huge structure in a safe place in a day or two. It is said the south end of the span is badly smashed.

Pembroke Southern.—This line which runs from the C.P.R. at Pembroke, Ont., to Golden Lake, on the O. A. & P. S. R., 21 miles, has been completed & inspected by R. McCallum, Engineer of the Ontario Public Works Department. (Sep. pg. 184.)

The Quebec Central is erecting shops at Newington, 1 mile from Sherbrooke. The machine shop includes boiler shop, smithy, casting & pattern room, & has brick walls, granite windowsills, coping stones, etc., iron roof, steel trusses, each truss guaranteed to support 10 tons over & above weight of roof for crane work. One 10 ton trolley runs full length of machine shop. One 20 ton travelling crane runs transversely in boiler shop. Full length of shop, 198 ft. 8 in.; full width of shop, 86 ft., 2 in.; height of walls, 22½ ft.; height to ridge of roof, 44 ft. The heating & ventilating plant is the fan system of warm air. A 100 h.p. boiler is to be installed. All the works are now being run & lighted by electricity. The paint shop is just completed & will accommodate 4 passenger cars. Its length is 150 ft., width 36 ft. An oil & waste store house has been completed. Seven stalls of the round house have been built, all with patent wood smoke stack. Three of the old stalls will be rebuilt next year. The coal shed is completed. A carpenter's shop, 165 x 45 ft., will be built, probably by contract, next spring.

Rutland-Canadian.—Particulars of the incorporation of this Co. were given in our last issue, pgs. 231 & 232. The object is to extend the Rutland Ry., which now runs from Bellow's Falls to Burlington, Vt. The extension will run from Burlington north to Rouse's Point, N.Y., either by Grand Isle County or by way of St. Alban's & Swanton & will connect with the Canada Atlantic. It is said 2 engineering parties are already in the field. The construction of this line will give the Vanderbilts, in whose interest the purchase of the Rutland road was made recently, a line from New York to Canada & the great lakes.

Spokane Falls & Northern.—The management does not propose to repeat the experiences of last winter with slides if it is possible to prevent it. With that end in view it has had a large force of men at work on the road ballasting & putting the track in shape for the winter. Considerable work has been done at the Seven Devils, where there was so much trouble last winter. The river bank has been cribbed to prevent washouts & the overhanging bank has been cut down so that in case of slides the track will be too far removed to be damaged.

Thunder Bay, Nipigon & St. Joseph.—This proposed Co., which intends applying for a charter, has secured sufficient funds for a preliminary survey, which is to be made by Z. Malhiot.

Vancouver, Victoria & Eastern.—This line is projected to run from the Mainland coast of B. C. in the neighborhood of English Bluff, near Point Roberts, via Chilliwack, to Penticton, approximately 230 miles, thence to the Boundary Creek district, approximately 100 miles. The charter is controlled by McKenzie & Mann, & the B. C. Legislature last session granted a cash bonus of \$4,000 a mile for the whole distance from the coast to Boundary Creek, where it will connect with the Columbia & Western extension, which the

C.P.R. is building, & thence with the Crow's Nest, thus affording a second through line from the Pacific Coast to the Prairies. Very little survey work has been done west of Penticton, but from Penticton southeast towards Midway engineers have been at work all summer locating. A little grading has been done from the Penticton end, & it is said to be the intention to complete the line within 18 months, though, on the other hand, it is said this will depend on the obtaining of a Dominion subsidy, as the work is very heavy. It is also said that the point at which the C. P. R. shall cease building the Columbia & Western extension westward, & at which the V. V. & E. shall begin, has not yet been decided on.

C.P.R. Betterments, &c.

Napierville Junction Ry.—A rumor has been going the rounds of the Quebec Press to the effect that the C.P.R. has under consideration a proposition to complete this line. Enquiry of the C.P.R. general management elicits the reply that there is nothing to say on the subject at present. The N. J. Ry. & Quarry Co. was chartered in 1881 to build from St. Remi to Napierville, Que., with an extension to St. John's, & built about 8 miles. The Dominion & Quebec Parliament have each voted \$3,200 a mile subsidy; the municipality of St. Edward has voted a bonus of \$2,500, & the municipality of Napierville \$10,000.

Windsor St. Station Montreal.—We are officially informed that the plans for the proposed extension have not yet been approved, & that it has not yet been decided when the enlargement will be proceeded with.

Sault Ste. Marie Bridge.—Work on the piers & abutments of the new bridge across the canal is proceeding apace, & the mason work will shortly be completed. The superstructure will be erected when the canal is closed for the season. Meantime the operation of dismantling the pier in the centre of the canal is going on, so that upon the close of navigation its entire removal will be speedily accomplished. The new bridge will swing clear over the canal.

St. Clair Tunnel.—The Railway World, Philadelphia, says: "The Canadian Pacific proposes building a tunnel under the St. Clair River at Point Edward. The object is to offset the advantage the Grand Trunk gets from its tunnel at that point." It is not believed the C.P.R. has any intention of building a tunnel to accommodate its western states travel. Its crossing is from Windsor to Detroit by car ferry, & it has no line to Point Edward, which is 2 miles from Sarnia, on the G.T.R., or anywhere near it.

Winnipeg Station.—It was recently reported in Winnipeg that the Co. had purchased a large block of land in the centre of the city, fronting on Red River, upon which a union station will be erected next year, the present

station to be utilized as freight offices. The block is bounded by Roric, Bannatyne & McDermott streets. The rumor lacks confirmation.

Stonewall Branch.—Neil Keith & Co. have finished this extension from Stonewall to Foxton, Man., 18 miles. (Nov., pg. 236.)

Pipestone Branch.—It was intended to complete 25 miles of the extension westward from Reston, Man., but on account of cold weather, work had to be stopped after the rails had been laid for 20 miles into the heart of a big French settlement, where farmers have needed railway facilities for some time. (Nov., pg. 236.)

Mountain Divisions.—In addition to the work mentioned in our last issue, pg. 236, a 5-stall stone round-house is to be built at Laggan.

Arrowhead to Kootenay Lake.—It is the impression at Revelstoke that the Co. will start work at an early date on an extension of the Revelstoke-Arrowhead branch from the latter place through the Lardeau to the head of Kootenay Lake. Manager Whyte, of the Western Lines, informs us he is not aware that it has been decided to make the extension referred to this winter.

Columbia & Western.—The standardizing of the line between Trail & Rossland is proceeding rapidly. The grading has been completed, & track is being laid with 70 lb. rails. A branch will be built across Centre Star gulch to the War Eagle & Centre Star mines & an extension will be built to the Columbia & Kootenay mine. Rossland City Council will build a bridge over the tracks on Washington St. (Nov., pg. 236.)

The final plan for Rossland Station has not yet been prepared. The Co. has acquired the necessary land in a choice situation, which permits of changing the plan first decided on, which owing to the circumscribed area of land available was not suitable for Rossland. (Nov., pg. 236.)

Boundary Creek Smelter.—On returning to Winnipeg on Dec. 6 from a consultation with the President & Vice-President in Montreal, Manager Whyte, of the Western lines, announced that the Co. had decided to erect a 1,000-ton smelter in the Boundary Creek district of B.C., in advance of railway construction, thus meeting the wishes of many mine owners in that region. The point at which the smelter will be located has not yet been decided on. Work will be commenced in the early spring, & it is expected it will be completed in the autumn. It will cost upwards of \$60,000, & will no doubt be of great usefulness to the mine owners in that district. By its means the Canadian smelting industry will receive a decided impetus. The smelter at Trail will be ready this month to treat lead ores.

Hotel Vancouver.—The great increase in business necessitates another addition to this hotel, the second in a few years. Plans are

being prepared by E. Maxwell, Montreal. It is expected the addition will be on the west side, taking in a good part of the present grounds. The ground floor will be devoted to corridors & billiard rooms, & the floors above will contain about 150 bedrooms.

Minneapolis, St. Paul & Sault Ste. Marie.—The Bismarck extension has been completed from Kulm to Hebard, N.D., about 78 miles, & no work beyond the latter point will be done this year. The new stations opened are Lehr, Wishek, Beaver Lake, Napoleon, Braddock & Hebard, all of North Dakota. Next year the line is to be extended to Bismarck.—Railroad Gazette.

The Twenty-four Hour System.

H. W. D. Armstrong, C.E., writes us:—The 24-hour system of dividing the days of the month has been in use in some parts of Canada for some time, & it seems strange that its use has not become general, for wherever used it appears to have given satisfaction. I believe the C.P.R. lines west of Fort William & the Intercolonial at the other end of the Dominion find it an improvement over the a.m. & p.m. method of marking the hours, & people generally living in the districts traversed by the railways mentioned have found no difficulty in adopting the 24-hour system.

But, to my mind, in some cases at least, it is improperly used. I refer to specifying any time by naming the hours belonging to one day with the minutes belonging to the following date, viz., 24-05. For instance, a certain time bill is announced to come into effect at 24-01 on Jan. 15. This appears to me to leave an opening for a mistake of 24 hours. The coming 15 of Jan. will fall on Sunday, & this time bill is intended to take effect at midnight between Saturday & Sunday, plus one minute. Now, 23 o'clock on Sunday does not arrive until within 1 hour of Monday, therefore (saying 24-01 on 15th) makes it appear that 24 o'clock comes before 23 o'clock, which is obviously wrong. As I look at it in this case, the date of Saturday the 14th terminates at 24 o'clock (being midnight between Saturday & Sunday) & after that we have no hours on the 15th until one o'clock, & the time when this bill should be said to take effect is 0-01 on Sunday, Jan. 15.

The Great Falls & Canada Ry. is putting 3 sleeping cars on its line, which runs from Great Falls, Montana, to Lethbridge, Alta. They are, of course, narrow gauge & will have lower berths only.

Notice is hereby given that The British Yukon Mining, Trading & Transportation Company will apply to the Parliament of Canada, at the next session thereof, for an Act authorizing the said company to construct & operate a line of railway from a point at or near Fort Selkirk to a point at or near Dawson City; thence westerly to the one hundred & forty-first Meridian; also to construct & operate lines of railway from a point at or near Cariboo Crossing or from or near Tagish Houses to Teslin Lake or River & to Atlin, & with the consent of the Governor in Council, to construct & operate branch lines in the Yukon District not exceeding fifty miles in length: to change the name of the company to "The British Yukon Railway Company;" & to divide the undertaking of the company into sections, & to borrow money separately upon each of said sections, or on any two or more of them combined; also to confirm the proceedings taken upon the organization of the company; & to further amend the Act incorporating the company.

CHRYSLER & BETHUNE.

OTTAWA, 19th November, 1898.

CANADA SOUTHERN RAILWAY CO.

Notice is hereby given that application will be made to the Parliament of Canada, at its next session, for an Act to extend the times limited for the commencement and completion of the unconstructed lines or branches of railway of the Canada Southern Railway Co.

KINGSMILL, SAUNDERS & TORRANCE,
Solicitors for the Applicants.

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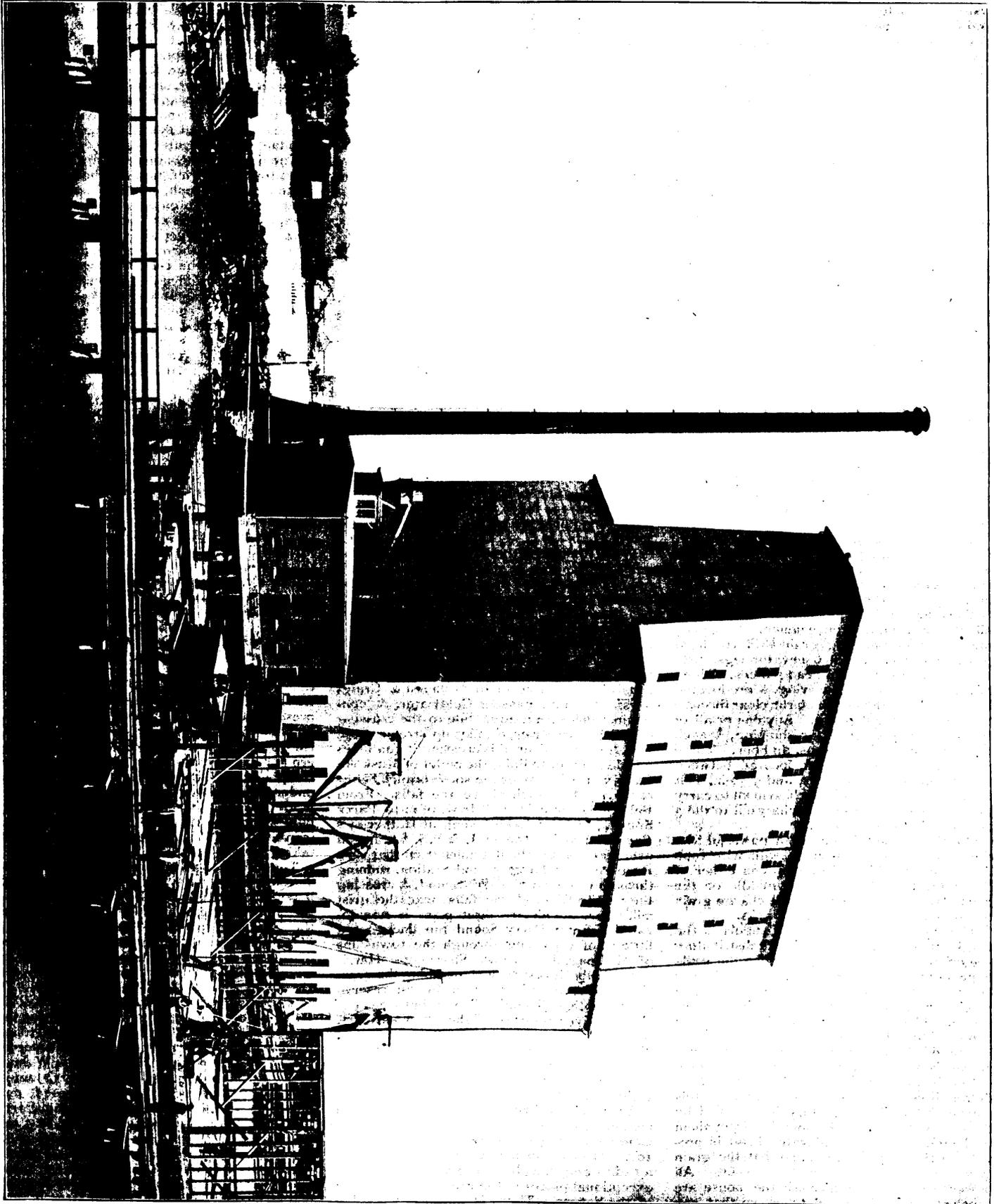
Office—17 Place d'Armes Hill.

Canada Atlantic Elevators.

The two elevators built by this line & its auxiliary, the O. A. & P. S. Ry. during this & last year, are illustrated in this issue. The illustration given below shows the elevator at Coteau Landing, Que., on the St. Lawrence

River, the other illustration, on pg. 267, shows the elevator on Depot Island, Parry Sound, Ont., the Georgian Bay terminus of the system. The Depot Island elevator was built last year to receive grain from boats for transfer to cars for shipment eastward. It is of the storage type, & is 80 ft. wide by 290 ft. long,

with bins 70 ft. deep. It has a capacity of 1,000,000 bus. It stands back from the face of the dock 100 ft., & on the wharf is a marine tower containing a marine leg of 15,000 bus. capacity per hour, & all grain for this elevator is received by it. The leg is supplied with a pusher & marine shovels. In



the tower is a receiving scale of 200 bus. capacity. The tower is connected with the elevator by means of a belt gallery containing a 36-in. belt conveyer.

A loftier leg of 16,000 bus. capacity in the elevator receives the grain from this conveyer, & by means of 2 belt conveyers over the bins will discharge it to any bin in the house. Underneath the bins, in the basement, are 2 systems of belt conveyers, which bring the grain from the bins to the working end of the elevator & discharge to 2 shipping legs, each having a capacity of 10,000 bus. an hour. The grain is weighed out in the cupola & spouted direct from the scales to the cars. The car spouts are metal & supplied with bifurcated loaders.

The power house is of brick & is located 100 ft. from the back end of the elevator. The power is transmitted to the elevator by a rope drive running up to & over the deep bins to a line shaft in the cupola, from which power is distributed to the different parts of the elevator & to the marine tower by means of ropes.

The Coteau Landing elevator was built this year. The main building is 143 ft. long by 90 ft. wide & 155 ft. high. It rests on a foundation of piles, heavy grillage & masonry, & is built out into the river so that barges can receive grain from either or both sides of the elevator. This arrangement gives also a wharf 8 ft. wide on either side of the elevator. The 1st story consists of heavy post & girder work, which supports the bins. The latter are 59 ft. deep, built of planking, & are surmounted by a cupola running the entire length of the building & 5 stories high. On east side of the elevator are 4 shipping bins, each of 5,700 bus. capacity. These, with the 74 others in the house, give a storage capacity of over 500,000 bus. The walls are covered with galvanized corrugated iron, & the roofs with tar-felt & gravel.

The engine & boiler house is of brick, 53x41 ft. in size, 23 ft. high, & stands close to the west end of the elevator. The smoke-stack is of steel plates lined with brick. It is 12 ft. in diameter at the base & 155 ft. high.

The elevator is equipped throughout with all of the modern conveniences & special machinery for handling grain with the least possible delay. It has 6 elevator legs, with 18x7x7-in. cups & 84-in. head pulleys. Three of these legs are for receiving, & are located between the 2 tracks, which run clear through the center of the building. Any one or all of the 6 legs may be used for shipping, & each has a capacity of 8,000 bus. an hour. Three pairs of Clark shovels are located between the tracks in the 1st story, and 3 30-in. belt conveyers are located in the basement to carry grain across the house & discharge it to the 3 elevators in the south end.

On the 1st floor is located a powerful friction-driven geared car-puller, with wire rope drum, arranged to handle cars on either of the 2 tracks. South of the middle of the house are 3 loading spouts, to discharge grain to cars standing on the house tracks.

The 1st story of the 5 story cupola is the distributing floor. It contains 12 distributing spouts, which take the grain from the scale hoppers to the different bins. The 3rd story contains six 1,200-bus. hopper scales, which receive grain from 6 large garners in the story above. The 4th story contains also the cupola line shaft, which extends the full length of the elevator. This shaft receives power from the engine shaft by means of a rope drive, & each of the 6 elevator heads is driven direct by rope transmission from this cupola shaft. The top story is occupied by the elevator heads & the spouting from them to the garners. Each elevator head is provided with a switch valve, so that the grain may be spouted to either of 2 garners. All power transmissions through the house are supplied with friction clutches, so that any

part of the machinery can be shut down or started at will.

