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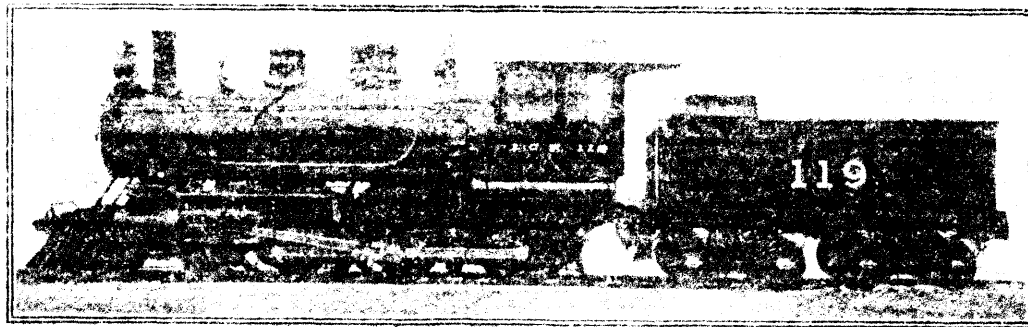
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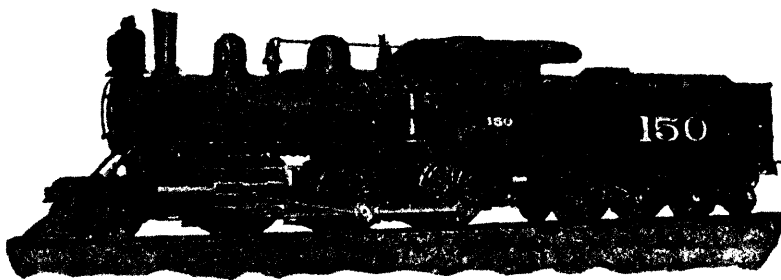
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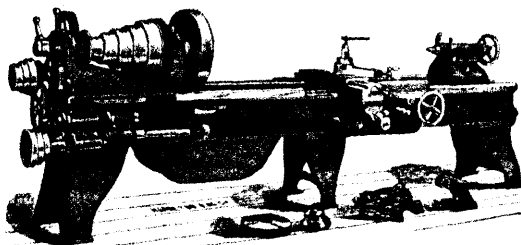
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The Construction of the Great Northern Railway of Canada.

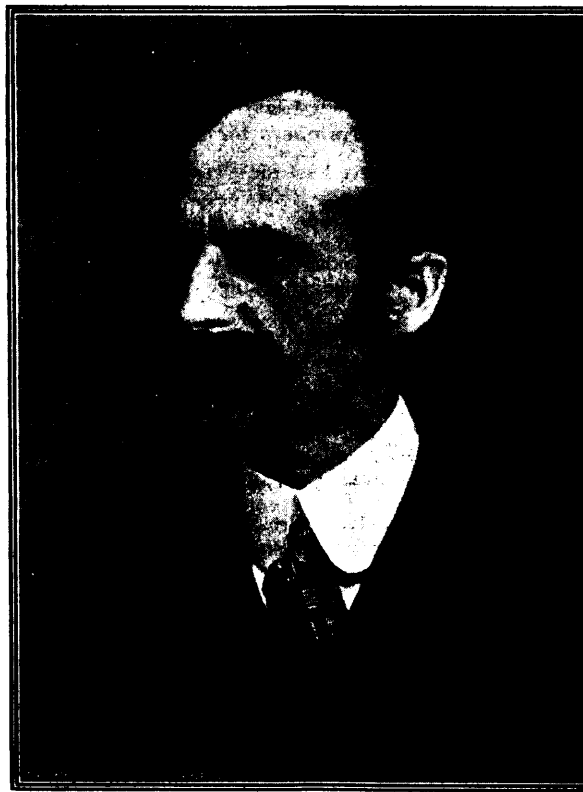
By J. M. Shanly, M. Can. Soc. C. E.

The Great Northern Ry. Co. was chartered by the Dominion Parliament in 1882—to build a railway from Quebec to some point on the Ottawa river, near Carillon, and to open up a rich section of country lying along the base of the Laurentian mountains, and at some distance to the north of the C.P.R. Construction was commenced about 1884 at St. Jerome, and was slowly pushed eastward from point to point until it reached Montcalm, a distance of 28 miles, about 1895. In the meantime the Lower Laurentian Railway had been built westward from River a Pierre—on the Quebec and Lake St. John Ry., about 58 miles from Quebec—to a junction with the Piles branch of the C.P.R., near St. Tite, about 35 miles in length. From St. Tite a section of 20 miles had been built, under the Great Northern charter, crossing the St. Maurice river at Grande Mere, to St. Boniface. In the beginning of 1899 the Great Northern Ry., therefore, consisted of two disconnected portions—the eastern one 20 miles in length, separated by a gap of 53 miles from the western one, 28 miles in length—and this western section was separated by a gap of 35 miles from its projected western terminus at Hawkesbury, Ont., where it was proposed to connect with the Canada Atlantic Ry., and thus form a link in a new line from Parry Sound to Quebec, which would bring down the produce of the Great West to the latter port, and enable it to take advantage of its fine harbour and unequalled geographical position. These two sections had been operated for local traffic—the eastern by the Quebec and Lake St. John Ry. Co., and the western by a firm of contractors who had built a portion of the line—but the latter line had been allowed to fall into bad repair, and was rapidly going to ruin. A reorganization of the Co. having taken place, and the necessary financial arrangements having been completed, in Mar. 1899, a contract was entered into with Ross, Barry & McRae, for the building of the 88 miles necessary to close the two gaps, and for the reconstruction of the 28 miles of old line between St. Jerome and Montcalm. Under this contract all plans, etc., were to be prepared in the office of E. A. Hoare, the Co.'s Chief Engineer, and all field engineering and superintendence was to be done by the contractors. J. M. McCarthy, C. E., and the writer, were employed by the contractors as their engineers, and arrangements were at once made to push on the work

of construction as soon as the spring opened. The eastern division from Montcalm to St. Boniface had been previously located and plans filed for subsidy purposes with the Government, so that the old lines had merely to be picked up and re-run. No deviations or alterations were allowed, except in one or two special cases, which proved to be quite a serious handicap to the contractors, but for which there was no help. The western division, including the bridge over the Ottawa river at Hawkesbury, had not been located, and this

yond the location of the bridge and the fixing of the number and length of the spans, so that the work of preparing plans could be gone on with. About April 25, the snow having gone down considerably, three location parties were put in the field, one under L. R. Ord, C. E., working from St. Boniface west; one under E. Lantier, C. E., working from Montcalm east, and one under A. H. N. Bruce, C. E., working from St. Jerome west. Tenders were called for clearing, grubbing, grading, etc., on the eastern division, in sections of about five miles each, and early in May the contracts were awarded—in some cases two or more sections being given to one firm. Contracts had already been let for rails, timber, the bridge superstructures, etc. The specified load for these bridges was two consolidation locomotives, with 160,000 lbs. on the drivers, followed by a train weighing 4,000 lbs. per foot. Ground was broken near Joliette within a few days, and the whole work was soon under way, and was pushed on continuously thereafter. The substructure of the main bridge at Hawkesbury was not let, though the stone was cut and supplied by contract, but this work was done by Ross, Barry & McRae themselves under the direct supervision of J. M. McCarthy. In Aug., the location of the western division having been finished, and the plans filed, contracts were awarded in the same way as those on the other divisions. About the middle of May the work of repairing the old line between St. Jerome and Montcalm was commenced. This work, which consisted of relaying a portion of the track with heavy rails, renewing ties, ballasting, rebuilding culverts and trestles, and a general overhauling, was done by the contractors themselves, with H. T. Hazen, C. E., as engineer in charge. As this line had been in operation for some time, it would have been a great hardship to the people of that neighbourhood if it had been closed even temporarily, so the work was carried on without interrupting traffic, although this required careful manipulation, as some of the structures which were quite large had to be taken down and entirely rebuilt.

The country through which the new line passed was well settled and fairly open—a sort of rolling prairie, intersected by numerous gullies, some of which were both wide and deep. Apart from the bridging, the work was very similar to the ordinary railway work in this part of the Province. The soil was mostly a sandy loam running into clay in places, and, especially towards the east end, sometimes a quicksand overlying blue clay. Embankments were called for 16 ft. in width, but were



W. R. BAKER,

Assistant to the Second Vice-President, Canadian Pacific Railway.

work was done by the contractors subject to the approval of the Co.'s Chief Engineer, the curvature being limited to 4° and the grades to 1%. The first work done after the appointment of the writer was the location of the Hawkesbury bridge—as it was important to get this done before the water rose in the spring, in order that everything should be in readiness for the work of construction during the low water period of summer, the bridge being the key of the whole undertaking. Owing to the great depth of snow no field work was done on the line at this time, be-

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probably nearer 15 ft. when finished and
settled. Cuttings were 24 ft. in width. The
quantities of materials of all kinds moved
averaged about 11,500 cubic yards per mile.
The right of way purchased was generally 66
ft. in width—which was too little to provide
conveniently the necessary borrow, and it
was only with great difficulty that the sub-
contractors were kept within the fence lines
and prevented from trespassing on the neigh-

boring lands. In a large number of cases
extra land had to be purchased outside the
right of way for borrow pits, and it was
generally found more troublesome and expen-
sive to settle for these pieces than it was to
buy the original right of way. The habitant
seems to know by instinct when his enemy is
in a hole, and is quite capable of taking ad-
vantage of the situation. The fencing consists
of 11 horizontal strands of coiled steel wire,
with vertical binder wires about 1 ft. apart,
locked to the horizontal strands. The posts
were of cedar, set 3½ ft. in the ground, and
16½ ft. apart. The lower ends of the posts
were pointed, so that in case any heaving
should take place they could readily be driven
back into place.

Clearing was done to the full width of the
right of way, and in large and heavy timber
for a width of 100 ft. Under embankments
of not more than 12 ft. in height wooden box
or beam culverts were put in, beam culverts
being used in only a few cases. Where it was
found impossible to do the work with a box,
wooden culverts were built of 8 x 10 in. or
10 x 10 in. cedar squared on three sides and
laid flat. Beam culverts had regular bridge
floors of pine.

Wooden trestles were built according to
standard plan, and were founded on piles
where it was possible to drive them. Single
decks as high as 32 ft. were used, but where
they exceeded 25 ft. they were divided into
two parts by a collar brace and a double set
of sway braces put on. This was found to be
more economical than dividing the bent into
two decks, and in the opinion of the writer
made a more substantial job. A great length
of trestle work was authorized by the Do-
minion Government, but this was materially
reduced by the contractors, as it was found
that up to a height of about 20 ft. an earth
embankment was cheaper than a trestle—
although, of course, the size of the waterway
required would considerably modify this rule.
The highest timber trestle on the line was at
the East Yamachiche, 3 miles from St. Boni-
face, a three-decker 74 ft. high, and the long-
est, apart from that at Hawkesbury, was at
the Cache river—17 miles east of Joliette—
where there were 32 bents, a total length of
480 ft. The quantities of timber in trestles
were as follows:—

Eastern division	1,244,000 ft. b. m.
Western division	135,000 "
Hawkesbury bridge	908,000 "
	2,287,000 "

The iron bridges were the heaviest item of
construction on the line. Commencing at the
St. Boniface end, the first structure was at
the East Yamachiche, three miles west. This
valley is somewhat in the shape of a W, with
the main river in the western depression some
feet lower than the eastern. The eastern
valley was crossed by a wooden trestle, as
described above, and the western by a steel
viaduct, consisting of four 40 ft. braced
towers with three 60 ft. plate girder inter-
mediate spans. The total length of steel is
thus 340 ft., and the extreme height from top
of pedestal to base of rail is 74 ft. The total
weight of steel in the structure is about 424-
000 lbs. The masonry consisted of 14 pedes-
tals and one abutment, founded on hard gray
clay. About three miles further west comes
the West Yamachiche river. This was crossed
by a steel viaduct, consisting of two towers
of 30 ft. each, and an intermediate plate
girder span of 60 ft., with a wooden trestle
approach at either end. The height from top
of cap to base of rail is 32 ft. The masonry
consisted of eight pedestals on pile and timber
foundations. Piles were spaced 3 ft. apart,
and driven about 18 ft. The piles were ca-
pped with 12 x 12 in. timbers, and on the
caps a flooring or grillage of 12 x 12 in.
timbers was laid and the masonry started.
The next stream, about four miles further

west, or about 10 miles from St. Boniface, is the River du Loup. The total length of steel in this structure is 920 ft., made up as follows:—Eight 40 ft. towers, one 55 ft. tower, seven 60 ft. plate girder spans and one 125 ft. pin-connected span. The height from cap to base of rail is 118 ft., and the total weight of steel in the structure 1,423,000 lbs. The eastern side of the valley is very steep, and the soil consists of sand overlying a slippery clay, which showed signs of having previously slid in places into the river. The 125 ft. span was put in to clear this slope, and avoid putting in foundations on it. There are 36 pedestals carried down from 6 to 10 ft. into a hard clay and boulder formation deep enough to be safe from any danger of frost or sliding banks. Four of them are in the river itself, which is very rapid, and falls about 150 ft. almost perpendicularly, a very short distance below the bridge. Considerable difficulty was experienced with these foundations, owing to sudden rises in the water, which drowned the coffer dams and carried away the temporary work. There is a short piece of wooden trestle at each end instead of abutments. Eleven miles further west is the Maskinonge river, which is crossed by a single deck lattice girder of 100 ft. span, on masonry abutments, founded on the solid rock. This bridge presented no unusual features, except that it was situated in very rapid water just at the crest of the falls of Ste. Ursule, where the river plunges down about 175 ft. into the valley below. About 300 ft. further west is the Maskinonge gully, a deep ravine into which the river falls immediately below the railway crossing. This ravine is crossed by a steel viaduct, with a short timber approach at either end, and is, with the exception of the bridge over the Ottawa at Hawkesbury, the most important structure on the line. (An illustration of this appeared in our Feb. issue, p. 53). It consists of alternate 40 ft. towers and 60 ft. plate girder intermediate spans, and has a total length of steel of 1,000 ft., and an extreme

height from cap to base of rail of 167 ft. The weight of steel was 1,685,000 lbs., and the time required to erect and complete it about four months. The pedestals were founded on rock or hard clay with one exception, where a bed of fine sand was struck. After going down 15 feet without striking anything better a bed of concrete was put in on this sand and the pedestal built on this. This sand though wet was very hard and a pointed bar was with difficulty driven into it. In some places where the rock came to the surface it was merely levelled off and the cap put in place, holes being drilled to receive the anchor bolts.

The balance of this paper will be published in our next issue. It was read before a recent meeting of the Canadian Society of Civil Engineers.

Fireproof Roundhouses on the C.P.R.

On pages 87 and 89 are drawings of the new fireproof construction for roundhouses adopted by the C.P.R. There is no wood about the building except the 5-in. plank floor at the pits, and the mouldings at the edges of the roof; it is therefore really fireproof. This particular house has eight stalls, but the same construction would apply to larger ones. The foundations are of stone, and the pits may be of either stone or brick. If of stone the pit walls are 18 ins., and if of brick 12 ins. Either brick or stone may be used also for the outer walls.

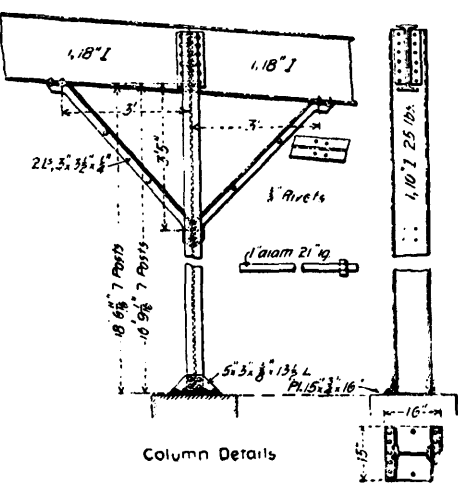
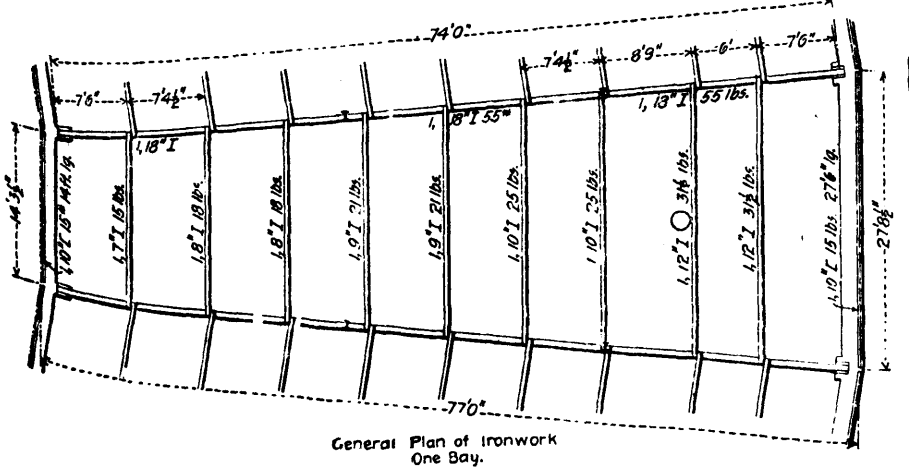
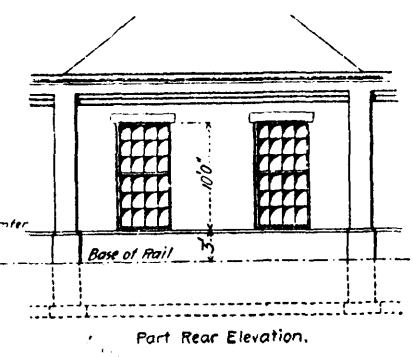
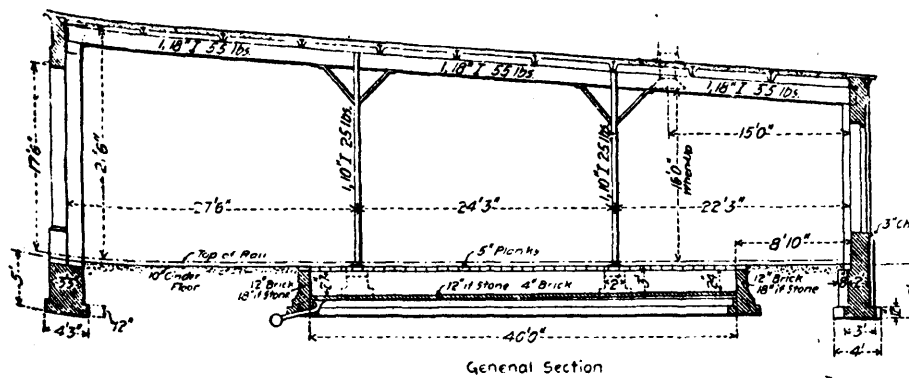
Large sections of rolled shapes are used for the posts and roof beams, and upon these the roof of fireproofing is laid and covered with 4-ply tar-and-gravel roofing. In the detail drawings the construction is clearly shown. It will be noticed that the roof-members resting on the 18-in. I-beams are 7-in. I-beams at the turntable end of each section of the building, and increased to 12 ins. at the outside, where the span is longer. Tile pipe is used

for the top portions of the smoke jacks, the lower portions, which are telescopic and movable, being of riveted sheets mounted on counterbalanced levers with three locations of the fulcrums to accommodate different lifts. A damper is placed near the bottom of the movable portion, and the arm attached to the spindle engages with the roof casting, or a bracket suitably placed on the roof. Except at the pits the floor is of cinders 10 ins. deep. The pits are 40 ft. long, and extend to within 8 ft. of the outer wall.—American Engineer and Railroad Journal.

Railway Route to the Yukon.

During 1898, 1899 and 1900, surveying parties have been engaged, under the Department of Railways, endeavoring to find a feasible route for a railway, on Canadian territory entirely, to give communication with the Yukon district from a point on an existing Canadian railway, and also from a Canadian port on the Pacific coast and the approximate cost of such a line. J. L. O'Dwyer, engineer in charge, has presented a lengthy report to the Minister dealing with the explorations made, indicating a feasible route and furnishing estimates of the cost of construction and equipment.

Starting from Edmonton, the present northerly terminus of the Calgary and Edmonton Ry. (leased to the C.P.R.), a point distant 192 miles north of Calgary on the main line of that company, a feasible route has been found to Lake Teslin. The distance to the head (southerly end) of this lake is 1,240 miles, and the estimated cost of construction at prices for similar work in the eastern section of Canada is set down at \$22,908,609; to this estimate, the Chief Engineer adds, for the difference between eastern and western prices, 60%, making the estimate for construction \$36,653,774; the cost of equipment is estimated at \$1,866,000, making the total estimate



for construction and equipment \$38,519,774.

By the construction of a branch line from a point on this railway—the confluence of the rivers Sestoot and Skeena—about 432 miles from Lake Teslin, an excellent ocean terminus would be obtained at Port Simpson, 500 miles north from Victoria, the climatic and other advantages of which make it a desirable site for this purpose. This branch runs down the valley of the Skeena; its length would be 307 miles, and the estimated cost of its construction, at eastern prices, \$9,298,400, or, adding 60% for western prices, \$14,877,440. The cost of equipment is set down as \$488,100, making the total estimated cost \$15,317,540.

For a line of railway from Port Simpson to Lake Teslin, following the route above indicated, a distance of 739 miles, the estimated cost would be, at western prices, \$28,050,560, and of rolling stock \$1,060,100, or a total for construction and equipment of \$29,110,660.

Port Simpson, which, in common with other possible ports, received in 1879 careful examination, has been pronounced both by naval and engineering experts to be an exceptionally fine, deep harbor, well protected from winds; easy of access from the sea; free from

fogs and ice; never freezing over even during the winter of 1878, which was an extremely severe one; while the average winter snowfall does not exceed 18 ins., and this does not remain more than a day or two. The officer of the Hudson's Bay Co. records the budding of trees and the blooming of garden flowers on Feb. 10, 1878. These climatic advantages, of course, due to the Japan current.

From the head (southerly end) of Lake Teslin, by a descending navigation, lake and river, communication, except at certain stages of low water, can be made with Dawson, a further distance of about 625 miles. By the construction, however, of 150 miles of railway from the head of Lake Teslin, northerly and westerly, communication would be made at Whitehorse—the present northerly terminus of the White Pass and Yukon Ry.—with the existing system of river navigation, now in full operation to Dawson, a distance of about 450 miles. The cost of building this 150 miles of railway may be estimated, Mr. O'Dwyer states, in the absence of definite data, at \$20,000 a mile (eastern rates), which, allowing an addition of 60% for the difference between eastern and western prices, would bring the cost to about \$4,800,000, or with equipment, \$5,000,000, and would make the

total cost of building and equipment for a road from Edmonton to Whitehorse \$43,520,000 and for a road from Port Simpson to the same point, \$34,110,000.

Railway Statistics for 1900-01.

The annual report of the Department of Railways for the year ended June 30, 1901, shows that the number of steam railways in actual operation, including the two government roads, the Intercolonial and the Prince Edward Island railways, was 163; some of these, however, are amalgamated or leased, making the total number of controlling companies 80, not including the government railways. The number of companies absorbed by amalgamation was 36, and the number of leased lines was 34. The number of miles of completed railway was 18,294, an increase of 658, besides 2,710 miles of siding. The number of miles laid with steel rails was 18,184, of which 634 was double track. The number of miles in operation was 18,140.

The paid-up capital was \$1,042,785,539, an increase of \$51,598,893. The gross earnings were \$72,898,749, an increase of \$2,694,396, and the working expenses were \$50,368,726, an increase of \$2,987,037 compared with those

Galena-Signal Oil Company,

Franklin, Penna.

Successor to Galena Oil Company and Signal Oil Company, sole Manufacturer of the celebrated Galena Coach, Engine and Car Oils, and Sibley's Perfection Valve and Signal Oils.

CHARLES MILLER,
PRESIDENT.

of the previous year, leaving the net earnings \$22,530,023, a decrease of \$292,642. The number of passengers carried was 18,385,722, an increase of 1,281,379, and the freight traffic 36,999,371 tons, an increase of 1,286,149. The total number of miles run by trains was 53,349,394, an increase of 727,870. Sixteen passengers were killed.

The act requiring street railways and tramway companies to make the same returns as ordinary railway companies was not passed till July 18, 1900, so the past fiscal year is the first in which these lines constitute a definite feature of railway statistics. In view of the rapid developments that are taking place in the use of electricity as applied to traction, not only within town and city limits, but on lines of considerable length extending beyond such limits, it is impossible to say how the question of classification of railways for statistical purposes may require to be handled in future. In the present report the statistics of steam railways form one set of statements and a separate set deals with electric railways. In the statements in the previous annual report, returns were included which had been received from 13 electric lines (none of them being street railways proper) but which are now removed from the steam line statements and placed with the other electric systems. For the purposes of comparison between the two years the financial and traffic figures relating to those 13 electric roads have been deducted in the comparative statements relating to steam railways.

The number of electric railways in operation on June 30, 1901 was 41, with 675 miles of track completed, of which 670 were laid with steel rails, 158 being double track. The paid up capital was \$39,076,019, of which the municipal aid was \$173,000 (including \$100,000 subscription to shares and \$40,000 loan). The number of miles in operation was 672. The gross earnings were \$5,768,283 and the working expenses \$3,435,163, leaving the net earnings \$2,333,120. The number of passengers carried was 120,934,656. The City street railways carried passengers as follows:—Montreal, 45,833,652; Toronto, 37,620,583; Ottawa, 7,469,304; Quebec, 3,715,675; Hamilton, 3,693,677; Winnipeg, 3,196,489; Halifax, 2,968,811; St. John, N.B., 1,710,223, and Vancouver, Victoria and New Westminster (operated by one company and returns amalgamated), 5,336,310. The freight carried was 287,926 tons. The car mileage was 31,750,754 miles; 3 passengers were killed. Power was supplied in 11 cases by water and in 30 cases by steam. Ontario had 386 miles, Quebec 197, New Brunswick 12, Nova Scotia 10, Manitoba 18, and British Columbia 51 miles.

The combined statistics of steam and electric railways show the following results:—

Companies making returns	120
Miles of railway completed	18,909
in operation	18,812
Gross earnings	\$1,081,861,558
Working expenses	\$48,667,032
Net earnings	\$53,803,889
Passengers carried	24,863,143
Tons of freight carried	139,320,378
Passengers killed	37,287,297

The Federal government expenditure on railways prior to and since the date of confederation (July 1, 1867) amounts, on capital account, to \$131,559,977 (including \$25,000,000 granted to the C.P.R. Co. for its main line), which, together with \$296,872 expended on the Nova Scotia Ry. and the European and North American Ry., and transferred to the Consolidated Fund, and for railway subsidies charged against the Consolidated Fund the further sum of \$25,737,891, makes a total expenditure of \$157,594,740. This includes the annual subsidy of \$186,600 to the Atlantic and North-west Ry. Co. for 20 years from July 1, 1869, which is paid through the Finance Department. It does not include the

annual payment of \$119,700 as interest at 5% on \$2,394,000, payable to the province of Quebec for the line from Quebec to Ottawa which sum has been transferred to the public debt. In addition there has been an expenditure since confederation for working expenses \$87,130,523, covering the maintenance and operation of the government roads, or a grand total of \$244,725,263; of which \$13,881,460.65 was paid out before confederation.

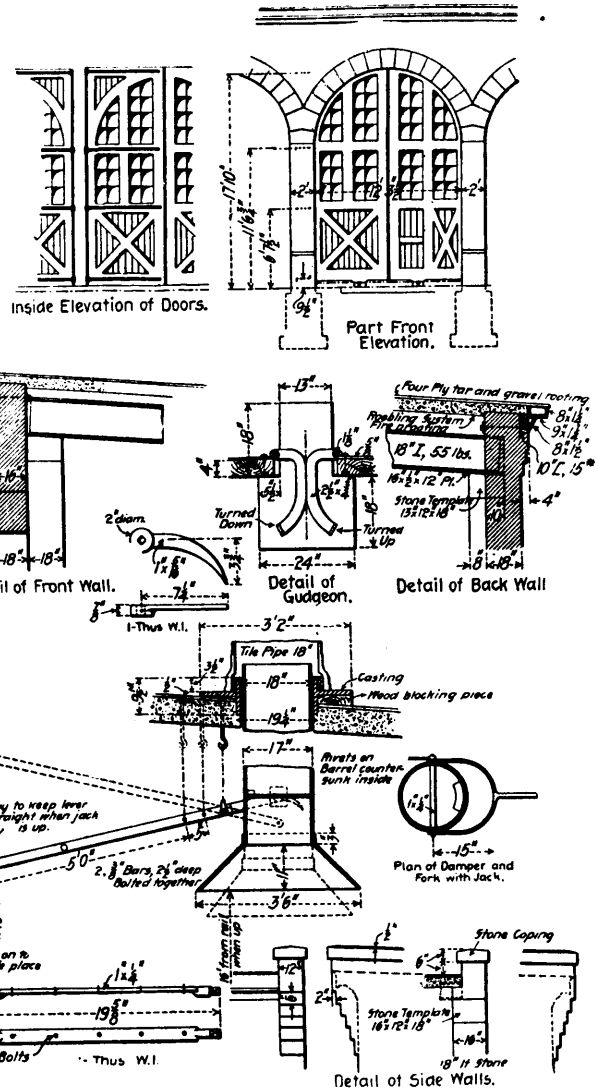
Operation of Government Railways.

The railways maintained by the government are: The Intercolonial, the Windsor branch (maintained only), and the Prince Edward Island railways. The gross earnings of all the government roads for the year ended June 30, 1900-1901, was \$5,213,381.24, an increase of \$439,219.37 over the preceding year. The gross working expenses were \$5,738,051.54, an increase of \$1,073,823.48. The net loss on the operations of the year was \$525,670.30. The Intercolonial gave a loss of \$488,186.77, including \$140,000 rental paid for the extension into Montreal; the Windsor branch (one-third of total earnings), gave a profit of \$30,399.23, and the Prince Edward a loss of \$67,882.76.

