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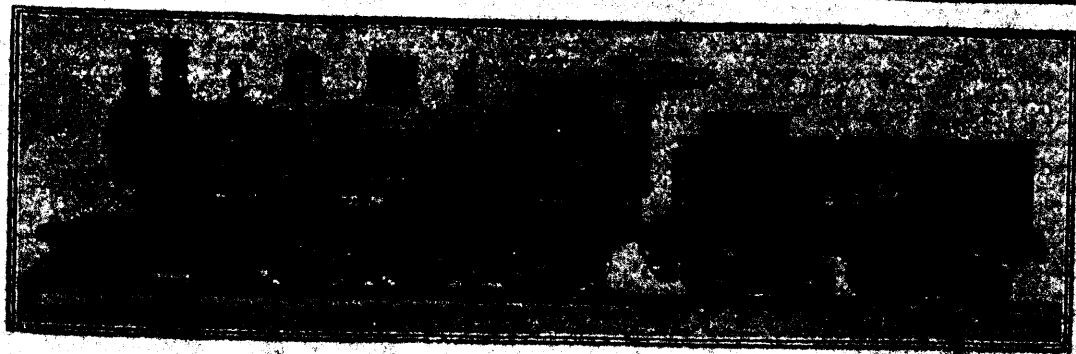
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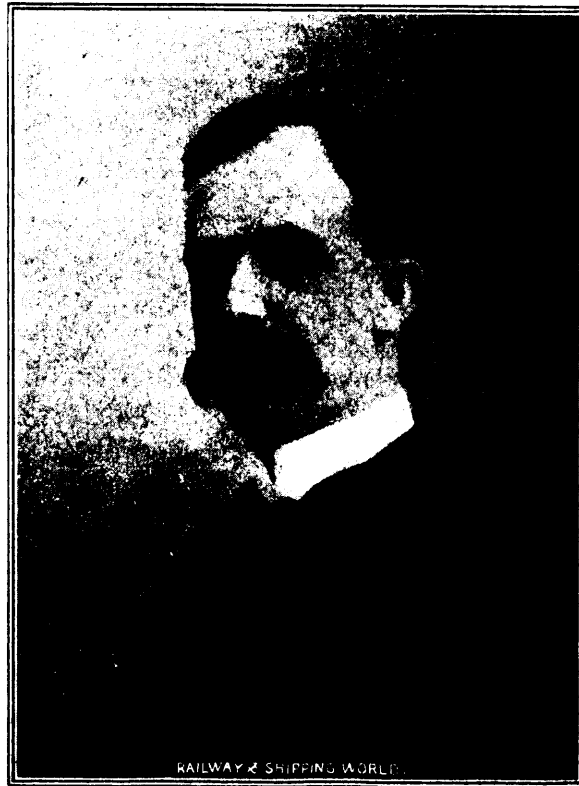
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THE QUEBEC BRIDGE.

This bridge is being constructed over the narrowest portion of the River St. Lawrence between Montreal and Quebec, about 6½ miles west of the commercial centre of the latter city. The river at this point flows between high rocky cliffs on both sides, the waterway being about 1,900 ft. at low tide, and about 2,500 ft. at extreme high tide, the tidal rise varying from a minimum of about 14 ft. to a maximum of 20 ft. The maximum depth of water in the channel is about 180 ft., the tidal current being 6 to 7 knots an hour. The depth of water decreases rapidly towards the main river piers, where at extreme low tide it is 10 feet deep, the maximum depth at high tide being 30 ft. These piers are 1,800 ft. apart between centres.

The channel will be crossed with a suspended span and two cantilever arms, making an unsupported structure 1,800 ft. long between centre of main piers, which will be the longest span in the world. The length of anchor arms on each side of the main span will be 500 ft., with one approach span of 220 ft. at each end between anchor piers and terminal abutments. The total length of the structure, including abutments, will be 3,300 ft. A clear headway of 150 ft. between underside of lower chords and highest tides for vessels in the channel will be provided. There will be a clear width of 62½ ft. between trusses for two steam railway tracks in the centre, divided by screens from a single electric track and highway on either side. The coping of main piers will be 30 ft. above high tide, and the highest point of superstructure above coping will be about 330 ft. The depth of the suspended span at the centre will be about 120 ft. The substructure will consist of two main piers, two anchor piers, and two abutments. The anchor piers are placed at the foot of the rocky cliffs bounding the river and beyond the limits of high water. The north anchor pier is founded on solid rock commonly called Silly grit. The south anchor pier will be founded on a formation of hard blue clay about 85 ft. in thickness, containing large boulders. Both piers are of granite backed with concrete, 105 ft. long by 24 ft. wide at coping, and about 30 by 111 ft. at the base, and 56 ft. high from bottom of anchorage to coping or base of steel towers. The north abutment is built into the face of the cliff near the summit, at which point the surface consists of loose masses of rock overlying the main body, which is of a very irregular and seamy nature, large quantities of which had to be removed before a solid foundation

could be obtained. The abutment on the south side of the river will be built on the same formation. Both are massive U-shaped structures built of granite backed with concrete, having the same lateral dimensions, 80 ft. wide by 40 ft. deep, the maximum height of front wall for both abutments being about 40 ft. The main pier on the north side of the channel is built of concrete, faced with massive rock-faced granite masonry—with the exception of the upper part of the pier for a depth of 19 ft. below coping—which is laid with solid granite blocks throughout.



GUY C. DUNN, M. CAN. SOC. C.E.

The coursed masonry commences below the river bed on a level with the top of the caisson, which is entirely buried. The total height of pier from top of caisson to coping is 57½ feet, at the latter point its length is 133 ft., and width 30 ft. The caisson was sunk through a very compact mass of granite boulders bound together with cobble stones and fine gravel. In such hard material the daily progress was very slow, the penetration only averaging about 4 inches in 24 hours, and at times it was too small to be recorded. Finally the caisson became wedged by the pressure from the outside, which held it up

after all the material was removed from under the cutting edge. After several unsuccessful attempts to continue sinking with a load on the roof of about 20,000 tons, the excavation was discontinued, it being considered unsafe to risk such a load unsupported any longer. Concreting in the working chamber was then commenced and finished in the short space of six days, working day and night. The pier was built to a height of 42 feet above the top of caisson before the latter was ceiled, the remaining portion being completed seventeen days later. The excavation was performed by three gangs, each working 8-hour shifts in every 24 hours. Each gang averaged 50 men exclusive of foremen.

The caissons for the two main piers are 150 by 49 ft. and 25 ft. high. They are built of southern pine, brought to the site in the rough, and milled by a plant consisting of a circular saw, butting saw and a sizing machine cutting four sides at a time. The caisson for the north pier was built on the north shore about 4,000 ft. east of the pier site, and was successfully launched on June 20, 1901, towed into position, and made fast in a berth previously prepared, in the short space of 70 minutes. At the site of the two main piers, the water having a depth of only about 10 ft. at low tide, and as the caisson draws about 12 ft. unloaded, it grounded at low tide, but floated at high tide, the water being then about 29 ft. deep. The concrete was being placed in the crib-work on top of the working chamber of the caisson for the north pier, on June 28, and excavation in the chamber was being carried on only during low tide, and it was continued until sufficient concrete was put in to overcome the buoyancy of the air pressure, after which the excavation was continued without interruption. The walls of the caisson are vertical and are made with double courses of planed timber, the outside course being laid horizontally, and the inside course, which does not extend above the deck, being set vertically. The timbers in the outer course are halved together with oblique joints at the corners, have three square lapped splices, breaking joints in every course, and are fastened together with 1 in. drift bolts, 30 in. long, and 3 ft. apart up to the 11th course from the bottom, and 4 ft. apart above that. The walls are sheathed outside with a double course of crossed diagonal planks, each course being secured with a row of ½-in. spikes 2 ft. apart, and staggered. There is a deck of three crossed layers of timber which forms the roof of the working chamber, 7½ ft. high in the clear above cutting edge. The ends of these timbers extend through the ver-

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The Quebec Bridge.

(Continued from page 221.)

tical wall timbers and abut against the horizontal wall timbers. The ceiling and inside walls of the working chambers are lined with plank, and all the main timber in the caisson deck and wall is 12 by 12. The working chamber is divided into six equal parts, by five transverse bulkheads, or double walls of horizontal 12 by 12 timber. Double rows of 1 1/2-in. vertical bolts extending nearly to the top of the caisson pass through the bulkheads, and tie them very strongly to the interior cross-braces above the caisson deck. The upper and lower courses of the bulkhead timbers are dove-tailed into the walls of the caisson, and there are flange timbers bolted to it, and to the deck at each side of the top of the walls. The walls are bevelled at a very flat angle to make a cutting edge 9 ins. wide, which is shod with 3/4-in. steel plate. It is stiffened laterally by 12 by 12 knee braces, about 3 ft. apart on centres, which are bevelled and gained into the wall and roof timbers at both ends, and also abut at the upper end against the vertical sides of timbers bolted to the deck of the caisson, parallel to the walls. Additional stiffness is also secured by 16 by 16-in. horizontal struts parallel to both walls, which divide the working chamber into squares of about 12 ft. These braces are dove-tailed and strap-bolted into the walls just above the

cutting edge, and at intersections one is halved over the other, and both are clamped in place by a vertical strut to the roof of the working chamber, and two 1½-in. vertical rods which have nut-bearings on the lower side of the bottom strut, and on the upper side of the caisson-bracing. Above the caisson deck there are horizontal 12 by 12 in. cross struts in the vertical planes of the bulk-heads, and of the struts for the cutting edge, and intermediate between each pair of these, dividing the caisson in plane into squares of about 6-ft. centres. The transverse and longitudinal struts are in alternate planes so as to clear each other at intersections where they are drift-bolted together. At the ends they are dove-tailed into the horizontal courses of the side walls.

There are six 36-in. steel air shafts in sections about 8 ft. long bolted together with gaskets and outside flanges, and connected to the deck with twenty-four ¾-in. bolts passing through a special cast flange and the three-deck courses. This flange has a Z-shaped cross-section with transverse stiffening webs for the flanges. The cross-section of the main shaft is about 300 degrees of a circle with a bent plate offset beyond the circumference for the remainder of the distance to afford an extension for the ladder outside of the 3-ft. cylinder which is left clear for the passage of buckets. The shafts, which are used exclusively for materials, are plain cylinders without extensions. The air locks are about 12 ft. high and 5½ ft. in diameter,

of the pipe against escape of air from the caisson and opening automatically to admit pressure from the compressors.

A very complete plant was installed for crushing the stone and mixing the concrete mechanically, using a minimum of labor. This plant was set up on the face of the cliff and adjoining the west end of the north anchor pier. The stone was quarried above the top of the stone crusher, and descended to the latter, where it was crushed and dropped into a small bin holding about 25 cubic yards. From this bin it was drawn through a trap door into a charging hopper which delivered it to the concrete machine. The concrete was discharged from the machine into cars which ran on tracks along the line of the north anchor pier, and also across the trestle which extended from this concrete plant across the rocky shore, a distance of 500 ft. to the working platform which surrounded the north main pier. From these cars the scales containing the concrete were lifted by derricks and deposited at any point within the range of each derrick. The sand required was gathered in carts and batteaux from the adjacent beach, and was elevated to the mixing platform by link belts, carrying malleable iron buckets, which deposit the sand into a rotary screen, which latter removes the gravel. From the moment the stone is quarried it is passed downward by gravity through the entire process of converting it into concrete. The crusher is capable of producing about 30 cubic yards an hour, which is the maximum

the concrete plant. The working platform at the north main pier site was about 40 ft. wide and extended across the west end of the pier site and along the north side and was built of spruce piles driven to refusal on about 7 ft. centres.

The compressing plant was located in temporary buildings at the west end of the working platform, and consisted of four 100-h.p. boilers, a boiler feed pump, a feed water heater, three high-pressure jet pumps, three duplex 16 x 18 x 18 inch air compressors, two high-speed automatic engines driving two electric generators for supplying light, and two powerful hoisting engines for operating the two derricks, which have booms 75 ft. long and 16 ins. square in the middle, these latter being British Columbia fir. The lighting plant was connected with the caisson and also with the concrete plant, so that the latter could be operated at night while filling the cribwork of the caisson, and while sealing the air chamber.

The granite for the masonry of the entire sub-structure is brought from Riviere à Pierre, Que., located 60 miles north of the city of Quebec, the stone being brought to Quebec by railway, and thence on scows by a powerful tug, which constitutes part of the working plant. The last of the sub-structure will be completed before the end of the current year. The steel for the shore spans is delivered, all of which will be erected this year.

A very complete and efficient plant has been provided by the contractor for sinking



THE QUEBEC BRIDGE.

very much resembling the Moran-Stuart material lock used on the caissons of the new East river bridge. The lower end of the lock has an extension to receive the double-hinged circular door, and allows it when open to swing clear of the bucket. The upper door is made with two leaves hinged to links, which work in guides carrying them back out of the way of the bucket as they descend. The doors close on rubber gaskets, and are operated by shafts counter-balanced at both ends. A long stuffing box is set in the centre of the upper door, and allows the bucket hoist rope to render through it when the lock is closed.

A 4-in. water pressure pipe is run along the deck of the caisson, and has six 3-in. vertical branches into the working chamber. There are also six 4-in. blow pipes through the deck, all of which terminate in valves screwed up tight against flat washers on the ceiling of the working chamber. The water pipes have gate valves, and the blow pipes have special cast-iron plug valves with a clear way for the passage of mud, sand and small stones. Air pressure is supplied to the caisson by a 6-in. vertical pipe passing through the roof, and terminating in the working chamber with an elbow which is screwed up tight against a washer on the ceiling. On the upper side of the deck an outside sleeve is screwed down tight on a corresponding washer. The open horizontal end of the bottom elbow is closed by an iron disc, faced with leather, and hinged at the top to make a flap falling to a vertical position by gravity, and closing the end

consumption when all the work is in operation. This entire plant was driven by a high-speed engine located underneath the crusher platform, and on a level with the mixer platform, steam being supplied to both this engine and the two hoisting engines, which operated the two adjacent derricks by a 100-h.p. boiler.

The shore is covered with huge boulders, which are brought down and deposited by the ice during winter, and which make it very hazardous to bring any materials to that point by water unless deposited on the shore at about low water. For this reason a double-track railway was constructed from a dock located about 4,000 ft. east of the site of the bridge, and over these tracks are conveyed all the cut stone, steel and cement required in the construction of the north abutment and north anchor pier. A trestle work connected these tracks with the working platform which surrounded the north main pier, and was used for conveying all classes of material to the latter work when it became necessary. All of the cut stone, however, for the north main pier was brought on scows and landed at high tide under the two derricks which commanded this pier, and unloaded before the water became too low, as the scows could not lie in this berth at low tide, owing to the bottom being covered with huge boulders. The working platform was constructed of ample strength to store a supply of cut stone to last several days in case of emergency, the trestle work leading to the shore was used only for conveying concrete and mortar, produced by

the caissons and building the piers. In addition to this there is a very complete equipment at the quarry—situated near the summit of a mountain—for quarrying and moving exceptionally heavy blocks of granite, which are cut and finally transferred by a double track inclined tramway to the loading siding on the Quebec, and Lake St. John Ry. at the foot of the mountain.—E. A. Hoare, Chief Engineer, Quebec Bridge Co., in Canadian Engineer.

Bradstreet's says:—"The Canadian railways are being kept busy handling all the freight offering for shipment at present. The freight service in Canada was never as good as it is at present, notwithstanding the delays which have occurred in handling the Western grain traffic. Fast freight services have been inaugurated, and small shippers have much to be pleased with considering the present general arrangements compared with that of previous years, when trade was depressed and the railways could not see their way to give the increased facilities now enjoyed."

The Reid Newfoundland Co. has issued some special reading matter in connection with its steamship trips to the Labrador coast. The round trip tickets at \$60 include passage from North Sydney, N.S., to Port aux Basques, Nfld., the railway trip across the island to St. John's, and passage on the boats along the coast. The trips are fortnightly from June 12 to Oct. 30. Full information can be obtained from H. A. Morine, General Passenger Agent, St. John's, Nfld.

Two-Direction Train Order Signal.

At the last meeting of the Canadian Railway Club, in Montreal, Hiram Piper exhibited a model of a two-direction train order signal, respecting which he said:

This model is an exact representation of the signal in all details. There are two arms, one of which is displayed to the right and one to the left at right angles to the track. From the approaching train both are visible, one displayed in each direction. There are two lights displayed in a like manner in each direction. The governing arm and light are displayed to the right as seen from an approaching train. If the arm to the right is in a horizontal position, or if the light to the right is red, it indicates "Stop." If the arm to the right is in a diagonal position (at an angle of 60° below the horizontal), or if the light to the right is green, it indicates "Proceed." If so desired arms and lights displayed to the left instead of the right, may be used to govern the movement of trains, and glasses of any color may be substituted for red and green. The color of the back light corresponds in each case with that of the front light, and this feature is of the highest value in that it indicates the position of the governing signal at night from a train or engine which has passed

it. The greatest objection to other two-direction train order signals, is the fact that at night the governing light is visible only from an approaching train, and consequently in the event of a signal indicating "Proceed" being changed to indicate "Stop" after a train or engine passes it there is danger of such train or engine leaving before the restoration of the signal to "Proceed." All four lights are illuminated from one source; this is accomplished by attaching cylinders containing reflectors to the sides of the central lamp, by which means the light is reflected into lenses which show in opposite directions, and is from them projected through red and green glasses in supplemental spectacles which move in conformity with the arms. An important advantage derived from the use of only one lamp (apart from its economy) is the fact that in the event of the light being extinguished all night signals immediately disappear. With the use of two or more lamps the failure of one might lead to trouble through the men on a train mistaking the remaining light or lights.