On each side of the elevator are 4 dock spouts, which receive grain from the shipping bins, each spout being supplied with wire tackle & a hand winch for handling the spout. Each spout will discharge grain to the barges at the rate of 15,000 bus. an hour.

The power plant consists of an engine 18-in. diameter & 42-in. stroke, & 2 boilers 72-in. diameter by 16 ft. long. A complete electric light plant, with dynamo, operated by an engine, is included in the equipment. The fire-protection system consists of a powerful fire-pump, with complete system of standpipe & hose connections on each floor, & hose reels, with hose & nozzles at convenient points throughout the building. The outfit is deemed sufficient for any emergency. There is also a complete system of pneumatic sweepers throughout the house, arranged to discharge the dust to the furnaces under the boilers.

Both elevators were designed & erected by J. S. Metcalf & Co., of Chicago.

The C.P.R. Toronto-Sudbury Line.

The survey of this route commenced in Mar. last under H. D. Lumsden, C.E., was completed early in Oct. Four engineering parties were employed in making the preliminary & location surveys. The plans have been completed for filing with the Department of Railways at Ottawa.

The line, as located, starts from Kleinburg, on the Co's Owen Sound section, 21 miles from Toronto, & joins the main transcontinental line at a point between Romford & Sudbury Jct., about 3½ miles east of the latter point, the whole distance from Kleinburg to the main line being 226 miles, making a distance of 250 miles from Toronto to Sudbury, as against 306 by the G.T.R. route via North Bay.

From Kleinburg the line runs almost due north, passing about 1½ miles west of Lloyd-town, thence a little east of north to near Allandale, passing about ½ mile west of Bond-head, & about 2 miles east of Cookstown. At Allandale it crosses the G.T.'s Hamilton & Northwestern branch by an overhead bridge, & the Collingwood branch on the level. After passing through Barrie the line runs almost due north to Midhurst & Craighurst, then n.e., passing Coldwater, & continuing almost in a direct line to the crossing of the Severn River, 9 miles up stream from Port Severn. From this crossing it continues a little e. of n. to Bala, the outlet of Muskoka Lake, where it crosses the south branch below & the north branch above the falls. From Bala the course is a little w. of n. to Parry Sound, touching Lake Joseph at Hatherley's Bay, & crossing the O.A. & P.S. Ry. by an overhead bridge about 3 miles from that Co's Rose Point or Parry Sound Station, running through the town of Parry Sound, & crossing the Seguin River at the falls near the grist mill where the electric light plant is now located. From Parry Sound the line goes a little w. of n. passing through the townships of McDougall, Carling, Shawnaga, Harrison, Wallbridge & Mowat, reaching the crossing of French River on an Indian reserve near Cantin's Island. The 2 branches of French River are crossed about 2 miles apart, & the line continues generally in a n. w. direction to the connecting point near Sudbury, crossing the Wahnapiatae River about 12 miles below Wahnapiatae Station on the main line.

An excellent line has been obtained with maximum grades ascending northerly of 1%. Coming south the maximum is ¾ of a foot per 100. The maximum curvature is 6 degrees, or a radius of 955.37, but these are only at a few exceptional places in the rocky country north of the Severn. There is no rock work be-

tween Kleinburg & the centre of the township of Matchedash. From there to the northern terminus a considerable amount is met with. For the length of the line the bridging is not heavy. The heaviest bridge will be just north of Kleinburg, where the Humber Valley, 1,200 ft. wide & 110 deep, has to be crossed. The only other streams of importance to be crossed are the Severn, with a span of 150 ft.; the Musquash at Bala, 1 span of 100 ft. & 1 of 150 ft.; the O.A. & P.S. Ry. & adjoining stream by 2 spans of 60 ft.; the Seguin River at Parry Sound, 2 spans of 100 ft.; Shawnaga River, 1 span of 100 ft.; 2 branches of the Nosquetiwan River, spans of 100 ft. over each branch; Magnetawan River, 1 span of 100 ft.; Key River, 1 span 100 ft.; French River, 2 branches, 1 span of 150 ft., 1 of 250 ft.; Wahnapiatae River, 1 span of 100 ft.

The line goes through the heart of the Muskoka tourist district, tapping both Muskoka Lake & Lake Joseph, & it would shorten the time between Toronto & Lake Joseph by several hours. It is still impossible to speak with any degree of certainty as to the C.P.R.'s intentions as to the construction of the line, but in view of the recent settlement of the C.P.R.-G.T.R. difficulties, it is almost a foregone conclusion that the work will not be gone on with at present. We are inclined, however, to think that there has been no abandonment of the idea, but merely a postponement. Ten years ago the C.P.R. had a preliminary survey made of the route, which was referred to in the Co.'s annual report for 1888. At about the same time the G.T.R. acquired the Northern & the Northwestern Rys., & an arrangement was effected between the C.P.R. & G.T.R. in regard to the former's northwest traffic going over the G.T.R. between Toronto & North Bay. The C.P.R. has for years shown a direct line from Kleinburg to Sudbury on its maps, & no doubt intends to build it sooner or later. The new arrangement with the G.T.R., which no doubt is satisfactory as regards northwest traffic, gives the C.P.R. no share of local business. The tourist traffic to the Muskoka Lakes has been greatly developed by the G.T.R. in the last 2 or 3 years & may now be said to be only fairly started. With proper hotel facilities it is capable of almost indefinite expansion. It can hardly be doubted that the C.P.R. has its eye on this traffic, & that when the time is opportune it will reach after it by a line that will traverse the heart of the lake district. At present the C.P.R. has more important work on hand in strengthening its position in British Columbia, where, in addition to the western portion of the Crow's Nest line yet to be completed, it has the Robson-Midway line under construction, 105 miles of the heaviest work on the Co.'s system, which is being built without a dollar of subsidy & the financing of which alone is quite enough of an undertaking for one year.

The C.P.R. has no charter for a line from Toronto to Sudbury, but it would appear that it could be built under the powers conferred by the Co.'s original Act of 1881, which gave the Co. the right, from time to time, to lay out, equip, maintain & operate branch lines of railway from any point or points along its main line to any point or points within the Dominion. In 1895 W. Mackenzie, H. D. Lumsden, C.E.; G. A. Cox, F. Nichols & D. D. Mann obtained a Dominion charter for the James' Bay Ry. Co., with power to build a line from Parry Sound to Duke's Indian reserve, thence to the easterly line of Lake Wahnapiatae, & to the mouth of Moose River, James' Bay. In 1897 another act was passed, empowering the Co. to extend its line from Parry Sound to Toronto, it being provided that the railway from Parry Sound to James' Bay, & the extension from Parry Sound to Toronto should be commenced within 2 years therefrom, & 15% of the capital stock of \$1,000,000 expended thereon. This charter is con-

trolled by Mackenzie, Mann & Co., & might, no doubt, be utilized should the C.P.R. wish to build under it.

For the country north of the C.P.R. main line there is power to build under a charter granted in 1884 to W. Hendrie, W. Thomson, Jas. Walton, J. Macnabb, W. B. McMurrich, J. C. Bailey, P. A. Scott, A. Kirkwood & A. Nairn, who were incorporated as the Lake Nipissing & James' Bay Ry. Co., with power to build a line from at or near the junction of the Callender branch with the C.P.R., or from near Callender to Moose Factory, or some other point on James' Bay. In 1889 the name was changed to the Nipissing & James' Bay Ry. Co. In 1896 the acts relating to this Co. were consolidated, the proposed railway was declared to be a work for the general advantage of Canada, & it was provided that the line should be completed to Lake Temiscamingue within 3 years, to Lake Temiscamingue within 5 years, & the balance within 7 years from the passing of the Act. It is said this charter is also controlled by Mackenzie, Mann & Co., or, at all events, it is in hands that are friendly to their interests.

At the 1st session of the Ontario Legislature this year the James' Bay Ry. was granted, to aid in the construction of 90 miles of its line from Parry Sound to, at or near Sudbury, \$3,000 a mile for a distance not exceeding 40 miles, & the unearned subsidy of \$3,000 a mile for a distance not exceeding 50 miles which was granted to the Nipissing & James' Bay Ry. in 1889, the unearned subsidy being transferred to the James' Bay Ry. This makes a total cash subsidy of \$270,000 for the 90 miles.

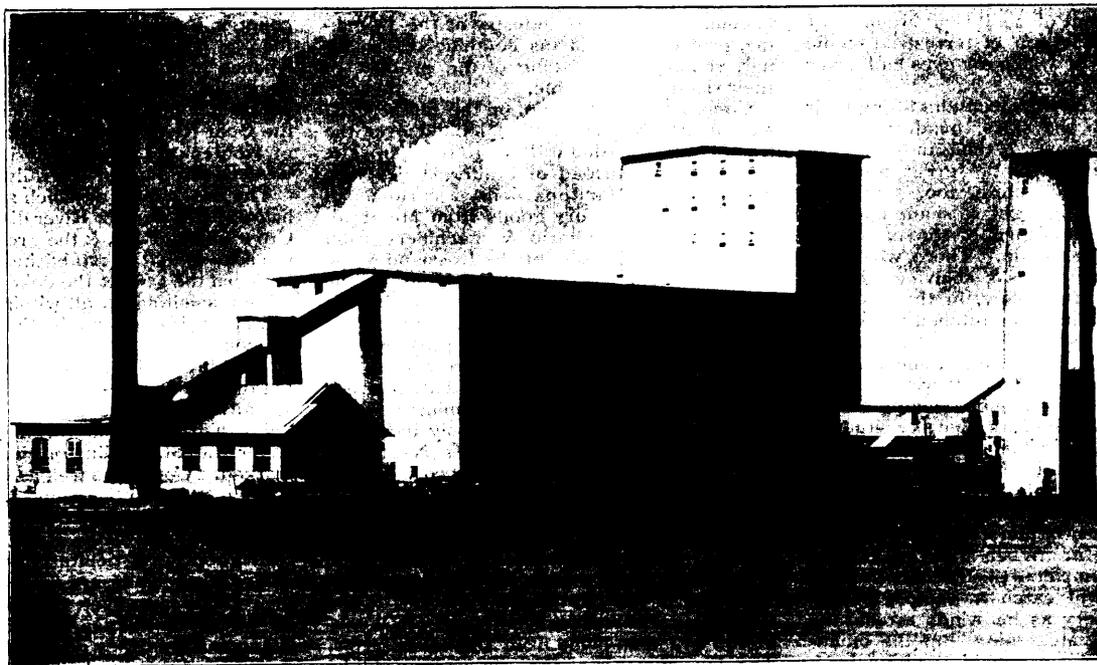
Early this year the City Council of Toronto appointed G. Gooderham, J. H. Mason, R. Davis, W. R. Brock, L. M. Jones & Mayor Shaw as the Toronto & Hudson's Bay Ry. Commission, W. T. Jennings, C.E., being appointed Secretary & Consulting Engineer to the Commission. At the last session of the Dominion Parliament the Commissioners secured incorporation as the Toronto & Hudson's Bay Ry. Co., with power to construct & operate a standard gauge line from Toronto to or near the mouth of Moose River, Albany River or Churchill River, on the west side of Hudson's Bay & James' Bay, with a branch to the Northern Pacific Jct. Ry. at or near Gravenhurst, a branch southward from the main line adjoining the watershed near Timagami Lake, thence to the Northern & Pacific Jct. Ry. at or near North Bay or Nipissing Jct. & a branch from near Parry Sound to or near Sudbury, thence to Wahnapiat Lake. In consequence of the opposition of the holders of the 2 charters above mentioned, it was provided that the operation of the Toronto & Hudson's Bay Ry. Act should be suspended for 2 years as far as power to lay out & con-

struct a line is concerned, & if at the end of that time the James' Bay Ry. Co. has commenced & substantially proceeded with the construction of its line from Toronto to Sudbury via Parry Sound, & if at the end of such time either the James' Bay Ry. Co. or the Nipissing & James' Bay Ry. Co. has commenced & substantially proceeded with the construction of a line northward from the present main line of the C.P.R., the Act shall be similarly suspended during such time as the substantial proceeding with the construction of the lines above mentioned continues, & upon the completion of those lines the Act shall cease.

Robson to Midway, B.C.

We are officially informed that about 5,000 men are at work on this line, which is being built by the C.P.R. under the Columbia & Western charter. About 70% of the grading, including rock work, has been done, & it is expected the line will be open by May next. (Nov., pg. 237.)

A recent despatch from Brooklyn, B.C.,



CANADA ATLANTIC RAILWAY ELEVATOR AT DEPOT ISLAND, ONT.

says:—One of the marvels of modern railway building is the speed with which the present contract of the 105 miles of the Robson-Midway branch of the Columbia & Western Ry. has been pushed. The contract was signed by Mann, Foley Bros. & Larson & the representatives of the C.P.R. in St. Paul June 4, & inside of 5 days the contractors had a force of men & the first of the supplies on the ground.

This promptness in taking hold of this gigantic contract has been a characteristic one of the work all through up to this time. No stone has been left unturned by which the work could be in any way facilitated. With the ablest of superintendents & assistants, with almost unlimited capital to carry any undertaking of this character, coupled with an experience of many years in the business, the contractors were in a position to successfully attack the great obstacles in their path before the iron horse could be sent over the new steel highway that will connect one of the richest mineral belts in North America with the outside world.

Possibly one secret of the successful prosecution of the work to the present stage is the

fact that the contract has had the personal supervision of the contractors themselves. Either Mr. Foley or Mr. Larson are almost always present at headquarters or out somewhere on the line of construction supervising the work. In addition to this, W. F. Tye, Chief Engineer of the C. & W., & his assistant, Mr. Sullivan, are also on the ground most of the time with their corps of some 125 assistant engineers & helpers.

The first month or two were largely occupied in preparations for future work, & in securing men. At first men were scarce, but latterly they have been more plentiful & the more than 5,000 now on the line from Robson to Glenwood are making the dirt & rock fly at an astonishing rate. Long stretches are completed, & the sub-contractors have moved on to secure more work. Yet in other places the work has scarcely been touched, & of course the bridges can not be put in place until the steel reaches them, & the timbers can thus be brought forward on the cars.

The long-looked for 14-drill air compressor plant, which was ordered some two months since for use on the 3,000 ft. tunnel, to be

driven about 4 miles out from Brooklyn, has arrived at the C.P.R. dock here, & the big job of hauling the heavy machinery to the scene of operations is now being undertaken. It is estimated that it will take about 3 weeks to get it installed & at work. Included in the plant are three 80 h.p. boilers & 2 large air receivers. The machinery will be installed on this side of the tunnel, but will be operated from both ends, the air for the work at the western end

being delivered in a 5-in. pipe nearly a mile long. At the west end a small boiler will be installed to operate a blower to drive the smoke from the tunnel, while a similar work will be performed at the eastern terminus by the main plant. Seven drills will be used on each end—6 on the heading & 1 on the bench. The machines are fitted with a 3½ in. piston & 2¼ in. bits, the drills being 5 ft. long. The cost of the outfit was about \$15,000, & it is being used by McLean Bros., who have the tunnel contract. It is complete in every respect, & will greatly assist in boring the 16 by 21 ft. hole through the mountain. While waiting for the plant to arrive, work has been commenced by hand, & on the eastern end the heading is into the mountain about 16 feet. Timbering has already commenced & may be necessary for 100 feet.

McLean Bros. have also received a patent steam scraper, the first one of the kind manufactured. Contractors are awaiting with interest the outcome of the trial. It is operated by a single 35 h.p. boiler, & it is claimed that the scraper will handle 3 cubic yards of gravel at one operation. The engine is of the donkey variety & can be made to proceed up hill

or down dale by its own power, there being 1,700 ft. of $3\frac{1}{2}$ in. steel cable. The whole outfit has been hauled to the second contract of McLean Bros., near the new town of Gladstone, where it will be set to work as soon as possible on some of the immense gravel fills & cuts. It will probably save a large amount of labor.

P. A. O'Farrell, writing to the Globe, says of this line: The Columbia & Western Ry. is being rushed with all speed to the Boundary Creek country. It will be completed to Midway. Between Arrow & Christina Lakes, a distance of about 50 miles, the new road will climb 3,000 ft. above the lakes, & the up & down grades will lead through a frightfully rough country. From Robson the road rises gradually till at Brooklyn it is fully 1,000 ft. above the lake, & then it cuts through a 3,000 ft. tunnel to reach Dog Creek. Western pioneers have an unhappy knack of inflicting inappropriate names on the mountains, creeks & rivers of this far northwest. Dog Creek is a noble torrent that rolls through a glen & valley of enchanting loveliness. One of its tributaries is Pup Creek, & the mountain at whose base it flows to a junction with Arrow Lake, is called Bull Dog Mountain.

From the summit of Bull Dog Mountain I recently beheld a vision of terrestrial scenic beauty, the peer of which my eyes had never yet seen.

Picture 10,000 rolling mountains lifting their heads proudly to the skies, hundreds hoary with everlasting snows, & thousands covered even to their crests with the great primeval forests of the land. Picture, too, a brilliant autumnal sun casting light & shade upon all that vast panorama of glen, & canyon, & torrent, & slope, & mountain. There, where the sun kissed mountain tops & shelving hillsides in the shadow & far below, in the midst of these glorious mountains stretched the waters of Arrow Lake, too unutterably beautiful to be portrayed by poet or painter, much less by this inartistic pen of mine. It were hard to tell whether forest, lake, glen, mountains, the light or the shade, the dark blue sky studded with fleecy clouds or the glorious autumnal sun added most to this magnificent scenery. It was the tout ensemble that made the picture so enchanting—a picture that must abide forever in the memory of him whom the Fates led thither to behold it. When the Columbia & Western Ry. is completed the traveller through the Kootenay will catch a glimpse of this magnificent scenery as he winds around the slope of Bull Dog Mountain. But the mountain-climbers only can behold it at its best. Were it not that nature had stored her richest treasures in these mountains of the Kootenay, these beautiful lakes & forest-clothed glens & glades & mountains must have for ever been given over to the empire of loveliness. Often for hundreds of miles there is not enough arable land to support a family, & yet in that same stretch there are mines of copper & gold, of lead & silver, sufficient to enrich an empire.

On the shelving sides of Bull Dog Mountain I examined a copper mine, called the Mountain Chief. I was amazed to find on this mountain side, $2\frac{1}{2}$ miles from the lake, the finest copper prospect that I have yet seen in B.C. The Columbia & Western Ry. was projected to give an outlet to the world's markets to the almost unlimited copper ores of the boundary country. That is the country west of Kootenay. Within a year Boundary can supply smelters with 1,000 tons of copper ore a day, & from what I have seen on Bull Dog Mountain I am convinced that rich copper ore will yet be developed on the way from Robson to Midway. A good copper mine is the most valuable of all business investments. The demand for copper is always greater than the supply, & the price of copper is as steady as Government bonds. The Anaconda mine clears \$5,000,000 profit yearly. The mining, smelting & refining of Kootenay & Boundary copper ores can be effected as cheaply there as at Anaconda as soon as the railway from Crow's Nest Pass to Midway is completed.