Intercolonial Ry.—During the year there was an addition of \$3,652,313.46 to the capital account expenditure, making the total expenditure chargeable to capital on the whole road as an amalgamated up to June 30, 1901, \$63,975,261.78.

The additions made during the year included: for increased accommodation at Halifax, \$31,969, at St. John, \$221,932, at Sydney, \$96,000, and at Levis, \$90,000; for increased sidings, stations and other facilities, \$353,577; for strengthening bridges, \$142,678; for engine-houses, \$132,422; for additional rolling stock, \$1,563,705; for applying air-brakes to freight cars, \$25,485, and for steel rails and fastenings, \$402,549.

The gross earnings of the year were \$4,972,235.87, an increase of \$420,164.16, and the working expenses \$5,460,422.64 (including \$140,000 rent paid for the extension into Montreal), an increase in comparison with the previous year (when \$164,694.47 was paid for such rental), of \$1,029,017.95, the excess of expenditure over earnings being \$488,186.77, against an excess of earnings over expenditure in the previous year of \$120,667.02. Of the expenditure for the past year, the item of locomotive power is answerable for \$1,970,987.70, an increase of \$585,917.80. Comparing the earnings with those of the previous year, the passenger traffic produced \$1,607,166.79, or 32.32% of the gross earnings, an increase of \$202,606.92; the freight traffic produced \$3,121,006.15, or 62.77%, an increase of \$208,215.63, and the carriage of mail and



CANADIAN PACIFIC RAILWAY FIREPROOF ROUNDHOUSES.

express freight produced \$244,062.93, or 4.91%, an increase of \$9,251.61. The earnings per mile of railway were \$3,782.11, an increase of \$319.59. The mileage of the railway was the same as in the previous year, 1,314.67.

The number of passengers carried was 2,025,295, an increase of 233,542; of freight, 2,111,310 tons were carried, a decrease of 39,898. The through freight increased 40,359 tons, and the local freight decreased 80,257 tons. Of flour and meal, 1,292,106 barrels were carried, an increase of 58,030. Of grain, 3,535,364 bush, were carried, an increase of 814,911. Lumber showed an increase of 17,508,890 superficial feet, the total quantity carried being 396,858,890. There was an increase of 3,110 in the number of live stock, of which 95,923 were carried, 506,590 tons of coal, a decrease of 96,619, were carried. Of raw sugar, 489 tons were carried, an increase of 383. Of refined sugar, 25,821 tons, a decrease of 3,186, were carried. 9,318 tons of fresh fish, an increase of 371, and 9,768 tons of salt fish, an increase of 3,125, were carried. Of manufactured goods, 476,528 tons were carried, a decrease of 30,496. Of ocean borne goods, other than deals, to and from Europe, via Halifax, the aggregate was 163,838 tons, an increase of 124,044. Of this, 155,514 tons was local traffic.

The removal of snow and ice cost \$96,855, an increase of \$7,982. The permanent way and all structures and works are in good order. The train mileage (or number of miles

run by trains) of the year was 6,262,674, an increase of 788,964. The cost per train mile was 87.19c., 6.24c. more than the previous year (in both years the rental of leased lines is included). The working expenses per mile of railway amounted to \$4,153.45, an increase of \$782.72 a mile. The rental of leased lines is included in both years. The work of fitting quick-action air brakes to freight cars has been continued; these brakes have been placed on 1,307 cars during the year, making the total number now so fitted 3,978.

The Windsor Branch is 32 miles long, from Windsor Jct., on the I.C.R., to Windsor. It is operated by Dominion Atlantic Ry. Co., which pays all charges in connection with the working of traffic, two-thirds of the gross earnings being allowed it, the government taking the remaining one-third, and assuming all costs of maintenance of the road and works. All charges for superintendence and 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 (one-third of gross receipts) credited to this branch, were \$47,261.89, an increase of \$89.54. The expenses of maintenance were \$16,862.66, an increase of \$3,971.10, leaving a profit to the government of \$30,399.23.

Prince Edward Island Ry.—The total cost of the road and equipment chargeable to capital account at the close of the fiscal year was \$4,123,827.21; there being an addition during the year of \$280,173.93; the principal items being \$115,663 on the branch to Murray Harbor, and \$92,828 for a combined railway and carriage bridge over the Hillsborough river, Charlottetown.

The gross earnings were \$193,883.48, and working expenses \$261,766.24; the loss being \$67,882.76. Compared with the previous year, the gross earnings increased \$19,144.75, and the working expenses increased \$40,-

834.43. The railway carried 157,793 passengers, an increase of 10,322, producing \$78,689.73, an increase of \$5,691.31. Of freight, there were carried 73,696 tons, an increase of 11,469, producing \$97,425.85, an increase of \$13,798.44. The earnings from mails and sundries were \$17,767.90, a decrease of \$345. Compared with the previous year, the working expenses were greater by \$40,834.43. The train mileage (the number of miles run by trains) was 270,255, an increase of 5,360. The cost per mile run by trains was 96.88c., an increase of 13.48c.; and the cost per mile of railway \$1,246.50, an increase of \$194.45.

The Mica Boiler Covering Co. has recently received an order from the French Admiralty; it is shipping mica boiler covering to the G.I.P. Ry., of India, also to the Natal Government. It has recently added three more English railways to its list of customers, viz: the Great Eastern, the London and North Western, and the Central of London.

The International Lumber Co., Ltd., has been incorporated under the Ontario Companies' Act, with F. H. Clergue, President of the Algoma Central and Hudson's Bay Ry., and his associates in the various enterprises at Sault Ste. Marie, Ont., as incorporators, to carry on a general lumbering business.

The U.S. Senate has passed a resolution calling upon the Secretary for War for all information referring to railway building in Cuba. It is stated that this is aimed at the Cuba Co., of which Sir Wm. Van Horne is President, as some senators contend it is proceeding illegally.

A bill is before the Ontario Legislature seeking to amend the Assessment Act by exempting the income of "railway employes," among other wage earners in receipt of \$1,000 a year, from taxation, instead of \$700 as heretofore.

Ontario Taxation of Transportation Co.'s

The Assessment Commission appointed by the Ontario Government recently presented its report. Among its recommendations is the following:

That a provincial board be appointed for the assessment of the land of railway companies, the income of express companies, and the "special franchises" of other persons, together with the land used in connection with the "special franchise," the tax on the amounts assessed to be paid to the Provincial Treasurer, and to be distributed after deducting the expenses of the board, amongst the various municipalities concerned. An appeal from the board to the Court of Appeal in a proper case to be provided for.

The commissioners say they have endeavored to tax private persons and corporations by analogous methods. It seemed to the commission to be a sufficient advance in the taxation of such corporations for the present if in the case of railways their land be valued like that of private persons, including the structures thereon; and in the case of other corporations possessing special privileges in regard to the use of public land, if the right to so use the land be assessed. "That method of taxation," they say, "will be more in harmony with what we recommend in the case of private persons than taxation upon gross receipts would be."

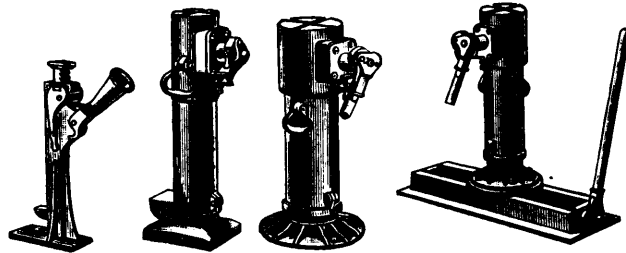


The Canadian Northern Ry. has adopted a trade mark, of which an illustration is given herewith.

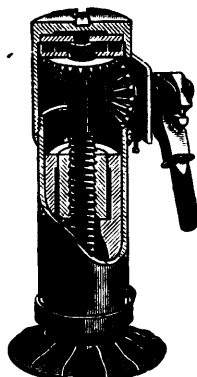
The Ameer of Afghanistan has issued a proclamation to his people, promising "to prevent the introduction of railways, telegraphs, European trade, education and missionaries."

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It's Because
They are
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ELECTRIC RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1901,

The following abbreviations are used in the names of railways,—E., electric; E. R., electric railway; E. S. R., electric street railway; R., railway; S. R., street railway:

Name of Railway.	Mileage.	Gross earnings.	Net earnings.	Proportion of earnings to working expenses.	Earnings per car mile.	Operating per car mile.
		\$ cts.	\$ cts.	p. c.	Cents.	Cents.
Belleville Traction Co. (1)...	2.00	4,012 97	- 801 78	83	.....	.....
Berlin & Waterloo S. R.....	3.02	13,456 01	2,318 41	121	18.23	15.09
Brantford S. R.....	5.90	19,552 35	- 7,412 62	73	9.78	13.48
British Columbia E. R. (2)...	48.30	297,698 74	95,098 67	147	21.08	14.34
Cornwall E. R.....	6.00	16,422 77	- 7,021 00	70	10.79	15.40
Galt, Hespeler & Preston S.R.	9.00	23,763 20	6,700 43	139	28.80	20.68
Guelph S. R.....	5.50	12,912 23	454 10	96	6.59	6.83
Halifax E. Tramway.....	8.43	135,173 95	24,608 06	122	22.08	18.06
Hamilton & Dundas S. R.....	7.23	30,590 30	17,140 63	227	43.15	18.97
Hamilton, Grimsby & Beams- ville E. R.....	23.00	51,433 86	30,482 56	245	22.17	9.03
Hamilton Radial E. R.....	12.00	40,075 36	17,844 88	180	20.79	11.53
Hamilton S. R.....	22.00	157,578 79	71,105 03	182	13.23	7.26
Hull E. Co.....	13.63	69,958 67	30,865 78	179	18.74	10.47
Kingston, Portsmouth & Cat- araqui E. R.....	7.40	37,056 74	7,425 98	125	38.60	30.86
London S. R.....	28.50	129,751 56	70,654 91	220	.....	.....
Metropolitan R.....	28.00	63,536 43	30,318 63	191	25.41	13.29
Montreal Park & Island R....	40.88	125,391 88	49,809 54	166	19.02	11.46
Montreal S. R.....	103.43	1,865,087 34	792,444 81	174	17.78	10.22
Montreal Terminal R.....	14.10	42,293 44	20,224 14	192	18.25	9.53
Nelson Electric Tramway....	2.65	10,316 39	- 15,190 94	40	12.14	30.01
Niagara Falls, Park & River R.....	13.68	87,025 25	41,439 05	191	31.38	16.44
Niagara Falls, Wesley Park & Clifton Tramway.....	4.33	10,174 99	3,055.54	143	.....	.....
Niagara, St. Catharines and Toronto R (3).....	19.94	57,842 73	15,673 13	137	28.15	20.52
Oshawa R.....	8.02	31,345 79	11,008 78	154	60.37	39.17
Ottawa E. R.....	23.85	321,122 43	128,916 35	167	14.25	8.53
Port Arthur E. R. (4).....	7.60	11,742 81	902 95	109	16.54	15.27
Port Dalhousie, St. Catharines & Thorold E. S. R. (5)....	6.82	2,443 50	1,131 20	186	.....	.....
Quebec R., Light & Power Co.—Quebec City S. R.....	17.22	159,876 65	41,972 63	136	14.67	10.82
St. John R.....	12.00	78,421 41	26,621 41	151	17.60	11.62
St. Thomas S. R.....	5.84	12,341 07	- 2,072 49	86	.....	.....
Sandwich, Windsor & Am- herstburg R.....	15.00	45,083 29	13,183 41	141	.....	.....
Sarnia S. R.....	4.50	15,369 90	2,163 53	116	18.60	15.98
Sherbrooke S. R.....	7.75	27,000 00	9,700 00	156	.....	.....
Toronto & Mimico R.....	5.87	20,050 36	7,958 05	166	12.11	7.30
Toronto & Scarborough E. R....	5.07	9,850 46	3,145 16	147	9.92	6.76
Toronto R.....	89.10	1,561,880 23	739,044 14	190	16.81	8.86
Toronto Suburban S. R.....	7.50	13,001 28	- 545 04	96	17.09	17.81
Winnipeg E. S. R.....	18.00	142,247 48	48,870 12	152	13.96	9.16
Woodstock, Thames Valley & Ingersoll S. R.....	9.50	1,910 83	45 63	102	9.80	9.57
Yarmouth S. R.....	2.00	13,489 67	4,744 67	154	.....	.....
	674.58	\$5,768,283 11	\$2,333,120 24			

Sir Wm. Van Horne and Cuba.

Sir Wm. C. Van Horne, Chairman of the board of the C.P.R., and at the head of the syndicate which owns railways in Cuba, is more deeply concerned in the franchise question in the island than in the question of tariff reductions now being so strenuously presented before Congress. He called upon President Roosevelt a few days ago and discussed the Cuban situation in a general way. Before leaving Washington he had several interviews with leading senators and government officers, in an effort to ascertain whether there had been any decision as to what action would be recommended in the transfer of the government of Cuba to the new republic, concerning the franchises which were granted under the military government, or were taken by promoters, without the formality of official sanction.

Sir William's anxiety results from a rather peculiar state of affairs in connection with the construction of Cuban railroads by the syndicate which he represents. Immediately upon the U.S. occupation of the islands his syndicate sought a franchise for railroad privileges covering a great portion of the island. The U.S. authorities took the position that they had no right or desire to enter into any franchise agreements concerning any portion of the island except that under U.S. occupation. The syndicate at once secured by purchase control of nearly all of the railways in the provinces of Havana and Matanzas, but the desire was to build a railway almost the entire length of the island. The U.S. authorities refused to grant any franchise or any assurance of one east of Cienfuegos, taking the view that this question should be settled by the new government of Cuba, whatever that might be. There was no other authority to appeal to at the time, and the syndicate wanted to build the railways. In that emergency, upon Sir William's recommendation, the syndicate decided to take its chances. While there was no one to grant authority for the work, there was no one to prevent it, so the syndicate proceeded to construct its line to Cardenas, thence across Santa Clara province, on through the province of Puerto Principe and toward Santiago de Cuba. It has been about completed, and Sir William and his associates are anxious to receive some assurance that they will not be disturbed in their rights. During his stay in Washington Sir William intimated that his company had every reason to believe that the new Cuban government would approve the work of the railway builders and grant them a franchise on very reasonable terms if the government of the U.S. does not interfere with the question in any manner.—Railway World, Philadelphia, Feb. 1.

The Train Dispatcher.

H. A. Dalby, Fairbury, Neb., writes:—"Looking over the Canadian Pacific Ry. Book of Rules, I note the following:—
'For movements not provided for by the timetable, train orders will be issued by the authority and over the signature of the designated train dispatchers.'
'I assume that this means the man commonly known as the 'trick dispatcher.' The same title is used throughout the code for the person to whom trainmen and others report directly while in actual service on the road. The chief dispatcher, trainmaster or superintendent, one of which officers is usually designated to take charge of such matters, is not mentioned. This seems to be right. The dispatcher is the man that does the work; why not sign the dispatcher's name to orders, messages and instructions which are directly authorized by him without aid or advice, and for which he alone is responsible? Some roads use the chief dispatcher's name for train movements, orders being made 'O. K.' and 'complete' over the initials of the dispatcher. This brings the authority to the dispatching department, as it should be; but there are many roads, and I believe they are the large majority, where the dispatcher, the man who does the work and who shoulders the blame if it is defective (but who seldom gets the credit if it is good), is unknown in any official sense. It is the name of the trainmaster or the superintendent which appears on train orders, when, as a matter of fact, that officer does not know when they are issued, never authorizes a movement and would not retain a dispatcher in the service who was not capable of executing this part of the work on his own account. Would it be out of place to urge upon the managing officer of our railways the justice of allowing the man who assumes the responsibility to affix his own name to the orders which emanate from his own brain and hand?'—Railroad Gazette.

(1) Belleville Traction Co., return very imperfect; road passed into hand of creditors, Sept. 12, 1901, and closed down.
(2) British Columbia E. R.—The figures given are for year ended, March 31, 1901.
(3) Niagara, St. Catharines and Toronto R., was originally the St. Catharines and Niagara Central R., operated by steam; its freight traffic between St. Catharines and Niagara Falls, is still operated by steam.
(4) Port Arthur E. R., connecting Port Arthur and Fort William, is owned by the town of Port Arthur.
(5) Port Dalhousie, St. Catharines and Thorold E. S. R.—The figures given are from May 9 to June 30, 1901.

The Prescott, Ont., Elevator Co. is reported to be in difficulties, and an application has been made to wind it up.

STEAM RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1901.

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. The numbers in brackets—thus (1)—after the name of a railway refer to notes alongside the table.

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.	Cents.	Cents.
Alberta Ry. & Coal Co.	64.62	157,059 11	50,314 38	147	223.00	151.56
Albert Southern (1)	19.00					
Algoma Central & H. B.	42.00	140,996 58	79,125 47	228	463.73	203.49
Atlantic and Lake Superior (2) ..	130.00	33,636 68	544 81	102	51.75	50.91
Bay of Quinte (3)	64.82	185,127 31	79,843 84	176	138.11	78.54
Bedlington & Nelson (4)	15.20	14,543 19	- 12,632 25	54	79.85	149.22
British Yukon	90.45	846,321 42	562,798 07	298	906.71	303.76
Brockville, Westport & Sault Ste. Marie	45.00	35,115 05	309 18	109	104.86	95.84
Buctouche & Moncton	32.00	15,968 99	- 2,764 07	85	86.63	101.63
Calgary & Edmonton (5)	295.93	406,352 82	178,820 01	178	185.10	103.65
Canada Atlantic (6)	458.00	1,786,338 27	374,905 23	127	116.52	92.07
Canada Coals & Ry. Co	12.00	28,975 61	15,888 20	221	82.16	37.11
Canada Eastern	136.00	133,453 25	11,670 34	110	68.99	62.95
Canada Southern (7)	382.19	5,094,374 26	314,520.55	107	128.55	120.61
Canadian Northern (8)	522.00	383,363 15	161,451 47	173	181.98	105.34
Canadian Government Rys.						
Intercolonial (9)	1,301.94	4,972,235 87	- 488,186 77	91	79.39	87.19
Prince Edward Island	209.00	193,883 48	- 67,882 76	74	71.74	96.86
Canadian Pacific (10)	7,292.31	30,378,589 29	12,127,168 58	166	171.91	103.29
Caraquet	68.00	26,172 94	- 1,045 98	96	55.09	57.91
Carillon & Grenville	13.00	2,355 98	- 1,142 81	67	36.25	53.83
Central Ontario	134.60	179,027 44	72,659 36	168	145.55	86.38
Central of New Brunswick	45.66	3,825 46	- 35,331 98	10	40.27	412.18
Central of Nova Scotia (11)	74.00	59,853 58	15,365 75	135	121.26	90.13
Cumberland Ry. & Coal Co	32.00	121,939 76	60,004 85	197	162.30	82.43
Dominion Atlantic (12)	220.50	869,352 83	167,859 75	124	167.06	134.81
Elgin & Havelock	28.00	7,001 46	- 3,968 75	64	48.38	75.80
Esquimalt & Nanaimo	78.00	234,194 10	18,027 71	108	118.98	109.82
Fredericton & St. Mary's Ry. Bridge (13)	1.33	5,416 78	4,184 86	440		
Grand Trunk (14)	3,153.98	20,900,946 64	7,584,815 30	157	126.76	80.76
Great Northern (28)	175.10	139,954 49	36,678 83	136	79.22	58.45
Gulf Shore	16.78	2,273 43	1,015 73	181	70.82	39.18
Halifax & Yarmouth (15)	50.10	35,515 90	8,287 83	130	76.89	58.95
Hampton & St. Martin's	29.00	11,415 69	- 3,121 24	79	60.38	76.51
Hereford (16)	53.30	45,144 03	- 22,912 57	66	69.17	104.28
Irondale, Bancroft & Ottawa. Interprovincial Bridge & Approaches	48.00	18,917 27	- 598 90	97	62.16	64.13
Inverness & Richmond (17) ..	1.30					
Kaslo & Slocan	56.50	1,313 86	189 35	117		
Kent Northern (18)	31.80	67,426 18	26,962 45	167	269.89	161.97
Kingston & Pembroke	34.00	11,386 81	1,706 81	118	63.26	53.78
L'Assomption	112.85	163,089 81	32,678 55	125	120.61	96.45
Lake Erie & Detroit River (19) ..	3.33	1,202 35	- 458 75	72	19.56	27.03
Leonora Mount Sicker	179.72	469,313 21	160,492 86	152	123.57	81.31
Lotbiniere & Megantic	6.25	1,126 92	- 7,877 47	13	22.36	178.66
Manitoulin & North Shore	30.34	15,738 24	2,380 68	118	89.91	76.31
Massawipi Valley (20)	15.50					
Midland of Nova Scotia (21) ..	35.46	128,989 97	18,851 03	117	84.03	71.75
Montford & Gatineau	33.00	21,172 67	- 1,386 52	94	40.53	43.19
Montreal & Atlantic (22)	200.00	399,660 22	40,406 61	111	108.70	97.71
Montreal & Province Line (23) ..	40.60	59,354 16	1,356 88	102	77.36	75.59
Montreal & Vermont Jct. (23) ..	23.60	188,574 28	40,214 45	127	100.67	79.20
New Westminster Southern (25) ..	24.10	9,052 97	- 24,770 87	27	51.13	191.03
Nelson & Fort Shepherd (24) ..	54.70	86,314 82	21,364 18	133	171.53	129.08
New Brunswick and P. E. I. ...	36.00	23,600 18	5,785 03	132	59.36	44.81
Northern Pacific & Manitoba (26) ..	320.51	258,042 07	- 42,682 79	86	108.87	126.88
Nosbonsing & Nipissing	5.50	33,536 55	3,194 20	111	374.71	339.02
Nova Scotia Steel Co.'s Ry	12.50	19,099 33	- 707 49	96	127.33	132.05
Orford Mountain	26.50	14,764 51	860 02	106	53.52	50.40
Ottawa, Northern & Western	57.87	82,033 71	16,213 11	125	129.97	104.29
Ottawa & New York	56.79	75,773 74	- 11,509 56	87	66.93	77.09
Phillipsburg Ry. and Quarry Co.	7.50	5,210 49	2,702 48	208	402.04	193.52
Pontiac & Renfrew (27)	4.25					
Pontiac Pacific Jct	70.60	53,510 71	8,895 18	120	114.95	95.84
Portage & North Western (26) ..	37.07	5,926 76	- 12,026 42	33	62.67	189.84
Qu'Appelle, Long Lake and Saskatchewan	253.96	132,089 97	7,246 02	106	197.24	186.42

(1) The Alberta Southern is unsafe and not in operation and has not made returns.

(2) The Atlantic & Lake Superior mileage is, Baie de Chaleur, 100; Great Eastern, 23; Ottawa Valley, 7.

(3) The Bay of Quinte's mileage includes the Kingston, Napanee & Western, 60.82.

(4) The Bedlington & Nelson has running powers on the C.P.R., Creston Pt. to Sirdar Jct. 870 miles.

(5) The Calgary & Edmonton is operated by the C.P.R.

(6) The Canada Atlantic's mileage includes two leased lines, Central Counties 37, Pembroke Southern 21.

(7) The Canada Southern has 132.50 miles double track.

(8) The Canadian Northern includes Lake Manitoba Ry. & Canal Co.'s line, Winnipeg Great Northern, Manitoba Southeastern, Ontario and Rainy River, and Port Arthur, Duluth & Western. Its financial returns include for June, 1901, the Northern Pacific & Manitoba and the Portage and Northwestern, leased from the Manitoba Government. The mileage of these lines is given separately. The C.N.R. has running powers over the Manitoba & Northwestern, Portage la Prairie to Gladstone Jct. 36 miles.

(9) The Intercolonial mileage is exclusive of the Windsor branch, 32, but includes Drummond County. The I.C.R. has running powers on the G.T.R., Point Levis to Hadlow 1.50 miles, Chaudiere curve to Chaudiere 1.18 miles; St. Rosalie Jct. to Montreal, 37.62 miles; total, 40.30 miles.

(10) The C.P.R. mileage comprises C.P.R. lines owned, 4,554.20; leased lines, Fredericton, 22.10; New Brunswick, 175; New Brunswick & Canada, 117.20; St. John & Maine, 92.10; St. John Bridge & Ry. Extension, 2; St. Stephen & Milltown, 4.64; Tobique Valley, 28; Cap de la Madeleine, 2.32; Montreal & Lake Maskinonge, 12.90; Atlantic & Northwest, 201.40; Montreal & Ottawa 93.20; Ontario & Quebec, 474.50; St. Lawrence & Ottawa, 58.40; Credit Valley, 175.70; Guelph Junction, 15.25; Toronto, Grey & Bruce, 191.10; West Ontario Pacific, 26.60; Manitoba & Northwestern, including Saskatchewan & Western, 252.60; Manitoba Southwestern Colonization, 214.40; Columbia & Kootenay, 60.50; Nakusp and Slocan, 36.30; Shuswap & Okanagan, 50.80; Columbia & Western, 157.90; Great Northwest Central, 71; B.C. Southern, 202.20. The C.P.R. has 34.80 miles double track. The C.P.R. has running powers as follows:—Grand Trunk, Toronto to Hamilton Jct., 36.20 miles; Toronto, Hamilton & Buffalo, Hamilton Jct. to Hamilton, 2.70 miles; Canada Atlantic, Montreal & Ottawa Jct. to Ottawa, .80 miles.

(11) The Central of Nova Scotia has running powers on the Dominion Atlantic, Middleton Jct. to Middleton, .33 miles.

(12) The Dominion Atlantic has running powers on the Intercolonial, Halifax to Windsor Jct. 14 miles. Its mileage includes the I.C.R. Windsor Branch, 32.

(13) The Fredericton & St. Mary's Bridge has running powers on Canada Eastern, 0.17 miles. The earnings are toll on trains run over the bridge by the Canada Eastern & C.P.R.

(14) The Grand Trunk mileage includes—G.T.R., 883.79; Great Western, 561.80; Brantford, Norfolk and Port Burwell, 34.39; Buffalo & Lake Huron, 162; G. T., Georgian Bay and Lake Erie, 171; Owen Sound branch, 12.42; London, Huron & Bruce, 68; Waterloo Jct., 10.25; South Norfolk, 17; Wellington, Grey & Bruce, 168.13; Northern Northwestern, 172; Northern Pacific Jct. 111.37; Toronto Belt, 12.79; Midland, 166; Grand Jct., 85.21; Toronto & Nipissing, 85; Lake Simcoe Jct., 26; Victoria, 53; Whitby, Port Perry & Lindsay, 46; Cobourg, Blairton & Marmora, not operated, 15; Jacques

STEAM RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1901—Continued.

Name of Railway.	Mileage.	Gross earnings.	Net earnings.	Proportion of earnings to working expenses.	Earnings per train mile.	Operating per train mile.
Quebec Central (29)	213.50	\$ 588,558 57	\$ 187,590 61	147	105.20	71.67
Quebec & Lake St. John (28)	242.00	375,695 89	91,373 97	132	113.02	85.53
Quebec Ry., Light & Power Co. (30)	30.00	92,049 43	35,959 79	164	56.33	34.32
Quebec Southern (31)	83.80	72,293 57	50,086 39	59	59.44	100.62
Red Mountain	9.53	103,679 69	45,595 42	178	470.25	263.44
Restigouche & Western (32)	10.00	.....	.....	.....	.....	.....
Rutland & Noyan	5.00	.....	.....	.....	.....	.....
Salisbury & Harvey	45.00	25,325 46	691 15	103	101.64	97.87
Shore Line, N. B.	82.50	32,499 99	29,547 62	52	53.21	101.58
Stanstead, Shefford & Chambly	43.00	72,478 83	10,664 00	117	86.64	73.90
St. Clair Tunnel, etc.	2.23	211,843 01	113,897 21	216	.....	.....
St. Lawrence & Adirondack (33)	33.00	188,576 59	103,569 21	222	98.44	44.37
St. Mary's River	30.00	3,803 92	444 00	113	26.32	23.24
Sydney & Louisburg	48.96	685,746 52	249,019 67	157	161.66	102.96
South Shore	61.50	62,618 39	18,812 53	143	79.08	55.32
Temiscouata	113.00	95,902.21	2,270 34	102	111.87	109.22
Tilsonburg, Lake Erie & Pacific	20.00	13,595 65	5,548 65	169	33.99	20.12
Thousand Islands	6.33	23,293 44	9,130 03	164	92.87	56.47
Toronto, Hamilton & Buffalo (34)	89.16	433,454 45	156,081 79	156	153.75	98.38
Victoria & Sidney	16.26	20,386 27	153 74	101	84.07	83.43
York & Carleton	5.75	.....	600 00	.....	.....	.....
	18,294.43	72,898,749 13	22,530,022 91	144.73	136.64	94.41

Engineers' Club of Toronto.

The following officers have been elected for the current year:—President, H. A. Gray; 1st Vice President, C. H. Rust; 2nd Vice President, C. M. Canniff; Secretary, W. Chipman; Treasurer, H. F. Duck; Directors, A. L. Hertzberg, T. R. Rosebrugh, K. Gamble, E. B. Temple; Finance Committee, A. F. Macallum, Chairman, A. B. Lambe, G. R. Michell, F. L. Somerville; Library Committee, W. H. Patton, Chairman, R. F. Tate, W. H. Law, H. Holgate; Rooms Committee, R. A. L. Gray, Chairman, C. E. Cooper, N. M. McLeod, A. J. Van Nostrand; Special Committee Civic Improvements, A. L. Hertzberg, R. W. King.

