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TORONTO, CANADA, APRIL, 1899.

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RAILWAYS & CANALS.

Annual Report of the Department.

The annual report of the Department of Railways & Canals for the year ended June 30, 1898, has been issued. Following is a summary of the report of the Deputy Minister & Chief Engineer.

The number of railways in actual operation, including the 2 Government roads, the I.C.R. & the P.E.I.R., was 146: some of these, however, are amalgamated or leased; making the total number of controlling companies 84, not including the Government railways. The number of companies absorbed by amalgamation is 34, & the number of leased lines is 33.

The number of miles of completed railway was 16,870, an increase of 183, besides 2,248 miles of sidings. The number of miles laid with steel rails was 16,622, of which 553 was double track. The number of miles in operation was 16,718.

The paid-up capital amounted to \$941,297,037, an increase of \$19,439,895. The gross earnings amounted to \$59,715,105, an increase of \$7,361,829, & the working expenses aggregated \$39,137,549, an increase of \$3,968,884 compared with those of the previous year, leaving the net earnings \$20,577,556, an increase of \$3,392,945. The number of passengers carried was 18,444,049, an increase of 2,272,711, & the freight traffic amounted to 28,785,903 tons, an increase of 3,485,572. The total number of miles run by trains was 50,658,283, an increase of 4,977,432. The accident returns show 5 passengers killed.

The Government expenditure on railways prior to & since 1867 amounts, on capital account, to \$123,551,091.77 (including a payment of \$25,000,000 to the C.P.R. Co.), & for railway subsidies charged against the Consolidated Fund the further sum of \$17,619,222.11, making a total expenditure of \$140,834,731.29. In addition there has been an expenditure since Confederation for working expenses of \$73,029,631.74, covering the maintenance and operation of the Government roads, or a grand total of \$213,863,363.03; all of which, with the exception of \$13,881,460.65, has been expended on railways during the past 31 years. This does not include an annual subsidy of \$186,600 to the Atlantic & Northwest Ry. Co. for 20 years from July 1, 1889, nor interest at 5% on \$2,394,000, payable to the province of Quebec for the line from Quebec to Ottawa, which has been transferred to the Public Debt. The revenue derived from the Government roads during the same period amounts to \$64,510,650.18.

Canadian Pacific Railway.—Of the \$579,255.20 awarded to this Co. in 1891 by the arbitrators in respect of transferred works in British Columbia, and to be expended by the

Co. under Government supervision in certain specified directions, the total value of the work executed up to Nov., 1898, is \$579,022.53, which includes the expenditure, \$202,675.20, prior to the date of the award, leaving still to be expended \$233.67.

It should be noted that for the year ended on the 30th June, 1898, the Company had under traffic in Canada 6,334 miles of railway, including leased lines, & 36 miles over which it has running powers. Its gross earnings were \$25,470,796.18 (as against 6,314 miles of railway, & earnings \$21,242,638.75 the previous year). The total expenditure for working expenses was \$14,684,790.65, making the net earnings

to competent hands, as the ground has been carefully selected & as good alignment as the physical features of the country will admit of obtained. The maximum grade is 1%, or 52.8% a mile, the severest curves being 10 & 12 degrees, except in one instance, where a 15 degree curve has been introduced. The work of construction has so far been confined to the section between Lethbridge & Kootenay Landing, 290 miles, over which the track laying was completed on Oct. 8, 1898, & at this date of writing the line over this section is in safe condition for public traffic. A train transfer landing has been constructed on Kootenay Lake at Kootenay Landing, so that cars with their loads can be transferred without transshipment from that point to Nelson, which will greatly assist mining operations through the Kootenay district. The amount of subsidy paid up to Nov. 1, 1898, is \$2,162,190.

It is only proper here to note that amongst the various works & undertakings of the Co. for the substantial improvement of its railway in the directions of steel bridge construction, the formation of solid embankments & the adaptation of the most recent appliances to its rolling stock in order to secure safety & comfort to its passengers & employes, it has now equipped with self couplers 8,456 freight cars, & has fitted 6,601 freight cars with automatic brakes.

Government Railways in Operation.—The lines maintained by the Government are: The Intercolonial, the Windsor Branch (maintained only), & the Prince Edward Island Rys. The gross earnings of all the Government roads for the fiscal year were \$3,313,847.10, an increase of \$253,772.72. The gross working expenses were \$3,577,248.88, an increase of \$399,979.27. The net loss on the operations of the year was \$263,401.78. These figures include \$70,000 rent, paid for the extension of the I.C.R. into Montreal.

Intercolonial Railway.—In Mar., 1898, the operations of the I.C.R. were extended to Montreal by means of leases obtained from the G.T. & Drummond County Ry. Cos., making an addition of 169.81 miles to the operation of the Government line, its length being 1,314 miles instead of 1,145. During the fiscal year there was an addition of \$252,756.80 to capital account expenditure, making the total expenditure chargeable to capital, on the whole road as amalgamated under the act of 1891, \$55,668,913.95. The additions made during the year included \$56,651.93 for increased accommodation at Halifax, \$93,943.08 for increased accommodation at Moncton, \$19,820.48 for the extension to deep water at North Sydney, & \$65,510.92 on rolling stock.

The gross earnings of the year amounted to \$3,117,669.85, an increase of \$251,641.83, & the working expenses (exclusive of \$70,000 rent paid for the extension to Montreal



JAMES OSBORNE,
GENERAL SUPERINTENDENT WESTERN DIVISION C.P.R.

\$10,786,005.53, an increase of \$2,120,167.20 over the net earnings of the previous year.

The construction of the Crow's Nest Pass Ry., being considered a necessity for the successful development of the mining interests of B.C., Parliament granted a subsidy of \$11,000 a mile in aid of it. Under the act the C.P.R. Co. undertook the work of construction & entered into a contract, breaking ground July 15, 1897, since which the works of construction have been vigorously prosecuted. The length of road under contract is: Lethbridge to Kootenay Lake, 290 miles; Kootenay Lake to Nelson, 54 miles; total, 344 miles. The supervision of the location of the line has evidently been entrusted

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

to \$3,257,648.51, an increase of \$331,679.84, making the excess of expenditure \$139,978.66, or, including the rent mentioned, \$209,978.66.

Comparing the earnings with those of the previous year the passenger traffic produced \$1,053,864.64, an increase of \$74,859.07; the freight traffic \$1,857,740.06, an increase of \$170,689.74, & the carriage of mails & express freight \$206,065.15, an increase of \$6,093.12. The earnings per mile were \$2,594.

53, an increase of \$91.45. These figures are based on an average mileage of 1,201.63 in 1897-98, & an average mileage of 1,145 in 1896-97.

The number of passengers carried was 1,528,444, an increase of 26,754 in through & local traffic, & 1,434,576 tons of freight were carried, an increase of 138,548 tons. Of flour 987,408 barrels were carried, an increase of 139,707. Of grain 1,551,372 bus. were carried, an increase of 457,873; of this, 8,000 bus. was for shipment at Halifax. Lumber showed an increase of 10,738.091 superficial ft., the total carried being 254,093,816 ft. There was an increase of 17,219 in the number of live stock, of which 89,301 were carried. 369,949 tons of coal, a decrease of 13,413, were carried. Of raw sugar, none was carried. Of refined sugar, 26,434 tons, an increase of 5,714, were carried, of which 15,445 was for points west of the road. 8,330 tons of fresh fish, an increase of 622 tons, & 5,005 tons of salt fish, a decrease of 875 tons, were carried. Of ocean borne goods to & from Europe via Halifax the aggregate was 26,220 tons, an increase of 6,064. Of this, 18,633 was local traffic.

In the winter of 1897-98 the removal of snow & ice entailed an expenditure of \$58,370.90, about \$25,000 more than the cost the previous year. The permanent way & all structures & works are in good order.

The train mileage (or number of miles run by trains) of the year was 3,955,009, an increase of 175,726. The cost per train mile was 82.37c., 4.95c. higher than in the previous year. The working expenses per mile of railway amounted to \$2,711.02, an increase of \$155.59 a mile.

The Windsor Branch is 32 miles long, extending from Windsor Jct., on the I.C.R., to Windsor. It is operated by the Dominion Atlantic Ry. Co., which pays all charges in connection with the working of the traffic, $\frac{2}{3}$ of the gross earnings being allowed the Co., the Government taking the remaining $\frac{1}{3}$, & assuming all costs of maintenance of the road & works. This arrangement is carried out under an agreement dated 1892, which extends for a further term of 21 years, arrangements similar to those made in 1871. All charges for superintendence & supervision of maintenance of works are borne by the Government; the duty of supervision being performed by the chief officers of the I.C.R. The gross earnings of the Government ($\frac{1}{3}$ of gross receipts) were \$37,226.64, a decrease of \$3,376.59. The expenses of maintenance were \$18,181.63, an increase of \$7,360.59, leaving the profit to the Government \$19,045.01. The road has been maintained in good order.

Prince Edward Island Railway.—The total cost of the road & equipments chargeable to capital account at the close of the fiscal year was \$3,768,107.26; there being an addition during the year of \$17,541.88 on account of new works, including the shortening of the line between North Wiltshire & Colville & a survey for a branch from South Port to Murray Harbor.

The gross earnings were \$158,950.61, & the working expenses \$231,418.74; the expenditure in excess being \$72,468.13. Compared with the previous year, the gross earnings increased \$5,507.48. The railway carried 126,511 passengers, an increase of 4,021, producing \$63,734.71, an increase of \$1,039.54. Of freight there was carried 57,539 tons, an increase of 5,388, producing \$75,845.60, an increase of \$5,972.94. The earnings from mails & sundries were \$19,370.40, a decrease of \$1,505. Compared with the previous year, the working expenses were less by \$9,069.16. The train mileage was 252,894, a decrease of 1,135 miles. The cost per mile run by trains was 91.51c., a decrease of 3.16c.; & per mile of railway \$1,101.99, a decrease of \$43.20 per mile. The road, with its buildings

& rolling stock has been maintained in a satisfactory condition.

Canals.—The expenditure charged to capital account on the original construction & the enlargement of the several canals of the Dominion up to June 30, 1898, was \$72,504,401.85. A further sum of \$15,067,096.31 was expended on the repairs, maintenance & operation of these works, making a total of \$87,571,498.16. These figures are the aggregate expenditures on specific canals & do not comprise certain items charged to "Canals in general." The total revenue derived, including tolls & rentals of lands & water-powers, amounted to \$11,710,240.08. The expenditure for the fiscal year was: On construction & enlargement, \$3,207,249.79, & \$624,755.96 for repairs, renewals & operation, making a total of \$3,832,005.75. The net revenue for the fiscal year was \$407,662.81, an increase of \$22,882.28. The net canal tolls were \$344,057.13, an increase of \$22,429.80, & the rents were \$44,050.39, a decrease of \$549.25. The expenditure on canal staff & maintenance, repairs & renewals amounted to \$624,755.96, a decrease of \$8,520.20; & the net receipts amounting as above to \$407,662.81, the amount of expenditure in excess of receipts was \$217,093.15, compared with an excess expenditure the previous year of \$248,495.63.

The following features of the principal canal traffic during the season of navigation of 1897 will be of interest:—On the Welland Canal, 1,274,292 tons of freight were moved, a decrease of 5,695 tons; of which 824,485 tons were agricultural products, an increase of 31,123, & 181,817 produce of the forest. 1,050,093 tons passed eastward & 224,199 westward; 1,244,750 were through freight, of which 1,026,458 passed eastward. Of this through freight Canadian vessels carried 345,977 tons, an increase of 4,847, & United States vessels 898,773, a decrease of 3,692. The total freight passed eastward & westward through this canal from U.S. ports to U.S. ports was 564,694 tons, a decrease of 88,519 compared with 1896. The quantity of grain passed down this & the St. Lawrence canals to Montreal was 560,254 tons, an increase of 99,205 compared with the previous year: of this 89,659 were transhipped at Ogdensburg as against 461,049 carried down in 1896, of which 77,355 were transhipped at Ogdensburg. The further quantity of 43,023 tons of grain passed down the St. Lawrence Canals only, to Montreal, making the total 603,277 tons. The rate of toll on grain for passage through the Welland (giving free passage through the St. Lawrence canals) was 10c. a ton.

On the St. Lawrence canals 1,231,365 tons of freight were moved, an increase of 117,675; of which 813,638 were east bound through freight; & 23,831 west bound through freight; 746,537 were agricultural products, 331,620 merchandise, & 94,496 forest products. Seven cargoes of grain, aggregating 2,324 tons, were taken down direct to Montreal through the Welland & St. Lawrence canals.

On the Ottawa River canals the total quantity of freight moved was 562,370 tons, an increase of 60,324, of which 551,700 were produce of the forest. On the Chambly Canal 352,136 were moved, an increase of 7,201, of which 237,653 were the product of the forest. On the Rideau Canal 77,276 were carried, an increase of 3,969, 47,010 being the product of the forest. On the St. Peter's Canal 67,093 were carried, an increase of 1,585, of which 50,013 were merchandise. On the Murray Canal 13,231 passed, an increase of 175, & 5,467 of this were the product of the forest. On the Trent Valley Canal 36,141 were moved, of which 35,294 were product of the forest.

On the Sault Ste. Marie Canal the total movement of freight was 4,947,063 tons, an increase of 369,664, carried in 4,268 vessels, the number of lockages being 2,604. Of wheat 17,924,802 bus., & of other grain

3,253,405 bus. were carried; 1,093,456 barrels of flour, also 3,572,854 tons of iron ore, & 7,799,156 ft. b.m., of lumber; all these items show a considerable decrease. The total traffic at this point, accommodated by the 2 canals, the Canadian & U.S., amounted to 18,986,689 tons, an increase of 1,730,266, carried in 17,080 vessels, a decrease of 1,497. The total quantity of wheat carried was 55,931,779 bus., a decrease of 7,532,097, & of other grain 24,968,136, a decrease of 2,747,129. Of lumber the total was 802,240,156 ft. b.m., an increase of 113,366,356.

As having an interesting bearing on the question of canal versus railway transport of grain from the west, it may be noted that whereas grain & peas passed down to Montreal through the St. Lawrence canals to the extent of 560,254 tons, an increase of 64,386 over the previous year, the quantity carried to Montreal via the C.P. & G.T. Rys. amounted to 228,586 tons, an increase of 74,869. The quantity of grain carried to tide-water on the New York State canals was 569,362 tons, a decrease of 183,677, while the quantity carried by the railways of the State to tide-water amounted to 4,132,740 tons, an increase of 267,980. Of the total freight carried by the canals & railways of the State of New York, respectively (amounting in 1897 to 43,711,512 tons—less by 44,539 than in 1896), the proportion carried by the canals has fallen steadily from 68.9% in 1859 & 47.0% in 1869 to 8.3% in 1897. The results which may follow on the approaching completion of the enlarged system of Canadian canals remain to be seen.

The Department is strenuously endeavoring to secure the completion of the enlarged canal systems on the River St. Lawrence to such extent as to admit of their use during the season of 1899. Emphasis is laid on the fact that though the dimensions of the enlarged locks are: length 270 ft., width 45 ft., with 14 ft. of water on the sills, the length of the vessels to be accommodated is limited to 255 ft.

G. T. R. SEMI-ANNUAL MEETING.

The ordinary general half-yearly meeting was held at the City Terminus Hotel, London, Eng., Mar. 29, when the following report was presented:—

The following summary shows a comparison of the ½-year's revenue account with that of the corresponding ½-year ended Dec. 31, 1897:—

	Dec. 31, '97.	Dec. 31, '98.
£2,247,151	Gross receipts.....	£2,140,579 17 10
1,434,804	Deduct— Working expenses, including taxes, being at the rate of 66.71 0/0, as compared with 63.84 0/0 in 1897.....	1,427,999 14 ..
812,347	Net traffic receipts.....	712,580 3 10
16,013	Add— Received from the International Bridge Co.....	12,930 12 9
5,570	Interest on Toledo, Saginaw & Muskegon bonds.....	4,741 15 7
3,088	Interest on bonds, etc., of Central Vermont Ry.....	3,087 10 8
64,821	Interest on securities of controlled lines & on St. Clair Tunnel bonds acquired by the issue of G. T. 4 0/0 debenture stock.....	64,781 3 6
18,397	Balance of general interest account.....	20,138 3 3
£920,236	Net revenue.....	£818,259 9 7

Following are the net revenue charges for the ½-year:—

Rents (leased lines).....	£ 73,174 8 3
Interest on debenture stocks & bonds of the Co.....	438,102 4 6
Interest on debenture stock & bonds of lines consolidated with the G. T. Co.....	71,955 .. 4
Interest on Michigan air line bonds.....	7,750
	590,981 13 1

Amount advanced to Chicago & G. T. Co. under traffic agreements towards payment of interest on its bonds, ½-year to Dec. 31, for which interest coupons are held.....14,555 11 7

Amount advanced to Detroit, Grand Haven & Milwaukee Co. towards payment of interest on its bonds, under agreements, ½-year to Dec. 31.....3,880 12 8

18,436 4 3
£609,417 17 4
208,841 12 3
£818,259 9 7

Leaving a surplus of.....

The surplus of £208,841 12s 3d, added to the balance from last ½-year of £2,271 3s 11d, makes £211,112 16s 2d, available for dividend.

The directors recommend the declaration of the ½-year's dividend on the 4% guaranteed stock, amounting to £104,395 17s 6d, & a dividend of 3% on the 1st preference stock, amounting to £102,504 18s 0d, leaving £4,212 0s 8d, to be carried forward to the next ½-year's accounts.

GROSS RECEIPTS.—This table exhibits a comparison of receipts for the ½-years ended Dec. 31, 1898 & 1897.

	1898.	1897.	Increase.	Decrease.
Passengers.....	£ 581,429	£ 619,788	..	38,359
Mail & Express..	104,632	110,583	..	5,951
Freight & Live Stock.....	1,388,711	1,486,391	..	97,680
Miscellaneous...	65,808	30,389	35,419	..
	2,140,580	2,247,151	..	106,571

The increase of £35,419 in the miscellaneous receipts arises from the additional rental received from the Wabash Co. in respect of running powers granted over the G. T. line between Windsor & the Niagara Frontier, & from the rental received from the Dominion Government for the use by the Intercolonial Ry. of the line between Ste. Rosalie & Montreal.

The decrease in the passenger & freight & live stock receipts is largely attributable to the deviation of traffic consequent on the above-mentioned running arrangements for which compensation is obtained in the additional rentals received from those Cos. included in miscellaneous receipts; the passenger receipts have also been adversely affected by the reduction in local passenger fares, which, however, were restored on Nov. 28 last to their normal basis.

TRAFFIC STATISTICS.

	Half year, Dec. 31, 1898.	Half year, Dec. 31, 1897.	Increase.	Decrease.
Passengers carried.....	3,833,614	3,641,761	191,853	..
Average fare per passenger.....	3s. 0½d.	3s. 5d.	..	4½d.
Tons of freight and live stock.....	4,756,205	5,136,328	..	380,123
Average rate per ton	5s. 10d.	5s. 9½d.	½d.	..
Earnings per train-mile.....	59.92d.	59.61d.	31d.	..

THE WORKING EXPENSES, including taxes, amounted in the ½-year to £1,428,000, or 66.71% of the gross receipts, as compared with £1,434,804, or 63.84%; a decrease in amount of £6,804, but an increase in the proportion to the gross receipts of 2.87%.

This table exhibits a comparison of the revenue expenditure, excluding taxes, as now classified, for the ½-years ended Dec. 31, 1898 & 1897.

Description of Expenditure.	1898.	1897.	Increase.	Decrease.
Maintenance of way & structures.	£ 397,110	£ 324,550	72,560	..
Maintenance of equipment.....	213,143	234,775	..	21,632
Conducting transportation.....	731,247	786,334	..	55,087
General expenses.....	55,042	50,192	4,850	..
Total.....	£1,396,542	£1,395,851	£691	..
Percentage of gross receipts.....	65.24	62.11	3.13	..

It will be seen from the above statement that the amount charged in the past ½-year's accounts for maintenance of way & structures was £72,560 in excess of the expenditure in the corresponding ½-year. A large amount of additional ballasting was done during the ½-year at an extra expense of £12,932, & in continuation of the policy indicated in the last ½-year's report of gradually improving the line, an increased amount of £61,405 for renewal of bridges & culverts has been charged, of which £30,805 was on account of the revenue proportion of the expenditure for the reconstruction of the Victoria Jubilee Bridge, & of the cost of renewing the bridges between Montreal & Portland, & on the Southern Division. The remainder of the additional expenditure was incurred on account of the renewal of several bridges on other portions of the line, indispensable for the prompt & economical conduct of the traffic. The reduction in the expenses for conducting transportation is a satisfactory feature in the accounts of the past ½-year.

THE TRAIN MILEAGE of the ½-year compares with that for the ½-year ended Dec. 31, 1897, as follows:—

	1898.	1897.	Increase.	Decrease.
Passenger.....	3,270,604	3,237,813	32,791	..
Freight.....	4,758,402	5,212,230	..	453,828
Mixed trains.....	544,519	598,091	..	53,572
Total.....	8,573,525	9,048,134	..	474,609

ROLLING STOCK.—The stock of cars has been increased during the ½-year by the purchase of 750 box freight cars of 60,000 lbs. capacity, & 250 double-deck stock-cars, & the construction in the Co.'s shops of 250 refrigerator cars, the cost of which, amounting to £123,054, has been charged to capital account. The reduction of £26,140 in the amount paid during the ½-year for the use of cars belonging to other companies, is partly attributable to the additional equipment recently provided.

Thirteen engines have been sold or broken up, 18 passenger cars & 527 freight cars have been broken up, & 2 first-class & 6 second-class cars have been converted into boarding cars. Two passenger engines were constructed in the Co.'s shops. Seven passenger & 126 coal & flat cars were also built in the Co.'s shops during the ½-year, at the cost of revenue, in part replacement of cars out of service.

There remained at Dec. 31, 1898, 3 locomotives in excess, & 34 passenger & 405 freight cars short of the official stock. To replace this deficiency in the stock of cars there was at the end of the ½-year £88,733 10s. 11d. at the credit of car renewal fund, & there was also £28,118 13s. 6d. at the credit of locomotive renewal fund.

CAPITAL ACCOUNT.—The total outlay on capital account amounted for the ½-year to £205,133 16s. 4d., of which £123,054 was expended in increasing the equipment of the Co. by the construction in the Co.'s shops & by purchase of 1,250 new freight & cattle cars. The remaining expenditure mainly consists of £26,039 for necessary additions & improvement to the rolling stock, & £46,186

for additional sidings & other new works required for the accommodation of the traffic.

RENEWAL OF BRIDGES.—An amount of £30,805, being the proportion of the expenditure chargeable to revenue for the reconstruction of the Victoria Jubilee Bridge & of the cost of renewing the bridges between Montreal & Portland & on the Southern Division, on the basis mentioned in the last report, has been included in the maintenance of way charges for the past ½-year. There was an amount of £33,853 19s. 11d. standing at the debit of renewal of bridges suspense account on Dec. 31, 1898. The directors are glad to report that trains commenced to run over the double track of the Victoria Jubilee Bridge in Dec. last. The completion of the bridge & of the roadway, footpaths & approaches has been retarded by the severity of the weather, but it is expected that all the works in connection with the new structure will be finished during the current ½-year.

CHICAGO & GRAND TRUNK RAILWAY.—The gross receipts for the ½-year to Dec. 31, 1898, amounted to £373,555, against £338,320 in 1897, an increase of £35,235. The working expenses were £299,355, against £299,995, a decrease of £640; the net profit being £74,200, against £38,325, an increase of £35,875. The net revenue charges for the ½-year were £88,755, against £87,792 in 1897. There was, therefore, a deficiency in meeting the net revenue charges in 1898 of £14,555, as compared with a deficiency for 1897 of £49,467, being an improvement, compared with the corresponding ½-year of £34,912. The deficiency of £14,555 is payable by the G.T. Co. under traffic agreements. The number of passengers carried during the ½-year was 622,847, against 575,416, an increase of 47,431, or 8.24%; & the passenger train receipts, including mails & express receipts, were £115,068, against £110,747, an increase of £4,321, or 3.9%. The quantity of freight moved during the ½-year was 1,005,054 tons, against 925,569 in 1897, an increase of 79,485, or 8.59%; & the receipts from this traffic were £258,175, against £227,226 in 1897, an increase of £30,949, or 13.62%.

DETROIT, GRAND HAVEN & MILWAUKEE.—The gross receipts for the ½-year to Dec. 31, 1898, were £106,379, against £117,073 in 1897, a decrease of £10,694; the working expenses were £72,492, against £81,838, a decrease of £9,346; leaving a balance of £33,887, against £35,235, & showing a decreased net revenue of £1,348, compared with the corresponding ½-year of 1897. The net revenue charges for the ½-year were £37,768, against £37,409 in

1897, so that there was a deficiency in meeting the net revenue charges of £3,881 as compared with a deficiency of £2,174 for the corresponding period of 1897. This deficiency of 3,881 is payable by the G.T. Co. The number of passengers carried during the ½-year was 330,357, against 333,781, a decrease of 3,424, or 1.03%; & the passenger receipts, including mails & express receipts, were £51,153, against £50,120, an increase of £1,033, or 2.06%. The quantity of freight moved was 285,202 tons, against 307,857 in 1897, a decrease of 22,655, or 7.36%; & the receipts from freight traffic were £54,318, against £58,759 in 1897, a decrease of £4,441, or 7.56%.

The directors have the satisfaction to record that the negotiations with the C.P.R. Co., to which reference was made in the last ½-year's report, resulted in an agreement embracing the settlement of all points at issue between the two companies. The new agreement concluded Nov. 22, 1898, provided for the re-establishment of interchange traffic facilities, via North Bay, & for the re-adjustment of rates & fares in connection therewith on a satisfactory basis.

It was announced at the last ½-yearly meeting that an arrangement had been virtually completed with the Committee of Bondholders of the Consolidated R.R. of Vermont, & other parties interested in that Co. That agreement with certain modifications has since been acknowledged in the new charter granted Nov. 16, 1898, to the Central Vermont Ry. Co. by both houses of the Vermont State Legislature. So soon as the legal procedure of the Courts under the decree of foreclosure & sale dated Feb. 1, 1899, will permit, the re-organization of the Central Vermont Ry. Co., as constituted in the new Act of Incorporation, will be completed, & the agreement between the two companies definitely settled & submitted in due course for the approval of the proprietors.

The retiring Directors at the forthcoming meeting are Sir C. Rivers Wilson, J. Price, G. Allen, & J. A. Clutton-Brock, all of whom are eligible, & offer themselves for re-election. G. B. Newton, one of the auditors in London, & W. Ramsay, one of the auditors in Canada, also retire, & offer themselves for re-election.

ENGINEERING DEPARTMENT.—The Chief Engineer states that on the G.T.R. system east of the Detroit & St. Clair rivers, & on the Detroit & Michigan Air Line division, west of these rivers, the charges for maintenance & renewals during 1898 were \$473,969.16 greater than in 1897. Of this, \$324,169.95 was for repairs

and renewals of bridges, exclusive of the Victoria Bridge; the remaining \$149,799.21 was divided in various proportions among the other items of expenditure, except superintendence and labor for repairs of roadway, which showed a decrease.

The bridge expenditure is high, & must continue to be so, until the light structures which were built when the railway was made, & for some years afterwards, have been renewed in a form strong enough to meet present requirements, with a reasonable surplus of strength for further probable increase in weights of rolling stock & car loads.

The masonry of the piers of the Victoria Bridge was finished April 2, 1898, & the trusses of the last span were so far completed on Aug. 19 that they became self-supporting. On Dec. 13 the first train passed over the second or new track, & the bridge, as a double-track structure, was brought into service. A good deal of work remained to be done at the end of the year, but it was of a character that would not appreciably interfere with the running of the trains. The carriage and footways, & their approaches, are not yet finished, & will not be until the opening of spring. The total expenditure on the work during 1898 was \$845,642.20.

Sidings have been more or less re-arranged & greatly improved at 41 stations. Their aggregate length has been increased 10¼ miles.

New offices for the Motive Power Department, & a freight shed, have been built at Montreal, & a station at Merritton. Round-houses, each of which will hold 30 locomotives, are in course of erection, one at Sarnia & one at Port Huron, & are well advanced towards completion.

The materials used for repairs of main tracks & sidings were:

80-lb. new steel rails in main tracks..	26,462 tons.
Partially worn rails in branch lines and sidings.....	24,074 "
New ties	1,591,426
Ba last.....	343,523 cubic yds.

The Co.'s permanent way & works have been carefully maintained & are in good condition.

MOTIVE POWER.—The Superintendent of Motive power gives these figures:

Half-Year Ended	Dec. 1898.	Dec., 1897.
Total expenditure.....	\$2,082,913	\$2,157,521
Train mileage.....	8,573,525	9,048,134
Expenses per mile—	cents.	cents.
Train.....	24.29	23.84
Engine.....	19.56	19.81
Car.....	1.50	1.40

The decrease in expenditure was \$74,608, or 3.5%, with a decrease in miles of 474,609 or

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5.2%. The average number of cars moved per train was for the respective ½-years:

	1898.	1897.
Passenger trains	4.6	4.07
Freight	24.8	25.4
Mixed	10.5	11.3

In addition to repairs to 483 engines, including the rebuilding of 31, two were built in the Co.'s Montreal works, & 13 were scrapped & sold, leaving the actual stock at Dec. 31, 1898, 798, a surplus of 3 over the official figures. At the end of 1898, 111 engines or 13.91% of the actual stock were out of service undergoing or waiting repairs, against 129 & 15.98% at the end of 1897.

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

	Repairs and renewals of locomotives.		All repairing charges, including shops, water-works, &c.	
	1898.	1897.	1898.	1897.
Train	Cents. 4.81	4.87	Cents. 6.19	6.10
Engine	3.87	4.05	4.98	5.07
Car	0.30	0.29	0.38	0.36

The expenditure on capital account was 19 engines fitted with driver & tender brake & Westinghouse air brake attachment; 9 fitted with driver brake & Westinghouse air brake attachments; 7 fitted with driver & tender brake; 22 fitted with driver brake; 51 fitted with train air signalling apparatus; 45 fitted with appliance for car warming; 14 fitted with Master Car Builders' coupler.

The ferry steamer International has been sold. The Huron is still out of commission. The Great Western is in good condition. The hull of the Lansdowne is in good condition. The boilers have received the necessary attention to keep them in service as long as possible.