More smelters must of course be built, more steamboats on the lakes & rivers, more coke furnaces, more villages, camps & cities. Lead, copper, gold & silver mining must then become the greatest industry of the Dominion, provided Canadians continue the smelting, refining & handling of the product of their rich mines at home.

Coming down the lake, on the fine C.P.R. steamboat, the Rossland, I looked over the freight which loaded it down to the gunwale. There was a carload of California peaches, 2 carloads of Manitoba flour, 2 carloads of hay from Regina, dry goods from Montreal, preserves from Ontario & machinery from Quebec, & the pursers of the Rossland & the Kootenay told me that all the boats on the lakes are busy as can be conveying freight & passengers. Their carrying capacity is strained to the utmost. Since F. A. Heinze turned the Rossland-Robson road over to the C.P.R. the express business on that road has increased threefold. It is booming now, & this business must be enormously increased in the near future. The Crow's Nest Pass Ry. will be in fine running order by January, & when it is in full swing they will start out shipping into the Kootenay about 200 tons of coke a day & about 500 tons of coal. Moreover, farm & food products of all kinds will be speedily forwarded over that line from Manitoba & the Northwest Territory, & the supplies that now reach Kootenay from Washington will then come from Canadian farms. The developments of the coming year will be the most astonishing that B.C. has yet seen, & will attract the attention of the world.

Frenchwoman (travelling for some time on Metropolitan Railway, London, to fellow passenger)—My station do seem very long to arrive at. I have passed Bovreel, Asbestos, Liebig, Pears' & Bouillon Fleet, but I come not to the Adeeson Road.

The Crow's Nest Pass Ry.

The construction of this line has been pushed very rapidly. Construction commenced July 20th, 1897, & the last rail was laid Oct. 7, 1898, completing the line between Lethbridge, Alta., & Kuskanook, Kootenay Lake, about 290 miles. From Kuskanook the cars are taken on barges, each of which carries 15 cars, down Kootenay Lake, & down the Kootenay River to Nelson, where connection is made with the Co's Columbia & Kootenay branch, thus giving through traffic to Rossland without breaking bulk, besides effecting a considerable saving of time. The Co. has 2 years within which to complete the line to Nelson, & notwithstanding reports to the contrary, Vice-President Shaughnessy states that the terms will be carried out to the letter.

From Lethbridge the line runs via Macleod & Pincher Creek. After reaching the Crow's Nest Pass, which lies on the boundary line between Alberta & British Columbia, the line follows pretty closely the stream known as the Middle Fork, afterwards taking a southerly course along the Michel River to the region of the Elk River. Crossing the Kootenay River into the East Kootenay mining country, it goes up the west side of the river for 50 miles until it reaches Cranbrook. Thence it crosses the summit of the Purcell range of the Selkirks to the Moyie River, which it follows for 50 miles until it strikes the Goat River valley, & follows it to the head of Kootenay Lake, which is the temporary western terminus of the railway.

The coal mines, of which so much has been heard, lie in the Elk River district beyond the Crow's Nest Pass, & the great advantage of the road is that it establishes communication between the gold & the coke which is required for smelting it, all within the Dominion. Moreover, it opens up the East Kootenay mining country, which is most promising. Already several properties are working in the district. On the St. Mary's River, the North Star is in an advanced state of development, & the Sullivan group is also working. On the Moyie River the St. Eugene property is also being worked. Copper as well as gold is making a good showing in the country.

The country crossed by the railway is mountainous, but the valleys are wide & contain land good for agricultural purposes. Splendid grazing lands are to be found all along the route. Moreover, the lakes & waterways are navigable the year round. Owing to the Chinook winds they do not freeze in winter. Another advantage to East Kootenay & the Rossland district is the fact that the food products of the Edmonton district have direct access thereto. This is one of the chief boons of the railway.

From Fernie, 35 miles west of the summit of the Rockies, the junction of Coal Creek & Elk River, a branch line runs 5 miles up Coal Creek to the coal mines which are already working & where 300 coke ovens are building. The Coal Co. has also a reserve mine,

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north of the main line, near Michel Creek, about 10 miles west of the summit. From Morrissey Creek, about 41 miles west of the summit, it is intended to build a branch eastward up the creek about 4 or 5 miles to the coal deposit, the vein extending through the spur of the mountain from 5 miles up the creek from Fernie to Morrissey Creek, appearing again on Morrissey Creek. A branch from Cranbrook to Fort Steele is also talked of.

Mixed trains have been running between Lethbridge & Cranbrook for some time, & the service has now been extended to Kootenay Lake. A train runs from Lethbridge to Cranbrook, the division point, returning the next day, & there is a similar service between Cranbrook & Kootenay Lake. Not much passenger traffic is anticipated for the winter months, but there will be a very heavy freight traffic, principally in coal, timber & ore. On Nov. 15, Manager Whyte of the Western Lines took over the Crow's Nest line from the Manager of Construction, & as there is a good deal of work yet to be done west of the Rockies, especially west of the loop, he appointed as Superintendent M. H. Macleod, who since H. D. Lumsden, C. E., came east to make the Toronto-Sudbury survey, has been Chief Engineer of Construction. G. Erickson, heretofore Roadmaster of the Mountain Section at Field, B.C., has been appointed Trainmaster. The line has been attached to the Western Division. The portion between Macleod & Cranbrook has been designated the Elk River Section, & that between Cranbrook & Macleod as the Goat River Section. Mr. Whyte says the ballasting of the road will be pushed forward as rapidly as possible, in order that passenger traffic may be well accommodated in the spring. He expects that next season trains will be able to make as good time on the new road as on any other part of the system. There will be little snow to contend with, & it will not be necessary, therefore, to erect any snow sheds in either of the two mountain ranges.

Early in December, at the invitation of the C.P.R., a number of West Kootenay business men made a trip from Nelson to Kootenay Landing by boat, & thence over the Crow's Nest line to Fernie, the centre of the coal fields.

Rosslund papers have been continually asserting that the Crow's Nest line would not be extended from Kuskanook up the west side of Kootenay Lake to Nelson, but that it would be built almost directly west via Salmo, Sayward & Trail. When Sir Wm. Van Horne was at Nelson recently he emphatically denied this, saying: "We don't want to go over

the tops of the mountains. It is too ridiculous to talk about; of course we are coming through Nelson."

The question of building a line into the Ymir & Salmo districts is another matter. It is said the C.P.R. has had a survey made & that the route is practical. Speaking of the matter, at Nelson, Sir Wm. said: "We are here for business, & wherever it is to be got we are after it. Ymir I have not visited, but if it be as great a camp as you say the C.P.R. will get into it. We are looking for trade & will do all we can to secure it."

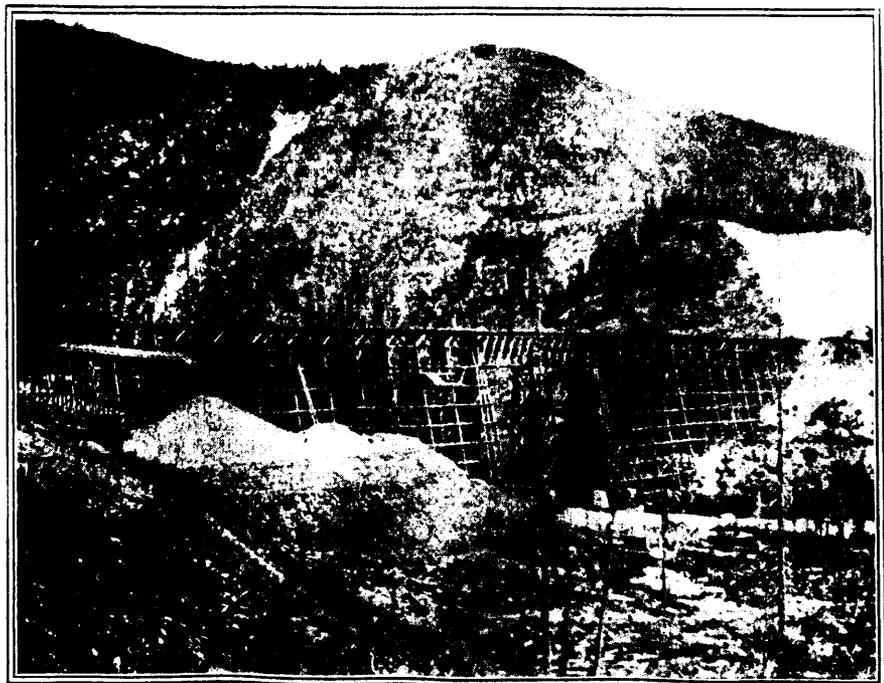
Hydraulic Filling on the C.P.R.

E. J. Duschenay, C.E., Superintendent of the Selkirk & Shuswap sections of the Pacific Division of the C.P.R., has, in response to a request, kindly furnished us with the following particulars of the hydraulic filling of trestles:

The C.P.R. Co., anxious to replace all its wooden structures, built during first construction, by permanent works, such as steel bridges, masonry arch culverts and solid embankments, has had a large force of men,

with the latest improved plant, at work for the last 12 years over the whole system. The new embankments were mostly made up with steam shovels loading gravel on cars, hauled sometimes long distances. In 1892 the Co. was engaged in doing a very large amount of filling of trestles in British Columbia, especially along the canyons of the Fraser River. At various points mountain streams intersect the railway line, & one may even to-day see where the pioneer miners utilized these streams to wash the gravel benches along the river in their mining pursuits. The management, always on the alert to improve & cheapen its manner of works, struck on the idea of using this water power which nature was offering, & decided to discard the use of its excellent steam shovels, with improved ballast unloaders, even the most ingenious air dump-cars, for hydraulicing wherever it could be done. The expectation was that the ultimate cost of filling these bridges by this method would be about half that of doing the same work as formerly. The results have fully proved this & have been most satisfactory.

Two large structures were replaced in this manner along the Fraser River, & the Co. is now completing a large embankment, across the wide ravine of Mountain Creek, near the summit of the Selkirk Range. This bridge has a total length of 1,071 ft., & is 155 ft. in depth, & is fully described & illustrated in the "Treatise on Wooden Trestle Bridges," by W. C. Foster. The cost of installation of this hydraulic plant has been very great. A flume 2 miles long had to be built along a very broken side hill, steep & rocky, & across the path of many snow slides. The stream of Mountain Creek is rapid, & in this distance of 2 miles from the railway track it rises over 380 ft. A dam was built across, so as to divert part of the stream into the flume at its head. The water is thus brought down in this flume, built 4 ft. wide, & on a gradient of 20 ft. per mile, so the flow of water is of uniform volume & speed throughout. It empties into a reservoir, or box, called "Penstock," which stands at a height of 180 ft. above the railway track. A line of steel pipes 14 inches in diameter is connected with this reservoir, & leads to the present pit on the east side, a distance of 2,200 ft. Although the cost of building the flume, laying the pressure pipe line, & all other installation expenses amounted to a very large sum, the ultimate cost of the



material retained in the embankment will prove a great saving to the Co. over other methods. It is expected this will be at least 50% & probably more with favorable circumstances.

There are 2 distinct operations, viz: 1st. Washing the bank down, leading & delivering it by means of a series of sluice boxes to where the filling is to be made. 2nd. Retaining & impounding the material after it is deposited. In hydraulic mines, the first operation only is done, since the tailings or gravel after the gold has been extracted are of no further use, therefore are deposited to the nearest dumping ground & allowed to go to waste.

The pipe line terminates with what is called a "Monitor" or "Giant" so constructed with ball joints, that the large volume of water, emerging under great pressure can be controlled & directed with greatest ease. There is a gate, a short distance behind the "Giant" which acts as a valve & closes the water when necessary. The piper & monitor men direct the jet of water at the foot of the bank of gravel, soon a cave-in of the bank takes place, & the water, gravel & boulders all run into the sluice boxes placed at the lowest point of the working pit. The sluice boxes, 33 in. wide by 2 ft. high are built of planks, with the bottom covered with pieces of old steel rails so to prevent the wear. When necessary to have the line of these sluices turn any small or large angle, the forward length of sluice boxes has to be built a few inches lower, so to prevent the gravel blocking the sluice, & forming bars at the turning point. They are on a steep or 8% grade, running down to the point of unloading, generally at the centre of the embankment to be made. Thus the gravel & all filling material is carried into the proposed filling. Now begins the difficulty of controlling, holding this material in its partly liquid state from wasting itself all over the country. Not only is it necessary to control it, but it must be held within the limits of the slope, usually $1\frac{1}{2}$ to 1, or angle of rest of an earth embankment. This is done by alternative rows of logs & brush, hand-laid along the outside face of the filling, each row receding the required distance to form the slope required. All the gravel, rocks, &c., are thus held back & the water only is allowed to fall over, & run down the face of the embankment already built. The filling at Mountain Creek began in Aug. 1897, & continued till Oct. 1897, when the winter weather stopped all possibility of work. It was resumed again last May & in all probability will be completed this fall. This was written Sep. 3. The volume of water used may be reckoned as 800 miners' inches, under a pressure of 180 feet.

The smaller of the two illustrations on page 270 shows the monitor at work, the larger illustration shows the hydraulic fill on the west side made to a height of 90 ft., also the sluice boxes fastened on the side of the trestle work.

F. S. Barnard, Resident Director in British Columbia of the B. C. Electric Ry. Co., is visiting England.

P. J. Myler, who has been Secretary & Asst. Treasurer of the Westinghouse Mfg. Co. since its establishment in Hamilton, Ont., & who has been Acting Manager since G. F. Evans went to St. Petersburg to establish the Co.'s Russian works, will, it is understood, be appointed Manager as well as Secretary at the next board meeting.

Grand Trunk Betterments, &c.

Portland Terminal Facilities.—Owing to the steady increase in the Co.'s business at Portland, Me., the officials have been greatly hampered in the narrow limits & small capacity of its yard. Various expedients were tried to extend the capacity of the freight yard, but it was not until the land near the East Deering stock yards was purchased & fitted up as a yard that the problem of handling the large business was solved in any satisfactory manner. Now the Co. has 2 yards, one near the passenger depot, extending out towards the bridge around the base of the Munjoy Hill & past Fish Point, & the other yard, the new one, about $1\frac{1}{2}$ mile from the passenger station & steamer docks.

The new yard begins just above Verandah street, where the Yarmouth road crosses the G.T. tracks. Its northerly end is at the stock yards, 2,500 ft. from the commencement of the yard. The yard contains $11\frac{1}{2}$ miles of tracks & holds 1,300 cars. The yard is 25 tracks across, the longest track being 2,400 ft. & the shortest about 1,300 ft. At the Verandah street entrance the yard branches out from the main line, which at this place is a double track, & this is the only entrance to the yard. It was the original intention to make the yard much longer than it now is, but this was prevented by the failure to secure a proper deed of the land near the northern terminus of the yard, & when the deed finally was secured it was too late to grade the land & lay the tracks for this season. This extension will probably be constructed as soon as it is required.

Grading for the yard was commenced July 22 & was done by contract. The big fields were smoothed down & the hollows filled in, making a perfectly level tract of land for the laying of the tracks. On Sep. 28 the work of putting in the tracks commenced. This required 23 miles of rails, 35,000 sleepers & hundreds of car loads of gravel for ballasting.

Victoria Jubilee Bridge.—The new superstructure is all completed, the removal of the old tube having been accomplished, with the exception of the centre span. As this will require a different method of handling, on account of its length, it will probably require more time than has the removal of the others. The laying of the floor is closely following the removal of the spans. The illustration on page 271 shows a cross section of the 11th pier, & of the 12th span. The old tubular bridge is shown inside the new span.

Crossing at St. Henri.—The application of the corporation of St. Henri (Montreal), for permission to open Gareau street across the G.T. tracks again came before the Railway Committee of the Privy Council Nov. 10. This application had been twice refused by the Committee on account of the danger to life of additional level crossings of the G.T. & also because there is already a crossing at Fort street, which is the next street to Gareau. The Mayor of St. Henri & Mr. Bruneau appeared for the City, & produced a quantity of new evidence to show that the municipality had the right of way before the building of the G.T., & that the right had never been surrendered. The necessity for the crossing was also urged, in view of the crossing being needed by the large population on the other side of the tracks. W. Wainwright, on behalf of the G.T., urged the

danger to life of permitting additional level crossings, & contended that there was already ample accommodation for the public in the existing crossings. Speaking of the danger of level crossings, Mr. Wainwright said it had been so great in Montreal & vicinity that the G.T. was seriously contemplating the raising of its tracks into the city, so as to do away entirely with level crossings. The case was adjourned.

The Contract.—McCormick & McLeod, of Bracebridge, have been awarded a 3 years' contract for ties for the Northern division & main line between Toronto & Montreal. During the past year they held the contract for the Northern division only. It is estimated that fully 450,000 ties will have to be supplied yearly under the contract.

Midland Elevators.—The management is said to be considering the advisability of erecting a third elevator at Midland, Ont., the present structures being overtaxed to accommodate the grain passing through that port.

Bridge Near Allandale.—At a meeting of the Railway Committee of the Privy Council Nov. 10, residents of Innisfil township, in the vicinity of Allandale, tendered an offer of \$500 towards the building of a bridge over the G.T. tracks. The Co. expressed its willingness to contribute half of the cost, but could not accept the offer of \$500. The Committee not being able to announce any unanimous finding, reserved judgment.

The Black Rock Yards.—On Dec. 6 a Buffalo, N.Y., paper published a Washington, D.C., despatch as follows: "The G.T.R. Co. has secured control of the Canadian section of the bridge to be built across the Niagara River at Grand Island, & the Co. has in view the removal of its yards at Black Rock to Grand Island, where unlimited space can be secured. The agitation to connect Grand Island with the mainland by a bridge has been carried on for years, but has been held up on account of the enormous expense attached to the construction of the 2 big spans, one on the U.S. side of the island, & the other on the Canadian side. It is stated now that the G.T. Co. has offered to build the Canadian section, & it is believed that the scheme will be carried out. The island affords splendid dockage facilities, which it is believed the G.T. Co. would make use of."

We are officially authorized to deny the statements, as there is no basis for them.

Grand Haven Harbor.—A second warehouse, 400 ft. long, & several hundred feet of additional dockage are being built by the Co. north of Krause & Co.'s elevator. The river in front of the Co.'s property is being dredged to a depth of $17\frac{1}{2}$ ft.