Major H. A. Gray, the President elect, delivered his inaugural address, Feb. 4, taking as his subject, "Recent improvements and developments accomplished by science and the various lines of invention in harnessing the great forces of nature." After referring to the development of the steamship, Mr. Gray said: "I may also be permitted to refer to the great increase in freights carried on our great lakes, which, of course, necessitates a larger number of vessels being used in the transportation of grain, ore, coal and all other items of commerce. I mention the great lakes, as statistics relating to the carrying trade there are more easily obtainable than those of the ocean-going freighters. Last year the traffic of Lake Superior alone was three times that of the Suez canal. The business on Lake Superior—aside from the local traffic—in the lake proper, was 28,403,065 tons of freight, while that of the Suez was about 9,000,000 Some 60,000 passengers were carried to and from the upper lakes during the season, most of the travel being done in three months. One large steel ship carried during the season 157,600 tons of freight, included in which were 5,280,000 bush. of grain. The same vessel travelled during seven months of the year, 33,600 miles, or a little more than 1 1/3 times round the world The progress which has been made during the last few years in the development, and utilization of Canada's great natural resources for transportation of much of the grain from the western states to the seaboard, through purely Canadian channels, and the carrying of return package freight from the seaboard to the great western centers, is chiefly due to the very energetic, capable and fearless manner in which the present Minister of Public Works is dealing with the transportation question. His methods are of a practical character, and he has familiarized himself with what is essential and thoroughly required to divert this great trade through and into our great Dominion. He has personally visited every port of importance on the great lakes, examining each in detail, thus acquiring a knowledge from personal observation, impossible to obtain as satisfactorily in any other way. It is also stated that it is his intention to provide a ship channel 30 ft. deep and 500 ft. wide from Montreal down the St. Lawrence, and to have it properly defined by range lights and gas buoys, rendering the navigation comparatively easy and safe."

Railways were next touched upon. In 1852 the G.T.R. was incorporated; in 1854 the Northern Ry. was completed and opened from Toronto to Collingwood, then called the "Hen and Chickens," in the following year the G.T.R. from Sarnia to St. Thomas was completed, and in 1860 there were 1,092 miles of railway in Canada. To-day of 17,657 miles of railways in Canada, the G.T.R. operates 4,179, and the C.P.R. 7,156 miles making a total of 11,335. The returns of these companies for 1901 showed an increase of \$1,437,311 in the one case, and of \$4,109,000 in the other, over the receipts for 1900. "Government ownership," added Major Gray, "may have its advantages, but it is certainly

Cartier Union, 6.50; Montreal & Champlain Jct., 61.73; Beauharnois Jct., 19.50. The G.T.R. has 456 miles double track.
 (15) The Halifax & Yarmouth also has 19.3 miles not operated, but which were operated in 1899-1900.
 (16) The Hereford, which is operated by the Maine Central, includes the Dominion Line Co.'s line.
 (17) The Inverness & Richmond was not open for traffic till June 15, 1901.
 (18) The Kent Northern mileage includes the St. Louis & Richibucto.
 (19) The Lake Erie & Detroit river mileage includes the Erie & Huron 155.72, and the London & Port Stanley, leased, 24.
 (20) The Massawippi Valley is leased to the Boston & Maine. It has running powers on the G.T.R., Sherbrooke to Lennoxville, 2.95 miles.
 (21) The Midland of Nova Scotia was under construction and rails were laid for 57.5 miles.
 (22) The Montreal & Atlantic is operated by the C.P.R. Its mileage comprises the old Southeastern, 139.30; and the Lake Champlain and St. Lawrence Jct. 60.70. The M. & A. has 36.6 miles, Sorel to Drummondville, not in operation.
 (23) The Montreal & Province and the Montreal & Vermont Jct. are leased by the Central Vermont.
 (24) The Nelson & Fort Sheppard is operated by the Spokane & Northern, a subsidiary of the Great Northern, U.S.A. It has running powers on the C.P.R. from Five-Mile Point to Nelson, 4.70 miles.
 (25) The New Westminster Southern is owned and operated by the Great Northern, U.S.A.
 (26) The Northern Pacific & Manitoba and the Portage & Northwestern returns are for 11 months to May 31, 1901, when the lines were leased to the Manitoba Government and re-leased to the Canadian Northern.
 (27) The Pontiac & Renfrew is not operated.
 (28) The earnings, etc., of 20 miles of the Great Northern were included in the Quebec

& Lake St. John returns for 4 months to Oct. 31, 1900, and for the balance of the year in the G.N.R. returns. The Great Northern mileage includes the Lower Laurentian, 35. The G.N. has running powers on the Q. & L. St. J., Quebec to River a Pierre, 58 miles.
 (29) The Quebec Central has running powers on the I.C.R., Harlake Jct. to Levis, 5 miles.
 (30) The Quebec Ry. Light & Power Co. has 6 miles double track.
 (31) The Quebec Southern has running powers on the South Shore, St. Robert Jct. to Sorel, 6 miles.
 (32) The Restigouche & Western is not operated.
 (33) The St. Lawrence & Adirondack has running powers on the G.T.R., 13.20 miles and on the C.P.R. 8.70 miles.
 (34) The Toronto Hamilton & Buffalo has 4.69 miles double track. It has running powers on the Hamilton & Dundas St. Ry., Hamilton to Dundas, 3.67 miles.

Writs have been issued against the Nelson Tramway Co. and the New Vancouver Coal Co., claiming in each case \$94,900 for alleged infringements of the Dominion Railway Act, sec. 299, directing the preparation and transmission to the Minister of Railways of annual returns; 300, directing the preparation and transmission of weekly returns of traffic; and 302, directing a return of accidents to be made half-yearly to the Minister of Railways; sec. 304 fixes the penalty for defaulting at \$100 a day. The writs are issued in the name of C. W. A. Neill, a runner for a Victoria hotel, who, according to press reports, stated when seen that he knew nothing of the matter except that he signed some papers for a man whom he did not know. Neill has also issued a writ against the Mount Ricker Ry. Co. for \$20,000 on similar grounds.

The National Portland Cement Co., of Owen Sound, Ont., is having the plant for a dredge constructed at the Polson Iron Works, Toronto, to be ready early in the spring.

expensive, as we all know it has been so in this country, and it is significant that in countries where the great lines of transportation have been developed by the adventure of private capital, the people have cheaper facilities than those afforded in other countries. There are some advantages, however, in Government ownership; on all railways in Germany, New Zealand, etc., rates of discrimination are absolutely prohibited."

Of the telegraph, Major Gray said, "To attempt to predict at this moment what the future of telegraphy will be would indeed be folly. New instruments and new processes are constantly being introduced, some of which are adopted, others are found to in no way improve the present practice or meet existing needs. The writing telegraph, invented by the late E. A. Cowper, which reproduces actual handwriting and called the Telautograph, is being made practical use of and electrical typewriting machines are by degrees replacing the A B C visual indicator. It is by no means, in my opinion, visionary to say, that in a very short time wire telegraphy will be entirely dispensed with and messages of length and importance flashed through the air by means of Marconi's wireless telegraphy." The introduction of the telephone revolutionized the business methods of the day; its development has been so rapid as to seem almost incredible. "Telephony has become a part and parcel of the business institutions of the country similar to the post and telegraph. An advocate of municipal or federal ownership will doubtless claim that the telephone system should belong to the state. This we will not now discuss, as it would open up a question of too great magnitude for an address of this kind. The Bell Telephone Co., in 1880, had 13 exchanges and 2,100 subscribers. In 1900 it had 350 exchanges, 494 agencies and about 39,000 subscribers. It also had in 1900 some 22,000 miles of long distance lines."

Dominion Subsidies to Railways.

Following is a list of subsidy contracts entered into by the Dominion Government from July 1, 1900, to Dec. 1, 1901, with date of each contract:

- Great Northern Ry. Co.—Shawenegan Falls branch, 6½ miles, July 4, 1900; Montcalm to St. Tite, 53½ miles, July 26, 1900.
- Central Ontario Ry. Co.—Coe Hill or Rathbun to Bancroft, 21 miles, Aug. 29, 1900.

Cape Breton Ry. Extension.—Port Hawkesbury to St. Peters, 30 miles, Sept. 15, 1900.

St. Mary's River Ry. Co.—From Alberta Ry. and Coal Co.'s line to Cardston, Alta., 30 miles, Sept. 10, 1900.

Montreal and Province Line.—Farnham to Frelighsburg and boundary, 21 miles, Oct. 31, 1900.

Ottawa and New York Ry. Co.—Bridge over St. Lawrence at Cornwall, \$90,000, Oct. 4, 1900.

Quebec Bridge Co.—Bridge over the St. Lawrence at Chaudiere Basin, \$1,000,000, Nov. 12, 1900.

Pontiac Pacific Jct. and Ottawa and Gatineau Ry. Companies.—Bridge over the River Ottawa between Ottawa and Hull, additional \$100,000, Nov. 26, 1900.

Chateauguay and Northern Ry. Co.—Railway bridge over east and west channels of Riviere des Prairies, Jan. 19, 1901; from Hochelaga ward, Montreal, to Great Northern Ry., near Joliette, with spur into L'Assomption, 42 miles, Jan. 19, 1901; railway bridge over Lac Ouareau, Jan. 19, 1901.

South Shore Ry. Co.—Railway bridge over St. Francis river, June 29, 1901.

Thousand Island Ry. Co.—Extension from present northerly terminus to a point easterly, 2 miles, Mar. 15, 1901.

Atlantic and Lake Superior Ry. Co.—From Caplin to Paspebiac, 30 miles, July 25, 1901.

Algoma Central and Hudson's Bay Ry. Co.—From Sault Ste. Marie, Ont., towards Michipicoten river and harbor, and towards main line of the C.P.R., 40 miles, Sept. 28, 1901.

Bruce Mines and Algoma Ry. Co.—From Algoma branch of C.P.R. at or near Bruce lake station, northerly to or near Rock lake, 9 miles, Nov. 19, 1901.

Kootenay and Arrowhead Ry. Co.—From Duncan lake towards Lardeau or Arrow lake, B.C., or from Lardeau to Arrow lake, 30 miles, Aug. 26, 1901.

Montreal and Province Line Ry. Co.—From Farnham to Frelighsburg, Que., 19 miles, Aug. 2, 1901.

Red Deer Valley Ry. and Coal Co.—From Calgary to township 29, range 23, 4th meridian, 55 miles, July 30, 1901.

Tilsonburg, Lake Erie and Pacific Ry. Co.—From Tilsonburg to Ingersoll or Woodstock, Ont., 28 miles, Oct. 15, 1901.

The following subsidy payments were made during the fiscal year ended June 30, 1901:

Great Northern Ry.	\$345,323.11
C.P.R. (Crow's Nest Pass)	205,544.00
Ottawa and New York Ry.	90,000.00
G.T.R. (Victoria Jubilee Bridge)	228,371.75
South Shore Ry.	88,400.00
Massawippi Valley Ry.	5,376.00
Inverness and Richmond Ry.	132,800.00
Canadian Northern Ry.	537,600.00
C.P.R. (Pipestone branch)	92,800.00
Central Ontario Ry.	67,200.00
Midland Ry. of Nova Scotia	170,264.00
Quebec Bridge Co.	74,570.00
St. Mary's River Ry.	75,000.00
Pontiac Pacific Jct. and Ottawa and Gatineau Valley Ry. Companies (Interprovincial Bridge)	212,500.00
Atlantic and Northwestern Ry.	186,600.00
Total	\$2,512,328.86

The following additional payments were made from July 1 to Dec. 1, 1901:

Quebec Bridge Co.	\$99,760.00
Canadian Northern Ry.	699,970.00
Atlantic and Lake Superior Ry.	14,800.00
Montreal and Province Line	32,000.00
York and Carleton Ry.	18,336.00
Thousand Islands Ry.	5,440.00
C.P.R. (Pipestone branch)	67,200.00
Inverness and Richmond Ry.	36,800.00
Total	\$974,306.00

The following shows the aggregate of the payments made on the subsidy account:

Fiscal year 1883-84, ended June 30, 1884	\$ 208,000.00
" 1884-85	403,245.00
" 1885-86	2,171,249.00
" 1886-87	1,406,533.00
" 1887-88	1,027,041.92
" 1888-89	846,721.83
" 1889-90	1,078,195.72
" 1890-91	1,265,705.67
" 1891-92	1,248,215.93
" 1892-93	811,394.07
" 1893-94	1,220,885.10
" 1894-95	1,310,549.10
" 1895-96	834,745.49
" 1896-97	419,955.30
" 1897-98	1,414,934.78
" 1898-99	3,201,220.05
" 1899-1900	725,720.35
" 1900-01	2,512,328.86
Total	\$22,712,641.37

To the above there have been added the following exceptional subsidies:

Canada Central Ry., paid between 1878-83	\$ 1,525,250.00
C.P.R. extension from St. Martin's Jct to Quebec, paid in 1885	1,500,000.00
Subsidies paid from consolidated fund up to June 30, 1901	25,737,891.37
Main line subsidy to C.P.R. paid from capital	25,000,000.00
Total paid as subsidies	\$50,737,891.37

The above does not include \$2,394,000 due the Province of Quebec for the railway between Ottawa and Quebec, which has been transferred to the public debt, and on which interest at 5% is paid, amounting to \$119,700 a year.

It Leads Them All.

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Track Laid During 1901.

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On Dec. 31, 1901, we issued a circular to all steam and electric railways in Canada asking particulars of track laid during that year. Below is a compilation of the figures received in reply. No official information having come to hand from the Algoma Central & Hudson's Bay Ry., the Manitoulin & North Shore Ry. and the Thousand Islands Ry., the figures given for those lines are approximate and subject to revision. We desire to make our returns absolutely complete, and invite information as to any track laid which may have been omitted from our table.

The largest amount of track laid by one company was 240 miles by the Canadian Northern, which is slightly over half the total for the year. The Inverness and Richmond laid 34.50 miles, making a total of 274.50 miles for Mackenzie, Mann & Co.'s line. The C.P.R. only laid 40 miles, its work having been interfered with by the trackmen's strike. The Co. has about 110 miles of branch lines in Manitoba ready for track, which will be laid in the spring. The Vancouver & Lulu Island Ry. is a subsidiary company of the C.P.R.

STEAM RAILWAYS.

	Miles.	Miles.
ALGOMA CENTRAL AND HUDSON'S BAY Ry.—From Bellevue to Ogidaki	29.00	
From Josephine Jct., on Michipicoten line to Josephine mine	10.50	39.50
BRUCE MINES AND ALGOMA Ry.—From Bruce Mines station, C.P.R., Sault Ste. Marie branch, to Rock Lake, Ont.		15.00
CANADIAN NORTHERN Ry.—From mileage 90 west of Stanley, Ont., to end of track of Manitoba & South Eastern Ry., at Beaudette, Minn., including Rainy River bridge	166.70	
From Beaver to Gladstone Jct., Man.	18.30	
Emerson branch extension into Emerson, Man.		
From St. Charles to mileage 11 beyond Carman, Man.	55.00	240.00
CANADIAN PACIFIC Ry.—From Forest to Wheatlands, Man.	17.00	
From Lardo to Tenderfoot Creek, B.C.	23.00	
From North Star branch to Marysville, B.C.	1.00	41.00
CAPE BRETON Ry.—From Point Tupper eastwards		3.50
CENTRAL VERMONT Ry.—From Farnham to Frelighsburg, Que.	18.00	
INTERPROVINCIAL BRIDGE AND APPROACHES.—From Hull, Que., to Ottawa, Ont.		1.34
INVERNESS AND RICHMOND Ry.—From near Port Hood, to Broad Cove, N.S.	30.00	
From Port Hastings to Point Tupper, N.S.	4.50	34.50
JAMES BAY Ry.—From Quebec siding, Canada Atlantic Ry., to Parry Sound, Ont.	4.50	
KETTLE VALLEY LINES.—From Grand Forks, B.C., to International boundary	5.00	
LAKE ERIE AND DETROIT RIVER Ry.—From Ridgeway to St. Thomas, Ont.	43.00	
MANITOULIN AND NORTH SHORE Ry.—From C.P.R., Sault Ste. Marie branch, at Stanley, to Spanish river pulp and paper mills	1.50	
Elsie mines branch	1.00	2.50
MIDLAND Ry. of N.S.—Bridge and approaches over Shubenacadie river, N.S.		.3
MOUNT SICKER Ry.—Westholme, at crossing of Esquimalt and Nanaimo Ry., to Lenora mine, Mount Sicker, B.C.		6.25
OTTAWA, NORTHERN AND WESTERN Ry.—From north of Hull city limits, Que., to Pontiac Pacific Jct. Ry., Union Station, Hull		1.52
PONTIAC PACIFIC JCT. Ry.—From Deschênes to junction at Interprovincial bridge approach at Hull, Que.		5.10
QUEBEC AND LAKE ST. JOHN Ry.—From Valcartier to St. Catherines, Que.	4.00	
From Quitchouan river to Quitchouan Falls	1.50	5.50
THOUSAND ISLANDS Ry.—Extension to G.T.R. at Thousand Islands Jct., new station		2.00
VANCOUVER AND LULU ISLAND Ry.—From Vancouver, B.C., to north arm of Fraser river		5.50
		473.99

The statement of new track laid does not include second track or sidings. The G.T.R. laid 13.13 miles of second track between Whitby Jct. and Port Union, and 105 miles on the G.T. Western Ry. between Detroit and Chicago.

ELECTRIC RAILWAYS.

Our returns from these lines are very incomplete. Officers of companies which have not complied with our request for information will greatly oblige by doing so at an early date, so that a complete table may be given in our next issue.

	Miles.	Miles.
HALIFAX ELECTRIC TRAMWAY.—Coburg road, Windsor street, Quai pool road, and Oxford st., Halifax, N.S.		1.48
NIAGARA, ST. CATHARINES AND TORONTO Ry.—From St. Catharines to Port Dalhousie, Ont.		5.00
TORONTO AND SCARBORO ELECTRIC Ry.—From Scarboro Bluffs to Halfway house, Ont.		2.15
TORONTO Ry.—Arthur st., from Bathurst st. to Ossington avenue	1.364	
Mackenzie avenue, from Bloor st. to Dupont st.	1.2964	
Shaw st., from King st. to Queen st.	.2248	
Sherbourne and Front streets	.0295	
York and Queen streets	.0285	
Parliament st., northwardly from Winchester street	.2886	3.2318
WOODSTOCK, THAMES VALLEY AND INGERSOLL Ry.—From Woodstock to Ingersoll, Ont.		12.00
		23.8618

The Canada Atlantic Ry. Option.

Of the numerous railway deals which W. S. Webb, chairman of the Board of the Rutland Rd., and his associates have been negotiating on both sides of the international boundary in the vicinity of Montreal during the past year, the option secured on the Canada Atlantic Ry. is by far the most important. No details of the transaction have been made public, but daily press reports have magnified the transaction into one of the first importance, and have worked out a number of surprising plans for new transcontinental lines on the strength of the statements made. After some days spent in cross-firing on the part of the respective sides through the press, one side maintaining that the line had been purchased out and out and the other asserting that not only had the line not been sold, but that it was not officially known that any negotiations for its sale were on foot, something tangible was officially given out by the principals after a meeting in Ottawa. W. S. Webb stated that "The purchase of the line by private interests identical with those of the Rutland Rd. and the New York Central Rd. is an assured fact. There is only one thing to prevent the deal, and that is our failure to pay the money." A few days later J. R. Booth, who controls the Canada Atlantic, while stating that the line had not been offered for sale, said, "You can buy any business if you are willing to pay the price for it. If we get our price we will sell the railway. A figure has been placed on the property and a certain time allowed in which to consummate matters." How long the option on Mr. Booth's interest has to run or the price to be paid has not transpired, but W. S. Webb stated that the transfer would not be completed until spring, as the books of the Co. had to be brought up to date and examined by the holders of the option.

The Canada Atlantic system was formed Aug. 11, 1899, by the consolidation of the Canada Atlantic Ry. and the Ottawa, Arnprior and Parry Sound Ry. The C.A.R. owns the line from Depot Harbor, Ont., to Aldburgh Jct., Vt., 401.6 miles; it leases the Central Counties Ry. from Hawkesbury to Glen Robertson, Ont., 21 miles, and from South Indian to Rockland, 16 miles, total 37 miles; and also leases the Pembroke Southern Ry. from Golden Lake to Pembroke, Ont., 20.9

miles. It has trackage rights over the Central Vermont Ry., from Aldburgh Jct. to Swanton, Vt., 6.7 miles; total mileage operated, 466.2. There are 74.5 miles of sidings and the track is laid with 56, 72 and 73 lb. steel rails. At Swanton, Vt., connection is made with the Boston and Maine Rd., as also with the Central Vermont Ry., by the use of 4 miles of the G.T.R. track, from Lacolle to Rouse's Point, N.Y., connection is made with the Delaware and Hudson and Ogdensburg and Lake Champlain systems. Through trains between Ottawa and Montreal are operated by utilizing the G.T.R. tracks from Coteau to Montreal, 37 miles.

At the time of the amalgamation of the Canada Atlantic and Ottawa, Arnprior and Parry Sound companies J. R. Booth held \$3,765,000 of stock in the Ottawa, Arnprior and Parry Sound Ry. and \$1,190,000 of common stock and \$515,400 of preferred stock in the Canada Atlantic Ry. The other large shareholders in the C.A.R. were: J. G. Smith, \$495,300 ordinary and \$154,000 preferred; W. G. Perley, \$249,400 ordinary and \$26,600 preferred, and the Fitchburg Ry. Co., \$300,000 preferred. The remaining shareholders held from 5 to 310 shares each, while in the O.A. & P.S. Ry. no one outside Mr. Booth held over 300 shares.

The authorized capital stock of the consolidated company is \$7,200,000, of which \$1,000,000 is preferred stock; and the company has authority to issue bonds to the amount of \$25,000 per mile of road constructed or to be constructed, exclusive of Coteau bridge and approaches. The capital stock, ordinary, paid up is \$6,158,300; preferred, \$1,000,000; bonded debt, \$4,450,000; total, \$11,608,300; Dominion Government subsidies, \$1,214,867.20; Ontario Government subsidies, \$847,326.06; Quebec Government subsidies, \$192,000; Ontario municipal aid, \$152,900; Ontario municipal subscriptions to stock, \$32,000; total subsidies, \$2,439,093.26; total capital, \$14,047,393.26. Total cost of line and equipment, \$19,101,528.87. The bonded debt consists of 1st mortgage 5% 20-year gold bonds due Jan. 5, 1909, secured by a mortgage covering both the railway and the bridge at Coteau.

The following statement of operations is for the year ended June 30, 1901, and the financial statement covers the same period: Train mileage—passenger, 507,098; freight, 853,554; mixed, 172,413—total, 1,533,065 miles. Passengers carried, 339,640; tons freight moved, 1,592,987. Earnings—passenger, \$283,658.22; freight, \$1,390,197.10; mails and express, \$29,276.01; other sources, \$83,206.94—total, \$1,786,338.27. Operating expenses, maintenance of way and structures, \$250,491.62; mechanical, \$562,512.33; traffic department, \$116,033.90; general operating expenses, \$482,395.19; total, \$1,411,433.04; net earnings, \$374,905.23.

A special meeting of the shareholders of the C.A.R. has been called for Mar. 11, at 2.30, to be held at Ottawa, for the purpose of adopting a by-law respecting the issue of preference stock and for the purpose of authorizing the directors to issue 1st mortgage bonds or debentures, and for other purposes.

The Secretary-Treasurer of the C.A.R. has replied to a letter from the Ottawa City Clerk as follows: "I am instructed to say that the President has not been officially informed of any proposed change in the control of the Canada Atlantic Ry., but he has been informed that the principal shareholder in the Co. has received an offer for the purchase of his shares of stock, but such purchase has not yet been completed; and without in any way admitting the correctness of the statements contained in said resolution, I am at liberty to state that the contracts and obligations of the Canada Atlantic Ry. Co. will be, as heretofore, strictly carried out. The President

also desires me to express his regret that he is unacquainted with the name of a responsible representative of the persons who have offered to purchase from the present holder his shares of the capital stock of the company." The principal stockholder is J. R. Booth; the President is his son, C. J. Booth.

The C.P.R.'s New Stock Issue.

The President, Sir Thos. G. Shaughnessy, issued the following circular to the shareholders, Feb. 10:—The extraordinary expansion of the Co.'s business during the past six or seven years, and the apparent certainty that the volume will continue to increase year by year, renders it essential that the Co. should, with the least possible delay, provide such additional rolling stock and other facilities as may be required for the prompt and efficient handling of its traffic. The gradients and alignment on the busy sections of the system should be substantially improved, so that the large and increasing tonnage may be moved with the economy requisite for the best results. In view of the present and prospective net earnings of the Co., the directors feel justified in proposing that the money required for these purposes be secured by an issue of ordinary capital shares rather than by other means, and, therefore, they recommend that the ordinary share capital be increased by \$19,500,000. The directors consider that it is due to the shareholders of the common stock that they should be given the privilege of subscribing for the new stock at par, in the proportion of 30% of their respective holdings of the outstanding common shares, on the closing of the books in London, Feb. 18, and in New York and Montreal Mar. 3rd, and a resolution to that effect will be submitted to the shareholders for their approval.

It is intended that the money thus raised shall be expended for the following pur-

poses:—Locomotives, cars and other equipment, \$10,000,000; enlargement of construction and repair shops at Montreal and other points on the system, \$2,000,000; reduction of grades, improvement of alignment and second track, where required, \$6,500,000; additional grain elevators, terminals, business and passing sidings, and other facilities such as are being provided from month to month, to meet the requirements of the Co.'s business, \$4,000,000. These estimates overrun the amount of the contemplated issue of stock at par, and, therefore, to make up the balance, and in order that the Co.'s property may be benefited to as full an extent as if the shares had been sold at a premium on the open market, it is proposed that an amount equivalent to about 15% of the issue, or \$3,000,000, be appropriated from the surplus earnings fund, to be expended for the purposes above mentioned, in addition to the proceeds of the sale of capital stock. After appropriating this amount and providing for payment of the dividends just declared on the preference and common shares, there will still be \$8,600,000 in the surplus earnings fund.

The subscription price of the new stock will be payable at the Bank of Montreal, London, New York and Montreal, as follows:—20% or \$20 per share on subscription, and similar amounts on June 27, August 27, October 27, December 27. No interest or dividend will be allowed on the payments made previous to July 1, or on advance payments, but all shares fully paid, as above stipulated, will take rank for dividend with existing shares for the half-year ending Dec. 31, 1902. No fractional shares will be issued, but rights may be assigned, and, for this purpose, a blank form will be provided. Holders having rights for fractions of shares should make such adjustment of their holdings, by purchase or sale with other shareholders direct, or through brokers, as will make whole shares.

As will be seen by advertisement on another page of this issue, a special meeting of shareholders will be held at Montreal Mar. 27, to authorize the issuing of the new stock.

Organization of Railway Club.

A meeting was held at the Queen's Hotel, Montreal, Feb. 15, to consider the desirability of organizing a railway club. The following officers were elected pro tem:—Chairman, W. H. Rosevear, Jr.; Treasurer, S. F. Underwood; Secretary, M. P. Kelly.

The following were appointed a committee to prepare a circular to be sent to the heads of departments of all railways in Canada:—P. Upton, A. Horsey, T. H. Hopkirk, M. P. Kelly, C.P.R.; S. F. Underwood, G.T.R.; L. Gleason, Galena-Signal Oil Co.; G. Brown, Westinghouse Mfg. Co.

The following were appointed a committee to prepare by-laws:—H. Craig, T. W. Dow, R. K. Oliver, A. Plow, G. Giroux, A. Horsey, H. Osborne, C.P.R.; A. Brown, W. Alderson, A. V. Maher, G.T.R.; L. Gleason, Galena-Signal Oil Co., G. Brown, Westinghouse Mfg. Co., G. Hatch.

The following circular has been issued:—“Realizing the good that has been and is now being done in railroad affairs by the cooperation, discussion and interchange of ideas through the medium of railroad clubs, we take this method of calling your attention to the fact that Canada is without such an organization; and wish to solicit your approval in forming such a society as those already well established throughout different parts of the U.S. The climatic and other conditions here are unlike those in other countries, and it is essential, even necessary, if we are to work to the best advantage for our individual companies, that we meet together and interchange ideas on all subjects

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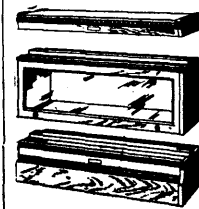
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relating to railroad matters. We, therefore, propose forming a club (the name of which will be decided at our organization meeting) whose object shall be the discussion and dissemination of ideas pertaining to the construction, operation and maintenance of steam and electric railroads and their equipment, and the promotion of social relations among railroad men and others of like interest. It is also the purpose of this club to work in unison with those in the U.S. so as to get the benefit of their proceedings. The endorsements that have been received from railroad officials in all parts of Canada on this movement are very gratifying indeed, and the younger element who have indicated their willingness to join the club, not only for educational purposes but also because of the desire to serve their employers more intelligently, consider that an appeal should be made to the higher officials, urging them to become members of this club in order that we might have the benefit of their presence at the various meetings, and be guided by their valuable opinions on all questions of importance that come up for discussion, thus preventing any possible chance of information of an erroneous or objectionable character from creeping into the reports of the proceedings, which the Committee can see might be the case, without the aid of the more experienced and far-thinking minds. We will hold a meeting at the Windsor Hotel, Montreal, Mar. 11, at 8 p.m., at which the permanent organization and election of officers will take place. If you approve of an organization as outlined above, will you kindly favor us with your presence or a letter of approval on date mentioned."

Canadian Northern Railway Mileage.