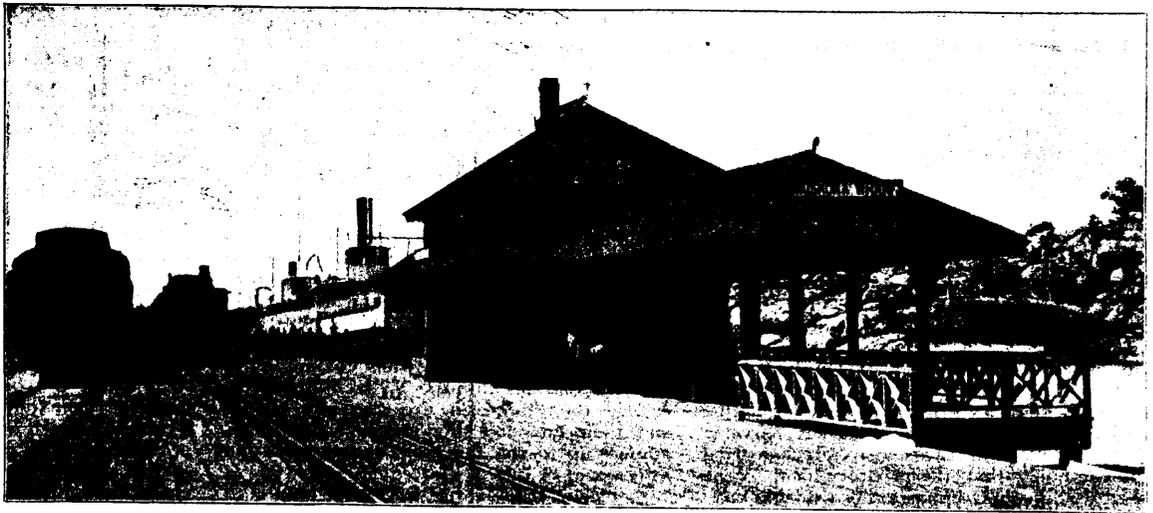
CAR DEPARTMENT.—The Superintendent of the Car Department gives these figures:

	Half year ended Dec., 1898.	Dec., 1897.
Cost repairs & renewals	\$590,601	\$506,956
Miles run, passenger	16,742,267	16,561,501
Freight	137,833,326	122,126,441
Total	154,575,593	138,687,922
Cost per mile	.382c.	.366c.
train	6.53c.	5.91c.

A decrease in expenditure of \$83,645, or 14.2%, with a decrease in car miles of 15,887,671, or 10.3%. At cost of capital 750 35-ft. 60,000-lb. box cars, & 250 35-ft. stock cars were purchased, & 250 refrigerator cars were built at the Montreal shops; 994 freight cars were equipped with automatic couplers & Westinghouse air brakes; 48 passenger cars were fitted with air signals; 58 passenger cars were also fitted with steam-heating apparatus. At cost of revenue 3 day coaches, 4 baggage cars, & 126 coal & flat cars were built at the Montreal shops.

CAPITAL EXPENDITURE FOR ½-YEAR ENDED DEC. 31, 1898.

	£ s. d.	£ s. d.
Instalment on Portland City Elevator Loan		445 9 7
New Works—		
Sundry Sidings & Works	36,751 0 5	
New Stations & Buildings	9,434 18	
		46,186 7 5
Double Track		5,851 1 4
New Rolling Stock—		
750 Box Freight Cars	66,601	7
250 Refrigerator	34,158	3
250 Double Deck Cattle Cars	22,294	5



THE GRAND TRUNK RAILWAY'S MUSKOKA LAKES TERMINAL.

Improvements to Rolling Stock: Equipment of Engines & Freight Cars with Air Brakes & Automatic Couplers: Air Whistles for Passenger Cars, &c.	26,039 13 10	149,093 7 10
Lands & Land Damages—		
For Lands at Deering, Montreal, &c.		3,557 10 2
		£205,133 16 4
Deduct—		
Premium on Debenture Stock sold	3,807 3 10	
Amount received from township of Verulam, Balance of Bonus	249 7	4,056 10 10
		£201,077 5 6

REVENUE ACCOUNT ½-YEAR ENDED Dec. 31, 1898.

Dec. 31, 1897.	Expenditure	Dec. 31, 1898.
£		£ s. d.
324,550	Maintenance of way & structures	397,110 8 8
234,775	Maintenance of equipment	213,143 8 9
786,334	Conducting transportation	731,246 11 5
59,192	General expenses	55,042 6 9
1,495,851	62.11% Total working expenses	65,247 1,396,542 15 7
	38.95% Taxes	1,477 31,456 18 5
1,434,804	63.84%	65,712 1,427,999 14
	812,347 Balance to Net Revenue Account	712,580 3 10
£2,247,151		£2,140,579 17 10

The directors, on entering the meeting, accompanied by General Manager Hays, were given a rousing reception. A large number of shareholders were present at the meeting, which was very orderly.

The President, Sir C. Rivers-Wilson, said that most satisfactory progress had been made & the Co.'s affairs were in a very prosperous condition. Referring to the surplus, he said that, unfortunately, they had to apply a portion of it towards paying debts incurred before the present directors were placed in office. Owing to the generous support given, the directors had used their discretion in expending money on the maintenance of the road. This liberality was absolutely necessary to keep the road at a high standard. The disputes with the C.P.R. had, happily, been all settled, & it was hoped that the future relations of the two roads would be of the most amicable kind. The President declared that the G.T.R. was absolutely not blamable for the rate war. Speaking of the falling off in freightage, he said that it was largely due

to the fact that prosperous farmers, with the prospect of better prices, were holding their grain. He said a good deal of this year's earnings must be spent on the line to compete with the C.P.R. The idea of the Board is to have heavier trains and lower gradients.

The G.T.R. will control the Central Vermont Road when the agreement is settled. Sir Charles proposed that the Co. take advantage of the offer of Montreal of a site for the head offices. Tenders, he stated, would shortly be called for. General Manager Hays was highly spoken of by the President, & his sentiments were vigorously applauded by the shareholders.

The retiring directors and auditors were unanimously re-elected. The report and the resolution eulogizing Mr. Hays were unanimously adopted.

Mr. Hays, on rising to return thanks, received an ovation, & said that not he alone, but his excellent staff, deserved credit. He spoke of the necessity of maintaining the value of the Co.'s property, & said the road was assured of a continuance of profitable work. During the past two years more had been done for the property in the way of maintenance & renewals than had been the case in any like period in the history of the Co. The work had been of a substantial nature, & the completion of this year would see the line in condition to bear any traffic available.

McGill University Lecture.—In the course of the annual university lecture recently delivered in Montreal, Prof. R. B. Owens, chief of the Electrical Department, said: "By the introduction of electric traction, not only has the sanitary conditions of our cities been improved, but healthy country homes have been substituted for the overcrowded tenement. Electric traction is not dangerous at higher speeds than is possible with horses, & the small cost of electric operation permits of low fares being charged. The effect of rapid transit on urban architecture is also plainly seen. The question is often asked, Will electricity eventually supersede the locomotive on the present steam railways? I may reply that careful estimates show no economy of electricity over steam for handling heavy freight traffic where the number of trains operated per day is small, but for passenger service, where trains must be operated at frequent intervals on small headway, the advantage is with electricity, & it is probable that because of the smaller cost, as well as increased speed, such cities as New York, Baltimore & Washington will be connected by through lines in the near future."

Toronto, Hamilton & Buffalo Ry.

In our last issue we gave copious extracts from a prospectus issued in New York offering \$3,280,000 1st mortgage 4% gold bonds of this Co., payable July 1, 1946, interest payable 1/2 yearly. There were also embodied in the prospectus letters from C. M. Depew, Chairman of the boards of the New York Central & Hudson River R.R. Co., & of the Michigan Central, & from Sir Wm. Van Horne.

Mr. Depew says:—The construction of the T., H. & B. Ry. was promoted by the New York Central & Hudson River R.R. Co., in connection with the C.P.R. Co., the Michigan Central R.R. Co. & the Canada Southern R. Co., as a connecting link between the C.P.R. & the Vanderbilt railway systems. It was expected that its principal traffic would be derived from interchange business between these systems, but it was also foreseen from the beginning that the territory local to the road would supply important & valuable business. At the outset of the enterprise careful calculations were made on behalf of the contributing companies by experienced engineers & traffic men as to the ability of the road to earn the interest upon its capitalized cost, & these calculations warranted the belief that as soon as the road was in full operation it would without trouble take care of its own fixed charges; but to guard against a contingency of a lack of remunerative business in times of depression, the 4 promoting companies agreed to guarantee the payment of the interest accruing upon the bonds in any 1/2 year by contributing, if necessary, up to 25% of their entire gross earnings upon the traffic delivered to and received from the T., H. & B. R. Co. in that 1/2 year by each of these companies. This possible contribution was considered more than sufficient to insure the payment of the interest under any circumstances that could be anticipated. During the first 14 months of the operation of the road, its own earnings, beyond the cost of operation, were entirely expended in construction & betterments, & the entire interest

upon the bonds for that period was promptly & readily made up by the contributing companies. Since Aug. 1, 1898, the T., H. & B. R. Co. has fully earned its interest, & the guaranteeing companies have no expectation of being called upon to make up a deficiency hereafter. The capital stock of the T., H. & B. R. Co. is distributed so that 51% of it is owned by the Vanderbilt lines, & is voted, on their behalf, by the N.Y.C. & H.R.R. Co.; 19% is voted by the C.P.R. Co. & 30% is owned & voted by others. The board of directors consists of 7 members, of whom 4 represent the interest of the Vanderbilt lines & 1 represents the C.P.R. Co. I think the facts briefly set forth above will indicate to you very clearly that the two great railroad systems to which I have referred are fully committed to friendly relations with the T., H. & B. R. Co., & that their interests are such as to insure their financial support under all circumstances up to the full limit expressed in the agreement of July 9, 1895.

Sir Wm. Van Horne says:—In reply to your inquiry as to my views on the situation & prospects of the T., H. & B. Ry. as affecting its ability to meet the interest on its bonded debt, I beg leave to say that as the connecting link between the New York Central, Canada Southern & Michigan Central railways on the one hand, & the C.P.R. system on the other (the latter system now embracing about 9,500 miles of railway), and with a traffic contract securing to the T., H. & B. all of the traffic interchanged between the Vanderbilt lines named & the C.P. systems, to the extent that it can be legitimately sent that way, & with an agreement on the part of all these lines to contribute 25% of their earnings on the traffic so interchanged in any 1/2 year towards making good any deficit which may occur in that 1/2 year in the interest on the bonds of the T., H. & B. R. Co., its position ought to be perfectly safe, & I so regard it. In addition to the through traffic assured to it by the traffic contracts referred to, the T. H. & B. R., traversing as it does one of the richest districts in Canada, commands a large & valuable local traffic. The ownership of 70% of the stock of the T.,

H. & B. Co. by the Vanderbilt interests & the C.P. Co. together should be a strong additional assurance.

Edward Sweet & Co. inform us the bonds were taken up at the subscription price, viz., par & interest, but that they are not at liberty to mention the names of the purchasers to anybody.

Irondale, Bancroft & Ottawa Ry.

A writ has been issued by Beatty & Co. solicitors, Toronto, on behalf of certain shareholders in the Irondale, Bancroft & Ottawa Ry., against J. H. Plummer, A. D. Benjamin, H. S. Mara, Z. A. Lash, the Trusts Corporation of Ontario & the Bank of British North America, to prevent the sale of bonds of the road which are held by the first-named defendants to the Bank of British North America. The writ is based on two clauses in the charter of the Co., which provide that every director of the road must hold at least 5 shares of stock therein, & that at least 4 directors, bodily present, shall be necessary to a quorum at any meeting, even where proxies are invoked. The statement of claim sets forth that at a so-called special general meeting of shareholders, held April 24, 1894, it was resolved to bond the road for \$15,000 a mile on those portions of it constructed or under construction. On Jan. 11, 1895, a meeting of directors was held in Toronto, at which it was decided, pursuant to instructions given at the earlier meeting of shareholders, to bond the road for 30 miles & to appoint the Trusts Corporation of Ontario trustees for the issue of the bonds. At this meeting 4 were present, C. J. Pusey, C. H. Williams, L. B. Holland, & R. G. Kingan, but it is alleged that Mr. Holland was not, & never had been, a director, & did not become a shareholder until long afterwards. Subsequently, at a meeting held again in Toronto, on Aug. 13, 1897, the President, C. J. Pusey, was authorized to enter single-handed into whatever agreement he thought proper in connection with the sale of the bonds. At this meeting C. J. Pusey, G. H. Williams, L. B. Holland, & F. C. Jones were present,

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Number of Farmers... 27,000.

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CROP OF 1895.		CROP OF 1896.	
A Favorable Season.		An Unfavorable Season.	
Average yield per acre.		Average yield per acre.	
WHEAT.....	27.86 bushels	WHEAT.....	14.33 bushels
OATS.....	46.73 "	OATS.....	28.25 "
BARLEY.....	36.69 "	BARLEY.....	24.80 "
FLAX.....	16.08 "	FLAX.....	12.30 "

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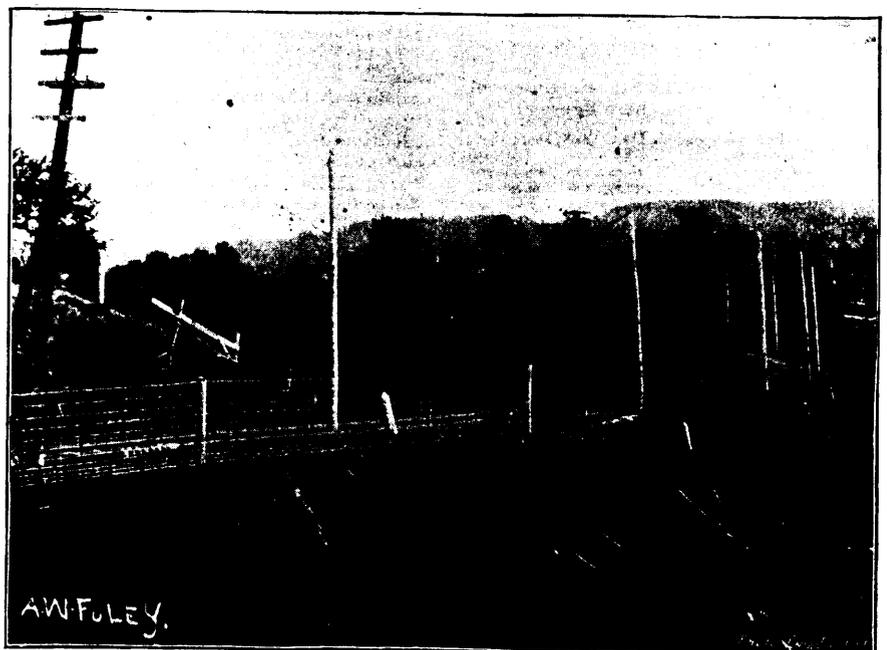
for a few days, and secure reliable information about settlements, free homesteads and lands for sale, from the heads of departments located in Winnipeg. For latest information and maps, all free, address

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30 York St., Toronto, Ontario.



The following leading railroads of Canada are using Page fencing in quantities of from 1 mile to 100: Canadian Pacific; Grand Trunk; Intercolonial; Lake Erie & Detroit River; United Counties; Canada Atlantic; St. Lawrence & Adirondack; Michigan Central; Manitoba & Northwestern; East Richelieu Valley; Toronto, Hamilton & Buffalo; Thousand Islands; Crow's Nest Pass.

For further particulars send to the Page Wire Fence Co., Ltd., Walkerville, Ont.

but it is alleged that neither of the latter two was a director or shareholder. On Sep. 1, 1897, Mr. Pusey entered into negotiations for advances on the road, which were made by the defendants. Incidentally notes were given which total \$103,500, & which fall due Sep. 1, 1899. Other advances have also been made which amount to \$33,600. The Bank of British North America holds these notes, & will claim payment of them. It, however, wishes to buy the \$450,000 bonds issued by the Co. 4 years ago. The plaintiffs wish to have the bonds declared invalid, on the ground that authority given for their issue was not sufficient according to the terms of the charter. They also wish to prevent the transfer of the same to the Bank of British North America, or in any event to permit it only in such an amount as will cover the notes held by the bank.

An Up-to-date Atlas.

Rand, McNally & Co.'s enlarged Business Atlas & Shippers' Guide for 1899, which is the 29th edition, consists of 425 pgs., 20 x 14 ins. Among the new features is a commercial map of the U.S. on a large scale, in 3 sections, showing only railways and important towns. There are also large scale maps of all states & territories in the U.S., in most cases each state or territory being given two full pages. These maps show in detail the entire railway system—the different railways being distinguished by different figures, with a ready reference index giving express company doing business over each line, & accurately locating all islands, lakes, rivers, mountains, counties, parishes, cities, towns, post-offices, railway stations, villages, etc., together with complete reference maps of all countries with marginal index, the maps being printed from type-lettered plates, which produce the clearest typographical effect of any known engraved plates. There are also guide maps, showing the streets, transportation lines, & public buildings of the large cities in the U.S. Canada is well represented by 9 large maps of British America, British Columbia, the Northwest Territories, Manitoba, the Maritime Provinces, Ontario, Quebec & the cities of Montreal & Toronto. That they are up-to-date is evidenced by the fact that last year's railway construction is given, including in British Columbia the Crow's Nest Pass line; in Manitoba, the C.P.R. Stonewall & Pipestone branch extensions; the N.P. Souris Valley branch, the Lake Manitoba Ry. & Canal Co.'s extension, & the Manitoba & Southeastern, while in Ontario the Pembroke Southern is given. The only suggestion we can offer for the improvement of the Canadian section of the work is, that in future editions two full pages, instead of one, be given to the Maritime Provinces, so as to show them on a larger scale.

Although this work has been in our office but a few days, we have already found it of great value, & have tested the accuracy of the maps to our entire satisfaction. It is simply indispensable for transportation offices & will be found valuable in every business office. Having once used it we would not be without it on any consideration. It is published by Rand, McNally & Co., of Chicago; price, \$7.50 in full canvas binding, & \$10 in half-leather.

The Railway Diary & Officials' Directory for 1899, published by McCorquodale & Co., London, Eng., price 1s., maintains the reputation of preceding editions, which is really all that need be said about it. In addition to the diary, there is a very complete directory of railway directors & officials in Great Britain, with copious details of traffic returns, accounts & dividends—the whole forming a convenient book of reference.

Railway Statistics for Year Ended June 30, 1898.

In this table the minus mark (—) before figures in the net earnings column shows that there was a deficit in the operations of the line to the extent of the figures given. Where (E) appears after the name of a railway it signifies that it is an electric line. The figures given for net earnings of the Intercolonial do not include the \$70,000 rent of the Montreal extension, so that the actual deficit is \$209,978.66. The Drummond County figures are for the 8 months ended Mar. 1, 1898. The earnings of the Fredericton & St. Mary's Ry. Bridge Co. consist of tolls on trains run by the Canada Eastern Ry. The St. Clair tunnel receipts consist of tolls on passenger cars, freight cars and new locomotives hauled. The figures are confined to lines in Canada and do not include any mileage operated in the U.S.

Name of Railway.	Mileage.	Gross earnings.	Net earnings.	Proportion of earnings to working expenses.	Earnings per train mile.	Operating per train mile.
		\$ cts.	\$ cts.	p. c.	Cts.	Cts.
Alberta Railway & Coal Co...	64'62	130,249 14	52,828 28	168	391'54	232'73
Albert Southern.....	19'00	3,106 96	564 36	122	62'13	58'52
Atlantic & Lake Superior.....	98'00	29,402 33	6,440 66	128	48'63	37'98
Bay of Quinte Ry. & Nav. Co.	64'82	142,593 31	57,918 50	168	112'44	66'77
Berlin & Waterloo (E).....	3'00	9,522 70	1,382 25	117	13'07	11'18
Brockville, Westport & Sault Ste. Marie	45'00	28,198 20	764 37	97	84'47	86'76
Buctouche & Moncton.....	32'00	16,362 43	2,012 20	114	78'71	69'03
Calgary & Edmonton.....	295'07	362,914 13	199,706 25	222	207'27	93'21
Canada Atlantic.....	176'00	714,566 02	178,934 68	133	130'54	97'85
Canada Eastern.....	136'00	127,536 16	41,176 48	147	62'57	42'37
Canada Southern.....	382'19	4,458,629 32	1,411,114 72	146	116'00	79'29
Canadian Government Rys.—						
Intercolonial.....	1,145'46	3,117,669 85	139,978 66	95	78'83	82'36
Prince Edward Island.....	210'00	158,950 61	72,468 13	68	64'43	93'80
Canadian Pacific.....	6,298'35	25,470,796 18	10,786,005 53	173	143'88	82'95
Caraquet.....	68'00	21,333 47	9,320 09	69	53'12	37'32
Carillon & Grenville.....	13'00	1,911 74	1,568 86	55	32'40	58'99
Central Ontario.....	113'60	99,962 12	13,657 16	116	95'64	82'58
Central of New Brunswick.....	45'66	12,198 73	8,510 98	59	37'90	64'35
Coast Ry. of Nova Scotia.....	30'80	14,719 70	4,317 05	77	52'63	68'07
Cumberland Ry. & Coal Co....	32'00	95,549 55	45,469 57	190	155'32	81'41
Dominion Atlantic.....	220'50	579,953 74	118,581 67	125	120'11	95'51
Drummond County.....	133'53	83,772 89	37,908 53	182	139'85	76'56
Elgin & Havelock.....	27'00	7,271 11	1,506 60	83	43'43	52'43
Erie & Huron.....	76'75	115,616 84	31,124 13	137	74'33	54'33
Esquimalt & Nanaimo.....	78'00	122,209 71	163,547 46	43	68'92	161'15
Fredericton & St. Mary's Ry. Bridge Co.	1'33	3,862 64	2,127 54	222	.....	.....
Grand Trunk.....	3,146'98	18,396,010 41	6,859,302 41	159	115'05	72'15
Great Northern.....	28'00	6,023 67	275 43	96	31'84	33'30
Great Northwest Central.....	50'93	49,358 75	1,188 78	102	306'88	299'49
Gulf-Shore.....	16'78	2,108 66	180 45	109	61'83	56'54
Hamilton, Grimsby & Beamsville (E).....	23'00	43,000 00	20,649 10	192	18'11	9'42
Hamilton & Dundas (E).....	7'25	19,667 65	8,809 23	183	65'56	35'89
Hamilton Radial (E).....	11'00	27,502 65	14,540 47	212	18'35	8'64
Hampton & St. Martins.....	30'00	3,543 34	2,082 41	63	25'30	40'18
Hull (E).....	13'63	49,494 28	19,939 57	167	13'26	7'92
Hereford.....	53'30	35,825 38	27,359 90	57	50'05	88'28
Irondale, Bancroft & Ottawa.....	50'00	12,905 57	2,345 67	122	35'58	29'11
Canada Coals & Ry. Co.....	12'00	27,947 94	17,770 19	274	177'11	64'49
Kaslo & Slocan.....	31'80	140,626 13	77,544 53	223	384'36	172'41
Kent Northern.....	34'00	10,168 32	2,641 32	135	55'36	40'98
Kingston & Pembroke.....	112'85	130,982 76	5,167 39	104	98'70	94'81
L'Assomption.....	3'00	984 82	1,153 04	46	15'39	33'42
Lake Erie & Detroit River.....	111'80	214,609 54	76,266 81	155	94'40	60'85
Lake Manitoba Ry. & Canal Co.....	123'24	83,946 54	37,012 35	179	189'04	105'69
Lotbiniere & Megantic.....	30'34	9,964 07	2,053 62	83	104'96	126'59
Manitoba & Northwestern.....	249'97	305,816 59	49,456 66	119	225'40	188'95
Massawippi Valley.....	36'00	148,269 17	28,137 28	123	85'62	69'37
Montfort Colonization.....	33'00	4,991 26	969 72	84	15'71	18'77
Montreal & Atlantic.....	163'40	290,493 14	63,524 85	82	92'44	112'65
Montreal Island Belt Line (E).....	12'67	32,079 58	11,658 89	157	13'72	8'73
Montreal Park & Island (E).....	40'88	100,178 50	25,831 81	135	14'71	10'92
Montreal & Province Line.....	40'60	44,495 26	6,740 14	118	76'93	65'28
Montreal & Vermont Jet.....	23'60	163,321 06	58,137 72	155	94'03	60'56
Nelson & Fort Sheppard.....	59'40	110,090 23	37,602 19	152	164'31	108'18
New Brunswick & P.E.I.....	36'00	21,656 67	6,527 30	143	60'62	42'35
Niagara Falls Park & River (E).....	13'68	50,842 75	19,763 47	164	22'74	13'90
Northern Pacific & Manitoba.....	265'11	315,876 97	7,651 90	98	137'46	140'79
Nosbonsing & Nipissing.....	5'50	58,762 00	10,935 50	123	441'48	359'32
Central of Nova Scotia.....	74'00	47,269 62	5,982 43	114	94'21	82'28
Nova Scotia Steel Co.....	12'50	19,939 66	3,063 97	118	128'64	108'87
Orford Mountain.....	26'50	15,866 08	2,343 56	117	51'33	43'75

RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1898.—Continued.

Name of Railway.	Mileage.	Gross earnings.	Net earnings.	Proportion of earnings to working expenses.	Earnings per train mile.	Operating per train mile.
Oshawa (E)	8'50	\$ cts. 22,887 99	\$ cts. 4,838 85	p. c. 127	Cts. 38'31	Cts. 30'21
Ottawa & Gatineau.....	56'50	52,578 70	5,640 64	112	94'16	84'05
Ottawa, Arnprior & Parry Sound	263'80	479,954 58	111,749 53	130	80'52	61'77
Philipsburg Ry. & Quarry Co.	7'50	1,610 64	33 75	98	160'10	163'45
Pontiac Pacific Jct.....	70'60	37,516 81	2,853 65	108	75'78	70'02
Port Arthur, Duluth & Western	85'50	15,847 22	723 49	105	92'83	88'59
Qu'Appelle, Long Lake & Saskatchewan	253'96	79,642 02	2,582 78	103	138'75	134'25
Quebec & Lake St. John.....	298'00	258,730 09	40,837 37	119	107'32	90'38
Quebec Central	213'50	439,035 62	126,649 21	141	103'50	73'64
Quebec, Montmorency & Charlevoix	30'00	54,533 70	16,347 89	143	97'71	68'42
Red Mountain.....	9'53	45,801 73	12,104 19	136	176'76	130'05
Salisbury & Harvey	45'00	21,169 49	1,297 54	107	75'14	70'54
Shore Line of New Brunswick	82'50	30,353 43	3,093 61	111	57'66	51'78
Stanstead, Shefford & Chambly	43'00	64,831 56	6,404 30	111	84'53	76'18
St. Clair Tunnel	2'23	250,955 50	139,524 84	225		
St. Catharines & Niagara Central	12'35	29,062 18	1,375 57	105	145'31	138'43
St. Lawrence & Adirondack.....	33'00	124,213 23	41,959 06	151	82'45	54'59
Sydney & Louisburg.....	65'90	336,057 06	166,941 44	199	246'08	123'84
South Shore	44'67	37,258 91	7,854 62	127	61'62	48'63
Temiscouata	113'00	61,675 02	2,753 86	105	62'31	59'53
Tilsonburg, Lake Erie & Pacific	20'00	6,273 12	779 12	114	33'01	28'91
Thousand Islands	4'33	17,790 22	5,396 88	144	111'32	77'55
Toronto, Hamilton & Buffalo.....	84'62	259,843 38	16,641 70	94	104'31	110'99
United Counties.....	61'00	46,232 93	943 28	98	54'61	55'73
Victoria & Sydney.....	16'26	18,671 79	3,937 78	127	77'36	61'04
Total.....	16,717'64	59,715,105 52	20,577,556 47			

tural country & the other in an iron ore district. On Mr. Kipling hearing of this he sent Mr. Underwood his photograph with the following lines on the back :

"RUDYARD" AND "KIPLING."

"Wise is the child who knows his sire,"
The ancient proverb ran,
But wiser far the man who knows
How, where and when his offspring grows,
For who the mischief would suppose
I've sons in Michigan?

Yet am I saved from midnight ills,
That warp the soul of man ;
They do not make me walk the floor,
Nor hammer at the doctor's door ;
They deal in wheat and iron ore,
My sons in Michigan.

Oh, tourist in the Pullman Car
(By Cook's or Raymond's plan),
Forgive a parent's partial view ;
But, maybe, you have children too—
So let me introduce to you
My sons in Michigan.

RUDYARD KIPLING.

Chignecto Ship Canal.—N. A. Belcourt, M.P. for Ottawa, who has recently been in England, said in an interview on his return : "I was very sorry to find the bad impression created in London by that most unfortunate Canadian scheme, the notorious Chignecto Ship Canal. Everywhere about the city the unfortunate thing would be met. It was something like Banquo's ghost, it would not down. I know of nothing which has so much hurt Canadian interests in Britain as this project. I don't know what, if anything, the present Government can do to compensate the people who invested in the scheme, but if anything can be done consistent with our means, I would strongly support any measure having that object in view, because it is bound to hamper & hinder Canadian affairs in London."

The Bonaventure Station Restaurant, Montreal, has been taken over by the Canada Ry. News Co., which has for some years leased the restaurant privileges at the Toronto Union, & at a number of G.T.R. stations, & which can be depended on to give a first-class service. A number of alterations have been made, including the providing of an up-to-date bar, & a handsome news & cigar stand.

"Sirkarka Hookum."

Here is a good story from India. Scene, a railway station on the main line of the East Indian Railway. A train from Delhi stops ; a tester is going round with his hammer striking the wheels. An officer of the Royal Engineers who has been watching him from a carriage window says :—

"Why do you beat the wheels like that?"

Answer—"Sirkarka hookum." ("It is the order of the authority.")

Officer—"But what is the use of so striking the wheels?"

Answer—"Khodar jani. Hum i-sa thees burrs-si Kurthani. Sirkarka hookum." ("God knows! I have been doing this for thirty years; it is the order of the authority.")

A Kipling Poem.

Several years ago F. D. Underwood, now General Manager of the Baltimore & Ohio R.R., & recently of the Minneapolis, St. Paul & Sault Ste. Marie Ry., named two stations in the upper peninsula of Michigan "Rudyard" & "Kipling," one being in an agricul-

F. B. POLSON

J. B. MILLER

The POLSON IRON WORKS

TORONTO, - - CANADA.