Jurisdiction in a Railway Case.—In a recent case in which the writ was issued out of the High Court of Justice for Ontario, to recover damages against the railway company for an accident which happened in British Columbia, & was served on the defendant's claims agent in Toronto. The head office of the railway was in the Province of Quebec, but the Co. did business in Ontario, where it had many hundreds of miles of railway, millions of capital invested, & where hundreds of its officers & employes resided. Mr. Justice Meredith held that the action was properly brought in Ontario.

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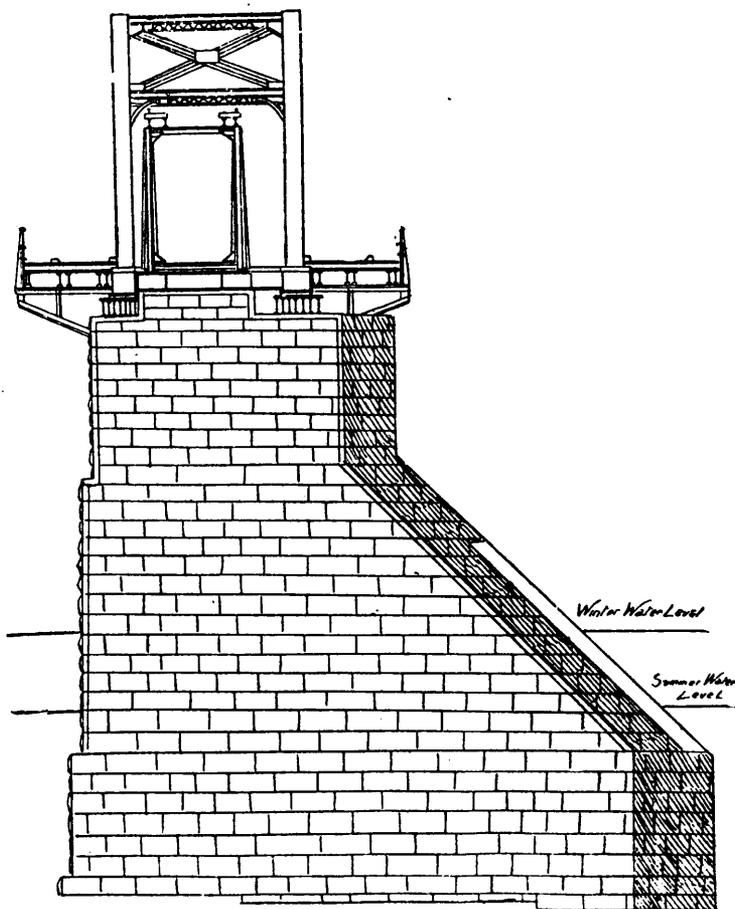
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ELECTRIC RAILWAYS.

The London Street Ry. Strike.

General Manager Carr writes us in reference to the article under this heading on pg. 241 of our last issue:—"I wish you would kindly correct the error in the last paragraph of the article, stating that the men secured a small increase in pay & recognition of the Union. The pay was increased as stated, but the Co. did not recognize the Union, as you will readily see from a copy of the agreement that was entered into between the Co. & its employes, each employe signing the enclosed agreement."

As the agreement is of considerable importance & interest we give its provisions in full as follows:

The wages for motormen, and conductors employed by the Co. shall be on the following scale: For the first 6 months, 13c. an hour. For the second six months, 14c. After one year, 15 1/3c. All men to be listed at once upon said scale according to length of previous service. All overtime to be paid for according to regular rate men are receiving. Nine hours to constitute a day's work for all regular men, with a leeway as near 2 1/2 hours as time table will allow. Regular relief men to receive remaining hours, which will not be less than 8.

All employes of Co. shall have full liberty to affiliate with any lawful association or club, and shall not be required to sign any document abridging their full rights under this agreement.

All conductors & motormen in the employ of the Co. to be marked upon the blackboard in accordance with the time they were hired. The spare men to get all spare work, which, as far as practicable, shall be equally divided among them.

All conductors & motormen shall report at the carbarns 15 minutes before their run goes out, & anyone failing to do so, his place shall be filled by the first man on the spare list, & any motor man or conductor failing to report or send word within 4 hours after his run goes out shall lose the next day also, unless his services are required.

No motorman or conductor shall be required to pay for any breakages unless it is proven that the breakage was due to his own carelessness.

No conductor or motorman shall lose his own time to look up accident reports when he is requested to do so by Manager or Superintendent, but in such case his pay shall go on at the regular rates.

All employes in the employment of the Co. to have free transportation over all lines operated by the Co. No more than 4 employes to be on 1 car.

Any employe laying off with permission of the Co. shall have his place on the list when he returns to work.

The Co. to have the right to make such rules or regulations as may from time to time be deemed necessary, but not inconsistent with this agreement.

One week's notice to be given by employes before leaving the Co.'s service, or failing such notice, forfeiture of equivalent wages.

None of the employes who went out on strike on Oct. 27, 1898, to be refused reinstatement in their former position on account of having struck work as aforesaid, & no dismissal of such employes to be made except for other & good cause. Also that R. Westby, W. Crawford, W. Kerr, J. Fitzgerald, M. Delisle, & J. Pickell be reinstated to the runs they were on previous to their dismissal.

The Manager of the Co. to hear at any time any complaint or grievance of any employe, & that such employe, if dissatisfied, shall be heard again with any one or more employes who can substantiate or prove the justice of his complaint or grievance; & further, that in case such employe is still dissatisfied with the Manager's decision, an appeal shall lie to the President & directors, if made within 3 days of the Manager's decision; & in case where conductors or motormen are suspended or dismissed, & it is found that they are not at fault, they shall be reinstated on their former run, with full back pay.

The employes to be at liberty to purchase their uniform where they see fit, subject to the same meeting the approval of the Manager as to uniform material & style, not exceeding in quality those in present use.

This agreement to be in force for 6 months, or for such further period as the employe may continue in the service of the Co.

The petition presented by the men on Oct. 2 contained the following clause:

"None but residents of London shall be employed, & before they start to train they must deposit their initiation fee with the Secretary of our Division, & receive a permit card. After 30 days' experience, if satisfactory to the Co., they must become members of our Association."

This was not agreed to by the Co.

British Columbia Electric Railway Co.

This Co. recently issued 12,000 non-cumulative 5% preference shares of £10 each, ranking for additional dividend rateably with the ordinary shares, after the latter have received 7%, at the price of £11 a share. The issue was explained in the Co.'s annual report (Oct., pg. 216), & is for the purpose of carrying out extensions & improvements at a cost of some £55,000, & to redeem, at a cost of £60,000, the non-cumulative 6% income bonds outstanding.

The Co. is now operating 41 miles of fully equipped line in Victoria & Vancouver, & between the latter place & New Westminster.

The earnings & expenses for Oct. were:

	1896-7.	1897-8.	INCREASE
GROSS EARNINGS.			
Railway—Vancouver.....	\$4,166	\$5,723	\$1,557
Victoria.....	5,995	6,981	1,076
Westminster.....	7,332	10,394	3,062
Lighting—Vancouver.....	6,281	10,139	3,858
Victoria.....	4,069	5,085	1,016
Total gross earnings.....	\$27,753	\$38,322	\$10,569
Working expenses.....	\$18,286	\$21,600	\$3,314
Net profits.....	\$9,467	\$16,722	\$7,255
Aggregate Gross Earnings			
from April 1 to Oct. 31....	\$158,496	\$228,684	\$70,188
Aggregate Net Profit from			
April 1 to Oct. 31.....	\$46,697	\$93,722	\$47,025

The aggregate gross earnings & net profit for 1896-7 are from April 15 only.

Maritime Province Lines.

Bedford Electric Co.—At the last session of the Nova Scotia Legislature M. Chisholm & others, of Halifax, were incorporated under this title, with power to build & operate an electric line in Halifax county, outside Halifax city, & with other powers. It was recently reported that the Co. had in contemplation the building of a line around Bedford Basin, through Dartmouth & down to Cow Bay.

Ontario Lines.

Brantford.—There has been a revival of the rumor respecting electric roads into Brantford, & it is possible something may be done next summer. The Brantford St. Ry., it is stated, would be willing to extend its Mohawk Park route to Cainsville for a consideration. The residents of this village & Echo Place, many of whom are employed in the city & prefer living in the suburbs, are very anxious that the electric road should be extended out there, & it is said that they would be willing to pay a bonus. Manager Barron stated to a Courier reporter that he had been approached on the matter, but had replied that it would take a bonus of \$10,000 to extend the line out the Hamilton road. He went on to state that the Hamilton & Chedoke Ry. Co. is still very anxious to build its line to Brantford, & it was possible it might yet do so. There is now a gap of only 16 miles between Brantford & Hamilton.

Brockville.—The Brockville Times says: "While we are not opposed to the town building an electric railway we believe that if the council would actively endeavor to interest capitalists in the matter it would be possible to secure the construction of an electric line by a company with an agreement that would guarantee a good service & low fares. A Brockville electric railway might in course

of time be made the centre of a system of radial electric lines extending to a number of tributary towns & villages. For some reasons it might be better to have such a system owned & operated by private capitalists. The gas & electric light systems are used only by the people of Brockville. An electric railway would be used by many outsiders, & in case of extension to other towns might belong to them as much as to Brockville. Still some strong arguments might be advanced in favor of municipal ownership of an electric railway, & if the council should decide in favor of it we would not oppose it, although we believe a satisfactory arrangement could be made with a company if the council would go about it in the right way."

Galt, Preston & Hespeler.—The proposal to extend this line from Preston to Berlin & Waterloo appears to be dormant. The town of Waterloo voted a bonus of \$12,000 on June 10 last & \$28,000 was expected from Berlin, but it was thought inexpedient to submit a by-law.

Hamilton, Grimsby & Beamsville.—When the case of Saltfleet Township Council against this Co. came up in Hamilton Dec. 1 Judge Street said he had read the pleadings & found the case was largely a question of engineering skill, concerning the operation, maintenance & repair of the road. In regard to the use of the red light in front of the cars, he observed that the clause in the by-law so ordered & it should be followed. Instead of hearing a mass of general evidence, he suggested that an independent engineer be engaged to inspect the road & report to him. He suggested the name of W. T. Jennings, but plaintiff's counsel objected & the Judge appointed R. McCallum, Inspector of Railways for the Ontario Department of Public Works, & aided by counsel, drew up a memorandum of the work which Mr. McCallum will be expected to do. When he has completed his report, it will be forwarded to Justice Street, who will then proceed with the trial in such a way as he finds expedient. The plaintiffs dropped the clause referring to the sale of tickets.

International Radial.—The directors of this Co., which was incorporated by the Dominion Parliament in 1895 to build from Hamilton to Guelph & other places, are negotiating with Hamilton City Council. The Mayor of Hamilton having recently stated that an attempt might be made to block the building of the road by the Hamilton St. Ry. Co. claiming the exclusive right to use the high level bridge & not entering into an agreement to give the new Co. running powers over its tracks, representatives of the H. S. R. Co. say that Co. will not take any such stand, but is willing to discuss terms with the International Co. for running powers over the lines inside the city.

London.—The gross revenue for Nov. was \$3,599.75, against \$7,380.31 for corresponding period, an increase of \$1,219.44.

The local Court of Revision has sustained the assessment of the Co.'s property at \$302,542. The Co. contended that instead of valuing the road & plant at an assumed cost of construction, the rails, poles, wires, etc., should be assessed on the basis of the price they would bring if removed & sold. No objection was taken to the assessment of \$73,725 on the power house, car barns & other realty, but to the following:—Rails, poles & wires, \$136,780; bridges, \$19,220; asphalt pavements, \$22,817; personal property (rolling stock), \$50,000. The rails, poles & wires last year were assessed at about \$80,000, & the bridges & asphalt pavement were not assessed at all. As the question is one of legality, the case will doubtless go to the Court of Appeal.

The Co. has given notice of application to the Ontario Legislature to confirm certain by-laws of the City of London, & of the townships of London & Westminster.

On account of threats non-union employees of the Co. asked permission to carry revolvers. The police refused.

Metropolitan.—A conference between the Railway Committee of the York County Council & President Warren & Manager Moyes of this Co. was held at Aurora recently to settle the alignment & location of the railway extension through the town, the Co. having taken objection to the route as laid out by the Council some time ago. After considerable discussion & an absolute refusal on the part of the railway to accept the conditions, the matter was finally settled by the town's consenting to the route & alignment suggested by the railway people. Now that this matter has been satisfactorily settled, it is understood the construction of the road north of Bond Lake through to Newmarket will be proceeded with at once.

The Co. has given notice of application to the Ontario Legislature for an Act to confirm by-laws of the Town of Newmarket, the villages of Aurora & Richmond Hill, & the townships of Whitechurch, King, Vaughan & Markham, under which the property of the Co. in the municipalities mentioned is exempted from taxation for 10 years, & also to confirm agreements made between the Company & the municipalities.

Niagara Falls Park & River.—A contemporary recently published the following:—"It is rumored that there is a possibility of the Niagara Falls Park & River Ry. being extended to Niagara-on-the-Lake on the north & to Fort Erie on the south. The present route of the road is between Chippewa & Queenston, Ont., along the bank of the Niagara River on the Canadian side. It has entrance to Niagara Falls, N.Y., over the upper steel arch bridge, & it is expected to enter Buffalo or to secure a connection with the

roads in that city over the International Bridge, which is soon to be rebuilt, when it will afford room for trolley as well as steam car tracks. The Co. controls the necessary franchises."

General Manager Phillips, in response to an enquiry, says:—"The press item referred to originated in the imagination of the correspondent, as we have no intention of making any extensions the coming year, but there is no doubt we shall extend the road to Fort Erie as soon as the international bridge is rebuilt, so as to admit of trolley travel, for we still hold the franchise from Chippewa to Fort Erie."

Ottawa.—The Railway Committee of the Privy Council has refused the application of the Co. for permission to cross the Canada Atlantic Ry. tracks at Elgin St., so as to continue the line to the exhibition grounds. (Nov., pg. 243.)

The cost of the proposed extension to Britannia, which is not likely to be taken up before next spring, is estimated at \$125,000. It is also suggested that the road be extended to Rockland, 22 miles.

J. Shepherd is suing the Co. for damages for wrongful ejection from a car. Several weeks ago, he alleges, he boarded a car, & at the time was smoking a cigar. He entered the car at the front vestibule, & merely held the cigar in his mouth while taking a car ticket from his pocket book. He further alleges that he was forcibly ejected by the conductor without remonstrance, & in attempting to board the car a second time at the rear entrance he was again pushed off, & in the fall sustained a severe sprain of the ankle, with which he has since been laid up.

Parry Sound to Depot Harbor.—The Parry Sound Board of Trade has appointed a committee to obtain information as to the cost

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of building an electric railway between the points named.

Peterboro.—The rumors of extensions to neighboring villages have again been revived.

Port Arthur.—In our last issue, pg. 243, we mentioned the inspection that had been made of this line by Manager Phillips, of the Niagara F. P. & R.R., at the instance of the Ontario Government. We have since obtained some additional particulars. The construction of this road into Fort William in the first place was bitterly opposed by the business people & the authorities of that town, as it was viewed as an attempt to capture the trade of a new & growing place, & to keep the business centre in Port Arthur. In consequence, a sullen opposition has been maintained ever since to everything in connection with the road, ever accentuated by the rivalry existing between the two towns. While Fort William has had just cause of complaint in respect to the condition of the roadway & crossings throughout the town, as shown by Mr. Phillip's inspection, the successive councils were themselves to blame for the weak & irresolute manner in which they acted in the matter. The track was not in the first place put in the condition required by the Order-in-Council, but, in places, the ties were exposed & never covered between the rails at all. This & sundry violations of the agreement were allowed to continue, with feeble protests & complaints lodged from time to time. Port Arthur, on the other hand, has run the road at considerable loss, so far as making it revenue producing, & has given a very fair and regular service. While the object of the road was to bring grist to its own mill, it has, it is generally admitted, been quite accommodating to the people of both towns, in the way of special trains, etc., as should be expected, but there has been little effort made to keep their track and crossings in repair. The management claims that the Fort William people are unreasonable, & that they will not meet them or co-operate with them in the work of repair or maintenance, & thus wrangle and vituperation are continually in evidence.

Mr. Phillips has made a lengthy report on the condition of the line. He finds that on some portions of the line within the limits of Fort William there is no planking inside or outside the rails, & that on other portions the planking is in very bad condition, that the rails in places are about street grade, & the earth filling below the level of the rails, & that the ends of the ties are exposed. At some street intersections there are no crossing planks. Frogs at turnouts are not packed as required by law. The trolley wire, no. 4 copper, is too small, & it appears from the number of splices that there has been considerable trouble with the wire breaking. At places the wire is too low, being only 12 to 14 ft. above the rails, on account of the span being slack, the poles on the sides of the streets leaning towards the roadways owing to the soft nature of the soil, or imperfect setting. There is no guard wire over the trolley wire to protect telephone & telegraph wires from contact with the trolley wire. A great number of the insulators used in attaching the trolley wire to the span wire are in bad condition, & must allow the span wires to become charged with electricity in a number of places. An iron wire was noticed off the insulator & lying on the cross arm. The rails are being rebanded with copper bonds. The cars are in good condition, being clean & well kept, & apparently run on schedule time. In conclusion, Mr. Phillips, under the authority vested in him by the Government, requires that the repairs, &c., pointed out as necessary be made forthwith, & it is said the Fort William authorities will insist on this being done.

Sandwich, Windsor & Amherstburg.—This Co. has given a chattel mortgage of \$150,000 to G. Gooderham & T. G. Black-

stock, of Toronto. We are informed that this is merely a renewal & should not in any way affect the credit of the Co. any more than for the past 5 years. The mortgagees have held the Co.'s bonds since 1893, and are secured by chattel mortgage.

St. Catharines & Niagara Central.—Application will be made to the Dominion Parliament next session for an Act to incorporate the Niagara Falls, St. Catharines & Toronto Ry. Co. with power to assume the assets, privileges, etc., of the St. Catharines & Niagara Central Ry. Co., the name of which was changed in 1895 to the Niagara, Hamilton & Pacific Ry. Co., and to extend the line to Port Dalhousie & to Hamilton, with power to operate the line by steam or electricity, also to sell electric power & to operate steamboats, etc.

Toronto & Mimico.—The Toronto daily press recently stated that it had been definitely decided to extend this line to the Long Branch ranges, & possibly to Lorne Park. Manager Keating informs us that while he has been looking into the matter for some months, no decision has yet been reached, so that he is unable to say whether the extension will be made or not.