By the completion of its line between Port Arthur and Winnipeg, the C.N.R. takes rank as the fourth system in Canada in point of mileage, as follows :

	Miles.
C.P.R., including leased and operated lines.....	8,042.30
G.T.R.....	3,153.98
Canadian Government Rys.....	1,510.94
Canadian Northern Ry.....	1,243.70

Of the Government railways the Intercolonial has 1,301.94 miles, so that this year's construction will put the C.N.R. in the third place for individual lines, and possibly also for systems. Its mileage now operated is divided as follows :

	Miles.
Main line, Port Arthur, Ont., to Erwood, Sask.....	810.2
Duluth Extension, Stanley Jct. to Gunflint, Ont.....	66.9
Winnipeg Transfer Ry.....	1.24
Emerson branch, Portage Jct. to Emerson, Man.....	63.00
Brandon branch, Morris to Brandon, Man.....	145.3
Souris branch, Hartney Jct. to Hartney, Man.....	50.8
Carman branch, St. Charles Jct. to Carman, Man.....	43.7
Delta branch, Portage la Prairie to Delta, Man.....	16.0
Gilbert Plains branch, Gilbert Plains to Grand View, Man.....	26.6
Winnipegosis branch, Sifton Jct. to Winnipegosis, Man.....	21.2
	1243.7

Of the above the following lines were built by the Northern Pacific Rd. and are leased from the Manitoba Government :

	Miles.
Winnipeg Transfer Ry.....	1.24
Winnipeg to International Boundary.....	65.9
Morris to Brandon.....	145.3
Portage Jct. to Portage la Prairie.....	52.5
Hartney Jct. to Hartney.....	50.8
Portage la Prairie to Delta.....	16.0
Beaver.....	19.2
	350.94

The Co. has completed an extension of the Carman branch for 19.8 miles west of Carman. The Co. also owns the Winnipeg Great Northern Ry.'s line of 40 miles from near Winnipeg to St. Laurent, Man., which was built some years ago but has not been operated.

Mackenzie, Mann & Co.'s system also includes the Inverness & Richmond Ry., of which 61 miles are in operation, giving them a total of 1304.7 miles in operation.

Increase in Gross Railway Earnings.

The following increases were made in gross earnings in 1901, compared with 1900 :

Canadian Pacific Railway.....	\$4,009,869
Grand Trunk Railway.....	1,327,922
Minneapolis, St. Paul & Sault Ste. Marie Ry.....	897,388

Passenger Traffic Matters.

An effort will be made at the next annual convention of the National Association of General Baggage Agents, in Chicago, May 21, to have uniform rules adopted for the handling of baggage by all railways in Canada and the U.S.

The C.P.R. is spending more money in Great Britain and Europe than ever in promoting emigration to Canada, and Lord Strathcona and the C.P.R. are doing all that it is possible to do to induce small farmers and laborers to come out to Canada.

The I.C.R. purposes putting on a fast train between Halifax and Montreal, to be known as the Imperial Express, the time between Halifax, N.S. and Moncton, N.B., 186 miles, will be five hours. The name proposed is too much like the C.P.R.'s Imperial Limited, and should be changed to something original.

F. J. Murray, of the Russell hotel, Montreal, has been fined \$20 for illegally selling a C.P.R. ticket. The ticket was originally issued to a South African volunteer returning to Calgary, but fell into the hands of the accused, who sold it. Two other persons were charged in connection with this sale, but they were let go on suspended sentence.

The White Pass and Yukon Route has issued a very neat desk calendar for 1902. It consists of 12 cards in a frame, each card containing, in addition to the month, a view of some part of the railway line, or steamer route, and a short sentence setting forth reasons why the Co.'s route should be patronized. It makes an effective piece of advertising.

The passenger department of the Great Northern Ry. of Canada has issued a time table printed on ordinary dry ground wood pulp, made at Shawinigan Falls, on the Co.'s line. The folder gives some details of the industries on the line and the openings for additional industries, as well as calling attention to the advantages of Quebec as a shipping port, and to a number of tourist resorts along the line.

With the establishment of a through passenger train service from New York and Boston, via the Rutland Rd., to Montreal, another through route has been opened to the trade of Central Canada to the New England states. This means greater competition for the G.T.R. and its Central Vermont line in a field which heretofore they have practically dominated. The number of through passenger trains running daily between New York and Boston and Montreal is increased to 10, and four U.S. roads haul their own trains into Montreal—the Rutland and the New York Central going over the C.P.R., and the Delaware and Hudson and Central Vermont over the G.T.R.—Leonard's Railway News.

"Newfoundland in 1900" is the title of a well written and printed book giving brief accounts of the geography, history and natural resources of the island, and giving special prominence to the development of the railway system, and the steamer routes operated in connection therewith, which are now under the control of the Reid Newfoundland Co. While the book, which is written by Rev. M. Harvey, LL.D., contains a great deal of matter that is of interest, there is much in it that could, with advantage, have been curtailed, or even omitted, and there

are points to which more space could have been given. It is admitted by the writer of the book that there cannot be a very large or speedy growth of population in the colony, and practically no growth at all, except in connection with the railway, which should, and will, attract industries suited to the country. There is, however, a splendid opening for encouraging a large tourist traffic, not only from the United States, but from Great Britain. Thousands of British people make the trip to Norway every year, many of them spending several months there during the fishing season. Newfoundland is not a much longer sea journey from the shores of Great Britain than is Norway, and with judicious advertising the ancient colony would become the destination of many of those who now visit Norway. "Newfoundland in 1900" does not give sufficient prominence to the attractiveness of the country to tourists which might have been given. There are a large number of good illustrations to the text, but most of the portraits could have been left out with advantage. An appreciative account is given of the work of R. G. Reid in developing the railway and steamship interests of the country.

Freight Traffic Matters.

The C.P.R. has made arrangements to ship wheat from Winnipeg, via the Great Northern Ry., U.S., to Duluth, Min., to be stored there for ultimate export. The G.N.R. is lending the C.P.R. what rolling stock it can spare for this purpose.

The B.C. Fruit Growers' Association has passed a resolution expressing its thanks to the management of the C.P.R. for the cooperative spirit in which they met the desires and suggestions of the Association in encouraging the development of the fruit growing industry of British Columbia, by affording facilities for transportation to Manitoba and the Northwest Territories as well as to the mining regions of B.C.

In the B.C. Supreme Court Justice Martin has dismissed the motion of the White Pass and Yukon Ry. Co., to dismiss the suits brought against it to recover large sums of money alleged to have been illegally collected on account of the Co. not having obtained the approval of the Minister of Railways to its schedules of charges. The matter, the Judge stated, involved the question whether the Canadian Parliament could regulate rates on U.S. territory.

The general freight departments of the C.P.R. and G.T.R. have issued a circular calling attention to the existing instructions to the effect that track delivery of grain received at Montreal will not be made and that such consignments on arrival will be placed in the Canadian Pacific or the Montreal Warehousing companies' elevators, as the case may be, subject to the usual storage, etc., charges. These instructions must be carried out, and agents are warned that they must not under any circumstances issue bills of lading calling for track delivery, or, in fact, any special delivery in Montreal.

The question of freight rates on the White Pass and Yukon Ry. has been under the consideration of the Minister of Railways, and as a result an agreement has been reached with the Co. by which a tariff prepared by E. Tiffin, Traffic Manager of the Government railways, will be put in operation on the W.P. & Y. Ry. in Canada. An order-in-council has been passed bringing the agreement into effect by approving of the Co.'s by-laws fixing rates. Under the by-laws the maximum passenger rate is fixed at 18c. a mile, and freight rates per 100 lbs. as follows: 1st-class, \$1.90; 2nd-class, \$1.66; 3rd-class, \$1.42; 4th-class, \$1.19; 5th-class, 95c.; 6th-

class, 90c.; 7th-class, 75c.; 8th-class, 73c.; 9th-class, 72c., and 10th-class, 70c. The rates hitherto in force varied from \$2.85 for 1st-class freight, to \$2.70 for 10th-class. The agreement contains a provision that in the event of the Co. increasing its rates on the U.S. portion of its line, the Government will have power to reduce the rate on the Canadian side, so as not to increase the total rate.

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits and increases or decreases over 1900-01, from July 1, 1901:—

Earnings.	Expenses.	Net Profits.	Increase or Decrease
July \$3,851,455.31	\$1,755,688.37	\$1,095,866.94	\$211,493.04 +
Aug. 3,118,551.32	1,812,919.23	1,305,632.09	251,156.49 +
Sept. 3,264,024.16	1,911,292.44	1,352,731.72	292,031.71 +
Oct. 3,582,403.05	2,115,363.83	1,467,039.22	388,864.81 +
Nov. 3,583,383.47	2,142,305.33	1,440,878.14	375,329.82 +
Dec. 3,497,733.70	1,929,042.19	1,568,691.51	130,325.90 +
Jan. 2,621,791.71	1,801,330.91	820,460.80	172,264.35 +

\$22,519,342.72 \$13,468,042.30 \$9,051,300.42 \$1,823,466.12 +

Approximate earnings for Feb., 1902, \$2,338,000; increase over Feb., 1901, \$343,000.

SUBSIDIARY LINES.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Gross earnings for Dec., 1901, \$203,800.41; net earnings \$65,008.04; against \$181,409.93 gross and \$57,214.02 net, for Dec., 1901. Net earnings for six months ended Dec. 31, 1901, \$506,791.01, against \$451,577 for same period 1900. Approximate earnings for Jan., 1902, \$192,156, against \$152,262 in Jan., 1901.

MINERAL RANGE.—Approximate earnings for Jan., 1902, \$42,380, against \$38,776 in Jan., 1901.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Gross earnings for Dec., 1901, \$510,401.87; net earnings \$288,081.94, against \$385,828.70 gross, and \$192,757.51 net for Dec., 1900. Net earnings for six months ended Dec., 31, 1901, \$1,939,272.50, against \$996,197.90 for same period, 1900. Approximate earnings for Jan., 1902, \$365,491, against \$304,552 in Jan., 1901.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1900-01	1901-02	1900-01	1901-02
July	40,715.46	49,089.96	\$129,483.42	\$154,646.84
Aug.	32,178.50	50,747.82	103,480.72	165,871.16
Sept.	21,807.57	60,060.46	69,012.54	197,057.61
Oct.	18,858.89	150,572.96	62,769.54	465,655.62
Nov.	22,408.68	151,922.89	69,627.27	512,862.94
Dec.	27,388.15	132,151.16	83,528.59	403,261.78
Jan.	27,928.80	109,846.99	86,752.54	347,761.91
	191,295.05	704,204.24	\$681,298.79	\$2,247,117.86

Grand Trunk Ry. Earnings, Expenses, &c

The accounts for the ½ year to Dec. 31, 1901, show the following results:

Gross receipts.....	£2,569,800
Working expenses, including special appropriation of £30,000 to bridge renewal account....	1,757,200
Net receipts.....	£812,600
Net revenue charges for the ½ year, less credits.	522,500
Balance.....	£290,100
Add Detroit, Grand Haven & Milwaukee surplus for the ½ year.....	1,900
Surplus.....	£292,000

This surplus of £292,000 added to the balance of £7,000 from June, 1901, makes a total of £299,000 available for dividend, which will admit of the payment of the full dividends for the ½ year on the 4% guaranteed stock and 1st preference stock, and a dividend of 4% for the year on the 2nd preference stock, leaving a balance of about £8,000 to be carried forward.

The accounts of the G.T. Western Ry. Co. for the ½ year show a surplus of £10,600,

which is carried forward to the current ½ year, as under the terms of the income mortgage such surplus cannot be appropriated until the termination of the year ending June 30 next.

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

	1902.	1901.	Increase.	Decrease.
Jan.....	\$2,278,978	\$2,242,117	\$36,861	.....
Feb.....	2,018,926	2,005,341	13,585	.....
	\$4,297,904	\$4,247,458	\$50,446	.....

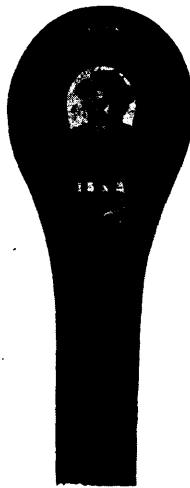
The following figures are issued from the London, Eng., office:

TRAFFIC RECEIPTS OF THE SYSTEM.

Traffic receipts, Jan. 1 to Jan. 31, 1902:

	1902.	1901.	Increase.	Decrease.
Grand Trunk....	£363,991	£373,581	.....	£9,590
G. T. Western...	81,114	70,233	£10,881	.....
D., G. H. & M..	23,178	16,834	6,344	.....
Total.....	£468,283	£460,648	£7,635	.....

Eye Bar for Quebec Bridge.



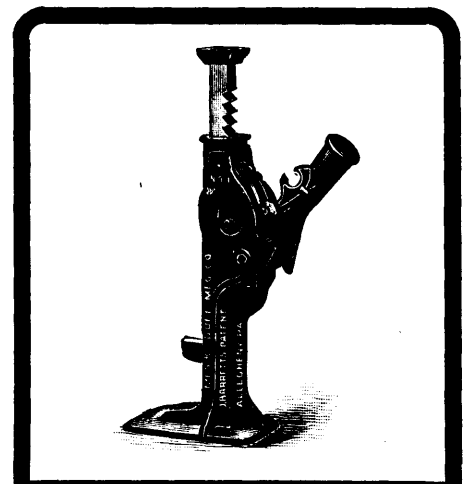
reduction of the area at the fracture was 52.9%. It broke in the body of the bar, with a silky fracture.

The accompanying engraving is from a photograph of an eye bar made for the bridge being built over the St. Lawrence river by the Quebec Bridge Co. It is probably the largest eye bar ever forged, and was broken in a 1,000 ton testing machine. The makers state that the bar is 15 in. x 2 in.; the eye is 32 in. in diameter, the pin-hole 12 in. In testing, the bar developed an ultimate strength of 50,160 lbs. per square in., and 28,000 lbs. per square in. elastic limit. The elongation in 8 ft. was 25.63%, the elongation of the pin-hole, 5.26 in.; the

The Hiram L. Piper Co., Ltd.—J. and W. Carruthers, Montreal, H. L. Piper, C. W. Band and J. E. Carruthers, Toronto, give notice of application under the Dominion Companies' Act for incorporation under this title, to manufacture and deal in railway supplies, electrical supplies, railway signals, ship lamps and supplies, and other similar business, with the right to acquire patent rights in connection therewith. The capital stock is to be \$40,000, and the head office is to be at Montreal. J. and W. Carruthers and H. L. Piper are to be the provisional directors. The Co. has secured premises at 12 St. Peter St., Montreal, and will start business during March.

The Annual Financial Review.—An appendix to vol. 1, compiled by W. R. Houston, Toronto, has been published. The Review is a carefully revised precis of facts regarding Canadian securities, and the appendix, now published, brings the information contained in vol. 1, issued in July, 1901, up to the end of that year. Particulars are given of the different stocks and bonds listed on each Canadian exchange, with a good deal of general information of interest to investors.

The C.P.R.'s new general train and interlocking rules will go into effect on the Pacific Division on March 1, and on the balance of the system when time is next changed, probably on June 11.



BARRETT TRACK JACK

Recommended as a Standard by The Roadmasters' Association of America

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Manufactured exclusively by

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MONTREAL.

ILLINOIS CENTRAL R.R.



EFFICIENTLY SERVES A VAST TERRITORY

by through service to and from the following cities:

Omaha, Neb.
St. Paul, Minn.
Minneapolis, Minn.
Hot Springs.
Memphis, Tenn.
Cincinnati, Ohio.
Louisville, Ky.
New Orleans, La.

Chicago, Ill.
St. Louis, Mo.
Peoria, Ill.
Evansville, Ind.
Nashville, Tenn.
Atlanta, Ga.
Jacksonville, Fla.
Vicksburg, Miss.

Weekly through service between Chicago and between Cincinnati

AND THE PACIFIC COAST
and three times a week with the **CELEBRATED SUNSET LIMITED.**

Fast and Handsomely Equipped Steam-Heated Trains—Dining Cars—Buffet-Library Cars—Sleeping Cars—Free Reclining Chair Cars.

Particulars of agents of connecting lines, or **C. B. WYLLIE, 220 ELLICOTT SQ., BUFFALO.**

A. H. HANSON, Gen'l Pass'r Agent, CHICAGO

C.P.R. Hotels in British Columbia.

The enlargement of the hotel under the shadow of Mount Stephen, at Field, which has recently been completed, has transformed the old building, which comprised a charming dining-room with a few bedrooms attached, into a small but first-class hotel. The addition has a large and handsome hall and billiard-room, with heavy beam and panelled walls and ceiling, and a huge open fireplace for burning logs; there is also a smoking-room and a drawing-room commanding views of the Kicking Horse valley. Fifty additional bedrooms are provided, most of which have bathrooms attached, with up-to-date plumbing, and several have private sitting-rooms en suite. This part of the building is so arranged that, if required, several rooms can be arranged in a suite. The whole of the building will be decorated and furnished in the

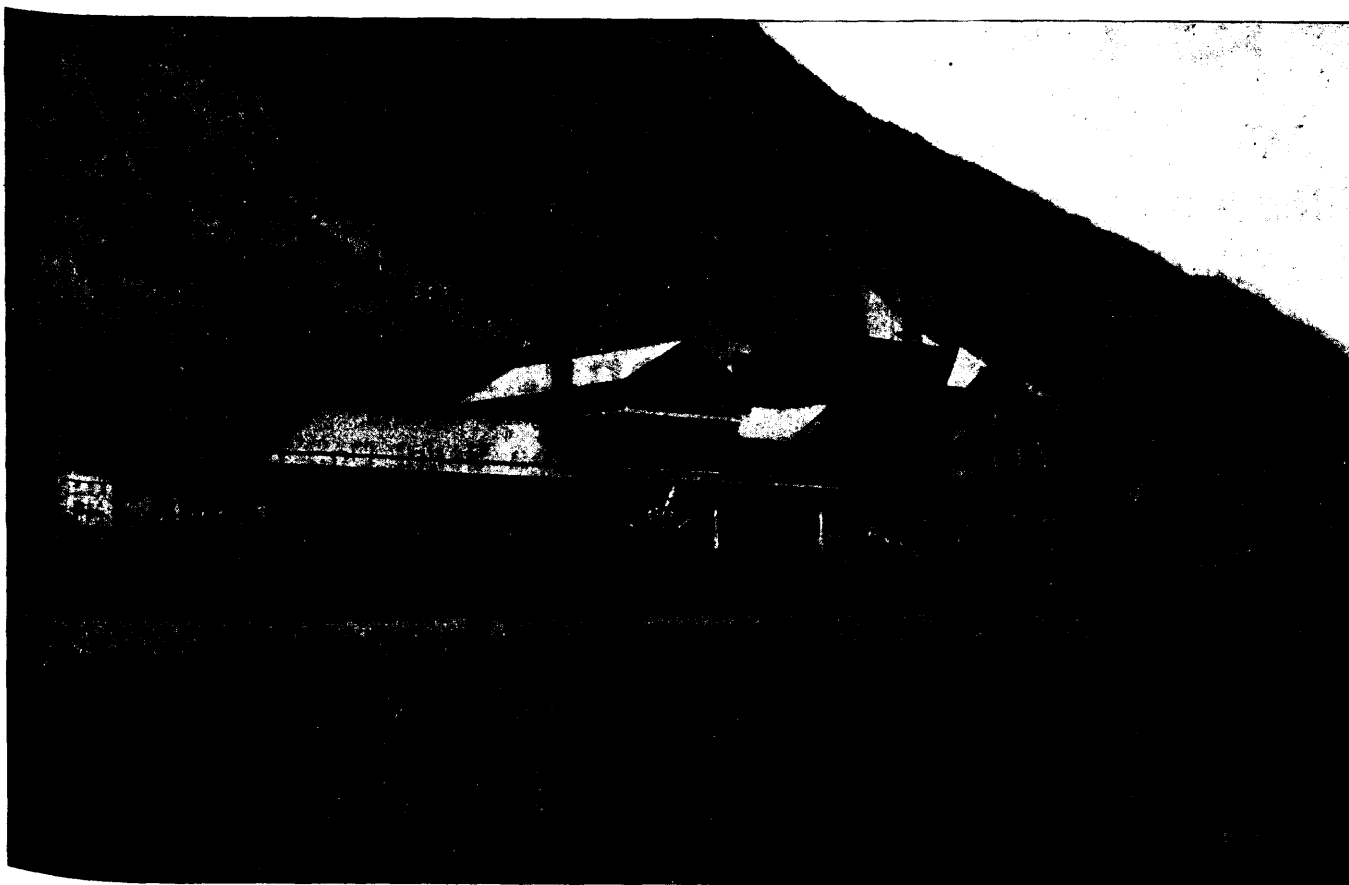
ing on the rotunda are the office, the approaches to the billiard-room (the present dining-room), the bar and lavatories. A short and spacious corridor leads from the main entrance along one side of the rotunda to the grand central staircase and the two electric elevators, which are in the center of the building, also to the dining-room, which will be 120 by 48 ft., with large plate glass windows reaching to the floor, facing on to Georgia and Hare streets. A feature of the dining-room is that there will be no columns whatever in the center of the room, the superstructure being carried by large steel trusses. It will be finished with hardwood floor, panelled ceiling and oak panellings, and will be an exceedingly bright and cheerful room. There is also a private dining-room, and guests' servants' dining room, with a private staircase from the bedroom floor. Only two staircases are provided on the ground floor, but

ventilating and of steam heating will be installed. The building is to be erected in a most substantial manner, steel frame work being used, finished with light grey pressed bricks and terra cotta trimmings on the outside, and plastered on steel laths inside, thus making it practically fire-proof. The general design is a classic Renaissance style, and shows a very substantial building, having ample chaste lines with delicate enrichments. The estimated cost of hotel and fittings is \$400,000.

The designs for these hotels were prepared by F. M. Rattenbury, architect, Victoria, B.C.

RAILWAY APPOINTMENTS, ETC.

Canadian Northern Ry.—W. Phillips has been appointed General Agent in charge of the Co.'s freight and passenger business in



MOUNT STEPHEN HOUSE, FIELD, B.C.

style customary at C.P.R. hotels. Hot water heating is provided, and a plant for gas lighting has been installed. An illustration of the hotel is given on this page.

Plans have been completed for the construction of a large modern hotel at Vancouver, and a contract has been let for the first part of the work. The hotel will have its main frontage on Georgia street, and the part now under contract is being built on the vacant ground immediately to the west of the present hotel. As soon as this wing is completed so as to be available for use as an hotel of about 80 bedrooms, the existing building, except the last built wing containing the dining-room, will be torn down and rebuilt in conformity with the new design. The plans for the completed hotel provide for a main entrance from Georgia st. through a fine arcaded corridor to a spacious rotunda, 50 by 60 ft., finished with a glass dome and tiled pavement, and elaborately decorated walls. Open

additional staircases are arranged at the main angles of the corridors on the upper floors. The ladies' entrance is off Granville street, and with the reading-room is so arranged that the hotel can be entered without necessarily passing through the rotunda. In the basement are many large, well-lighted sample-rooms for travellers, together with the usual store-rooms. The bedrooms are provided on the 1st, 2nd and 3rd floors, their sizes being 13 by 16 ft. to 15 by 16 ft.; one-half of the guests' bedrooms having bath rooms attached, and provision is made by which some additional bedrooms can be built, when required, without interfering with the general design of the building. The interior of the building will be divided into sections by fireproof walls, and fireproof doors are to be provided in the corridors, while balconies with iron ladders will be fitted at the end of each corridor. A complete system of

Ontario, west of Kingston and Sharbot Lake, to the Detroit River. Temporary office, Toronto Railway Chambers, Toronto.

J. B. O'Brien's appointment as General Roadmaster of all lines was mentioned in our last issue. The district roadmasters are as follows:—W. Shanks, Winnipeg, with jurisdiction from Beaudette, Minn., to Portage la Prairie, Man., including branches, and also the branch from Winnipeg to Pembina, N.D.; A. Fraser, Port Arthur, with jurisdiction from Port Arthur to Rainy River, Ont.; C. W. Tyson, Belmont, Man., with jurisdiction from Morris to Brandon, Man., including the Souris branch; N. Wocks, Dauphin, Man., with jurisdiction over all lines west of Portage la Prairie, Man.

Canadian Pacific.—P. A. Peterson, heretofore Chief Engineer, having been appointed Consulting Engineer, H. E. Vautelet, Assistant Chief Engineer, will, until further notice, perform the duties of Chief Engineer.

T. Williams, General Superintendent of the Lake Superior division, having resigned, the jurisdiction of C. W. Spencer, General Superintendent of the Eastern division, has been extended over the Lake Superior division, which was formerly part of the Eastern division.

G. J. Bury has been appointed Assistant General Superintendent, Lake Superior division. Office at North Bay, Ont.

T. Williams has been appointed Superintendent at Farnham, Que., succeeding R. R. Jamieson.

R. R. Jamieson has been appointed Superintendent at Cranbrook, B.C., succeeding G. J. Bury.

C. B. Foster has been appointed District

Passenger Agent at St. John, N.B., in place of A. J. Heath, assigned to other duties in the General Passenger Agent's office at Montreal. W. Howard, heretofore travelling passenger agent, has been appointed chief clerk in Mr. Foster's office.

Craig and Stewart have been appointed ticket agents at Seaforth, Ont., succeeding R. J. Macdonald, resigned.

A. C. McArthur, station agent at Rossland, B.C., has been appointed General Commercial Agent in charge of the town office for passenger and freight business.

B. G. Hamilton has been appointed Land Agent at Moose Jaw, Assa.

F. J. Holloway has been appointed Road-

master of Windsor section, with office at Woodstock, vice W. Rose, resigned.

B. Tansley has been appointed Roadmaster at Owen Sound section, with office at Orangeville, vice F. J. Holloway, transferred.

J. Cushing, heretofore Assistant-Roadmaster at London, Ont., has been appointed Roadmaster of Orangeville, Teeswater and Elora branches, with office at Orangeville, vice B. Tansley, transferred.

Cape Breton Ry.—J. R. Donnelly, heretofore locomotive foreman of the G.T.R. at Montreal, is reported to have been appointed Superintendent of Motive Power and Car Department of the C.B.R., with office at Port Hawkesbury, N.S.

STEEL RAILS

We have pleasure in offering highest grade Bessemer Steel Rails made by THE ALGOMA STEEL CO., Ltd., of Sault Ste. Marie, Ont.

Offices—
CANADA LIFE BUILDING,
Montreal.
93 YORK STREET,
Toronto.

Drummond, McCall & Co.,
General Sales Agents,
The Algoma Steel Co., Ltd.



PAGE WIRE FENCE ON G.T.R., NEAR BARRIE.

Page fencing is in use on all of the leading railroads of Canada. We now make our own wire and hence we can furnish a still better fence than ever. Glad to furnish further information.

THE PAGE WIRE FENCE CO., LIMITED, WALKERVILLE, ONT.

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BREWERY,**

Fine  **Winnipeg, Manitoba.**
ALES, EXTRA PORTER

... AND ...

PREMIUM LAGER.

*Most Extensive and Complete Brewery
and Malthouses in Western Canada.*

CHOICE MALT FOR SALE.

Manufacturer of the Celebrated

Golden Key Brand . . . **AERATED WATERS.**

**THE FIRSTBROOK BOX CO.,
LIMITED.**

**CROSS ARMS, TOP PINS,
AND SIDE BLOCKS,**

TORONTO.

Central Vermont Ry.—C. M. Hays has been elected a Director and Chairman of the board, succeeding G. B. Reeve.

Dominion Iron and Steel Co.—L. W. Squire having resigned, the position of Superintendent of Transportation has been abolished. The principal duties heretofore performed by Mr. Squire have been assumed by V. C. Armstrong.

Grand Trunk.—F. H. McGuigan, heretofore General Superintendent, has been appointed Manager, with charge of maintenance of way and transportation departments, reporting direct to the Second Vice-President and General Manager. The circular announcing the appointment of F. W. Morse, as 3rd Vice-President published in our issue of Aug., 1901, stated that the transportation, motive power and car departments would report direct to him. We are officially informed that Mr. McGuigan's appointment as Manager is a change in title and in method of reporting and that it does not change Mr. Morse's jurisdiction.

W. Loveridge has been appointed locomotive foreman at Windsor, Ont., succeeding A. Whittaker, resigned.

A. G. McLellan has been appointed locomotive foreman at Niagara Falls, in place of W. Loveridge, transferred.

C. Battley, heretofore a machinist in Stratford repair shops, has been appointed locomotive foreman at Fort Erie, in place of A. G. McLellan, transferred.

Press reports say that F. Payette has been appointed locomotive foreman at Montreal, succeeding J. Donnelly, who has entered the service of another company, and that J. E. Linahen has succeeded F. Payette as road foreman of locomotives on the Portland division. — Kirkpatrick is reported to have been appointed locomotive foreman at Belleville.

The following agents have been installed: Auburn, Lewiston, E. H. Boynton; Bryants Pond, E. C. Herrick; Bethel, F. P. Chandler; Berlin, N. H., J. H. Edwards; Groveton, W. A. Bunting; Palgrave, J. B. Campbell; Malton, D. Johnston; South Bend, O. E. Shaner; Climax, M. S. Seeley; Muskegon, C. G. Robinson; Mt. Clemens, E. J. Lang; Port Credit, H. R. Diltz; Woodstock, W. D. Griggs; London, J. H. Gordon; Norwich, N. Vickers; Davison, G. H. Bradley; Vernon, E. A. Hill; Harvard, Claude R. Beebe; Rochester, G. L. Knight.

Great Northern of Canada.—J. Pitt, heretofore connected with the G.T.R. shops at Montreal, has been appointed Master Mechanic of the G.N.R. Office at Quebec.

Intercolonial Ry.—H. Ashton has been appointed Master Mechanic in charge of Moncton locomotive shops.

G. C. Allen has been appointed General Baggage Agent, with office at Moncton, N. B., vice H. H. Melanson, assigned to other duties.