STEEL BOILERS

The Best Equipped Boiler and Engine Works

in Canada.

We Manufacture

- The Brown Automatic Engine
- Single, Compound and Triple Marine Engines
- Hoisting and Mining Engines
- Steel Steam Vessels of every description
- Steam Yachts and Launches

..... Get Our Prices Before Ordering.

Esplanade East, Foot of Sherbourne Street,

-:-

TORONTO.

C.P.R. Earnings & Expenses.

The gross earnings, working expenses, net profit & increases or decreases over 1898, from Jan. 1, 1899, are as under:

	Earnings.	Expenses.	Net Profits.	Increase or decrease.
Jan.	\$1,864,570.36	\$1,247,030.50	\$ 617,533.86	\$101,966.27 +
Feb.	1,753,352.82	1,153,091.34	599,701.48	176,034.12 +
	\$1,617,953.18	\$2,400,717.84	\$1,217,235.34	\$277,949.39 +

Mileage increased to 6.95.
+ Increase. - Decrease.

Approximate earnings for Mar., \$2,098,000, against \$2,050,000 in Mar., 1898, an increase of \$48,000.

SUBSIDIARY LINES.

DULUTH, SOUTH SHORE & ATLANTIC.—Approximate earnings for Mar., \$160,907, compared with \$136,067 for corresponding period, increase \$24,840.

Net earnings for Jan., \$51,849, against \$35,069 for Jan., 1898.

MINERAL RANGE, HANCOCK & CALUMET.—Approximate earnings for Mar., \$26,720, compared with \$23,919 for corresponding period, increase \$2,801.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—Approximate earnings for Mar., \$336,523, compared with \$311,427 for corresponding period, increase \$25,096.

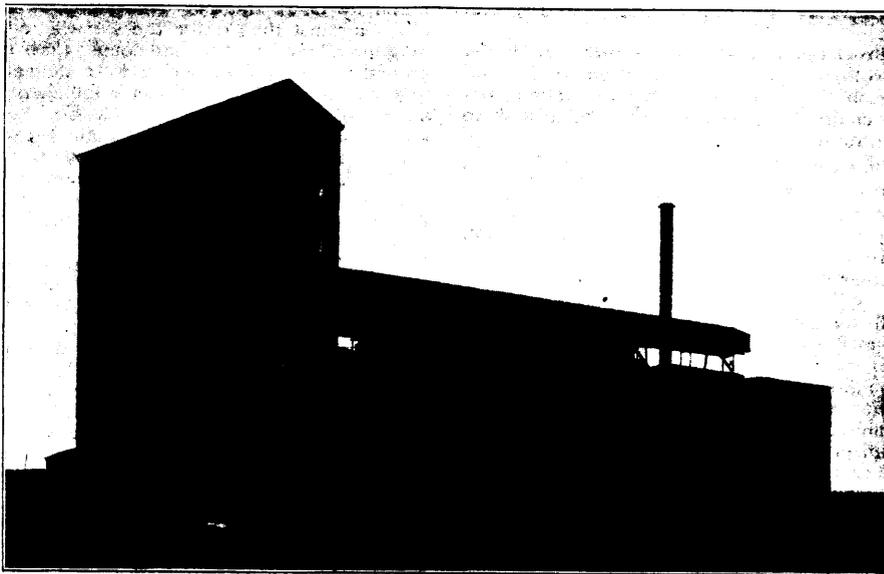
Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1899	1898	1899	1898
Jan.	14,718	22,044	\$46,411.35	\$72,024.83
Feb.	13,747	20,650	43,371.09	66,399.00
Mar.	24,045	33,421	74,439.00	109,010.00
	52,510	76,115	\$164,212.35	\$248,333.83

The officials report business as much more brisk with the opening of spring. The Moose Mountain district, which is being opened up by the extension of the Pipestone branch of the C.P.R., is one about which many inquiries are being made.

CANADA NORTHWEST LAND CO.

For the past 4 or 5 years the lands of this Co. have been managed by C.P.R. Land Commissioner Hamilton, the Winnipeg office of the Co. being in the C.P.R. Land Department. The report presented at the annual meeting in Toronto Mar. 29, shows the farm land sales for 1898 to have been 71,640.03 acres for \$383,051.88, against 38,994.07 acres in 1897 for \$210,549.99. The original purchase by the Co. from the C.P.R. comprised



CANADIAN PACIFIC RY. STEEL TANK ELEVATOR, FORT WILLIAM, ONT.

2,200,000 acres, of which 370,130 had been sold to the end of 1898. The expenses per acre sold in 1898, exclusive of taxes, were only 10c. an acre, an almost nominal figure, much to the credit of the management. 1898 started with a debit to profit & loss account of \$5,535,65. This was wiped out & 1899 started with a credit balance of \$12,231,39.

The following directors were re-elected:—Sir Wm. Van Horne, President; E. B. Osler, Vice-President; R. B. Angus, J. Burns, W. Hendrie, W. B. Scarth, T. G. Shaughnessy, T. Skinner, Lord Strathcona & Mount Royal.

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.:

	1899	1898	Decrease	Increase
Jan.	\$1,956,281	\$1,916,332	.....	\$ 39,949
Feb.	1,824,434	1,674,453	.....	149,981
Mar.	2,186,359	2,048,970	.....	137,389
	\$5,967,074	\$5,639,755	.....	\$327,319

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

GRAND TRUNK RAILWAY.

Revenue statement for Jan., 1899.

	1899	1898	Increase	Decrease
Gross receipts	£315,400	£318,700	.....	£3,300
Working expenses	227,400	231,300	.....	3,900
Net profit	£88,000	£87,400	£600	.....

CHICAGO & GRAND TRUNK RAILWAY.

Revenue statement for Jan., 1899.

	1899	1898	Increase	Decrease
Gross receipts	£72,000	£60,600	£11,400	.....
Working expenses	56,700	47,500	9,200	.....
Net profit	£15,300	£13,100	£2,200	.....

DETROIT, GRAND HAVEN & MILWAUKEE.

Revenue statement for Jan., 1899.

	1899	1898	Increase	Decrease
Gross receipts	£14,600	£14,400	£ 200	.....
Working expenses	12,500	12,600	.....	£100
Net profit	£2,100	£1,800	£300	.....

RECEIPTS OF THE SYSTEM.

From Jan. 1 to Feb. 28, the traffic receipts were:

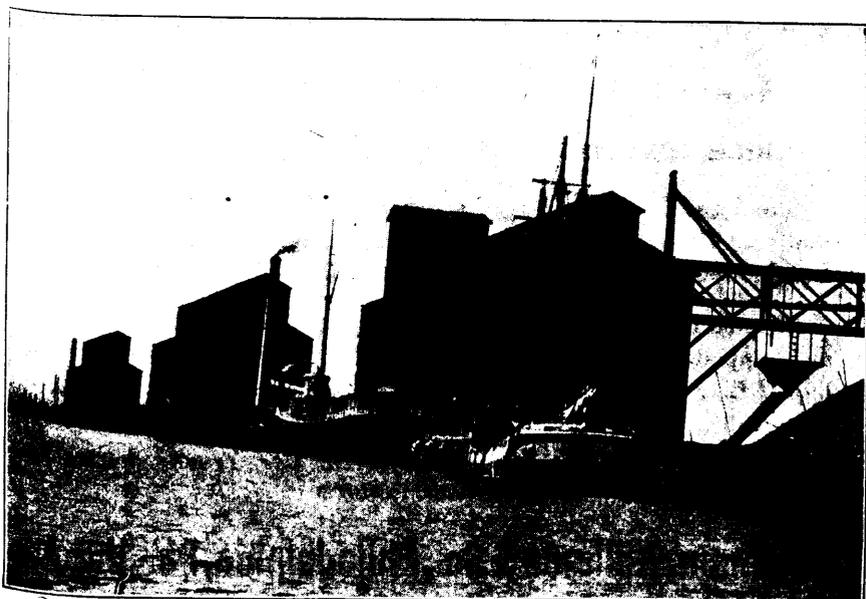
	1899.	1898.	Increase.	Decrease.
Grand Trunk	£613,033	£591,536	£21,497	.....
Chicago & G.T.	137,487	119,069	18,418	.....
D., G. H. & M.	26,339	27,227	.....	£888
Total	£776,859	£737,832	£39,027	.....

DETAILS OF G.T.R. RECEIPTS JAN. 1 TO FEB. 28.

	1899.	1898.
Passengers, number	786,488	789,294
amount	£ 131,627	£ 125,272
Immigrants, number	299	598
amount	£ 147	£ 377
Mails, express, &c.	£ 24,228	£ 24,207
Freight, tons	1,564,013	1,554,137
amount	£ 435,866	£ 431,138
Miscellaneous receipts	£ 21,165	£ 10,542
Total receipts	£ 613,033	£ 591,536
Increase	£ 21,497	.....

The Shelden Forwarding Co., Ltd., has been incorporated under the Dominion Companies Act with a capital of \$700,000, the incorporators being R. Mackay, J. Beattie, H. Paton, D. Macmaster, Montreal, & C. MacKenzie, Toronto.

Liability for Crossing Accident.—In the Ontario Court of Appeal in the recent case of Henderson v. Canada Atlantic Ry. Co., it was held that as the defendant had failed to give the statutory warning near crossing, by which the plaintiff's horses, which had been driven close to the line, were frightened, the plaintiff should recover. The court held that damages for "mental shock" are not recoverable.



CANADIAN PACIFIC RY. ELEVATORS A, B AND C, FORT WILLIAM, ONT.

RAILWAY FINANCE, MEETINGS, &c.

Brockville, Westport & Sault Ste. Marie.

—Notice is given of application to the Dominion Parliament to incorporate a company to acquire this line from any purchaser & to operate it.

Calgary & Edmonton net earnings for Feb., \$9,201.58, against \$18,824.71 in Feb., '98.

Canada Atlantic.—A special general meeting of shareholders will be held in Ottawa, May 1, to consider & sanction a deed amalgamating this Co. with the Ottawa, Arnprior & Parry Sound Ry. Co. On May 22 application will be made to the Governor-General-in-Council to sanction an agreement entered into between the two companies for their amalgamation, when all persons may appear & be heard. Application will be made to the Dominion Parliament this session for an act to confirm the deed of amalgamation between the two companies & to incorporate them into one corporation under the name of the Canada Atlantic Ry., & to give certain powers as to the issue & redemption of bonds, &c.

Caraguet.—It is said 600 shares of this N. B. Ry. were recently sold for \$10.

Cobourg, Northumberland & Pacific.—Application will be made to the Dominion Parliament this session for an Act extending the time for the commencement & construction of the line to the 31st days of Dec., 1901 & 1903 respectively; to validate the issue of stock & bonds issued by the Co., & for other purposes.

Drummond County.—Conservative papers say the arrangement between the Dominion Government & this Co. will be brought up again at this session of Parliament, & that an effort will be made to secure parliamentary consent to the purchase of the line.

The Columbia & Western Ry. Co. is applying to the Dominion Parliament for authority to issue 1st mortgage bonds on its main line & branches, not exceeding \$35,000 a mile, & for other purposes.

Dominion Atlantic.—Receipts for Feb., \$35,348, against \$27,580 for Feb., 1898. Receipts Jan. 1 to Feb. 28, \$77,638 against \$60,715 for corresponding period.

Grand Trunk.—A Montreal despatch says: This Co. has taken an action in warranty for \$22,500 against J. J. C. Thompson, contractor, of Hamilton, Ont. The suit arises out of one

taken by G. P. Magann, contractor, of Toronto, against the Co. for the same amount. Magann alleged that he had some 75,000 ties around Wiarton, Ont., which were delivered to the company by Thompson in fulfilment of an arrangement with Magann. The Co. claims that it had a contract with Thompson, who was to supply the quantity of ties mentioned, & that he did so, & received payment for all but some 25,000. The action taken by the G.T.R. is to protect itself against loss in the litigation between the two.

J. Bicknell, Toronto, has issued a writ against the G.T.R. Co. on behalf of the Niagara Falls International Bridge Co. & the Niagara & Suspension Bridge Co., to compel the issuance of annual passes to the directors of both bridge companies over all railway lines using the bridges. The companies are respectively the Canadian & U.S. owners of the single arch steel bridge spanning the Niagara River below the falls. Under an agreement made in 1855, the G.T.R. leases all rights of way over the bridge for \$59,000 annually. In the agreement the issuance of annual passes to the directors is stipulated, & passes over the G.T.R. annually provided. The directors of the companies claim, however, that the stipulation covers all other railways using the bridges under sub-leases from the G.T., & by this action expect to compel the G.T. to procure passes from their sub-lessees for the plaintiff directors. There are 20 directors in the 2 companies, & the railways over which passes are asked are the Lehigh Valley, New York Central, Michigan Central, Rome & Watertown, & several minor lines. The suit has been set down for trial at Ottawa on June 19.

Great Northern.—Application will be made to the Dominion Parliament this session for an act amending the several acts incorporating this Co. extending the time for the completion of the railway, changing its name, ratifying agreements made for the purchase or lease of connecting lines, authorizing the issue of bonds, debenture stock & other securities required to carry out the conditions of such purchase for lease, authorizing the construction & working of branch lines & of grain elevators, warehouses, hotels & wharfs, & the building & operating of steamboats & steamships on navigable waters touched or reached by the railway & its connecting lines, & for other purposes.

The Great Northwest Central Ry. Co. will apply to Parliament this session for amendments to the act it secured last year. Among the amendments asked is to repeal the provision which declared all issues of new bonds under the act to be void, unless 10 miles of the westerly extension were completed by Dec. 31, 1898, also to extend from Aug. 1, 1899, to Aug. 1, 1900, the date for the completion of an extension of 20 miles.

A London, Eng., cable of April 1 says the affairs of the Co. are to be investigated by the Court of Chancery in England in a suit brought by Messrs. Codd & Armstrong, plaintiffs for the shareholders, v. Delap, Charlebois, G. M. Clarke et al, defendants. The claim involves the ownership of the shares, & covers the history of the road from 1883. Justice North will preside. Efforts to dismiss the action have entirely failed.

The Hudson's Bay & Yukon Railways & Navigation Co. will apply to Parliament this session for an act amending the act incorporating the Co. by authorizing it to construct wagon roads to be operated as stage & mail routes along, connecting with, or near to the proposed railway lines, to enter into agreements for amalgamating with or leasing from other companies, or for transportation purposes, to construct telegraph & telephone lines, to carry on the business of general traders including business connected with the fishing industry, to issue special bonds or debentures, to mortgage the revenues, to guarantee the revenues therefrom & otherwise to extend the powers of the Co., to extend the time for construction of the railways & works of the Co., & for other purposes.

Kingston & Pembroke.—Notice was recently given that this Co. would on Mar. 30 last, be prepared to pay the interest due on 1st preference bonds.

Kootenay Ry. & Navigation Co.—Application has been made to the London, Eng., Stock Exchange Committee to appoint a special settlement in and to grant a quotation to the £480,000 5% debenture stock.

Lehigh Valley.—It is stated in New York that J. Pierpont Morgan has now absolute control of the Lehigh Valley R. R. Company. Since Mar., 1897, he has held an option on a block of 150,000 shares of stock, belonging to the Packer estate. The right to purchase this stock has been exercised & \$3,000,000,



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Burnham, Williams & Co., Philadelphia, Pa., U.S.A.

the cash covering the transaction, has been paid to the trustees of the estate in Philadelphia by Drexel & Co.

The Newfoundland Ry. contract came up in the British House of Commons recently, when Colonial Secretary Chamberlain, in reply to questions in regard to R. G. Reid's contract with Newfoundland, said that to have disallowed or delayed it would have been a tremendous interference upon the part of the Imperial Government with a self-governing colony, & either course would have brought the colony into bankruptcy, for which he would have been held responsible. Although he shared largely in the opinion in regard to the financial unsoundness of the contract, possibly he might be mistaken & the government of the colony might be right. Its government, however, had made a painful admission that it was incapable of efficiently carrying out large operations, which were handed over to a contractor, whom he believed to be competent & honorable.

Qu'Appelle, Long Lake & Saskatchewan net earnings for Feb., \$290.53, against \$89.55 in Feb., '98.

Quebec Central.—Traffic receipts Feb., \$26,983.40; increase over Feb., '98, \$4,823.28. Traffic receipts Jan. 1 to Feb. 28, \$54,113.01, increase over corresponding period \$7,649.07.

Temiscouata.—The Quebec Court of Appeal has confirmed the judgment of the Court of Review in the case of A. R. Macdonald, ex-District Superintendent of the I.C.R., vs. C. Riordan & the estates of E. D. Boswell & J. J. Macdonald, in which the plaintiff claimed \$193,000 as due him out of the construction of the Temiscouata Ry. Judge Ouimet, in the Superior Court, in the first instance gave a judgment favorable to the plaintiff, but this judgment was reversed by the Court of Review. The Superior Court held that Macdonald, having been one of the promoters of the railway, was entitled to enter into the covenants which he had. The judgment of the Court of Review reversing the judgment of the Superior Court was based on the illegality of the agreements in question. The Court held that the plaintiff, by entering into these agreements was guilty of an act which is declared by Parliament to be a misdemeanor, & that these agreements are in consequence unenforceable. This latter judgment has now been confirmed. Counsel for Macdonald applied for leave to appeal to the Imperial Privy Council, which was granted.

Wabash.—An influential director of this Co. says that the floating debt still stands at

the amount printed in the last annual report—\$400,000. The failure to reduce this obligation is on account of the heavy expenditures that have been made by the management in improvements on the property, including large additions to the equipment. The amount paid to other companies for hire of cars is being considerably reduced, but the item will not be completely extinguished, as the Co. always has to pay sums of money of varying amounts to the palace car companies & for the use of refrigerator cars. Nearly \$1,000,000 has been disbursed since June 30, 1898, for these improvements, which include 1,500 coal cars & 1,500 box cars. The large increase in operating expenses is on account of the fact that the Co. has over 250 miles of new road to handle, the section from Buffalo to Detroit. In addition to the equipment mentioned, a number of new engines have been purchased. Operating expenses have been swelled by the large aggregate of first payments for this equipment, but hereafter disbursements will be made monthly. Since 1889 the Wabash has expended for equipment, including new engines & rolling stock, an aggregate sum of \$6,418,000, which has been charged to operating expenses.

C.P.R. ANNUAL MEETING.

At the annual meeting in Montreal, April 5, as usual the attendance of shareholders was small, & the greatest possible unanimity prevailed, the irrepensible J. Morrison being the only one who caused the slightest departure from the usual routine. When he looked round the board room at noon & noted the paucity which marked the attendance, he asked if such indifference was not criminal. One of the directors having remarked that the chief thing to be considered was the dividend, Mr. Morrison replied that dividends were only one of the things which should be regarded—the good management was to be considered, primarily, & that it seemed a waste of time to prepare such an elaborate report as that which had been submitted to the shareholders if there was no one to criticize it. "Well," said Mr. Matthews, laughingly, "we depend on you, you know, Mr. Morrison." "I will do my best," was the reply.

President Sir Wm. Van Horne, who occupied the chair, in moving the adoption of the report for 1898, which was published in full in our last issue, said:—"The annual report deals so fully with the year's operations of the Co. that it seems hardly necessary to

supplement it with any remarks on this occasion beyond a reference to the measures which will be submitted for your approval relating to the Minneapolis, St. Paul & Sault Ste. Marie Ry., the so-called Soo Line, the most important of your subsidiary lines. These measures were not fully stated in the report, because the details were not definitely settled at the time it was issued. The Soo Co. can hardly be said to be in default to you in its interest obligations. The deficits which your Co. has been called upon to make good have been entirely due to expenditures for equipment, terminal facilities & general improvements such as are incident to a new & growing property; indeed, the expenditures for equipment & terminal facilities were almost entirely made at the instance of your Co., with the object of improving the joint earnings. The total advances to the Soo by your Co. amount to \$1,431,663, while the expenditures for equipment, terminal facilities & general improvements during the years in which these advances were made, foot up \$1,748,041; but as our accounts stand, the advances of interest charged against our income account appear to have been \$963,846, & for other purposes, as shown in the balance sheet, \$467,817. The Soo Co. has coming due in the immediate future certain interest bearing obligations which were outstanding at the time your Co. became interested in that property, & it is necessary to provide for these, & at the same time provision should be made for all the floating obligations of that Co., & also for additional equipment & facilities required at once as well as for some years to come. It is proposed that the Soo Co. shall issue second mortgage bonds to the extent of \$5,000,000, the interest on the bonds to be guaranteed by your Co. It is only intended that \$3,500,000 of these bonds shall be guaranteed & disposed of in the immediate future; & the remainder are to be held subject to the control of your Co. for the possible later requirements of the Soo Co. This arrangement will enable the Soo Co. to devote its net earnings to the payment of its interest charges, & at the same time to repay in annual instalments the interest which has been advanced by your Co. Its improved earnings justify the belief of your directors that it will not only be able to do this, but to make a return on its capital stock, of which your Co. holds more than one-half. The arrangement is fully set out in the resolution which will be submitted for your approval, & in the agreement with the Soo Co. which will be laid on the table."

Edward L. Drewry

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No. 1 Trip.

Mr. Morrison said he was not sure the Soo line would pay back to the C.P.R. all the moneys which the latter had advanced, but was assured by the President that the arrangements made for the issue of debentures to the amount of \$5,000,000, was, among other things, for the purpose of repaying the C.P.R. Suppose, however, that the Soo Co., as a matter of fact, did not pay the C.P.R. back, would the Soo line revert to the former? asked Mr. Morrison. To this Sir William replied that the Soo line was practically a part of the C.P.R. at present, both as to its stock & its management.

Mr. Morrison wanted to know how the Duluth, South Shore & Atlantic Ry. was doing, & the President replied that they were confident that in the near future the line would be self sustaining. This line was also an integral feature of the C.P.R. System.

Then Mr. Morrison started in to criticize the book-keeping of the Co. He said a conglomerate mass of figures had been presented, which was mystifying to a degree. He

did not charge that anything was wrong, but he wanted simplicity; he did not want that figures should be thrust backwards & forwards so that their right relation could not be easily ascertained. It would be better for the President himself, better for the officials, & better for all concerned if everything were plainly stated, so that all could understand Mr. Morrison went into particulars to show in what respect he considered the figures misleading, though not intentionally so.

Sir William rather thought that the bookkeeping was tolerably clear, & they were rather chary of changing their system, though doubtless Mr. Morrison was competent to give them some enlightenment on the point. He thought, however, that anybody interested in the affairs of the Co. could understand what the figures meant.

Mr. Morrison said that doubtless it was better to continue an old error than to start a new one, but he reminded the President that for the want of a nail the shoe was lost, for the want of a shoe the horse was lost, & for the want of a horse the rider was lost, & he expressed the conviction that with respect to a certain item of \$1,400 which had never been accounted for, that Sir William never put his hand into his own pocket & produced it. Mr. Morrison stepped up to the table, report in hand, & approaching the President in familiar conversational style, asked where was this million, or what had been done with that surplus—to the huge amusement of the meeting, including the President himself.

The report was then unanimously adopted. **AYLMER BRANCH.**—The President submitted & explained an agreement between the Co. & the Hull Electric Co., providing for the sale of the Aylmer Branch to the latter Co., & for the interchange of traffic between

the two lines, & it was resolved that the agreement dated Jan. 9, 1899, between the C.P.R. Co. & the Hull Electric Co., providing for the sale to the latter Co. of the Aylmer Branch of the C.P.R., extending from Hull to Aylmer, for \$100,000, & providing also for the permanent interchange of traffic between the two companies, be & the same is hereby approved, ratified & confirmed.

STONEWALL & PIPESTONE BRANCHES.—It was resolved that, whereas the Co. has applied to the Dominion Parliament at its present session for an act authorizing the Co., amongst other things, to construct & operate a railway from or near the north terminus of its Stonewall Branch to Foxton, Man., thence northerly & north-easterly to the west shore of Lake Winnipeg between Gimli & Arnes; & also a railway from a point on the one last named, in a direction generally north-west to the east shore of Lake Manitoba between Marsh Point & the north boundary of township 25; & also a railway from a point at or near Reston, on the Co.'s Pipestone Branch, thence

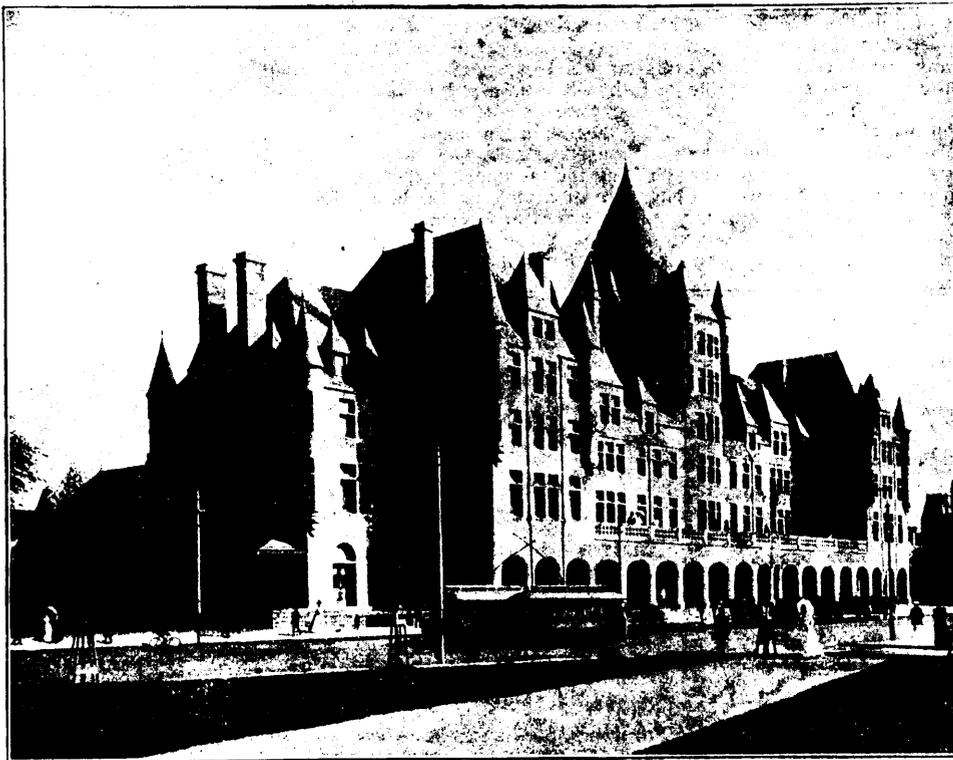
pedient not exceeding in the aggregate \$20,000 a mile thereof, & at the same rate for any portion of a mile, bearing interest at the rate of 4% per annum, payable at the times & places & in the same manner as on the stock heretofore issued, provided that if the Co. issue bonds creating a lien on the said railways or any portion or portions thereof, then the amount of consolidated debenture stock which may be issued as aforesaid in respect thereof shall be diminished to the extent of the amount of such bonds.

COLUMBIA & WESTERN RY.—A lease in perpetuity of the C. & W. R. to the C.P.R. Co. of its property & franchises was submitted & explained, & it was resolved that the lease submitted to this meeting dated July 12, 1898, whereby the C. & W. R. Co. demises in perpetuity to this Co. with the option of purchase, the lessor's railway from Rossland to Midway, B.C., by the route therein described, & the branches therefrom whether constructed or to be constructed, be & the same is hereby approved, ratified & confirmed; the yearly

rental being an amount equal to the interest on the capital of such bonds as the lessor may from time to time issue, such capital not at any time to exceed the maximum limit of \$35,000 for each mile of the railway & branches which shall then have been completed, or be under contract to be completed, & such interest, not exceeding 5% per annum payable ½-yearly, to be guaranteed by his Co., by way of rental.

MINNEAPOTIS, ST. PAUL & SAULT STE. MARIE RY.—The following resolution relating to an agreement with the M., S. P. & S. S. M. R. Co., providing for extended traffic arrangements & for the guarantee by the C.P.R. Co. of the interest on an issue by that Co. of 2nd mortgage bonds, was submitted & the agreement having been

explained & laid on the table, the resolution was adopted, viz.: Whereas, this Co.'s Board of Directors consider it advantageous to enter into an agreement with the M., S. P. & S. S. M. R. Co., hereinafter called the Soo Co., for a further working arrangement on the terms & conditions set out in a draft thereof now submitted to this meeting, & whereas the agreement provides, amongst other things, for interchange of traffic between the two companies & the division of earnings & other matters relating to such traffic, as therein more particularly set forth, & that the Soo Co. shall make an issue of its corporate bonds to be denominated 2nd 4% fifty year gold bonds to an aggregate of \$5,000,000, or its equivalent in sterling money, & shall secure the payment of the same by a second mortgage to the Central Trust Co. of New York as trustees of all its railways & other properties therein described, & that this Co. shall guarantee the payment of the interest on the bonds at the rate of 4% per annum, payable ½-yearly; all of the said bonds to be executed by the Soo Co. & delivered to the trustees, after which a portion



C. P. R. STATION AND HOTEL, PLACE VIGER, MONTREAL.

in a general westerly direction to the Moose Mountain District, thence westerly & north-westerly to or near Regina, with power to issue in aid of the construction & equipment of the said railways or any one or more of them, or any part thereof, bonds which will be a first lien & charge thereon, with the same effect as if the same were being built by the Co. as a branch of its railway within the meaning of section one of Chap. 51 of the statutes of 1888, or in lieu of such bonds consolidated debenture stock conferring on its holders equal rights in all respects & a rank pari passu with holders of such consolidated debenture stock as the Co. has been heretofore authorized to issue; therefore the shareholders do hereby resolve, that if the said Parliament do pass an act empowering the Co. to issue consolidated debenture stock for the purpose of aiding the construction or the construction & equipment of the said railways, or any one or more of them, or any part or parts thereof, then for that purpose the Directors may issue consolidated debenture stock of the Co. to such amounts as they deem ex-

thereof, viz., \$3,500,000, or its equivalent in sterling money, is to be in the first instance certified by the trustees & delivered back to the Soo Co. for issue, the proceeds thereof to be applied approximately as follows, that is to say: For terminal yards & facilities at Minneapolis, increased accommodation at divisional & intermediate points, permanent bridges & general additions & improvements, \$950,000.00; for redemption of interest bearing securities coming due, & for payments on account of rolling stock equipment already purchased, & for additional equipment estimated to be required, \$1,675,000.00; for payment of floating debt incurred for additions & improvements to the property, including amount advanced by the C.P.R. Co. for that purpose, but not including amount advanced by that Co. on account of interest on bonds which will be distributed over a term of years, \$875,000.00; total, \$3,500,000.00. The remainder of the said bonds, namely, \$1,500,000, or its equivalent in sterling money, to be afterwards certified by the trustees from time to time in such amounts as the Soo Co., by resolution of its Board of Directors may direct, the written concurrence & approval of this Co. having been first obtained; & provided that the remainder of the said bonds or any part thereof shall not be disposed of, or the proceeds thereof applied, except as this Co. shall from time to time first authorize & approve of in writing; now therefore it is resolved that the shareholders do hereby approve of the transaction embodied in the said agreement, & do authorize the Board of Directors to cause the said agreement to be executed on behalf of this Co. under its corporate seal & the signa-

tures of such of its officials as they may appoint for that purpose, & from time to time to do whatever may be necessary in order to carry out & give effect to the terms thereof.