With this signal the operator has full control of trains approaching from either direction without interfering in any way with those from the opposite direction, thus reducing by approximately one-half the number of stops

required of trains on single track for the purpose of obtaining clearance orders on train order signals displayed at stop, which do not affect them. This signal, while it is in every way adapted for double track, is therefore of even greater value on single track. In erecting the signal on a station, the horizontal arm should be placed 14½ ft. above the rail, this will bring the light 16 ft. above the rail. The object of getting it this height is that the view of the signal cannot be obstructed, and can be seen by the engineer on passing train even when another train is standing on track near the station. Where there is sufficient room between the tracks, the signal can be placed on a post and operated by a chain passing either over or under the tracks; in the former case the post requires to be high enough to ensure the chain being not less than 21 ft. above the rail, whilst in the latter case 16 or 18 ft. over all is quite sufficient. A great many superintendents object to putting anything between the tracks if it can possibly be avoided, and the only object in putting a two-direction signal in this position is that a slightly better view is obtained, but for all practical purposes it is much better on the station, with the supporting arm fixed so that the blade nearest the rail is not less than 5 ft. from it. Another thing in favor of this posi-

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CHARLES MILLER,
PRESIDENT.

tion is that for years the engineers have been accustomed to look for train order signals on the stations. The signal light in this position is between 16 and 17 ft. either to the right or left of centre between tracks, which at a quarter of a mile away looks very little out of line, whilst the advantages of having no obstruction between tracks and clear head room on station platform with no posts to run against are certainly very great. This is a matter, however, about which the inventor or manufacturer of a signal has very little to say. He is usually very pleased to have the opportunity of erecting his signals exactly where he is told.

Suburban Electric Railways.

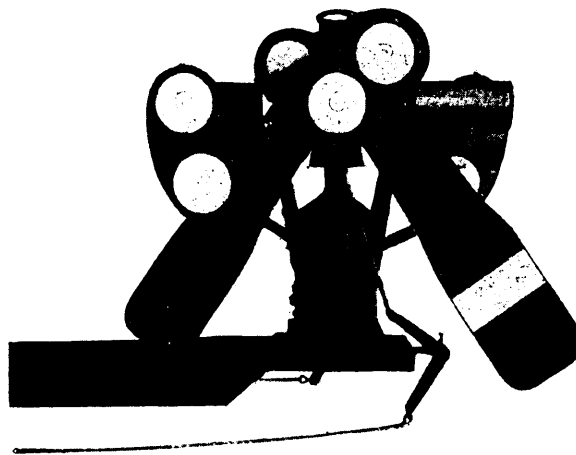
By E. A. Evans, General Manager and Chief Engineer, Quebec Railway, Light and Power Co.

A paper was recently read by C. H. Davis, C.E., before the Canadian Society of Civil Engineers, on the competition of steam vs. electric parallels, in which, among other conclusions, Mr. Davis took the ground that "steam railways will, in the near future, handle their suburban and short distance interurban passenger traffic, and mail, express, baggage and light local freight carried in said suburban and interurban passenger trains by electric motive power; and this, irrespective of whether operating expenses are affected favorably or unfavorably." In this conclusion I firmly agree, and propose to show that to carry it out it is not even necessary to construct a parallel, but on the contrary, steam trains and electric cars can be safely operated upon one and the same track.

As Manager of the Quebec Railway, Light and Power Co., part of which company's lines were formerly the Quebec, Montmorency and Charlevoix Ry., a steam road operating between the city of Quebec and Ste. Anne de Beaupré and St. Joachim, a distance of 30 miles, I inaugurated a service of electric cars upon the same track, and running between the usual steam railway service. The scheme was generally considered a bold one and one that would not meet with the success anticipated; the results, however, as will be presently shown, have more than justified the innovation and the expenditure incurred. The Q.M. & C. Ry., as it was formerly called, after leaving Quebec, passes along the flats comprising the north shore of the River St. Lawrence; for six miles there is a continuous row of farmers' and other dwellings running on both sides of the highway, which, however, is on the top of a cliff running parallel to the railway and at a distance varying from one half to one mile from the track; at Montmorency the line runs through a small village, the inhabitants of which are mostly operatives in a large cotton factory, and from there the line runs through the following parishes: L'Ange Gardien, population about 1,400; Chateau Richer, population about 2,000; Ste. Anne de Beaupré, population about 1,500, and St. Joachim, population about 1,000. Before the innovation of the electric system, this population were served in the winter by two daily steam trains leaving Quebec at 8.50 a.m. and 5.15 p.m., and leaving Ste. Anne de Beaupré at 7.15 a.m. and 11.40 a.m. In the summer there were four daily steam trains, leaving Quebec at 7.30 a.m., 10.00 a.m., 5 p.m. and 6.15 p.m., and St. Anne at 5.45 a.m., 7.23 a.m., 11.50 a.m. and 4.10 p.m. There was also an additional steam

train between Quebec and Montmorency, leaving Quebec at 2 p.m., and returning at 3.45 p.m. Special trains, as required, were put in service to convey the large number of pilgrims visiting the shrine of Ste. Anne. The residents in the thickly inhabited portion on top of the cliff, between Quebec and Montmorency, previously mentioned, did not patronize the railway, but travelled by omnibuses, of which there were 8 or 10.

The year prior to the introduction of the electric cars, viz., 1899, the steam trains carried 253,054 passengers, including about 41,500 pilgrims, to Ste. Anne de Beaupré. This did not appear to me to be satisfactory, especially during the winter, when residents would take advantage of the good winter roads and drive, rather than have the inconvenience of having to wait and be at a railway station at a certain fixed time to catch a train; as a result, it was decided to electrically bond the existing track, put up an overhead trolley wire, high enough to allow of brakemen travelling with safety on top of box and freight cars, put in an A.C.D.C. generator at the electric power station at Montmorency and operate electric cars between the steam trains. These cars were each equipped with four 50-h.p. motors and Westinghouse air brakes, operated by an



TWO-DIRECTION TRAIN ORDER SIGNAL.

independent motor, and were so geared as to be capable of running 45 miles an hour—standard railway car wheels being used. The cost of this work for the 30 miles of track was as follows:—

Electrically bonding existing track	\$ 5,022 00
Overhead trolley, including poles, etc.	68,804 00
6 large double truck cars, seating capacity 54, with motors, etc., complete	51,606 00
One 600 K.W., A.C.D.C. generator and water wheel and one 200 K.W. rotary transformer at Ste. Anne, including switchboards, etc.	43,943 00
	\$169,375 00

Upon its completion, in addition to the regular steam railway service, which was continued as before, cars were sent out between Quebec and Montmorency every hour between 6.30 a.m. and 9.30 p.m., and between Quebec and Ste. Anne de Beaupré about every three hours, and the following comparative statement shows the result of the year's operation in 1901, from which it will be noted that there was an increase of 218,320 passengers carried, and an increased revenue of \$29,071.39, with an increased expenditure of \$5,698.46. From June 30, 1901, to June 10, 1902, there has been a further increase of 86,392 passengers over the corresponding period of 1900-1.

COMPARATIVE STATEMENT OF TICKETS SOLD AT DIFFERENT STATIONS.

	1899.		1901.	
	Passengers.	Steam. Amt.	Passengers.	Steam & Electric. Amt.
Quebec	108,103	\$20,107 20	259,364	\$33,976 70
" Pilgrims	41,329	7,687 35	106,280	13,922 34
Hedleyville	2,431	452 30	4,759	623 45
Beauport	20,241	1,626 25	47,237	4,991 40
Montmorency	17,079	2,963 60	64,535	6,294 31
L'Ange Gardien	11,062	1,427 10	15,669	2,048 25
Chateau Richer	12,652	2,274 25	18,885	2,879 70
Ste. Anne	23,738	4,569 45	33,190	5,404 55
Beaupré	2,198	463 60	3,691	611 50
St. Joachim	2,920	563 00	110,577	1,596 62
Agencies	11,310	2,087 45	7,207	944 12
Totals	253,054	\$44,221 55	571,374	\$73,292 94

The operations for 1900 are omitted, as the work of electrifying the road was only partially completed. The omnibuses previously referred to have been run out of business, notwithstanding the inconvenience of passengers having to walk up the cliff to get to the public road and their houses, and traffic has now so much increased that it has been found necessary to run cars every half hour between Quebec and Montmorency and about every hour between Quebec and Ste. Anne; and, in addition, the steam trains are run as formerly. On Sundays and holidays the resources of the Co. are so fully taxed that it has been found necessary to increase the rolling stock with cars having a seating capacity for 120 passengers, and in addition to the regular cars, to run specials at from 10 to 15 minutes interval. It has also been found absolutely necessary to construct a double track between Quebec and Montmorency.

As an old steam railway engineer, I would like very much to enlarge upon the subject of suburban railways and the desirability of steam railway managers studying and taking up the subject, but sufficient has, however, been said to show that it is advisable and in the interests of their companies to leave the old groove and not to allow other and independent street railways to compete for suburban traffic. It may perhaps be as well to mention that notwithstanding the traffic above mentioned, steam freight and special pilgrimage trains are being constantly handled, and that no collision or any other accident has so far occurred.

The foregoing paper was read at the Canadian Electrical Association's convention at Quebec June 13, the day after the members had been taken over the line to Ste. Anne de Beaupre by Mr. Evans. After reading the paper, Mr. Evans said: I think it is important to mention that in 1901 the Kent house, at Montmorency, and all the property that we saw there yesterday was not in existence; that is, the building was there but it was not open to the public, and it had not been thought of as a place of resort for the citizens of Quebec, yet notwithstanding that, you see, we carried 64,000 passengers last year and over 17,000 the year previous.

President Gossler said: You have heard this very interesting paper, which we are all the better able to appreciate after our very delightful excursion of yesterday afternoon. While we naturally would conclude that rapid development of the road would have been made under the able management of Mr. Evans, it hardly occurred to me there would be such rapid progress as is shown by his paper, which is now before you for discussion.

E. G. Evans: I may add for the information of the members one feature, that is the absolute necessity of having standard railway car-wheels M.C.B. standard. Of course they are not suitable and you cannot run them over city tracks, the flange is too deep, but if you want a high-speed suburban service it

is absolutely necessary you should have standard wheels so that there is no danger of their running off the tracks at the different blocks and switches.

President Gossler: You must have found it very much to your advantage to have put in the ballast you have there and the heavy rail?

E. G. Evans: Undoubtedly. That was one of the points I omitted to mention. Before we put in the double track we were operating on the old track, 56 lb. rail, with ordinary old-fashioned single fish-plates. The traffic increased to such an extent that we had positively to double the track the first six or seven miles, and in doing so we put in 70 pound T rails and a special 3 ft. long fish plate, double angle, an angle on both sides; the result of that has been very satisfactory, so much so that our electrical engineer in testing the power taken in running the cars on both tracks, finds that on the old track it takes 10 h.p. more to operate our 48,000 lbs. car than it does on the new track, showing the advantage of having the heavy rail and good joints, which, in my opinion, is more important than the heavy rail.

Mr. Reynolds: I would like to ask Mr. Evans in regard to the distribution of power. Is there a sub-station on the road beyond the power plant, or is that all direct feed, and how many miles is that?

E. G. Evans: The power is taken from a 600 kw double current generator at Montmorency, seven miles from Quebec; there on the d.c. end we distribute seven miles to Quebec and seven miles to Montmorency, making 14 miles d.c. distribution from that machine. We send a.c. current to Ste. Anne de Beaupre, 14 miles away, at 11,000 volts; there it passes through a 200 kw rotary transformer, and feeds back seven miles to meet the d.c. current coming from Montmorency.

Sir Wm. Van Horne in Cuba.

Weldon Fawcett writes:—"The railway systems, existent and prospective, in Cuba constitute one of the most important factors in the promised development of the new republic. To a neglect in the past to comprehend the full value of transportation facilities must be attributed, in a measure, the retardation of the commercial and industrial advance of the country; but nevertheless the dawn of the new era in Cuba has found ready to hand a very fair foundation equipment of rail lines, steam or electrically operated. Moreover, the inauguration of American military control was coincident with the promulgation of an enterprise for the construction of a great trunk line through the center of the island—a long-awaited and sorely-needed undertaking of pre-eminent importance; and finally, other projects of only slightly lesser importance but awaited the establishment of a stable government to take definite shape."

After describing the steam railways already in operation, he continues:—

"However, the enterprise of supreme importance in the transportation field, if not indeed in the entire range of activities on the island, is found in the project being carried out by Sir Wm. Van Horne, the builder of the Canadian Pacific Ry., and the capitalists associated with him in the construction of a central line of railroad throughout the length of the island. This 'backbone railway,' as it has been aptly termed, and which will exert a more powerful influence for the general development of the island and all resources than any other one undertaking, was an objective institution with foreign capitalists for half a century prior to the Spanish-American war; but all their schemes failed of consummation. The main line from Santa Clara to Santiago, to be completed this spring, is about 350

miles in length; but there will be feeders to the north and south coasts, which will bring the aggregate length of the system to approximately 1,000 miles. The branches or feeders will reach such ports as Nipe, Baracoa, Gibara and Manzanillo, connecting them with the interior and affording an outlet to deep water shipping points for the plantations along the lines.

"The Cuba Co., as the Van Horne syndicate is known, has carried on its construction work in the face of many difficulties, not the least of which was found in an inability to secure a governmental franchise or even a permit for construction, and the consequent necessity of purchasing outright a private right of way. However, the same energetic tactics which characterized the construction of the C.P.R. were adopted, a working force

which at times exceeded 6,000 men was employed, and at certain portions of the route the line was carried forward at a rate considerably in excess of a mile a day. The construction of this new railroad has been thoroughly in accord with the latest approved modern practice in every respect. Although it has been necessary to provide an immense number of bridges, owing to the volume of water which falls during the rainy season, steel construction has been employed exclusively, and the rolling stock and equipment is identical with that to be found on the most important railroads in the U.S."

The Nelson Electric Ry. Co. has ceased operating its line in Nelson, B.C. (Jan., pg. 39.)

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Railway Operating Matters.

The British Board of Trade report as to railways shows that not one passenger was killed in a railway accident during 1901, although 476 were injured; 11 railway employes and others than passengers were killed and 161 injured.

The trains of the Ottawa, Northern and Western, and the Pontiac Pacific Jct. Rys., which heretofore ran into the Central station, Ottawa, are now and will continue to be operated into the Union station, where the C.P.R. management finds it more convenient to handle them.

The C.P.R.'s new code of train rules, which were described in our May issue, went into force on the Atlantic, Eastern, Ontario and Lake Superior divisions on June 1. They have been in force on the Pacific division since Mar. 1, and on the Western division since May 1. There was not the slightest hitch in

Passenger Traffic Notes.

With the coming into force of the C.P.R. summer time-table the running time of the trains between Montreal and St. John, N.B., has been reduced one hour.

At a meeting of General Passenger Agents recently held at Kansas City, Mo., a system of interchangeable mileage was agreed upon, to come in force July 1, for use on the railways in the territory west of the Mississippi and Missouri rivers, east of the Rocky Mountains and south of Canada to the Gulf of Mexico.

The C.P.R. has organized a series of canoe trips varying from 150 to 300 miles in length on the less frequented streams and lakes of the Algoma district of Ontario. Guides are provided and all arrangements made by the Co., the trips starting, as may be arranged, from Dayton, Dean Lake or Blind River on the Sault Ste. Marie branch, to Biscotasing,

July Birthdays.

Many happy returns of the day to Geo. Collins, General Superintendent Central Ontario Ry., at Trenton, Ont., born at Kingston, Ont., July 20, 1860.