Toronto & Scarborough.—As mentioned in our last issue, the question of extending this line about 7 miles from its terminus near the Hunt Club to the west side of Highland Creek Hill, is under consideration, but Manager Keating advises us that no decision has yet been reached as to whether the extension will be made or not.

Toronto Ry.—The gross earnings of this Co. are as follows:—

	1898	1897	Increase.	Decrease
Jan.....	\$86,562.36	\$74,545.55	\$12,016.81	.....
Feb.....	82,402.19	69,744.61	12,657.58	.....
Mar.....	92,818.12	78,891.45	13,926.67	.....
April.....	86,898.83	73,756.38	13,142.45	.....
May.....	92,670.35	82,461.51	10,208.84	.....
June.....	94,119.32	91,533.44	2,585.88	.....
July.....	104,302.92	105,381.64	.....	\$1,078.72
Aug.....	110,300.54	93,224.33	17,076.21	.....
Sep.....	138,021.74	113,072.44	24,949.30	.....
Oct.....	99,650.16	86,404.22	13,245.94	.....
Nov.....	99,735.01	88,607.96	11,127.05	.....

The percentages paid to the city in Nov. of the past 3 years have been as follows:—1896, \$6,091.65; 1897, \$7,155.79; 1898, \$8,016.40.

Province of Quebec Lines.

Hull Electric Co.—The cars of this Co. between Hull & Aylmer have been equipped with headlights, which have 5 lamps of 16 candle power each, placed together before a strong reflector. It is said the equipment will be altered so that the running speed may be increased to 40 miles an hour.

Montreal Island Belt Line.—The cars between Montreal & Bout de l'Isle have been fitted with an arc light reflector on the front vestibule, which acts as a powerful searchlight, small objects a quarter of a mile ahead being plainly visible to the motorman.

Montreal Park & Island.—The Town Council of St. Louis is urging the Co. to increase its service on Park avenue & has passed a by-law requiring the Co. to remove snow, etc., thrown to the sides of the streets by snow plows, etc.

Montreal Street.—The gross earnings are as follows:—

	1898	1897.	Increase.
Oct.....	\$133,419.69	\$116,093.09	\$17,326.60
Nov.....	125,125.10	110,698.98	14,426.12

The road committee will ask the City Council to take steps to have all electric wires, except trolley wires, placed underground.

Quebec, Montmorency & Charlevoix.—In our last issue, pg. 241, we gave full particulars of the issue by this Co. of \$1,500,000 5% 1st mortgage gold bonds. On Dec. 6 we were advised that from \$700,000 to \$800,000 of the bonds had been sold & that the vendors felt

warranted in saying that it had been a most satisfactory and successful issue, as bonds were being sold every day.

The Co. gives notice of application to the Dominion Parliament for an act amending its act of incorporation, to change the name of the Co. to "The Quebec Ry. Light & Power Co." to confirm the purchase of the property & franchise of the Quebec District Ry. Co., the issues of bonds & stock made for the purpose of paying therefor, & to authorize the Co. to build railways or tramways in the counties of Levis, Bellechasse, Dorchester, Beauce & Lotbinière, to ratify the purchase by the Co. of the property of the Montmorency Electric Power Co., & the issues of bonds & stock made by the Q. M. & C. Ry. Co. in connection with that purchase, to empower the Co. to carry on the business carried on by the Montmorency Electric Power Co.; to acquire water powers & to construct & maintain dams, locks & other constructions necessary to improve the water powers; to expropriate for the purpose of placing poles & carrying wires; to authorize the purchase of gas & lighting companies, & for other purposes.

RAILWAY PROJECTS.

The Atlantic & Northwest Ry. Co. gives notice of application to the Dominion Parliament for an act extending the time within which it may complete its works. This line, originally chartered in 1879, is leased to the C.P.R.

Arthabaska.—Notice is given of application to the Dominion Parliament to incorporate the Arthabaska Ry. Co. to build a line from a point at Dudswell, on the Quebec Central Ry., to Maddington Falls, on the north side of the I.C.R., & with other powers.

The B.C. Southern Ry. Co. gives notice of application to the Dominion Parliament for an act authorizing it to proceed to construct its eastern section until Jan. 1, 1904, & to build a railway between a point on its line in the neighbourhood of Fort Steele to or near Golden on the C.P.R., by a route having the same general direction as the valleys of the Columbia & Kootenay Rivers, & also branch lines therefrom not exceeding in any one case 30 miles in length. The eastern section above referred to is defined by the Dominion Statutes of 1896-7 as commencing at the junction of Summit Creek with Michel Creek, thence by way of Michel Creek to Elk River & the Upper Kootenay River, with power to go to the 49th parallel & the Tobacco Plant.

B.C. Yukon Ry. Co.—Application will be made to the B. C. Legislature for an act to amend this Co.'s act passed in 1897, so as to empower the Co. to build a branch line from its main line in B.C. to the Taku Arm of Tagish Lake & thence to Atlin city.

Canadian Yukon.—F. B. Gregory, solicitor, Victoria, gives notice of application to the B. C. Legislature for an act to amend the C. Y. Ry. Co. Act, 1898, by striking out sec. 40, which provided that the Co. should within 6 months after the passing of the act deposit with the Government \$5,000, as security that it would expend not less than \$10,000 in surveys or construction before June 30, 1899. An alternative amendment is to substitute 18 months for 6, & June 30, 1900, for June 30, 1899. This is a Mackenzie & Mann charter.

Carp, Almonte & Lanark.—A statement which has been extensively published to the effect that work is to begin soon on this road is at least premature. The charter granted by the Ontario Legislature has lapsed without any work being done, & Andrew Bell, C.E., of Almonte, Ont., who is interested in the scheme, informs us that it has not yet been decided whether application to revive the charter will be made next session, though it is probable it will be if arrangements for

building the line are made by that time. The lapsed charter was for a line from the O.A. & P.S. Ry. at Carp, 20 miles west of Ottawa, through Almonte & Lanark to Bridgewater, Hastings Co., where connection was to be made with the since disused Madoc branch of the G.T.R. Mr. Bell says this would make the shortest possible line, with least work required, from Ottawa to Toronto, & adds that the country through which the line would pass is generally easy for railway building, especially as it was intended to utilize some 40 miles of the grading done by the intended Toronto & Ottawa Ry.

East Kootenay.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from some point on the B. C. Southern Ry. between Wardner & Cranbrook, or at either of those places, to St. Mary's River; thence along the St. Mary's River to or near North Star mine; thence along the St. Mary's River to Kootenay Lake, with power to extend the line easterly to Fort Steele; & also from a point on the line of the railway so to be built to Upper Arrow Lake; & from a point on the last-mentioned line, via Windermere, to Golden, on the Columbia River, & with other powers.

Edmonton District.—Application will be made to the Dominion Parliament by this Co. next session for power to construct a railway from some point on the line which it is already authorized to construct, either to Yellow Head Pass, to Peace River Pass, or to a port in British Columbia, or to connect with a railway which the British Pacific Ry. is authorized to construct, with authority to construct a branch line to the navigable waters of the Yukon River, to change the name of the Co. to that of the Edmonton, Yukon & Pacific Ry. Co., to declare valid the organization of the Edmonton District Ry. Co., & for other powers.

Fort Simpson to Telegraph Creek.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from or near Fort Simpson to or near Glenora or Telegraph Creek, & for other powers.

Haliburton, Whitney & Mattawa.—Gordon & Sampson, solicitors, Toronto, give notice of application to the Ontario Legislature to incorporate the H. W. & M. Ry., with power to build a railway from or near the present terminus of the G.T.R. at Haliburton, Ont., to the Ottawa, Arnprior & Parry Sound Ry. at or near Whitney, thence northerly to or near Mattawa, & with other powers.

Hamilton & Caledonia.—Nesbitt, Gauld & Dickson, solicitors, Toronto, give notice of application to the Ontario Legislature for the incorporation of the H. & C. Ry. Co., with power to build a railway from Hamilton to Caledonia, Ont., & to extend it to Cayuga, to Selkirk, & to the shore of Lake Erie, & with numerous other powers.

Kitamaat.—Notice is given of application to the B.C. Legislature for an act to amend the "Kitamaat Ry. Act, 1898," by conferring on the Co. power to construct the railway authorized by that act from the head or north end of Kitamaat Inlet north to Copper River, & east to the telegraph trail; thence south & east to the south end of Babine Lake; thence north & east to Germansen Creek at or near its confluence with Omenica River in latitude, approximately, 55.47 north, in lieu of the route originally prescribed, & branch lines in connection therewith, & with other powers.

Kootenay & Northwest.—McPhillips & Williams, solicitors, Vancouver, give notice of application to the B. C. Legislature to amend the Kootenay & Northwest Ry. Co.'s Act, 1898, by confirming & consolidating in that Co. all the powers granted by the East Kootenay Ry. Act, 1897, to the E.K.R. Co., & granted by the Southeast Kootenay Ry.

Act, 1898, to the S. E. K. Ry. Co., & purchased by the K. & N. W. R. Co., & to extend the times limited in the acts for the commencement & completion of the works, & extending the time of giving any security for 3 years, & for extended powers. The owners of the charters are L. Hirsch & others, of London. Eng.

Lake Winnipegosis to Edmonton.—J. H. Coburn, solicitor for applicants, gives notice of application to the Dominion Parliament for an act authorizing the building of a railway from Lake Winnipegosis to or near Edmonton, Alb.

Lindsay, Bobcaygeon & Pontypool.—Notice is given of application to the Dominion Parliament to revive & amend the act to incorporate the L., B. & P. Ry. Co., to extend the time for commencing & completing the railway, also to reduce the capital stock, & for other purposes.

Lytton to Quesnelle River.—Notice is given of application to the B. C. Legislature to incorporate a company to build a railway from the C.P.R., near Lytton up the Fraser River Valley, to or near the mouth of Quesnelle River, with other powers.

The North Star & Arrow Lake Ry Co. gives notice of application to the B.C. Legislature for an act to amend its act of incorporation granted last session. This act empowers the Co. to build a railway from Cranbrook, B.C., or some convenient point where the Crow's Nest line crosses the Kootenay River, up the St. Mary's River to or near the North Star mine, thence along St. Mary's River to Kootenay Lake, with a branch to Upper Arrow Lake. Power is now sought to also build from or near Fort Steel to Golden. The act of 1898 provides that the Co. shall within 6 months of its passing deposit with the B.C. Government \$5,000 as security that it will expend not less than \$10,000 in surveys or construction before June 30, 1899. It is sought to extend both the periods above mentioned by one year. W. Mackenzie, Toronto, & D. D. Mann, Montreal, are the principal incorporators of the Co.

Ottawa to Meach's Lake, &c.—G. E. Kidd, solicitor for applicants, gives notice of application to the Dominion Parliament to incorporate a company to build a railway or tramway, operated by steam, electricity or other motive power, from Ottawa, Ont., through the Township of Nepean, by Kingsmere to Meach's Lake, Que.; with branches to Hog's Back & Graham's Bay, in the Township of Nepean, & the town of Aylmer & city of Hull; also to build a railway, foot passenger & vehicular bridge across the Ottawa River from the Township of Nepean to the Township of Hull, at or near the Remous Rapids.

Pacific Yukon Ry. & Navigation Co.—Notice is given of application to the Dominion Parliament to incorporate a company under this name, to build a railway from or near Pyramid Harbor, near the head of Lynn Canal, or from a point on the International Boundary, near Lynn Canal, through the Chilkat Pass to Dalton's Post on the Alsek River, thence to below Five Finger Rapids on Lewes River, & with other powers.

Quesnelle Forks to Hazelton.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from or near Quesnelle Forks to or near Hazelton, near the junction of the Wat-sau-Kwa or Buckley & the Skeena Rivers.

Revelstoke to Atlin Lake.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from or near Revelstoke, northerly through the valleys of the Columbia, Canoe, Fraser & Parsnip Rivers to the 56th parallel of latitude, thence to the northerly boundary of B.C. to a

point on or near the Liard River, or westerly to the northerly boundary at or near Atlin Lake.

Skagway to Dawson.—Col. Domville, M. P. for Kings, has, according to a cable despatch, recently stated in London, Eng., that the Dominion Government will propose a State-aided railway from Skagway, via the Dalton Trail, to Selkirk & Dawson. This lacks confirmation.

Spence's Bridge to Nicola.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from or near Spence's Bridge, along the Nicola River, & south through the Nicola Valley to the lake sources of the Nicola River or thereabouts, & with other powers.

St. John, N.B., to Sydney, N.S.—A North Sydney paper gives currency to a rumor, said to have originated in the west, that the C.P.R., failing to acquire the Intercolonial or to obtain satisfactory running powers over it, has about decided to build a line from St. John, N.B., to North Sydney to connect with the Reid steamers. We have not thought it necessary to ask the C.P.R. management for a confirmation or denial of this rumor, which is about as unlikely to be true as any of the rest of the batch of sensational stories published from time to time.

Taku Inlet to Atlin Lake.—Notice is given of application to the B.C. Legislature to incorporate a company to build a railway from or near the International Boundary Line, on the headwaters of Taku Inlet, to Atlin City, or some other point on the shores of Atlin Lake, with branch lines to the south end of Taku Arm of Tagish Lake, or to the south end of Bennett Lake.

Trail to Salmon River.—In our Oct. issue, pg. 204, we gave particulars of an application to be made to the B.C. Legislature to incorporate a Co. to build a railway from or near Trail to Sayward, on the Columbia River, thence to Salmo, thence following the Salmon River to its junction with the Pen d'Oreille River. The preliminary organization of the Co. has been effected by the election of the following provisional officers: President, F. Fletcher; Vice-President, J. A. Gilker; Sec.-Treas., W. A. Galliher; Chief Engineer, F. Moberly, all of Nelson, B.C. Coast papers say the C.P.R. is behind the scheme.

Vancouver, Northern & Yukon.—As a result of a recent meeting of Vancouver citizens steps are to be taken to secure Dominion & Provincial charters for a railway from Vancouver to the Yukon. In 1891 a charter was obtained for the Vancouver, Northern Alaska & Peace River Ry., but was allowed to lapse. A charter for the Burrard Inlet Ry. & Ferry Co. suffered a similar fate. It is proposed to secure legislation embracing the principal powers of both these companies. A large & influential committee was appointed by the recent meeting to carry out its views, & subsequently the matter was placed in the hands of a sub-committee, with A. Williams as Solicitor, & W. Moberly, C.E., as Secretary. Notice has already been given of application to the B.C. Legislature to incorporate the V. N. & Y. R. Co. to build a railway from Vancouver or some other convenient point on Burrard Inlet; thence northerly by Seymour Creek, or the most feasible route, to Squamish Valley; through Pemberton Meadows to Lillooet; northerly to Quesnelle; north-westerly to Hazelton, or some other point on Skeena River; & northerly to the northern boundary of B.C., with a branch from or near Hazelton along the valley of Black River to the northern boundary of B.C.; with branch lines to Fort St. John; & east & west from the main line along the north shore of Burrard Inlet to Howe Sound, & the west shore of the North Arm of Burrard Inlet, & with other powers.

SHIPPING MATTERS.

The Allan Line & St. John.

On Dec. 2, to inaugurate the adoption by the Allan S.S. Line of St. John, N.B., as a winter port, the Company entertained a number of St. John's prominent citizens at luncheon on the S.S. Parisian. Hugh A. Allan, who presided, in proposing St. John & Maritime ports, made an important speech as follows:

It is a great pleasure to me to meet you here to-day, as it has been the wish of the Allans on both sides of the Atlantic, who are connected with the active management of the business, to have a closer connection with the Maritime Provinces for sometime past. It is a great surprise to me to see the wonderful development in the port of St. John during the last two years, & I feel sure that no one could help being struck with the amount of energy that is shown as a result of the work that has been done in that time. Your terminal facilities here reflect the greatest credit both on the municipal authorities of the city & the management of the C.P.R. The enlargement of the elevator, the dredging of the basins, the extension of the wharves, & the enlargement of the yards, not only at Carleton but also outside the city, & the increased accommodation in sidings along the route, make it possible to accommodate successfully a very much larger business than heretofore; & all these improvements, I feel sure, will enable the C.P.R. to accommodate all the traffic offering, even in such a prosperous season as this is likely to be.

Of course it will not do to stop content with what has already been achieved. In order to compete with other ports, improvements of every kind must be pushed to a completion, & amongst the most important of these are the lighting & buoying of the approach to the harbor, & the dredging of the harbor itself. Everything that the work of man, aided by the most modern improvements, can accomplish must be done in this connection in order to make this port not only equal to those south of us—for that I am sure is not what we wish to accomplish—but to make it better than any of them. No doubt your Board of Trade will see that the Government does its share.

Your railways have done a great deal, but they stand in the position of the philanthropist who builds an institution & who generally finds it necessary to endow it. Your railway companies have not only to invest their capital in building their road to, & terminals at this port, but they must endow it to the extent of carrying the traffic to & from the port at rates which will enable exporters & importers to compete at least on equal terms with those doing business at other cities on the Atlantic seaboard. For I need not tell you that steamers will go to the ports at which they can make the most advantageous arrangements, & if the railways to this port are not able to compete with their rivals at Portland, Boston, New York & Philadelphia, you will not be able to get satisfactory steamship connections to come here.

The line I represent was founded by Capt. Alex. Allan in 1825, & at that time consisted of the brig Favorite. In 1855 the Government made a contract with my uncle, the late Sir Hugh Allan, for a fortnightly line, the subsidy agreed upon being \$120,000, & the service was opened in April, 1856, the first steamer to carry the mails being the North American. In 1858 the service was increased to a weekly line, & the subsidy paid was advanced to \$208,000 a year, & subsequently further increased to \$416,000 a year. In 1872, the fleet having been considerably increased by such steamers as the North Britain, Nova Scotian, Bohemian, Hungarian, Norwegian, Hibernian, Peruvian & Moravian, a contract was entered into with the Newfoundland Government for the carriage

of the mails between Great Britain and St. John's, Nfld. This contract has been carried on ever since, & is still being maintained by us, the steamers employed in the trade having their terminal port on this side of the Atlantic at Philadelphia.

The contract for the carriage of the mails between Great Britain & Canada was altered from time to time, but remained always in our hands—latterly in conjunction with the Dominion Line—up to the close of navigation 1897. At that time the Government gave the tender to the Beaver Line, which has carried the mails for the last 12 months. The Dominion Line & ourselves have again taken up the mail contract for a period of 6 months, or until May 1 next, & this has given us the opportunity we have so long desired of establishing closer connections with the Maritime Provinces. As our line has grown we have been obliged to find outlets at U.S. ports from time to time. In 1880 we established an office in Boston, Mass. Later on the Philadelphia service was inaugurated, & finally an opening was found in the New York trade to Glasgow.