CAPITAL EXPENDITURE.—The President submitted & explained estimates approved by the directors of proposed capital expenditure to be incurred during the current year on construction & improvement account; & it was resolved that the shareholders hereby authorize expenditures on capital account during the current year, as recommended by the directors, as follows:

Improvement permanent way	\$1,150,979
Additional station yard & terminal facilities ..	788,187
Completion of air brake & automatic coupler equipment	305,010
Branch lines to mines in connection with Crow's Nest Line (as required)	300,000
Rolling stock (as required)	1,000,000
	\$3,544,176

SOLICITING ON TRAINS.—The following by-law, passed by the Board of Directors, was submitted & approved; by-law 76, "The C.P.R. Co. hereby enacts as follows: Any person who does any of the following acts without the written consent of the Co. in or upon any passenger car of the Co. or in any station or premises occupied by the Co. shall be & is hereby subjected to a penalty not exceeding \$40, that is to say: Advertising, soliciting custom or canvassing for any hotel, lodging house, restaurant, or other like places; or soliciting the transportation of passengers or baggage or selling or exhibiting for sale any goods, wares or merchandise; & if any person while on any passenger car continue to do any of the said acts after being forbid-

den by the conductor, then he may be put off the train in the same way as a passenger who refuses to pay his fare may be."

The following directors were re-elected by unanimous vote: Lord Strathcona & Mount Royal, Sir Wm. Van Horne, R. B. Angus, T. G. Shaughnessy, E. B. Osler, Sir Sandford Fleming, Sir Geo. Kirkpatrick, Gen. S. Thomas, G. R. Harris, W. D. Matthews, Hon. D. MacInnes, T. Skinner, J. W. MacKay. At a subsequent meeting of the Board, Sir Wm. Van Horne was re-elected President & T. G. Shaughnessy, Vice-President, & the following were appointed the executive committee: Sir Wm. Van Horne, T. G. Shaughnessy, Lord Strathcona & Mount Royal, R. B. Angus.

The Central Vermont Sale.

The sale of this line at St. Alban's, Vt., Mar. 21, placed the principal railway of the State of Vermont definitely & decisively under the control of the Grand Trunk. W. Wainwright, General Assistant, & R. S. Logan, Secretary to the General Manager of the G. T. R., were present & witnessed the purchase by E. H. Baker, of Boston, on behalf of the purchasing committee, in the interest of the bondholders, for the purpose of carrying out the reorganization agreement of Nov. 29 last. Mr. Baker's bid was the only one made. It was \$7,000,000, the upset price named by Judge N. M. Wheeler of the U. S. court in the decree ordering the sale of the property. After the sale, the President of the road, Governor E. C. Smith, did not care to speak

C. P. R. LANDS.

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

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

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

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

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

TERMS OF PAYMENT.

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

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

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

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

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

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

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

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F. T. GRIFFIN, Asst. Land Commissioner,

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Ladies' Waiting Room	Baggage Room	Ticket Office	Smoking Room
Men's Waiting Room	Agent's Office	Telegraph Office	No Admittance

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Railway numbers for bridges, mile posts, signal houses, etc.; single figures on plates 8 1/2 in. high.

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

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in detail of the road's future, but expressed the opinion that the road was now placed on a basis which would be to the benefit of all interests concerned. He said General Manager Hays, of the G. T. R., was a brilliant railroad man, & that Vermont interests would be well looked after under the reorganized management.

Attorney C. M. Wilds, who has practically had charge of the reorganization, was asked what effect a protest made by the New York Central interests against the sale would have upon the situation, & replied as follows: "Mr. Young, who presented the objection to the sale, represents bondholders holding about \$316,000 of bonds made by the Ogdensburg & Lake Champlain R.R. Co. & guaranteed by the Central Vermont R.R. Co., which are in default. These bondholders have contested their rights in court & their principal grounds of objection, as well as the protest that the New London Northern lease is not subject to the mortgage, & that the second mortgage is not valid, have already been passed upon in court adversely to the contentions of Mr. Young's clients. The other grounds of objection were to the sale of various parcels of land acquired since the mortgages were executed, & which were

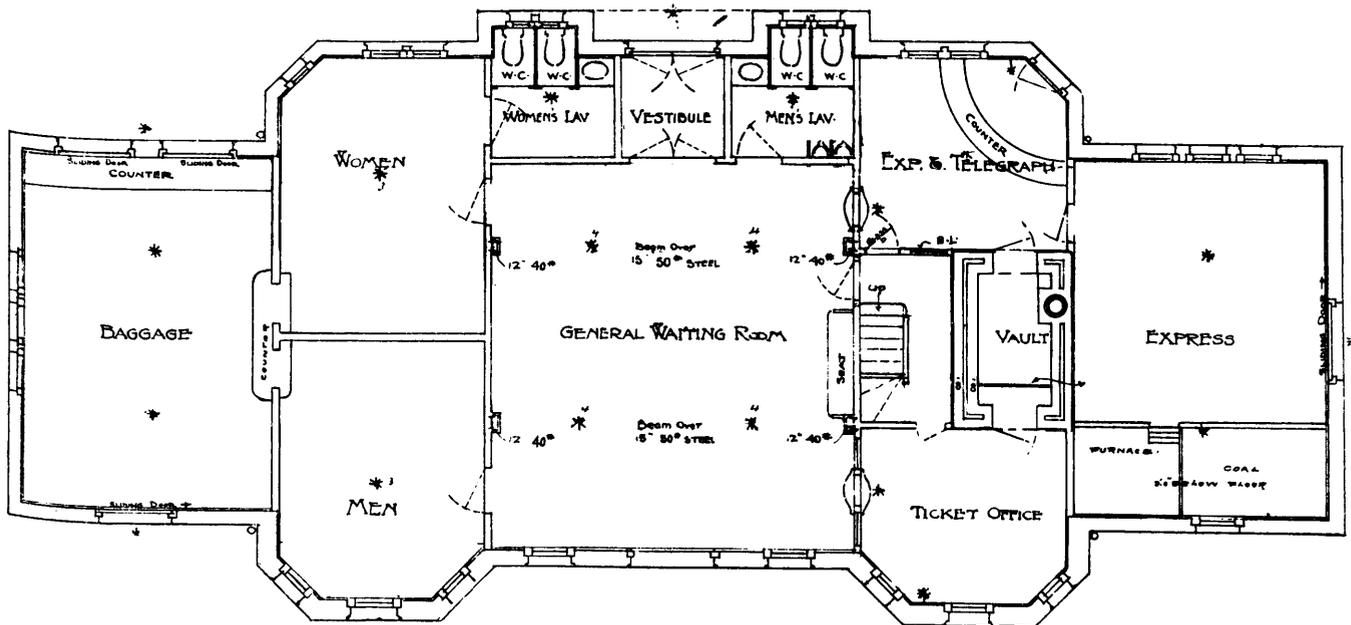
The close relations which have hitherto existed for many years between the C. V. & the G. T. will be perpetuated. The interchange of traffic between the two roads will be provided for by traffic agreement. What change there will be in the management is not at present disclosed. All conflict between the security holders has been adjusted & the litigation over the C.V.R. is practically concluded."

In reply to a question regarding the policy of the new management regarding improvements & the quality of service to be expected by the people of Vermont, Mr. Wilds said:—"Some weeks since the court authorized the receivers to purchase 5,000 tons of steel rails, which when laid will complete the relaying of the main line with 75 lbs. rails. Most of the wooden bridges have been replaced with iron structures, & it is expected that the remainder will soon give place to new bridges. The

of their bonds in the stock of the new company for defaulted interest. These old bonds, by the way, are now selling in Boston at 94. The second mortgage bonds were generally held as collateral security, & their holders will receive new bonds for the face of their loans. The sale of a railway at auction is unusual in Vermont, but the mortgages having provided for a sale in the event of default, Judge Wheeler thought that the foreclosure proceedings should be completed by such a sale of the property. It was sold as a single parcel, & the conveyance by the master will be direct to the new company.

Mr. Baker, of the purchasing committee, made a number of interesting statements with reference to the bondholders. He said the bondholders were over 1,300 in number, & it seemed that nearly all of them had called upon him at his office. The bondholders were widely scattered, being located in various parts of the country. All of the bonds except about \$40,000 were represented in the purchase of the C.V.R.

At a session of the U.S. Circuit Court at Brattleboro, Vt., Mar. 28, a hearing was had in the Central Vermont receivership case on petition of the American Loan & Trust Company, for an order confirming the sale of the



TRACK ELEVATION AND FLOOR PLAN, C. P. R. STATION, NEW WESTMINSTER, B.C.

claimed not to be covered by the mortgage. These parcels of real estate are of small value. It is expected that the confirmation of the sale will promptly follow, & that upon the return about the middle of April of Mr. Hays, who is now abroad, & who is one of the incorporators of the Central Vermont Ry. Co., the new company, chartered at the last session of the Vermont Legislature, will be organized & that the receivers will turn over the property to the new corporation about May 1. The G. T. R. Co. is to guarantee the payment of interest on the new bonds, which will be issued to the amount of \$12,000,000, & it will own something more than two-thirds of the entire capital stock of the new company, which will be \$3,000,000. It will, therefore, be able to name the directors of the new company, although three of the board are to be chosen on the nomination of the bondholders.

somewhat radical improvements in management inaugurated on the G.T.R. since Mr. Hays took the management warrants the prediction that the future management of the C. V. under the controlling influence of the G.T. will not be lacking as to efficiency & satisfaction to the public. It will be operated under its new charter as a Vermont institution."

Turning to the subject of the action of the bondholders Mr. Wilds said that less than 1/3 of 1% of the entire issue of bonds of both classes had failed to come into the reorganization, the entire balance of the bonds being represented by Mr. Baker, the successful bidder at the sale. The first mortgage bondholders will receive new 4% bonds in exchange for their holdings of the old bonds & interest at the rate of 4% per annum since Feb. 1, 1898. This interest has already been advanced by the G.T.R. They also receive 8% on the face

road by the special master, whose report has been filed, & after such hearing the prayer of the petition was granted & an order entered accepting & confirming the master's report & confirming the sale to E. H. Baker & H. B. Day.

The C.V.'s main line runs from Windsor, Vermont, to Rouse's Point, N.Y., 158 miles. There are 3 branches, between Montpelier, Jct., & Montpelier, Vermont; between Essex Jct. & Burlington, Vermont; & between Swanton Jct. & Province Line, Que., making a total mileage of 178. The Montpelier & White River R.R., from Montpelier to Williamstown, Vt., is 13 miles, & there are 318 miles of leased lines, making the total length of lines operated 510. The leased lines are—Burlington & La Moille Valley, 26 miles; Missiquoi Valley, 28; Montpelier & Vermont Jct. 23; Stanstead, Shefford & Chambly, 43;

Montpelier & Province Line, 40; New London, Northern 121; Brattleboro' & Whitehall, 36. In passing from Windsor to Brattleboro' the C.V.R. uses the tracks of the Sullivan County R.R. from Windsor to Bellows Falls, & of the Vermont Valley R.R. from Bellows Falls to Brattleboro'. The C.V. Co. was formed by a consolidation in 1891 of the Central Vermont, the Vermont & Canada, & the Montpelier & White River R.R. Companies. In Mar., 1896, E. C. Smith & C. M. Hays were appointed receivers in a suit in equity brought by the G.T.R. Co. In April, 1896, default was made on interest due under the lease of the Ogdensburg & Lake Champlain R.R., & shortly afterwards default was made in rental due to the Rutland R.R. Co. The latter road was surrendered to its owners in May, 1896. The Ogdensburg & Lake Champlain R.R. was turned over to a separate receiver in Mar., 1897. Suits in foreclosure proceedings were brought under both of the consolidated Vermont R.R. Companies' mortgages. The C.V.R.'s net earnings for the year ended June 30, 1897, were \$705,139.04.

Canadian Pacific Betterments, Etc.

St. John, N.B., Terminals.—In reference to the rumor quoted in our last issue to the effect that the Co. had in contemplation the construction of a large extension or addition to the terminal facilities at West St. John, at a cost of about \$150,000, we were officially informed on Mar. 11 that nothing had been definitely decided, though steps had been taken to decide upon the best location for a deep water coal wharf should one be required.

Eastern Lines.—Among the principal works to be done this year on the lines east of Lake Superior are the erection of a roundhouse & turn table at McAdam, N.B., & of a passenger station at Joliette, P.Q., the completion of the double track between Western Jct. & St. Anne's, Que., the improvement of the coal & engine handling facilities at Havelock & Smith's Falls, Ont., the providing of additional siding room at Havelock & Toronto Jct., the completion of the bridge over the Grand River at Galt, Ont., the reduction of the grade in its vicinity, the erection of a passenger station at Woodstock, Ont., the putting in of compressed air plants at the principal terminal & divisional points, & the providing of additional crossings at a number of points. In addition to the foregoing a large number of bridges will be replaced with permanent work, either by filling or with masonry & iron, & there will be considerable ballasting done, principally on the St. John, N.B., section, between London & Windsor,

Ont., & on the Lake Superior section. Improvements contemplated to the Montreal terminals include a freight delivery yard at Mile End, the re-arrangement & enlargement of Outremont, Hochelaga & Place Viger yards, & additional freight shed room at Place Viger station.

Fort William-Winnipeg Double Track.—As stated in our last issue an engineer will go over the line between Fort William & Winnipeg this year & prepare an estimate of the cost of double tracking throughout. When the double tracking will be done will depend altogether on the traffic. If there should be a rapid increase in the acreage under cultivation, by reason of a large increase in immigration which would also mean an increase in other traffic besides wheat, a double track will become a necessity. (Mar. pg. 71.)

Rat Portage.—It was stated in our Feb. issue that provided satisfactory arrangements could be made with the Town Council, it was probable a handsome station would be built, & that a considerable sum would be spent in remodelling the divisional yard. It is understood that the arrangements have been concluded & that the work will go on.

Winnipeg Station.—Local papers have had a good many items recently alleging that the Co. has been purchasing land for the erection of a larger station & possibly on a new site altogether. So far no decision has been come to & the rumors are mere talk.

Crow's Nest Pass Railway.—Manager Whyte, of the Western Lines, went over this line on a recent trip of inspection which extended to the Pacific Coast. On arriving at Vancouver he said:—"I came west through the Crow's Nest Pass. Trade is busy through there. Parts of the lines in that section are not completed, & I was looking specially over those. There is more traffic almost than the road can accommodate, & the arrangements that have been made for shipping goods through to Nelson work well. All stuff from the east bound for Kootenay points is now sent in by way of the Crow's Nest line." Questioned as to when the line would be completed from Kootenay Landing, its present terminus, to Nelson, he replied that he preferred to say nothing. The general idea is that this work will not be done this year.

At the recent annual meeting of the Co. the expenditure of \$300,000 was authorized to be made as required for branch lines to mines in connection with the Crow's Nest Pass line. Nothing definite appears to have been decided yet in this connection, but the building of a branch to Fort Steele has been considered. There is a good deal of speculation in East Kootenay as to the route which

will be chosen for this branch, Cranbrook, Fort Steele Jct. & Wardner, all being mentioned as possible starting points. The people at Fort Steele seem to feel satisfied it will go their way & on to Windermere, eventually joining the main line at Golden, & that a branch will be run to the North Star mine.

Columbia & Kootenay Branch.—A considerable sum will be spent this year in filling trestles & improving the alignment.

Columbia & Western.—In the purchase of this line from F. A. Heinze, the C.P.R. Co. acquired the narrow gauge line between Trail & Rossland, the physical characteristics of which make it of more than ordinary interest. It is 13.8 miles in length, & rises 2,360 feet from Trail to the Le Roi mine, the average rise per mile being 171 feet. The grade on tangents is 4% curves, being compensated .04 per degree, making it one of the greatest inclines in the world. There are 38 curves 25% & 6 of these contain 180 degrees of curvature each. There are 2 switch-backs, so that the line is a succession of loops & switch-backs, which is made doubly apparent on account of the fact that Rossland & Trail are only 4½ miles apart as the crow flies. The track was laid with 28 lbs. steel, on 6 ft. ties, so that the Co. is compelled to build practically a new line between these points, in the work of standardizing this line, which they started in August last, completing the grading & bridging last fall, but on account of the early winter, it was impossible to lay the track, which of necessity had to lay over until this spring, when everything will be in readiness, so that the new track can be substituted for the old & traffic not interfered with, which will be done by laying a narrow gauge rail between the standard rails, & thus allow both standard & narrow gauge trains to operate on the new track. By this method the change in the gauge will be made without any interference with traffic.

The Co. is removing all the 25° curves, taking out the present tiger switch-back, & providing for a single loop at the upper switch, & a complete spiral at the lower switch, as well as filling all the bridges except 6, which have been strengthened to carry safely the heavy engines, which are to handle the Rossland traffic, when this work is complete. In addition to standardizing this line the Co. is making many marked improvements & extensions, the most prominent of which are, 1st, the extension to the Center Star & War Eagle mines. This branch is ½ a mile in length, crossing the Center Star Gulch with a bridge 600 ft. long and 130 ft. high. In the construction of this line valuable ore deposits were discovered on the Idaho & Center Star mining claims.

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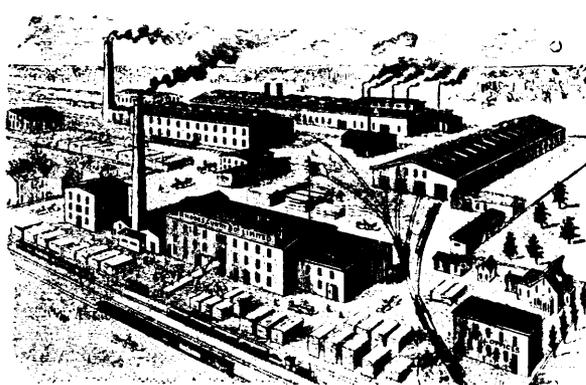
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2nd, the new Rosland terminal & station buildings, which will be located on the Nickel Plate Flat, half-way between the centre of the City of Rosland & the Red Mountain Railway station. The buildings will consist of a passenger station, a freight station & a 2-stall engine-house. The entire work will be finished about June 1.

A correspondent of the News Advertiser, Vancouver, writing from Midway, B.C., Mar. 14, respecting the line from Robson to Midway, which the C.P.R. Co. is building under the C. & W. R. Co.'s charter, says: "On parts of the line just above Midway men are working night & day at grading, so it is evident that it is intended to complete the grade between Boundary Falls & Midway (where occurs the heaviest work west of the summit of the divide between the North Fork of Kettle River & Boundary Creek) as expeditiously as is practicable. Yesterday the C.P.R. survey party, which, under the direction of G. G. Odell, has for several months past been engaged in surveying the projected branch line from Midway up the main Kettle River & thence up the West Fork to Beaver Flat, returned to Midway. It is understood the men are required for work on the branch lines from several of the Boundary Creek mining camps to the main line at the summit."

On returning from a recent inspection trip over the Western lines Manager Whyte said that although he did not go over the Robson-Midway line, he had a long talk with the engineer in charge & learned that work is being carried on very satisfactorily. Some delay was caused in the work on the big tunnel west of Robson by the severity of the weather, the water used to drive the compressor plant which works the steam drills being frozen. Of the 30 drills on the ground only 2 could be operated. This, however, will not delay the completion of the line as a switchback is being constructed & will be used until the tunnel is completed.

In a recent interview in Winnipeg, after returning from a trip to British Columbia Traffic Manager Kerr, of the C.P.R. Western Lines, is reported to have said: "The railway is now being built through the Boundary Creek district from the Columbia River at Robson in a southwesterly direction to Cascade, west to Grand Forks (now called Columbia) thence taking a sharp curve up north, then down again to Midway, west to Rock Creek & from there northwest to Pentiction & up along the Okanagan Lake to Vernon where it joins the branch from Sicamous Jct., thus forming a complete circle around West Kootenay."

We are inclined to think that Mr. Kerr has been misreported or else that he intended to refer to what may be done, rather than to what is under way. At present the line from Robson to Midway is all that is under construction, though possibly the line may be extended to Rock Creek this season. Nothing has been done about the extension to Pentiction. It was expected it would have been built by Mackenzie, Mann & Co., under the Vancouver, Victoria & Eastern charter, but their contract with the B.C. Government was cancelled at the recent session of the B.C. Legislature & although the B.C. Government took power to enter into another contract no intimation has been given that such action has been taken. As to rail connection between Pentiction & Vernon, by building along the east side of Okanagan Lake, we do not think anything is likely to be done for some time at least, certainly not in the near future.

Branch to Republic.—Rumors have been afloat to the effect that the C.P.R. Co. will build a branch from the Robson-Midway line to cross the International Boundary, & run down the San Poil Valley to the new mining camp at Republic, Wash. No official confirmation of the rumors is obtainable.

Smelting Works.—It is announced that the C.P.R. Co. will commence this spring the

construction of a large reduction plant in the Boundary Creek region of B.C. This scheme is in the line of the general policy of the Co., to give to the miners in this section of B.C. the benefit of the lowest possible smelting charges on all classes of ores, thus placing them, as regards the cost of reduction, upon the same footing with the miners of the older camps in the U.S. At Trail this has been already accomplished by the establishment of charges of \$7 a ton (and, in some cases, even less) for the treatment of refractory ores requiring roasting, & containing a high percentage of silica & alumina, while running very low in copper. It may be doubted whether more favorable rates are offered to miners of such ores even in Colorado or Montana.

Arrowhead to Kootenay Lake.—A survey is being made for this proposed extension, but nothing has been decided in regard to construction.

Nakusp & Slocan Branch.—Some B.C. papers have stated that a large sum is to be spent on this line this year. We are informed that nothing has been included in the estimates for this, & only ordinary maintenance work will be done this year.

New Westminster.—The illustrations on pg. 111 show the track elevation & ground floor plan of the stone & brick station which is to be built on the site of the one destroyed by fire last year. It will be 90 x 40 ft., 2 stories high, & with stone filling on the river side will cost about \$40,000. The architect is E. Maxwell, Montreal. Work has been started on it. The 25 ft. railway reserve is to be filled in & protected with cribbing on the river side. The present track will be moved over several feet towards the water front, & a siding will be laid beyond for the accommodation of the wharves, etc.

Vancouver Terminals.—Tenders were recently asked for 40,000 cubic yards of rock filling required at the Vancouver wharves. When at Vancouver recently Manager Whyte said that the work of filling in all the docks & wharfage extensions laid out in detail & presented to the City Council a year ago, would be gone right on with & he expected to see a large increase of trade in consequence.

It is said the plans for the extension of the Hotel Vancouver are elaborate, & embrace a 7 story addition towards Howe St. which will make the hotel the largest on the whole Pacific Coast.

The Minneapolis, St. Paul, & Sault Ste. Marie will probably build new freight terminals at Minneapolis in the near future. The plans have not as yet been fully perfected.

The Mineral Range built 9 miles of road last year from Boston, Mich., southeast & southwest to Arcadian Mine, & from Grosse Point, on Portage Lake, northwest to Dollar Bay, leaving a gap of 4 miles between the 2 lines to be completed this year. Work is now in progress on this gap, & it will be completed by July 1.

Grand Trunk Betterments, Etc.

The Work of 1898.—General Superintendent McGuigan states that 255 miles of steel rails, of the standard 80 lbs. weight, were laid during 1898. Over 400 miles of the road were greatly strengthened & improved. Sixty-six miles of new track, & 20 miles of sidings intended for the use of manufacturing establishments, were laid. 85 light iron, steel & wooden bridges were replaced by steel structures of the best & most modern description, their total length being 21,236 ft., or 116 ft. in excess of 4 miles. The number of running feet embraced in this achievement includes the 25 spans, or 6,592 ft. of the Victoria Jubilee Bridge, but does not include the splen-

did new structure spanning the Niagara gorge. Other bridges were likewise looked after, & the G.T. record for 1898 also shows that 35 wooden pile bridges & trestles, possessing a total length of 2,361 ft., as well as 10 overhead wooden waggon bridges, the whole being 1,108 ft. long, were completely rebuilt, most of these being on the branch lines.

The G.T. laid during 1898 1,759,833 cross ties, an increase over 1897 of 500,000. 312 miles of ballasting has also to be placed to the credit of the road for this period, 262 having been done with gravel, & the remaining 50 with cinders, the latter being considered excellent material where the line passes over wet land, or where drainage is difficult. 61 wooden, stone & pipe culverts were renewed in stone during the year, while fine new buildings of all kinds went up all along the lines. Sixteen stations, 8 freight sheds, 2 coal chutes & 12 motive power buildings were erected, while 60 stations, 9 freight sheds & 9 motive power structures were remodelled, painted & repaired during the same time. Eleven of the 16 new stations were built in Ontario & Quebec, 1 in Maine, & 5 in Michigan.

Victoria Jubilee Bridge.—It is frequently asked if provision has been made for an electric car service across this bridge, connecting with the south shore, & opening up all the districts & municipalities in this region to prompt communication with the metropolis. The interest in this question is not confined to the proprietors, who naturally look for an enhancement of values. It extends to several corporations & syndicates, who see in such opening up great possibilities for future expansion & profit. Charters have been obtained for operating electric power along the south shore as well as throughout the Eastern townships. The question hitherto has been the connection across the river. It may be said that the G.T.R. management, while alive to the question, has not made any provision for an electric service at present. This is a matter which will, in the near future, be the subject of negotiation with all the parties interested, & doubtless electric cars will run across the reconstructed bridge with advantage to the districts of country to be served, as well as profit to those who are willing to invest their money in the project of placing a gridiron across a stretch of country which has hitherto been cut off from vital connection with the city. The new bridge, however, will be opened without such service, & it may take some time before arrangements can be made for its introduction. Those who have noticed the laying of wires below the rails & who believed that electricity was virtually an accomplished fact are a little sanguine—signal wires are being laid to make connection with either shore. Electricity will doubtless come in time, as an influential official recently remarked; but it cannot be immediately arranged for.—Witness.

Montreal Offices.—The directors have approved of the plan of the new general offices as submitted by the architect, who has received instructions to proceed at once with the letting of contracts, & it is expected that the foundation will be commenced early in May. In so far as possible local firms will be preferred, but it is claimed there are several features in connection with the building which can only be supplied in the U.S. Nevertheless, the large features of the work will be offered to local contract & the disbursement of over \$500,000 will be an encouraging feature at the beginning of a new season. When once the work is commenced, it will be proceeded with with the utmost energy, but it is not expected the building will be finished before Sept., 1900.

Western Division.—For some time the management has contemplated laying a double track between Port Huron & Chicago, & there is a possibility that the work may be

commenced this season. Engineers have been employed for a considerable period surveying the line & estimating the cost of the additional track, & are still working at the surveys & estimates.

It is said a branch will be built from Port Huron, Mich., south to the Jenks Ship Building Co.'s yards if sufficient business is guaranteed.

Surveys are said to be in progress for a new line from the west into Battle Creek, Mich., to avoid a steep grade.

Place Viger Station, Montreal.

The subject of the enlargement of the old Quebec Gate Barracks station yard, & the building of a combined station & hotel, was first taken up by the City Council of Montreal & the C.P.R. Co. in 1893. Several sites were proposed, & finally it was arranged that the City should expropriate the block bounded by Craig, Berri, Notre Dame & Lacroix sts., should sell the buildings thereon, & hand over to the Co. the vacant ground, comprising a total area of 208,450 ft., inclusive of parts of streets in the block.

The City also agreed to erect a bridge to carry Notre Dame st. & a part of Lacroix st. over the new yard, & to subscribe \$150,000 towards the cost of a building not less than 4 stories high to be used as a station & hotel, on condition that the Co. should spend not less than \$350,000 on the building & its appurtenances, & should cede to the City several valuable properties comprising an area of 184,856 ft. By Nov., 1895, the City had acquired the entire block & had removed all the buildings therefrom, except a fire station at the corner of Notre Dame & Lacroix sts. In Jan., 1896, the Notre Dame st. bridge was completed. In May, 1896, the deed was passed conveying the new block to the Co., & the properties above mentioned to the City.

The surface of the new block was very irregular, being at an elevation above city datum of about 64 ft. next Notre Dame st., & 29 ft. adjoining Craig st.

As the level of the new yard is about 34 ft., the excavation amounted to about 75,000 yards, exclusive of the excavation required for the erection of the bridge under Notre Dame st. & part of Lacroix st. In July, 1896, the Co. began the erection of the new freight shed in the old Quebec Gate Barracks yard, now called the Barracks yard, & work was commenced on the station building in Aug., 1896, & was carried on continuously until Aug. 15, 1898, when the station was opened for traffic. The hotel was opened a few days later.

The new yards being at right angles to the tracks which led to the old station, it was necessary to lay out the new tracks oblique to the new station in order to provide a sufficient length of straight track next the station. These tracks are shown on the plan on pg. 107. At present track no. 1 leads past the

stores building & the end is used for repairs. Tracks nos. 2 & 3 are for baggage & express cars, which are, in the future, to be loaded opposite the baggage & express platforms, & pulled out & coupled to front of outgoing trains a few minutes before train time. At present, however, the baggage is taken on trucks up to baggage cars at their place in front of trains. Tracks nos. 4 & 5 are for passenger car storage. Nos. 6, 7 & 8 are outward passenger tracks, & nos. 9, 10 & 11 are inward passenger tracks. Tracks nos. 12 to 17, both inclusive, are for delivery of freight direct from cars to trucks. These are all the tracks in the new Place Viger yard.