E. J. Coyle, Assistant General Passenger Agent C.P.R., at Vancouver, B.C., born at Stayner, Ont., July 23, 1870.

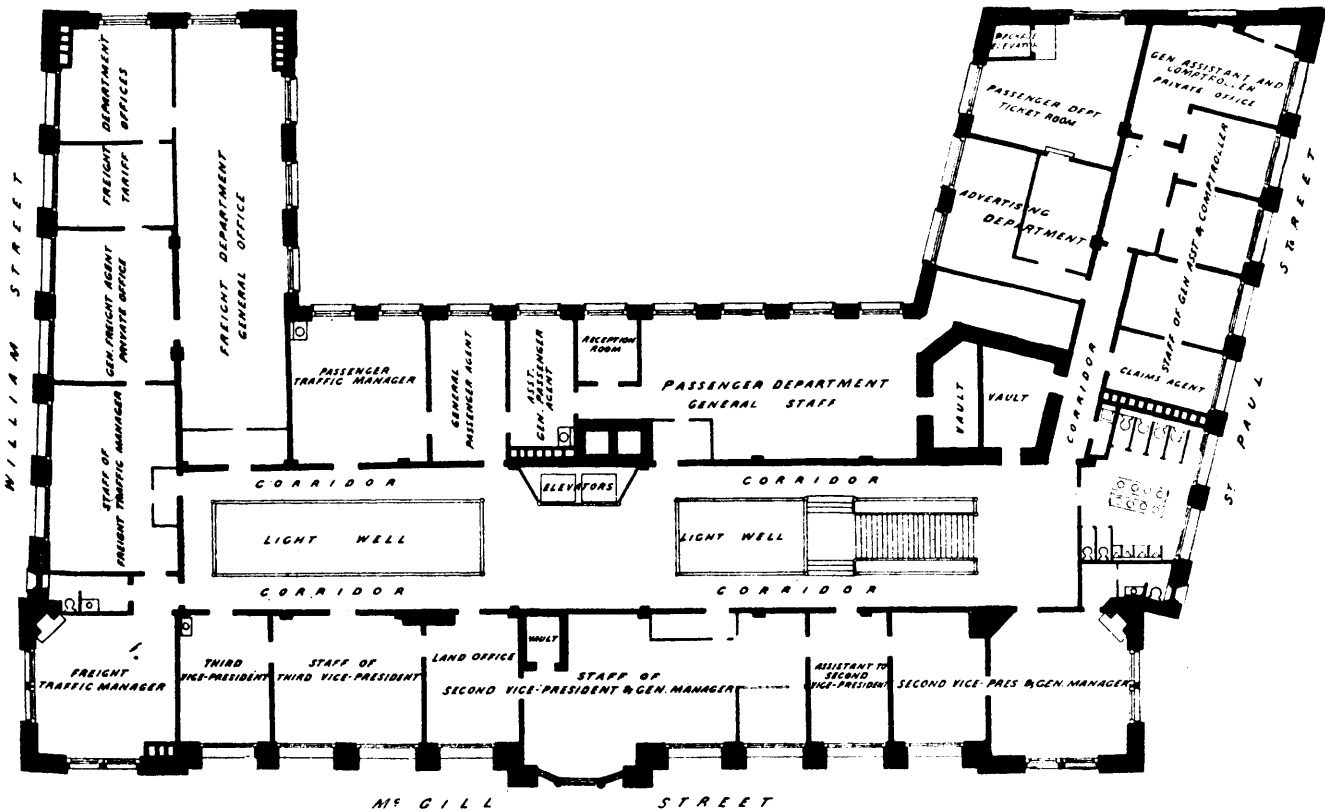
W. R. Haldane, District Freight Agent C.P.R., at Detroit, Mich., born at Galashiels, Scotland, July 6, 1867.

J. H. Hanna, Division Freight Agent G.T.R., at Hamilton, Ont., born at London, Ont., July 27, 1867.

S. A. King, Vice-President Lake Erie and Detroit River Ry., at Kingsville, Ont., born there July 23, 1844.

J. M. Lyons, General Passenger and Ticket Agent I.C.R., at Moncton, N.B., born at Halifax, N.S., July 1, 1850.

T. J. Maguire, Accountant Quebec Central



THE EXECUTIVE FLOOR, GRAND TRUNK RAILWAY GENERAL OFFICES, MONTREAL.

For description see RAILWAY AND SHIPPING WORLD for June, pg. 203.

Putting them in force, and they are said to be working admirably.

On June 15, by arrangement between the several railway companies, the different times, local, eastern or otherwise hitherto in use for operating trains in Nova Scotia and New Brunswick were discarded and "Atlantic" or "Intercolonial" standard time was put in operation. This will do away with the confusion that has hitherto prevailed throughout those Provinces, particularly in towns served by two railways, each having its own time and the town a third. On the I.C.R. the district affected lies east of Campbellton, and the change was made from Eastern to Atlantic standard time at 9 o'clock, at which hour, on a signal from St. John, N.B., the station clocks were all put one hour forward and all officials reported at the nearest telegraph office to have their watches regulated. On the C.P.R., Atlantic time is used from Vancouver east. Atlantic standard time has also been adopted outside railway circles, so that there is now a uniform time throughout N.B. and N.S., viz: that of the 60th meridian west of Greenwich.

Winnebago or Woman River on the transcontinental line.

The Canadian Northern Ry. has issued its first folder giving details of its train service on all lines. In the center is a large map showing the Co.'s completed lines, as well as those under construction, and the list of stations shows that 12 out of the 168 are competitive points with the C.P.R. The Co. has also issued the map of its line in the form of a pocket folder.

The C.P.R. new Imperial Limited, the tri-weekly train making the 2,906 miles between Montreal and Vancouver in 97 hours, was inaugurated June 15. The route from Montreal is over the short line to the Central station, Ottawa, then to Hull over the Alexandra bridge, into the Ottawa Union station and thence westerly. The equipment of the first train westbound included the sleepers Fontenoy and Vincennes and the Royal dining car Sandringham.

The Canadian Ticket Agents' Association's headquarters in Washington during the annual meeting in Oct. will be at the Ebbitt house.

Ry., at Sherbrooke, Que., born at Quebec, July 31, 1860.

E. W. Meddaugh, General Counsel Chicago and Grand Trunk Ry., at Detroit, Mich., born at Morseville, N.Y., July 16, 1833.

J. B. Morford, Superintendent Canadian Division Michigan Central Rd., at St. Thomas, Ont., born at Warwick, Orange Co., N.Y., July 16, 1836.

J. E. Quick, General Baggage Agent G.T.R., at Toronto, Ont., born at Richmond, Ontario Co., N.Y., July 10, 1851.

W. C. Ross, Mechanical Foreman I.C.R., at Halifax, N.S., born at Quebec, Que., July 26, 1863.

E. G. Russell, Manager I.C.R., at Moncton, N.B., born at St. George, N.B., July 23, 1858.

Thomas Tait, Manager of Transportation C.P.R., at Montreal, born at Melbourne, Que., July 24, 1864.

The Toronto Ry. Co. has presented an elephant to the Toronto city council for Riverdale park.

The Pintsch Light System.

An interesting statement has been issued by the Safety Car Heating and Lighting Co. showing the remarkable increase in the use of the Pintsch light system during the past twelve months, as well as giving the total number of cars, locomotives, buoys and beacons equipped with this system throughout the world. There are at present in Canada and the United States 18,653 cars equipped with the Pintsch system of lighting, while in the territory controlled by the American company there are 66 Pintsch gas manufacturing plants in operation. Following is the statement of cars, locomotives, buoys, etc., using the Pintsch system up to May, 1902:—

	Cars.	Loco- motives.	Gas Works.	Buoys and Beacons.
Germany	40,156	4,786	71	124
Denmark	45	..	3	21
England	18,859	18	87	272
France	6,741	..	27	240
Holland	3,487	5	10	86
Italy	1,528	..	5	15
Switzerland	380	2	1	..
Austria	4,218	..	10	1
Russia	3,041	112	13	13
Sweden	679	43	4	2
Servia	216	..	..	..
Bulgaria	98	..	1	..
Turkey	114	..	..	..
Egypt	42	..	3	118
Canada	166	..	3	65
Brazil	974	31	1	33
Argentina	1,096	..	10	2
Chili	46	..	2	..
India	9,584	..	16	..
Australia	2,953	..	13	38
United States	18,497	..	63	172
Japan	100	..	2	4
China .....	..	..	1	15
Mexico	81	..	1	..
Total	112,191	4,997	347	1,211
Increase for the year	6,527	525	11	49

Per Diem Charges for Freight Cars.

The Secretary of the American Railway Association has issued a list of the railway companies, members of the Association, on whose behalf per diem rule agreements had been signed and filed in his office up to June 16. The total memberships in the Association are 275, and the companies named in the list hold 192 memberships, constituting 54 more than a majority thereof. The mileage operated by these companies is 156,051 out of 200,154 miles. The total number of freight cars reported as owned by members of the Association is 1,578,387, and of these the companies named in the list represent the ownership or control of 1,344,709, constituting 292,451 more than two-thirds thereof.

The companies operating in Canada which have filed agreements are:—Canadian Pacific, Central Vermont, Grand Trunk, Great Northern (U.S.A.), Intercolonial, Michigan Central, Minneapolis, St. Paul and Sault Ste. Marie, Ottawa & New York, Prince Edward Island, Rutland, Toronto, Hamilton and Buffalo, Wabash. Among the companies, not members of the Association, which have filed agreements are the Dominion Atlantic.

The per diem rules were given in our June issue, pg. 211. They go into effect July 10.

Canada Southern Ry. Meetings.

The annual meeting was held at St. Thomas, Ont., June 4. Following are the officers for the current year: President and Treasurer, C. F. Cox, New York; Vice-President, E. A. Wickes, New York; Secretary, N. Kingsmill, Toronto; other directors, W. K. and F. W. Vanderbilt, C. M. Depew, S. F. Barger, J. E. Brown, New York, H. B. Ledyard, Detroit.

The various subsidiary companies held their annual meetings at St. Thomas June 4 and 5, and elected directors as follows:—

Canada & Michigan Bridge and Tunnel Co., Michigan, Midland and Canada Rds. Co., Niagara, Grand Island Bridge Co., Niag-

ara River Bridge Co., Toledo, Canada Southern & Detroit Ry. Co.:—W. K. and F. W. Vanderbilt, C. M. Depew, S. F. Barger, E. A. Wickes, E. A. Worcester, C. F. Cox, New York; H. B. Ledyard, Detroit; N. Kingsmill, Toronto. Leamington & St. Clair Railway Co.: W. K. and F. W. Vanderbilt, C. M. Depew, C. F. Cox, E. D. Worcester, New York; N. Kingsmill, Toronto; Jas. Ross, Montreal. Sarnia, Chatham & Erie Ry. Co.; W. K. and F. W. Vanderbilt, C. M. Depew, C. F. Cox, New York; N. Kingsmill, Toronto.

The Railway Committee of the Privy Council has had before it the question of the right of the C.P.R. to use the Central station, Ottawa, for its through trains. The C.P.R., according to the contention of the Canada Atlantic Ry. Co., had the right to use the Central station at Ottawa as a terminal for its Montreal-Ottawa trains, and for its recently acquired branches in Pontiac county, Que., but not for its through trains to the West. The committee expressed an opinion that the public interest must be served, and directed the parties to agree. A temporary agreement for the use of the station was made, and the matter adjourned for two months within which a permanent agreement has to be entered into, in default of which the committee will make an order.

Canadian Society of Civil Engineers.

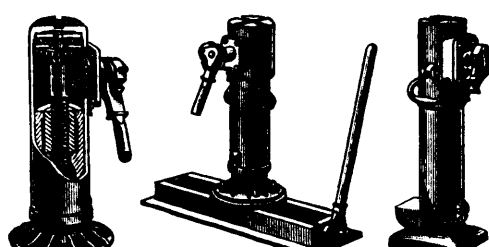
At the ordinary meeting, May 22, the following applications were announced:—For admission, C. W. Dill. For transfer from the class of associate member to the class of member, W. Burns. The following elections took place: Member, A. Bell; associate members, W. R. Duckworth, G. E. Jorgenson and R. W. MacIntyre; transferred from the class of associate member to the class of member, E. Belanger; transferred from the class of student to the class of associate member, W. B. Anderson and P. W. K. Robertson; elected as students, A. A. Blanchard, G. H. Blanchet, G. B. Brown, G. B. Burchell, J. E. Cauchon, C. E. Cooper, H. J. Deyell, S. H. Fillmore, F. E. Healy, G. T. Jennings, F. S. Keith, B. S. McKenzie, A. P. Miller, N. L. Tooker, and C. H. Wright.

The Hiram L. Piper Co., Ltd., has been incorporated under the Dominion Companies' Act, with J. and W. Carruthers, Montreal; H. L. Piper, C. W. Band, and J. E. Carruthers, Toronto, as incorporators, to deal in railway supplies, and manufacture signals, etc., with the right to acquire patent rights in connection with the same. The capital is fixed at \$40,000, and the Co.'s place of business is at Montreal.

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RAILWAY FINANCE, MEETINGS, ETC.

Albert Southern Ry.—Press reports state that G. D. Prescott, of Albert, and the Messrs. Alcrofts, London, Eng., are negotiating for the purchase of this line, which has not been operated for some time. The Co. was incorporated in 1884, and a subsidy of \$51,200 was voted for the construction of a line from Albert to Alma. The line was constructed from a junction with the Salisbury and Harvey Ry. at Albert, to the public wharf at Alma, 16.23 miles, in respect of which \$50,460 of the subsidy was earned and paid.

Bay of Quinte Ry.—An act passed at the recent session of the Dominion Parliament confirms the agreement entered into between the Rathbun Co. and the B. of Q. Ry. Co. and authorizes an increase of the capital to \$2,500,000, to be divided into preferred and common stock. The agreement referred to sets forth that the Rathbun Co. holds \$830,500 of 2nd mortgage bonds made by the B. of Q. Ry. Co. and that \$144,500 of common stock out of the \$1,250,000 had been issued and paid up. The B. of Q. Ry. Co. was desirous of exchanging the mortgage bonds for stock, and in consideration of the capital of the Co. being increased the Rathbun Co. agreed to exchange its bonds for \$325,000 preferred and \$505,500 common stock fully paid up.

B. C. Southern Ry.—Replying to a question in the B.C. Legislature recently, the Commissioner of Lands and Works stated that the B.C. Southern Ry. Co. had been granted 3,600,000 acres of land, and was now entitled to a further grant of 3,600,000 acres.

The Brantford Street Ry. Co. was carried as an asset valued at \$120,000 in the last financial statement of the Canadian General Electric Co. During the year \$10,726.47 was spent on the line, all of which had been written off. Dr. I. R. Ickes, representing the Von Echa Construction Co., recently secured an option on the line and on June 3 asked the city council to grant him an extension of the present franchise of 36 years, by 14 years, in consideration of his spending \$10,000 on the line at once, and \$25,000 within a year, and granting workmen's tickets at 3c. A by-law has been passed giving the extension of time asked for, fixing the frequency of service, and the price at which tickets will be sold. The Co. agrees to give running rights to any radial line desiring an entrance into the city, and to pay a percentage of its profits to the city.

British Columbia Electric Ry.—Earnings and expenses for April:

	1901.	1902.	Increase.
GROSS EARNINGS.			
Railway—Vancouver division	\$8,332	\$9,434	\$1,102
Victoria	7,459	7,943	484
Westminster	6,881	7,783	1,202
Lighting—Vancouver	8,577	11,116	2,539
Victoria	5,171	5,490	319
Total gross earnings	36,120	41,766	5,646
Working expenses	25,231	29,974	4,716
Net earnings	\$10,889	\$11,819	\$930

*Aggregate gross earnings, 13 months to April 30.....\$534,916 \$601,201 \$68,285

†Aggregate net earnings, 13 months to April 30.....210,120 231,526 21,406

*In order to meet the requirements of the Dominion Government, the Co.'s Accounts will in future be made up to June 30 instead of March 31 in each year.

Bruce Mines and Algoma Ry.—The directors have recommended the issue of bonds to the amount of \$250,000 secured by mortgage on the Co.'s property, and a meeting of shareholders was called to be held at Sault Ste. Marie, Ont., June 30, to ratify the resolution to authorize the issue of the bonds.

The Buffalo Ry. Co. in 1900 was given a Dominion charter and given power to acquire and amalgamate the Niagara Falls Park and River Ry., the Queenston Suspension Bridge Co., the Queenston Heights Bridge Co., and the Clifton Suspension Bridge Co.

The International Ry. Co. has since acquired the charter of the B. Ry. Co., and on the petition of the several companies interested the Dominion Parliament at the recent session passed an act giving the International Ry. Co. all the powers previously conferred on the B. Ry. Co. (April, pg. 121.)

Calgary and Edmonton Ry.—Net earnings for April, \$33,909.55, against \$25,764 for April, 1901. Net receipts for four months ended Mar. 31, \$124,983, against \$81,115 for same period 1901.

Canada Atlantic Ry.—It is generally understood that the proposed transfer of this line to Dr. W. Seward Webb and his associates will not take place. The option to Dr. Webb was understood to be only up to June 1. Early in May the directors of the Rutland Rd. decided to guarantee the principal and interest of the \$11,200,000 of 4½% bonds issued by the C.A. Ry. Co., under the terms of a resolution passed Mar. 12, subject to the approval of the shareholders. A meeting of the Rutland shareholders, was held May 15, but action on the matter was postponed until June 28.