Niagara Gorge Rd.—B. L. Jones, heretofore Secretary and Treasurer, who has also been acting as General Manager since G. Morgan recently resigned, has been appointed Treasurer and General Manager.

Port Arthur Electric Ry.—W. P. Cooke has been elected Chairman of the Port Arthur St. Ry. and Light Commission.

Reid Newfoundland Co.—Nicholas Johnstone, heretofore of the C.P.R. freight department at St. John, N.B., has been appointed Chief Clerk of the freight department of the Reid Newfoundland Co. at St. John's, Nfld.

Rutland Rd.—G. W. Kenney has been appointed Superintendent of Motive Power and Rolling Stock. T. J. Reed becomes Assistant Superintendent of Motive Power, and C. J. McMaster Assistant Superintendent of Rolling Stock. The position of Master Car Builder has been abolished.

Victoria Terminal Ry. and Ferry Co.—Capt. S. F. Mackenzie, of Victoria, has been appointed Manager. He will have supervision of the Victoria and Sidney Ry., recently acquired by this Co., of the steamers running in connection therewith, and of the construction of the V.T. Ry., of Vancouver Island and on the mainland.

T. W. Patterson, Manager of the Victoria and Sidney Ry. for many years, has resigned.

Mainly About People.

N. A. Curry, of Rhodes Curry & Co., Ltd., has been elected Mayor of Amherst, N.S.

Geo. Gould, C.P.R. ticket agent at Rat Portage, committed suicide there Jan. 29, by shooting himself.

Mrs. David Seath, wife of the secretary of the Montreal Harbor Commissioners, died suddenly Feb. 8.

C. F. Sise, President of the Bell Telephone Co., and Mrs. Sise are contemplating a trip to the Mediterranean.

F. P. Thompson, who has been appointed to the Senate, is Managing Director of the New Brunswick Telephone Co.

W. Stitt, General Passenger Agent of the C.P.R. for Australia, has arrived at Sydney, N.S.W., with his wife and family.

W. Askin, Manager of the Northern Navigation Co., was married, Feb. 5, at Detroit, Mich., to Miss Turner, of that city.

G. A. Sharp, Superintendent of the Prince Edward Island Ry., was recently presented by his staff with a gold-headed cane.

E. T. Horne, Assistant to the Manager I.C.R., left Moncton, N.B., Feb. 4, for a trip to Georgia, for the benefit of his health.

The engagement is announced of C. F. Sise, Jr., Superintendent of Toll Lines of the Bell Telephone Co., to Miss Elsie Scott.

G. R. Joughins, ex-Mechanical Superintendent of the I.C.R., has returned to Moncton, N.B., from a business trip to Europe.

The engagement is announced of A. G. Slaughter to Miss Evelyn Lukes, daughter of Lewis Lukes, of Mackenzie, Mann & Co., Toronto.

J. H. Beatty, founder and President of the Northwest Transportation Co., better known as the Beatty line, died in Toronto, recently, aged 75.

E. J. Coyle, Assistant General Passenger Agent of the Pacific Division, C.P.R., at Vancouver, was married at Winnipeg, Feb. 10, to Miss Conklin.

H. S. Howland, who died in Toronto Jan. 28, was for some time President of the Toronto and Nipissing, the Toronto, Grey and Bruce and the Toronto and Ottawa Rys.

F. H. McGuigan, General Superintendent of the G.T.R., and Mrs. McGuigan, gave a ball at the Windsor hotel, Montreal, Feb. 11, when their second daughter, Miss Edna, made her debut.

C. Haman, M.P. for London, has been appointed chairman of the Railway Committee of the House of Commons, succeeding Hon. Jas. Sutherland, on the latter's appointment as Minister of Marine.

A. J. Nelles, formerly Manager of the Hamilton, Grimsby and Beamsville Electric Ry., is promoting the Windsor, Essex & Lake Shore Rapid Ry., which is seeking a franchise from the town of Essex.

A Montreal dispatch of Feb. 4, to the Halifax Chronicle, said: "It is understood that J. E. Muhlfield, Superintendent of Machinery and Rolling Stock of the I.C.R., will be married soon to Miss Muriel Murphy, an actress who is playing a leading role with the Liberty Belles organization."

Angus Brown, division superintendent of motive power on the New York Central Ry., at West Albany, N.Y., who died recently, was born April 31, 1856, and served his machine shop apprenticeship at Woodbridge, Ont.

A. J. Heath, on being transferred recently from the position of District Passenger Agent of the C.P.R. at St. John, N.B., to the general passenger department at Montreal, was presented by his staff with a handsome locket.

At a recent dinner of the Canada Club in London, Eng., Archer Baker, European Traffic Manager of the C.P.R., presided. One of the principal guests of the evening was R. Marpole, General Superintendent of the Pacific Division, C.P.R.

G. W. McCaskey, of the Northern Pacific Ry. passenger department, was recently presented with a silver tea set and a silver mounted umbrella, by the passenger men in Toronto, on being transferred from Toronto to St. Paul, Minn.

J. R. Donnelly, heretofore locomotive foreman on the G.T.R. at Montreal, who recently resigned to become Master Mechanic on the Cape Breton Ry., was presented, on leaving, with a bronze clock and easy chair by the employes of the Point St. Charles shop.

J. Cochrane, who has been elected Mayor of Montreal, was in early life a telegraph operator on the I.C.R. at Rimouski and subsequently in the service of the Montreal Telegraph Co. Later on he had some contracts on the C.P.R. along the north shore of Lake Superior.

B. Fletcher, for many years travelling passenger agent of the G.T.R. at Detroit, Mich., died there Jan. 30, of paralysis, aged about 60. He had been in the service of the line west of Detroit since 1863, having commenced railway life as a news agent in company with T. A. Edison.

Robert Forsyth, who died in Montreal Feb. 7, came to Canada in 1853 from Scotland and entered the service of the Montreal Harbor Commissioners as assistant to the Chief Engineer, afterwards becoming Chief Engineer. He organized the Thousand Islands Granite Co., which supplied the stone for the Bell Telephone building and the new G.T.R. general offices in Montreal.

G. H. Duggan, Chief Engineer of the Dominion Bridge Co., has been appointed Consulting Engineer and Assistant to the General Manager of the Dominion Iron and Steel Co. at Sydney, N.S. He is a native of Toronto, a graduate of the School of Practical Science, and has achieved an international reputation in yachting circles. The appointment is another indication of the ascendancy of Jas. Ross, of Montreal, in the Dominion Steel Co.

E. N. Bender, who has been appointed General Purchasing Agent of the C.P.R., was born in Quebec, Oct. 3, 1858, and entered railway service June 1, 1880, since which his record has been: to 1881, secretary to the General Storekeeper, Montreal, Ottawa and Occidental Ry.; 1881, to June, 1882, Accountant, Stores Department, same road; June, 1882, to 1889, Chief Clerk, Purchasing Department, C.P.R.; 1889 to Feb., 1902, Assistant General Purchasing Agent.

H. E. Vautelet, Assistant Chief Engineer of the C.P.R., who, in consequence of the appointment of P. A. Peterson as Consulting Engineer, is performing the duties of Chief Engineer, is a B.A., 1873, and a B.Sc., 1874, School of Mines, Paris. He commenced railway work on the Northern Ry. of France in the locomotive department; he was employed on the Dominion Government Geological Survey in 1884 and 1885, and in 1886 entered the service of the C.P.R. in the Chief Engineer's office.

L. H. Gray, formerly Traffic Manager of the White Pass & Yukon route, and latterly acting as agent in Seattle for the Pollard Steamship Co., has been appointed traffic agent for the Co. in the Northwest, his jurisdiction including the Sound territory, British Columbia and Alaska.

I. J. Gibb, President of the Ottawa River Navigation Co., died at Como, Que., Feb. 19, aged 87. He practised as a notary in Montreal till about 30 years ago, when he removed to Como. He became associated with the late R. W. Shepherd in the steamboat business in 1842, a line of boats being operated at that time under the name of the Ottawa steamers. In 1865 the firm was formed into the Ottawa River Navigation Co. Mr. Gibb was Vice-President up to the death of R. W. Shepherd, in 1895, when he became President.

Charles Beverly Foster, who has been appointed District Passenger Agent of the C.P.R. at St. John, N.B., was born at Kingston, N.B., Sept. 30, 1871. He entered railway service with the C.P.R. April 1, 1891, as stenographer in office of Assistant General Passenger Agent at St. John, N.B., since which he has been consecutively: Sept., 1893, to July, 1899, Travelling Passenger Agent in Maritime Provinces; July, 1899, to Feb., 1902, chief clerk for District Passenger Agent at St. John, N.B.; Feb. 15, 1902, to date, District Passenger Agent in charge of district east of Megantic and Levis, P.Q., including

part of Maine and Quebec, Maritime Provinces and Newfoundland.

F. H. McGuigan, who has been appointed Manager of the G.T.R., with office at Montreal, was born at Cleveland, Ohio, 1850, and entered railway service 1863 as water-boy, Erie and Pittsburg division Pennsylvania Rd., since which he has been consecutively to 1874 in various minor positions same road; 1874 to 1880, roadmaster same road; April to July, 1880, foreman construction train, St. Louis and Omaha division Wabash Rd.; July, 1880, to Jan., 1885, division roadmaster same road; Jan., 1885, to 1888, General Roadmaster lines west of Mississippi river; 1888 to Dec., 1895, Superintendent Western division same road at Kansas city, Mo.; Feb., 1896, to March, 1902, General Superintendent G.T.R. at Montreal.

Walter Reginald Baker, whose portrait appears on the first page of this issue, was born in England, 1852, and entered railway service in 1873 as local freight and passenger agent at Ottawa, with the Canada Central Ry., since which he has been consecutively: Feb. to Sept., 1881, assistant to General Supt. and Local Treasurer Western division C.P.R.; Sept., 1881, to May, 1882, Purchasing Agent same division; May, 1882, to June, 1883, Assistant to General Manager, same road; June, 1883, to Sept., 1892, General Supt. Manitoba and North-Western Ry.; Sept., 1892, to May, 1900, General Manager, same road; May, 1900, to 1901, Executive Agent C.P.R. at Win-

ipeg; 1901 to date, Assistant to 2nd Vice-President at Montreal.

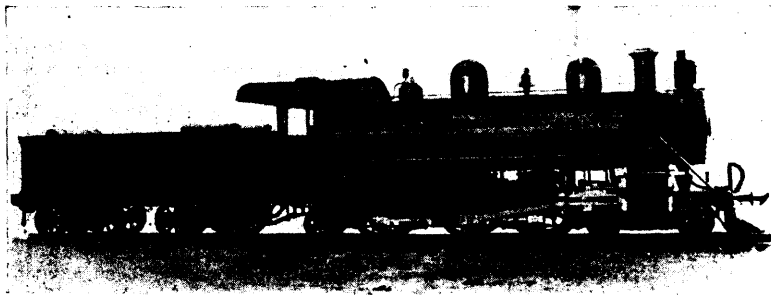
A. C. Henry, General Purchasing Agent of the C.P.R., died in the General Hospital, Montreal, Feb. 3, aged 52, as the result of an operation for appendicitis. He was born in Beamsville, Ont., and was for many years in the wholesale hardware house of Benny, Macpherson & Co., of Montreal. In 1886 he succeeded T. G. Shaughnessy as Purchasing Agent of the C.P.R., and in 1899 was made General Purchasing Agent. He had been in rather poor health for several months, and spent some time at Mount Clemens, Mich., for treatment. He leaves a widow and two young sons. On the day of his funeral the flag floated at half-mast on the general offices in Montreal, and the offices were closed during the funeral, which was attended by Sir Thos. Shaughnessy and other directors and by hundreds of officials and employes of the Co. as well as by a large number of the public. Floral offerings were sent by officials on every division of the system. A statement prepared by Sir Thos. Shaughnessy's instructions shows that Mr. Henry placed orders for the Co. aggregating \$102,000,000, but notwithstanding this immense purchasing patronage having passed through his hands, Mr. Henry left a modest estate, scarcely representing a fair saving on the salary he received, an emphatic tribute to his integrity and upright dealing. It is said the Co. has presented Mrs. Henry with an amount equal to Mr. Henry's salary for a year.

Established 1831.

Annual Capacity, 1,200.

BALDWIN LOCOMOTIVE WORKS.

SINGLE EXPANSION AND COMPOUND LOCOMOTIVES.



Broad and Narrow Gauge Locomotives; Mine and Furnace Locomotives; Compressed Air Locomotives; Steam Cars and Tramway Locomotives; Plantation Locomotives; Oil Burning Locomotives.

Adapted to every variety of service, and built accurately to gauges and templates after standard designs or to railroad companies' drawings. Like parts of different engines of same class perfectly interchangeable.

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DREDGES, DITCHERS, DERRICKS AND STEAM SHOVELS

OF VARIOUS STYLES AND SIZES
TO SUIT ANY WORK

Submarine Rock Drilling Machinery, Hoisting Engines, Suspension Cableways, Horse-Power Hoisters, Gang Stone Saws, Centrifugal Pumps for Water, Sand and Gold Mining, and other Contractors' Plant.

Established 1849

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Capital and Surplus \$1,500,000

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NOS. 346 and 348 BROADWAY, N.Y. CITY, U.S.A.

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March Birthdays.

Many happy returns of the day to
 P. S. Archibald, C.E., ex-Chief Engineer
 I.C.R. at Moncton, N.B., born at Truro, N.S.,
 Mar. 21, 1848.
 C. N. Armstrong, ex-General Manager Atlantic
 and Lake Superior Ry. at Montreal,
 Que., born at Maskinonge, Que., Mar. 19,
 1850.
 D. E. Brown, General Agent C.P.R. for
 China, Japan, etc., at Hong Kong, born at
 Owen Sound, Ont., Mar. 20, 1855.
 G. J. Bury, Assistant General Superintendent
 C.P.R. at North Bay, Ont., born at Montreal,
 Que., Mar. 6, 1866.
 J. A. Cameron, ex-Superintendent C.P.R.
 at Cranbrook B.C., born at Pictou, N.S.,
 Mar. 5, 1855.
 F. G. J. Comeau, General Freight Agent
 Dominion Atlantic Ry. at Halifax, N.S.,
 born at Meteghan River, N.S., Mar. 10,
 1859.
 H. B. Curtis, General Superintendent Newfoundland
 Express Co. at St. John's, Nfld.,
 born at Adrian, Ohio, Mar. 21, 1848.
 Hon. L. J. Forget, President Richelieu and
 Ontario Navigation Co., born at Terrebonne,
 Que., Mar. 11, 1853.
 C. O. Foss, Chief Engineer Nova Scotia
 Central Ry. at Bridgewater, N.S., born at
 Wentworth, N.H., Mar. 20, 1852.
 H. W. Gays, President and General Manager
 Ottawa and New York Ry., and Receiver
 New York and Ottawa Rd. at Ottawa,
 Ont., born at Brant, Erie co., N.Y., Mar. 21,
 1848.
 F. Grundy, General Manager Quebec Central
 Ry. at Sherbrooke, Que., born at Bury,
 Lanc., Eng., Mar. 28, 1836.
 W. Harty M.P., President Canadian Locomotive
 Works, Kingston, Ont., born in Bid-
 dulphe tp., Middlesex, Ont., Mar. 8, 1847.
 H. S. Heydon, New York Agent Canada
 Atlantic Ry. at New York city, born at
 Newark, N.Y., Mar. 28, 1861.
 C. B. Hibbard, General Passenger Agent
 Rutland Rd. at Rutland, Vt., born at St.
 Johns, Que., Mar. 31, 1858.
 J. Hobson, Chief Engineer G.T.R. at Montreal,
 born at Guelph, Ont., Mar., 1834.
 C. E. Lytle, General Superintendent Duluth
 South Shore and Atlantic Ry. at Marquette,
 Mich., born at Newark, Ohio, Mar. 2,
 1859.
 Owen McKay, Chief Engineer Lake Erie
 and Detroit River Ry., Walkerville, Ont.,
 born in Ross tp., Renfrew co., Ont., Mar.
 13, 1848.
 W. Mitchell, ex-Managing Director Drummond
 County Ry. at Drummondville, Que.,
 born at Durham, Que., Mar. 14, 1841.
 R. Patterson, Master Mechanic G.T.R. at
 Stratford, Ont., born at Brantford, Ont., Mar.
 13, 1860.
 J. Ritchie, General Eastern Agent Canada
 Atlantic Ry. at Boston, Mass., born Mar. 16,
 1860.
 J. A. Sheffield, Superintendent Sleeping
 and Dining Cars C.P.R. at Montreal, born
 at Columbus, Ohio, Mar. 16, 1845.
 C. J. Smith, General Traffic Manager Canada
 Atlantic Ry. and Canada Atlantic Transit
 Co. at Ottawa, Ont., born at Hamilton, Ont.,
 Mar. 10, 1862.
 W. Y. Soper, Vice-President Ottawa Electric
 Ry. Co., Ottawa, Ont., born at Oldtown,
 Me., Mar. 9, 1854.
 W. F. Tye, Chief Engineer of Construction
 C.P.R. at Montreal, born at Haysville, Ont.,
 Mar. 5, 1861.
 H. Wallace, ex-Chief Mechanical Superintendent
 G.T.R. at Montreal, Que., born at
 Derby, Eng., Mar. 10, 1844.
 In our last issue it was stated that C. W.
 Milestone, Superintendent C.P.R. at Moose
 Jaw, Assa., was born at Medina, Ohio, Feb.
 24, 1847. It should have read 1857 instead
 of 1847.

Grand Trunk Ry. Betterments, Etc.

Portland, Me.—General Manager Hays recently said he considered the future of the harbor assured and that he would continue a policy favoring its development. The first year he became connected with the G.T.R. 26 steamers left Portland, while last year there were 105. He thought that number would increase. The G.T.R. had done considerable for Portland, and the time had come for Portland to reciprocate by providing an adequate system of fire protection.

The Montreal Herald recently stated that "The new G.T.R. station at Portland, which is to be built during the coming summer, will be of red brick with granite trimmings. On each corner will be a tower to relieve the too set character. It will be two stories high. The ground floor will have waiting rooms, ticket and local agent's office, and a restaurant. The second floor will contain the local freight cashier's office, employes' quarters and lavatory and a store room. There will also be several offices for the use of the local steamship officials and employes. One feature that will be missed is the train shed. There will be an incoming and outgoing track, but the hood covering over the platform will project only part way over each track." An officer advised us, on Feb. 24, that the character of the plans had not then been determined upon. General Manager Hays and other officials returned from Portland, on Feb. 24, where it was reported they had been selecting a site for the new station. (Dec., 1901, pg. 362.)

Montreal General Offices.—It is expected that the officials will take possession of their quarters in the new general offices on McGill street early in April. During the summer D'Youville square, in front of the new offices, is to be greatly improved. The square is to be sodded and shrubs and trees are to be planted on it. Nothing has been decided as to what will be done with the present general offices at Point St. Charles. (Dec. 1901, pg. 362.)

Track Water Troughs.—Press reports recently stated that track water troughs were to be constructed along the line between Montreal and Chicago, so that the engines could take water without stopping; the troughs to be 1,600 ft. long and capable of containing 6,000 gals. of water. We are informed by an officer that the reports referred to are the first the management has heard of the matter.

Port Hope to Port Union Second Track.—In the summer of 1901 work was commenced on the double tracking of the main line between Port Hope and Port Union, Ont., 46.26 miles, the section taken in hand being between Whitby Jct. and Port Union, 13.13 miles, which has been completed. In connection with the remaining 33.13 miles between Port Hope and Whitby Jct., an unconfirmed press report says the Co.'s engineers have reported in favor of making a deviation from the present main line at Whitby, Ont., to a survey which would pass about a mile and a half north of Oshawa, four miles north of Bowmanville and Newcastle, and join the present line near Port Hope, that the curvature and gradients between Whitby and Port Hope, on the present line, are too great to double track, and that ballast is also scarce on the present line. We are officially informed that surveys have been made with a view to improve the gradients and alignment, but that no definite conclusion has been arrived at in regard to the matter. (Dec. 1901, pg. 362.)

Owen Sound Extension.—Application has been made by the Co. to the Owen Sound, Ont., town council for the right to extend its tracks along Stephen st. to McDonald's fish house, with a view to carrying out a number of improvements. Mr. Dench, the Co.'s agent, said it was proposed to move the present

freight house southward to opposite the station, and to extend it. The tracks would then be run on to the docks, and the track planked so that it would not interfere in any way with the crossing of teams.

Bridges Near Hamilton.—The Co. is about to erect a steel bridge over the Burlington canal, on the line between Burlington Jct. and Hamilton, and another one at Burlington Heights, west of Hamilton. They will be up to the fullest requirements of the largest locomotives and cars.

Main Line Deviation to Brantford.—As a result of a conference between the Third Vice-President and the Brantford city council, an agreement has been entered into by which the main line between Niagara Falls and Sarnia tunnel will be carried through Brantford instead of via Paris as now. To do this it will be necessary to construct four miles of line, renew a bridge on the existing line near Brantford, at a cost of \$118,650; renew the bridge over the Grand river and strengthen and improve the line between Brantford and Paris at a cost of \$93,500, or a total cost of \$212,150, towards which the Co. asks Brantford to contribute \$58,325. The Co. will also construct a short branch into the Homedale district, provided certain industries are established there. A by-law is being prepared for submission to the taxpayers confirming the agreement. (Aug. 1900, pg. 234.)

London to Komoka Second Track.—Press reports say that the Co. proposes to double track the line between London and Komoka, Ont., 10 miles, and that the change will mean the building of a number of costly bridges, the most important of which will be the one over the river Thames. We are officially informed that the work will not be undertaken immediately, but will be done in the near future.

Point Edward Elevator.—The 1,000,000 bush. tank elevator being constructed at Point Edward, Ont., will be ready to handle grain at the opening of navigation. (Jan., pg. 8.)

Detroit, Mich.—The city council desires the Co. to bridge over the level crossings in that city, and has passed an ordinance requiring this to be done, or subways to be constructed. General Manager Hays was recently asked what the policy of the Co. would be in this matter, but he would not commit himself either one way or the other.

Port Huron to Chicago Second Track.—On the line between Port Huron, Mich., and Chicago, 334.79 miles, the section between Port Huron and Durand, mileage 81.09 from Port Huron, has been completed, and there is under construction a further mileage of 77.25 miles from Durand to Battle Creek, mileage 158.34 from Port Huron. In connection with this work the Co. has opened an office for its engineers at Lansing, Mich. The work will be fairly heavy, as there are a number of grades to be reduced, curves to be straightened and two steel bridges to be built. The double tracking has also been proceeding from Chicago, and a section of 50.01 miles from Chicago to Sedley, mileage 283.57 from Port Huron, has been completed; and an additional 30.50 miles, between Granger, mileage 224.29 from Port Huron; and Stillwell, mileage 254.79, was under contract last year and is now reported completed. (Dec., 1901, pg. 362.)

Plans have been submitted to the Michigan State Commissioner of Railways by the Detroit, Lake Orion and Flint Ry. Co. for interlocking signals to be installed at the crossing of its line and the G. T. Western Ry. on Harrison st., Flint, Mich.

Chicago Tracks.—A meeting of the executive of the Chicago, Western and Indiana Ry. has been held in New York, C. M. Hays representing G.T.R. interests, to discuss the

question of elevating the tracks in Chicago to meet the requirements of the city by-law requiring this to be done in two years. It is understood that progress has been made with the Co.'s plans for carrying out this work. (Dec., 1901, pg. 362.)

SHIPPING MATTERS.

Canadian and U.S. Shipping Associations

At the recent annual meeting of the Lake Carriers' Association at Detroit, a resolution was passed inviting Canadian vessel owners to become members, and G. P. McKay, of Cleveland, Ohio, the Treasurer, was deputed to communicate with the Canadian owners with that object in view. The object of the Association is "to consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes and the waters tributary thereto, to maintain necessary shipping-officers, and in general to protect the common interest of lake carriers and improve the character of the service rendered to the public." For the year 1901-02 the tonnage represented by the Association was 874,203 tons. The expense of carrying on its work is met by a levy per net registered ton, to be fixed annually; the levy for the current year being as follows: steel vessels over 1400 tons, and wooden vessels over 1800 tons, 4c. per net register ton; steel vessels 1400 tons and under, 3c. per net registered ton; and wooden vessels of 1800 tons and under, 2c. per net registered ton; which dues include all private lighting of every description. It is possible that there will be some few Canadian vessel owners who will join the Association, but we fail to see what advantage they can possibly hope to gain from such membership, as the interests of the two mercantile marines must of necessity be antagonistic. A recent instance, showing how far opposed are the interests of the ship-owners of the two countries, is to be found in the application made to suspend the coasting regulations so as to allow U.S. bottoms to be utilized in the carrying of grain from Fort William, Ont., to other Canadian ports. With Canadian shipowners as members of the

Lake Carriers' Association, there would be little use of protesting against such an application in future, as it would be represented that Canadians had thrown in their lot with the U.S. shipowners and that the interests of the two countries, for all practical purposes, had been combined. This policy of U.S. people operating so called international organizations and inviting Canadians to endeavor to protect their own interests by joining them, has been allowed to go quite too far, and it is time to call a halt. The interests of the two countries are not identical and Canadians should realize that it is only by maintaining their own independence and standing strictly on their rights that the country will be developed and built up.

Canadian shipowners in their own behalf should organize a Canadian shipping association, which should have for its object the encouragement of coasting and lake and river trade. Some such an association existed a few years ago, but it was allowed to become inoperative. There is a marine section of the Toronto Board of Trade, but its work is purely local. A strong and active association representative of the shipping interests of the whole country ought to be brought into existence at the earliest possible moment. There is no time more fitting than the present, when Canada is on the threshold of a wonderful development, not only as a shipping but as a shipbuilding center, for the establishment of such an association, as it will not only stimulate and develop the growing industries, but will help in reaching out and securing more trade openings and a still greater carrying trade. If there had been such an association during the last few years the Government would not have acted as it did in 1899, and the recent attempt to have the same act repealed last season would not have been made. There are many other matters connected with the regulation and development of our mercantile marine which such an association could profitably discuss from time to time. The time is ripe for action and we would suggest the calling of a meeting of shipowners at an early date, to discuss the formation of a Canadian association, so that the organization could be completed by the opening of navigation.

Northern Navigation Co. of Ontario.

Some two years ago the Northern Navigation Co. of Ontario acquired a controlling interest in the Northwest Transportation Co., generally known as the Beatty Line, by purchasing the late J. H. Beatty's stock, \$153,000, out of a total issue of \$300,000, the remaining \$147,000 being principally in the hands of H. Beatty, J. D. Beatty and the Bank of Commerce. Recently the whole of this minority interest, with the exception of five shares of \$500 each which have been retained by J. D. Beatty, have been purchased by Osler & Hammond, brokers, Toronto, and it is said that this purchase has been made for the Northern Navigation Co. and that the stock will shortly pass into the hands of that Co. if it has not already done so, as at the recent annual meeting of the Northern Navigation Co. J. J. Long was authorized to negotiate for the purchase of the \$147,000 of N.W.T. Co.'s stock above referred to and the N.N. Co. directors were authorized to issue 4,400 shares of N.N. Co.'s stock at not less than par and to offer the same first to the stockholders of the latter Co. No announcement has been made as to when the new stock will be issued, but it will probably be in the near future. The acquirement of the balance of the N.W.T. Co.'s stock will materially strengthen the position of the N.N. Co.

The N.W.T. Co. has two steamers, the United Empire and Monarch, plying between Sarnia, Port Arthur, Fort William and Duluth, which are valued at \$225,000 and on Jan. 1, 1901, had \$142,000 on hand. The net earnings for 1900 were \$37,000, over 12% on the capital. A steel steamer, the Huronic, is being built for the Co. at Collingwood at a cost of \$285,000, which cost will be in part defrayed out of the cash balance above mentioned. The N.W.T. Co. has not paid any dividend recently, the surplus earnings having been retained to form a cash balance as above mentioned.

At the recent annual meeting of the N.W.T. Co. a slight change was made in the directorate. The officers for the current year are:— President, J. J. Long, other directors, E. B. Osler, T. Long, W. J. Sheppard, J. D. Beatty;

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Secretary, D. H. Beatty. Messrs. Osler and Sheppard replaced B. E. Walker and Jas. Scott, who were on last year's board. J. D. Beatty was heretofore General Manager, and Treasurer, but up to the date of writing this (Feb. 24th) the question of management for this year had not been decided. It is probable that the management of the two companies will be merged, though the N.W.T Co. may nominally be operated separately for a time.

H. B. Smith, of Owen Sound, has been elected a director of the N.N. Co. to succeed his late brother, H. E. Smith.

French River Navigation.

L. Coste, C.E., of the Dominion Department of Public Works, recently addressed the St. John, N.B., Board of Trade on the importance of the French river route as a factor in handling grain shipments. He stated that only 4% of the grain trade of Canada was handled in the Dominion and he would not be satisfied until the whole of it reached the seaboard without touching U.S. territory. To bring this about the accommodation at Montreal must be increased; the St. Lawrence channel must be rendered absolutely safe; and the French river should be made navigable from Georgian bay to Lake Nipissing. He hoped to see the Intercolonial Ry. extended to North Bay, so that it could share with the C.P.R. the handling of grain from that point to the coast. In addition to handling Canadian grain, U.S. grain would be largely carried, as by the French river route the shipping port could be reached from Chicago in 420 miles, and from Duluth in 450 miles less than via Buffalo. In conclusion he said the total cost of the works required to make the French river navigable to lake Nipissing was estimated not to exceed \$5,000,000, which would involve an annual charge of \$150,000. When this was done, and the St. Lawrence end properly equipped with elevators there was no reason why the C.P.R. could not handle up to 50,000,000 bush. of wheat from North Bay, landing it on shipboard at Montreal for 4c. a bushel, as against 7c. a bushel for transportation to New York. There were no engineering difficulties in the way of construction, and the climatic conditions were such that navigation to North Bay would be possible during the length of time it was to Buffalo.