There are at present no passenger tracks in the old yard, now called the Barracks yard. Tracks nos. 1 & 2 of this yard are for freight delivery from cars into the lower storey of the old station building, which is to be used for freight storage, while the space below Notre Dame st. bridge, next the old station, is being closed in & connected with the old building by four 8-ft. doors, & will be used for delivery of freight to trucks. The top storey of the old station, at the level of Notre Dame st., is fitted up as offices for the Division Engineer & his staff, the Superintendent of Terminals, the Roadmaster, & the Stationery Department & stores. It is proposed to put in an intermediate floor between the two storeys above mentioned for freight storage. Tracks nos. 3 & 4 are for unloading freight direct from cars into trucks, nos. 5 & 6 are for storing cars of freight for delivery to city, & no. 7 is for freight delivery direct from cars to trucks. Tracks nos. 8 to 16, both inclusive, are for delivery from cars into freight sheds. No. 17 is for car storage, no. 18 is for freight delivery direct from cars to trucks, & nos. 19 & 20 are grain elevator tracks.

There is a complete system of water, steam & air pipes laid across the entire head of the Place Viger yard, the pipes also extending from the head of the yard for about 210 ft. between tracks 5 & 6, for about 350 ft. between tracks 7 & 8, & for about 670 ft. between tracks 9 & 10, & between tracks 11 & 12. These pipes are laid from 5 to 6 ft. below base of rail, & are enclosed in a wooden box of 2-inch plank. At the head of the yard, between each pair of tracks, and also at intervals of about 100 ft. along the lines of pipes between the tracks above described, there are vertical shafts, 2½ x 2½ ft. clear inside, rising to the level of the top of the rail, made of 3-in. plank. Stand pipes for water, steam & air, with the usual rubber pipe connections, are set in these shafts. The boxes in which the pipes are laid have a grade of 2½ ins. per 100 ft. towards the head of the yard, so that any water collecting in them may drain off into a 10-in. pipe running under the station building opposite the end of track 4.

The platforms between the tracks have an umbrella-roof covering the full width of the

platforms, supported on a single row of cedar posts along the centre line of the platforms. This arrangement of the posts is much more convenient than the double row adopted by some railways, as it does not interfere with passengers getting on or off trains, & as it separates the passengers coming from or going to trains on either side of the platform. These covered platforms are lighted by an incandescent lamp between each pair of posts.

The station & hotel building is the early 16th century style of French Renaissance. The exterior face of the walls, up to the sill of the first floor windows, is of pick-faced, grey Montreal limestone, plainly treated. The remainder of the exterior face is of Glenboig firebrick of buff color with dark mottling, the quoins, heads, string courses, etc., etc., being of Montreal grey limestone. There is a covered portico, 16 ft. wide, on the Craig st. face, extending along the entire length of the main building, having a stone colonnade in front, & being approached by five stone steps running the whole length of the portico. The roof of this portico is used as a promenade during the summer. The roof of the entire building is of slate with copper flashing.

The whole of the work was carried out under the supervision of the Co.'s Chief Engineer, P. A. Peterson, J. P. O'Leary being inspector of works. We are indebted to Mr. Peterson for the foregoing description, which was written by H. Irwin. A plan of the yards & a view of the station & hotel building appear on pages 107 & 109.

The Crow's Nest Pass Railway.

Some interesting particulars about this line are given in a report made by the Government Superintending Engineer, G. R. L. Fellowes, under date of Dec. 1 last, as follows :-

The railway was given under contract to the C.P.R. Co. to be constructed & equipped for a subsidy of \$11,000 a mile, from Lethbridge to Nelson, the total amount of subsidy not exceeding \$3,630,000. The line was to be opened for traffic on or before Dec. 31, 1898, as far as the south end of Kootenay Lake, there providing train transfer facilities, without transhipment, not later than that date, from that point to Nelson, B.C., the service to be kept up until the balance of the road to Nelson was completed & put in operation for public traffic, the contract allowing the Co. until Dec. 31, 1900, to complete it.

The section of road to Kootenay Lake will be in safe condition to be opened for traffic before the close of the present month; it is equipped with rolling stock sufficient for the requirements of the traffic. Car loads of freight have already been carried from the south end of Kootenay Lake to Nelson, B.C., by water in transfer barges & steamers, thereby giving the public a traffic service before the expiration of the time limit named in the contract.

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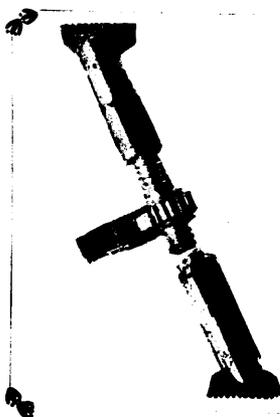
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The contract specifies that steel rails of a minimum weight of 56 lbs. per lineal yard are to be used for track. The 56 lb. rails have been introduced on the prairie sections & on the river bottoms, where tangents & light curvature occur, the balance of the road-bed is completed with a percentage of 60 lb. rails & fully 26% of the whole 288 $\frac{3}{4}$ miles is laid with rails weighing 73 lbs. to the lineal yard.

The truss bridges of large spans on this line, both for through & deck spans are of the Howe truss, of the C.P.R. standard, built of wood, the splicing of the lower chord members being of steel plates. Over the Kootenay River, which is navigable for steamers, an iron swing bridge has been erected over the north channel, which I consider gives ample provision for the passage of craft navigating these waters. The trestle bridging is well designed & of the C.P.R. standard, where necessary rows of piles driven from the mud sill of the embankments, 30 & 45 ft. out, which are framed into the deck system, having diagonal sill braces to ensure greater rigidity.

The position of the culverts, both box & beam, have been well chosen, the structures being strong, well put together & of sound material, in some cases stone is used, & in others cedar & Douglas fir timber. They are similar in design to those in a like country on the main line of the C.P.R.

The surfacing & ballasting of the road has been well advanced from Lethbridge to Jaffray station at the 173 $\frac{1}{2}$ mile. From this point to Kootenay Lake the road is about half ballasted. At present a large force of men, steam shovels & working trains are employed in completing the work.

Such of the buildings for sectionmen's houses & stations as are built, are roomy, of neat design & suitable for the traffic, & conform to the requirements as specified in the contract. Tanks of the C.P.R. standard design, of a capacity of 40,000 gall. each, have been erected at suitable points between Lethbridge & Kootenay Lake, excepting at Cranbrook, a divisional station, & at Sirdar, at which two points water for the present is being supplied by temporary tanks.

The road-bed throughout is of a solid, substantial character & well built. The embankments have settled down, & become consolidated, which naturally has lessened the original width at formation level; the Co. is now bringing these up to the contract width.

The cuttings have been formed of the widths called for by the contract, but the earth cuttings are now being further widened. In earth cuttings the character of the material largely governs the pitch of the slopes. In gumbo, or running clay, the slopes have been taken out at a flatter angle than 1 $\frac{1}{2}$ to 1, & to give greater stability to the road-bed, & prevent disturbance of the track, 12 in. sheet piling has been driven at the foot of the slope on the upper side of the cuttings; not only has this been done, but in through cuttings of this material a base of broken rock over the full width of the bottom of the cuttings has been laid in, over 3 ft. in thickness, which has given most satisfactory results. Cemented material has been met with in many of the cuttings, from the Crow's Nest Lake station westward, in such cases a slope of less than 1 $\frac{1}{2}$ to 1 has been adopted, which appears to meet all requirements, as they are standing well. In some of the cuttings east of the Crow's Nest station, a firm, dry & compact soil is found, in such cases the slopes have been taken out at less than 1 $\frac{1}{2}$ to 1, & so far they have stood well. In other cuttings between Lethbridge & Macleod a cemented material is found which is so hard & compact that blasting had to be resorted to. As the specification calls for a slope of 1 $\frac{1}{2}$ to 1, I am, until I have had an opportunity to fully satisfy myself of the sufficiency of these slopes as taken out, re-

taining part of the subsidy to cover the cost of flattening these slopes, if it should be found necessary after a year's experience.

The contract limits the maximum grades to 106 ft. to the mile, but I am pleased to be able to report that the Co. has succeeded in keeping the maximum down below 60 ft. to the mile, which is very satisfactory. Owing to the mountainous character of the country & its general configuration, curves of 10°, 12°, and in one case 14°, had to be introduced, & I see no way in which it could, at reasonable cost, have been avoided.

The Co. at present has 3 steam shovels employed in ballasting, widening cuttings & filling in trestles, which are being served by the necessary trains.

Surveys have been made of the balance of the line subsidized, from the south end of Kootenay Lake to Nelson, but the final plans of location have not yet been filed in the Department, as a revision of the location is in contemplation with a view of reducing the severity of the curves in some cases as now laid out.

C.P.R. Fort William Elevators.

The illustrations on page 105 show the four mammoth elevators erected by the C.P.R. Co. at Fort William, Ont. The following description of them recently appeared in the *Marine Review*:—The Co. began the consolidation of its various interests at Fort William in 1890. Previous to that time its local works were located at West Fort William, & the chief offices & the port for the transshipment of all freight from lake to rail was at Port Arthur. The business had not been greatly developed, however, before the officials of the Co. perceived the natural & economic advantages offered by the Kaministiquia river for the concentration of the entire business on Lake Superior, & a well-defined policy was soon after mapped out for the process of centralization by means of the erection of mammoth elevators, the construction of good docks, etc. Beginning with the spring of 1891 all lake freight & passengers were landed on the wharves of the Kaministiquia, & Fort William was made the connecting point between lake & rail—the northwestern terminus of navigation. All the works & business of the Co. formerly carried on at the west end & Port Arthur were thus brought together at Fort William, where over \$1,000,000 had already been expended in improvements.

Improvements since undertaken have brought the total up to fully \$2,000,000. The 4 elevators alone have entailed an expenditure in excess of \$1,000,000. The elevators, which are the largest in Canada, are designated A, B, C, & D. The 3 first mentioned are each 325 ft. in length by 90 ft. in width, & all are equipped with the latest improved type of machinery. Capacities are as follows:—A, 1,200,000 bus.; B, 1,300,000; C, 1,250,000. The 4th elevator, D, is the new steel tank structure, & has a capacity of 1,500,000 bus., bringing the aggregate up to 5,250,000 bus. as the capacity of the 4 elevators.

The steel tank elevator was erected in 1897-98, & is the first & only elevator of this unique design in Canada. It consists of 24 cylindrical steel storage tanks 60 ft. in height. Eight of the tanks are each 58 ft. in diameter, while the diameter of each of the remaining 16 is 29 ft. They are absolutely fire & damp proof, & have been rendered impervious against rats, insects, etc. The main building, which is of structural steel, contains modern machinery for cleaning, separating, weighing & transferring grain from cars to tanks or vessels. The shipping capacity is 40,000 bus. an hour, & the unloading capacity 400 cars a day. The elevator has attracted considerable attention by reason of the fire-proof arrangement which obviates the necessity of insurance & the very excellent plan for the separation of the stor-

age department from the machinery for handling & weighing the grain.

Other facilities of the C.P.R. are in keeping with the completeness of the elevator equipment. For the storage of package freight delivered by the steamship lines there are 2 sheds, each 500 ft. in length. The company also has an unbroken line of more than 4,000 ft. of docks. The coal docks alone have a river frontage of 1,200 ft., & upon them are landed annually more than 150,000 tons of coal.

The prospects for the future of Fort William as a grain shipping port are of the brightest. During 1895 there was shipped from Fort William 10,587,866 bus. of wheat; during 1896, 12,689,000, & during 1897 17,600,000. Of the quantity of the latter year 12,928,000 bus. were shipped for export by way of Buffalo, the bulk of it in U.S. bottoms, while 2,000,000 found its way to the seaboard via Montreal. The figures for 1898, 9,218,000 bus., show a falling off, but the loss was due to temporary conditions.

A very complete description of the steel tank elevator, with an illustration showing how it will appear in its completed condition, when its present capacity will be doubled, appeared in our issue of April, '98, pg. 37.

Surveys, Construction, Betterment, &c.

Canada Atlantic.—The Ottawa shops are expected to be completed in May, when the manufacture of cars will be commenced. A large amount of machinery is already in position. Provision is being made for running electric cars on the track between the Chaudiere & the shops.

In reply to a recent enquiry as to whether the Co. would build from Coteau to Montreal, President Booth said he would in all probability double-track the present road first. "It will next summer make Montreal one of the greatest grain-shipping centres in the world," he added.

Canadian Northern.—This is the new name of the Lake Manitoba Ry. & Canal Co. The line, which was built last year to Cowan, 51.8 miles from Sifton Jct., is to be extended to the Saskatchewan River this year, & W. Mackenzie recently stated he expected it to be completed to Hudson's Bay by the end of 1901. Mr. Mackenzie also stated that from the best information he could obtain he thought Hudson's Straits were open about 5 months in the year. In referring to this Commander Wakeham, who was in charge of the last Government expedition to Hudson's Bay, thinks 3 $\frac{1}{2}$ months the extreme limit.

Superintendent Hanna reports that a considerable number of settlers have already gone into the Dauphin district this season. (Feb., pg. 40.)

Coast Ry. of Nova Scotia. The first section of this line, from Yarmouth to East Pubnico, 31 miles, is being operated. Last season the 2nd section of 20 miles from East Pubnico to Barrington was graded to Atwood Brook, 17 miles, structures built & ties distributed. During the winter the stone required for the uncompleted masonry on this section was cut & delivered on the sites of the structures, which are incomplete only for about 3 miles, & are principally box culverts, there being only one bridge of 60 ft. span. We are officially informed that if weather permits work will be resumed about May 1 on the completion of the 2nd section, & that in all probability work will be carried on beyond Barrington. The 3rd section of 39 miles between Barrington & Lockport has been surveyed & the timber taken off, & surveys have been made for part of the line between Lockport & Halifax. A stone wharf, 250 ft. long & 60 ft. wide, has been built at Barrington, to which 150 ft. of pile wharf will be added. When the line is completed to Barrington a steamer will run between Barrington & Hali-

fax, caling at all shore ports. It is said the Co. will survey a branch from Liverpool north to Caledonia, 25 miles. It is intended to change the name of the Co. to The Halifax & Yarmouth Ry. Co. (Nov., '98, pg. 238.)

Edmonton Bridge.—We are officially informed by the Dominion Department of Public Works that a contract has been let by the Department for the construction of the superstructure of this bridge, which will be used by the Edmonton District Ry. to make connection between South Edmonton & Edmonton. A full description & illustration of the bridge appeared in our issue of Dec., '98, pg. 261.

Edmonton District.—One of the directors informs us that until the legislation asked for at this session of the Dominion Parliament is disposed of, there is no definite information to be given. He says surveys have been made, & that preparations are being made for building the line from South Edmonton to Edmonton, & that in all probability the line will be built to Athabasca Landing this year.

Reference was made in our Feb. issue to the work done in respect to a reconnaissance survey from Edmonton towards the Yukon under the Department of Railways. Following is a portion of the report:—Between the junction of the Parsnip & Finlay rivers & Hudson's Hope, Peace River runs between 2 ranges of mountains which have an elevation of between 3,000 & 4,000 ft. above the level of Peace River. The peaks of some of the mountains are bare of vegetation. Mt. Selwyn is the highest point of the eastern range along the rivers, & has an elevation of 6,240 ft. above sea-level. It was ascended by the chief of the expedition, who succeeded in reaching the summit, where he obtained a wide spread view of the surrounding country, presenting to him a grand panorama of mountain peaks capped with snow the year round as far as the eye could reach. Peace River has a fall of about 1½ ft. per mile on an average from the junction of the Parsnip & Finlay to the canyon, & presents no serious obstacles to navigation, with the exception of the Parle Pass & Finlay Rapids, where it is necessary to portage supplies & other freight. Peace River Canyon, which is about 24 miles long,

presents the appearance of a large canal cut through the mountains by the river, the walls of the canyon being 100 to 400 ft. high. It has taken ages to make the channel through which it runs at the present time, the old bed of the canyon being clearly seen over 150 ft. above the river where it now runs. The proof of this is seen in a series of deep wells cut in the solid rock by whirling boulders caused by the eddies of the river, being similar to such wells on the level of the river as it runs now. These wells are 15 to 20 ft. deep, & from 2 to 4 ft. in diameter, their walls being worn smooth & polished by the constant rubbing of the boulders as they turned for centuries. Three miles from the mouth of the canyon there is an island which presents at a distance the appearance of a large ship of war of the old wooden pattern, with its numerous port-holes. This island stands about 30 ft. out of the river, having been cut out in this peculiar way by the river in the years gone by. The fall of the river through the canyon is about 270 ft. in 23 miles, & there is a series of rapids from its mouth to Hudson's Hope. Navigation, although dangerous, is not impossible at certain times of the year to expert boatmen; but there is nothing to be gained by attempting to go through.

Great Northern of Canada.—The rumor published in our Mar. issue, pg. 82, to the effect that a contract has been let for the completion of the 88 miles of this line to be built between Shawenegan, Que., & Hawkesbury has been confirmed. A contract has been made between the Co. & the Great Northern Construction Co., composed of New York, Boston & Quebec people, to whom all subsidies, bonuses, cash subscriptions & a portion of the bonds will be transferred. Bonds have, it is announced, been placed by J. McNaught, of New York, & H. H. Melville, of Boston, for a sufficient amount to complete the line. The Construction Co. has given a contract for the execution of the work to Ross, Barry & McRae, of Toronto, who are well known in connection with C.P.R. and other contracts. The work is to be completed by July 31, 1900. There will be numerous bridges; 3 will be of considerable size; 2 steel

viaducts will each be about 1,000 ft. long & from 140 to 150 ft. high. The bridge over the Ottawa River at Hawkesbury, including the crossing of the canal & trestle approaches, will be about 3,200 ft. long. The character of the line is to be first-class in every respect, the bridges to be of steel of the strongest specification, & the track is to be laid with 70 lb. steel rails. The rails & fastenings for the whole line have already been purchased. The contract includes the erection & equipment of workshops & carshops in Quebec city. The 88 miles now contracted for includes the section between Shawenegan & Montcalm, near Joliette, 53 miles, on which some work has been done, & 35 miles between St. Jerome & Grenville, on the Ottawa River. Between Montcalm & St. Jerome, 28 miles, the G.N. is already in operation, so that the building of the 88 miles will make a continuous line from the Ottawa River to Shawenegan. From Shawenegan the G.N. is already built east 22 miles to St. Tite. From St. Tite eastward to Riviere a Pierre Jct., 33 miles, the Lower Laurentian Ry. is in operation, & from Riviere a Pierre Jct. to Quebec, 58 miles, the Quebec & Lake St. John Ry. is in operation. The Lower Laurentian Ry., as well as the G.N. Ry., is operated by the Q. & L. St. J. Co., so that the whole line between Quebec & the Ottawa River will be under the one management. E. A. Hoare, C.E., Quebec, is Chief Engineer for the Co., & McCarthy & Shanley are engineers for the contractors. (Mar., pg. 82.)

For the information of the Railroad Gazette, New York, which speaks of this line as a Nova Scotia road, we may mention that it is entirely within the Province of Quebec. At Hawkesbury it will connect with the Canada Atlantic Ry., giving another route between Ottawa & Quebec.

It is the intention of the Co. to erect a grain elevator at Quebec with 1,000,000 bus. capacity. It will probably be located between the Customs House & the Point A'Caray wharf, where there will be splendid loading facilities.

Great Northern, U.S.A.—Surveys, said to be in the interest of this Co., are being made for a line from Moscow, Wash., northwest via

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Davenport, along Hawk Creek & the Columbia River to Hell Gate, & thence north along the San Poil River to the new mining region at Republic. The line would be about 100 miles long.

The Co. is about to give Duluth another great elevator that will be far ahead of the one of 3,000,000 bus. capacity previously built, as the new structure will be of steel, & its capacity will be 6,000,000 bus.

Intercolonial.—During the past fiscal year 19½ miles laid with 58 lb. steel rails were taken up & replaced with 67 lb. rails, & 6½ miles laid with 67 lb. worn rails were taken up & the rails cut & relaid on various parts of the line. 650,135 ordinary ties & 120 sets of switch ties were renewed. 103,166 cubic yards of ballast were placed on various parts of the line where necessary. 42½ miles of barbed & woven wire fence were erected, replacing pole fence & old barbed wire fence. Extensive repairs were made to the old fences on all parts of the line. 7,062 rods of snow fence were renewed in the Central & Northern Divisions.

It is said the Minister of Railways has decided to build a 1,000,000 bus. grain elevator in Montreal, & that the funds will be asked for at this session of Parliament.

Interprovincial Bridge, Hull to Ottawa.—Work is proceeding satisfactorily on the piers. The masonry will be gone on with as soon as the water lowers, & it is expected the superstructure can be put on next fall, by the time the extension of the Pontiac & Pacific Jct. Ry. is completed to Hull. A contract has been let for the superstructure.

Inverness & Richmond.—The prospects for this Nova Scotia line going on this year are very favorable. For some time past P. Ryan & R. H. Bowes, of Toronto, have had an option on the charter from Oakes, Grey & Wheaton, & as stated in our last issue, negotiations have been going on for the sale of this option to Mackenzie, Mann & Co., which have been closed. The I. & R.R. Co. was incorporated by the N.S. Legislature in 1887 to build a line from the Straits of Canso, at or near Port Hawkesbury, to Cheticamp, a distance of about 100 miles, by way of Port Hood, Mabou, Broad Cove & Margaree, with a branch from or near Mabou to Wycocogmah, thence to connect with the I.C.R. at or near Orangedale. For the 1st 58 miles to Broad Cove mines, the Dominion Parliament has voted a cash bonus of \$3,200 a mile, the N.S. Legislature has voted a similar amount, & the County of Inverness has voted \$1,000 a mile. The 58 miles have been surveyed. Some time ago about 15 miles from Port Hawkesbury north were partially graded, & some men have been at work since July last to comply with the Act. It is said Mackenzie, Mann & Co. have secured options on about 60 square miles of coal fields in Inverness county, in the neighborhood of Port Hood, Broad Cove & Chimney Corner, & that they will go extensively into coal mining, shipping the coal to Quebec, Montreal & New England ports, from Cheticamp, at the north end of the line, & from Hastings & Cariboo Cove on the south. (Mar., 98, pg. 82.)

Kootenay Ry. & Navigation Co.—In a memorandum issued from the London, Eng., office of this Co., some references are made to the lines which have been acquired by it. Speaking of the Kaslo & Slocan, it says the capital for its construction was found largely through President Hill, of the Great Northern (U.S.A.) "At Kaslo, the K. & S. Ry. connects with the steamers of the International Navigation & Trading Co., which ply from that point to Nelson, where connection is made with the Spokane Falls & Northern R.R. running to Spokane, at which point the Great Northern & Northern Pacific roads are met. But a considerably shorter & more inexpensive connection with the U.S. roads is offered by the building of 53½ miles of railway from

the southern end of Kootenay Lake (whither the steamers would then run instead of to Nelson) to meet the G.N. at Bonner's Ferry & the N.P. at Sandpoint. This road would run along the valley of the Kootenay river, avoiding any steep gradients or sharp curves or danger of washouts, all of which are difficulties encountered by the Spokane Falls & Northern road. A Co. known as the Bedlington & Nelson R.R. Co. has been formed & incorporated by Canadian Act of Parliament to own & operate so much of the line as lies in Canadian territory, whilst a U.S. Company has been formed to own & operate so much as lies in U.S. territory. During last spring a large engineering force was engaged on the location of the line under N. D. Miller, a chief engineer of the construction of the Great Northern road. A close estimate has been received from him, & he places the approximate cost of construction, equipment, buildings, etc., at £240,000 for the entire work."

J. F. Stevens, who is associated with Foley, Bros. & Co. in the contract for the line between Kootenay Lake & Bonner's Ferry, says rapid progress is being made with the work all along the route, including the bridge & trestle at Bonner's Ferry.

Rumors have been in circulation to the effect that the Privy Council has granted the application of the Nelson & Bedlington for running powers over the Crow's Nest Ry., from Creston to Kootenay Landing, but up to the time of writing (Apr. 14) no decision had been given.

Kootenay & Northwest.—It is stated that C. R. Watson, C.E., & staff left Golden recently for Cranbrook, B.C., to start the survey of this line & work north. The K. & N. Co. was incorporated by the B.C. Legislature in 1898 to build from Golden south along the Columbia River Valley to Canal Flat, thence along the Kootenay River Valley to Cranbrook, also from or near Golden, north through the valleys of the Columbia, Canoe, Fraser & Parsnip Rivers, to the valley of the Liard River, to the northerly boundary of B.C., or to Teslin Lake. The incorporators were L. Hirsch, A. J. Douglass & A. E. Mitchell Innes, of London, Eng., & it is believed the charter was obtained in the interest of the Great Northern (U.S.A.)

Lake Erie & Detroit River.—There is nothing new to report respecting the proposed extension of this line from Ridgeway to St. Thomas, Ont. The by-law passed by St. Thomas ratepayers granting a bonus of \$20,000 for the extension has been quashed on the ground that the law had not been complied with, the sinking fund not having been mentioned in the by-law. A bonus of \$7,000 granted by the village of Aldborough is also being attached.

Manitoba & Southeastern.—Arrangements are being made for an early start from La Broquerie, to which point the line was built from St. Boniface, 46 miles, last season & it is expected to build to the International Boundary and thence through Minnesota to the mouth of Rainy River, this year.

Michigan Central.—A 3rd truss is to be put on the cantilever bridge over the Niagara River, the truss to be carried by another tower bent and masonry work on each side. The truss is to be placed between the 2 already in position & will strengthen the bridge very much, as is rendered necessary by the increased weight of rolling stock. Work has commenced on the excavations for the foundations.

The new station at Courtright is a frame building, 24 x 62 ft., with spreading eaves 12 ft. high. The room is decorated Gothic, & altogether the building has a very up-to-date appearance.

The Toronto, Hamilton & Buffalo is taking steps to secure right of way for a spur line to the blast furnace. (Mar., pg. 73.)

Railway Appointments, &c.

Canadian Pacific.—F. W. Jones, Assistant to Manager Whyte, of the C.P.R. Western Lines, resigned his position at the end of Mar. to accept the Secretary-Treasurership of the Columbia River Lumber Co., with headquarters at Golden, B.C. Mr. Jones, who has been in the C.P.R. Co.'s service since boyhood, went to Manitoba in 1886 as Private Secretary to W. Whyte, on the latter's appointment as General Superintendent of the Western Division. Subsequently he became Chief Clerk in the General Superintendent's office, & on the creation of the position of Manager, in 1897, he was appointed Assistant to the Manager, with special charge of the operation of the Western Division, in which position he showed marked ability, serving the Co. with zeal & energy, & becoming very popular with the public. On his retirement from the service the railway men & the citizens of Winnipeg presented him with \$1,000 & a \$300 silver tea service as practical testimony of the esteem in which he is held. The Columbia River Lumber Co., of which W. Mackenzie, of Toronto, is the principal stockholder, is among the largest lumber concerns in B.C., having mills at Golden, Beaver, Moberly & Tappen Siding.

On Mar. 30, Manager Whyte issued a circular announcing the appointment of J. Osborne as General Superintendent of the Western Division, with headquarters at Winnipeg, from April 3. Mr. Osborne arrived at Winnipeg Mar. 30, accompanied by his Secretary, G. Graham. On leaving Montreal Mr. Osborne was given an enthusiastic send off at the Windsor St. Station by his colleagues in the general offices. Mr. Osborne, whose portrait appears on the 1st page of this issue, entered the railway service in 1874, the following being his record:—Oct., '74, to July, '83, in Mechanical Department, G.T.R.; July, '83, to July, '86, in Mechanical Department, C.P.R.; July, '86, to Sept., '87, Chief Clerk, Vice-President's office, C.P.R.; Sept., '87, to Oct., '90, Car Accountant, C.P.R.; Oct., '90, to June, '92, Superintendent Car Service, C.P.R.; June, '92, to April, '96, Superintendent Car & Fuel Service, C.P.R.; April, '96, to Mar., '99, Assistant to Vice-President C.P.R. In April, '95, he was elected President of the International Association of Car Accountants.

Vice-President Shaughnessy recently stated that no one would be appointed to succeed Mr. Osborne as Assistant to the Vice-President. It is however, the general impression in C.P.R. circles in Montreal that some other appointment will be made to relieve Mr. Shaughnessy of some of the work he now handles, & it is persistently rumored that the Passenger Traffic Manager, D. McNicol, will receive promotion.

J. D. Chipman, heretofore Travelling Freight Agent, has been appointed City Freight & Passenger Agent at Halifax, N.S., C. S. Phillips having resigned the City Passenger Agency. D. Sutherland, City Canvassing Agent at St. John, succeeds Mr. Chipman as Travelling Freight Agent.

D. Willard, having resigned as Division Superintendent of the Minneapolis, St. Paul & Sault Ste. Marie to take the Assistant General Managership of the Baltimore & Ohio, has been succeeded at Minneapolis by F. C. Batchelder, C. P. Eckels succeeding the latter at Enderlin, N.D.

H. M. McGregor, Travelling Passenger Agent, has been transferred from San Francisco to Alaska.

A report that L. A. Hamilton, Land Commissioner at Winnipeg, was about to retire, has been denied by Asst. Land Commissioner Griffin. Mr. Hamilton is travelling abroad.

W. H. Forrest, on retiring from the Vancouver freight agency recently, was presented with \$100 by the Co.'s employes & with \$100 by local merchants.

Grand Trunk.—David McCooe has been appointed General Roadmaster, Eastern Division, vice S. J. Pegg resigned. Office, Bonaventure Station, Montreal.

J. Foley, who has been appointed Roadmaster of the 22nd district, as mentioned in our last issue, was section foreman for 18 years on the G.T.R. at Whitby, & 1 year in charge of extra gang on the middle division.

A. G. Allison, Chief Dispatcher at Belleville, Ont., resigned recently after 39 years service, 35 of which he served as Train Dispatcher.

Intercolonial.—A press despatch from Quebec about the middle of Mar. stated that District Superintendent Ouellette, of the Montreal & St. Flavie District, with headquarters at Riviere du Loup had been suspended, & that General Superintendent Price was looking after his duties. Enquiry of I.C.R. officials has failed to elicit a reply, & we therefore give the report as a rumor, being unable to verify it.

J. W. Wallace has been appointed Travelling Auditor.

W. K. Reynolds has been appointed to write up the advertising matter for the line.

Mainly About People.

Sir Wm. Van Horne is about to take a holiday trip to California.