For 10 years or more the Canadian Government have been asking for an improved mail service, & during that time we have stood up in competition with the world & have retained the contract, except for the 12 months just past. During these 10 years we have put in tenders or have discussed the terms of contracts for vessels varying in speed from 15 to 20 knots, but none of our tenders or offers have been accepted. It seems to have been the desire of the different Governments to make contracts for lesser subsidies than we have been able to accept, & we think that on looking back the stand we have taken has been justified by the result. After years of waiting for a decision in this matter, we last year determined to make some additions to our fleet, which have been delayed so long pending the adoption of some decided policy with regard to the mail contract. Consequently we have given orders for 5 new steamers—one of 8,800 tons & 14 knots speed, two of 10,000 tons & 15 knots speed, to be used either in the Liverpool-Montreal passenger trade or on the New York service, & two cargo steamers of 8,000 tons & 12 knots speed for the St. Lawrence service. Of these, the Castilian is already launched; the Bavarian, 10,000 tons, is contracted for delivery in May. The Tunisian, 10,000 tons, is promised for Aug. & the Sicilian & Corinthian, the 2 cargo steamers, will probably be ready by the end of next St. Lawrence season. With these additions to our fleet we can, without at all encroaching on our other services, arrange for a permanent connection with the Maritime Provinces.

No one who has been in the trade during a period of years & has seen the ups & downs & the difficulties to be contended with in this trade will venture on a scheme of such magnitude & requiring such an investment of capital as a fast service to the St. Lawrence, without securing for himself & his associates adequate remuneration to enable him to carry the enterprise to a successful issue. The fact that all these years no one of substance has come forward to carry out such an undertaking, has, I maintain, proved that our judgment has been sound, & that our stipulation for an adequate subsidy, which has been considered excessive, is in reality not so.

I yield to no one in my opinion of the capabilities of the St. Lawrence. With the developments that are taking place in the deepening of the canals, in the improvement of the harbor at Montreal, & in the increased railway connections to that port, I see possibilities for its future which were not dreamt of even a few years ago. These canals, when complete, will enable vessels drawing nearly 14 ft. to bring cargoes from the west down to Montreal, & thus put that port in a position to compete on favorable terms with the ports of New York, Philadelphia & Newport News.

In addition to these, however, the opening up of the Parry Sound route has increased shipment from the port of Montreal enormously, & these can still further be increased if the Canada Atlantic Ry. secures an entry into the port of Montreal or a direct connection with the Intercolonial Ry. to that port. You may judge of the vast benefit of this route by the facts which I shall allude to later on.

The Canada Atlantic Ry. has brought to Montreal this season, the first year in which they have been doing business, between eight & ten million bushels of grain, & about 46,000 tons of package freight. Such a connection is invaluable, & there is no reason why the port of St. John in the winter should not, to a large extent at any rate, reap the benefit of this connection, if the facilities for getting into Montreal are accorded to Mr. Booth's railway. In addition to their large elevators at Depot Harbor & Coteau, they will undoubtedly erect a large elevator at Montreal, & these would all serve as storage for grain, which would be exported by the maritime ports in winter, & would thereby increase the traffic over these routes to an enormous extent.

Glancing at the map of Canada, we see that there are 3 main arteries for the carriage of western wheat to the east, viz.: the G.T.R., the C.P.R., & the Canada Atlantic. Turning to the two latter lines of railways referred to by me, viz., the C.P.R. & the C.A.R., the interest of these two roads lies in the development of the maritime ports. The C.P.R. has a direct connection with St. John & Halifax. The C.A.R. may also be given a direct connection with these ports by means of the I.C.R. The C.A.R. takes its enormous freight from the wheat fields of the western states, as also other products, which must necessarily find their way to the eastern markets in the winter months.

Via maritime ports navigation on the lakes is open at least for a month longer than the St. Lawrence route. Wheat & other freight can be landed at Parry Sound by water, for a month or more after navigation has closed at Montreal. This, with a proper elevator system would enable the C.A.R. to store at Parry Sound & other points along its lines, enormous quantities of grain, which, with proper connections to the lower provinces, would find their way to the markets of the east via maritime ports. This would be a trade in excess of what is now coming to the maritime ports via the C.P.R. The freight carried by the C.A.R. this summer was diverted from Buffalo & went to Montreal. What it has done in the last 12 months for Montreal may, in perhaps a lesser degree, easily be done for St. John & Halifax. It is for the people of the lower provinces to be alive to their own interests, & to encourage by every means possible, the building up of their ports. They should be able during the winter months to control the greater part of the Canadian freight & a large proportion of the freight originating in the western states carried by the Canadian lines.

At the same time, in considering the question of the fast mail service, it must be remembered that Montreal port is only open for 7 months of the year, & that a contractor undertaking a fast service must look for connections elsewhere for the other 5 months, & in getting these connections he must guard against the competition of all ports to the south of him in winter, just as he has to guard against them at Montreal in summer. It is, therefore, necessary that the railway connections to the Canadian winter port should be in a position to offer an intending contractor terms for the conveyance of both export & import cargo at rates equal to those obtainable at the other Atlantic seaboard ports. With such an arrangement in hand, I would be glad to go to the Government & ask for a tender for a service of 16-knot steamers, which I believe is the speed which Canada is

at present most in want of. With such vessels capable of making the passage from Moville to Rimouski via Belle Isle in 5 days & 23 hours, & via Cape Race in 6 days & 12 hours; & from Moville to Halifax by the short route in 5 days & 20 hours, & by the long route in 6 days & 9 hours, as against 6 days & 4 hours to 6 days & 12 hours by the New York routes, at an average speed of 19 knots, we would be able to secure a fair share of passenger traffic besides the higher classes of freight traffic. Such vessels would be capable of steaming 17 to 18 knots in fair weather, & would in summer make the passage in very much less time than I have indicated. No country in the world, as far as I know, has leapt in a bound to the highest acme of speed in its steamship service, & it seems to me both unlikely & undesirable that Canada should attempt to do so.

It should, however, be realized, that in order to secure a good mail service an adequate subsidy must be allowed, or failure will surely ensue. A great deal of money has been spent in the subsidizing of railways. Trains are being run from the Atlantic to the Pacific for the carriage of passengers not only from one point of Canada to another, but for the accommodation of trans-continental, Australian, Japanese & others who are attracted to Canada by the beauties of the scenery on the C.P.R. route. It seems, therefore, that the link is not complete without an improved service. The speed I suggest would give steamers that would be capable of making the passage in as fast time as the fastest vessels to New York, & would also be able to carry a considerable quantity of cargo, & thus accommodate the many high-class dairy industries of Canada which have sprung up of late years, & which are bound to increase & multiply as time goes on. The shipping of butter, poultry & eggs, as well as many other goods, in cold storage is only in its infancy, but we have had sufficient experience in the trade to know that they can be produced in this country of a quality to compete in the English market with the rest of the world, & it only requires time & the attention of our farmers to allow of the trade being developed to an enormous extent.

Facilities for the free & economical movement of traffic are a chief factor in the building up of a seaport. Montreal has the immense advantage of possessing interior water facilities during the season of navigation. Her railway facilities are also great & growing. Formerly she had but one railway, the G.T.R. Afterwards the C.P.R. was established, & simultaneously the G.T.R. found it necessary to double its tracks in order to accommodate its trade. And last season a new line, the Canada Atlantic, came into operation, bringing to Montreal some 8,000,000 bus. of grain, & 50,000 tons package freight for export to Europe; & this without apparent diminution of traffic by other lines. St. John might do worse than promote the extension of the Intercolonial to connect with the new road. But facilities are not everything. Without men to use them they are, indeed, comparatively valueless. The facilities of Montreal are in a great part used by the merchants of Montreal. Merchants of St. John, it is for you to do likewise. In this way you will hold the destinies of your port in your own hands & continue to be worthy sons of your own fair city.

I am a Canadian, born under the sunny skies of this fair Canadian climate. I know & realize that our national development for the last half century has been slow. To the student of history the reason has been plain. We have to the south of the line a vast country that has attracted, for many reasons, the tide of immigration. We have waited patiently, knowing that our time would come. It has, thank God, in the day and generation of us who sit around this board, come at last.

There are no longer on the other side or within the borders of our neighbors to the south, lands to be taken up by the surplus population of Europe. Where must they come? To Canada. We have in our boundless Northwest millions upon millions of acres that only require the hand of the agriculturist to turn them into a garden from which we can feed the multitudes of Europe. Canada to-day is the proudest jewel in the British crown. The progress & development which followed the events of 1775 in the U.S., will be repeated in Canada in future years, dating from the jubilee year of 1897.

We, in this country, occupying as we do the northern portion of the continent of America, inhabited as it is by a sturdy & loyal race, possessing as a national heritage millions upon millions of acres of rich virgin soil from which we can supply the food which the eastern hemisphere must necessarily draw from the west; our destiny is plain. The history of the Roman & Grecian empires has taught the world that a northern race must ultimately triumph over a people reared under a southern sun. I do not utter these words in disparagement of the valor & the commercial enterprises of our neighbors to the south, but I, as a Canadian, whose interests & future are identified in every possible way with Canada, know that history must repeat itself, & that as the northern race in a barbarian age overran the Roman & Grecian empires by the force of arms, so with the Canadian people, occupying as they do, the same position territorially as the Goths & the Vandals occupied to Rome, we will, in the near future, attain a dominant position in the world of commerce in this, the western hemisphere.

Mr. Blair, the Minister of Railways, in the course of a speech said he hoped soon to have the Canada Atlantic Ry. connected with the sea, & as a result he believed the maritime ports of St. John & Halifax would be benefited & the trade of Canada increased.

General Superintendent Timmerman, of the C.P.R., said that Co. was ready & willing to compete with the rates to New York, Boston & Portland, thus overcoming the physical disadvantages of the maritime port of St. John. The C.P.R. had made & was making every effort to make the St. John winter port business successful & every department of the road seemed to be working to that end. To do this great efforts were required & no small sacrifices, for it was no small undertaking to divert business which had long been established at nearer although foreign ports.

The Trade of the St. Lawrence.

The shipping of the St. Lawrence ports for 1898 has been extensive. In 1897 there entered the port of Montreal 479 vessels, with an aggregate tonnage of 1,054,225; this year there arrived 516 vessels, with the tonnage of 1,212,747. It will be readily seen that the gain in tonnage is proportionally much greater than the gain in the number of vessels entering the port.

The coastwise steamers in Montreal harbor also show a substantial increase, both in vessels & tonnage. In 1897 there arrived 300 vessels, while this season 330 arrived. The tonnage for 1897 was 317,000 tons, & this year 345,800, being an increase of 28,000.

Both imports & exports from Montreal show a marked increase. That of the former is indicated by the customs returns. The customs receipts at Montreal from May 1 to the close of navigation a year ago were \$3,708,345.46, while during the same period of 1898 they were \$4,842,695.35, an increase of over \$1,100,000 in less than 7 months. All the St. Lawrence ports, with the exception of Quebec, show an increase in the imports of coal, Montreal, Sorel, Three Rivers & Quebec taking 932,793 tons, as against 896,157 tons

the previous year. There was an extraordinary movement for export from Montreal, as it to be gathered from the following table:

Wheat, bushels.....	1898. 8,933,393	1897. 7,027,058
Corn, bushels.....	19,115,891	6,778,896
Peas, bushels.....	1,640,466	1,865,533
Oats, bushels.....	6,801,239	2,631,785
Barley, bushels.....	320,297	247,148
Rye, bushels.....	969,943	361,627
Flour, barrels.....	856,312	772,124
Meal, barrels.....	34,171	40,014
Pork, barrels.....	2,757	585
Lard, barrels.....	44,675	85,043
Meats, packages.....	136,261	228,752
Eggs, cases.....	186,173	141,853
Hams, bacon, boxes.....	12,484	8,123
Apples, barrels.....	385,475	725,016
Cheese, boxes.....	1,888,785	2,102,985
Butter packages.....	278,922	225,268

The decreased movement of peas, meal, lard, meats, cheese & apples is more than made up in the increase in other Canadian staple products.—Monetary Times.

Sault Ste. Marie Canal Traffic.

The Marine Record gives the following figures of freight & passenger traffic to & from Lake Superior during Nov.:

ITEMS.	EAST BOUND.		
	U.S. CANAL	CANADIAN CANAL	TOTAL
Copper, net tons.....	16,068	553	16,621
Grain, bushels.....	2,338,842	524,673	2,863,515
Building stone net tons.....	1,216,513	119,499	1,336,012
Flour, barrels.....	604,089	154,743	758,832
Iron ore, net tons.....	3,716	.....	3,716
Iron, pig, net tons.....	84,771	133	84,904
Lumber, M. ft. B.M.....	.....	.....	.....
Silver ore, net tons.....	13,758,421	2,217,820	.....
Wheat, bushels.....	.....	.....	.....
Unclassed freight, net tons.....	12,222	836	15,976,241
Passengers, number.....	453	109	13,058
			562

ITEMS.	WEST BOUND.		
	U.S. CANAL	CANADIAN CANAL	TOTAL
Coal, (hard) net tons.....	90,809	6,200	97,009
Coal, (soft) net tons.....	299,432	48,271	347,703
Flour, barrels.....	311	.....	311
Grain, bushels.....	11,200	.....	11,200
Manufactured iron, net tons.....	20,108	2,805	22,913
Salt, barrels.....	79,005	1,874	71,879
Unclassed freight, net tons.....	55,897	6,750	62,647
Passengers, number.....	96	240	336

East bound freight, net tons..... 1,623,182
West bound freight, net tons..... 535,103

Total..... 2,158,285
Total craft, United States..... 1,394
Total craft, Canadian..... 281

Total..... 1,675
Total registered tonnage, U.S..... 1,545,524
Total registered tonnage, Canadian..... 270,018

Total..... 1,815,542

The returns to the Department of Railways & Canals gave the following figures for Nov.:

Year.	Vessels.	Vessel tonnage.	Freight tonnage.
1897.....	293	28,937	406,523
1898.....	280	270,749	306,044

For the entire period of navigation to Nov. 30 the figures are:

Year.	Vessels.	Vessel tonnage.	Freight tonnage.
1897.....	4,166	3,739,992	4,858,599
1898.....	3,643	2,745,216	2,965,301

Ontario & the Great Lakes.

The people of Whitby want the Government to take over the harbor & to deepen it to 14 ft.

The steamer North King has been put in dry dock at Kingston, to remain there till the spring.

A steam launch is being built at Kingston, Ont., for Dr. Evans, for use on the river Jordan, Palestine.

The schooner *Peruvian*, which sunk near Foresters' Park, while trying to make Deseronto harbor, with a cargo of iron ore, is a menace to navigation in that part of the bay, & will be raised.

The Government dredge & scows, which have just finished working on the improvements at Kingston, will winter at the Government dry dock. They will undergo repairs during the winter.

The car ferry *Shenango* is having considerable difficulty in making Port Stanley. The Captain says the water is shallow, but the L. E. & D. R. people say there is 1½ ft. more than she draws.

The Hamilton Harbor Committee has forwarded to Ottawa petitions from lake captains, vessel-owners, & local yachtsmen, asking for a range light on the west end of the south pier on the bay side of the Beach canal.

The harbor improvement work at Port Burwell, for which provision has been made in the estimates, will, it is said, be immediately commenced under the supervision of Mr. Teel, engineer of the T. H. & B. Ry. construction work.

The str. *Edna Brydges*, plying on Lake of the Woods & Rainy River, between Rat Portage & Fort Frances, encountered thick ice in the Falcon Rapids on her last down trip of the season. A hole was made in her bow & she was beached just in time to prevent her sinking.

The barge *Toronto*, carrying 18,200 bus. of wheat, was cut through by ice in the Lachine Canal, Nov. 29, & about 4,000 bus. of her cargo damaged. She did not sink, & the balance of the cargo was unloaded in good condition. She was on her way from Fort William to Montreal.

The wreckers have abandoned the schooner *Hector*, ashore near Wellington. The schooner *Kildonan*, which went on at the same time, has been released & was towed to Kingston. The wreckers were driven away from the *Hector* by bad weather. She is valued at \$8,000 & is not insured.

The schooner *Sephie*, which has been tied up at Sarnia for the winter, carried 18 cargoes of lumber to Point Edward, & took up 2 cargoes of supplies from Sarnia to French River. This is a greater number of cargoes than any one sailing vessel has ever carried from Georgian Bay to Sarnia or Point Edward in the history of these places, & sailing both ways. The *Sephie* is owned by the Ontario Lumber Co.

About 3 years ago the steamer *Fairbank* was almost destroyed by fire at Port Colborne. Since then she has been idle, no material repairs having been made to her. She has been bought by Captain Strong, of the tow barge *Calhoun*, & towed to Tonawanda Creek. During the winter she will be rebuilt, & put into commission at the opening of navigation next season. It is estimated that it will cost about \$6,000 to make her fit for service again.

The handsome steam launch *Wanda*, the property of the T. Eaton Co., recently built by the Polson Iron Co., is being enlarged & remodelled, & 15 ft. added to her length. Her speed will be increased to 17 miles an hour. A number of apartments will also be added, & when finished she will be one of the prettiest yachts afloat on Muskoka Lakes. She is being repaired at her moorings in Gravenhurst, where she will winter.

At a meeting of the Executive Committee of the Lake Carriers' Association with a number of vessel owners not members of the organization, held in Cleveland, Ohio, Dec. 13, a resolution was adopted providing that navigation should not open before April 25 next year. In order to bring about what is desired, it was decided to solicit the aid of the grain

underwriters. The object is to prevent the usual early rush of boats for cargoes & the subsequent demoralization of rates.

A number of freight & passenger steamers doing business on the Lake of the Woods & up the Rainy River as far as Fort Frances, make their headquarters at Rat Portage & take considerable business to the town. This year has witnessed a great increase in the popularity of the run to Fort Frances as a pleasure trip, & the twin-screw steamer *Keenora*, which makes tri-weekly trips to that point, is said to have secured considerable revenue from this source.

The big steel propellers *Rosedale* & *Algonquin*, which generally winter at Toronto, have secured new berths at an outside port for the coming winter. Both vessels have been engaged in conveying grain & general merchandise between Fort William & Prescott during the past season. Both belong to Toronto, & would have wintered there had not the Cuba, Persia & Ocean of the Merchants' Line been tied up at Geddes Wharf. There is no other suitable place for shelter along the water front, so the owners decided to tie them up in Owen Sound Harbor, where they will undergo a renovating for next season's work.