In connection with the proposed improvement of the French river, the Department of Public Works has issued a map showing the principal transportation routes from the head of the great lakes via Montreal, New York, etc., to Liverpool. The rail and water connections of the routes to Montreal via Depot Harbor, the Welland canal, and the proposed new route, as well as to New York by Buffalo are clearly shown on the map and tables are given showing the distances by the several routes, and also showing the length of canals on the two waterways with details as to locks, etc.

The following figures give distances of the different routes:

	Fort William	Duluth	Milwaukee	Chicago.
Via Depot Harbor to Montreal.	3547	3653	3593	3680 miles.
Via Depot Harbor to Quebec.	3521	3627	3497	3554 "
Via Midland to Portland, Me.	3848	3954	3623	3881 "
Via Buffalo to New York.	4287	4393	4251	4308 "
French River route to Montreal.	3593	3669	3553	3610 "

The Dominion Canals.

The total expenditure charged to capital account on the original construction and the enlargement of the several canals, up to June 30, 1901, was \$81,404,543.98. A further sum of \$17,218,448.67 has been expended on the

repairs, maintenance and operation of these works, making a total of \$98,622,992.65. The total revenue derived, including tolls, and rentals of lands and water powers, was \$12,717,343.01.

The total expenditure for the fiscal year ended June 30, 1901, was as follows:—On construction and enlargement, \$2,514,214.93, and \$638,909.72 for repairs, renewals, and operation, a total of \$3,153,124.65. The net revenue collected for fiscal year was \$315,425.69, a decrease compared with the previous year of \$7,217.87. The net canal tolls amounted to \$26,129.40, a decrease of \$11,404.42. The expenditure on canal staff and maintenance, repairs and renewals, amounted to \$638,909.72, a decrease of \$72,690.34, and the net receipts amounting to \$315,425.69, the amount of expenditure in excess of receipts was \$323,484.03, compared with an excess expenditure the previous year of \$388,957.20.

The total traffic through the several canals for the season of 1900, amounted to 5,013,693 tons; a decrease of 1,212,231 compared with the previous year. This includes 2,035,667 tons passing through Sault Ste. Marie canal, which is free of toll. On the Welland canal, 719,360 tons of freight were moved, a decrease of 70,410, of which 379,658 were agricultural products, a decrease of 82,865, and 115,217 produce of the forest; of coal, 47,392 tons were carried. 601,130 tons passed eastward and 118,230 westward; 688,557 tons were through freight, of which 579,312 passed eastward. Of this through freight, Canadian vessels carried 319,497 tons, an increase of 9,911, and U.S. vessels 369,060 tons, a decrease of 91,012. The total freight passed eastward and westward through this canal from U.S. ports to U.S. ports was 318,529 tons, a decrease of 42,000 compared with the year 1899. The quantity of grain passed down the Welland and the St. Lawrence canals to Montreal was 244,651 tons, a decrease of 88,085 compared with the previous year; of this, 38,403 were transhipped at Ogdensburg, as against 48,828 transhipped in 1899. The further quantity of 51,267 tons of grain passed down the St. Lawrence canals, only to Montreal, making the total 295,928 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, 1,115,171 tons of freight were moved, a decrease of 233,922; of which 667,584 were eastbound, and 29,979 westbound through freight; 693,734 were agricultural products, 437,423 merchandise, 375,239 coal, and 95,518 forest products. Fifteen cargoes of grain, aggregating 7,924 tons, were taken down direct to Montreal through the Welland and St. Lawrence canals, as against two cargoes, aggregating 558 tons, in 1899.

On the Ottawa river canals, the total quantity of freight moved was 389,145 tons, a decrease of 130,960, of which 378,801 were produce of the forest. On the Chambly canal, 348,561 tons were moved, a decrease of 14,074, of which 205,160 were produce of the forest, and 92,598 coal. On the Rideau canal, 75,432 tons were carried, an increase of 5,527; 37,925 being the product of the forest, and 17,292 coal. On the St. Peter's canal, 73,843 tons were carried, an increase of 3,009, of which 42,548 were merchandise, and 32,418 coal. On the Murray canal, 19,067 tons passed, an increase of 2,279, and 4,496 of this were the product of the forest. On the Trent Valley canal, 43,572 tons were moved, of which 42,292 were the product of the forest.

On the Sault Ste. Marie canal, the total movement of freight was 2,035,677 tons, being a decrease of 970,987 carried in 3,081 vessels, the number of lockages being 2,205. Of wheat, 9,291,114 bush., and of other grain 1,113,414 bush. were carried; 647,944 barrels of flour, 999,591 tons of iron ore, 530,298 tons

of coal, and 7,435,806 ft. b.m. of lumber; all of these items show a considerable decrease. The total traffic at this point, accommodated by the two canals, the Canadian and U.S., amounted to 25,643,031 tons, an increase of 384,228, carried in 19,450 vessels, a decrease of 779. The total quantity of wheat carried was 40,616,807 bush., a decrease of 17,684,875, and of other grain 16,439,208 bush., a decrease of 13,898,147. Of lumber, the total was 905,528,806 ft. b.m., a decrease of 127,073,194.

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 and peas passed down to Montreal through the Welland and St. Lawrence canals to the extent of 244,661 tons, a decrease of 88,085, compared with the previous year, the quantity carried to Montreal via the C.P. and G.T. railways was 229,624 tons, an increase of 20,454. In addition, during the past three seasons, a new system of grain traffic has come into operation, viz., from Depot Harbor, on Georgian bay, Lake Huron, over the Canada Atlantic Ry. to Coteau Landing, at the head of the Soulanges canal, thence by barge to Montreal. In 1899, the total freight carried by this route to Montreal was 309,573 tons, of which 259,531 were grain. In 1900, 319,865 tons were carried, of which 303,259 were grain (including 153 of peas and buckwheat). Of the grain so carried in 1899, 66,635 tons were wheat and 174,932 corn, and in 1900, 126,963 were wheat and 154,815 corn. The quantity of grain carried to tidewater on the New York state canals was 308,945 tons, a decrease of 107,755, while the quantity carried by the railways of the state to tidewater amounted to 4,396,441 tons, a decrease of 246,511. Of the total east and west-bound freight carried by the canals of the State of New York (the Erie, the Champlain, the Black River, the Cayuga and Seneca and the Oswego) and the competing railways, the New York Central and the Erie respectively, amounting in 1900 to 65,433,541 tons—greater by 13,730,780 than in 1899), the proportion carried by the canals has fallen steadily from 68.9% in 1859 and 47.0% in 1869, to 6.8% in 1898, 7.2% in 1899, and 5.2% in 1900. These canals carried, in 1900, 3,345,941 tons, a decrease of 340,110; of this quantity, 857,607 were through freight eastwards to tidewater, 596,246 coming through the Erie Canal. This eastward bound through freight is answerable for the total decrease to the extent of 307,058 tons. The falling off in the U.S. canal traffic is officially ascribed to the rate war between shippers and boatmen, the unusually late opening of navigation, the strike in the coal regions, which reduced shipments, and the fact that a number of old boats were put out of commission on account of their condition, and there were but few boats built to take their place, owing to uncertainty as to the action that might be adopted in regard of improvement to canal navigation. In attempting to draw deductions from the above figures in dealing with the great question of waterways versus railways as freight carriers, the dimensions of these U.S. canals, their length, and the difficulties of lock passage must be kept in mind. The enlarged Erie canal between Buffalo and Albany, which is, of course, the main factor, is 350½ miles long, comprises 72 locks, 110x18 ft., with a depth of 7 ft. of water, accommodating, as a maximum, vessels of 240 tons burden.

On the opening of navigation in the spring of 1900, by means of the enlarged Canadian canal systems and the intermediate waterways (though not fully completed), a minimum depth of 14 ft. of water from Lake Superior to the head of ocean navigation at Montreal was afforded. The extent of the improved facilities of communication so obtained, and their value to commercial interests may be understood from the fact that in place of the old

limit of lock dimensions, viz., length, 200 ft.; width, 45 ft.; depth of water on the sills, 9 ft., the enlarged locks are 270 ft. in length, 45 ft. in width, with 14 ft. of water on the sills, accommodating vessels 255 ft. long and 44 ft. wide. As an index to the carrying power of the new canal works, it may be observed that a typical vessel, the propeller Aragon, whose length is 247 ft. and width 42½ ft., has passed through the enlarged Welland canal, drawing 14 ft. of water and carrying 2,212 tons of corn. The through route between Montreal and Port Arthur, at the head of Lake Superior, now open as a 14 ft. navigation, comprises 73 miles of canal, with 48 locks, and 1,150 miles of river and lake waters, a total of 1,223 miles. To Duluth the total distance is 1,357 miles, and to Chicago 1,286 miles. The approaches to the canals and the channels, through the intermediate river reaches are well defined, and are lighted with gas buoys, admitting of safe navigation, if in the hands of competent pilots, both by day and night. The Soulages canal is well lighted throughout by electricity, and will next season be operated by the same power; contracts have been made for electrical installation for similar purposes on the Cornwall and Lachine canals.

The time has not yet arrived, though probably it is not far distant, for appraising the full value of the Canadian through canal system from Lake Superior to tidewater. The decrease for 1900, noted in the case of the canals of the state of New York, was shared by the Canadian route, and probably the causes were, in some respects, similar. The facilities for the passage of vessels of large tonnage are now, it is true, in good working order, but any great increase in traffic cannot be looked for until the last contractor's dredge has been moved out of these waters, and the full system of channel buoying and lighting has been completed, as time and experience may show its requirements; further, until the pilots acquire the necessary experience and confidence (a point the importance of which can hardly be over-estimated), and lastly, until shipowners build in greater numbers the larger type of vessel which this route is capable of accommodating. The advantages, however, of the Canadian route are so enormously preponderant, that appreciation of its commercial value is simply a question of time. Considerable progress has been made with the improvements at Port Colborne, the Lake Erie entrance of the Welland canal. These improvements comprise the deepening of the approach to the canal to 22 ft., and the construction of two docks, with piers, 200 ft. wide, upon which grain elevators will be erected for the transference of grain to vessels adapted to the canal navigation, when required. A breakwater, about a mile long, is being constructed across the entrance to the harbor, and the area so contained will be dredged out, thus greatly increasing the accommodation, and ensuring safety at this important point. The deepening of the approaches to the Sault Ste. Marie canal is being carried on at the lower entrance. The present depth of these approaches is limited to the accommodation of vessels of 17½ ft. draught; they will be deepened to 21½ ft., thus enabling the depth of the lock, which is the same as that of the U.S. lock on the other side of the river, to be utilized to its full extent.

The construction of the new works for the improvement and extension of the Trent canal system is proceeding. When the present contracts are completed, a 6 ft. navigation will be afforded from Lake Simcoe to Heely's falls, about 160 miles, leaving the portion between Heely's falls and Lake Ontario, and the portion from the head of Lake Simcoe to Georgian bay still to be dealt with; the total distance between the Bay of Quinté and Georgian bay is about 192 miles.

During 1899 and 1900, under special appropriations voted by parliament, surveys have been conducted on the upper River Ottawa with a view to ascertaining the feasibility and probable cost of constructing a canal system, which will give a 14 ft. navigation from Georgian bay down that river to Montreal, a scheme proposed many years ago and lately

revived by private parties with considerable energy. The engineer in charge, H. A. F. Macleod, reports that the canal can be constructed at an estimated cost for a 14 ft. navigation of \$23,898,000, and for a 20 ft. navigation of \$72,627,000. The distance from Georgian bay to Montreal is set down at 430 miles.



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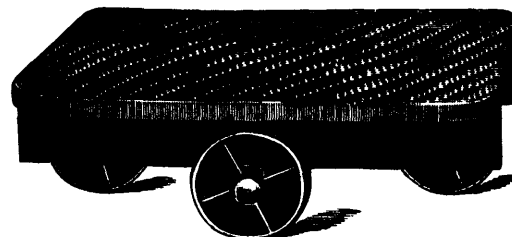
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CANADIAN FACTORY AND OFFICE—MONTREAL

Richelieu and Ontario Navigation Co.

The hull of this Co.'s str. Montreal, was launched at Toronto Feb. 3. She is to run between Quebec and Montreal. Her dimensions are: Length 340 ft.; width of hull 43 ft.; width over guards 75½ ft.; moulded depth 15 ft. The hull, including the main deck, is entirely of open hearth steel, and has 8 water-tight bulkheads. The bottom has considerable dead rise, and forward, the hull is cut away under water from the water line at the stem for 40 ft. to the point where the sweep of the forebody reaches the keel. The stern end is also slightly raised so that the rudder hangs over a foot above the line of the bottom, both of these departures from old practice being designed to give greater facility in turning the vessel.

The machinery consists of a 3-cylinder, 3-crank, inclined, triple-expansion engine, the diameter of the cylinders being 32, 53 and 88 inches respectively, with a stroke of 6½ ft. The engine is estimated at 3,000 h.p. The wheels are 25 ft. in diameter and have 11 feathering curved steel buckets each. There are 6 Scotch type cylindrical boilers, each of 11 ft. diameter and 12 ft. long, with 2 corrugated furnaces 42 inches in diameter, fitted with hot draft system. The working pressure of steam will be 185 lbs. The electric light plant will furnish current for 1200 sixteen-candle power lamps, and the pumps will supply running water to every stateroom. There will also be steam steering gear, steam windlass, steam winches forward and aft, and steam heat in the cabins.

In the body of the hull the forward part is laid out for sleeping quarters for the crew and 2d class passengers, the centre for the boilers and engine and the stern for kitchen, store rooms and mess rooms for the crew. On the main deck aft is the dining room for 120 first-class passengers, with pantry attached. In front of this and opposite the passenger gangways is the entrance hall, with the purser's office and baggage room on one side and smoking room on the other. The bar saloon is immediately forward of the entrance hall. All of the main deck space forward of this is for freight, except that occupied by the engine and smokestacks, some rooms on the sides for officers, and a 2d class passenger compartment forward. The freight capacity is estimated at 300 tons. The arrangement of the upper saloons and state rooms on the 1st and 2d upper decks is much the same as in the Co.'s str. Kingston. The main stairway to the upper saloon is in the entrance hall, and in front of the landing space at the top of this stairway is the stairway to the gallery deck. In consequence of the great width of the steamer there will be three rows of state rooms on each side of the upper saloon in the central portion of the vessel, this being a new feature. The total number of staterooms will be 260, including 20 parlor rooms with bath rooms attached. The work is also designed so that a third tier of staterooms, giving 100 more rooms, can be built over the other two, if the traffic should require it. The entrance hall will have rubber tile floor, and large paintings of Canadian subjects with dark mahogany woodwork on the sides. In the dining room, the stained glass windows will be the leading feature. Both the dining room and entrance hall will be in modern French style. In the upper saloon the Wilton carpet will be of three shades of crimson. The stair and gallery railings will be of bronze leaf work, surmounted with mahogany hand rails. The furniture will be of dark mahogany and crimson plush, and it, as well as the general ornamentation of the upper saloon, will be in Louis XV style. The body of the large richly moulded panels which form a large portion of the sides of the saloons will be covered with green watered silk, and the dome ceiling, which gives the most extensive area for decoration in steamers of this class,

has had an additional arch worked into it. It will be more richly ornamented than usual, with heavy scroll work, and its leading feature will be two large allegorical paintings representing the periods of the day.

The steamer will be taken to Montreal through the rapids, and it is hoped to have her completed in time for next summer's travel.

When the Co.'s str. Montreal, now building at Toronto, is completed, she will be put on the Quebec-Montreal route, to replace the present str. Montreal, which will be named the Beaupré, and will be employed in the pilgrimage business between Montreal and Ste. Anne de Beaupré. The str. Quebec will remain on the Quebec-Montreal run for next season at least. Possibly another boat similar to the new Montreal will be ordered in the course of this year.

Following is a summary of the report for the year 1901 presented at the annual meeting on Feb. 19:

	1901.	1900.
Gross receipts	\$1,109,458.99	\$901,331.80
Operating expenses	920,569.32	748,105.33
Fixed charges	22,792.16	23,903.51
Net profit	\$166,097.51	\$129,322.96

The increase in operating expenses is attributed principally to \$80,000 having been spent on improvements to several steamers, in addition to the regular outfit, repair and reconstruction work. From the surplus of Dec. 31, 1900, there has been written off \$57,311.22, proceeds of sale of three steamers which had been withdrawn from service and were not required by the Co. The new str. Kingston commenced running between Toronto and Prescott July 2, 1901, and has proved a success. The Co.'s new hotel at Murray Bay has been a great attraction to the lower St. Lawrence route. Additional wharf property has been purchased at Quebec. During the year, \$22,386.66 of bonds were withdrawn and cancelled, making \$119,719.98 cancelled to date, and leaving \$452,113.35 outstanding. The directors claim that the condition of the Co.'s property is satisfactory and improving.

INCOME ACCOUNT.

Dividend 3 p.c. paid May 2, 1901,	\$64,823.47
Nov. 2,	75,128.53
Carried to surplus Dec. 31, 1901	26,145.21
Net income over and above expenses, fixed charges and interest	\$166,097.51

ASSETS.

Steamers, real estate and buildings, wharves, etc.	\$3,249,650.10
Coal, stores, provisions, etc.,	81,892.31
Accounts receivable	28,518.74
Bonds in treasury	23,360.00
	\$3,383,421.15

LIABILITIES.

Capital stock	\$2,505,600.00
Bonds 5 p.c. sterling	\$571,833.33
Less cancelled	119,719.98
	452,113.35
Bank loans	251,727.51
Accounts payable	35,496.19
Unclaimed dividends	150.00
Accrued interest on bonds	7,144.78
Surplus	131,189.32
	\$3,383,421.15

As stated in the report \$57,311.22 was written off for proceeds of sale of 3 steamers. In the discussion on the report, according to the Montreal Herald, these steamers were the Caspian, which was valued on the Co.'s books at \$70,000, and sold for \$21,000; and the Island Queen and River du Loup, valued at \$5,000 each and sold at \$2,000 each. It would therefore appear that the three steamers appeared in the Co.'s statements of assets as worth \$80,000, that they only realized \$25,000 and that \$57,311.22 was written off in connection with the sale. One of the shareholders called attention to the discrepancy and said the public would probably conclude that the Co.'s other assets were over-valued.

In reference to this matter, President Forget informs us: "That the proceeds of steamers, \$25,000 were credited to the \$80,000, leaving \$55,000 to be written off; the

difference between this amount and \$57,311.72, as appears on the report, amounting to \$2,311.72, came out of the inventory of goods and stores at various ports, which were cut down to this figure."

The shareholders approved of the issue of \$626,400 of new stock, to be offered to the shareholders at par, one share of new stock to each four shares of old. This will bring the capital up to \$3,163,000 out of an authorized capital of \$5,000,000. The new stock is to be utilized as follows: Building str. Montreal, \$412,000; furnishing str. Montreal, \$113,000; new wharves at Quebec, \$60,000; pontoons, etc., for Quebec, \$15,000; improvements Manoir Richelieu Hotel \$26,400. The board for the current year is as follows: President, Hon. L. J. Forget; vice-president, W. Wainwright. Other directors: R. Forget, F. C. Henshaw, C. O. Paradis, G. Caverhill, E. B. Garneau, J. K. Osborne, H. M. Pellatt, W. Hanson, H. M. Molson.

Alien Laws Respecting Seamen.

The Nautical Gazette, New York, says:—"What is known as the Lockwood bill for the Americanizing of lake vessels ought to receive favorable consideration in Congress this winter. It has been somewhat modified and reintroduced by Representative Ryan. The bill is largely the inspiration of Inspector of Immigration DuBarry, stationed at the port of Buffalo, who has made a close study of the abuses the measure seeks to remedy. The bill provides that 'sailors and deck-hands on American vessels plying on the Great Lakes shall be permanently domiciled in the U.S. six months prior to their working or engagement on said American vessels.' The need of such protection for American seamen is apparent when it is stated that 45% of the crews of lake vessels are aliens, chiefly, of course, from Canada, and who go back to Canada to spend their money. When we consider the vastness of British shipping as compared with our own, we have to conclude that there is room under the British flag for British seamen without these hearties crowding Americans from the decks of American vessels."

This is a matter that should occupy the serious attention of the new Minister of Marine. We do not believe in alien labor laws, but if they are to be enacted by the United States, especially directed against Canadians, as the Lockwood bill certainly is, precisely similar legislation should be passed by the Dominion Parliament. If Canadians are not to be allowed to work on U.S. vessels, U.S. citizens should be similarly debarred from Canadian vessels, and the Dominion Government and Parliament will be recreant in their duty if the Lockwood bill becomes law without parallel legislation at Ottawa. U.S. "hearties" should have no right here that Canadians do not enjoy in the U.S.

Notices to Mariners.

The Department of Marine has issued the following notices:

No. 6. Jan. 27.—Nova Scotia.—18. Jeddore harbor, south coast, position of range lights. 19. Nautical Almanac, 1902. In some copies of a reprint of the Nautical Almanac for 1902, some pages of the Nautical Almanac for 1905 have been bound up in error; the pages are from 33 to 48. Perfect copies will be supplied to anyone having the erroneous copies on returning the same to the Admiralty agents or sub-agents.

No. 7. Feb. 11.—British Columbia.—20. Burrard Inlet, English bay, position of telegraph cable. 21. Porter pass, Romulus rock, buoy discontinued.

No. 8. Feb. 11.—Nova Scotia.—24. Bay of Fundy, Chebogue ledge buoy adrift. 25.

Halifax harbour, Mauger beach lighthouse, etymology. 26. Canso harbor approach, Cape Breaker bell buoy.

No. 9. Feb. 14.—Nova Scotia.—28. Louisburg harbor, fog signals at outer lighthouse.

The U.S. Hydrographic Department has issued the following notices of interest to Canadian mariners:

No. 147. Feb. 1.—Lake Ontario.—Gallos island and Stoney Point light stations, intended changes at opening of navigation, 1902.

No. 184. Feb. 8.—Detroit river.—Grosse island, north channel range light, intended change in color of lights.

No. 185. Feb. 8.—Detroit river.—Grosse island, north channel range light station, intended change in color of structure.

No. 206. Feb. 8.—Alaska, Unalaska and Dutch harbor approaches, prominent marks.

No. 217. Feb. 15.—Lake Superior, ice conditions.

Maritime Provinces and Newfoundland.

From Jan. 28 to Feb. 6 the government str. Stanley, running between Summerside, P.E.I., and Cape Tormentine, N.B., was held in the ice.

The car ferry Scotia, built for the I.C.R., has had another mishap. She broke loose from her moorings in Halifax during a storm and collided with the fisheries' protection cruiser Acadia.

The Coronation, a 125-ton schooner, has just been launched at Shelburne, N.S., and two other schooners will be launched there by April 1. On the La Have eight schooners are under construction.

The International Steamship Co.'s str. Cumberland, now in New York, will have a

new boiler placed and undergo other repairs before being again placed on service between St. John, N.B., and Boston, Mass.

The Halifax shipping firm of F. D. Corbett & Co. has dissolved by effluxion of time. G. S. Campbell, President of the Board of Trade, will continue the business, and has taken into partnership W. S. Davidson and R. A. Corbett.

G. Robertson, M.L.A., met the committee of the St. John, N.B., town council on Feb. 7, respecting the proposed dry dock. While many matters in connection with it were discussed, no decision was reached on any point.

The St. John, N.B., city council has directed the engineer to prepare plans for additional wharf accommodation for the Dominion Atlantic Ry. Co.'s steamers; and for the improvement of warehouse accommodation on several wharves.

The Plant Line str. Halifax, the repairs on which are completed, will resume her place on the run between Halifax, N.S., and Boston, Mass., during the month; and the Olivette, now in the Southern States, will take her place on the same run in May.

The Dominion Coal Co.'s str. Mira, which was built in Great Britain last year, ran on a rock at Chebogue Point, near Yarmouth, N.S., Feb. 3, while returning to Louisburg from Boston, and is a total wreck. The crew of 35 men were rescued with great difficulty. She was a steel steamer of 2,400 tons register.

The Miramichi Steam Navigation Co. has authorized the directors to issue bonds to the amount of \$10,000 to pay for the building of a new steamer for the down-river route, to

replace the Miramichi, which is to be transferred to the up-river run. The new steamer is being built at a cost of \$14,000. She will carry 400 passengers.

The Eastern Coastal Steamship Co. is being organized in Nova Scotia to run a steamer between Halifax and Canso, calling at intermediate ports. J. McMillan and A. Reid, of Isaac's Harbor, are interested. A temporary service has been established by the str. Lunenburg, under the management of Leslie, Hart & Co., pending the building of a steamer.

The str. Ask, which inaugurated the new St. John, N.B., Jamaica service, is reported to have made a successful trip. The C.P.R., which handled the freight carried for Montreal and Toronto, expects to see a considerable trade built up. The St. John shippers are continuing to protest against the short time which the vessels of the Pickford & Black line stop in St. John.

The Minas Basin Steamship Co. has had built at Canning, N.B., a steamer, the Brunswick, to trade between St. John, N.B., and Minas bay ports. She has accommodation for 25 passengers and for considerable freight. Her dimensions are: length, keel, 96 ft., over all, 110 ft.; breadth, 23 ft. She is well fitted, is expected to make 12 knots, and will be put on the service this month.

J. Peters, C. W. Robinson, F. W. Sumner, J. W. Y. Smith, F. P. Reid, J. H. Harris, P. McSweeney, L. H. Higgins, and D. I. Welch, Moncton, N.B., are applying for incorporation under the New Brunswick Companies' Act as the Shepody Navigation Co., to carry on a general navigation business. The proposed capital is \$25,000 and the head office is to be at Moncton, N.B.

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 Manitoba and Assiniboia average \$3 to \$6 an acre.

Lands in Alberta and Saskatchewan with the exception of some special locations where prices range from \$3.50 to \$5.00 per acre, generally \$3.00 per acre.

TERMS OF PAYMENT.

In the case of an actual settler who goes into residence upon and cultivates the land, 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 date of purchase, and the remainder annually thereafter.

- 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.

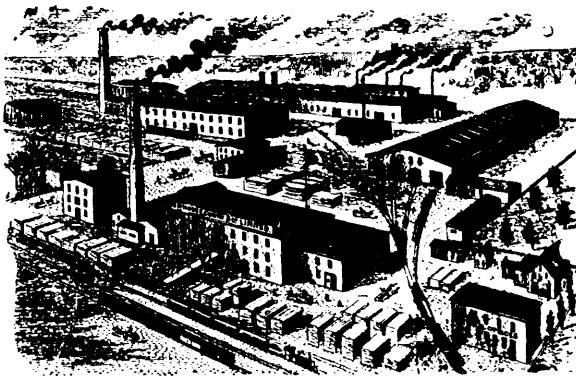
Purchasers who do not undertake to go into residence on the land within one year from date of purchase are required to pay one-sixth of the purchase money down and the balance in five equal annual instalments with interest at the rate of six per cent. per annum.

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.

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

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Export Elevator, Buffalo, N.Y.....	"	1,000,000 "
J. R. Booth Elevator, Depot Harbor, Ontario.....	"	2,500,000 "
Cleveland Elevator Company's Elevator, Cleveland, O.....	"	500,000 "
Erie R. R. Transfer & Clipping House, Chicago, Ill.....	"	100 cars in 10 hrs.
Manchester Ship Canal Co.'s Elevator, Manchester, Eng.....	"	1,500,000 "
Burlington Elevator Co., Peoria, Ill.....	"	500,000 "
Canada Atlantic Railway Elevator, Coteau Landing, Que.....	"	500,000 "
Northern Grain Co., Manitowoc, Wis.....	"	1,350,000 "
Union Elevator, East St. Louis, Ill.....	"	1,100,000 "
Montreal Warehousing Co.'s Belt Conveyor System.....	"	"

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It is reported that the screw str. Westport, owned by the Insular S.S. Co., of Westport, N.S., has been sold to Grand Manan people for fishery purposes. The Westport was built at Shelburne, N.S., in 1896, her dimensions being: length, 82 ft.; breadth, 8 ft.; depth, 7.7 ft.; tonnage, gross, 80. register 48. The Insular S.S. Co. contemplates replacing the Westport with a larger vessel.

L. Coste, C.E., of the Dominion Public Works Department, has laid before the St. John, N.B., city council plans for harbor improvements. It is proposed to dredge the harbor to give 30 ft. at dead low water; and to build a wharf between Sand Point and North Rodney wharves. It is also recommended that the west channel leading into the harbor be closed, so as to keep the water in one channel, thus aiding in clearing the silt out of the harbor.

D. J. Purdy, J. W. McAlary, G. H. Perry, L. Jordan, A. P. Belyea and S. H. Belyea, of St. John, N.B., are making application under the New Brunswick Companies' Act as the People's Line Steamship Co. (Ltd.) to purchase the str. Star of St. John, and other vessels, and to carry on a general navigation business on the St. John river and tributaries. She is a sidewheel steamer built at St. John in 1873, her dimensions being: length 153 ft.; breadth, 22.6 ft.; depth, 6.5 ft.; tonnage, gross 461, net, 328.

A return is to be brought down in the House of Commons giving all the papers having reference to the placing of the Stanley on the route from Summerside P.E.I., to Cape Tormentine, N.B. The Minister of Marine recently said the instructions to the officers of the Stanley were to make the trip under all condition, consistent with the safety of the ship, passengers and crew. The Minister of Public Works said there was difficulty at the pier at Cape Tormentine, and the harbor works at Summerside were being reconstructed.