Vice-President Shaughnessy returned to Montreal Mar. 17 from Europe.

Dr. J. S. Smith, a brother of Lord Strathcona, died in Edinburgh recently.

R. B. Angus, of the C.P.R. directorate, & Jas. Ross, of Montreal, are in Europe.

D. A. Waterman, Treasurer of the Michigan Central, died at Yonkers, N.Y., Apl. 2.

General Manager Hays, of the G.T.R., arrived in Montreal Apl. 16 from his European trip.

Lord Strathcona is to receive the honorary degree of LL.D. from the University of Aberdeen.

Mrs. E. Tiffin, wife of the C.P.R. District Freight Agent at Toronto, has gone to California.

President Sir C. Rivers Wilson is expected to arrive in Canada shortly for his annual inspection of the G.T.R.

Mrs. McGuigan, wife of the General Superintendent of the G.T.R., has gone to California on a health-seeking trip.

H. B. Darnell, of the C.P.R. service in Japan, underwent an operation in Toronto General Hospital last month.

H. Garden, C.E., has been engaged on the survey for the proposed C.P.R. branch from Arrowhead to Kootenay Lake.

J. W. Fraser, Inspector of supplies & building material on the G.T.R. between Chicago & Toronto, died in London, Ont., recently.

M. Cleary, late of the Toronto, Hamilton & Buffalo Ry., has been appointed Superintendent of construction work for the Pittsburg Western Ry.

H. W. D. Armstrong, C.E., has returned to Toronto after running a survey for the Manitoba & Southeastern Ry. through Minnesota to Rainy River.

Michael Dwyer, a resident of Port Arthur, Ont., for 25 years, formerly a contractor on the C.P.R., & afterwards road commissioner for the Ontario Government, died recently.

R. A. Carder, formerly of the International Line, has been appointed Travelling Passenger & Freight Agent of the Dominion Atlantic Ry., with headquarters at 228 Washington St., Boston, Mass.

W. Stitt, of the C.P.R. Passenger Department, Winnipeg, left Los Angeles, Cal., in the middle of March, intending to spend some time in San Francisco, Victoria & Vancouver before returning to Winnipeg. His health is much improved.

E. C. Hawkins, Chief Engineer & General Superintendent of the White Pass & Yukon Ry., has been promoted to the position of General Manager, having complete charge of the engineering & construction departments, in addition to his work in the traffic branch.

H. C. Flockton, for many years the traffic representative of the G.T.R. in London, Eng., recently resigned to take the managership of the Lake Bennett & Klondike Navigation Co. at Victoria, B.C. He has been succeeded at 22 Leadenhall St., London, by J. R. Ion, formerly of the Allan Line and latterly with the Hamburg-American Packet Co.

A. B. Stickney, who was first General Superintendent of the C.P.R. at Winnipeg, & started the construction of the line west from there in 1881 & is now President of the Chicago & Great Western Ry., has written extensively on railway matters during the last few years. The latest product of his pen is "A Western Trunk Line Railway Without a Mortgage," in which he deals with the finances of the C. & G.W.R.

A joint circular issued by J. W. Blabon, Western Traffic Manager of the Great Northern (U.S.A.), & C. Shields, Vice-President of the Spokane Falls & Northern, announces that C. G. Dixon, in addition to his duties as General Freight & Passenger Agent of the S. F. & N.R., is appointed Commercial Agent of the G.N. Ry. at Spokane, in charge of freight & passenger business. H. A. Jackson is appointed Contracting Freight Agent of the G. N. R. & S. F. & N.Ry. at Spokane, under the direction of C. G. Dixon.

Lord Mount-Stephen has taken Lord Curzon's house in Carlton Gardens for the London season. It is probable that Lady Mount-Stephen will take her place among the great entertainers, being very popular, very clever, a favorite with the Duchess of York, & now a very rich woman, while Lord Mount-Stephen is both hospitable & generous. Lord & Lady Mount-Stephen were among those present to meet Prince & Princess Christian & Princess Victoria of Schleswig-Holstein at a dinner given by the Marquis & Marchioness of Lansdowne at Lansdowne House recently.

ELECTRIC RAILWAYS.

British Columbia Electric Railways.

B. C. Electric Ry. earnings and expenses for January :

	1897-8.	1898-9.	Increase.
GROSS EARNINGS.			
Railway—Vancouver branch	\$4,467	\$5,538	\$1,071
Victoria	6,399	6,737	338
Westminster	4,688	5,484	796
Lighting—Vancouver	9,040	12,888	3,848
Victoria	5,536	7,222	1,686
Gross earnings	\$30,130	\$57,869	\$7,739
Working expenses	\$20,131	\$23,860	\$3,729
Net profits	\$9,999	\$14,009	\$4,010

Aggregate Gross Earnings from April 1 to Jan. 31.....\$246,446 \$345,698 \$99,252

Aggregate Net Profit from April 1 to Jan. 31.....\$77,581 \$140,496 \$62,915

The aggregate gross earnings and net profit for 1897-98 are from April 15 only.

Traffic Superintendent Arnold, of the Vancouver branch, has retired, being succeeded by D. A. Shiles, heretofore Superintendent of the Westminster branch, who now combines the superintendency of the Vancouver & Westminster branches, with headquarters at Vancouver.

General Manager Buntzen & Mrs. Buntzen left Vancouver Mar. 21 for England, where they will spend a few months, Mr. Buntzen's health having been rather poor lately. While in England he will consult with the directors in reference to the extension of the Co.'s service & its affairs generally.

The Co. is making great improvements on the line between Vancouver & Westminster, the entire road bed is being re-gravelled & the track made quite safe by the filling in of all trestles. All dangerous trees along the line are being removed, to prevent their being blown down on the track. There will be placed on the through line two improved passenger cars, somewhat larger than the present ones, and capable, when the line is improved, of making the trip between Vancouver & Westminster in half an hour.

The city of Vancouver has given the Co. 11 years lease of Davie St., on which the Co. is building about a mile of track to English Bay, using 56 lb. T rails. The Co. will also build, this season, a line from English Bay along Denman st. to connect with its present line on Georgia st. Further on, it is going to erect a car barn on nine 25 ft. lots, purchased on Westminster Avenue, between Barnard & Prior sts., & will build a larger power-house on the joint site of the present power-house & car barn, & place therein direct connected machinery, at a total outlay of about \$100,000, which will give a modern & efficient station. The City Council wants the Co. to extend its lines in the east end & on Mount Pleasant, & the matter will be considered by the directors shortly.

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E. B. EDDY'S

MATCHES

A Government Tramway.—During the recent session of the B.C. Legislature some of the members petitioned the Government for the construction, as a provincial work, of an electric tramway from Vancouver to Stevenson, on the Fraser River, & up the south side of Lulu Island, a total distance of about 17 miles, the cost of which was estimated at \$145,000, exclusive of right of way & bridging. No action is likely to be taken on the matter before the next session of the Legislature, if even then.

Maritime Provinces Electric Lines.

Bedford Electric Co.—Since the issue of the original prospectus of this Co., a summary of which was given in our last issue, pg. 91, its scheme has been considerably enlarged. The capital is to be increased from \$250,000 to \$2,500,000, & it is proposed to build 3 lines of railway instead of 1. The 1st is projected from the Three Mile House, west of Bedford, running through Bedford northeast about 5 miles to Waverly; then south about 12 miles on the north side of Halifax Harbor to Dartmouth. The 2nd is to be from the same starting place west through the head of St. Margaret's Bay, Chester & Mahone Bay to Lunenburg, 56 miles. The 3rd is to be from the same starting point along Kempt Road, & into Halifax. Power for the railways, for sale as electric energy, & for the operation of a pulp mill is to be obtained at St. Margaret's Bay, 18 miles from Halifax. The Co.'s agent, now in London, Eng., is very confident of success in raising the necessary capital there.

Moncton Electric St. Ry.—The M.E. St. Ry. Heat & Power Co. is applying to the New Brunswick Legislature to change its name to the Moncton St. Ry. Co.; to authorize the extension of the railway to Shediac; to authorize the City Council of Moncton & the County Council of Westmoreland to exempt the Co. from taxation; to authorize the Co. to lease from the city of Moncton the gas & electric light works, & to authorize the City Council to lease the works upon receiving the approval of the electors. It is believed that people interested in the Halifax Electric Tramway are prepared to take hold of the Moncton line if the legislation above outlined is secured, & if the desired arrangements can be made with the City Council.

St. John, N.B., Ry.—Prof. Hesse, organist of the Roman Catholic cathedral at Providence, R.I., who received injuries last July while on a runaway car on this line, necessitating the amputation of his left foot, has secured a verdict of \$25,000 damages against the Co.

Ontario Electric Railways.

Belleville Traction Co.—It was recently reported that this property had been sold for \$85,000, & that a line would be constructed to the cemetery & a loop line over the hill to the G.T.R. On Mar. 27 we were officially informed that a sale had not been made, but that possibly it would be within a short time.

Cornwall St.—The bondholders, the Sun Life Insurance Co., recently offered to put the tracks in proper order & build up the roads between the tracks & for 18 ins. on either side, provided the Corporation would keep the roadway in repair for 5 years. The council has so far taken no action on the proposal, & the feeling appears to be against accepting it. J. M. Taylor, who is managing the line for the bondholders, has made arrangements with the Shedden Co. to handle freight over the line on similar terms to the old contract. A contract has been secured for carrying the mail between the post-office & the G.T.R. station. A quantity of machinery has arrived & another car has been put on the line. The

equipment, etc., is being generally overhauled & improved.

Guelph St.—This Co. has recently installed a 110 kilowatts 6 pole railway generator in its power house.

Hamilton.—J. Patterson, of the Cataract Power Co., is, it is said, the moving spirit in a plan to consolidate all the radial roads in the neighborhood of Hamilton, & to acquire the street railway franchise there. For some time a local stock broker has been getting options on stock of the St. Ry. Co. Some of the principal stockholders in the Cataract Co. are in control of the Hamilton Radial Ry. The plan is to get control of these companies, to build a line to Guelph, a fast electric freight line to Niagara Falls, to make Hamilton a fruit centre; also, to establish a big cold storage warehouse. At first it was said the enterprise was projected by local capitalists, but the impression is gaining ground that the syndicate which has secured the Buffalo & Niagara Falls electric lines is behind the Cataract Power Co. in the matter, & that the idea is to connect the system of electric railways in & around Hamilton with the Niagara Falls system, also to connect the Hamilton Radial with the electric line at Mimico so as to reach Toronto.

Hamilton & Caledonia.—A bill is before the Ontario Legislature to grant power to construct an electric line from Hamilton to Caledonia, with an extension to Cayuga & Selkirk. A similar scheme has been in contemplation for some time—not exactly by this route. One scheme was by a road from Brantford to Hagersville & Selkirk, with loop to Cayuga. The purpose is to furnish an outlet for the agricultural products of Haldimand to market, also to introduce more root & small fruit growing on the farms of Haldimand which are particularly so adapted. Besides this, near Selkirk is one of the most beautiful natural summer resorts, Hoover's Point, to be found along the lake. The Private Bills Committee of the House passed the clause giving power to run on Sundays, but there will be a fight on this in the House on the third reading.

Hamilton, Chedoke & Ancaster.—The Private Bills Committee of the Ontario Legislature has passed this Co.'s bill to increase the capital stock from \$100,000 to \$300,000, to extend the line to Brantford, & to change the name to the Hamilton, Ancaster & Brantford Electric Ry. Co. A proposal to use steam as well as electricity, or compressed air, was struck out. The Co. also asked the right to run on Sunday, & agreed to a compromise on the basis that if the Sunday clause in the Hamilton & Caledonia Ry. Co. bill went through the House it should hold good in this bill as well.

Hamilton, Grimsby & Beamsville.—Provincial Engineer McCallum, who inspected this line recently under instructions from Judge Street, in the suit of the township of Saltfleet vs. the Co., has made his report, which, strange to say, appears to please both sides. The township solicitor says it goes against the Co. on nearly every point. The Co.'s solicitor says it shows the road is in good workable condition, & that the defects pointed out by Mr. McCallum are such as could be found on every railway. Considerable complaint was made about the condition of the farm crossings, respecting which Mr. McCallum reports that if the present grades of the railway were approved by the township engineer, the Co., with two or three exceptions, has reasonably complied with the by-law, though many of the crossings could be much improved. Planking has not been provided at the crossings as called for, & the surface has not been kept an inch above rail level. Telegraph & telephone wires had not been properly protected from connecting with the trolley wires. The roadbed in Saltfleet

township was not in good repair between the rails & 15 ins. outside, more ballast was required & many of the ties were worn out.

Formerly the Co. issued 1,000 miles books for families, & 500 miles books for one person, at 1c. a mile. Last fall, when the trouble between Saltfleet township & the Co. commenced, the Co. discontinued selling these books to Saltfleet residents. Now the sale of the books has been withdrawn altogether & new books have been issued, each good for 400 miles & for families for \$5 each, or 1½c. a mile. These are sold to anyone, irrespective of residence.

The Co. is removing its repair shop from Grimsby to Hamilton.

Hamilton St.—There appears to be a good deal of friction between this Co. & some of its employes. A city by-law provides that the motormen & conductors shall work only 60 hours a week, & shall be paid 15c. an hour. It is said the men have to work longer hours & only get 13½c. an hour.

Ingersoll to Woodstock.—S. R. H. Ickes, of Harrisburg, Pa., has been in these towns with a view of connecting them by an electric railway, the power house to be erected midway at Beachville.

The London St. Ry. Co. has a bill before the Ontario Legislature embodying agreements between the Co., the city of London & the townships of London & Westminster. A clause in the agreement with the township of Westminster, fixing the taxes of the Co. at \$75 for 28 years, was withdrawn when before the Private Bills Committee, because of the opposition of the city, on the ground that about a third of the part of the railway in question was about to become part of the city.

The Co. is adding to the power house machinery.

A plan to provide seats for the motormen is said to be under the consideration of the management.

Metropolitan.—This line starts from immediately north of the C.P.R. track at Yonge st., in North Toronto, & runs to Bond Lake, 18 miles north. The track of the Toronto Ry. goes to within a few feet of the Metropolitan's starting point on the south side of the C.P.R. track, but there is no connection between the two electric lines. Lately the C. P.R. started to put in a switch at North Toronto, with the apparent intention of connecting with the Metropolitan, but the connection has not yet been made. President C. D. Warren, of the Metropolitan, says the Co.'s plans are to extend the straight northern branch out Yonge st. as far as Newmarket, passing through Aurora, & to cut across country north-westerly to Schomberg. After the system has been pushed out to these points the Newmarket line will be carried to Roach's Point, on Lake Simcoe, & the spur line to Schomberg will extend farther north-westerly to Tottenham. The new power-house is erected at Bond Lake, to which point the Co. succeeded in carrying the line last fall, & but for the early cold weather the tracks would have been laid much farther. At Bond Lake it is expected that the new & modern plant of 1,000 horse-power will be in position during April. Surveys have been made to Newmarket on the north, which point for the time being will be one of the termini. The north-west extension survey has been made to Schomberg, a distance of 15 miles from Bond Lake. The reason that the line is cut across country at an angle of about 45 degrees to Yonge street is that it is a territory supplying greater facilities for the construction of the road, & it is shorter, being but one side of a triangle, which otherwise would have to be traversed on two sides, i.e., the other route taken would have to be from Schomberg to Newmarket east, & then south to Bond Lake. The next surveys to be made will be north from Newmarket to Roach's Point, 18 miles,

& north-west from Schomberg to Tottenham, some 9 miles.

The Company has bought all the Bond Lake property, comprising 200 acres, which it intends making into picnic & camp grounds. The lake is from 50 to 90 ft. deep, & is 650 ft. above the level of Toronto.

As soon as frost is out of the ground sufficiently 200 men will be started on construction, while in the meantime preliminary work is being done. In order to obviate possible objection of any municipality to the construction of the line through its territory, the Company secured an act, whereby the whole of Yonge st. north of the C.P.R. tracks was placed in the control of the County of York, so that there is no possible difficulty with regard to the extension of the line to Roach's Point, the northern terminus of Yonge st. & Lake Simcoe. It is expected that with ordinarily good weather the line will reach Aurora by May 15, & that Newmarket will be connected with before May 24. The north-west spur will, it is thought, be completed before Sep. 1. The same general kind of cars which are operated by the Co. now will be used all over the line except that they will be larger. The President says that with 1 motor the Co. could put on 8 or 10 trailers if there were as good streets to travel on as those in Toronto, & that there were 2 cars coming which would be capable of hauling 25 loaded freight cars over any ordinary grade.

The Co. looks for large excursion parties to Bond Lake, which point can be reached by the new system in an hour, starting at the C.P.R. tracks. The Newmarket trip can be made in 1½ hours, a person can get to Aurora in 1¼ hours, & the time occupied in getting to Schomberg will be but 1½ hours. At present it necessitates half-a-day's travel to reach Toronto from Schomberg, for people have to drive either to Aurora or Kleinburg, which alone takes 3 hours, before a train is reached. The line, it is estimated, can be operated with 20 or 30 men. When this system is completed the places along it & benefiting therefrom will be: Deer Park, Davisville, Eglinton, York Mills, Lansing, Willowdale, Newtonbrook, Thornhill, Langstaff, Richmond Hill, Elgin Corners, Jefferson, Bond Lake, Oak Ridges, Aurora & Newmarket. On Schomberg branch: Eversley, Kettleby, Pottageville, Lloydtown & Schomberg. President Warren says the general trade of Richmond Hill has increased 35% since the electric line has been built through there, & he expects that the other towns when reached will take just as great a stride forward. It cost \$150,000 to build the road to Richmond Hill.

The Co. has let a contract to the Westinghouse Co. for the power transmission plant. It is proposed to have the freight traffic provided for by cars equipped with motors, & also by electric locomotives. The distance is too great for the operation of the railway from a single power-house, & consequently a second power-house will be provided, which will receive its power in the form of alternating current from the first power-house. The generators in the central power-house or generating station at North Toronto, will be two 275 kilowatts machines, both of which will be adapted for supplying either alternating or direct currents. The direct current will pass

directly to the trolley lines for supplying the cars near the generating station. The alternating current will be raised in pressure by four 125 kilowatts, step up transformers to 15,000 volts. The current required for transmitting the power at this voltage is so small that comparatively thin wires can be used for transmitting the power to the sub-station near Aurora, some 15 miles away. Here the pressure will be reduced, & the alternating current passed through rotary converters, which will deliver a direct current to the trolley line. The cars & locomotives will be equipped with the most modern type of apparatus, & the whole will constitute one of the model plants of Canada.

Ottawa Electric Ry. Co.—The application to the Ontario Legislature to allow this Co. to operate cars on Sundays, the people having voted in favor thereof, caused a hot fight before the Private Bills Committee of the Ontario Legislature Mar. 8. The Mayor & other Ottawa officials appeared in support of the measure & a deputation from the Lord's Day Alliance opposed it. The bill passed by a vote of 34 to 13.

Work is progressing favorably on the extension the Co. is making to its power house at the Chaudiere. A force of 20 men are at work blasting & carting away the rock. The drill & hoists in operation are worked by steam. About 25,000 cubic yards of rock will be removed, deepening the cut 35 ft. Six 50-h.p. water wheels will be put in place, & a 1,500 h.p. dynamo operated direct from them. This is to furnish a duplicate source of power for the running of the system. The building containing the machinery will be beneath the street level & constructed entirely of concrete & iron. The work, which will entail an outlay of \$60,000, is expected to be completed by June.

Owen Sound & Georgian Bay St. Ry. Co.—Notice is given of the intention of C. Eaton & others, of Owen Sound, to apply for incorporation under this title under the Ontario Companies Act, with power to construct & operate a street railway line in the municipalities of Owen Sound, Sarawak, Derby & Sydenham. The capital is to be \$95,000, & C. & P. Eaton, W. Tayler & J. & J. H. McLaughlan are to be the first directors. The plans contemplate a line extending from the foot of Poulett st. hill along that thoroughfare to Division st., thence across the river to Stephen st. & along that thoroughfare & Bury rd. to the Pottawamie river bridge at Terrace st., where the road will cross to Brookholm & extend along the Bay Shore road to McLaughlan Park. Another line will run from Division st. hill down through the town & along Water or River st. to the C.P.R. station, continuing up Russell & and along Bay st. to the Cement works, where the line will end for the present, though the Squaw Point Park may ultimately be served by this line. It has not been decided whether the electric power will be generated by steam or water power.

Port Arthur-Fort William.—The Ontario Legislature has refused the application of the town of Port Arthur to be allowed to raise the fare on its electric railway to Fort William from 5 to 10c. The people of Fort William petitioned almost unanimously against the change, contending that the line was allowed to enter the limits of Fort William, in spite of

the determined opposition of that town, that the object of the construction of the line was to capture the trade of Fort William, a new & growing town, & enable workmen employed there to live in Port Arthur, & that the railway has retarded the growth of Fort William. It is contended that the line is now helping to build up Fort William at the expense of Port Arthur, the tables being turned, therefore the people of Fort William object to an advance in fares. They say the railway was forced on them under the terms of an Order in Council & that that order should not now be varied for the benefit of Port Arthur. (Mar., pg. 92.)

St. Thomas.—The contract for conveying the mails between the railway stations & the post office has been given the electric railway company. Collections from the street letter boxes will also be made from the cars.

Toronto Elevated Ry. Co.—E. A. Macdonald's application for the incorporation of a company under this name has been summarily rejected by the Ontario Legislature.

Toronto Railway.—The gross earnings are:

	1899.	1898.	Increase.
Jan.	\$95,690.12	\$86,562.36	\$9,127.76
Feb.	91,860.30	82,402.19	9,458.11
			\$18,585.87

The bill introduced in the Ontario Legislature by T. Crawford, M.L.A. for West Toronto, to regulate the over-crowding of street railway cars, & which was especially directed against the Toronto Ry. Co., its last clause making it apply only to cities whose population at the last census was over 100,000, has been thrown out on the ground that it should have been introduced as a private bill instead of as a public one. The Speaker said that had it not been for the last clause, he would have held that it was a public measure. He held that any citizen of Toronto had the right to introduce a private bill for the same purpose.

E. A. Macdonald's bill to amend the contract between the Toronto Ry. Co. & the City has been unanimously thrown out by the Private Bills Committee of the Ontario Legislature. The bill provided for restrictions upon the building & extension of lines; that transfers should be given from day to night cars; that the design of cars should be fixed by the City Engineer, or other official designated by the Council, & that the Co. be liable to a penalty of \$10,000 for disregarding an approved plan; that the Council shall regulate the number of passengers to be carried in cars; that the Co. or its servants be liable to a fine of \$50 for violating the by-law; that any ratepayer might bring such an action; that the City Engineer shall fix the time-table; that for contravention thereof a penalty of \$10,000 might be exacted from the Co. The City Solicitors were present, but having had no instructions, took no part in the discussion. W. Mackenzie & his solicitor were also present. The committee, without entering into details, voted down the legislation.

The Co. has ordered a 3rd large generator of the direct connected type, similar to the 2 already in operation. It will have a capacity of 850 kilowatts, operating at 85 revolutions a minute.

Argument in the appeal of the Co. against the decision of the Police Magistrate, took place Mar. 8 at the General Sessions, To-

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ronto. The formal conviction made by the Magistrate imposed a fine of \$5 upon the Co. for running trolley car 528 without a proper vestibule for the protection of the conductor. J. Bicknell, who appeared for the Co., read the statute empowering any city to pass a by-law compelling electric railway companies to provide their cars with vestibules sufficient to protect motormen & persons in charge of the car from exposure while engaged in operating the cars. He contended that the words "persons in charge of the car" meant persons in charge of the car in the same capacity as motormen; that at the time the statute was passed the word "motormen" was new, & that the statute was intended to cover all such persons as might operate the cars, whether they were called motormen, engineers, drivers, controllers, or by any other name. He further contended that the conductor was not intended to be covered by the statute; that he was not in charge of or operating the car within its meaning, & that the Co. therefore had not committed any breach of the by-law. He also contended that the liability at the most was to provide for proper & sufficient vestibules for protecting the operators of the car, & unless it could be shown that the present vestibules were improper or insufficient for such protection, no offence was committed. He also contended that the Toronto Ry., by crossing the G. T. R., the C. P. R. & the Toronto Belt Line Ry., became a railway for the general advantage of Canada, & that therefore, the Co. was liable only to put vestibules on its cars when ordered by the Railway Committee of the Privy Council, J. S. Fullerton, Q. C., & W. C. Chisholm, who appeared for the City of Toronto, contended that the statute & by-law were sufficiently wide enough to include conductors; that they were persons who were entitled to such protection as motormen, & that the Legislature when using the words "motorman & persons in charge of a car" must have included persons of a different class from motormen, & that the other class intended to be covered must be conductors. The argument was lengthy & exhaustive, & judgment was reserved.

The Solicitors for the City of Toronto have served upon the Solicitor for the Co. a statement of claim, comprising 27 pages of typewritten matter, in the overcrowding case. The gist of the statement of claim is that the Corporation seeks an injunction restraining the Co. from overcrowding its cars. The Corporation also desires an order restraining the Co. from using the old trailers purchased from the City. It also asks that the Co. shall be compelled to furnish transfers from day cars to night cars. The defence of the Co. has not yet been put in.

Manager Keating says it is the intention of the Co. to extend the west branch, which goes to Long Branch now, but before any lines can be laid, of course, the consent of the county authorities has to be given. Regarding this proposal the York County Council is willing to allow all necessary extensions, but the Peel County Council has yet to be heard from. If there is no objection, Mr. Keating would favor extending the line to Oakville, but at least he thinks the rifle ranges should be connected with the city for the convenience of the many soldiers going to & coming from the butts. Mr. Keating has asked Peel County Council for the privilege required, the obstacle being the Etobicoke river, over which there is a regular traffic bridge already built. The Co. will be willing to strengthen the present bridge to allow the line to pass over safely, or if this is not satisfactory it will construct a bridge of its own. The Peel authorities have acknowledged the receipt of the Co.'s letters, but no definite answer regarding the consent has been received. As soon as it is known that there is no objection to the proposed scheme the survey will be

made, & the work of constructing this valuable line will be gone on with. However, it is not the Co.'s intention to proceed with the initial steps till it is assured that the whole scheme can be carried out.

An eastern radial to run as far as Oshawa is also one of the probable new lines. Already the survey as far as Highland Creek has been made; this the Scarborough Co. had done last autumn, while the municipal authorities' sanction has been granted as far as that point. There is a fine level country from Highland Creek to Oshawa, & it is thought there will be no objection offered to the projection of the line thus far. The largest places on the line would be Oshawa & Pickering, both of which would certainly profit by the electric freight & passenger communication with Toronto. Mr. Keating has had estimates of the probable traffic prepared, which show that these lines would be of immense value to the towns & villages which they would touch.

Toronto Suburban St. Ry.—A contemporary recently stated that a new agreement had been entered into between the town council of Toronto Junction & this Co., extending the franchise for 23 years from Sep. 1st last, the Co. agreeing to extend its lines to Cooksville or Woodbridge in 2 years, & to reach both places before the expiration of the present franchise. We were officially informed on Mar. 8 that the foregoing was incorrect, and that the negotiations between the Co. & the town were then still pending.

Quebec Electric Railways.

Hull Electric Co.—Wright county council has passed a resolution, asking the Dominion Government to grant a permit to this Co. to build a bridge across the Ottawa river, from Hull to Bank Street, Ottawa.

Montreal Island Belt Line.—This Co. will apply to the Dominion Parliament for an amendment to its act of incorporation to alter its bonding sections, increase its bonding powers, extend its powers concerning branch lines, change its name, & to enable it to purchase the franchise & powers of the Chateaugay & Northern Ry. Co.

Montreal St. Ry.—The gross earnings are:

	1898-9.	1897-8.	Increase.
Oct.	\$133,419.69	\$116,093.09	\$17,326.60
Nov.	125,126 10	110,698.98	14,426.12
Dec.	127,678.00	113,029.33	14,648.67
Jan.	125,276.04	110,155.96	15,120.08
Feb.	113,838.02	102,425.99	11,412.03
			\$72,933.59

The Co.'s bill before the Quebec Legislature met with a good deal of opposition in the Legislative Assembly, but went through early in Mar. without any material amendments. Among its principal provisions are the granting of power to increase the capital from \$5,000,000 to \$1,000,000 & the right to cross over the St. Lawrence River to St. Lambert, & to extend its lines towards Longueuil & Verdun.

The City Council wants the Co. to pay percentage on its total gross earnings, including the earnings derived from the car service in suburban municipalities outside the city. This the Co. refuses to do, & it is said the matter will go into court. From 1892-3 to 1897-8 inclusive, the Co. paid the City \$256,007.52 percentage, the largest payment being \$58,951.37 in 1897-98. The City claims some \$36,000 more. The clause in the by-law on which the City bases its claim reads:—"The Co. shall pay to the City annually from Sep. 1, 1892, upon the total amount of its gross earnings arising from the whole operation of its railway, either with cars propelled by electricity, or with cars drawn by horses, 4% of its gross earnings up to \$1,000,000; 6% of its gross earnings from \$1,000,000 to \$1,500,000; 8% of its gross earnings from \$1,500,000 to \$2,000,000; 10% of its gross earnings from

\$2,000,000 to \$2,500,000; 12% of its gross earnings from \$2,500,000 to \$3,000,000; 15% of its gross earnings above \$3,000,000."

Since 1892 the City has done all the work of cleaning the tracked streets of snow, the Co. paying \$1,650 per mile of track towards the cost. In 1898-9 the Co.'s payment for this was \$59,730.

Plans for a car shed for the Co. on Upper St. Denis street have been completed. It will be located a little north of the C. P. R. tracks, & will be built of corrugated iron with a steel frame, & will be 250 ft. long & 100 ft. wide. It will provide accommodation for about 72 cars, & is chiefly designed for the storage of winter cars during the summer, & summer cars during the winter.

The Co. is testing a street car recorder, similar in principle to the ticker used in brokers' offices to record the fluctuations of the stock market. By attaching the instrument to any line a record is shown at the Superintendent's office, & it can then be seen how many cars pass a given point in a given time.

Daily press rumors predict that the Co. will absorb the gas & electric companies & run the electric railway, lighting & power business of all as one concern. The Co.'s management denies any knowledge of such a scheme.