As usual the last cargoes of the season carried westward were enormous. The large C. P. R. liner *Manitoba* cleared from Owen Sound for Port Arthur with a record cargo. She carried in all 1,548 tons of freight, equal to 118 car loads. In all 129 cars were awaiting shipment, but 11 of them had to go direct to their destination. The cargo included 22 straight cars of sugar, 3 cars of whiskey, 6 cars of iron pipe, 5 cars of salt & 82 cars of miscellaneous merchandise. The Owen Sound Times says: "When the steamer left the dock she was weighted down an inch or more below the water line, & was drawing 15 ft. of water aft & 12½ ft. forward."

The Winnipeg Produce Exchange was anxious that the Minister of Public Works should keep Fort William harbor free of ice to the latest possible date this fall, owing to large quantities of wheat which were late in moving. Mr. Tarte did not give the grain men much encouragement. His reply was as follows:—"We cannot do anything to keep the Fort William harbor free of ice during the winter. Nature is stronger than man, & as we have no proper equipment either for Fort William or other harbors, we have to let things follow their natural course. We would like very much in Montreal to have a few days' more navigation, but we can't get them."

The storms that have swept over the lakes this season have been the most disastrous for shipping in the history of navigation. A cursory estimate places the total losses to underwriters & vessel-owners on the lakes for the season of 1898 at \$2,500,000, & gives it first place for losses in the history of lake navigation. The year 1895 had hitherto held the record with a total loss of \$2,097,000. It still stands as the closest rival with the memorable season just brought to a close. On an average the boats lost have been more important & larger than usual. There have been almost 100 accidents during the last 2 months. A great deal of freight has been recovered from some of the sunken vessels, while others are a complete loss. The storms of Oct. & Nov. made this an extraordinary year. Lake Superior has had a share of the wrecks, with the Straits of Mackinac & narrow passages of the north to increase the totals. Three steamers went down with a loss of \$375,000. Only one mishap occurred on Lake Ontario during the past season, but several vessels have been wrecked. The accident occurred to the schooner *St. Peter*, which, laden with a big cargo, bound for Duluth, went down with all on board, including the captain's wife.

Charting the Great Lakes.

The Hydrographic Survey in connection with the Marine Department has lately settled down in winter quarters at Ottawa, & the staff are busily engaged placing on charts the information gathered during the season. The survey this season was extended along the south shores of Cockburn & Grand Manitoulin Islands, from the southern entrance to False Detour Channel to near the entrance to Georgian Bay, a distance of 80 miles. Soundings were carried on in boats to an average distance of 1½ miles off the shores at intervals of about 175 yards, or to a safe distance outside the shoal water. Outside of this soundings were taken in the deep water from the deck of the steamer *Bayfield* to an average distance of 11 miles from shore. For this work the 2 boats were rowed by 4 men in each, 1,180 miles, & the ship steamed 950 miles. A great deal of care was taken over the examination of the dangerous magnetic reefs lying 2½ miles off the southeast point of Cockburn Island, & immediately in the entrance to Mississauga Strait. Much time & labor were also spent in carefully sounding out the various channels through the Duck Islands & the extensive area of shoal water projecting from the south end of the group. No doubt the correct marking of these dangers will prove a great boon to those compelled to navigate these hitherto unsurveyed waters. Really good harbors are scarce along the south side of the Grand Manitoulin Island, there being not one from the Ducks to South Bay, a distance of 50 miles. The latitude & longitude of a point on the Ducks, & also the magnetic variation of several places along the shore were carefully ascertained.

Before beginning the regular survey work on Lake Huron a careful inspection was made of the approach to Depot Harbor, Parry Sound, to ascertain if the channel were suitable for the deep-draught boats that were expected there. This channel is now so carefully buoyed & lighted by range lights & well-placed gas buoys that no accident occurred during the season. The steamer *Bayfield* was placed in commission April 23, & the crew was paid off on Oct. 25. During that time she had on board 3 surveying officers, a sailingmaster, 2 engineers & a crew of 17. The season was not a good one for surveying, there being fresh breezes nearly always on shore, making work in the boats & landing on a low flat shore, strewn with boulders, very dangerous. This last season has been the first for hydrographic work on Lake Huron, & it is hoped that before the opening of navigation in 1900 the first sheet chart will be issued, embracing all the shore line & water from the mouth of St. Mary's River to the Ducks. A second chart of the south shore of Grand Manitoulin Island will be issued later.

The hydrographic survey of the Canadian shore of Lake Erie was completed in 1897, & has been partially published by the British Admiralty, which lately issued two coast charts of the Canadian shore from Buffalo to Port Burwell, including Long Point & Port Dover. A new edition of the sailing directions for Georgian Bay is being prepared by the hydrographic staff, & will shortly be issued, embodying in it all the latest information.

Canada's Merchant Marine.

A supplement to the 13th annual report of the Department of Marine, just issued, shows that the total number of vessels remaining on the register books of the Dominion on Dec. 31, 1897, including old & new vessels, sailing vessels, steamers & barges, was 6,684, measuring 731,754 tons register tonnage, being a decrease of 595 vessels & a decrease of 57,545 tons register, as compared with 1896. The number of steamers on the registry

books on the same date was 1,785 with a gross tonnage of 213,864 tons. Assuming the average value to be \$30 a ton, the value of the registered tonnage of Canada, on Dec. 31 last, would be \$21,952,620.

The number of new vessels built & registered in the Dominion during the last year was 231, measuring 17,094 tons register tonnage. Estimating the value of the new tonnage at \$45 a ton gives a total value of \$769,230 for new vessels.

Following is a statement by provinces of the number of vessels & number of tons on the register books :

	No. of Sailing Ships and Steamers.	No. of Steamers.	Gross Tonnage of Steamers.	Total Net Tonnage of Sailing Ships and Steamers.
New Brunswick...	923	115	8,373	103,584
Nova Scotia.....	2,204	142	19,992	283,056
Quebec.....	1,480	311	54,059	158,077
Ontario.....	1,424	896	91,928	135,349
P. E. Island.....	174	21	4,043	15,812
British Columbia...	304	226	29,042	28,604
Manitoba.....	115	74	6,427	7,272
Total.....	6,684	1,785	213,864	731,754

The new vessels built & registered during 1897 were as follows :

	No. of Sailing Ships and Steamers.	No. of Steamers.	Gross Tonnage of Steamers.	Total Net Tonnage of Sailing Ships and Steamers.
New Brunswick...	33	11	1,459	1,738
Nova Scotia.....	54	6	211	4,259
Quebec.....	49	13	1,094	4,227
Ontario.....	50	43	2,101	3,850
P. E. Island.....	3	1	33	226
British Columbia...	26	24	3,848	2,420
Manitoba.....	16	15	501	395
Total.....	231	113	9,247	17,094

In British Columbia Waters.

A small tug, the Troubadour, has been added to the fleet which makes its headquarters at Victoria.

The str. Myrtle B, Capt. Benjafield, is plying on Christina Lake, having been taken in from Arrow Lake.

H.M.S. Egeria recently came out of dry-dock at Esquimault, & has resumed her work of surveying the coast waters.

A whaling fleet is to make Vancouver its headquarters. A Norway whaler is now on the coast making preliminary arrangements. The Pacific whale is not as valuable as the whale found in the Atlantic, but they are very numerous.

Notice has been given by the B.C. Marine Railways Co. of its intention to deposit with the Dominion Minister of Public Works the plans for, & to apply for leave to build a marine railway & wharf on Burrard Inlet, Vancouver.

The C.P.R. str. Minto was launched at Nakusp in the middle of November. She is a sister boat to the Moyie mentioned in our last issue, pg. 247, & will take the place of the Rossland on the Robson-Arrowhead route during the winter, the Rossland going on again in the spring.

It is announced in Revelstoke that provisional directors have been appointed for the purpose of forming a company to run steamers on the Columbia River from Revelstoke north to the Big Bend district. Letters of incorporation have been applied for. The bulk of the capital will be raised in Great Britain, where it is hoped to float the company.

The Ainsworth, a small steamer plying between Nelson & Bonner's Ferry, was wrecked Nov. 29 during a storm on Kootenay Lake, 6 of her crew & 3 passengers being drowned. She left Nelson on the evening of that day on

her regular trip, & when about 6 miles from shore, during a heavy sea, she was struck by a squall & commenced taking in water. The Captain headed her for shore, but she reeled over on her side, filling immediately. She was owned by Braden Bros. of the Pilot Bay Smelter.

Richelieu & Ontario Navigation Co.

Many of the daily papers spoke of a trip made by the Co.'s new steamboat Toronto last month as the trial trip. But it was only a preliminary trip, & the regular trial trip will take place next spring. President Forget informs us that he refused to have the trial trip made this fall, on account of the late date. On Nov. 30 the boat ran from Toronto to Oakville, covering the distance from light to light, 19 1/2 miles, in an hour, under command of Capt. McGiffen, of the Niagara Navigation Co.'s steamer Chippewa. Wm. Black, of Belleville, will be Chief Engineer of the new steamer when she starts on her run between Toronto & Prescott next season.

All the Co.'s steamers, with the exception of the Hochelaga & Longueuil, are being wintered at Sorel. Heretofore a steamer or two has been stored away for the winter at Quebec, & the same was the case at Kingston.

A new electric light plant is to be put in the str. Richelieu, & her boilers and engines are to be overhauled.

Croil's Steam Navigation

Steam Navigation & its Relation to the Commerce of Canada & the U.S. By James Croil; Montreal, 381 pgs., illustrated. Toronto, W. Briggs. \$1.50.

The author treats of the dawn & early days of steam navigation, the Cunard S. S. Co., North Atlantic S. S. Co.'s, steam to India & the East, steam in the British navy, the St. Lawrence route, steam on the Great Lakes, steam commerce on the Great Lakes, steam navigation in all the provinces of the Dominion & in Newfoundland. As the author states in his preface, the pages are but a compilation of materials more or less intimately connected with steam navigation gathered from many sources during many years, & now woven into homely narrative. But they are very interesting, & contain a lot of information not easily available elsewhere.

TELEGRAPHS & CABLES.

Telegraph Line to Yukon.

The prospectus was issued in England recently of the Canadian, British Columbian & Dawson City Telegraph Co., Ltd., share capital £300,000, which is not offered for subscription. The Co. had made an issue of £95 of £225,000 5% 1st mortgage debenture stock. The lists closed Dec. 15, & a London cable of Dec. 19 says construction operations will commence at once. The directors are, Sir James Grant, Sir A. P. Caron, Ottawa; J. H. Turner, M.P.P., Victoria, B.C.; Alderman J. Hyde, Mayor of Banbury, W. P. J. Fawcus, M.I.C.E., M.I.E.E., Director Edison & Swann United Electric Light Co., London. The Consulting Engineer is Sir T. S. Tancred, Bart., C.E.; Resident Engineer, E. G. Woodford, C.E., late State Mining Engineer, Transvaal; Secretary W. Young, 64 Victoria St., London. The following is taken from the prospectus:— This Co. has been formed for the purpose of constructing & working the telegraph lines to be built by the Dawson City & Victoria Telegraph Co., incorporated by the Dominion Parliament in 1898. From Quesnelle (which is the present terminus of the telegraphic system in B.C. northward), where the telegraph line of this Co. will start, the route lies along an excellent trail to Hazelton on the Skeena

River. From Hazelton the line will go along the trail to Telegraph Creek, thence to Teslin Lake, & then across to Atlin City, where connection will be made with the Skagway-Dawson section. The distance traversed by the 2 sections of telegraph line will be about 1,400 miles. It is contemplated that working agreements with both the Canadian Government & the C.P.R. Telegraphs will be entered into. Particular attention is directed to the report of R. E. G. Woodford, C.E., late State Mining Engineer to the Transvaal Government, which accompanies prospectus. The route traversed by the line lies through important mining centres, including the Cariboo, Omenica & Cassiar districts. A number of large mining & trading companies are now operating there. Outside, therefore, of the very large revenue to be derived from the Klondyke district proper, there should always be an increasing revenue from the first-named district. It is intended to construct a line of telegraph from the vicinity of Skagway to Atlin City, connecting at the latter station with the section of the line from Quesnelle, so soon as the necessary powers have been obtained. From Atlin City the route covers very important trading posts, & the inhabitants of these should be large users of the telegraph line. Customs officers & a force of mounted police are stationed at various points along the line. Police stations are established at the junction of White & Dyea Passes, at Tagish Lake, at White Horse Rapids, at the mouth of the Hootalinqua River at Fort Selkirk, & other important points. The 3 largest companies operating in the North-West Territories are the North American Transportation Co., the Alaska Commercial Co. & the Hudson's Bay Co. The first is directed principally from Chicago, the second from San Francisco, & the last from Winnipeg. The telegraph business of these 3 companies alone should be considerable. It is difficult to estimate the large income which will be certain to be derived from messages to & from Dawson City, New York, Boston, Chicago, San Francisco & London. The directors are of opinion, especially having regard to the heavy investment of European & American capital in B.C. & Klondyke, that the following is a reasonable & fair estimate of net profits to be earned :

50 telegrams a day, averaging 10 words, between Dawson City, London, Paris, Berlin, Ottawa and Montreal at \$5. a word, taking 300 days to the year.....	= £37,500
50 telegrams a day, averaging 10 words, between Dawson City, New York, Philadelphia and Boston at \$5. a word, taking 300 days to the year.....	= 37,500
50 telegrams a day, averaging 10 words, between Dawson City, Chicago, San Francisco, Victoria, Vancouver, Seattle and Winnipeg at \$5. a word, taking 300 days to the year.....	= 37,500
50 telegrams a day, averaging 10 words, between all other parts of the world, including America, British Columbia, Australia, Europe, etc., at \$5. a word, taking 300 days to the year.....	= 37,500
Local & intermediate traffic, as described on the other side, say.....	= 37,500
Total.....	£187,500

This gives a gross revenue over the Co.'s system of £625 a day. Allowing £36,500 for wages & maintenance, the net revenue would not be less than £151,000 a year, sufficient to cover the debenture interest 13 times over, or to repay the principal in full in 1 1/2 years. It should be borne in mind that the weather in Klondyke during winter is dry & cold, with scarcely any wind, the snow falling in small crystals & not in large damp flakes, as in more southerly climates. The cost of maintenance should, therefore, be very small. The enormous development likely to take place in the goldfields of Klondyke & B.C. in 1899, should add largely to the revenue. In addition to the sources of revenue referred to above, there will be traffic from press telegrams, which will be transmitted at the usual rates. The line is expected to be in operation not later than April next.

The G. N. W.'s President.

The accompanying illustrations are made from photographs of H. P. Dwight, taken in 1861 & 1898 respectively. Mr. Dwight was born in Belleville, Jefferson county, N.Y., Dec. 23, 1828. He left home at the age of 14 with a capital of 50 cents & started life in a country store in Fulton. In 1847, the first year of its existence, Mr. Dwight secured a position as operator with the Montreal Telegraph Co., at Montreal, where he remained until 1850, occupying at the time of his departure the position of chief operator. While stationed at Montreal the great cholera plague of Quebec broke out & the telegraph office at that point was abandoned. Mr. Dwight volunteered his services & remained in charge of the office there during the whole of that disastrous epidemic. In 1850 he was removed to Toronto, where for the first year he was sole operator. Extensions throughout Western Ontario were planned & executed by him, until the lines of the Co. reached out in every direction. The business soon assumed very extensive proportions, & Mr. Dwight was in a few years appointed General Western Superintendent. On the amalgamation of the Montreal & Dominion companies, in 1881, under the charter of the Great North-Western Telegraph Co., Mr. Dwight was chosen General Manager of the combined systems, & in 1892 was elected President; since which he has occupied the dual office of President & General Manager.

Canada stands second to no country in the world in regard to the cheapness & efficiency of its telegraph system, & this fact is due in a great measure to the foresight & executive ability of Mr. Dwight, who inaugurated the present low rates of transmission which the country enjoys, and under which it is possible to send a message 1500 miles for 25 cents. Mr. Dwight rendered signal service to the country at the time of the Fenian Raid, & also during the Northwest Rebellion, & for the latter service was publicly thanked in the House of Commons by the Minister of Militia.

Aside from the telegraph business, Mr. Dwight has taken a very active part in a number of important enterprises. He was for a number of years a director of the Midland Ry., and is now President of the Birkbeck Investment Co.; Vice-President of the Canadian General Electric Co., & Director of the Toronto Electric Light Co. He is also Chairman of the Investigating Governors of the Royal Canadian Humane Association, & a member of the Ontario Fish & Game Commission. He is a keen sportsman, & a man of broad sympathies.

Telegraph Office Changes.

C. P. R. TELEGRAPH.

OPENED: Montford Jct., Que.; Thessalon Station, Ont.; Leduc, N.W.T.; Beresford, Man.; Turner, Maine; Irishman's Creek, B.C.; 111-Mile House, B.C.; Duck Lake, B.C.

CLOSED: Henryville, Que.; Mount Brydges, Ont.; Sebringville, Ont.; Ferrona, N.S.; McLeod Station, N.W.T.; Bridge Creek, B.C.; Vanceboro, Maine.

GREAT NORTH-WESTERN.

OPENED: Dunrae, Man.; Elgin, Man.; Minto, Man.; Ninette, Man.; Waupoos, Ont.; Aylwin, Que.; St. Lin, Que.

CLOSED: Selby, Ont.; Tobermora, Ont.

Notice is given of application to the B.C. Legislature to incorporate a company to build telegraph & telephone lines from the south end of Teslin Lake, to Victoria via Glenora & Telegraph Creek.

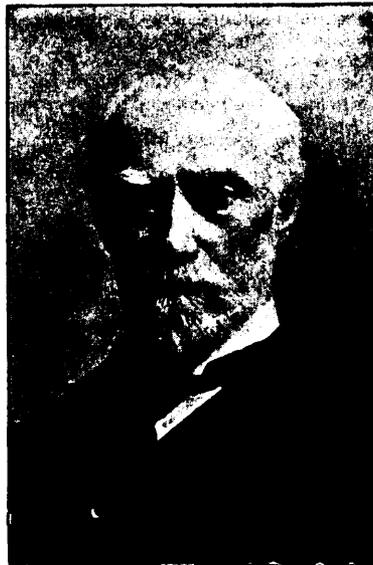
Telegraph & Cable Notes.

The G.N.W.'s chief office in Montreal has been considerably improved by new entrances, marble steps & interior changes.

Sir Sandford Fleming has addressed a letter to the Secretary of State for the Colonies advocating the adoption of a system of state-owned cables connecting every British possession & all Great Britain's naval coaling stations. Sir Sandford proposes 3 sections of



H. P. DWIGHT IN 1861.



H. P. DWIGHT IN 1898.

cables, in the Pacific, Indian & Atlantic oceans, & estimates their cost at £6,000,000. The first step he suggests is a state-owned Pacific cable. He contends that if his proposals were carried out the cost of cabling would be enormously cheapened.