At the end of May W. Mackenzie and D. D. Mann went over the line with Dr. Webb, and rumor credited them with being about to purchase the line, either for themselves or in conjunction with the Rutland Rd. Later a meeting between Dr. Webb and F. H. Clergue took place at Sault Ste. Marie, Ont., and Mr. Clergue states that negotiations are in progress for the purchase of the line by a syndicate with which he is connected. There is also in circulation a statement to the effect that the Minister of Railways has entered into an arrangement by which the Intercolonial Ry. will have access to Depot Harbor over the C.A.R.

Canada Eastern Ry. Co.—A. Gibson, sr., A. Gibson, jr., J. Gibson, J. R. McConnell, C. H. Hatt and F. Merritt, Marysville, N.B., were incorporated at the last session of the Dominion Parliament under the above title, with a capital of \$3,000,000, for the purpose of acquiring from the Alexander Gibson Railway and Manufacturing Co. the railway owned by it, and known as the Canada Eastern Ry. The Co. is authorized to construct branches not exceeding in any one case 75 miles in length, and is given all the other powers usually conferred upon a railway company. The Co. is authorized to acquire the charter of the Fredericton and St. Mary's Bridge Co. and amalgamate it with its undertaking.

The Canada Eastern Ry. Co. was formed in 1890 by the amalgamation, under the authority of the Dominion Parliament, of the Northern and Western Ry. of New Brunswick, and the Chatham Ry., two lines constructed and being operated under N.B. acts. In 1898 the C.E. Ry. Co. was authorized to transfer its lines and franchises to the Alexander Gibson Ry. and Manufacturing Co., formed under an act of the New Brunswick Legislature to take over the lines and operate them in connection with the other Gibson enterprises. The C.E. Ry. extends from Chatham and Loggieville via Nelson to Gibson, opposite Fredericton, N.B., 127 miles, and from Blackville to Indiantown, N.B., 9 miles, total 136 miles; total track 142.5 miles, laid with 56½ and 60-lb. steel rails. The equipment consists of 11 locomotives; 7 passenger cars, 2 baggage cars, 12 box and stock cars, 88 flat cars, 2 cabooses, 5 snow plows and 1 flanger. The common stock, authorized and paid up is: \$1,000,000; bonded debt, \$1,854,174.60; subsidies—Dominion, \$374,839.84 (including \$24,439.84 value of iron rails granted to the Chatham Ry. Co.); New Brunswick, \$400,000; Municipal, \$20,000; from other sources, \$331,571.69; total subscribed, \$3,980,586.13; paid up, \$2,106,411.53. Cost of railway and equipment, \$2,098,411.53. Operations for the year ended June

30, 1901: train mileage—passenger, 90,720; freight, 77,430; mixed, 25,290; total, 193,440 miles; engine mileage, 199,600. Passengers carried, 45,270; freight carried, 138,411 tons; gross income, \$1,334,453.25; net revenue, \$1,167,034.

Canadian Northern Ry.—At the last session of the Ontario Legislature the Premier stated there was unpaid at the end of 1901 \$620,000 of the subsidy voted for the construction of the Ontario and Rainy River Ry.; the remainder of the subsidy had been paid in railway certificates. Scrip amounting to \$400,000 was being prepared for issue in respect to 100 miles of construction.

The holders of the £700,000 30-year Ontario division 1st mortgage 4½% debentures have been offered the privilege of exchanging the same for an equal amount of 4% bonds, unconditional, guaranteed both as to principal and interest by the Manitoba Government. The new bonds are of an authorized issue of £1,190,000, maturing June 30, 1930, the mortgage securing the same having been confirmed by an act passed at the recent session of the Manitoba Legislature.

Canadian Pacific Ry.—At the recent session of the Dominion Parliament power was given the Co. to hold land and buildings, and shares in land and building companies in Canada or elsewhere, to be used for the purposes of the Co. or its steamship connections; also to build or purchase hotels or restaurants at any points along its line as might be desirable for its business; also to generate and transmit electricity; and to construct and maintain irrigation ditches. It is also provided that the number of directors, not to exceed 15, shall be fixed by bylaw from time to time; that their qualification shall be 250 shares each, and that they hold office for such term as may be fixed by bylaw, so that at least one-fourth shall retire each year. This section replaces sec. 6, schedule A, of the act of 1881.

At the recent session of the Dominion Parliament an act was passed authorizing the issue of \$20,000,000 of new stock at par, to be applied for the purpose of purchasing additional rolling stock, enlarging shop facilities at Montreal and elsewhere, reduction of gradients, improvement of alignment and double tracking, and for elevators, terminals and other facilities. It is also provided that this additional capital shall not be deemed capital within the meaning of section 20 of schedule A of the act of 1881. This section gave the Government power to reduce the tolls to be levied by the Co. to such an extent that when reduced shall not produce less than 10% a year on the capital actually expended on the construction of the railway.

The Cape Breton Ry. Co. executed a first mortgage Oct. 10, 1901, to the Standard Trust Co. of New York as security for the issue of \$2,400,000 of 5% bonds to be used for construction purposes. The charter, etc., of this Co. is one of the principal assets of the Dominion Securities Co., the New York corporation, with which Dr. W. Seward Webb and others are associated, and whose affairs are in course of adjustment by a committee of bankers. See also under Dominion Securities Co.

Carillon and Grenville Ry.—H. Wallis was elected President and H. W. Sheppard Vice-President, at the recent annual meeting.

Central Ry. (Ltd.)—This line, from a junction with the Dominion Atlantic Ry. at Middleton, to Lunenburg, N.S., has been acquired by Mackenzie, Mann & Co., in connection with their projected Halifax and South Western Ry. Negotiations have been going on for some time with the Bank of Halifax and the purchase was completed, on the recent visit of W. Mackenzie and D. D. Mann to Halifax. The price paid is reported to be

\$525,000. The line is in operation between Middleton Jct. and Lunenburg, 74 miles; and has trackage rights over the D.A. Ry. from Middleton to Middleton Jct., 0.33 miles; total track, 77.5 miles, laid with 56 lb. steel rails. The charter was originally granted to the Nictaux and Atlantic Ry. Co. by the N.S. Legislature, which also voted a cash subsidy of \$440,000, and 150,000 acres of land. Power was subsequently given to extend the line from Nictaux to Margaretville, on the Bay of Fundy, but construction has only been completed to Middleton. The line was sold under foreclosure to the bondholders in 1891, and in 1896 it came into the possession of the Central Ry. (Ltd.). Equipment: 5 locomotives, 5 passenger cars, 2 baggage cars, 10 box cars, 3 stock cars, and 49 flat cars. Financial statement: capital, subscribed and paid up, \$500,000; funded debt, 5% 30 year land grant bonds with sinking fund provisions for redemption, \$1,000,000; Dominion subsidies, \$235,200; provincial subsidies, \$432,261; municipal bonus, \$88,874; total capital subscribed and paid up, \$1,256,335; cost of line, \$1,452,656. Operations for the year ended June 30, 1901: gross earnings, \$59,853.58;

net earnings, \$15,365.75; passengers carried, 46,022; freight carried, 33,824 tons; mileage of mixed trains, 49,358; engine mileage, 54,553. The officials are: General Manager, J. Brignell; General Passenger and Freight Agent and Auditor, R. M. J. McGill; Engineer, C. O. Foss; Locomotive Foreman, J. H. Grant, all of Bridgewater, N.S.

Central Ontario Ry. Co.—An order has been made by the Ontario courts for the sale of the railway, equipment and franchises of the C.O. Ry. Co., to satisfy a mortgage of \$2,200,000, held by the Toronto General Trusts Corporation as trustees for the bondholders. The loan and mortgage were made 20 years ago; no interest has been paid, and the bonds became due in April, 1902. Who the bondholders are is a question that has been referred to the Master in Chancery at Belleville to determine. The sale of the line has been fixed for Sept. 10, at Toronto.

Chignecto Marine Transport Co.—At a meeting held in London, Eng., June 20, an opinion was expressed that the Co. was entitled to compensation for the abrogation of

its contract, and a resolution was passed to press the claim.

The Consolidated Lake Superior Co., the stocks of which have been listed on the Toronto stock exchange, has a common stock authorized for \$85,000,000, with \$62,000,000 outstanding, and \$35,000,000 of preferred stock with \$18,000,000 outstanding. The Co. owns all the Clergue enterprises at Sault Ste. Marie, Ont., and Mich., among which are included: the Algoma Central and Hudson's Bay Ry., the Manitoulin and North Shore Ry., the International Traction Co., the Algoma Central Steamship Co., the Algoma Central Telegraph Co., and the British American Express Co. The Co. also has a plant for building cars and other railway equipment, and a plant for rolling steel rails.

Cornwall Street Ry., Light and Power Co.—G. S. H. Ewing, A. MacPherson, M. MacKezic, J. P. Cleghorn and J. Tasker have been incorporated under the Ontario Companies' Act, under this title, to take over and operate the Cornwall St. Ry. The railway is owned by the Sun Life Insurance Co., which entered into possession June 4, 1901,

Pintsch System Car and Buoy Lighting.

This Company controls in the United States and Canada the celebrated Pintsch System of Car and Buoy Lighting. It is economical, safe, efficient, and approved by the railway managers and Lighthouse Board of the United States and Canada, and has received the highest awards for excellence at the World's Expositions at Moscow, Vienna, St. Petersburg, London, Berlin, Paris, Chicago, Atlanta and Buffalo. 112,000 cars, 4,500 Locomotives and 1,250 Buoys are equipped with this light. 160 Railroads in the United States and Canada have adopted this system of lighting, applied to over 19,000 cars.

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This Company's Systems have been adopted by 120 of the principal Railroads of the United States and by the great Sleeping Car Company. They consist of The Steam Jacket System of hot water circulation, The Direct Steam Regulating System and Straight Steam (plain piping).

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under a deed of foreclosure, and the present Co. has been formed so as to readjust the management. The trustees for the bondholders did not proceed with their application to the Ontario Legislature for an act enabling them to operate the line. (Feb., pg. 55.)

Cumberland Ry. and Coal Co.—The officers elected at the recent annual meeting were: President, Hon. G. A. Drummond; Vice-President, E. McDougall; General Manager, J. R. Cowans; Secretary-Treasurer, H. R. Drummond.

Demerara Electric Co.—The following directors were re-elected at the annual meeting recently held: Sir Wm. VanHorne, Hon. G. A. Drummond, W. B. Chapman, J. Hutchison, Hon. D. McKeen, and B. F. Pearson, with E. Alexander as Secretary-Treasurer.

Dominion Atlantic Ry.—Net earnings for April \$64,800, against \$53,916 for April, 1901. Net receipts for four months ended April 30, \$234,400, against \$190,946 for same period, 1901.

Dominion Securities Co.—A committee was recently appointed to investigate the affairs of this New York corporation and reported its liabilities to be \$1,681,000 on stock account, and the Cape Breton Ry. construction contract; and its assets to include the following: 9,500 shares and 1,850 bonds Cape Breton Ry.; subsidy right in Cape Breton Ry.; franchise in bridge at Montreal, equity in 100 acres of land opposite Montreal, purchased as a probable terminal for the Longueuil bridge; advance to Canada Atlantic syndicate, \$20,300; charter Pembroke Southern Ry., equity 300; 50 acres terminal land Louisburg, N.S.; equipment at Cape Breton Ry., cost of construction Cape Breton Ry., \$565,464; option on Nova Scotia coal lands. The statement of receipts shows that the Co. made a profit of \$150,000 on the purchase and re-sale of the South Shore Ry.

The Elgin and Havelock Ry. was advertised to be sold by auction on April 30 in St. John, N.B., but the sale was postponed to May 31, when the line was withdrawn, the highest bid received being just over \$5,000. The railway is in operation from Elgin to Havelock, 27 miles, with a branch 1 mile in length from Havelock to Keith's Mills, and has a total track of 30 miles, laid with 56 lb. steel rails. It is the successor to the Elgin, Petitcodiac and Havelock Ry. Co., whose line was sold under foreclosure in Oct., 1892. The equipment consists of 2 locomotives, 1 passenger car, 1 baggage car, 1 box car and 7 flat cars. Financial statement: Share capital, authorized and subscribed, \$125,000, paid up, \$43,000; subsidies—Dominion, \$82,652.82, including \$44,252.82 value of iron rails; New Brunswick, \$107,500; municipal, \$13,000; floating debt, \$3,968.75. Total cost of line, \$586,994.19. During the year ended June 30, 1901, the train mileage was 14,472 of mixed trains, 4,090 passengers and 7,622 tons of freight being carried; the total receipts amounted to \$7,001.46, and net receipts showed a deficit of \$3,968.75. The directors are all resident in England.

Grand Trunk Ry.—It is reported that the G.T.R. has secured an option on the Milwaukee, Benton Harbor and Columbus Ry., running from Buchanan to Benton Harbor, Mich., 27 miles. The G.T.R. line does not connect with the M., B. and C. Ry., its nearest stations being South Bend, Ind., about 17 miles from Buchanan; and Edwardsburg, Mich., about the same distance from Berrien Springs, 11½ miles from Buchanan. The same report states that the G.T.R. will construct a line to connect Edwardsburg and Buchanan, via Niles. (See pg. 239.)

Great Northern Ry. of Canada.—A report is current in New York that at the time of the collapse of the Webb-Meyer stocks, an arrangement had been concluded for the trans-

fer of the bonds and a large proportion of the stock of the G.N. Ry. to a syndicate closely allied with the Dominion Securities Co. of New York, and that the G.N.R. directors declined to go any further with the proposed sale. They have since announced that it proposes to remain an independent line.

Halifax Electric Tramway Co.—Gross receipts from railway:

	1902.	1901.	Increase or Decrease.
Jan.....	\$10,764.58	\$9,543.14	\$1,221.44+
Feb.....	8,498.39	8,042.11	456.28+
Mar.....	9,761.57	9,448.32	313.25+
Apr.....	10,025.66	9,370.98	654.68+
May.....	11,126.66	9,467.45	1,659.21+
	\$50,176.86	\$45,872.00	\$4,304.86+

The Hamilton Electric Light and Cataract Power Co., controlling the Hamilton Street Ry., the Hamilton Radial Electric Ry., and the Hamilton and Dundas Ry., has been granted supplementary letters patent increasing its capital from \$3,750,000 to \$4,000,000, by the issue of \$2,500 shares of preference stock.

The Co. has declared a dividend at the rate of 5% per annum on the preference stock for the half year ended June 30th.

Hull Electric Ry.—The hitch occurring in the negotiations for the purchase of this line by the C.P.R. at the time of the purchase of the Ottawa, Northern and Western and Pontiac Pacific Jct. Rys., has been arranged, and the transfer was made June 14. The price paid is said to have been between \$700,000 and \$800,000. It is reported that the C.P.R. will lease or sell the line to the Ottawa Electric Ry. Co.

Lake Erie and Detroit River Ry.—At the recent annual meeting the following officers and directors were elected: President, F. H. Walker; Vice-President, E. C. Walker; Secretary, E. Radford; Treasurer, J. H. Walker; other directors: Dr. S. A. King, Windsor; and W. Aikman, Detroit, Mich.

A special meeting of the shareholders was called to be held June 16 for the purpose of authorizing the directors to issue bonds to the extent of \$15,000 a mile for the lines now in operation, or to be hereafter constructed, not exceeding 315 miles in all, and to execute a mortgage to secure the bonds.

London Street Ry. Co.—The Everett-Moore syndicate, of Cleveland, Ohio, owning the L. S. Ry., got into deep water financially some time ago and has been selling its holdings in the electric railway companies it controlled. It is now stated that the L.S. Ry. is the only line the syndicate now has for sale.

Montreal Street Ry. Co.—Comparative statement of earnings and expenses for May:

	1902.	1901.	Increase or Decrease.
Passenger earnings.....	\$173,001.58	\$160,611.82	\$12,389.76+
Miscellaneous ".....	4,506.57	671.63	3,834.94+
Total.....	178,408.15	161,283.45	17,124.70+
Operating expenses.....	86,780.45	90,765.89	3,985.44-
Net earnings.....	91,627.70	70,517.56	21,110.14+
Fixed charges.....	18,072.42	11,632.74	7,039.68+
Surplus.....	72,955.28	58,884.82	14,070.46+
Expenses % of car earnings.....	49.90	56.51	6.61-
Interest on M. P. & I. Ry. Co.'s bonds owned by this Co. not included.			

Oct. 1 to May 31:—

	1902.	1901.	Increase or Decrease.
Passenger earnings.....	\$1,241,307.39	\$1,168,843.37	\$72,464.02+
Miscellaneous ".....	16,210.51	5,256.28	10,954.23+
Total.....	1,257,517.90	1,174,099.65	83,418.25+
Operating expenses.....	766,237.91	743,687.30	22,550.61+
Net earnings.....	491,279.99	430,412.35	60,867.64+
Fixed charges.....	124,906.70	75,095.49	49,811.20+
Surplus.....	366,373.29	355,416.86	10,956.43+
Expenses % of car earnings.....	61.73	63.63	1.90-

The Michigan Central Rd. has recently retired \$8,000,000 of 7% bonds and \$2,000,000 of 5% bonds, by the issue of \$13,000,000 of 3½% 50 year gold bonds, for the payment of which a mortgage to the Guaranty

Trust Co. of New York city has been executed. This issue will give the Co. \$3,000,000 for betterments and general improvements on the system in addition to saving a considerable amount on fixed charges.