The Quebec, Montmorency & Charlevoix Ry. Co. proposes changing the existing steam railway system from Quebec to Cap Tourmente, 30 miles, into an electric system. In addition it proposes to construct a branch line, parallel to the existing line but on top of the cliff & alongside of the public road, between Quebec & Montmorency Falls, 7 miles. With this object in view the Co. has let a contract for the necessary cars, which will be somewhat similar to the ordinary steam railway cars, 55 ft. long & equipped with four 50 h.p. motors & air brakes manufactured by the Westinghouse Co. & speeded for 50 miles an hour. The additional generating plant required at the Montmorency Falls power house will consist of one 600 K.W.A.C.D.C. generator with converter, switchboard, etc., complete, & at the sub-station which it is proposed to build at St. Anne de Beaupre, one 200 K.W. rotary transformer with converter, switch board, etc., complete. This will all be supplied by the Westinghouse Co. The Q., M. & C. Co. already operates the street railway in Quebec City by electricity.

Since the foregoing was written we have been informed that the changes between Quebec & Cap Tourmente will undoubtedly be made this year, & if there are no undue obstructions in purchasing the right of way for the branch line between Quebec and Montmorency Falls, it also will be built this year. All the work will be done by the Co. itself, & the contracts for rails, ties, timber & other material have been placed. The cars will be somewhat similar to those used by the Detroit & Ypsilanti Ry., & each will have four 50-h.p. Westinghouse motors, with controllers, air brakes, etc. The generators, rotary transformers, etc., for generating the current at the power house at Montmorency Falls, & at St. Anne de Beaupre, will also be of Westinghouse manufacture. The water wheel, which will be required to operate the generators under 195 ft. head, has not yet been ordered.

Sherbrooke St.—Nothing further has transpired respecting the negotiations for the sale of this road to F. Thompson & Co., & it would appear that the deal has not been closed. No change has been made in the directorate or management, & it is said no extensions will be made this year. (Mar., pg. 92.)

Consolidation of Electric Lines.

The New York Evening Post of Mar. 21 says: "The purchase & control of the Buffalo & Niagara Falls electric railways, in the interest of the International Traction Co. was

consummated to-day, the syndicate paying cash for the purchases, & the sellers accepting the offered terms. The International Co. was recently formed by a number of capitalists interested in the development of electric energy from Niagara Falls, which is already in considerable use in Buffalo & adjacent territory. The International Co. will be used to combine these companies, & will purchase power from the Niagara Falls Power Co. The terms on which minority stockholders may come in will be announced later in the week."

A Buffalo despatch of Mar. 22 says: "It is stated that, as a result of the Pan-American project, extensive improvements will be made this summer on the shore property on the Canadian side of the river, including the construction of an electric railway from Fort Erie to Point Albino, 13 miles, & from Fort Erie to Chippewa, from which point an electric road runs along the Canadian side of the river to Queenston, affording one of the most glorious views that can be secured of Niagara Falls, the whirlpool & other portions of the beautiful, historic river. The road will have a branch line to Fort Erie race track, & the company will run a system of trolley cars from Fort Erie to the grove at Erie beach, extending east to the upper part of the beach, which is extensively occupied during the summer months by well-known Buffalonians, who have their country homes on the south shore. The trolleys may be extended as far as Crescent Beach. New York capitalists are back of the enterprise, & will expend, it is said, about \$265,000 in equipping the trolley lines. It is also said that the road to Fort Erie Beach will be in operation by July 1. The Chippewa branch will not be completed until some time in the autumn."

We gave full particulars of the companies going into the amalgamation in our Mar. issue, pg. 89. Speaking of the matter the Street Railway Review says: "All the railways of the city of Buffalo, the lines connecting that city with Niagara Falls & Lockport, the electric road of Niagara Falls & the Niagara Falls Park & River Ry. on the Canadian side, all fall into the possession of a syndicate capitalized at \$25,000,000. While there is yet much believed to be back of the plans of the syndicate, it is known that it is proposed to retire all the stock bought with an issue of new bonds, while there will also be a new issue of preferred & common stock. The companies consolidated are the Buffalo Ry. Co., the Buffalo Traction Co., the Buffalo, Bellevue & Lancaster Ry. Co., the Buffalo & Niagara Falls Electric Ry. Co., the Buffalo & Lockport Ry. Co., the Niagara Falls & Suspension Bridge Ry. Co., & the Niagara Falls Park & River Ry. Co. But in addition to these electric roads the new syndicate becomes the possessor of two of the great Niagara bridges, one of them the fine new upper steel arch, owned by the Niagara Falls & Clifton Suspension Bridge Co., & the other the sus-

pension bridge now in course of erection across the Niagara gorge at Lewiston. These bridges will afford crossings for a belt line about the gorge, while the possession of the Buffalo & Niagara Falls road gives trackage facilities from Buffalo to the falls on the New York side. As the Niagara Falls Park & River Ry. controls a franchise for a line from Fort Erie to Chippewa on the Canadian side, it will be seen that the new company has all the rights for a belt line skirting the Niagara River on both shores from Lake Erie to Lake Ontario. Much of the stock of the several railway companies was bought below par, but it is understood the stockholders of the Buffalo Ry. Co. will receive par. Also that about 75c. was paid for stock of the Buffalo & Niagara Falls road, about 50c. for the Buffalo & Lockport road, & about 40c. for the Niagara Falls Park & River Railway. The amounts involved in the purchase of the various interests are about as follows: Buffalo Ry. \$15,215,000, Buffalo Traction \$3,858,000, Buffalo & Niagara Falls Ry. \$2,250,000, Buffalo & Lockport Ry. \$1,500,000, N.F. Park & River Ry. \$1,000,000, Lewiston & Queenston Heights Bridge \$285,000, a total of \$24,108,000. This is exclusive of the property of Niagara & Clifton Bridge Co., the bonds of which Co. are out to the extent of about \$400,000, & are understood to be equally divided between Canadian and U.S. capitalists."

The International Traction Co. has filed articles with the Secretary of State at Trenton, N.J., amending its original articles of incorporation, increasing the capital stock from \$85,000 to \$15,000,000. B. W. Franklin, President, & Chas. McVeagh, Secretary, signed the papers. The office of the Co. is 60 Grand street, Jersey City, N.J. L. J. Hayden & W. H. Blain are also connected with the International Traction Co. J. P. Morgan & Co., New York, are reported in charge of financing the consolidation of the various street railways. A new mortgage will be made for \$30,000,000, of which \$11,000,000 at 4% will be issued, & the remainder devoted to improvements & retiring prior liens. Reports are that J. P. Morgan & Co. recently issued a call to subscribers for the payment of 80% of their subscriptions.—Railroad Gazette.

On Mar. 31 we were officially informed in regard to the organization of the International Traction Co. that while more than 2/3 of the stock of each of the constituent companies had been secured & delivered, no steps had been taken towards consolidation further than the reorganization of the boards of directors & officers of each of the constituent companies on the U.S. side. Similar steps will

be taken soon in regard to the Niagara Falls Park & River Ry. & the Canadian companies owning the two bridges involved.

Announcement is made that the Buffalo Traction Co., under date of Dec. 1, 1898, gave a mortgage for \$2,345,000 to the Metropolitan Trust Co., New York as trustee, to secure 5% gold bonds. The deed was signed by President E. G. S. Miller. Secretary Bissell is reported as stating that the mortgage is in the interest of the Traction Co., & has nothing to do with the consolidation now taking place in Buffalo.—Railroad Gazette.

Liability to a Motorman.

At the recent spring assizes in Toronto, W. Downs sued the Toronto Ry. Co. for \$5,000 for injuries received while performing his duties as a motorman on one of the Co.'s cars last year on Carlton Street, when it was being repaired. He was driving a motor car, & seeing a piece of asphalt on the tracks slowed up. It was less than the size of obstacles which it was common to run cars over, but he was aware that the rear motor box hung lower than it should. He thought the car would run over the obstacle, as it was not more than 2 ins. in height, but kept the brake tight & his hand to the regulator in order to stop at a moment's notice. The front motor box crossed the asphalt, but the rear one caught it & jolted the car so that he was thrown forward, & had to liberate the brake, which came round & hit him with such force as to render him unconscious. He was obliged to stay in bed for 6 weeks, & had not been able to do any work since. Medical evidence was produced to show that he was permanently disabled, & was at the time of the trial suffering from lung trouble as a result. Downs claimed that the Co. was to blame for having permitted a car to be run with a motor box so near the track, & that if the car had not been defective the accident would not have happened. He swore he had notified the repairer at the stables of the defect 2 days before the accident happened. When Downs became strong enough to get out after the accident, he signed a deed of release to the Co., & received \$65. Because of this the judge took the case from the jury & non-suited the plaintiff, giving him power to go to the Divisional Court in order to determine whether the deed of release does not fall under the Workingman's Compensation Act, sec. 10. The Act stipulates that an employe cannot be compelled to sign a deed of release; if he is, the deed cannot be held valid. With the deed

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existing the judge explained that it was useless to go on taking evidence, unless it was shown that it was invalid. J. Bicknell appeared for the Co.

Mixed-up Information.

"NIAGARA FALLS, ONT.—Many improvements & repairs, according to report, are to be made on the Niagara Falls Park & River Ry. as soon as the frost is out of the ground. W. Phillips, Manager, has submitted a report of inspection of the road to the Government, & the improvements are ordered on his suggestion."

The foregoing, from the Railroad Gazette, New York, is altogether incorrect. Mr. Phillips, being Manager of the N.F.P. & R. Ry., would hardly be likely to make an inspection of it for the Government, nor has he made any report on it to the Government. As stated in our issue of Dec., '98, pg. 273, Mr. Phillips was appointed by the Ontario Department of Public Works to inspect the Port Arthur-Fort William electric railway, & suggested certain things as necessary to be done, which the Government has ordered.

The Gorge Road.—Early in Feb. the control of the Niagara Falls & Lewiston R.R. was sold to New York parties, & J. R. Megrue, of New York, was elected President, succeeding J. M. Brinker, of Buffalo, who built the road. After a careful examination of the affairs of the Co., it became evident that the mode of operation must be thoroughly reorganized, & that a considerable expenditure will be needed for repairs & improvements, for which bonds must be issued. The road has done a fair amount of business, carrying over 240,000 passengers during 1898. The expenses of operation & maintenance are large, & the management has not been economical. On the petition of the directors Mr. Megrue has been appointed Receiver for the property, & has opened an office in Erie County Bank Building, Buffalo. Messrs. Mott, Sprague, Brownell & Marcey are counsel for receiver & G. A. Ricker is engineer. The operation of the road was stopped on Feb. 14 owing to the shutting down of the Niagara Falls Hydraulic & Manufacturing Co., which furnish power, & will be resumed in the spring after the road has been thoroughly overhauled & put in first-class condition.—*Electrical World.*

Receiver Megrue has appointed C. W. Taylor, Superintendent; G. Garland, Auditor, & W. L. Marcey, Attorney. No announcement has yet been made as to whether the Gorge Line is to pass into the hands of the International Traction Co., which has recently acquired other lines in the vicinity of Niagara Falls & Buffalo, but that would appear to be its manifest destiny. Large quantities of rock & other debris have fallen on the track this winter, & considerable money will have to be spent on it before traffic is resumed. The Receiver informs us that the work to be done includes a careful cleaning of the banks, the alignment of the roadbed & the erection of some bridges. He hopes to resume operations about May 1.

The Electrical Trades Directory & Handbook for 1899, published by The Electrician Printing & Publishing Co., London, Eng., price 10s., shows a great advance in the extension of the directorial division of the book, & in the large additions made to the handbook division. The latter additions include very complete & elaborate sheet tables giving technical data & statistics relating to electricity supply for lighting power & traction in all parts of Great Britain, & a sketch map, diagrams, &c., complete this statistical information up to Feb., 1899. The capital expenditure up to Dec. 31, 1898, is given of the principal electricity supply undertakings.

International telegraphs and data relating to the telephone are also included, & it is claimed, & we think with justice, that the book is as perfect & complete as such a work can possibly be made by great care & attention to the details of compilation & arrangement. The great development in electrical industries is shown by the increased bulk of the book, which comprises some 1,500 pages, care having been taken to omit everything that is not of a purely electrical character. The biographical division contains sketches of the careers of over 300 prominent electricians, & more than 60 of these sketches are accompanied by a recent portrait. All divisions of the book are of an international character, rendering the publication of great value to an important & rapidly-extending industry. The chief new features of this edition are an increased bulk of 80 pages, the sheet tables largely extended, a very full directory of directors of electrical companies & electric traction data & statistics.

Birmingham, Eng., Tramway.—At a meeting of the Birmingham City Council Mar. 7 it was decided by a vote of 60 to 1 to take over the street tramway & operate it as a department of the municipal service at the expiry of the lease to the Co., of which Jas. Ross, of Montreal, is President. The lease has but a short time to run, & the plant will at its close be taken over at a valuation G. C. Cunningham, formerly City Engineer of Toronto, is managing the railway for the Co. Since it passed into the hands of the Co. the trolley has been introduced, & it is believed that a fair profit will come to the Co. from that change.

TELEGRAPHS & CABLES.

The Laying of the Atlantic Cable.

By A. E. Morrison of the Anglo-American Telegraph Co., Charlottetown, P.E.I.

As soon as the fact was established that a telegraph could be constructed by the aid of electricity, the attention of discoverers in Europe & America was turned to the invention of some insulating substance by which wires could be enveloped & buried in the earth. It was not deemed practicable to place them in the open air upon poles, from the fear that they would be constantly broken by accident, or from malicious motives, & it was supposed necessary to insulate them from the atmosphere. The first insulating substance used being hemp or cotton saturated with asphaltum tar, a plough was invented for the purpose of opening a trench in the earth for burying the wires, but on account of the expense & the difficulty of obtaining anything like good insulation, the idea of laying them underground was abandoned. Still the fact was apparent to all, that perfect insulation or something approaching it was imperatively demanded for crossing wide rivers. For this purpose copper wire covered with cotton yarn dipped in asphaltum tar, and the whole enclosed in a lead tube was used.

In 1847 a person in New York designed a submarine cable, the covering of which was to be glass, in the form of a ball & socket joint. The object was to get something which would unite both strength & flexibility, & at the same time furnish the best insulation. I do not know whether he ever had any of this cable manufactured, but he endeavored to get some of the telegraph people to engage in the manufacture of it. It is probable, however, that nothing was done about it, for about this time gutta percha was discovered & was applied to submarine telegraphing at once, it proving to be one of the best insulators known. In 1849 an experimental gutta-percha covered wire, 2 miles in length, was submerged in the sea off Folkestone Harbor, one end being connected with a wire leading to London, &

the other with a telegraph instrument on board a steamship, communication was maintained during the day, until the wire was collected in. The success of this experiment led to an attempt to lay a submarine cable across the English Channel between Dover & Calais in 1850. It consisted of a copper wire covered with gutta percha, unprotected by any outside coating. But after a few hours the communication thus established was abruptly stopped. A fisherman took up part of the cable on his trawl, & cut off a piece which he bore in triumph to Boulogne, where he exhibited it as a specimen of rare seaweed with its centre filled with gold! This accident caused the attention of scientific men to be directed to the discovery of some mode of preserving submarine cables from similar casualties, & a suggestion was made that the wire insulated with gutta percha should form a core or centre to a wire rope, so as to give protection to it during the process of laying down as well as to guard it from vessels' anchors & the rocks. In 1851 another cable was laid between Dover & Calais, & this idea adopted. It contained 4 conducting wires, and was protected by an armor of 10 iron wires. In 1852 the first ocean cable in America was laid across the Straits of Northumberland, between Prince Edward Island & New Brunswick. In 1853 cables were laid between Dover & Ostend, a distance of 80 miles, between Oxford Ness & Holland, 120 miles, & between Scotland & the north of Ireland.

In 1852 a project was started in Newfoundland to run a line of steamers between Galway & St. John's in connection with a telegraph to Cape Ray, where a submarine cable was to be laid to Cape Breton, & thence by means of another cable to Prince Edward Island & New Brunswick. A company was formed by F. N. Gisborne, who started to construct a road from St. John's to Cape Ray, over a barren tract of 400 miles, & succeeded in laying the Prince Edward Island cable on Nov. 21, 1852, but he was not successful in a similar attempt to connect Newfoundland with Cape Breton. Meanwhile, the company became involved in pecuniary difficulties, & Mr. Gisborne, in 1854, proceeded to New York, where he hoped to find money to enable him to carry out the scheme. He met C. W. Field & laid his plan before him. Mr. Field listened with attention, & thought over the project. To lay these cables so as to connect Newfoundland with New Brunswick & to run a line of steamers from St. John's to Galway would shorten the time of receiving news in New York from Europe 4 or 5 days, but if a cable could be laid in these seas the great Atlantic might be spanned. Mr. Field terminated his reflections that night by an eminently practical measure. Ere he retired to rest, he sat down and wrote two letters, one to Lieut. Maury, author of the Physical Geography of the Sea, as to the practicability of laying the cable, & to Professor Morse in regard to the scientific possibilities. Replies from both gentlemen reassured him, & he proceeded to form a company. He put down the names of 10 of the principal capitalists in New York, & proceeded to unfold to each in succession his project. He called meetings of these gentlemen at his house, & after full discussion & consideration, it was resolved to form the New York, Newfoundland & London Telegraph Co.

Mr. Field entered into an agreement with Mr. Gisborne for the purchase of the Newfoundland Co., & proceeded to Newfoundland to obtain from the Legislature an act of incorporation. After some little delay the Legislature with only one adverse vote granted valuable privileges to the Co., giving a monopoly of telegraph rights in Newfoundland for 50 years. The Co. also obtained from the Prince Edward Island Legislature the exclusive rights of landing cables on the coast.

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1884	2,558	13,914 31	23,081 85	9 01	4.23
1885	3,642	26,576 99	29,802 42	8 18	7.76
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1887	7,811	59,014 67	81,384 41	10 44	5.78
1888	11,800	89,018 16	117,821 96	9 98	6.43
1889	17,349	116,787 82	188,130 36	10 84	5.85
1890	24,604	181,846 79	283,967 20	11 54	5.18
1891	32,303	261,436 21	408,798 20	12 65	6.40
1892	43,024	344,748 82	580,597 85	13 49	6.25
1893	54,484	392,185 93	858,857 89	15 76	5.47
1894	70,055	511,162 30	1,187,225 11	16 94	5.47
1895	85,521	685,000 18	1,560,733 46	18 03	5.07
1896	102,838	820,941 91	2,015,484 38	19 60	5.50
1897	124,685	992,225 60	2,558,832 78	20 52	5.56
1898	144,000	1,176,125 14	3,186,370 36	22 12	5.67

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The first step in the great enterprise was the connection of St. John's, Nfld., with the telegraph lines already in operation in Canada & the U.S., & Mr. Field was despatched to England to order the necessary work to be done. He entered into a contract for a cable to be laid across the Gulf of St. Lawrence from Newfoundland to Cape Breton. The first attempt to lay it in Aug., 1855, was not successful. Another contract was made, which was executed in the following year.

Then came the ocean work, & Mr. Field was authorized to go to Europe and ask the financial aid of Great Britain. He secured the services of J. Brett, Sir Chas. Bright & others, & organized another company. The lobbying necessary in Washington nearly discouraged him, for he encountered far more opposition there than in England, but the measure passed the Senate by one vote, & after a risky passage in the House received the President's signature Mar. 3, 1857. The next question which arose for consideration was how the cable was to be laid. The Great Eastern, then known as the Leviathan, alone could embrace it within her gigantic hold, but then the vast fabric had never been tried, she might prove a failure. It was determined that the responsibility should be divided & the burden entrusted to two vessels of smaller dimensions. The British Government placed at the disposal of the Co. the battle ship Agamemnon, & the U.S. the steam frigate Niagara. It was decided that the Niagara should land the shore end at Valentia, & pay it out till her cargo was exhausted midway; the Agamemnon was to take up the tail & carry it on to Newfoundland. On Aug. 5, 1857, the shore end was secured in the little cove selected for the purpose in Valentia. On the 7th the squadron sailed, & the Niagara commenced paying out the cable very slowly, but on the 11th the cable broke & was lost in 2,000 fathoms of water 280 miles from Valentia. This loss proved fatal to the first attempt to lay the Atlantic Cable.

Nothing daunted by the failure Mr. Field started off at once for England & urged the immediate renewal of the enterprise, but it was resolved to postpone it to the following year. All was ready for the expedition before the time indicated & the directors & the public looked with confidence to the result. Instead of landing a shore end at Valentia it was decided that the ships should proceed together to a point midway between Valentia & Newfoundland, there splice the cable & turn their bows east & west & proceed to their destination. On June 10, 1858, the Agamemnon & Niagara left Plymouth, but scarcely had they set out when a violent storm separated the vessels. The overloaded Agamemnon, strained & cracking in the gale, heeled over & threatened every moment to sink in the trough of the sea; she escaped & finally rode safely to the rendezvous in the midst of the ocean. The Niagara passed through the dreadful ordeal with less danger & difficulty. The ships met on June 25 in the midst of the Atlantic. The next morning they spliced the cable; it however became foul of the scraper on the Niagara & broke. A second splice was immediately made, & the vessels started, but after going a short distance the cable broke. On June 28, the third splice was effected. The Agamemnon had paid out 146 miles of cable, when the upper deck coil became exhausted, speed was slackened in order to shift the cable to the lower deck when suddenly it snapped. The vessels returned to Ireland for new supply of cable, & on July 29th the ships once more met in mid ocean, spliced the cable, & sailed away from each other, the Agamemnon for Valentia & the Niagara for Newfoundland. But they were never separated, the busy cable still bound them together, & at length on Aug. 7, a thrill of wonder shot through the two continents when it was told they were bound to-

gether by electric thought, & the first message that came over the cable gave glory to the Most High & promised peace on earth & good will to men. The first public message that came over the cable was from the Queen to the President of the United States, his reply & others followed, but the cable broke down on September 3.

For seven years the cable slept almost forgotten, they were years full of political convulsions & fatal disorder. The reign of peace on earth & good will to men which had been so fondly promised by the first message over the cable seemed to have faded for ever, for the United States was threatened with destruction. In the tumult of the rebellion the cable & its projectors sank into neglect, & when at length the war was ended few believed that the proposed plan would ever be renewed. The public had lost its interest in the Atlantic cable, & looked with coldness upon a project that had once aroused its highest enthusiasm. Amidst such disappointments Mr. Field & his courageous associates in 1865 had renewed their telegraph company, provided a new cable, & gallantly prepared to brave the dangers of the sea. The cable was more perfect than any former one, & its greatly increased weight & size would have made the question of stowage a very embarrassing one, had it not been for the existence of the Great Eastern, there being no two ordinary ships afloat that would be capable of containing in a form convenient for paying out the great bulk presented by 2,300 miles of cable of such dimensions. On July 15 the Great Eastern left the Nore carrying 7,000 tons of cable. On the 17th she came up with the str. Caroline, which had the shore end on board, & took her in tow. Next day the tow rope broke, & the Caroline ran for Valentia Harbor, & the Great Eastern passed inside the Skellegs, stood in close to Valentia light, & sent a boat ashore. After firing a gun to announce her arrival, she steamed for Berehaven in Bantry Bay, & anchored inside the Island on July 19. Here she lay preparing for her great errand, whilst the Caroline was laying the shore end of the cable in Foilhumorum Bay, in Valentia. On July 22 the bight of the cable was shipped from the Caroline to the Great Eastern. The next morning was exceedingly fine, & the Great Eastern proceeded at the rate of 6 knots an hour. When 84 miles of cable had been paid out, a fault occurred, & the whole staff was aroused. The engines on deck were got ready to work the picking-up apparatus at the bows. The operation of picking up proceeded all day & all night. After 10½ miles of cable had been hauled in, to the joy of all on board the fault was discovered. After a detention of some 12 hours the paying-out machinery was again put in action, & the cable glided out rapidly astern. About half a mile of cable had been paid out, when suddenly all communication between the shore & the ship ceased. The news spread from end to end of the ship, which again lay in restless quiet on the waters. Again the wearisome energy of the picking-up apparatus was to be called into play, but the index light reappeared on its path in the testing room, & the weary watchers were gladdened by the light of the beacon of hope once more. As the sea was calm & the cable ran out so beautifully, the speed of the ship was increased, & it looked as if there was really no limit to the velocity at which the process could be conducted under favorable circumstances. Every eye in the ship was watching the turning of a single wheel, every ear was listening for a single sound. The Great Eastern was now near a fatal spot. Somewhere below her lay the bones of two Atlantic cables, & as Mr. Field was watching on the tank the sound of the wheel suddenly stopped, the cable broke, & was lost in the deepest part of the ocean. The still shining Atlantic had swallowed up the expiring cable

1,062 miles from Valentia, 606 miles from Newfoundland. There around lay the placid Atlantic smiling in the sun, & not a dimple to show where lay so many hopes buried. After brief consideration it was resolved to make an attempt to recover the cable. The grapnels were brought up to the bows & secured to wire rope & thrown over, & whistled through the sea a prey to fortune. All life died out in the ship, & no noise was heard except the dull grating of the wire rope over the wheels at the bows. After 2,500 fathoms, or nearly three miles of rope had been paid out, the grapnel reached the bed of the Atlantic, & set to the task of finding & holding the cable. All through the night's darkness the grapnel groped along the bottom, as the wind drifted the Great Eastern. At 6 a.m. she swayed gradually, & turned her head towards the wind. It began to be seen that there was some agency working to alter the course of the ship. The machinery was set to work to pull up 2,500 fathoms of rope, the operation was of course exceedingly tedious. As the shackle & swivel of the eleventh length of rope, which would have made a mile on board were passing the machinery, the head of the swivel pin was wrung off by the strain, & 1,400 fathoms of line, with grapnel attached, rushed to the bottom of the Atlantic, carrying with it the bight of the cable. The Great Eastern hung about the spot 9 days, & made 3 more unsuccessful attempts to recover the cable. The wind & sea were rising, as if anxious to hurry her from the scene. She struggled against the helm for a moment, as though she yearned to pursue her course to the west, then bowed her head to the angry sea, in admission of defeat, & moved slowly to meet the rising sun. Early on the morning of Aug. 17 the Great Eastern came in sight of land, & soon steamed into Crookhaven to communicate with the telegraph station at that solitary spot. Ere noon the news of the safety of the ship relieved many an anxious thought, silenced many a tongue & pen, & dissipated many a gloomy apprehension. Her return was a subject of national rejoicing, every newspaper in the kingdom contained articles on the topic. The energy, skill & resolution displayed in the attempt to recover the cable was admitted & praised on all sides.

By this time Mr. Field's health & fortune were so impaired that his friends supposed he would abandon the project. But after a short period of recuperation he put forth a paper, in which he asserted that although the expedition had been unsuccessful in carrying the cable across the ocean, it was by no means a failure. He organized the Anglo-American Telegraph Co., with a capital of \$3,000,000, & raised the money in less than 3 months. The new cable was completed & put on board the Great Eastern in June, 1866. The shore end was successfully laid, & made fast to the cable on the steamer, & she left Valentia on July 15. For 14 days the cable was paid out over the enormous drums, & on July 27, 1866, the enormous hull of the Leviathan was discerned by watchers on the Newfoundland coast, & with guns firing & bunting floating, with a trail of wire 2,000 miles behind her, the Great Eastern steamed majestically into the harbor of Heart's Content, & dropped her anchor in front of the telegraph office, all safe, all well. A salute of 21 guns from the Great Eastern, H.M.S. *Terrible*, *Niger* & *Lilly*, with hearty cheers from the ships & people on shore, announced the complete success of the first object of the expedition, that of laying & landing the new cable of 1866.

The squadron having done its work with the cable of 1866, left Newfoundland a few days afterward, & proceeded to search for the lost cable of 1865, & on Sept. 1 it was raised by the Great Eastern, spliced to the remaining portion, & the whole landed in Newfoundland, & thus terminated, so far as cable laying & picking up were concerned, the practical work

of the Atlantic Telegraph Expedition of 1866, & the success of the great enterprise was doubly assured.

The Northern Telegraph Route.

Now that all eyes are turned to the gold fields of Cariboo, Omineca, Cassiar, Klondike, & the Atlin district, perhaps a few particulars relative to the past, present & prospective future telegraph facilities in the far North might be of interest. There is probably no better known or more respected citizen of British Columbia than J. B. Leighton, he being foremost among the pioneers, having settled in the interior of B. C. in the early sixties, was one of the first operators in the country, & is at present known to all as the Superintendent of the B. C. Express Co., which operates a line of stages & transacts a general express business from Ashcroft to Barkerville, 285 miles, with connections to all the principal mining camps between the two above towns. He was an operator along this road in early days (between the sixties & seventies). In conversation with Mr. Leighton, recently, the facts which form the foundation of this article were obtained.

In the spring of 1865 the Collins Overland Telegraph Co., virtually the Western Union Telegraph Co., which already had a direct wire from San Francisco to Portland, Seattle & Swinawish, with cable connection via San Juan Island to Victoria, Vancouver Island, realizing the importance of more speedy communication with Europe, commenced operations at Swinawish to construct an overland line to the mother country across Behring Strait and Russian territory, the route being via Matsqui, thence northeast over the Cariboo trunk road to Quesnelle. It crossed the Fraser River at this point & followed up the right bank for 80 miles, where it left the river, & striking out in a northwesterly direction over a wide, well cleared right of way, reached Telegraph Creek 400 miles north of Quesnelle. While operations were being pushed with all possible speed overland with a force of about 500 workmen, extensive operations were also being carried on by water. Large ocean-

going steamers were speeding north loaded with telegraph construction material for Fort Wrangel, where it was transferred to river steamers, & rushed forward with all possible speed up the Stikine River to Telegraph Creek points.

Now that the telegraph trail & Telegraph Creek are famous as the shortest & most direct overland route to the Yukon district via Ashcroft it may be well to mention that the trail was made, & it & the creek derived their name from these construction operations. During the seasons of 1865 & '66 the Co. constructed & had under successful operation 900 miles of first-class wire offices located at Seattle, Swinawish, Matsqui, New Westminster, Chilliwack, Hope, Yale, Lytton, Cache Creek, Clinton, Eighty-Three-Mile House, One-Hundred-&-Fifty-Mile House, Soda Creek, Quesnelle & Fort Stager.

Before operations commenced in 1867, word was received of C. W. Field's successful laying of the Atlantic cable, which put a stop to further operations, the Co. having expended \$3,500,000, which was a dead loss. The cable proving a success the Co. made a present of the entire line & property on hand to the B.C. Government. B.C. was at that time a Crown colony. The telegraph was worked as far north as Quesnelle, under the name of the B.C. Telegraph Service. The 400 miles constructed north of Quesnelle were abandoned, & remains up in places until this day.