R. S. Orchard, C. W. Wasson, W. I. Barton, B. C. Eastbrooks, of St. John, N.B., and C. C. Taylor, Sheffield, N.B., are applying for incorporation under the New Brunswick Companies' Act as the Majestic Steamship Co., to carry on a general navigation business. The proposed capital is \$250,000 and the head office of the Co. is to be at Gagetown. The Co. has acquired the str. Majestic, hitherto running on the Richelieu river, Que., and propose putting it on the service between Gagetown and Indiantown, N.B., on the St. John river. The Majestic was built by the Polson Iron Works, Toronto; she is a screw steamer and can carry 400 passengers. The dimensions are: length, 130 ft.; breadth, 22 ft. 6 in.; draft, 6 ft.

Province of Quebec Shipping.

Very extensive works in connection with the improvement of the harbor at Three Rivers are to be undertaken this year, a \$750,000 contract having been let to T. Malone, by the Department of Public Works. It is reported that a suction dredge having a capacity of 60,000 yards a day has been purchased for the work.

The Nova Scotia Steel and Coal Co., has made application to the Quebec Harbor Commissioners for a site for a wharf, and storage space for 100,000 tons of coal. It is proposed to make Quebec the distributing point for its coal throughout Quebec and Ontario. The Dominion Coal Co., of Glace Bay, N.S., is also applying for wharfage accommodation at Quebec.

The Montreal harbor commissioners have had another discussion regarding elevator ac-

commodation at that port, but did not make any progress. In the course of the discussion the commissioners expressed themselves in favor of equal treatment for Montreal and Quebec. This they did not get now, as they were paying the Dominion Government interest on over \$2,000,000, while Quebec, according to Hon. J. I. Tarte, had received \$5,000,000 from the same source upon which nothing whatever was being paid. The commissioners also expressed their disapproval of a recent public statement of Mr. Geoffrion, one of their number, that it was the commissioners and not Mr. Tarte that were responsible for the delay in carrying out the harbor improvements. A committee of the commissioners has visited a large number of ports, and reports generally that Montreal harbor is ill equipped in every way.

Hon. A. A. Thibaudeau, Hon. W. Owens, Hon. T. Berthiaume, R. Prefontaine, S. H. Ewing, A. J. Corriveau, H. A. A. Brault, R. Bickerdike, A. Haig-Sims, P. Galibert, C. Berger, T. T. Gauthier, and W. G. Reid of Montreal; S. T. Willett, of Chambly Canton; Hon. J. Girouard, M. Perrault and L. E. Morin of Longueuil; J. Ocain and A. MacDonald, of St. Johns, Que.; S. M. Weed, of Plattsburg, N.Y.; C. F. Burger, and J. W. Allison of New York city; and C. H. Cummings of Mauch Chunk, Pa., were incorporated by the Dominion Parliament in 1898 as the Lake Champlain and the St. Lawrence Ship Canal Co., to construct a canal from the south shore of the St. Lawrence river in Chambly county to the Chambly canal, or the Richelieu river as might be most convenient, to carry on a general navigation business and for other purposes. The Co. is applying at the present session of the Dominion Parliament for an act declaring its corporate power to be in full force, and granting an extension of time for the construction of the canal.

Hon. S. N. Parent, Premier of Quebec, and Mayor of Quebec city, was recently entertained at a banquet, and in a speech said it was their duty to direct all their energies to make their city the center of a large export trade, more particularly of grain, agricultural produce and cattle. Many enterprises would be centered in the city on the completion of the bridge which would bring in the railways, but the navigation of the river would have to be rendered safe. Then the question of winter navigation would have to be taken up, and he hoped that the Government would soon have this thoroughly tested. The Quebec people were not jealous, and he suggested that the cities on the great national water way of the St. Lawrence and the Great Lakes should enter into a combination in order to obtain from the Dominion Government all the help needed, it being understood that for every million expended for the benefit of Toronto and Montreal half a million should be expended on Quebec. With a united action on the part of the three cities all the problems of transportation along the St. Lawrence and the Great Lakes would be solved.

Speaking at the banquet given in honor of Hon. S. N. Parent at Quebec recently Capt. Wolvin said, in reference to his company's proposed expenditure there:—"We hope to help you to establish at this point the national port of the Dominion, but it will be better for us to let our actions speak. I am here tonight to formally accept the conditions embodied in the resolutions of your Harbor Commission. Since I left here three weeks ago the Great Lakes and the St. Lawrence Transportation Co. has been organized, and is now ready to do business. We have opened agencies at Duluth, Chicago and Milwaukee, and in a few days we will have secured accommodation here and our sign will be in evidence in your streets." The conditions of the arrangement necessitate the spending

of \$1,500,000 on a steel elevator and stores on the cross wall of the Louise embankment, and the building of a fleet of grain carriers. Pending the erection of its own elevator the Co. has secured the use of the Great Northern Ry. Co.'s elevator. A floating elevator will also be employed. It is reported that a number of vessels have been chartered to bring in grain as soon as navigation opens, and that the first of the Co.'s own vessels will be put on the route by June 30. The Marine Record, referring to the project, says that 20 or 30 steamers may be acquired by the Co. provided they can be obtained at a favorable price; that they will be of sufficiently light draft to make the trip without lightering at Port Colborne, and that there is no lack of steamers of the required size being offered. No steamers with gangways will be required as all cargo will be worked by the hatchways. G. T. Smith formerly of the Conners' Syndicate in Montreal, will represent the Co. in Quebec.

Ontario and the Great Lakes.

The Ottawa Transportation Co. is having two lumber barges built to be ready for the coming season's navigation.

The Port Huron and Sarnia ferry line has suspended operations in order to more efficiently carry out the quarantine laws on the international border.

The quantity of grain arriving at Owen Sound by water during the season of navigation of 1901 was 1,570,921 bush., of which 99,280 came from the U.S.

Plans are being prepared by the Collingwood Shipbuilding Co. for two large steel steamers, one of which is reported to be for the Midland Navigation Co.

The car ferry Shenango, running between Port Stanley, Ont., and Conneaut, Ohio, has been laid up, owing to the heavy slush ice on the southern shore of Lake Erie.

The Booth steamship line has purchased the str. America, operated last season between Buffalo and Niagara, for the Duluth, Port Arthur and Isle Royale route.

The first canal lock built in America was at Sault Ste. Marie in 1790. It had a lift of 9 ft., and a depth of 2½ ft., and was wrecked during the war of 1812. It is now shown as a curiosity.

The Kawartha Lakes Excursion Co., Lindsay, proposes to operate its recently purchased str. Crandella as an excursion boat on the river Scugog and the adjoining lakes during the summer.

The str. Primrose belonging to the Detroit, Belle Isle and Windsor Ferry Co. has been fitted with wireless telegraphy, and kept in communication with Detroit while on a recent trip to Wyandotte, 16 miles.

Among the vessels doing business in 1846 on Lake Superior was the schooner Whitefish, owned by the Hudson's Bay Co., and trading along the north shore for that Co. under the command of Capt. Lamphire.

Application is being made at the current session of the Dominion Parliament for an act incorporating the Knapp Tubular Steamship Co., to carry on a freight-carrying business on the Great lakes and the St. Lawrence river.

The U.S. Congress is being asked to authorize the expenditure of a considerable sum for the purpose of celebrating the 50th anniversary of the construction of the canal at Sault Ste Marie, Mich., which event occurs June 4, 1903.

The Ottawa Forwarding Co. states that the carrying business of 1901 was not so heavy as in 1900, but that the prospects of the coming season are bright. The Rideau passenger

trade, it is expected will show a considerable increase.

W. H. Bennett made a complaint in the House of Commons, Feb. 20, in reference to the enforcing of the alien labor law, particularly on Georgian Bay, where U.S. tugs have been allowed to come in and do work that Canadian tugs ought to do.

The Rideau Lakes Navigation Co. propose to have built at a cost of \$35,000 a steamer on the lines of the Rideau Queen, for the opening of navigation in 1903. It is said to be the intention of the Co. to establish a daily service between Kingston and Ottawa.

The Dominion Government is not satisfied with the decision of the Court of Exchequer in the case of the duty on the Algoma Central Ry. Co.'s str. Minnie M., given in our Feb. issue, pg. 75, and has entered an appeal which will come before the Supreme Court on an early date.

The Canada Atlantic Ry. Co. has a two years' lease of the barges of the Kingston and Montreal Forwarding Co. The fleet consists of 13 barges having a total capacity of 410,500 bush. of wheat. They will be operated between the Co.'s terminal at Coteau and Montreal, as was the case in 1901.

It is reported to be the intention of the Rutland Ry. Co. to operate the eight steamers hitherto running from Chicago, Ill., via the Welland canal, to Ogdensburg, N.Y., from Chicago to Depot Harbor, Ont., and ship freight over the Canada Atlantic Ry. recently acquired by W. S. Webb and associates.

The Collingwood Shipbuilding Co. (Ltd.) is the successor of the Dry Dock and Wrecking Co. of Collingwood, which was in 1899 granted exemption from taxation. The corporation is asking the Ontario Legislature to confirm that exemption, and also to confirm a by-law granting a bonus of \$50,000 to the Shipbuilding Co.

The Ottawa River Navigation Co.'s annual meeting was held in Montreal, Feb. 12. An officer states that the season of 1901 was more successful than for several years past. The officers for the current year are: President, J. J. Gibb; Vice-President, H. W. Shepherd;

Managing Director, R. W. Shepherd; other directors, H. Wallis and R. Bolton.

The data respecting the level of Lake Erie, collected by the U.S. engineering department shows that during the past four years the water level has been gradually getting lower. The highest level registered was +6.4 on Nov. 21, 1900, and the lowest on Mar. 14, 1901, when the register showed -4.4. This same level was registered on Dec. 4, 1898.

Commander Spain, R.N., P. Harty, chairman of lighthouses, and E. Adams, chairman of the board of steamboat inspectors, held a court of inquiry at Kingston recently, to investigate the loss of the schooner Marine City, in Lake Huron, in Nov. 1901, and the conduct of Capt. Malone, of the str. India, in relation thereto. The decision has not been announced.

The Lake Carriers' Association is desirous of having rules made for the navigation of the Detroit river, and suggests that an international agreement be arrived at whereby regulations could be put in force. The Association has drafted the rules and is seeking to obtain approval for them at Washington. The Canadian Government will have to be consulted before they could become operative in Canadian waters.

The use of French steel plates in the construction of boilers in Canada is being objected to by the Dominion officials on the ground that they are not of the quality required by the British Lloyds. These plates were imported by a Toronto firm, who have taken the case to the Minister of Marine and have argued it out fully. No decision upon the matter has been arrived at.

The Masters' and Mates' Association met at Toronto recently and elected the following officials for the year: President, R. Fugel; 1st Vice-President, Capt. Conlin; 2nd Vice-President, F. Jackman; Secretary, T. Jennings; Tyler, H. McSherry; door-keeper, A. Martin; Auditors, J. McSherry and M. Osborne; Delegate to the Grand Council, R. Williams, Oakville.

The Rainy River Navigation Co., at its annual meeting at Rat Portage, Ont., Feb.

13, declared a dividend of 10%, and is said to have carried a considerable sum to rest account. The officers for the current year are: President and Manager, G. A. Graham; Vice-President, W. Ross; Secretary-Treasurer, M. McCulloch; other directors, J. Bertram, A. Thompson, C. H. Lewis.

A Rat Portage deputation has asked the Ontario Government to aid in the improvement of navigation in Lake-of-the-Woods at Ash rapids, and at Fort Frances locks on the Rainy river. The trade on the lake and river is increasing and will increase more rapidly as settlement follows the opening of the Canadian Northern Ry. from Port Arthur through the Rainy river valley.

Reports are again current that it is the intention of the New York Central Ry. to operate one or more lines of steamers on Lake Ontario and the St. Lawrence in competition with the Richelieu & Ontario Navigation Co. Ogdensburg, N.Y., reports state that the competition on the St. Lawrence will be inaugurated through the Folger lines; and a Rochester, N.Y., report states that a fast steamer is to be run between Charlotte and Cobourg and Port Hope.

In June 1899 the Georgian Bay Co.'s str. Carmona was damaged by a collision in the Detroit river, due, it is alleged, to the negligence of the U.S. barge Crete, which was in tow of the Shenandoah. The damage to the Carmona amounted to \$3,000, but it was not until quite recently that the Crete happened to get into Canadian waters, when process was at once served. The case has been argued before Judge McDougall in the Admiralty Court at Windsor and judgment is reserved.

The Hamilton Steel and Iron Co., (Ltd.) has under consideration a project to make Sarnia the lower lake terminal of its ore-carrying steamers from Lake Superior points, transferring the ore to G.T.R. cars at Sarnia for transportation to Hamilton. If this project is decided on steam unloading apparatus will be provided on the wharves at Sarnia, and other improvements made. We are officially informed that the press reports that additional vessels will be built for this trade, are not correct.

MANITOBA

The Government Crop Bulletin issued Dec. 12th, 1901, gives the following statistics for the year:

CROPS.		
ACRES.	AVERAGE YIELD.	TOTAL.
Wheat..... 2,011,835	25.1 bus.	50,502,085 bus.
Oats..... 689,951	40.3 "	27,796,588 "
Barley.... 191,009	34.2 "	6,536,155 "
Potatoes.. 24,429	196. "	4,797,433 "

STOCK.

Number of stock in the Province, July 1, 1901:		
Horses..... 142,080	Sheep..... 22,960	
Cattle..... 263,168	Pigs..... 94,680	
Value of Dairy Products..... \$926,314		

18,375 FARM LABORERS

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

MANITOBA FARMERS ARE PROSPEROUS.

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

MANITOBA LANDS—For sale by the Provincial Government. Over 1,600,000 acres of choice land in all parts of the Province are now offered at from \$2.50 to \$5.50 per acre. Payments extend over nine years. **Special Attention** is directed to 500,000 acres along the line of the Manitoba and Northwestern Railway at \$3.50 and \$4.00 per acre.

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

For full information, maps, etc., **FREE**, address
HON. R. P. ROBLIN, Minister of Agriculture
and Immigration, Winnipeg, Manitoba.
Or JAMES HARTNEY, Manitoba Emigration Agt.,
77 York Street, Toronto, Ont.

All C.P.R. Agents in

MANITOBA, ASSINIBOIA, ALBERTA and BRITISH COLUMBIA

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

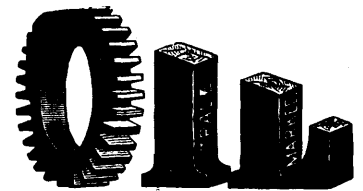
They also sell prepaid tickets to passengers coming from the old country, cheaper than the rate obtainable in Europe, and on favorable terms.

Apply to any agent Port Arthur and west, or to

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For Heavy, Slow, or Fast Fine

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ENGINES,
DYNAMOS.**

Compression Grease.

**DIAMOND OILS
For ELECTRIC RAILWAYS.**

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

The methods of water ballasting on the lake type boats, according to the Marine Record, is "simply to partly fill the hold with water, which is prevented from running through to the engine room by a bulkhead, generally constructed of a few planks, with a filling of cement to make it watertight." The reason the ballast is so placed is to submerge the propeller when the vessel is light, and since it has come in vogue there has been a minimum of broken shafts and lost propeller blades through racing.

The Brockville Navigation Co.'s directors for the current year are: President, R. Bowie; Managing Director, W. S. Buell; other directors, N. Cossitt, sen., J. Grant, O. K. Fraser and J. A. McKenzie. The Co. is a close corporation, organized by residents of Brockville and neighboring summer resorts for the purpose of supplying a satisfactory ferry service, which is given by the str. Brockville. The Co. has done a satisfactory business and paid last year the usual dividend of 5%, besides carrying forward a substantial amount

The Lake Carriers' Association Committee on Aids to Navigation recommends among a large number of other works the following: range lights on Point Edward, near the mouth of the St. Clair river, recommended on account of several strandings having occurred after the lightship was removed because of the ice, thus leaving the dangerous channel unmarked; a number of additional gas buoys along St. Clair river both on the American channel, and the middle ground; a gas buoy to mark the channel of the Soo river near the Dark Hole.

In addition to the figures respecting the traffic through the Canadian and the U.S. canals at Sault Ste. Marie in our last issue the following additional facts from the U.S. reports will be of interest. The 4,204 vessels passing through the Canadian canal included 3,438 steamers, 336 sailing vessels, and 430 unregistered vessels. The total number of passengers carried was 59,663, of which 29,962 were carried through the Canadian canal. The outward traffic totalled 23,087,742 tons, its destination being as follows: to Lake Michigan ports, 2,211,476 tons; to Lake Huron ports, 917,919 tons; to Lake Erie ports, 19,716,464 tons; and Lake Ontario ports, 241,882 tons; while the inward traffic amounted to 5,315,323 tons.

The Algoma Central & Hudson's Bay Ry. Co. has purchased a side-wheel steamer for the route between Toledo, Ohio, and Sault Ste. Marie, Ont., via Kincardine and other Lake Huron ports in Canada and the Manitoulin channel. This steamer, with the Osifrage, will give a bi-weekly service between these ports. The steamer which has been bought is the iron side-wheeler Montauk, owned by the Montauk Steamboat Co., which has been plying between New York and Sag Harbor, and which is the smallest steamboat running on Long Island Sound that has state-rooms. She was built at Wilmington, Del., in 1891. Her dimensions are: length 175 ft., beam 31 ft., width over guards 45 ft., depth 9½ ft., tonnage gross 570, net 449. She has 1 cylinder, vertical beam 38 x 108, 2 boilers, water pressure 60 lbs. She has accommodation for about 100 passengers.

Manitoba and the Northwest Territories.

Work on the construction of the locks at St. Andrew's rapids on the Red River below Winnipeg, has been recommended by the contractors, Kelly Bros.

The Saskatchewan river is navigable from Lake Winnipeg along the north branch to Edmonton, Alta., for large vessels, and for smaller steamers for 150 miles further to Rocky Mountain house.

P. McArthur, A. D. McArthur, G. Barr, of Westbourne, G. O. Bellamy, of Winnipegosis, and J. G. Harvey of Dauphin, are making application for incorporation under the Dominion Companies' Act as the Standard Lumber Co. of Manitoba, with power, among other things, to acquire vessels and carry on a general navigation business, with office at Winnipegosis, Man.

The Roman Catholic mission on Lesser Slave lake has had built two steamers, one for the Peace river to be operated between Hudson's Hope and Fort Vermilion, about 600 miles; and the other for the Lesser Slave lake. The Peace river steamer is 60 ft. long and 11 ft. wide, and is fitted with powerful engines; while the second boat is a 29 ft. steam launch. Both are being taken overland from Edmonton to Athabasca Landing, the larger one in sections.

B.C. and Pacific Coast Shipping.

The C.P.R., it is said, will not take any steps in the direction of inaugurating a line of steamships from Vancouver, B.C., to Vladivostock, for some months.

Press reports state that a steamer is to be put on the Columbia river, to trade from Death rapids to the mouth of Canoe river, and up that river as far as it is navigable.

The Canadian Pacific Navigation Co. is about to build, at the Pacific coast, a wooden screw steamer for general service there. Her dimensions will be: length, 200 ft.; breadth, 36 ft.; depth, 16 ft.

The British Yukon Navigation Co. proposes to use crude petroleum as fuel on its steamers plying on the Yukon river between Whitehorse and Dawson. The experiments will be commenced in May.

The Pacific Coast Steamship Co. has purchased the str. Valencia to operate on its Alaska route; and will place the new str. Spokane on the run between Victoria, B.C., and San Francisco, Cal.

The Canadian Pacific Navigation Co.'s str. Charmer, plying between Vancouver and Victoria, B.C., has been equipped with a telephone, and when lying at the wharf at either port is connected with the city system.

The steamer service between Victoria and Crofton, B.C., in connection with the Victoria Terminal and Ferry Co.'s railway lines, was commenced on Feb. 3 by the str. Iroquois, the str. Mystery taking the place of the Iroquois.

It is reported that J. J. Hill and W. Oakes between them control most of the steamship lines operating from U.S. points on Puget Sound to southeastern Alaska, and that W. Oakes has in all his purchases been acting for J. J. Hill.

It is reported that one steamship company operating on the northern runs will hereafter employ wooden instead of steel vessels. It is claimed that they are less liable to damage, and should they run ashore, they can be got off at less cost than can steel vessels.

Goodall, Perkins & Co., San Francisco, who have been agents for the Pacific Coast Steamship Co. for some years, have given notice of cancellation of their contract, to take effect, it is stated, on June 30. The P.C.S. Co. will manage its business direct, and it is understood that Mr. Goodall, jun., will enter the Co.'s service.

Press reports state that the steamers of the Canadian-Australian line will resume calling at Fiji during the summer, and that it will receive mail contracts from the Imperial and Australian governments on the expiry of existing contracts with the U.S. lines. The Co. is having one new steamer built and will purchase another.

The Canadian Pacific Navigation Co., has placed an order with Swan & Hunter, Newcastle-on-Tyne, Eng., for a twin screw steel steamer, to run between Vancouver and Victoria, B.C. Her dimensions will be: length, 300 ft.; breadth, 40 ft. 6 in.; depth, 17 ft. 6 in. She is to be engined to give a speed of 18 knots an hour.

The Hudson's Bay Co. is having built at Victoria a stern wheel steamer for the Skeena and Stikine river trade. The dimensions will be: length, 130 ft.; breadth, 28 ft., with a very light draught; and the boiler is to be tested to 200 lbs. a square inch. The boat is being built under the superintendence of Capt. Johnson and Chief Engineer Hickey, of the H.B. Co.'s Skeena river service.

Press reports state that the promoters of the Trans-Alaska Ry. have secured three steamers, each capable of carrying 300 passengers and 2,400 tons of freight, and having a speed of 10 knots an hour, to run between Seattle, Wash., and Iliamna bay, Alaska, the proposed Alaskan terminal of the line. Two of the vessels are said to have been secured on the Great lakes and the third on the Atlantic coast.

Some surprise was recently created on the coast by the announcement that the collector of customs at Sitka, Alaska, had issued instructions to his deputy for Unalaska and Dutch Harbor, directing him to refuse the privileges of the port to British vessels engaging in sealing operations, such vessels being said to be engaged in "illegal poaching." The attention of the authorities at Washington was called to the Collector's action, with the result that he has been relieved of his position and the instructions cancelled.

U.S. shipping papers continue to state that the Canadian Pacific Navigation Co. is having built on the Clyde four 21-knot steamers, each to be 600 ft. long, 12,600 tons displacement and having accommodation for 800 cabin and 1,200 steerage passengers, that these steamers are for the Oriental trade, and that the three Empress liners are to be put on the Vancouver-Australia route. The C.P.N. Co. does not operate either of the two lines in question, but does operate on the Pacific coast in connection with the C.P.R. The C.P.N. Co. has just placed an order for an 18-knot steamer with an English firm, and a wooden screw steamer is to be built on the Pacific coast, for general service there. The C.P.R. operates the Oriental line and is considering plans for an additional steamer for it. The line to Australia is operated in connection with the C.P.R. by the Canadian-Australian S.S. Co., for which Co., it is reported, a new steamer is being built on the Clyde, and enquiries are being made for the purchase or charter of another.

The Elder-Dempster line has decided to withdraw its steamers from the route from Portland, Me., to Bristol, Eng., as the business has never been satisfactory.

By reason of an agreement between a number of transatlantic steamship companies, freight and passenger rates between Canada and British ports have been raised, and U.S. ports have agreed to quote Montreal rates in Canada for all classes of goods, hay alone excepted. The minimum saloon rate, winter months, is to be \$50 in future. The Elder-Dempster Co. state that they will not enter into any combination that will affect the immigration rates, consequently the third-class rates are not to be altered this season.

J. J. Riley, Jr., read a paper on marine insurance before the Montreal Insurance Institute recently. He stated that he was unable to trace the introduction of insurance into Canada, but the oldest policy

now in existence was made out at St. John, N.B., in 1803. The first incorporated company, the New Brunswick Assurance Co., was founded in 1827, with a capital of £50,000, and power to increase it to £100,000. Probably the first to start a purely marine insurance office in Montreal was Theodore Hart, in 1853, those who had preceded him doing a fire as well as marine insurance business.

Hon. J. I. Tarte, speaking at Montreal recently, said if he were a private member of parliament he would say it was the duty of the Government to encourage shipbuilding in Canada, just as the manufacture of iron and steel was being encouraged. In connection with this same matter, G. B. Hunter, of Swan & Hunter, Newcastle-on-Tyne, Eng., who was in Montreal at the time, stated:—"I see a great future for the steel shipbuilding industry in Canada. From the nature of things steel shipbuilding can be done in Canada cheaper than anywhere else in the world. No country will in the future be able to compete with Canada—neither England nor Germany, nor the U.S. At present, however, the steel necessary for the construction of steel ships is not produced in Canada. In this industry steel plates and bars are required, and as they are not manufactured in Canada they would have to be imported from England or Germany. This would necessarily be a heavy handicap if an industry of this character were started at the present time. There is, however, every probability of steel for shipbuilding purposes being manufactured in Nova Scotia in the future, but at present there is no such plant in existence."

Among the Express Companies.

L. A. Garner, General Western Superintendent of the American Ex. Co., died at Omaha, Neb., recently.

Recent press reports that the Adams, American, United States and Wells-Fargo express companies would shortly be merged into one corporation, are denied.

Application will be made at the present session of the Dominion Parliament for an act incorporating the Canadian Northern Express Co., primarily to operate on the Canadian Northern Ry.

There seems to be more or less misunderstanding among expressmen as to winter transportation to Alaskan points. According to the Travelers' Guide, published at Skagway, Alaska, letters are received almost daily asking when navigation will be reopened, etc. It calls attention to one received from Missouri to the effect that "the package recently sent you by express has been returned with the statement that navigation is closed for the winter." In sending a copy of this article Supt. Jackson, of the Alaska Pacific Express Co., states that navigation never closes to Alaska, except to Nome, in fact that the Co. operates the entire year to Alaska and the Yukon Territory, and there is no reason whatever for express matter being refused shipment for any of that northern country.—Express Gazette.

Telegraph and Cable Matters.

The C.P.R. Co.'s Telegraphs will operate the telegraph line of the Midland Ry., between Truro and Windsor, N.S.

Hon. R. W. Scott stated in the Senate, Feb. 18, that the proposal for a Government cable to England had not then taken definite form.

The Marconi Wireless Telegraph Co. of London, Eng., has issued its first annual report. The directors have decided to insure the life of the inventor for £150,000.

It is reported that a telegraph line will be completed between Valdez and Eagle City, Alaska, by July 1. Already the line extends to about 25 miles beyond Copper Center.

Notice is given that application will be made at the current session of the Dominion Parliament for an Act incorporating the Canadian Northern Telegraph Co., primarily for the purpose of operating the telegraph lines on the Canadian Northern Ry.

W. Marconi, prior to leaving for Canada Feb. 22, told his company in London, Eng., that the series of tests he would make would include the transmission of words and messages between the station at the Lizard, Cornwall, Eng., and Glace Bay, N.S.

The U.S. Congress House Committee on Commerce has passed a resolution favoring a state owned Pacific cable, and reported favorably on a bill providing such a cable at a cost of \$10,000,000, the cable to be of U.S. manufacture, at a cost of not more than 10% in excess of what a cable of British or other foreign manufacture would cost.

The Minister of Public Works is reported to be making preparations for the installation of the necessary apparatus for sending messages by Marconi's system of wireless telegraphy across Northumberland strait, dividing New Brunswick from Prince Edward Island. Nothing has been decided as to the location of the stations.

W. F. Thompson, of Dawson, is negotiating for the use of the Marconi system of wireless telegraphy in the Yukon territory. He proposes, if satisfactory arrangements can be made, to establish test stations at Whitehorse and Dawson, for the transmission of news, and later on to install the necessary equipment between Ashcroft, B.C., and Dawson.

H. B. Perham, President of the Order of Railway Telegraphers and Brotherhood of Commercial Telegraphers, commenced his railway and telegraph career as messenger for the G. T. R. in Toronto in 1872, and was subsequently in the employ of the Mont-

NOTICE.

Application will be made to the Parliament of Canada at its present session for an Act to incorporate THE CANADIAN NORTHERN EXPRESS COMPANY, with all necessary and proper powers to carry on the business of an Express Company; also for an Act to incorporate THE CANADIAN NORTHERN TELEGRAPH COMPANY, with all necessary and proper powers to carry on the business of a Telegraph and Telephone Company. Dated February 14th, 1902.

Z. A. LASH,
Solicitor for Applicants.



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

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It was lately awarded the only Gold Medal in its section at the Pan-American Exposition, and was a prize winner at Paris.

The Mica Covering is largely used by Railways in Canada, Great Britain and India, also by the British Admiralty.

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4240 AND 4241

RICHARD SOUTHAM, MANAGER

real Telegraph Co., the Dominion Telegraph Co., and the G.T.R. before going to the U.S.

The Canadian Northern Ry. is operating a commercial telegraph between Port Arthur, Ont., and Winnipeg, Man., between Winnipeg and Carman, Man., and on all other points of its system. The telegraph on the Northern Pacific Ry. in Manitoba is being operated by the G.N.W. Telegraph Co., but will, at a later date, be taken over and operated by the C.N. Ry. in connection with its other lines.

Tenders have been asked for the construction of the terminal buildings for the Pacific cable at Barkley sound, Vancouver island, described on page 83 of our Feb. issue. The site is now being cleared and F. M. Rattenbury, the architect, of Victoria, expects to have the buildings completed by June 1. The site acquired covers 160 acres, providing space for the laying out of tennis courts, etc. for the 20 officials who will be located at the station. The elevations show that the buildings will be of an attractive appearance, though they will not be of a very expensive character.

The Toronto Globe published in a recent issue some reminiscences recalled by the reprinting in its columns of an extract from its issue of Jan. 24, 1852, stating that it was indebted to "Mr. Dwight, the operator on the Quebec Telegraph line" for certain news. The Mr. Dwight referred to is H. P. Dwight, President of the G.N.W. Telegraph, who has now been a resident in Toronto for 52 years; and the Quebec telegraph line of 1852, so was called because Quebec was the most easterly point reached by the Montreal Telegraph Co. whose lines are operated under lease by the G.N.W. Co.