The Morning Post has been urging Colonial Secretary Chamberlain to publish the report of the commission on the Pacific cable question. It would seem, however, that he has been forced to hold over the publication of the report till he knows definitely whether or not the colonies will join in paying their share of the expense of the cable service. Certain proposals are under consideration, & Canada's reply is waited for with the hope that she will see her way to take her part in the scheme—

& to make her decision quickly. The arrangement of the whole matter is said to depend on Canada.

The annual supply of telegraph poles for the British telegraph system, which is under the control of the British post office, amounts to about 100,000 poles, & come chiefly from Norway & Sweden. The specifications have recently been changed so as to include Canadian wood if otherwise meeting the requirements. Any person in Canada desiring to tender for supplying should direct inquiries for information to the Controller of Stores, Postoffice Telegraphs, General Postoffice, London, E.C., Eng., & also to the Engineer-in-chief, General Postoffice, London, E.C., Eng.; they require 25,000 poles immediately.

The C.P.R. Co. recently appealed against the assessment as really of the switchboard & instruments installed in the Toronto office for daily use. The judge dismissed the appeal, finding these things essential to the operation of the system. "The instruments themselves have no use or particular value detached from the connection with the telegraph wires, for they, too, become silent, & of no commercial value, but when united with the wires they form, with the poles & wires, one indivisible whole, a practical working telegraph line." The price & value of the instruments had been agreed upon between the parties, so that their assessability was the the only question raised.

TELEPHONE MATTERS.

Bell Telephone Co.

The Co. has arranged an exclusive franchise for 5 years in London, Ont. The city is to receive \$1,000 a year & reduced telephone rates. Business telephones are to be \$40 instead of \$45 a year, residence 'phones \$20 instead of \$30, & doctor's & dentists' 'phones \$25 instead of \$35. The People's Co. has withdrawn from the field. The Bell Co. is erecting an exchange building in London.

After a squabble lasting since last June the Town Council of Windsor, Ont., has finally settled the telephone question, & the Bell Co. has won. Though the rival People's Co. dropped out some time ago, some members of the Council opposed to the Bell Co. continued to block the proceedings & to prevent the Co. from securing the franchise. The by-law has, however, been finally passed. The franchise given dates from June last & is for 5 years.

In St. Thomas, Ont., as elsewhere, the People's Telephone Co. did not materialize & the offer of the Bell Co. has been accepted as follows: To pay the city \$250 a year for 5 years; free 'phone at the hospital, reduced rate for 'phone at waterworks, 1 free 'phone at city hall, rates for residences \$20 a year, & when 3 are on a line, \$15 a year.

In the case of Bonn against the Bell Co. at Chatham, Ont., recently \$325 damages were awarded plaintiff, who claimed \$8,000 for injuries sustained in a runaway accident at Wallacebug, when his buggy collided with one of the Co.'s poles.

The Bell Co. recently appealed to County Judges Macdougall, Dartnell & McGibbon against the assessment of its Toronto plant by the city. Last year the city lumped the assessment of the Co.'s property outside the land & buildings as "personal property, \$100,000." This year this was increased by over \$500,000. The judges reduced the assessment by over \$500,000, & the assessment is now fixed at \$102,550 instead of \$638,649. There were no legal points in dispute in the matter, the question at issue being simply one of values. The following table shows the details of the reduction made by the judges:

	Judges' figures.	City Asses.
Land & buildings.....	\$34,750	\$ 34,750
Poles, wires, conduits.....	53,900	377,994
Temperance Street switchboard.....	12,000	177,174
Yorkville & Parkdale switchboards.....	3,900	59,733
Totals.....	\$102,550	\$638,649
		102,550
Total reduction.....	\$536,099	

There was no dispute as to the assessment on land & buildings.

Eastern Township Telephones.

Judgment was recently delivered at Sweetburg, Que., in the case of F. E. Harvey against Louis Pare, of Granby, for \$5,000 damages for false arrest. Harvey was formerly the proprietor of the Citizens' Telephone Exchange, with head office at Waterloo, & became insolvent. At the curator's sale of the effects the lines, poles & instruments of the Exchange were sold to Pare. Another lot which included the perpetual leases of a certain line of the Sherbrooke Telephone Association, running from Waterloo to Sherbrooke, was bought by H. B. Brown, Q.C., of Sherbrooke, acting in trust for other parties. Mr Harvey was appointed by the trustees as manager of this line. On the other hand, Pare claimed that this particular line was part & parcel of the lot he had bought. Harvey, in his position as manager of the line, cut the wires connecting it with the wires of the former Citizens' Telephone Exchange. Pare caused Harvey to be arrested & brought before the District Magistrate, who dismissed the case. Harvey then took out the action for damages against Pare, alleging loss of reputation & time, injury to feelings & loss of money expended in defending himself before the District Magistrate. The court held that there was no loss of reputation, that the plaintiff had been paid by the trust for his loss of time, & also that it had been proved that the trust had paid the expenses of plaintiff's defence before the District Magistrate. The value of the injury to plaintiff's feelings he assessed at \$10, & held that defendant had acted with malice in causing plaintiff to be arrested. As to the real ownership of the disputed line the court was not called upon to adjudicate. Judgment for \$10 & costs.

Spokane & B.C. Telephone Co.

A Myers Falls despatch of Nov. 14 says: The management of the Spokane & British Columbia Telephone Co. has been a matter of litigation in the courts for some time past. On October 10 Messrs. Oakes & Aris, President & General Manager, respectively, sold a controlling interest in the stock of the Company to C. O. B. Reddin, of Rossland, B.C., & resigned upon condition that they should be retained, the former as a Director, & the latter as General Manager. The new management failed to accord them these positions, but voted them out. They refused to give up control of the lines & Reddin began suit to gain possession of the property of the Co., & secured a restraining order enjoining Oakes, Aris & all their agents & employes from interfering with the management of the business. This order did not oust them out, & Reddin sent N. R. Stone here this week to take possession, which was refused. Stone then tapped the main wires of the line for the purpose of cutting out the general office. Aris cut these wires, & with F. J. Lively, C. Chamberlain & S. Crager was arrested. Aris caused a warrant to issue for Stone, & he was held to answer under \$500 bonds. Yesterday evening Aris & his associates were released. Judge Richardson yesterday issued an order to Aris, Oakes & their associates to show cause why they should not be punished for contempt of court for violating the restrain-

ing order. The lines of the Co. cover a distance of 200 miles, & are estimated to be worth \$35,000.

British Columbia Telephones, Ltd.

In our last issue, pg. 252, we mentioned the registration of this Co. in England, with a capital of £100,000. Notice has since been given of application to the B. C. Legislature for an act to incorporate the B. C. Telephones, Ltd., for the purpose of enabling the Co. to acquire & take over all rights, assets, &c., held by the New Westminster & Burrard Inlet Telephone Co., & the Vernon & Nelson Telephone Co., & to assume the liabilities entered into by those companies & with other powers.

Within two months after the recent disastrous fire in New Westminster, the N. W. & B. I. Telephone Co. had established a new central office & thoroughly equipped its system throughout the town. The switchboard in the new central has capacity for 150 metallic subscribers. There is also a 10 point trunk line switchboard. At present there are 7 trunk lines, 2 from Vancouver, & 1 each from Ladner, South Westminister, Port Moody & Chilliwack, & of course, intermediate points, & another from Blaine, Wash., where connection is made with the Sunset Telegraph & Telephone system. Apart from the loss sustained by the Telephone Co. by the fire, the cost of restoring the system has been considerable, & includes the erection of 100 new poles & the stringing of 150 miles of new wire, apart from 1,000 ft. of cable along Columbia Street, which contains 102 wires. The wire weighs 56 lbs. a mile, or over 40 tons in all.

Telephone Items.

A local telephone line is projected from Cannington, Ont., to Hartley, Victoria Road, & Kirkfield.

The Little Salmon River Telephone Co. has been granted the privilege of carrying its line into St. John, N.B.

The People's Telephone Co., of Sherbrooke, Que., is applying for confirmation & amendment to its letters patent, & for powers to increase its capital stock & issue bonds.

G. T. Baird, of Perth Centre, N.B., & others give notice of application for incorporation, under the N.B. Joint Stock Co.'s Act, as the Victoria Telephone Co., to build & operate lines within the counties of Victoria & Madawaska. Capital \$5,000.

Notice is given of application to the B. C. Legislature to incorporate a company for electric lighting the town sites at Teslin Lake, Glenora, Telegraph Creek, & Atlin City, with power to operate telegraph & telephone lines within & between the town sites.

The Metis Telephone Co. recently elected the following directors at a meeting at St. Octave de Metis, Que.: Hon. President, Dr. J. A. Ross, M.P.; Honorary Vice-President L. F. Pinault, M.P.; Directors, Rev. Mr. Chouinard, L. M. Desrosiers, J. Gendron, A. C. Landry, L. M. Langlais, Dr. J. C. Demers, & D. Caron.

In Michigan farmers are fast taking advantage of the benefits offered by the telephone, & it will be but a short time when telephones will be as common in the country as they are now in the cities. In Allegan County the farmers have an exchange of their own, & maintain it by annual assessment. In Oceana County every township has telephone connection with Hart, the county seat, & this system is essentially a farmers' exchange, being owned & maintained chiefly by the farmers & fruit growers. Gratiot County has another farmers' exchange, which, with Ithaca as the center, has connections with every township & many farmers.—Electrical Engineering.

Express Companies' Items.

The Dominion Express Co. has established wagon routes between Beamsville & St. Catharines, Ont., & between Picton and Northport.

The Western Express Co. has opened offices at Napoleon, Withita & Braddock, N. D., on the extension of the M. St. P. & S. S. M. line from Kulm to Braddock.

The Canadian Express Co. handled very large shipments of deer from Muskoka this season. In 2 weeks the Co. carried 1,754 deer, weighing 182,618 lbs.

Owing to the increase in the express business at Toronto it is likely the quarters occupied by the Canadian & Dominion Express Cos. will have to be enlarged.

The Dominion Express Co. has opened offices at Pincher, Alta. (formerly Pincher Creek), Doris, Fernie, Cranbrook, Kootenay Landing, Moyie & Wardner, B.C., on the Crows' Nest Ry.

The Northern Pacific Express Co. has opened the following offices on its Souris River branch in Manitoba: Departure, Tiger Hills, Minette, Ontap, Dunrea, Margaret, Minto, Fairfax, Elgin.

W. M. Gordon, for a number of years running messenger for the Dominion Express at Winnipeg, has been appointed Route Agent, with headquarters at Winnipeg, succeeding H. F. Maley, assigned to other duties.

It is said that Stanley Metcalfe, a well-known clerk in the accounting office of the Canadian Express Co., is missing. He was also Secretary-Treasurer of the Co.'s Employes' Benefit Association, & as such, handled the funds. That there is a shortage in his accounts with the Association has been ascertained, it is alleged, but the books are in such a condition that it is hard to determine just how matters stand.

The Pacific Express Co. announces the opening of the following offices in Canada, which are served by the Wabash trains on the southern division of the G.T.R.: Aylmer, Belle River, Cayuga, Chatham, Delhi, Glencoe, Jarvis, Lawrence, Middlemiss, Newbury, Niagara Falls, Port Robinson, St. Thomas, Simcoe, Thamesville, Tilsonburg, Welland, Windsor.

General Manager Stout announces the appointment of S. A. Davis, as Superintendent of the Western Express Co., with headquarters at St. Paul, Minn., vice R. Stewart resigned. The Express Gazette says Mr. Davis received his first express experience under P. R. Keim, then Superintendent of the American Express at St. Joseph, Mo. This was 10 years ago, and his duties were those of stenographer and over-and-short clerk. He was later promoted to chief clerk, and has latterly been filling that position at St. Paul, Minn., under General Superintendent Naylor. He combines all the elements of a successful expressman.

Ronald Stewart, who has been appointed Superintendent of the Great Northern Express Co., vice J. F. Lawless, resigned, entered the service in 1883 as driver for the American Express at St. Paul. A month later he was placed in charge of the "O. H." desk, & from that position promoted to Assistant Cashier, which he filled until 1885, when he was appointed Cashier at Minneapolis. Five years later he was given a similar desk at St. Paul. In 1891 he was appointed Agent of the National Express at Detroit, Mich. He returned again to St. Paul a year later as Superintendent's Chief Clerk, & upon the establishment of the Great Northern Express Co. became its St. Paul Agent, which position he filled until Jan., 1895, when he was placed in charge of the Western Express Co.'s lines as Superintendent. He resigns the latter office to assume his new duties. Express Gazette.

THE PURCHASING AGENTS' GUIDE

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

Accident Insurance	Foghorns	Semaphore Arms
Canadian Ry. Act. Ins. Co. Ottawa, Ont.	Rice Lewis & Son. Toronto.	Acton Burrows Co. Toronto.
Travellers' Insurance Co. Montreal.	Forgings	Shafting
Air Brakes & Fittings	Rhodes, Curry & Co. Amherst, N.S.	Rice Lewis & Son. Toronto.
Westinghouse Mfg. Co. Hamilton, Ont.	Gates	Shipbuilders' Supplies
Aluminum	Page Wire Fence Co. Walkerville, Ont.	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	Grease	Ship Carpenters' Tools
Anchors	Eureka Min. Wool & Asbestos Co. Toronto.	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	W. C. Wilson & Co. Toronto.	Ships
Anti-Friction Metal	Half Tones	Polson Iron Works. Toronto.
Canada Metal Co. Toronto.	Acton Burrows Co. Toronto.	Shovels
Axles	Hardware	Rice Lewis & Son. Toronto.
Rhodes, Curry & Co. Amherst, N.S.	Rice Lewis & Son. Toronto.	Signal House Numbers
Babbit	Headlights	Acton Burrows Co. Toronto.
Canada Metal Co. Toronto.	Noah L. Piper & Sons. Toronto.	Signals
Rice Lewis & Son. Toronto.	Hose	Noah L. Piper & Sons. Toronto.
Beams	Rice Lewis & Son. Toronto.	Signs
Rice Lewis & Son. Toronto.	Illustrations	Acton Burrows Co. Toronto.
Bellows	Acton Burrows Co. Toronto.	Snow Plows
Rice Lewis & Son. Toronto.	Iron	Rhodes, Curry & Co. Amherst, N.S.
Bells	Rice Lewis & Son. Toronto.	Solder
Rice Lewis & Son. Toronto.	Iron Signs	Canada Metal Co. Toronto.
Belting	Acton Burrows Co. Toronto.	Speed Indicators
Eureka Min. Wool & Asbestos Co. Toronto.	Japans	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	McCaskill, Dougall & Co. Montreal.	Spikes
Block & Tackle	Lamps	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.	Springs
Blocks	Noah L. Piper & Sons. Toronto.	Rhodes, Curry & Co. Amherst, N.S.
Rice Lewis & Son. Toronto.	Lanterns	Station Name Signs
Boat Fittings & Hardware	Rice Lewis & Son. Toronto.	Acton Burrows Co. Toronto.
Rice Lewis & Son. Toronto.	Launches	Steamboats
Boiler Covering	Polson Iron Works. Toronto.	Polson Iron Works. Toronto.
Eureka Min. Wool & Asbestos Co. Toronto.	Life Insurance	Steamboat Signs
Mica Boiler Covering Co. Toronto.	Travellers' Insurance Co. Montreal.	Acton Burrows Co. Toronto.
Boilers	Locomotives	Steam Whistles
Polson Iron Works. Toronto.	Baldwin Locomotive Works. Philadelphia.	Rice Lewis & Son. Toronto.
Boiler Tubes	Lubricators	Steel
Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.	W. G. Blyth. Toronto.
Bolts	Matches	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	E. B. Eddy Co. Hull, Que.	Switch Targets
Bridge Numbers	Milepost Numbers	Acton Burrows Co. Toronto.
Acton Burrows Co. Toronto.	Acton Burrows Co. Toronto.	Telegraph Office Signs
Buckets	Mohair	Acton Burrows Co. Toronto.
Rice Lewis & Son. Toronto.	Lister & Co. Manningham, Eng.	Telegraph Spoons
Bunting	Numbers	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	Acton Burrows Co. Toronto.	Telephone Office Signs
Cars	Oakum	Acton Burrows Co. Toronto.
Rhodes, Curry & Co. Amherst, N.S.	Rice Lewis & Son. Toronto.	Tie Plates
Car Wheels	Oils	F. E. Came. Montreal.
Rhodes, Curry & Co. Amherst, N.S.	Eureka Min. Wool & Asbestos Co. Toronto.	Tollet Paper
Castings	Galena Oil Co. Franklin, Pa.	Rice Lewis & Son. Toronto.
Rhodes, Curry & Co. Amherst, N.S.	W. C. Wilson & Co. Toronto.	Tools
Chains	Office Signs	Rice Lewis & Son. Toronto.
Rice Lewis & Son. Toronto.	Acton Burrows Co. Toronto.	Truck Jacks
Cuts	Packing	Duff Manufacturing Co. Allegheny, Pa.
Acton Burrows Co. Toronto.	Eureka Min. Wool & Asbestos Co. Toronto.	Track Tools
Door Signs	W. C. Wilson & Co. Toronto.	Rice Lewis & Son. Toronto.
Acton Burrows Co. Toronto.	Pipe	Trucks
Electric Car Route Signs	Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.
Acton Burrows Co. Toronto.	Pipe Covering	Valves
Electric Car Trucks	Eureka Min. Wool & Asbestos Co. Toronto.	Rice Lewis & Son. Toronto.
Baldwin Locomotive Works. Philadelphia.	Mica Boiler Covering Co. Toronto.	Varnishes
Enamelled Iron Signs	W. C. Wilson & Co. Toronto.	McCaskill, Dougall & Co. Montreal.
Acton Burrows Co. Toronto.	Plushes	Vessels
Rice Lewis & Son. Toronto.	Lister & Co. Manningham, Eng.	Polson Iron Works. Toronto.
Engines, Stationary & Marine	Portland Cement	Waste
Polson Iron Works. Toronto.	Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.
Engraving	Printing	Eureka Min. Wool & Asbestos Co. Toronto.
Acton Burrows Co. Toronto.	Mail Job Printing Co. Toronto.	Noah L. Piper & Sons. Toronto.
Express Office Signs	Pumps	Water Meters
Acton Burrows Co. Toronto.	Rice Lewis & Son. Toronto.	Westinghouse Mfg. Co. Hamilton, Ont.
Fencing	Rails	Wheelbarrows
Page Wire Fence Co. Walkerville, Ont.	Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.
Ferry Signs	Rivets	Wire & Wire Rope
Acton Burrows Co. Toronto.	Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.
Flags	Rope	Yachts
Rice Lewis & Son. Toronto.	Rice Lewis & Son. Toronto.	Polson Iron Works. Toronto.

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