New Brunswick Ry. Co.—At a meeting of directors in Montreal, May 2, an option was given on the Co.'s lands in New Brunswick, covering 1,764,000 acres, to a syndicate consisting of R. Reford, W. A. Hastings, Montreal; H. McLean, St. John, N.B., and others. The N. B. Ry. Co. was incorporated by the N. B. Legislature in 1870, and was given a land grant; in 1881 it was given a charter by the Dominion Parliament, and in 1891 its lines passed under the control of the C.P.R. by lease.

The Ontario Power Co. of Niagara Falls, was, at the recent session of the Dominion Parliament, authorized to divide its capital into \$100 shares, and cancel existing shares of \$50 each by the issue of new stock, and by law deal with any single or odd shares. The undertaking of the Co. is defined to be contained in chap. 127, statutes of 1887, and all acts amending the same.

Ottawa Northern and Western Ry.—At the recent session of the Dominion Parliament an act was passed authorizing the O.N. and W. Ry. Co. to purchase the whole or any part of the stock of the Pontiac Pacific Jct. Ry., the Hull Electric Co., and the Ottawa Interprovincial Bridge Co., and that the acquiring of any portion of the stock shall be deemed the purchase of a proportionate part of the mileage of such Co. The capital stock of the Co. was fixed at \$10,000,000. While before the Senate a clause was inserted requiring the consent of the Government to the sale, but this was afterwards struck out, when it was shown that the C.P.R. and not a U.S. syndicate was purchasing.

At the reorganization meeting the following directors and officers were elected: President, A. R. Creelman, K.C.; Vice-President, D. McNichol; other directors: I. G. Ogden, C. W. Spencer, T. Tait and W. R. Baker, all C.P.R. officials.

C. W. Spencer has since succeeded D. McNichol as Vice-President and has also been appointed General Manager.

Notice is given that application will be made to the Minister of Railways, on Aug. 29, for the approval of the agreement for the amalgamation of the O.N. and W. Ry., and the Pontiac and Pacific Jct. Ry. Companies.

Port Burwell and Ingersoll Ry.—Forty original shares in the P.B. and I. Ry., which was incorporated by the Ontario Legislature in 1871, issued at \$20 each, were sold at a Sheriff's sale at Ingersoll recently at \$6 a share.

Qu'Appelle, Long Lake and Saskatchewan Ry.—Net earnings for April, \$19,089.10, compared with \$3,765.16 for April, 1901. Net earnings for four months ended April 30, \$47,089.10, against \$17,665.16 for corresponding period.

Quebec Central Ry.—Gross earnings for April, \$50,477.53; working expenses, \$32,626.62; net earnings, \$17,850.91; against net earnings, \$23,147.31 for April, 1901. Gross earnings for four months ended April 30, \$178,279.88; net earnings, \$50,066.88; against \$177,163.30 gross and \$52,556.87 net for same period 1901.

The press reports recently current that the Q.C. Ry. was about to be purchased by a U.S. syndicate for absorption in a combination of New England railways, and that F. Grundy, the General Manager, had been called to London, Eng., in connection therewith, are denied. Mr. Grundy was called to England owing to the illness of his daughter, and while there discussed the position of the line with the directors. Under present

conditions the directors are not favorable to any sale.

The Quebec and Lake St. John Ry. Co. obtained an act at the recent session of the Quebec Legislature confirming the sale of certain lands to the Q. and L. St. J. Ry. Lumbering and Trading Co.

Quebec Southern Ry.—The agreement of amalgamation between the Q.S. Ry. and the South Shore Ry. made Jan. 24, has been filed with the Secretary of State; and the Q.S. Ry. Co. has executed a deed of hypothec to the National Trust Co. of its line as security for \$900,000 of 1st mortgage 4% bonds.

Rutland Ry.—O'Brien and Sheehan, of New York, were the original contractors for the construction of the Rutland Ry. between Burlington, Vt., and Rouse's Point, at the International boundary. Owing to some difficulties the R. Ry. Co. cancelled the contract when the work was half done, and gave it to the Champlain Construction Co. Actions were brought by the contractors in the U.S. Circuit Court for damages, and judgment has been entered against P. W. Clement, former President of the R. Ry. Co. for \$50,806.15,

and against the Construction Co., or, in default of that Co. paying, against the R. Ry. Co. for \$148,064.49. The cross-suits against the contractors were dismissed with costs.

A mortgage for \$1,500,000 has been filed with the County Clerk of Rennselaer Co., N.Y., in favor of the American Loan and Trust Co., as security for new rolling stock which is to be paid for by the R. Ry. Co. by 1917.

The South Shore Ry. has entered an action against the G.T.R. for \$250,000 for an alleged breach of the contract under which the S.S. Ry. had running powers over the G.T.R. from St. Lambert to Bonaventure station, Montreal. A writ has been issued by the G.T.R. against the S.S. Ry. Co. to recover \$7,107.07 alleged to be due for use of tracks and terminal facilities at Bonaventure station after the date of the cancellation of the contract.

St. John, N.B. Ry.—The following officers were elected at the annual meeting held June 11: President, Jas. Ross, Montreal; Vice-President, J. M. Robinson; Secretary-Treas-

urer, M. Neilson; other directors: J. Manchester, R. B. Emerson, H. H. McLean and J. J. Tucker.

Toronto Ry. Co.—Gross earnings:—

	1902.	Increase or Decrease.
Jan	\$1,37,135 21	\$15,478 01+
Feb	127,681 01	18,468 80+
Mar	141,681 22	17,182 23+
Apr	152,846 56	9,840 56+
May	144,898 00	13,640 00+
	\$685,642 00	\$74,799 30+

A dividend of 1 1/4% for the quarter ended June 30 has been declared.

Toronto, Hamilton and Buffalo Ry. Co.—At the annual meeting of the shareholders in Toronto, June 3, the annual report and statement of accounts were adopted, and the following were elected: President, J. N. Beckley, Rochester, N.Y.; Vice-President, Sir T. G. Shaughnessy, Montreal; Secretary-Treasurer, C. F. Cox, New York; other directors: W. K. Vanderbilt, W. H. Newman, New York; S. E. Peabody, Boston, Mass., and H. B. Ledyard, Detroit, Mich.

Earnings 1st week of June, \$7,441; de-

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crease, \$206. From July 1, 1901, \$476,612; increase, \$104,818.

Temiscouata Ry.—The litigation initiated by the Trustees, Executors and Securities Insurance Corporation, Ltd., in the English courts to recover from W. C. H. Armstrong £42,000 which it was alleged had been obtained from the plaintiffs' predecessor in title by fraud and misrepresentation, has reached the Court of Appeal where the judges upheld the decision already given that there was neither fraud nor misrepresentation. The matter arose out of the construction of the St. Francis branch, which plaintiffs say was represented as being a siding, which the trustees had power to construct, and not a branch, which was outside the limits of the power of the trustees as described by the deed. The courts have all through held that the trustees had the power to construct the branch, and gave the authority on the report of their own agent.

White Pass and Yukon Ry.—Gross earnings from Jan. 1 to May 31, \$246,490.

M. Beatty & Sons, Welland, Ont., report the following as among their larger shipments made recently: Canadian Bridge Co., Walkerville, Ont., special erecting engine; B. H. Appleby, St. John, N.B., hoisting engine; North Shore Power, Ry. and Navigation Co., Levis, Que., 2 hoisting engines, 2 swingers, and 2 sets derrick irons; San Portland Cement Co., Owen Sound, Ont., clam derrick with steel frame and boom; Yukon Saw Mill Co., Dawson, 2 additional drums for hoisting engine and duplicate of same, 2,500 lbs. sent by express; Armstrong, Morrison & Balfour, Vancouver, B.C., contractors for the Fraser river bridge, 4 hoisting engines, 2 hoisting engines with swing attachments; 1 centrifugal sand pump with direct connected engine, 2 clam buckets; W. H. Soule, Vancouver, B.C., 1 hoisting engine; R. P. and W. F. Starr, St. John, N.B., 1 hoisting engine; Mount Johnson Quarries Co., St. Gregoire, Que., 1 double drum h.p. hoister; Dawson & Riley, Niagara Falls, Ont., 1 hoisting engine, 3 double drum attachments; M. P. Davis, Quebec, 1 swinging drum attachment.

Magann vs. G.T.R.—The Supreme Court at Ottawa has reserved judgment in this case which is an action against the G.T.R. Co. for the price of 75,000 railway ties sold by G. P. Magann, of Toronto, to the Co. and alleged to have been delivered at the Saugeen peninsula, on Lake Huron and Georgian bay. The question on the appeal is as to 20,000 of these ties claimed by R. Thomson & Co., as purchasers from the Union Bank, which claimed them under a bank act lien for advances to one Gillies, by whom they had been manufactured. The validity of the lien is contested for want of sufficient description as required in the bank act, and questions arise on the appeal as to whether timber brands are property marks or merely trade marks, and if they make prima facie proof of ownership under the timber marks' act passed in 1870, at the instigation of the late A. Wright, M.P., acting for Ottawa lumbermen. Both courts below decided against the appellant Magann.

Free Passes for Bridge Directors.—In the Supreme Court the appeals and cross appeals in the case of the Niagara Falls Suspension Bridge Co., and Niagara Falls International Bridge Co., against the G.T. Ry. Co. have been dismissed. This confirms the decision of the Ontario Court of Appeal given in Nov., 1901, that the G.T.R. Co. is entitled to procure for the directors of the bridge companies annual passes over all the railways using the bridge, but that they are not entitled to specific performance but only to such damages, if any, as they may have sustained. The trial judge did not make any finding on the question of damages. (April, 1900, pg. 101.)

Quebec Central Railway Meeting.

The following report for the year ended Dec. 31, 1901, was presented at the annual meeting in London, Eng., May 28:—

1900.		1901.
\$537,995	Gross earnings.....	\$622,716
368,544	Working expenses.....	422,165
\$169,451	Net earnings.....	\$200,551
777	Interest on balances.....	320
\$179,228	Net revenue.....	\$200,871

After providing \$81,772 for the year's interest paid and accrued upon the outstanding prior lien bonds and 4% debenture stock issued, there remains a net revenue balance for the year of \$119,099, which, added to \$18,658 brought forward from 1900, makes an available balance of \$137,757. The interest on the 3% second debenture stock amounts to \$49,348, and a dividend at the rate of 1 1/2% on the 7% income bonds has been declared, absorbing \$24,675, which leaves a balance of \$63,734. During the year a serious collision occurred at Thetford, by which three employees were killed and four injured, and great damage was done to the rolling stock, while in the early part of the year there were washouts causing some considerable expense. Under these circumstances, the directors have transferred from the reserve contingent fund \$10,000 to revenue account, and this, added to the balance of \$63,734 referred to above, makes \$73,734. Of this \$37,497 has been used on account of the collision, and \$34,359 to pay for the cost of the washouts, renewal of bridges, etc., leaving \$1,878 to be carried forward. There remains, as far as at present can be ascertained, a balance of about \$12,500 to be charged against the current year's revenue on account of the damage caused by the accident. Up to Dec. 31, 1901, £232,137 of the new 4% debenture stock had been issued. Of this £197,400 had been used in retiring a like amount of prior lien bonds, and £34,737 had been sold to provide funds for a portion of the requisite additional capital expenditure authorized by the act of 1899. There remained £152,600 prior lien bonds unexchanged on Dec. 31, 1901. The conversion of the old 5% income bonds into 3% debenture stock and new 7% income bonds has been carried out.

On revenue account the expenditure was 67.80% of gross earnings, against 68.50 in 1900. Conducting transportation cost 10.94% of gross earnings against 11.53 in 1900; maintenance and working of locomotives, 21.27% against 20.47; maintenance of cars, 4.57% against 4.76; maintenance of way, 17.92% against 18.30; general expenses, 5.66% against 5.90, and miscellaneous expenses, 7.41% against 7.54.

President E. Dent, in moving the adoption of the report, referred to the details of the statement and said the dividend paid on the second debenture stock and income bonds together was equivalent to the 2 1/4% paid last year on the old income bonds. The directors hoped this year to have paid a larger dividend as the earnings were so favorable, but the collision and the washouts prevented this. Continuing, he said: "The increased earnings are partly due to the larger passenger traffic—\$24,867 over the preceding year, 21,300 more passengers having travelled over the lines. The increase was mostly in local traffic into districts served by the railway, and not away from it, showing there is plenty of room to be found there, and that the population along the line is increasing. The other reason for the increase of earnings is that 64,160 more tons of freight were carried. This increase has been spread over all sections of the line. Business conditions throughout the country have been prosperous, and large increases are shown in the amounts of asbestos, pulp wood, agricultural produce, and general merchandise carried. I believe the asbestos

carried exceeds any other year we have had yet. The track has been kept in good order. We have laid 10 miles of 70 lbs. rails, replacing 66 lbs. Many ties have been renewed, some new sidings laid, and some 11 miles have been ballasted. The old 5% income bonds ceased to exist upon Jan. 1, being replaced by the new 3% debenture stock and new 7% income bonds, and I do not think that the old income bondholders need regret the exchange, as the combined value of the two securities shows an increase on the former value of the old income bonds. The prospects for the current year are favorable. There is a large amount of goods waiting to be carried. A through Pullman car runs between New York and Levis, and on June 26 a through train will run from New York to Levis—one train each way—and it is hoped that that will materially increase the summer traffic. Therefore, unless anything unforeseen occurs, we shall hope to meet you with a favorable report. So far this year the net earnings are, up to the end of April, \$50,066—a decrease of \$4,534—but the gross earnings to the end of the third week in May are \$211,745, a small decrease of \$674."

F. Grundy, General Manager, in seconding the resolution, said: "We have at our stations at the present moment sufficient traffic, if we can only get cars to move it, to fully equal the receipts of last year, and we are likely to exceed them; but the great question in Canada and the U.S. at the present moment is want of cars. Every company is short of a supply of cars to move its own traffic. Since I left, a fortnight ago, I have received a letter from our Traffic Manager, in which he says that we are still suffering from want of sufficient cars to move the traffic. The G.T.R. has promised to help us out, and supply some cars for pulp-wood for the New York state points. They have not supplied us with any for the last few months, being very full of traffic themselves, and the same remark applies to the C.P.R. The Boston and Maine Rd. invariably helps us, because we are a good feeder to that Co. Last year's accident has taken a good deal of money, but I hope that this year we shall not have anything of that sort. With regard to the floods which occurred on June 27 last, the probabilities are that we shall not have any this year, inasmuch as the ice went quietly about five weeks ago, and the snow has gone. Altogether, I do not see why the year 1902 should not be a fairly successful one. The asbestos business is flourishing very greatly, and the owners of the mines are putting up in many cases large new mills, and those who are prospecting are very hopeful of finding sufficient asbestos to make more mines—not merely sampling places, but to develop them into mines. Taken altogether, I think your little property is a good one, and shows very good prospects."

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

It is understood that the C.P.R. will this summer commence work on an irrigation scheme for reclaiming 3,000,000 acres of barren land between Calgary, Alta., and Medicine Hat, Assa. W. Whyte, Assistant to the President, has been in consultation with the Northwest Territories Government upon the matter. It is proposed to build a dam at Bow river, a mile east of Calgary, cut intersecting canals, and leave the rest to the force of gravitation.

Jas. Ross, of Montreal, who acquired the Birmingham, Eng., Street Ry. Co. some years ago on behalf of a Canadian syndicate, has recently sold it to English capitalists, for, it is reported, \$6,000,000.

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	\$4,851,455.31	\$1,755,588.37	\$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.	3,584,403.05	2,115,363.83	1,469,039.22	388,864.81 +
Nov.	3,583,383.47	2,142,595.33	1,440,788.14	375,329.82 +
Dec.	3,497,733.70	1,929,042.19	1,568,691.51	139,325.90 +
Jan.	2,621,791.71	1,801,330.91	820,460.80	172,284.35 +
Feb.	2,349,039.34	1,674,678.66	674,360.68	53,680.84 +
Mar.	2,953,799.59	1,868,854.54	1,054,914.96	106,579.23 +
Apr.	3,263,848.79	1,972,142.16	1,291,706.33	110,897.82 +
May	3,237,082.33	2,070,189.95	1,166,892.38	156,607.90 +
	\$34,323,082.688	\$11,083,907.61	\$13,239,175.07	\$2,251,231.97 +

SUBSIDIARY LINES.

DULUTH, SOUTH SHORE AND ATLANTIC RY.

—Gross earnings for April, 1902, \$241,797.23; net earnings, \$104,496.08; against \$204,567.07 gross and \$73,748.47 net for April, 1901. Net earnings for ten months ended April 30, \$815,911.39, against \$692,886.23 for same period last year. Approximate earnings for May, \$226,553, against \$224,938 in May, 1901.