R. Borland, of the One-Hundred-&-Fifty-Mile House, who was over the telegraph trail last summer, informs me that miles of wire is now upon cottonwood trees 60, 80 & 100 ft. in height at different places along the route, it having gotten in this condition through trees falling across the wire & tearing it down from the insulators & dropping it across the limbs of small cottonwood trees, which in the course of over 30 years had attained their present height & carried the wire up with them. In several places where the wire has been twisted around trees huge knots have grown & the wire is imbedded in the trees. The Indians have also constructed swings for their children, & hammocks for themselves with considerable of the fallen wire in their camping grounds.

It is an interesting spectacle to pass over the telegraph trail & note the acts of nature on the deserted wire. Mr. Boland tried in numerous places to shove poles over, as a test of how they were lasting in the ground after so many years. He was unable to accomplish it. This gives the reader some idea of the kind of material the Collins Co. used in constructing this wire.

At different points along Telegraph Creek & the Stikine River there are huge piles of material & thousands of coils of wire corded up, all a dead loss. In 1868 private parties constructed a line, as a speculation, between Quesnelle & Barkerville, 60 miles, at a cost of \$10,000, which, from a financial point of view, notwithstanding the fact that the receipts of the Barkerville office were \$1,500 a month, proved to be a failure. Those who complain of exorbitant telegraph rates of the present day should have lived in Barkerville between 1868 & 1870. The rate in those days for a 10-word message between Barkerville & Victoria, about 600 miles, was \$3.50, & 20c. for each additional word. The rate of 10-day is 50c. & 4c. In 1870, the first Cariboo boom having terminated, & the throb of life having died out, capital withdrawn, etc., the telegraph no longer a paying proposition, the entire line was abandoned.

F. H. Lamb, now Superintendent of the Western Union service at San Francisco, was, in the sixties & seventies, Superintendent of that Company, Portland to Victoria, & District Superintendent of the B.C. Telegraph Service until its abandonment.

At this time, 2 operators, formerly employes of the line—Mr. Yates, of Soda Creek, & Mr. Hughes, of Clinton—undertook to keep that portion between their respective towns, 131 miles, open, & maintain it at their own expense. They were fairly successful for about a year, when Mr. Yates died & Mr. Hughes removed to a ranch near Kamloops, where he still resides. This, once more, left the line a dead letter.

In 1871, when all public works were taken over by the Dominion Government, the Cariboo telegraph line once more received attention, & was opened up for operation through

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to Barkerville, & has since been continuously & successfully under the operation of the Department of Public Works of Canada, under the name of the Dominion Government Telegraph Service.

R. B. McMicking was the district superintendent to succeed Mr. Lamb, & held the position until 1879, when he resigned to accept the management of the telephone service of Victoria. He was succeeded by J. Wilson, who still holds the office.

In 1895 a branch wire was run from Ashcroft to Lillooet, 62 miles. Ashcroft is at present the relaying point for business between the outside world & points on the Barkerville & Lillooet lines. The Barkerville line is destined to become an important factor as the connecting link between the north & the rest of the world.

C. A. Sherr is joint manager at Ashcroft for the C.P.R. Telegraph & Dominion Government lines. The telegraph agents for the Government are: C. A. Labourdais, 111-Mile House; R. M. Cornell, 150-Mile House; S. T. Hall, Soda Creek; C. H. Smith (who claims the honor of having sent the first message over the Lillooet extension), Quesnelle; Mrs. A. Bowron, Barkerville; J. Stone, who is somewhat of a pioneer himself; in 1870 he was a marine officer in the British navy; opened an office at the English garrison on San Juan Island on Western Union wires. He also closed this office in 1872, as the ownership of the island was settled, and the British forces evacuated. It will be recalled that the U. S. & Great Britain jointly occupied San Juan Island for a considerable length of time, when, in 1872, it was decided one or the other must pull out. The matter was left to arbitration, the Emperor of Germany being chosen as arbitrator & awarded the island to the U. S. Mr. P. Cummings represents the Government at Pavilion, on the Lillooet extension, & Mr. S. A. McFarlane holds forth at Lillooet.—R. M. Cornell, in the Railroad Telegrapher.

The Late Captain Trott.

Capt. S. Trott, for many years commander of the cable str. Minia, died at the Royal Palm Hotel, Miami, Fla., Mar. 11. He went to Florida to recuperate his failing health about 4 weeks ago, accompanied by Dr. Dorman & Chief Steward Satterley of the Minia & a nurse. The remains have been taken to England for interment.

Capt. Trott was born in Sussex, Eng., in 1832. He started a seafaring life at the age of 17 as an apprentice, & at the age of 27 was in command. He began his career in the cable service by taking charge of the str. Faraday in 1874, & continued as her commander until 1880. During this time he laid the French & Direct Cables, & made some remarkable repairs, which showed him to be a man of rare ability. He astonished the world when in midwinter of 1876 he sailed from London to Nova Scotia, repaired the Direct Cable in a gale of wind & a blinding snow storm, & was back in the Thames again inside of 35 days. As he steamed up the river on his return the marine population who had seen him go to sea were amazed & cheered him lustily. He repeated this great feat the same year in 31 days. Seven unsuccessful attempts having been made to repair the Atlantic cables in winter, at large expense to cable companies, it was considered absolutely impossible to pick up cables during the months from Oct. to May. Capt. Trott, however, proved such an idea was altogether erroneous. His achievements naturally attracted the attention of that able manager & director, H. Weaver, of the Anglo-American Co., & the command of the Minia being vacant in 1880, Capt. Trott's services were secured by him.

During the summer of 1888 he sailed from England to repair the Anglo-American Co.'s

French cable in mid-Atlantic, on the same day the str. Scotia sailed to repair the Direct Cable, also in mid-ocean. Much interest was felt at the time as to which ship would finish first, but Capt. Trott completed his work 3 weeks before the Scotia & according to the published reports the costs of these Direct Co.'s repairs made by the Scotia footed up to \$290,000, while the similar ones effected for the Anglo-American Co. by the Minia did not exceed \$110,000. This is to be taken as the criterion of the rapidity with which the king of cable repairers did his work.

It has been said of him that he knew the bottom of the Atlantic & the position of every cable as well as a cabman knows the streets of a city, & that on one occasion being aware that a steamer, in laying one of the Atlantic cables, having been compelled during a storm to abandon a length of cable worth many thousand dollars, & happening to be in the locality one day several years afterwards, it occurred to him that it would be but little trouble to recover it. He therefore stopped his ship, picked up the cable, & resumed his journey within an hour. On arriving in port he presented the cable to the company to which it belonged, declining to accept any remuneration for his work.

Capt. Trott was a man of positive views & a strict disciplinarian, but just, kind hearted, thoroughly honorable, & esteemed by all who enjoyed the privilege of his acquaintance.—Telegraph Age.

The Yukon Telegraph Line.

H. Bostock, M.P. for Yale & Cariboo, believes the Dominion Government should amplify the project looking to the establishment of telegraphic communication between the Yukon district & the outside world by constructing a line from Dawson to Quesnelle, to connect with the Government telegraph between that point & Ashcroft on the C.P.R. It is now proposed to string a wire from Bennett to Dawson. Connection will be established at Bennett with the line of the White Pass & Yukon Ry., terminating at Skagway, & communication will be had between these points & Vancouver & Victoria by steamer. Mr. Bostock holds that this is a mistake, & he will endeavor to impress the Government with the wisdom of his view. The distance between Quesnelle & Dawson is about 1,200 miles, & the cost of stringing a wire between these points would in round numbers be \$600,000, adopting C. R. Hosmer's estimate of \$500 a mile. Though the amount is large, it is the opinion of Mr. Bostock that the expenditure would be justified. The local advantages would be great, because the settlements along the way, such as Hazelton & Telegraph Creek, would be brought into communication with the outside world & their development advanced. The delay involved in the steamship voyage from Skagway to Vancouver or Victoria would be avoided, an all-Canadian line of communication would be established, & Dawson City would be brought into immediate communication with Ottawa, which would greatly facilitate the good government of the district. It is likely that an enormous investment of British capital will be made in the Yukon, & the interests of the country, as well as of investors, would be materially advanced by establishing a direct connection between Dawson & London.—Globe.

Wireless Telegraphy.

A London cable says: "Great interest was excited at a recent meeting of the Society of Electrical Engineers, by Signor Marconi's wireless telegraphy demonstration. He sent a message from one end of the hall to the other by means of a small apparatus. He said that

operations which had been in progress daily for months between the South Foreland & the lightship at the East Goodwins showed that on no single occasion had communication been interrupted, despite all sorts of bad weather. Messages between the Queen at Osborne & the Prince of Wales on the royal yacht had been transmitted, in some instances, for a distance of 8 miles overland. Intervening hills, although 300 feet higher than the vertical wire at Osborne, offered no obstacle. During his lecture Signor Marconi received a note conveying the permission of the French Government to establish his system between Folkestone & Boulogne. Signor Marconi states that vertical wires, rising to a height of 114 ft., will be sufficient to insure communication between the two coasts."

A later cablegram says: "Marconi's wireless telegraphy will shortly be applied to all the lightships around the British coasts. Its value was strikingly demonstrated in this connection by the sailing ship Elbe, which went ashore on Goodwin Sands in a fog. On the East Goodwin lightship is a wireless telegraph system. The crew telegraphed to the South Foreland lighthouse by this means, & as the lighthouse is in telegraphic communication with coast towns, tugs & lifeboats were soon proceeding to the ship's assistance. This is the first occasion since the installation of the system that its practical use has been put to the test, & it proved highly successful."

Commercial Cable Company.

The annual meeting of the Commercial Cable Co. was held Mar. 6. The balance sheet & accounts for 1898 were approved. The net traffic earnings from cables & land lines (Postal Telegraph Co.) amounted to \$2,024,500.95, an increase of \$107,409.83. Out of the balance to the credit of revenue account there has been set aside \$450,000 to the various reserves. The reserve fund now amounts to \$3,037,103.43. The following directors were elected:—J. W. Mackay, J. G. Bennett, G. G. Howland, W. Jay, G. G. Ward, Sir W. Van Horne, E. C. Platt, Lord Strathcona & Mount Royal, C. R. Hosmer, T. Skinner, C. H. Mackay, A. B. Chandler, D. Clark. The directors met & elected the following officers:—J. W. Mackay, President; G. G. Ward, Vice-President & General Manager; C. R. Hosmer, Vice-President; A. B. Chandler, Vice-President; C. H. Mackay, Vice-President; E. C. Platt, Treasurer; A. Beck, Secretary; J. O. Stevens, Assistant Secretary.

Telegraphing & 'liphoning at Once.

On the matter of simultaneous telegraphing & 'liphoning on a single wire on the Great Northern Ry., U.S.A., C. P. Adams, Superintendent of Telegraph of the system, recently wrote to this effect: "Owing to other matters I find I shall be compelled to postpone all further experiments in this line for the present. The wire on which we are now working the simultaneous telegraph and telephone apparatus is known as the St. Paul & Great Falls circuit, being a no. 9 iron wire, & the distance between the two points, Carman, Minn., and Larimore, N. D., is 53 miles. There are also on the same line of poles 6 to 8 wires the entire distance, but notwithstanding this the telephone has in every way given satisfactory results. There are, of course, many detailed matters which will have to be remedied in order to make it entirely practical for everyday use, particularly in the matter of signaling, which no doubt can be done in a number of ways. The method used by me in this experiment is that laid down by Van Rysselberghe for a single wire circuit, in which I am using graduating coils, condensers, etc."—Telegraph Age.

The telegraph companies will hereafter count "percent" as 1 word instead of 2 as formerly.

The Dominion Public Works Department is calling for tenders for the construction of a telegraph line from Spence's Bridge to Nicola, & from Kamloops to Nicola Lake.

The Commercial Telegraph Construction Syndicate, Ltd., was registered in London, Eng., Feb. 20th, with a capital of £5,000, to adopt an agreement with Hon. J. Roche, M.P., & to subscribe for or otherwise acquire & hold any shares, stock, or securities in the Northern Commercial Telegraph Co. incorporated in Canada.

The Michigan Supreme Court has decided that the Western Union Telegraph Co. is responsible for failure to promptly transmit & deliver a telephoned telegraph message, through which failure the complainant suffered a loss. The complainant had telephoned to the operator to send a message to Chicago directing a step in a wheat deal. The message was not delivered. The company claimed that the operator had no authority to receive the message by telephone, & that in so doing he was acting as an agent for the complainant; but the court held that the use of a convenience like the telephone should not be entirely at the risk of the patron.

Telephone Matters.

J. J. McGaffigan, St. John, N.B.; W. Ferguson, J. Young & P. Arseneau, Tracadie, & J. P. Sherry, Memramcook, are applying for incorporation as The Tracadie Telephone Co., Ltd., with a capital of \$2,000.

C. J. Milligan, St. John, N.B., gives notice of application to the Dominion Parliament for an Act authorizing the construction & operation of telephone lines from or near River du Loup, Que., to Sackville, N.B., & branch lines from the main line to other points in Quebec & New Brunswick.

The Columbia Telephone Co. is said to have let a contract for the construction of a telephone line from Trail to Camp McKinney, B.C. The line will run from Trail to the International Boundary line, where it will connect with the Spokane & B.C. Telephone Co.'s line to about 1½ miles below Cascade, where it will commence again, running through Cascade, Grand Forks, Niagara, Phoenix, Greenwood, Anaconda, Boundary Falls, Midway & Rock Creek to Camp McKinney, taking in all the mining camps of the Boundary Creek district. Exchanges are to be established at Trail, Rossland, Cascade, Grand Forks, Greenwood, and Republic. The line will be completed by July 1.

A London cablegram says an engineer named Germain, in the French Ministry of Posts & Telegraphs, has an invention which he claims will revolutionize the telephone. By an ingenious adaptation of the telephone wire the microphone is made to develop & intensify the vibration received so that it is unnecessary to place the receiver to the ear or stand with the mouth close to the transmitter, & conversation is easily carried on between two persons, both of whom may be several yards distant from the instrument. It is said the invention has been several times officially tested & pronounced a complete success. It is familiarly known as "high speaker."

The first experimental telephone line erected in Canada was from the residence of Prof. G. Bell's father in Brantford, Ont., to the residence of Rev. T. Henderson, in the same city. The first working any distance was one set up in 1875 by Prof. G. Bell between Paris & Brantford. The battery was in Toronto, some 60 or 70 miles from Paris. The first commercial telephone was established in

Hamilton in 1877.—Johnson's First Things in Canada.

The Financial Secretary of the British Treasury recently asked for a credit of \$10,000,000 to enable the Post Office Department to establish a telephone system in London. In explaining the proposal the Globe says that under the new law the Post Office Department will own & operate all municipal telephone systems by 1911, & by that time it will, as an act of fairness, buy up all the stock of the National Telephone Co. London is to have special treatment at once under the Swiss system of charging for telephones. In Switzerland the State owns the telephones. The subscriber pays \$20 for the 1st year, \$13.75 for the 2nd, & afterwards \$7.75 a year, & at the rate of \$1 per 100 calls. This charge according to calls is borne by the person calling, not by the one who is called. As the British Postmaster-General makes the subscription £3 a year, probably the calls will be less than a cent each. The Swiss system is designed with special regard for the convenience of the general public. Messages can be sent by non-subscribers from call offices & delivered to non-subscribers by express messengers; but persons who wish to save the journey to a call office to despatch a telephone message, or to receive it direct instead of by a written message, can secure a private telephone in their house or office on payment of the stipulated annual sum. For all messages actually sent, subscribers & the public alike pay the same fixed toll, smaller if the message is a local one, larger if it travels over the trunk wire; the price for all distances over trunk wires being the same. Each message sent by a subscriber is numbered, & an account against him is kept. It follows, under this system, that every telephone can be used by the general public instead of being confined to the actual subscriber, with the result that in many towns every shop or place of business which has a telephone becomes in practice a public call office. The National Telephone Co. owns 96,000 miles of wire, & the value placed on its entire plant is £3,000,000. That is the Government's estimate of the sum required to put the public telephone system in healthy operation. The work of absorption will be accomplished through the municipalities. In London the area to be treated as a unit covers 634 square miles, & possesses 19,000 public wires, one-fifth of the wires in the country. After its plant is brought under the control of the Postal Department the same course will be followed in other large cities.

Among the Express Companies.

T. E. Foard has been appointed Route Agent of the Western Ex. Co., with temporary headquarters at Sault Ste. Marie, Mich., vice L. L. Stenseth assigned to other duties.

The road houses built by the Arctic Ex. Co. between White Horse & Dawson City, Yukon, have, it is said, been transferred to the Bennett Lake & Klondike Navigation Co.

General Manager Stout has issued the rules & regulations of the Dominion & Western Express Co.'s in very complete form. In the revision many important changes & additions have been made.

Money orders issued by the Western Ex. Co. will be cashed by the Southern Ex. Co. at Havana, Cuba, & such orders may be sold at domestic rates. Money orders issued by the Southern Ex. Co. at Havana, Cuba, will be redeemed by agents of the Western Ex. Co. & accounted for in the usual way.

The express business on the Spokane Falls & Northern Ry. system has been taken over by the Great Northern Ex. Co., & the Northern Pacific Ex. Co. has withdrawn & closed all its offices. Among the offices opened by

the Great Northern Ex. Co. are the following in British Columbia:—Kaslo, Nelson, Rossland, Sheep Creek, Waneta, Ymir. The N.P. Ex. Co. had 17 offices, so there are 11 less under the new arrangement.

Money orders are now issued at all offices of the Dominion Ex. Co., payable in Havana, Cuba, at rates charged for orders payable in the U.S., & such orders will be redeemed by Southern Ex. Co. Money orders issued by the Southern Ex. Co. at Havana, Cuba, will be redeemed by agents of the Dominion Co., & accounted for in the usual manner. Adams Ex. Co.'s Money Orders may be cashed by agents of the Dominion Co., & orders may be sold payable at all offices of the Adams Ex. Co.

The Alaska Pacific Ex. Co. gives notice of the following marine insurance rates:—From Dawson City, Yukon, or other intermediate express offices, to offices in British Columbia or the U.S., on Puget Sound, on gold dust, money, bullion, coin, etc., 1%. Between offices on Puget Sound & ports touched by steamers operated by the Co. in Alaska, not north of Lynn Canal (Juneau, Sitka, Skagway, Wrangle, etc.) on treasure, gold dust, bullion, coin, currency, etc., ¼ of 1%. Between last-named points, on merchandise, ½ of 1%.

The Dominion Express Co. gives notice that notes, drafts, accounts or bills, in any amount, may be received for collection, to be returned at the special rate, between all points on this Co.'s lines & the lines of Canadian Ex. Co. in Canada and the U.S. To & from offices of Western, Great Northern & Northern Pacific express companies a limit of \$400 will apply. To & from offices of American, National, Pacific, Southern, U.S. & Wells, Fargo & Co.'s express companies the limit in amount of such collections is \$100, except to exclusive offices of Wells, Fargo & Co. located west of Salt Lake, Utah, Albuquerque & Deeming, New Mexico, charge classification card rates, these special rates do not apply.

The Alaska Pacific Ex. Co. has arranged to send a dog team into Dawson City, Yukon, in charge of special messengers, leaving Skagway about April 1, & is prepared to accept in transfer from connecting companies at Seattle, & carry through to destination any light express matter. The rates for this special trip will be:—On merchandise, \$5 a pound; minimum charge \$2.50. On money, specie, etc., 5%; minimum charge \$2.50. On franked letters (when enclosed in the Co.'s regular franked envelopes) \$1 each. All charges must be prepaid by the shipper. A deposit will be required from irresponsible parties to cover duty. Duty will be assessed at the frontier port, & will average about 35%.

Effective Mar. 15. Dominion & Western express companies will be regarded as one company in the interchange of business, & charges will be made as follows:—On business between common points where the through service can be performed by any one company, one graduate on the through or aggregate rate, lowest through rate by any transfer point to govern. On business between exclusive offices, from a common point to an exclusive office, from an exclusive office to a common point & between common points where two or more other companies make the competing line, charge a graduate for Dominion & another graduate for Western Ex. Co., but not exceeding the through charge of such competing companies. The Dominion Ex. Co. will not advance the charges of an intermediate company on business that can be transferred by the originating company direct to the Western Ex. or to Dominion Ex. Co. The Dominion Ex. Co. will not advance charges on business for its exclusive offices, originating at common points with Western Ex. Co.

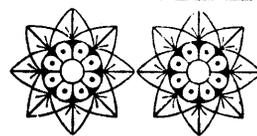
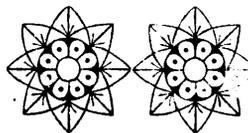
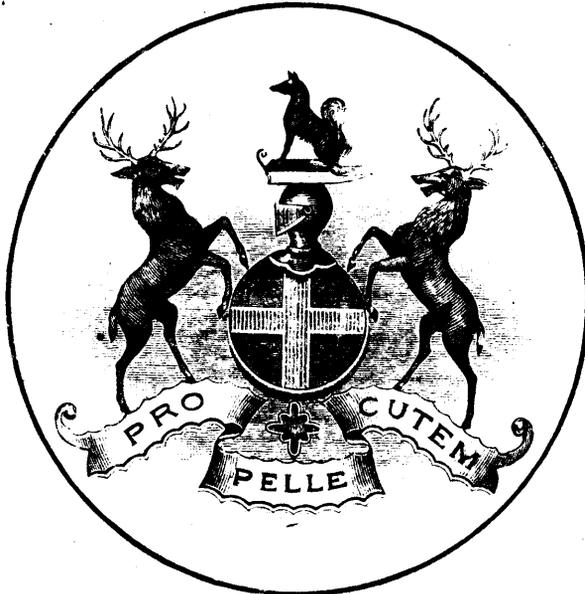
The Purchasing Agents' Guide

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

Accident Insurance		Flags		Rivets	
Canadian Ry. Accident Ins. Co.	Ottawa, Ont.	Rice Lewis & Son	Toronto.	Rice Lewis & Son	Toronto.
Travelers' Insurance Co.	Montreal.	The Hudson's Bay Company		Rope	
Aerated Waters		Foghorns		Rice Lewis & Son	Toronto.
E. L. Drewry	Winnipeg.	Rice Lewis & Son	Toronto.	The Hudson's Bay Company	
Air Brakes & Fittings		Forgings		Semaphore Arms	
Westinghouse Mfg. Co.	Hamilton, Ont.	Rhodes, Curry & Co.	Amherst, N.S.	Acton Burrows Co	Toronto.
Ales		Gates		Shafting	
E. L. Drewry	Winnipeg.	Page Wire Fence Co.	Walkerville, Ont.	Rice Lewis & Son	Toronto.
Aluminum		General Supplies		Shipbuilders' Supplies	
Rice Lewis & Son	Toronto.	The Hudson's Bay Company		Rice Lewis & Son	Toronto.
Anchors		Grease		Ship Carpenters' Tools	
Rice Lewis & Son	Toronto.	Eureka Min. Wool & Asbestos Co.	Toronto.	Rice Lewis & Son	Toronto.
Anti-Friction Metal		Groceries		Ships	
Canada Metal Co	Toronto.	The Hudson's Bay Company		Polson Iron Works	Toronto.
Asbestos		Half Tones		Shovels	
Eureka Min. Wool & Asbestos Co.	Toronto.	Acton Burrows Co	Toronto.	Rice Lewis & Son	Toronto.
Axles		Hardware		The Hudson's Bay Company	
Rhodes, Curry & Co.	Amherst, N.S.	Rice Lewis & Son	Toronto.	Signal House Numbers	
Babbitt		The Hudson's Bay Company		Acton Burrows Co	Toronto.
Canada Metal Co	Toronto.	Headlights		Signals	
Rice Lewis & Son	Toronto.	Noah L. Piper & Sons	Toronto.	Noah L. Piper & Sons	Toronto.
Beams		Hose		Signs	
Rice Lewis & Son	Toronto.	Rice Lewis & Son	Toronto.	Acton Burrows Co	Toronto.
Bellows		Illustrations		Snow Ploughs	
Rice Lewis & Son	Toronto.	Acton Burrows Co	Toronto.	Rhodes, Curry & Co.	Amherst, N.S.
Bells		Iron		Solder	
Rice Lewis & Son	Toronto.	Rice Lewis & Son	Toronto.	Canada Metal Co	Toronto.
Belting		Iron Signs		Speed Indicators	
Eureka Min. Wool & Asbestos Co.	Toronto.	Acton Burrows Co	Toronto.	Rice Lewis & Son	Toronto.
Rice Lewis & Son	Toronto.	Jacks		Spikes	
Blankets and Bedding		F. E. Came	Montreal.	Rice Lewis & Son	Toronto.
The Hudson's Bay Company		Japans		Springs	
Block & Tackle		McCaskill, Dougall & Co.	Montreal.	Rhodes, Curry & Co.	Amherst, N.S.
Rice Lewis & Son	Toronto.	Lager Beer, &c.		Station Name Signs	
Blocks		E. L. Drewry	Winnipeg.	Acton Burrows Co	Toronto.
Rice Lewis & Son	Toronto.	Lamps		Steamboats	
Boat Fittings & Hardware		Rice Lewis & Son	Toronto.	Polson Iron Works	Toronto.
Rice Lewis & Son	Toronto.	Noah L. Piper & Sons	Toronto.	Steamboat Signs	
Boiler Covering		The Hudson's Bay Company		Acton Burrows Co	Toronto.
Eureka Min. Wool & Asbestos Co.	Toronto.	Lanterns		Steam Whistles	
Mica Boiler Covering Co	Toronto.	Rice Lewis & Son	Toronto.	Rice Lewis & Son	Toronto.
Boilers		Launches		Steel	
Polson Iron Works	Toronto.	Polson Iron Works	Toronto.	W. G. Blyth	Toronto.
Boiler Tubes		Life Insurance		Rice Lewis & Son	Toronto.
Rice Lewis & Son	Toronto.	Independent Order of Foresters	Toronto.	Switch Targets	
Bolts		Travelers' Insurance Co.	Montreal.	Acton Burrows Co	Toronto.
Rice Lewis & Son	Toronto.	Linoleum and Floor Coverings		Telegraph Office Signs	
Bridge Numbers		The Hudson's Bay Company		Acton Burrows Co	Toronto.
Acton Burrows Co	Toronto.	Locomotives		Telegraph Spoons	
Buckets		Baldwin Locomotive Works	Philadelphia.	Rice Lewis & Son	Toronto.
Rice Lewis & Son	Toronto.	Lubricators		Telephone Office Signs	
Bunting		Rice Lewis & Son	Toronto.	Acton Burrows Co	Toronto.
Rice Lewis & Son	Toronto.	Matches		Tobacco and Cigars	
The Hudson's Bay Company		E. B. Eddy Co.	Hull, Que.	The Hudson's Bay Company	
Carpets		The Hudson's Bay Company		Toilet Paper	
The Hudson's Bay Company		Milepost Numbers		Rice Lewis & Son	Toronto.
Cars		Acton Burrows Co	Toronto.	The Hudson's Bay Company	
Rhodes, Curry & Co.	Amherst, N.S.	Mohair		Tools	
Car Wheels		Lister & Co.	Manningham, Eng.	Rice Lewis & Son	Toronto.
Rhodes, Curry & Co.	Amherst, N.S.	The Hudson's Bay Company		Track Jacks	
Castings		Numbers		Duff Manufacturing Co.	Allegheny, Pa.
Rhodes, Curry & Co.	Amherst, N.S.	Acton Burrows Co	Toronto.	Track Tools	
Chains		Oakum		Rice Lewis & Son	Toronto.
Rice Lewis & Son	Toronto.	Rice Lewis & Son	Toronto.	Trucks	
Curtains		The Hudson's Bay Company		Rice Lewis & Son	Toronto.
The Hudson's Bay Company		Oils		Uniform Caps	
Cuts		Eureka Min. Wool & Asbestos Co.	Toronto.	W. H. Coddington	Hamilton, Ont.
Acton Burrows Co	Toronto.	Galena Oil Co	Franklin, Pa.	Valves	
Door Signs		Office Signs		Rice Lewis & Son	Toronto.
Acton Burrows Co	Toronto.	Acton Burrows Co	Toronto.	Varnishes	
Dry Goods		Packaging		McCaskill, Dougall & Co	Montreal.
The Hudson's Bay Company		Eureka Min. Wool & Asbestos Co.	Toronto.	Vessels	
Electric Car Route Signs		Pipe		Polson Iron Works	Toronto.
Acton Burrows Co	Toronto.	Rice Lewis & Son	Toronto.	Waste	
Electric Car Trucks		Pipe Covering		Rice Lewis & Son	Toronto.
Baldwin Locomotive Works	Philadelphia	Eureka Min. Wool & Asbestos Co.	Toronto.	Eureka Min. Wool & Asbestos Co.	Toronto.
Enameled Iron Signs		Mica Boiler Covering Co	Toronto.	Noah L. Piper & Sons	Toronto.
Acton Burrows Co	Toronto.	Plushes		Water Meters	
Rice Lewis & Son	Toronto.	Lister & Co.	Manningham, Eng.	Westinghouse Mfg. Co	Hamilton, Ont.
Engines, Stationary & Marine		The Hudson's Bay Company		Wheelbarrows	
Polson Iron Works	Toronto.	Porter		Rice Lewis & Son	Toronto.
Engraving		E. L. Drewry	Winnipeg.	Window Blinds	
Acton Burrows Co	Toronto.	Portland Cement		The Hudson's Bay Company	
Express Office Signs		Rice Lewis & Son	Toronto.	Wines and Liquors	
Acton Burrows Co	Toronto.	Printing		The Hudson's Bay Company	
Fencing		The Hunter, Rose Co.	Toronto.	Wire & Wire Rope	
Page Wire Fence Co.	Walkerville, Ont.	Mail Job Printing Co.	Toronto.	Rice Lewis & Son	Toronto.
Ferry Signs		Pumps		Yachts	
Acton Burrows Co	Toronto.	Rice Lewis & Son	Toronto.	Polson Iron Works	Toronto.
		Rails			
		Rice Lewis & Son	Toronto.		

HUDSON'S BAY COMPANY

INCORPORATED 1870



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 direct from all the principal markets of the World.

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Farming Stock - Raising and Coal

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 TERMS OF PAYMENT, and without any
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And to The Commissioner

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