The report of the Deputy Minister of Public Works for the past fiscal year after mentioning the completion of the telegraph line along the Labrador coast, says:—"I am pleased to be able to state that the first attempt at a practical use of Marconi wireless telegraphy on this continent was made by this department, and with great success, owing to the ability and care of D. H. Keeley, the Superintendent of the Government telegraphs, who took the matter in charge and carried it to a successful completion. The Marconi system is now before the world attracting more attention than ever owing to the visit of the inventor himself. The system under the charge of this department seems to have worked satisfactorily, and the improvements in progress will, I hope, ensure the greatest guarantee of success."

The Governor-General, in his speech at the opening of the current session of the Dominion Parliament, said:—"The inventor, Mr. Marconi, having met with unexpected obstacles to the carrying on of his experiments in wireless ocean telegraphy in a sister colony, my Ministers deemed it expedient to invite him to continue his operations on the coast of Nova Scotia, and they availed themselves of his presence in Canada to enter into negotiations resulting in an arrangement through which, should the project prove as successful as is hoped for, the Government and people of Canada will enjoy the benefits of the invention on very favourable terms, including rates for transatlantic messages very much below those now existing." In return for the proposed Government aid it is understood that the use of Marconi's system will be obtained for protection of property on the coast and the great lakes; that public messages will be transmitted across the ocean at 60% less than the present cable rates, and Government messages at a still lower rate. The station for the receipt and despatch of transatlantic messages is to be near Glace Bay, N.S. A contract has been drawn up and a bill is before Parliament to ratify it.

Details of the cost of construction and of maintenance and operation of the Government telegraph lines for the year ended June 30, 1901, are given in the report of the Department of Public Works as follows:

	Construction, etc.	Maintenance and Operation.
Cape Ray line (subsidy) ..		\$ 250.00
Nova Scotia lines	\$ 2,420.82	3,577.10
P.E.I. lines (subsidy) ..		973.33
New Brunswick lines ..		2,139.24
Quebec lines	68,888.12	26,737.87
Ontario lines	5,025.52	
N.W.T.		16,461.34
B.C. lines	250,602.78	39,695.55
Yukon Territory lines ..	23,819.52	84,536.86
Telegraph service generally		2,768.53
	\$ 350,756.76	\$ 177,139.82

The report of Superintendent D. H. Keeley, shows the construction during the year, and generally the operation of the lines. The revenue for the year was \$122,360.86, of which \$108,272.13 was from the Bennett, Dawson and Atlin lines.

The repair men of the Government telegraph line from Ashcroft, B.C., to Dawson, Yukon, according to press reports, have an exceptionally difficult task in looking after the line. The worst section is between Telegraph Creek and Hazleton, where the present break has occurred. Along portions of this section snow lies for about ten months in the year; the country is thickly wooded and the trees are so poorly rooted that the weight of snow often brings them down. On a recent occasion 20 large trees were found to have been broken down within a space of 175 feet. Not only are the snow drifts up to 20 feet deep, but there are heavy snow slides, and as much as a mile of wire has been buried under one of them. Most of the travelling has to be done on snowshoes and so bad is the road and the weather that 3 miles is a good day's journey. They report that the breaks in the cable on Dec. 21, 1901, are so extensive and the weather so bad that it will be impossible to do any repairs before July.

Canada Atlantic Ry. Telegraphers.

After numerous conferences between the management of the C.A.R. and the general committee of the telegraphers on the line, a new agreement has been entered into, which increases the pay on an average about \$3 a month. In addition, many menial duties have been transferred from the agents and telegraphers to the road department, such as shovelling snow, attending switch lamps, etc. The Railroad Telegrapher says that the most cordial relations existed between the management and the committee at the close of the negotiations. The new agreement is as follows:—

Any employe performing the duty of telegrapher, by assignment of proper authority, whether termed agent, train dispatcher, assistant, or otherwise, will be considered a telegrapher.

When a telegrapher is suspended or discharged for an alleged fault, he will have a fair and impartial trial, and decision will be advised within 10 days after filing his written request therefor with the proper official. If suspended for investigation, such investigation will be held and decision advised within 10 days without such request. If blameless in the case under investigation, he will be paid at regular rate for time lost, and be reinstated. If detained more than 10 days awaiting investigation at the Co.'s instance, he will be paid for extra time in excess of 10 days, whether found guilty or not. If decision rendered is considered unjust, an appeal may be made to the General Superintendent or General Manager.

The rule of promotion of telegraphers will extend over entire system. Senior telegrapher

in service to have preference if considered competent and a proper man for the position. General Superintendent to be the judge. In case of reduction of number of telegraphers employed, senior telegraphers in service to be retained, merit and ability being equal. This does not apply to appointment of train dispatchers.

There will be no discrimination against telegraphers for being members of the Order of Railroad Telegraphers, and when called upon to serve on boards of adjustment, will be relieved for such purpose on request of nearest deputy head, as promptly as the business of the Co. will warrant.

Telegraphers will be furnished free transportation over this railway to attend meetings of their order, so far as consistent with good service, provided the Co. is put to no extra expense.

When a telegrapher is transferred by order of the proper official, he will receive free transportation for himself and family and household goods, and will suffer no loss of time in consequence.

Telegraphers attending courts or investigations at request of the Co. will be paid their regular rate of wages per day, and \$1 a day additional, to cover expenses when away from home. Fees accruing to be retained by the Co.

Telegraphers employed by this Co. shall have returned to them all service cards and letters of recommendation presented to the Co. within 30 days.

A telegrapher leaving service of Co. will receive such letter from General Superintendent as his past service warrants, providing he has given proper notice of two weeks, as required by the Co.

Telegraphers performing duty at wrecks, wash-outs, or other temporary offices of this nature, will receive their regular wages and actual expenses.

Telegraphers will be exempt from Sunday work as much as possible.

Telegraphers will not be allowed or required to teach telegraphy, nor shall a telegrapher teach telegraphy on the Co.'s premises without permission from the General Superintendent.

Agents will be permitted to accept commission from express companies doing business on the Co.'s premises.

As telegraphers may be called upon to work overtime in cases of accidents, snow blockades, etc., they will be given 15 days' holidays per annum, with full pay, after being one year in service.

At offices where one or two telegraphers are employed, 12 consecutive hours, including meal hours, will constitute one day. When more than two telegraphers are employed, 10 hours will constitute one day.

Telegraphers required to remain on duty will be given an official order from dispatcher, and excused in same manner.

This schedule of rates is binding on telegraphers and Co. from Jan. 1, 1902, and will continue in force for one year, and from year to year, subject to cancellation by either party by notice on or before the first day of any year.

The schedule of pay ranges as follows: truck dispatchers, \$80 to \$90; agents, \$38 to \$75; operators, \$38 to \$45.

The Transpacific Cable.

The actual work of laying the Government Transpacific cable connecting Australia with England via Canada will be begun towards the end of the year. The manufacture of the various cables is well in hand. In order to complete the work within the specified time the contracting company is building a new cable-laying steamer which will be the largest cable-laying vessel afloat. The total length of the cable, including 10 per cent. allowed for

ASSESSMENT SYSTEM



INDEPENDENT ORDER OF FORESTERS.

THE BEST FRATERNAL BENEFIT SOCIETY IN EXISTENCE.

Cost to Join the I.O.F.

(For \$1,000 Mortuary Benefit.)

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

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

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

Benefits given by the I.O.F.

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

The Members, the Benefits, and the Surplus

At 31st December Each Year.

Year.	Total Membership.	Benefits Paid.	Total Surplus.	Surplus per Capita.	Death Rate per 1,000.
1881	1,019	\$ 1,300 00	\$ 4,568 55	\$ 4 48	4.50
1882	1,134	12,058 86	2,967 93	2 61	11.00
1883	2,210	9,493 68	10,857 65	4 91	4.73
1884	2,558	13,914 31	23,081 85	9 01	4.23
1885	3,042	26,576 99	29,802 42	8 18	7.76
1886	5,804	28,489 82	53,981 28	9 30	4.85
1887	7,811	59,014 67	81,384 41	10 44	5.78
1888	11,800	89,018 16	117,821 96	9 98	6.43
1889	17,349	116,787 82	188,130 36	10 84	5.85
1890	24,004	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	590,597 85	13 49	6.25
1893	54,484	392,185 93	858,857 80	15 76	5.47
1894	70,055	511,162 30	1,187,225 11	16 94	5.47
1895	86,521	685,000 18	1,560,783 46	18 03	5.67
1896	102,838	820,941 91	2,015,484 38	19 60	5.50
1897	124,685	992,225 60	2,558,832 78	20 52	5.56
1898	144,000	1,176,125 14	3,186,370 36	22 12	5.67
1899	163,610	1,430,200 33	3,778,543 58	23 09	6.30
1900	180,717	1,545,145 64	4,483,364 44	24 81	6.53

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

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

James Marshall, 24 Charing Cross, London, Eng.

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

A. E. Stevenson, 431 E. Sixty-Third St., Chicago, Ill.

Or Any Officer or Member of the Order.

slack, will be about 8,000 nautical miles. The longest span is that from Kelp bay, on the south coast of Vancouver island, to Fanning island—about 3,561 miles. The shortest sections are from Fanning island to Suva Fiji, 2,093 miles; from Fiji to Norfolk island, 961 miles; from Norfolk island to a point near Brisbane, Australia, 834 miles; and from Norfolk island to the northern end of New Zealand, 537 miles.

The time taken by an electrical pulsation to pass through a submarine cable increases with the length of the cable in proportion to the square of the length. That is to say, if it takes the signal one second to travel 1,000 miles, it will take four seconds to travel 2,000 miles, nine seconds to travel 3,000 miles, and so on. But the speed also depends on the dimensions of the core and its insulation gutta percha, or india rubber. A thicker copper wire and coating of gutta percha gives a higher speed. The Vancouver to Fanning island section of the Imperial cable will be "fast," owing to its heavy core, which weighs about 650 lbs. of copper and 400 lbs. of gutta percha per mile. Such a cable will carry seven or eight paying words a minute, and as it is the longest section, this will be the speed of through messages. For the shorter spans of the line smaller cores will suffice. The messages will be received on the siphon recorder and mirror instrument of Lord Kelvin. The duplex system of Dr. A. Muirhead, by which two messages, one from each end, pass through the wire at once, will be employed on the southern sections at least. Although this system nearly doubles the capacity of a cable it is not considered so advantageous for this cable as for others, owing to the fact that only a few business hours in the day are common to Great Britain and Australasia. It is anticipated, however, that there will be a certain amount of telegraphic communication between Canada and the United States and Australasia, over this cable, in which event the adoption of the system will prove very convenient. Dr. Muirhead has recently improved his system by applying a self-induction shunt to the receiving instruments, which has the effect of curbing the signals, making them easier for the clerk to read, and increasing the speed of messages. Lord Kelvin has recommended the utilization of this appliance for despatching messages for the same purpose. Two repairing ships will be retained to maintain the cable in working order. There is some fear of earthquakes or landslides breaking the cable in the direction of Fiji. Not long ago the Eastern Telegraph Co.'s cable between Sydney and Nelson was bitten by a shark, in 300 fathoms, and so injured that it had to be recovered and a splicing made.

General Telephone Matters.

Lawrencetown, N.S., wants telephone service with outside points.

The North American Telegraph Co. has built the telephone line from Perth to Balderson, Ont., which was referred to in our last issue as under construction.

The Pacific Telephone Co., will, it is reported, string a telephone line between Grand Forks, B.C., and Republic, Wash., along the telegraph poles of the Kettle Valley Ry. lines.

The Nova Scotia Telephone Co.'s switchboard at its Halifax exchange, which was installed last year at a cost of \$50,000, was practically burned out during a storm, Feb. 17. A temporary switch has been installed.

The farmers residing in the vicinity of Bath, N.B., are contemplating the erection of a telephone line for their own use. For general purposes the district is served by the lines

proposed to be amalgamated as the Union Telephone Co.

The Port Arthur, Ont., town council has appointed a committee to report on the feasibility of establishing a municipal telephone system, and has invited the town of Fort William to take joint action. The Bell Telephone Co. has exchanges in both towns.

The Toronto City Council in its bill before the Ontario Legislature is asking for power, among other things, to operate a telephone system, and for such purpose to acquire the rights or interest of any existing or future company, or to subscribe for stock in any company organized to operate such a system.

M. Welch, Bristol; T. Lynch, Fredericton; J. Love, J. McIntosh, P. Fitzgerald, Glassville; and J. R. Ronald, West Glassville, N.B., are making application under the N.B. Companies' Act for incorporation under the title of the M. Welch Telephone Co., to build and maintain telephone lines in Carleton county.

The Cranbrook, B.C., Electric Light Co. operates telephone lines in the southeastern portion of the Kootenay district. It is proposed to extend the line now terminating at Marysville to Kimberley; and possibly to construct a line to Moyie; and another to Elko, Morrissey and Fernie. An exchange will be put in at Cranbrook.

The Bell Telephone Co. offers to renew its agreement with the Hamilton city council for five years, and to pay on the same basis as at present, which is about 5% on its revenue. It is willing to pay \$2,000 a year for 5 years, and throw off the \$100 charged for the police patrol system. A committee of the council is considering the proposition.

La Compagnie du Telephone de Montmorency is making application to the Quebec Legislature for an amendment to its act of incorporation changing its name to La Compagnie de Telephone Provinciale; increasing its capital to \$300,000, and allowing it to extend its lines within the city of Quebec, and for the better definition and extension of its powers, etc.

Wolfville, N.S., people have organized a local telephone company with a capital of \$5,000, to operate a system of cheap telephones, the Valley Telephone Co., which is now in the field, having given notice of an increase in rates. The officials of the local company are: President, R. E. Harris, Sec.-Treasurer, Dr. deWitt; other directors: G. L. Starr, J. Herbin, J. E. Hales and C. W. Strong.

J. A. Ritchie, Solicitor of the Bell Telephone Co., writes that the press report that the Co. is applying to Parliament for an act empowering it to increase its rates, is untrue, and says that the only legislation which is being sought is an act empowering the Co. to increase its capital stock in order that it may be in a position to satisfy the demands for telephone facilities made upon it from various quarters and generally to meet the growing needs of its business.

The New Brunswick Legislature will be asked at the forthcoming session to incorporate a company to be known as the Union Telephone Co. The lines to be taken over by the new company are two private lines constructed by Dr. Ross, of Florenceville, and Dr. Brown, of Centreville, covering in all about 200 miles of wire and 100 instruments. The lines extend from Woodstock, N.B., to the River du Chute, connecting at Bristol with Glassville, Argyle, Foreston and Highlands, and have been constructed within the last two years. It is proposed to extend the line to Edmundston.

The Eastern Telephone Co.'s new offices and exchange at Sydney, N.S., are expected

to be ready for occupation by April 1. All the wires will enter the new exchange underground, and conduits have already been laid for this purpose on George st., Charlotte st. and the Esplanade. The new circuits are to be metallic, the advent of the electric railway having rendered this necessary. When the lines leave the conduits they will be carried in cables, so that the only open wires will be those for the local work on the streets passed through. The general construction work at the exchange, and generally on the whole system, has been arranged with a view to a very considerable expansion of the Co.'s business.

W. F. Maclean recently introduced in the House of Commons a bill respecting telephone companies. He explained that it was based largely on the present general acts governing railways and telegraph companies. It gave companies power to fix their tolls, subject to the supervision and revision of the Governor in Council, tolls to include both charges for messages and rentals for instruments. No rebate or discrimination would be permitted. The most important clause compelled companies to give the use of their systems to other companies, as railways are compelled to give running rights to other companies. The Government were empowered to take over the telephone systems as they are now empowered to take over the telegraph systems, and the companies could not discriminate unfairly against rival companies or cut rates in one municipality as against another to kill out a rival. The legislation declaring that "telephone" and "telephonic" shall not be construed as "telegraph" or "telegraphic," so as to exclude telephones from the operation of the telegraph laws, it was proposed to repeal.

In commenting on the clause in the above mentioned bill which provides that all companies shall be compelled to allow municipal councils the use of their main lines connecting towns and cities, President Sise, of the Bell Telephone Co., is reported by the Montreal Herald to have recently said:—"The provisions of this clause are both unjust and impracticable. Our lines and equipment in Canada represent an investment of over \$8,000,000 and a small municipal system could be erected at a cost of but a few thousands; yet if we should be forced to permit such a system to use our trunk lines it is obvious that it could, owing to the small amount of its investment, furnish its community with a service equal to ours and at a rate far below that required for the actual maintenance of our lines alone; and the injustice of such a measure is too apparent to need comment. We have no objection to municipal ownership of separate lines, but we do most emphatically object to their furnishing telephone service on our money. We are willing to transmit messages from other telephone lines just as we now do telegrams in certain instances, charging a fair tariff, but this is radically different from having other lines directly attached to our wires. Aside, however, from the question of what is right, equitable and just, the proposed legislation is absolutely impracticable, and for this reason: Our system is materially different in construction and operation from any other in use; it is peculiar to our Co. alone and cannot be acquired by others. If a system different in construction and kind should attach to our wires it could not transmit a single message, and our connection would be absolutely of no use." As to the broader question of municipal ownership of telephone lines Mr. Sise further said:—"In Montreal, with a population aggregating 300,000—upon the basis of five to a family or firm—there are only 15% who have telephones, and the remaining 85% would not subscribe for phones even if the rental was materially reduced. In this instance, municipal ownership would

mean that 85% of the population would be compelled to submit to an increased taxation in order that 15% might secure a slight reduction in the cost of their telephone service. These figures practically apply to every community."

Telephone Building at St. John, N.B.

The N.B. Telephone Co.'s new office and exchange building on Chipman Hill, St. John, N.B., is three stories high, the ground-floor front being of red New Brunswick sandstone, the two upper floors of red pressed brick with sandstone trimmings. The whole of the building, with the exception of the interior partitions on the first floor, is carried out in a good quality of so called fireproof construction; the whole of the floors and roof being fireproof cinder concrete. Those interior partitions which are not brick, are lathed with metallic laths and plastered with a cement plaster.

The ground-floor, which is a few steps above the sidewalk level at the main entrance, dips rapidly underground towards the rear of the building, which is roughly 100 by 33 ft., on account of an abrupt rise in the property on which it is built towards the rear. The front end of this floor is to be used for the public hall and the public local and long distance toll room, in which are situated sound-proof booths to ensure privacy of conversation. The public hall is finished with a tile floor, the whole of the trimmings being in the best quality of oak, and all other public rooms throughout the building are finished with oak trimmings and hard-wood floors. The rear of the ground-floor is given up to cellarage, furnace rooms and storage rooms.

On the first floor towards the front are situated the board room, which is handsomely finished in oak, the Manager's office, in which is located a commodious fireproof vault, and the general public office. The rear end is occupied by the operators' quarters, which consist of lavatories, cloak rooms and a large cheerful lunch room; and an inspectors' room with a private entrance from the rear and a private stairway to the stores room in the basement, which permits the inspectors to carry on their work without passing through any other part of the building, while at the same time they are under the direct supervision of the Manager.

The operating room, which occupies the whole of the second floor, is 98 by 30 ft., and about 17 ft. high. In it will be the whole of the telephone plant in connection with the working of the switchboard. The wires from the outside will be brought up from a man-hole in the street opposite the building through fireproof ducts built in the solid brick walls, to the operating room floor level. The operating room floor is unbroken by a stair well or opening of any kind whatever, consequently, should fire occur in the lower part of the building, it could not possibly rise to the operating room unless the whole building were wrecked, as it would have to throw down the fireproofing of this floor. Access to this room is had through an exterior fireproof staircase tower, which starting with an exterior entrance on the ground floor level, connects by means of a cast iron staircase with each floor through fireproof doors, in this way insuring as thoroughly as possible the safety of the operating plant from an attack by fire from any point whatever, and at the same time a safe mode of access in case of necessity. The building is lit from all four sides, the Co. having thought it advisable to buy sufficient land so that it may be kept open and separated by a reasonable distance from adjacent buildings. The building is heated by hot water radiators fed by twin boilers, either of which may be worked separately in mild weather, or both together in severe weather. The building is lit throughout by

electric light, the wiring being encased in iron conduit of the most approved pattern. Gas is also laid on in case of the electric light being cut off.

The building was designed by W. J. Carmichael, architect of the Bell Telephone Co., Montreal, who supplied complete working

drawings and specifications, but as he was too busy to superintend the erection the N. B. T. Co., at his suggestion, employed C. St. J. Thomson, of Montreal, as superintending architect.

GOD SAVE THE KING.

Ontario Jockey Club

WOODBINE PARK, TORONTO

May 22, 23, 24, 26, 27, 28, 29,
30, 31.

The King's Plate, Toronto Cup, Minto Handicap, Red Coat Race, Woodstock Plate, May Handicap, Alexandra Purse, Hopeful Stakes, Liverpool Cup, Stanley Stakes, Valley Farm Handicap, Gimcrack Purse, Thorncliffe Chase, Waterloo Handicap, Street Railway Steeplechase.

Six or More Races
Each Day.

Wm. Hendrie, W. P. Fraser,
President. Secretary-Treasurer.

The Canadian Pacific Railway Company.

NOTICE TO THE SHAREHOLDERS.

A Special General Meeting of the Shareholders of the Company will be held at the principal office of the Company at Montreal on THURSDAY the TWENTY-SEVENTH DAY OF MARCH next, at noon, pursuant to the Act of the Parliament of Canada, 55-56 Victoria, Chapter 35, entitled "An Act respecting the Canadian Pacific Railway Company," for the purpose of considering, and if approved, of authorizing an increase of the present capital stock of the Company by an amount not exceeding the sum of twenty millions of dollars, and of determining the amount or amounts and the time or times of the issue or issues of said stock and the purpose to which the proceeds thereof shall be applied, and of adopting such resolution or by-law as may be deemed necessary in connection therewith in order to enable the Directors of the Company to give effect to the same.

The Common Stock Transfer Books will close in London at 3 p.m. on Tuesday, 18th February, and in Montreal and New York at 3 p.m. on Monday, 3rd March. The Preference Stock Books will close at 3 p.m. on Friday, 28th February.

By order of the Board,
CHAS. DRINKWATER, Sec.

Montreal, 10th February, 1902.

The Canadian Pacific Railway Company.

Dividends for the half year ended 31st December, 1901, have been declared as follows:

On the Preference Stock two per cent.
On the Common Stock two and a half per cent.

Warrants for the Common Stock dividend will be mailed on or about 1st April to Shareholders of record at the closing of the books in Montreal, New York and London respectively.

The Preference Stock dividend will be paid on Tuesday, 1st April, to Shareholders of record at the closing of the books at the Company's London office, 1 Queen Victoria Street, London, E.C.

The Common Stock Transfer Books will close in London at 3 p.m. on Tuesday, 18th February, and in Montreal and New York at 3 p.m. on Monday, 3rd March. The Preference Stock Books will close at 3 p.m. on Friday, 28th February. The Preference Stock Books will be reopened on Wednesday, 27th April and the Common Stock Books on Thursday, 10th April.

By order of the Board,
CHARLES DRINKWATER,
Montreal, 10th February, 1902. Secretary.

WHEN YOU GET THERE

You are within from half a minute to fifteen minutes of 77 hotels, 85 clubs, and 31 theaters. All this, provided you arrive in the second city of the world at **Grand Central Station**, this being the Metropolitan terminus of the **New York Central**, which is the only trunk line whose trains enter the city of New York.

The following remark of an experienced traveler tells the whole story:

"For the excellence of its track, the speed of its trains, the safety and comfort of its patrons, the loveliness and variety of its scenery, the number and importance of its cities, and the uniformly correct character of its service, the **New York Central** is not surpassed by any similar institution on either side of the Atlantic."

Call on nearest ticket agent of the C.P.R. or T.H. & B. for further information, or address

LOUIS DRAGO, H. PARRY,
Can. Passr. Agent. Genl. Agent,
TORONTO, ONT. BUFFALO, N.Y.
GEORGE H. DANIELS,
Genl. Passr. Agent, Grand Central Station,
NEW YORK.

The Northern Electric and Manufacturing Co., Limited

MONTREAL

Contractors for and Dealers in

Electrical Apparatus and Supplies

Experimental and Model Work,
Fine Machinery, Special Tools,
Patterns, Gear-Cutting, Specialties, Repairs, Etc.

ESTIMATES PROMPTLY FURNISHED.

Sale One Hundred Millions a year.

RIPANS

THE WONDERFUL MEDICINE

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

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

WANTED

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The Purchasing Agents' Guide

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

Accident Insurance Travelers' Insurance Co..... Montreal.	Groceries The Hudson's Bay Company.....	Rope Rice Lewis & Son..... Toronto. The Hudson's Bay Company.....
Aerated Waters E. L. Drewry..... Winnipeg.	Hardware Rice Lewis & Son..... Toronto. The Hudson's Bay Company.....	Scales The Gurney Scale Company..... Hamilton, Ont.
Air Brakes & Fittings Westinghouse Mfg. Co..... Hamilton, Ont.	Headlights N. L. Piper Railway Supply Co..... Toronto.	Semaphore Arms Acton Burrows Co..... Toronto.
Ales E. L. Drewry..... Winnipeg.	Hose Rice Lewis & Son..... Toronto.	Shafting Rice Lewis & Son..... Toronto.
Anchors Rice Lewis & Son..... Toronto.	Illustrations Acton Burrows Co..... Toronto.	Shipbuilders' Tools & Supplies Rice Lewis & Son..... Toronto.
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Babbit Rice Lewis & Son..... Toronto.	Iron Signs Acton Burrows Co..... Toronto.	Shovels James Cooper..... Montreal. The Hudson's Bay Company..... Rice Lewis & Son..... Toronto.
Blankets & Bedding The Hudson's Bay Company.....	Japans McCaskill, Dougall & Co..... Montreal.	Signal House Numbers Acton Burrows Co..... Toronto.
Block & Tackle Rice Lewis & Son..... Toronto.	Lager Beer, &c. E. L. Drewry..... Winnipeg.	Signals N. L. Piper Railway Supply Co..... Toronto.
Bolt Fittings & Hardware Rice Lewis & Son..... Toronto.	Lamps & Lanterns The Hudson's Bay Company..... Rice Lewis & Son..... Toronto. N. L. Piper Railway Supply Co..... Toronto.	Signs Acton Burrows Co..... Toronto.
Boiler Covering Mica Boiler Covering Co..... Montreal.	Launches Polson Iron Works..... Toronto.	Snow Ploughs Rhodes, Curry & Co..... Amherst, N.S.
Boilers Polson Iron Works..... Toronto.	Life Insurance Independent Order of Foresters..... Toronto. Travelers' Insurance Co..... Montreal.	Spikes Rice Lewis & Son..... Toronto.
Bolts Rice Lewis & Son..... Toronto.	Lights, Contractors and Wrecking W. H. C. Mussen & Co..... Montreal.	Station Name Signs Acton Burrows Co..... Toronto.
Brake Shoes F. E. Came..... Montreal.	Litholeum and Floor Coverings The Hudson's Bay Company.....	Steambots Polson Iron Works..... Toronto.
Bridge Numbers Acton Burrows Co..... Toronto.	Locomotives (Compressed Air) American Locomotive Co..... New York, N.Y. Baldwin Locomotive Works..... Philadelphia, Pa.	Steamboat Signs Acton Burrows Co..... Toronto.
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Car Wheels Rhodes, Curry & Co..... Amherst, N.S.	Matches The Hudson's Bay Company.....	Telegraph and Telephone Office Signs Acton Burrows Co..... Toronto.
Castings Rhodes, Curry & Co..... Amherst, N.S.	Milepost Numbers Acton Burrows Co..... Toronto.	Tobacco and Cigars The Hudson's Bay Company.....
Chains Rice Lewis & Son..... Toronto.	Mohair The Hudson's Bay Company.....	Toilet Paper The Hudson's Bay Company.....
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Cuts Acton Burrows Co..... Toronto.	Pipe Covering Mica Boiler Covering Co..... Montreal.	Trucks Rice Lewis & Son..... Toronto.
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Derricks M. Beatty & Sons..... Welland, Ont.	Pneumatic Tools F. E. Came..... Montreal.	Vessels Polson Iron Works..... Toronto.
Door Signs Acton Burrows Co..... Toronto.	Porter E. L. Drewry..... Winnipeg.	Waste Rice Lewis & Son..... Toronto. N. L. Piper Ry. Supply Co..... Toronto. The Queen City Oil Co..... Toronto.
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Electric Car Route Signs Acton Burrows Co..... Toronto.	Pumps Rice Lewis & Son..... Toronto.	Wines and Liquors The Hudson's Bay Company.....
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Electric Trucks Baldwin Locomotive Works..... Philadelphia, Pa.	Rails (for relaying) James Cooper..... Montreal. J. J. Gartshore..... Toronto.	Yachts Polson Iron Works..... Toronto.
Electric Wires The Wire and Cable Co..... Montreal.	Rail Saws F. E. Came..... Montreal.	
Enameled Iron Signs Acton Burrows Co..... Toronto.		
Engines, Stationary & Marine Polson Iron Works..... Toronto.		
Engraving Acton Burrows Co..... Toronto. Toronto Engraving Co..... Toronto.		
Express Office Signs Acton Burrows Co..... Toronto.		
Fencing Page Wire Fence Co..... Walkerville, Ont.		
Flags Rice Lewis & Son..... Toronto. The Hudson's Bay Company.....		
Foghorns Rice Lewis & Son..... Toronto.		
Furniture Office Specialty Mfg. Co..... Toronto & Montreal.		
Gates Page Wire Fence Co..... Walkerville, Ont.		
General Supplies The Hudson's Bay Company.....		
Grain Elevators John S. Metcalfe Co..... Chicago, Ill.		

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HUDSON'S BAY COMPANY