MINERAL RANGE RY.—Approximate earnings for May, \$53,568, against \$54,088, for May, 1901.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Gross earnings for April, \$535,068.37; net earnings, \$267,465.22, against \$405,680.96 net, for April, 1901. Net earnings for ten months ended April 30, \$2,778,551.78, against \$1,569,901.87 for same period 1901. Approximate earnings for May, \$487,891, against \$408,450, for May, 1901.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1900-01	1901-02	1900-01	1901-02
July	40,715.46	49,080.96	\$129,423.42	\$154,646.84
Aug.	32,178.50	50,747.82	103,480.78	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
Feb.	29,370.22	78,039.43	91,189.58	256,156.70
Mar.	39,316.14	101,029.22	122,362.47	333,852.22
April	48,874.13	231,127.11	152,445.70	695,071.68
May	40,489.90	207,153.95	129,614.69	736,021.45
	449,475.34	1,341,553.05	\$1,176,911.24	\$4,268,219.91

Grand Trunk Ry. Earnings, Expenses, &c

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	.....
Mar.	2,537,873	2,386,090	151,783	.....
April	2,439,756	2,365,491	74,265	.....
May	2,574,198	2,343,535	230,663	.....
	\$11,846,731	\$11,342,574	\$504,157	.....

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

GRAND TRUNK RY.

Revenue statement for April :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£396,500	£390,800	£5,700	.....
Working expenses	258,500	262,500	.....	£4,000
Net profit	£138,000	£128,300	£9,700	.....

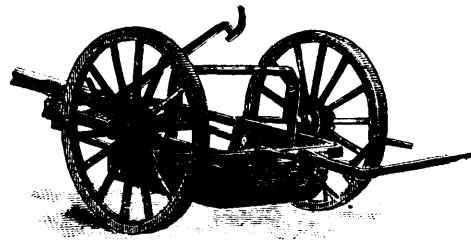
Aggregate Jan. 1 to April 30, 1902 :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£1,524,700	£1,487,900	£36,800	.....
Working expenses	1,019,500	1,035,000	.....	£15,500
Net profit	£505,200	£452,900	£52,300	.....

GRAND TRUNK WESTERN RY.

Revenue statement for April :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£87,200	£70,500	£16,700
Working expenses	72,200	66,600	5,600
Net profit	£15,000	£12,900	£2,100



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FOR SALE AT ALL LAKE PORTS.

The best goods are most economical. The names of the best are well known to all marine engineers of experience.

Aggregate Jan. 1 to April 30, 1902 :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£309,100	£246,700	£124,400	.....
Working expenses	261,300	252,200	9,100	.....
Net profit	£47,800	£44,500	£3,300	.....

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

Revenue statement for April :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£17,000	£15,700	£1,300	.....
Working expenses	14,200	12,600	1,600	.....
Net profit	£2,800	£3,100	.....	£300

Aggregate Jan. 1 to April 30, 1902 :

	1902.	1901.	Increase.	Decrease.
Gross receipts	£71,100	£64,300	£6,800	.....
Working expenses	52,100	50,400	1,700	.....
Net profit	£19,000	£13,900	£5,100	.....

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to May 31, 1902 :

	1902.	1901.	In-crease.	De-crease.
Grand Trunk	£1,946,720	£1,887,824	£58,905	.....
G. T. Western	396,244	364,206	31,948	.....
D., G. H. & M.	91,285	78,462	12,823	.....
Total	£2,434,258	£2,330,582	£103,676	.....

Montreal Abattoirs.—The C.P.R. has acquired a controlling interest in the stock of the Union Abattoir Co. of Montreal, the President, G. N. Ducharme, and a number of large shareholders having transferred their holdings to the Royal Trust Co. for the C.P.R. The Union Abattoir Co. purchased the eastern and the western yards from the Montreal Abattoir Co. and the Dominion Abattoir Co. respectively, in 1885, agreeing to pay therefor \$250,000 by instalments of \$6,250 a year for 40 years. The object of the C.P.R. is said to be the establishment of large cattle yards and abattoirs at Hochelaga. At the annual meeting held recently, the following were elected directors: T. Tait, Manager of Transportation C.P.R., A. D. Campbell, F. B. McNamee, S. Villeneuve, E. W. Villeneuve, V. E. Mitchell and T. Biennu. The following executive committee was appointed: Chairman, T. Tait, F. B. McNamee, and V. E. Mitchell.

The methods adopted for placing insurance on railway property have been investigated by the Railway Age. C. M. Hays, 2nd Vice-President and General Manager G.T.R., replied: This Co. has its own insurance fund, in which we insure our rolling stock and certain other selected risks, and such risks as are not covered by our insurance fund are insured in regular insurance companies. Another reply received was from F. Grundy, General Manager Quebec Central Ry., who said: "We insure everything in regular insurance companies. We cannot say that we find the plan profitable. Our premium reaches about \$3,000 a year. The insurance company up to 1900 cleared about 50% of the premium, in 1901 all of it, and up to date, 1902, we have not had to make any claim."

The Railway Age recently published a list of 130 narrow gauge railways on the continent having a total of 9,389 miles of track. The following lines are in Canada and Newfoundland: Alberta Ry. and Coal Co., 65 miles; British Yukon Ry., 90 miles; Kaslo and Slokan Ry., 28 miles; Prince Edward Island Ry., 210 miles; Newfoundland Ry., 714 miles; total, 5 railways and 1,107 miles of line. Of these the Alberta Railway and Coal Co.'s line is to be widened this year, as also is its U.S. connection, the Great Falls and Canada Ry., 140 miles.

The Brotherhood of Railway Trackmen of America has been refused permission to carry on an insurance business in Canada, for the benefit of its members, on the ground that it has not been satisfactorily proved to the Government that the calling of a trackman is sufficiently dangerous to prevent trackmen from obtaining insurance at reasonable rates from the ordinary companies.

Nova Scotia Telephone Company, Ltd.

At the annual meeting June 12 the following statement was presented for the year ended Jan. 31, 1902 :

ASSETS.	
Exchanges and plant	\$414,545 74
Stores	25,459 94
Stock in other companies	42,050 00
Real estate buildings, etc.	15,138 66
Amounts due company	2,407 45
Due by agencies, including Halifax	7,449 74
	<u>\$507,051 53</u>

LIABILITIES.	
Capital stock	\$300,000 00
Dividend payable Mar. 1, 1902	4,500 00
Bonds	10,000 00
Sundry amounts due	29,810 90
Bills payable	33,017 14
Sinking Fund	26,000 00
Accident reserve	10,000 00
Insurance reserve	10,000 00
Contingent and depreciation	56,960 39
Profit and loss	26,763 10
	<u>\$507,051 53</u>

PROFIT AND LOSS ACCOUNT, Jan. 31, 1902.

Balance from previous year	\$25,667 95
Net earnings	21,716 29
	<u>\$47,384 24</u>

Dividend paid June 1, 1901	\$4,224 91
" " Sept. 1, "	4,397 35
" " Dec. 1, "	4,498 88
payable Mar. 1, 1902	4,500 00
Transferred to sinking fund	3,000 00
	<u>\$20,621 14</u>

Balance carried forward	<u>\$26,763 10</u>
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The directors were re-elected.

TRANSPORTATION APPOINTMENTS.

Canadian Pacific Ry.—W. H. D. Miller, heretofore chief clerk in the Assistant-General Freight Agent's office, Toronto, has been appointed chief clerk in the Assistant Freight Traffic Manager's office, Montreal.

R. Marlow, heretofore Travelling Freight Agent, has been appointed chief clerk in the Assistant General Freight Agent's office, Toronto.

W. Bamford, heretofore Station Agent at Peterboro, Ont., has been appointed Travelling Freight Agent; office at Toronto.

F. E. Harris, heretofore Station Agent at Myrtle, Ont., has been appointed Station Agent at Peterboro, Ont.

R. Preston, heretofore Assistant Master Mechanic of the Lake Superior Division, has been appointed Master Mechanic; office at North Bay, Ont., as heretofore.

J. H. Woodside has been appointed acting Chief Train Dispatcher at Calgary, Alta., in place of A. Allan, who is acting Superintendent at Moose Jaw, during C. W. Milestone's leave of absence.

J. A. Sheffield, for many years Superintendent of Sleeping, Dining and Parlor Cars and Hotels, has resigned.

A Montreal dispatch of June 27, says:—"The C.P.R. engineering department is undergoing re-organization. Hitherto there have been two departments, one of maintenance and another of construction. The former was originally under P. A. Peterson, but upon his recent resignation was taken over by his assistant, H. E. Vautelet, who was given the title of Acting Chief Engineer, and Mr. Peterson that of Consulting Engineer. The construction department was under W. F. Tye, as Chief Engineer of Construction. The two departments are to be merged into one under E. H. McHenry, the new Engineer-in-Chief, who will start on his inspection of the road to the Pacific Coast next week, to determine upon what work is necessary in reducing gradients and curvatures."

Central Vermont Ry.—W. E. Mullins has been appointed Superintendent of Transportation. Office at St. Albans, Vt.

Grand Trunk Ry.—The following agents have been installed:—St. Liboire, Que., O.

A. Auclair; St. Hubert, Que., A. R. Clement; Massena Springs, N.Y., B. G. Washburn; Napanee, Ont., J. P. Purdy; Osh-awa Jct., Ont., F. W. Hinde; Coldwater, Ont., J. Prior; Mount Albert, Ont., J. McLean; Goodwood, Ont., F. W. Bowles; Stouffville, Ont., W. T. Byam; Beaverton, Ont., J. W. Elliott; Huntsville, C. W. Leroy; Stayner, Ont., A. J. Wakely; Phelpsston, Ont., W. Dickson; Elmvalle, Ont., A. Durnford; Oakville, Ont., N. J. Dore; Mount Brydges, Ont., J. H. Kinder; Appin, Ont., J. D. Hodgins; Thorold, Ont., J. G. Baxter; Buffalo City (Pass.) N.Y., Chas. L. Coon; Pt. Huron Tr'l (Pass.) Mich., C. R. Clarke; Potterville, Mich., P. N. Moore; Pavilion, Mich., G. H. Bradley; Ovid, Mich., A. B. Bullard; Linden, Mich., D. Marshall; Fowler, Mich., F. H. Hall; Corunna, Mich., F. J. Comstock; Muir, Mich., G. D. Young; Burton, Mich., A. N. Henry; Hamburg, Mich., T. D. Howitt; Fraser, Mich., A. Hutchinson; Orchard Lake, Mich., W. Mingst.

C. W. Johnston has been appointed Travelling Passenger Agent at Montreal, vice W. H. O'Donnell, transferred to City Passenger and Ticket Agent's office, Montreal, as Soliciting Passenger Agent. Mr. Johnston will report to District Passenger Agent, Montreal.

O. W. Mitchell, heretofore office assistant to the commercial agent at Buffalo, N.Y., has been appointed Travelling Freight Agent, succeeding S. A. Jones, who has entered the service of the Delaware, Lackawanna & Western Rd.

Inverness Ry. and Coal Co.—Norman McKenzie, heretofore underground Manager of the Dominion Coal Co.'s Dominion no. 1 colliery, has been appointed General Manager of the I.R. and C. Co. Office at Broad Cove, N.S.

Levis County Ry.—The officers are: President and General Manager, G. U. G. Holman, Quebec; Vice-President, Hon. H. C. Blouin, Levis; Secretary-Treasurer, P. E. Bourassa, Levis; Assistant Treasurer and Superintendent, G. H. Dodge, Levis.

Michigan Central Rd.—M. C. McCarthy, heretofore of the Chicago, Burlington and Quincy shops at Burlington, Iowa, has been appointed Master Mechanic at the M.C.R. locomotive shops at St. Thomas, Ont., vice C. D. Hilferty, resigned.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—A. M. Sharpe has been appointed Acting Superintendent of the Minnesota division, with office at Enderlin, N.D., vice C. P. Eckels, resigned to accept service elsewhere.

Ottawa Northern & Western Ry.—Pontiac Pacific Jct. Ry.—P. W. Resseman, General Superintendent has resigned. It is reported that he has been appointed chief trainmaster on the Western division of the New York Central Rd., with office at Buffalo, N.Y.

It is rumored that H. B. Spencer, Superintendent of the C.P.R. at Ottawa, will also have charge of the O.N. & W. R. and the P.P.J. Ry.

G. A. Duncan has been appointed District Passenger Agent; J. H. Sorley, District Freight Agent, and G. A. Fowler, Lumber Agent. Mr. Duncan is City Passenger Agent of the C.P.R. at Ottawa; Mr. Sorley is City Freight Agent, and Mr. Fowler is Lumber Agent. They will continue to hold these positions also.

Quebec Southern Ry.—A. Duchesne, has been appointed Car Accountant; office at Sorel, Que. He also has charge of car service and distribution.

Wabash Rd.—A circular issued by General Passenger Agent Crane states that after long, faithful and efficient service H. N. Garland, Western Passenger Agent at Kansas City, Mo., has resigned. He is succeeded by L. S. McClellan.

Mainly About People.

Lady Van Horne and family are settled for the summer at Covenhoven, St. Andrew's, N.B.

E. H. McHenry, Chief Engineer of the C.P.R., entered on his duties at Montreal June 3.

J. H. Scammell, of J. H. Scammell & Co., shipbrokers, St. John, N.B., died there June 20, aged 65.

Dr. W. Seward Webb has resigned from the directorate of the Cramp Steel Co. of Collingwood, Ont.

Lady Shaughnessy and her family will be guests at the Algonquin Hotel, St. Andrews, N.B., for the summer.

Mrs. P. A. Peterson, wife of the Consulting Engineer of the C.P.R., and her family will summer at Little Metis, Que.

Wm. Verger, cashier of the C.P.R. freight office, Fort William, Ont., drowned himself in the Neebing river there June 19.

J. H. Moore, agent of the Canadian Express Co., Hamilton, and Mrs. Moore celebrated their silver wedding there June 5.

C. W. Milestone, C.P.R. Superintendent at Moose Jaw, Assa., who is on leave of absence, was expected to resume his duties July 1.

Mrs. D. B. Scott, wife of the I.C.R. electrician at Moncton, N.B., died there June 25, aged 35, after several months' illness.

Miss Amy Blair, daughter of the Minister of Railways, was married at Ottawa, June 4, to the Rev. F. H. Brewin, M.A., of Hove, Eng.

Miss Bessie Van Ham, daughter of G. H. Ham, Advertising Agent of the C.P.R., was married at Montreal, June 21 to L. N. Beard.

Jas. H. Still, the principal mover in the electrification of the St. Thomas, Ont., Street Ry., and at one time its president, died there recently.

Mrs. F. H. McGuigan, wife of the Manager of the G.T.R., and the Misses McGuigan, have gone to South Portland, Me., for the summer.

J. E. Malone, Soliciting Passenger Agent of the G.T.R. at Montreal, has resigned to become agent of the Federal Life Insurance Co. there.

Sir Thos. G. Shaughnessy has purchased the Barclay ranch in the Okanagan valley, B.C., about 4,000 acres, which he intends to divide into small fruit farms.

J. Phelan, heretofore local freight agent of the C.P.R. at Vancouver, B.C., was recently presented with an address and purse on being transferred to Victoria.

Capt. Thomas Donnelly, for many years a marine inspector for the inland Lloyds, has been appointed Superintendent of the Knapp Tubular Steamship Co.

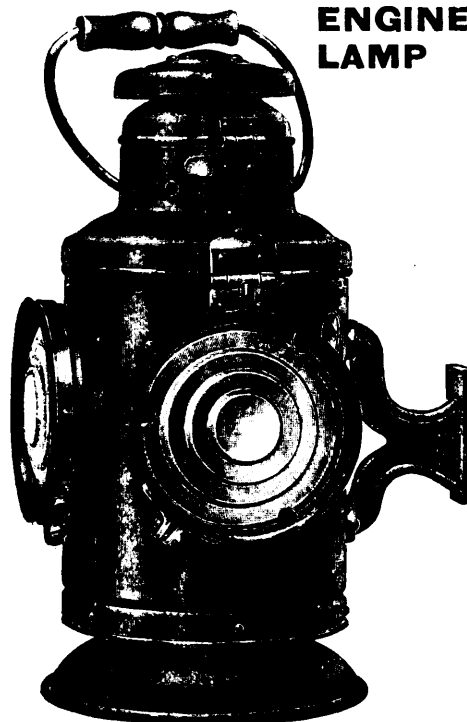
Miss Edith J. Whyte, daughter of Wm. Whyte, Assistant to the President of the C.P.R., was married at Winnipeg June 11 to C. M. Meek, of Toronto.

Mrs. G. M. Bosworth, wife of the Fourth Vice-President of the C.P.R., died at their house in Montreal June 15. She was buried in Mount Royal Cemetery.

L. B. Archibald, Superintendent Parlor, Sleeping and Dining Cars, I.C.R., has been elected Grand Master of the Nova Scotia Grand Lodge A. F. and A. M.

C. F. Sise, President of the Bell Telephone Co., was entertained at dinner by the directors of the Mount Royal Club, Montreal, recently, prior to his departure for Europe.

W. C. Kerr, at one time chief pilot of the Richelieu and Ontario Navigation Co., between Kingston and Montreal, died at Brockville, Ont., June 13, aged 64.

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At Niagara-on-the-Lake with Michigan Central R.R.

Five Trips Daily (except Sunday). First Trip for 1902, May 14th.

JOHN FOY, General Manager, Toronto, Ont.

H. S. Folger, of Kingston, Ont., has purchased the fast yacht Viator, owned by B. L. Taylor, Watertown, N.Y. She is 42 feet long, with 36 h.p., and electric gasoline engine.

S. J. Trites, formerly I.C.R. train dispatcher at Campbellton, N.B., who was transferred to Riviere du Loup, has resigned, owing to illness, and gone to his home at Berry Mills.

D. H. Williams, of North Bay, Ont., eldest son of T. Williams, Superintendent of the C.P.R. at Farnham, Que., was married at London, Ont., June 24, to Miss M. M. McVean.

Miss L. S. Dickson, youngest daughter of M. C. Dickson, ex-District Passenger Agent of the G.T.R. at Toronto, was married there June 18 to Capt. J. N. Carter, of Picton, Ont.

Mrs. Archer Baker, wife of the European Traffic Manager of the C.P.R., was presented by Mrs. Needham, at the Court held by the King and Queen at Buckingham Palace on June 5.

W. S. Skeats, at one time agent of the Blue Line in Toronto, has been appointed Division Freight Agent of the Boston and Albany Rd., with office at South Station, Boston, Mass.

Duncan S. Macintyre, railway specialties and supplies, Montreal, reports having made some large sales for the Railroad Supply Co., Chicago, and the National Machine Co., Tiffin, Ohio.

Robert Hill, for two months manager of the Woodstock, Thames Valley and Ingersoll Electric Ry., is reported to have entered the service of the International Traction Co. at Sault Ste. Marie.

H. J. Somerset, formerly Superintendent of the Winnipeg Electric St. Ry., and now Manager of the Perth and Kalgoorlie (Australia) branch of the Tramway Syndicate Co., Ltd., of London, Eng., is visiting England.

J. C. Young, who for 25 years was connected with the engineers' corps of the old Great Western and the Grand Trunk railways, died in Detroit, Mich., June 23. He lived in Hamilton, Ont., from 1832 to 1873.

H. W. Scooners, a well-known steamship captain on Lake Winnipeg, Wabigoonlake, and other inland waters, and for several years examiner of masters and mates for inland certificates, died at Port Arthur, Ont., recently.

G. Tombs, General Freight and Passenger Agent of the Great Northern Ry. of Canada, was married in Montreal, June 18, to Miss Ethel Cree. General Manager Scott, on behalf of the officials and staff, presented Mr. Tombs with a cabinet of silver.

F. E. Ward, General Superintendent of the Great Northern Ry., U.S.A., was married at Winnipeg recently to Miss Christine Lawrence. Mr. Ward, who was born in 1867, and was educated in Montreal, commenced his railway career with the G.T.R., in its mechanical department, at Montreal, in 1881.

W. R. Baker, Assistant to the Second Vice-President of the C.P.R., returned to Montreal June 14 from an official trip on the Ontario division, and had to be taken to the Royal Victoria hospital that evening, where he was operated on for appendicitis. The operation was entirely successful, and he is reported to be making a good recovery.

W. K. Hallet, who has been appointed Assistant Superintendent of the Bangor and Aroostook Rd., with headquarters at Bangor, Me., is a native of St. Mary's, N.B. He was station agent at Cross Creek, on the Canada Eastern Ry., for a time, resigning about six years ago to enter the service of the Bangor and Aroostook Ry. as an operator.

F. G. Walsh, manager of the Bell Telephone Co., Winnipeg, has returned home after a six months' leave of absence granted on account of ill-health. While in Vancouver, on his way back from California, he had a narrow escape

from a serious injury while out driving in company with T. W. Goulding, manager of the Western Union Telegraph Co. in that city.

G. H. Dodge, who has been appointed Assistant Treasurer and Superintendent of the Levis County Ry., was born at Billerica, Mass., May 14, 1875, and after being engaged with private engineering firms was, in 1899, placed in charge of construction of the Lowell and Boston Street Ry., and, on the completion of the line, was appointed Engineer and Superintendent.

The Dominion Government, through the Minister of Marine, has made the following presentations to the officers and crew of the C.P.R. str. Athabasca for distinguished bravery in saving the crew of a U.S. steamer during a storm in Lake Superior June 29, 1901: piece of silver plate to Capt. McDougall, binocular glass to the chief officer, gold medal to the chief engineer, and silver medals to the crew.

Wilfrid C. Schrieber, who died at Marthaville, Ont., June 4, began his railway career as inspector of ties for the old Northern and North Western Ry., with office at Allandale, and later on became General Purchasing Agent for the line at Toronto. On the absorption of the N. and N.W.R. by the G.T.R. he was made store inspector and afterwards storekeeper at London, continuing in the Co.'s service until about six years ago. He was a brother of Collingwood Schrieber, Deputy Minister of Railways.

R. H. Bell, who has been appointed Traveling Freight and Passenger Agent of the Canadian Northern Ry. at Montreal, was born at Toronto, Jan. 13, 1865, and entered railway service Aug. 1, 1879, as junior clerk with the old Great Western Ry. Co., and remained with the G.T.R. when the G.W.R. was amalgamated with it in 1882. After acting as chief billing clerk, he was appointed Contracting Freight Agent in Toronto, and transferred to the office of the Divisional Freight Agent, Toronto, remaining there till his present appointment in April.

G. U. G. Holman, President and General Manager Levis County Ry., was born at Talca, Chili, July 21, 1866, and was educated at Boston, Mass. He entered the service of the General Electric Co. in 1889, and in 1899 became railway engineer for the Mather Electric Co. After being connected with a light, heat and power company in Philadelphia, he was, in 1899, associated with the formation of the Great Seaboard Air Line, and in 1901 went to Quebec as General Manager of the Canadian Electric Light Co. He is the author of a manual on "Modern Switchboard Engineering."

Arthur Cox, for many years Treasurer and Superintendent of Supplies of the G.N.W. Telegraph Co., has decided to retire from his dual position early in the autumn. Mr. Cox, who is an A.R.C.A., will spend the winter pursuing his art studies in England and France. The Toronto Globe says: "His long connection with the G.N.W. Telegraph Co. in the highly responsible positions which he has filled have brought him in contact with the leading business men of this city and the country at large, and in addition he has formed a wide circle of valued social and personal friendships. These it will be hard to break up, and all who have the pleasure of his acquaintance in a business or social way will regret that he contemplates removing from Canada, but will rejoice that he is about to take life easier, and to engage in pursuits congenial to his tastes and early training."

E. H. McHenry, who has been appointed Chief Engineer of the C.P.R., was born at Cincinnati, Ohio, June 25, 1859; and entered railway service 1883 as rodman on the Black Hills branch, Northern Pacific Rd., acting successively as rodman, chainman, drafts-

man, leveler, transitman, assistant engineer, division engineer, principal assistant engineer, and Nov., 1893, to Jan., 1896, chief engineer; Oct., 1895, to Oct., 1896, also receiver same road; Sept. 1, 1896, to Oct., 1901, chief engineer, re-organized road, Northern Pacific Ry., in charge of location and construction of all lines of system in Wisconsin, Minnesota, Dakota, Montana, Idaho, Washington, and Oregon under construction department, and all engineering on operated lines under engineering department. Mr. McHenry also had charge of the N.P. Ry. Co.'s lines in Manitoba until they were transferred to the Manitoba Government.

Guy C. Dunn, whose portrait appears on the first page of this issue, was born at Quebec, May 13, 1862, and entered railway service in Oct., 1881, joining the engineering staff of the C.P.R., and remained with that Co. and the Atlantic and Northwest Ry. for about three years, being engaged in construction and surveys, including the surveys for the St. Lawrence bridge. Subsequently he was on the engineering staff of the Pontiac Pacific Jct. Ry., the Ottawa and Gatineau Valley Ry., and the Montreal and Western and Chateauguay Ry., being appointed Assistant Chief Engineer to the P.P.J. Ry., and the O. and G.V. Ry. in 1895, and Chief Engineer in 1897. He was also Chief Engineer in charge of construction of the Interprovincial bridge at Ottawa. On the passing of these lines under the control of the C.P.R., May 1, he resigned his position to act as engineer in charge of construction of the extension of the O.N. and W. Ry. from Gracefield to Maniwaki. He was elected as associate member of the Canadian Society of Civil Engineers June 25, 1887, and a full member Dec. 9, 1897.

The B.C. Legislature at its recent session threw out a bill to amend the Railway Assessment Act by compelling railway companies to provide free transportation within the Province to members of the Legislature during the continuance of the Legislature, and for three months after dissolution; the judges of the supreme and county courts, and to the Surveyor of Taxes, the Inspector of Revenue, and the assessor of taxes, not only on their railways, but also on their steamships.

No steel rails have been delivered by the Algoma Steel Co. of Sault Ste. Marie to the I.C.R. under the contract entered into in 1900, and approved of by Parliament in 1901, but delivery will soon commence as the rail mill was put in operation early in May. F. H. Clergue reports that the Co. has sold all the rails that can be made to the end of the year to Canadian companies, and that arrangements are being made to increase the plant.

A number of actions were recently initiated in British Columbia against steam and electric railway companies for violation of sections of the Railway Act by neglecting to supply the Government with returns of traffic, etc., by certain dates. At the recent session of the Dominion Parliament an act was passed relieving the companies from the penalties incurred, the violation of the law being a technical one only.

I. G. Ogden, 3rd Vice-President of the C.P.R., replying to a deputation of Montreal Aldermen, recently stated that it was impossible to abandon the present monthly system of paying wages in favor of a fortnightly system. There were 29,000 employes to be paid, and the monthly pay involved about \$1,500,000.

The G.T.R. Literary and Scientific Institute at Point St. Charles has decided to amalgamate with the Railway Y.M.C.A. at that place, and the joint society will erect a building at a cost of \$30,000.

The C.P.R. President's Inspection.

Sir Thos. G. Shaughnessy, President, C.P.R., left Montreal, May 31, on his annual tour of inspection of the line to the Pacific coast, travelling most of the way by special train in his private car Manitoba. He was accompanied throughout the greater part of his journey by E. B. Osler, M.P., and W. D. Matthews, Toronto, two of the directors of the Co. At Ottawa Sir Thomas' special was stopped at the Central station by blocks placed on the line by the Canada Atlantic Ry. for the purpose of preventing the C.P.R. using the station for through traffic, which obstacles have since been removed by agreement at the instigation of the Railway Committee of the Privy Council.

At Fort William Sir Thomas confirmed the reports that the new cleaning elevator would be erected at Port Arthur, thus centralizing the cleaning work there. As to other work the Mayor was told that in a few years the elevator capacity at Fort William would be increased to 25,000,000 bush., and that one-tenth of the \$20,000,000 of new stock issued would be expended in new works, and in improving the terminal facilities at that point. Though no definite statement was made, it is understood that a new station will be built at an early date. At Rat Portage the President received a deputation, headed by D. C. Cameron, M.L.A., Mayor, and some representatives of the Board of Trade, asking for the location of a C.P.R. hotel in the town. Several sites were inspected and the growing importance of the town as a tourist center dilated on, and Sir Thomas stated that the matter would be taken into consideration by the directors.

The party reached Winnipeg June 5, and remained there until June 7, during which time Sir Thomas was the guest of Messrs.

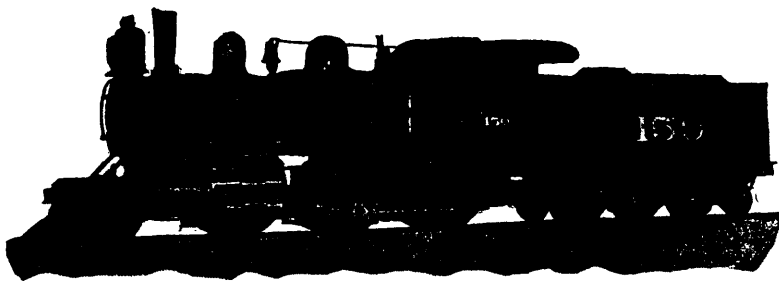
Osler, Hammond & Nanton. A number of deputations were received, the most important being one of citizens which dealt with all matters at issue between the Co. and the city, and Sir Thomas promised to consider all that had been said in regard to the subway and the hotel. W. Whyte and J. W. Leonard would deal with the city officials in reference to all matters in connection with the subway. In an interview Sir Thomas said the Co. was gradually constructing a double track between Fort William and Winnipeg and it would be completed as soon as the country needed it. As to construction of branch lines this year the branches on which work would be done had been announced, and no other work would be started, but there would be 105 miles of track laid on the branch to Pheasant hills from Kirkella. Sir Thomas, when asked, would not say whether it was the intention to carry the line through Battleford to Wetaskiwin, Alta., that was a matter for future consideration, as also was the construction of a line from Medicine Hat to Victoria, N.W., T which had been surveyed. Referring to the irrigation scheme, Sir Thomas said that only survey work would be done this year; G. A. Anderson would be the chief engineer in charge of the work, and it was probable that J. S. Dennis, the N.W.T. Government engineer, would lend his assistance.

Going westward, Sir Thomas was interviewed by deputations at Portage la Prairie and Brandon. At the former place he stated that some necessary improvements would be made at the station, and the question of the railway shops, as well as that in regard to the construction of a line to the southern part of the province, would receive every consideration. The Brandon deputation was told that the Co. would go on with the projected overhead steel bridge between Eighth and Ninth streets at a cost of \$25,000, that the yards

would be arranged to clear First and Eighteenth streets, and that better facilities for handling freight would be provided. Regina is interested in having freight privileges as a distributing center, and Sir Thomas said he thought it should be accorded the same privileges as Brandon and Calgary. A branch from Regina to Arcola, the deputation was told, would be built within a couple of years.

In British Columbia the President only went over the main line, not being able to visit the Crow's Nest Ry. or the Kootenay branches. At Vancouver, he said there would not be any extensions made in B.C. this season; a branch from Spence's bridge to the Similkameen had been under consideration, but not in a final way, and nothing will be done this year; a new Empress liner was to be built, but the contract was not let; two new steamers were being built, one for the Vancouver-Victoria service and one for the coast service, the Co. being determined to keep up to the needs of the service between Vancouver and the Yukon. After visiting Victoria the party went to Seattle and returned via the Great Northern Ry. to Minot, N.D. From this point to Sault Ste. Marie the party travelled over the Minneapolis, St. Paul and Sault Ste. Marie Ry., a subsidiary of the C.P.R., Sir Thomas making an official inspection. From Sault Ste. Marie the party travelled by C.P.R. steamer to Owen Sound, thence via Toronto, reaching Montreal June 24.

Speaking of the trip, Sir Thomas said he was extremely gratified though not surprised at the progress the country was making; in British Columbia more attention could profitably be given to agriculture, the miners being at present largely dependent on the State of Washington for their supplies. By the end of 1903 there would not be a wooden trestle or a temporary structure on the line between Montreal and Vancouver. The replacing of the



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- RICHMOND LOCOMOTIVE WORKS, RICHMOND, VA.
- COOKE LOCOMOTIVE WORKS, PATERSON, N. J.
- RHODE ISLAND LOCOMOTIVE WORKS, PROVIDENCE, R. I.
- DICKSON LOCOMOTIVE WORKS, SCRANTON, PA.
- MANCHESTER LOCOMOTIVE WORKS, MANCHESTER, N. H.

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light rails with 80 lb. steel was going on, except in the mountain districts where a heavier rail was used, and the whole work would be completed in a comparatively short time. As to the proposed double-tracking between Port Arthur and Winnipeg, he said the gradual lengthening of the side tracks was being proceeded with, and although these are from 2,000 to 2,500 ft. long, and only four miles apart, the gaps will be shortened considerably before the close of the present year.

Sir Thomas started to make his annual inspection of the Atlantic division June 26.

Freight Claim Association.

The 11th annual meeting was held at Montreal, June 11 and 12. This Association was organized at Chicago, March 3rd, 1892, by the consolidation of the Claim Agents' Association, of the eastern, middle and southern states, which had been in existence since 1887, the Freight Claim Agents' Association of the west, which was organized in 1890, and the freight claim officers of the lines interested in Texas traffic, who were organized in 1891. The Association has a membership of 210, representing nearly 180,000 miles of line, and comprised of nearly all the principal railways in Canada, the U.S. and Mexico, and many of the steamship lines. The mileage of the latter is not included in the figures mentioned. The object of the Association is to expedite the investigation and adjustment of claims for loss and damage to property in transit over two or more lines, and the settlement of claims for overcharge and terminal expenses, by the adoption of rules which are mandatory upon the members of the Association. In connection with the investigation of claims different methods of handling freight are suggested, and reports are made to the operating departments with a view of effecting a remedy, and subjects of this nature are brought up for discussion at the annual meetings of the Association. The various railways in the interim between the annual meetings correspond with the chairmen of the various committees, and a few months prior to the annual meeting there is a meeting of all the standing committees where this correspondence is gone over very carefully, and a recommendation made to the Association for consideration at the annual meeting. This has the object of very materially reducing the work of the members at the annual meetings, for the reason that the matters considered at the meetings of the standard committees are printed in pamphlet form and distributed to the members 30 days prior to the annual meeting, thus giving all members an opportunity of thoroughly looking into each question, and being prepared to intelligently discuss the subjects, based upon instructions they have received from the higher officers of their respective companies. There is an arbitration committee to which is referred all claims where carriers cannot agree upon a settlement, and the ruling of this committee is binding upon the members. There are also five standing committees, whose duties are confined to the following subjects: constitution and by-laws, loss and damage rules, overcharge rules, uniform blanks, car sealing devices. During the past year A. E. Rosevear, Freight Claim Agent of the G.T.R., was Chairman of the first-named committee, being the only representative of a Canadian railway holding office.

The Montreal meeting was of especial interest, being the first held in Canada, many of the members not having set foot in the Dominion before. It was largely attended. At the opening A. E. Rosevear introduced the Mayor of Montreal, who welcomed the members to the city.

J. Pullen, General Freight Agent of the G.T.R., being unable to be present at the

opening, sent a letter from which the following are extracts: "These international gatherings cannot be held too often for the good of the people on both sides of the line, because our ideas of each other and our respective countries are sometimes limited by a narrow vision owing to lack of contact. In precisely the same manner as the freight claim agents of all parts of the U.S. and Canada have banded together under this splendid organization to exchange ideas and formulate uniform practice for the more expeditious and satisfactory discharge of your duties, thus bringing the railway companies and their patrons into a better understanding each with the other, so these international gatherings serve to promote a better understanding between the people of these two neighboring countries. We all need this, and, therefore, you are the more welcome on that account. I should have been glad, as a traffic official, to have had an opportunity of saying a few words to you, and to congratulate you on the splendid work that you are doing. The railway service of to-day, in all branches of it, is calling loudly for the best talent that can be procured to conduct its intricate affairs. This is an age of specialists in the railway service as well as in commercial life. Few of us can expect to be ever adequately equipped with the experience and knowledge of details in all the manifold departments of railway work, but we can all hope to be the very best specialist in our chosen field. You have chosen the profession of freight claim agents, and I believe each one is trying to be the best in his profession. It is possible you may sometimes try to get the best of each other, but unless you succeed in a right cause, you do not deserve to experience the satisfaction that comes from labor well bestowed. Your traffic officers are high-minded men and expect you always to perform your duties in a strictly judicial and impartial manner. There are few branches of the service where one has greater opportunities for acquiring knowledge and practical experience than in the claims department, as you are brought into close contact with all classes of people, both in and out of the service, and with all conditions surrounding the transportation problem. A freight claim agent should have an even disposition, not be easily annoyed, yet having sufficient determination to firmly stand by the right. He should possess, not only a general knowledge of freight matters, but of the practice governing commercial life. He should be broad-minded enough to realize that the public have some rights which the railway companies should respect and be able to view his claims from all sides, before rendering a decision. He should be a diplomat as well, so that he may succeed in making a man believe that he has really done him a favor when obliged to decline his claim. He must have a clear discernment of human character, and be able to read men's minds, also their motives. He needs to have the capabilities of a judge on the bench, because he must have a knowledge of common law as well as transportation law, in order to keep his company out of expensive legal contests. In all these attributes you will, I am sure, strive to excel. The time has gone by when the merit of a freight claim agent is measured by his ability to bluff or bull-doze a claimant or a connecting line out of its just due, and his salary is not raised because he can show how much money he has saved his company by whatever means—fair or unfair. The freight claim agent ought to be not only one of the spending officers of the railway, but to be a large revenue producer as well, and so he surely will be if in his dealings with the public he is always fair and just, and courteous and considerate. I sometimes think the freight claim agent is a much-abused official, therefore I am glad to extend to you my sincerest sympathy in your work. Few are sub-

ject to such bitter revilings as a freight claim agent sometimes receives by letter from unreasonable claimants, and if he be at all sensitive, surely the discouragements must be many. Nevertheless, it is a fact that the claims work nowadays all over the country is being performed in what I might call a scientific manner. Claims are being adjusted with less expense to the railways, less friction with the public, and more expedition. I have read with deep interest your rules and proceedings from time to time, and have been impressed with the fairness shown throughout. It is too much to expect that each member will always agree with all the others, but it is nevertheless a matter of great satisfaction to find so unanimous a desire to stand on the decision of the majority. It is a safe rule to follow, the majority is usually right. Your traffic officials will always welcome any suggestions you make looking to an improvement in methods or results. The railway tonnage of the country is steadily increasing, and we may reasonably expect that the claim work is never going to grow less. Therefore, methods must be constantly improved to keep pace with the demands of the age."

During the first day the members attended strictly to business, but an entertainment was provided by the C.P.R., I.C.R. and G.T.R. for the ladies, including a drive round the city, visiting various points of interest. At 7.30 p.m. a trolley car ride round the mountain and city generally was enjoyed by all the members, including the ladies, and at 9.30 p.m. an informal reception was held in the ladies' ordinary of the Windsor hotel, which was very largely attended by Montreal railway men.

The session was continued on the second morning, and closed at 1 p.m., after which a drive to the top of the mountain was enjoyed, and an informal luncheon was tendered to the members by the city corporation, after which the party were driven to the G.T.R., and taken to Lachine by special train, then a trip down the rapids was very much enjoyed.

The discussions at the meetings related principally to the settlement of claims as between carriers. One of the most important features of the discussion was that relating to package freight checking over at various points without waybills, and the forwarding of same to marked destination. This action was taken with a view of saving delay to freight and consequent claims in connection therewith, and impresses upon shippers the importance of seeing that all less than car-load package freight is properly marked with either the name of the consignees in full or their initials and destination in full.

The following officers were elected:—President, J. J. Hooper, Freight Claim Agent Southern Ry., Washington, D.C. 1st Vice-Pres., A. E. Rosevear, Freight Claim Agent G.T.R., Montreal. 2nd Vice-Pres., W. S. Taylor, Freight Claim Agent, Hannibal and St. Joseph Rd., St. Louis, Mo. Sec.-Treas., W. P. Taylor, Traffic Manager Richmond, Fredericksburg and Potomac Rd., Richmond, Va. The next meeting will be at Detroit, Mich.

The local committee of arrangements for the Montreal meeting comprised:—A. E. Rosevear, G.T.R., Chairman; J. E. Dalrymple, Central Vermont Ry.; T. Henry, R. & O. Navigation Co.; T. A. Riddell, C.P.R.; W. P. Hinton, Canada Atlantic, and A. L. Headburg. The ladies' committee were Mesdames J. E. Dalrymple, T. Henry, T. A. Riddell and A. E. Rosevear.

The G.T.R. in Michigan.—Since pg. 231 went to press, we are officially informed that there is no foundation for the report that the G.T.R. has secured an option on the Milwaukee, Benton Harbor and Columbus Ry.

Railway Equipment Notes.

The St. John, N.B., Ry. Co. is in the market for two open cars.

The Halifax and South-western Ry. is likely to be in the market towards fall for construction equipment.

The International Transit Co. has ordered 8 double-truck motor cars with 30 ft. bodies, for its line in Sault Ste. Marie, Ont.

The Intercolonial Ry. has received from Rhodes, Curry & Co., Amherst, N.S., 469 box cars out of the order placed for 500.

The Lake Erie and Detroit River Ry. is figuring on some new box car equipment but has not decided as to the number, etc.

The Durham Switch Line Ry. Co. has purchased 1 locomotive and 12 hopper cars for its recently completed line at Durham, Ont.

The Ottawa Northern and Western, and the Pontiac Pacific Jct. railways' equipment will, it is said, be brought up to date by the new owner, the C.P.R.

The Mineral Range division of the Duluth, South Shore and Atlantic Ry., a subsidiary of the C.P.R., has ordered 100 ore and coal cars for Aug. delivery.

R. McNair is reported to have purchased equipment for a logging railway to be built from Howe sound, near Gibson's landing, B.C., up the Capilano Valley.

The Westinghouse Air Brake Co. has purchased a block of land adjoining its Hamilton, Ont., works, with a view of enlarging its plant at some future date.

The Quebec and Lake St. John Ry. has added some 1st and 2nd class passenger coaches and some combination express, postal and baggage cars to its equipment.

The B.C. Electric Co. is building at its shops a freight car 40 ft. in length, for use between Vancouver and New Westminster. The car will be fitted with four 50 h.p. motors.

The Kingston, Portsmouth and Cataract Electric Ry. Co. has purchased the equipment of the Belleville Traction Co., consisting of 4 cars, 2 trucks, 5 motors, wires, trolleys, etc.

The Canada Atlantic Ry. has just finished, at its Ottawa shops, two 1st class passenger

coaches, 65 ft. long, with wide vestibules, on 6-wheel trucks; and is building 35 platform cars, 60,000 lbs. capacity.

The Canadian Rolling Stock Co., one of the Clergue enterprises at Sault Ste. Marie, is turning out flat cars and small locomotives for the Algoma Central and Hudson's Bay Ry. Co.

The St. Anthony Lumber Co. has bought 25 logging cars from the Canada Atlantic Ry. for the railway which it is building from Whitney to Big Opeongo lake, Ont., and the Co. will also buy one or two locomotives.

Rhodes, Curry & Co., Ltd., Amherst, N.S., is making an addition to its general offices, and the following additions to its car shops: blacksmith's shop, 66 by 180 ft.; truck shop, 60 by 50 ft.; and engine house 30 by 40 ft.

The Great Northern Ry. of Canada has purchased 2 50-ton freight engines in the U.S. which are being rebuilt, and 4 new freight engines, also in the U.S. The Co. is also negotiating for the purchase of 2 passenger locomotives.

The Cape Breton Ry. Co.'s equipment consists of 3 Baldwin locomotives, 1 passenger coach, 81 platform cars and 1 steam shovel, employed in construction. The flat cars were built by Rhodes, Curry & Co., Amherst, N.S., who have an order for 20 more.

The Reid Newfoundland Co. has ordered from the Baldwin Locomotive works 2 consolidation freight locomotives, cylinders 18 by 24 ins.; driving wheels, 48 ins. in diameter, for Nov. delivery. The same Company has ordered 50 flat cars in the U.S.

The Montreal St. Ry. is placing six new cars on its Park and Island division. They are very similar to the large new cars, one of which is running on the Lachine line, except that a smoking compartment is provided by dividing the car in two, the entrance for smokers being at the side near the rear end.

The Inverness Ry. and Coal Co. has recently placed an order with Rhodes, Curry & Co., Amherst, N.S., for 25 hopper coal cars, 60,000 lbs. capacity. It has also placed an order for 400 box cars, 60,000 lbs. capacity. This Co. will probably place orders during the summer for additional locomotives and coal cars.



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The Intercolonial Ry. at the recent session of the Dominion Parliament was voted \$308,000, of which \$34,000 was a revote, for rolling stock, and \$8,000 to change couplers on passenger cars (revote). It is intended to remove the Miller and the ordinary type of drawhead couplers, and to substitute the M.C.B. standard type of vertical plane couplers.

The Record of Recent Construction of the Baldwin Locomotive Works, no. 33, gives details of the commemoration of the completion of the 20,000th locomotive built at the works in the 70th year of continuous operation; and no. 34 gives illustrations and general dimensions of 14 engines of varying types, for Chilean and Indian, as well as U.S. railways.

The Simplex Railway Appliance Co., of Hammond, Ind., is establishing a factory at St. Henri, Montreal, for the manufacture of Simplex bolsters and Susemihl roller side bearings, and other railway specialties for its Canadian trade. W. W. Butler, 2nd Vice-President, has been in Montreal for some time making arrangements. The Canadian business will be in charge of J. A. Lamont.

The Canadian Northern Ry. has received from the Canadian Locomotive Co., Kingston, the five 10-wheel locomotives, ordered for June delivery, also freight locomotives, completing the order placed there. It has also received 6 out of an order for 8 freight locomotives built at the Brooks works of the American Locomotive Co. It has on order 1 dining car to be built in the U.S.; 3 combination baggage, mail and express cars, and 100 flat cars to be built in Canada.

The Lake Erie and Detroit River Ry. has recently purchased 3 locomotives having the following general dimensions: type, road engines; wheels, 4 driving and 4 truck; cylinders, 18 by 26 in.; diameter of driving wheels, 5 ft.; length of engine, 43 ft.; length of engine and tender, 55 1/2 ft.; weight, 55 tons. It has also purchased 100 34-ft. flat cars, 60,000 lbs. capacity, of which 60 have been converted into gondola cars and delivered, and the remaining 40 will be delivered as soon as they are altered into gondolas.

The Lake Erie and Detroit River Ry. Co. at a recent meeting decided to organize a car trust company, and on that account an order for 300 gondola cars will be placed, 200 of which have been provided for. They are to be used in the coal trade between the Bessemer and Lake Erie Rd. Co., and the L.E. and D.R. Ry. via the car ferry Shenango no. 1, operating across Lake Erie. It is expected that an order for the other 100 flat cars will be placed shortly. The cars will all be 34 ft., 60,000 lbs., gondola cars, equipped with automatic couplers and Westinghouse air brakes.

The Dominion Coal Co.'s annual report states that arrangements were made with the Dominion Rolling Stock Co. to supply rolling stock for the Sydney and Louisburg Ry., the expenditure being provided for by terminable debentures to be retired by equal monthly payments extending over 10 years, in which capital and interest at a reasonable rate are included. These payments are to be met by the earnings of the property, and at the end of the period the rolling stock will become the actual property of the Coal Co., free from every incumbrance. The rolling stock comprises 19 locomotives, 1,355 flat coal cars, and 12 passenger and service coaches.

The Minneapolis, St. Paul and Sault Ste. Marie Ry., a subsidiary of the C.P.R., has received from the Baldwin Locomotive Works 3 locomotives, to be used in fast passenger service on its line, where many grades occur, and as a consequence they have smaller driving wheels than would otherwise be necessary. The total weight of the engine in working order is 156,000 lbs., of which 116,000 rest on the driving wheels. The driving-wheel

base is 14 ft. 10 in., the total wheel base of engine, 25 ft. 10 in., and the wheel base of engine and tender, 55 ft. 4 1/2 ins. long. The cylinders are 20 ins. diameter by 20 ins. stroke, and are of the balance slide valve type. The working steam pressure is 200 lbs., and the driving wheels are 69 ins. diameter. The engines exert a tractive power of 25,623 lbs. The boiler is of the radial stay extended wagon-top type, 62 in. diameter at its smallest ring. It contains 312 iron tubes 2 ins. in diameter and 15 ft. long. The fire-box is 120 ins. long by 41 1-8 ins. wide. The main driving journals are 9 1/2 ins. in diameter by 11 in. long, the others being 8 1/2 ins. diameter by 11 ins. long. The forward truck has wheels 33 ins. in diameter, and journals 6 1/2 ins. diameter by 11 ins. long. The tender is of 60,000 gals. water capacity, and is carried on two 4-wheel diamond type trucks, having wheels 33 ins. diameter, and journals 5 1/2 ins. diameter by 10 ins. long.—Railway Age.

The Quebec and Lake St. John Ry. recently received a mogul freight locomotive from the Baldwin Locomotive Works. Following are the general dimensions:—

Cylinder.....	14 and 24x26
Valve.....	balanced piston
Boiler, type.....	straight
" diameter.....	64 ins.
" thickness of sheets.....	11-16 in.
" working pressure.....	200 lbs.
" fuel.....	soft coal
" staying.....	radial
Firebox, material.....	steel
" length.....	108 3-16 ins., width, 42 1/2 ins.
" depth.....	front, 67 1/2 ins., back, 65 1/2 ins.
" thickness of sheets, sides, 5-16 in.;	back, 5-16 in.;
" crown, 3-8 in.; tube, 1/2 in.	
" water space.....	front, 4; sides, 3; back, 3
Tubes, material iron.....	wire gauge no. 12
" number, 263; diameter, 2 ft.; length, 12 ft. 6 ins.	
Heating surface, firebox.....	166.6 sq. ft.
" tubes.....	1700.8 sq. ft.
" total.....	1867.4 sq. ft.
" grate area.....	31.6 sq. ft.
Driving Wheels, diameter outside.....	57
" diameter of centre.....	50
" journals.....	main, 9x11 others, 8x11
Engine Truck Wheels (front).....	diameter 30 ins.
" journals.....	5 1/2 x 10
Wheel Base, driving.....	14 ft. 0 ins.
" rigid.....	14 ft. 0 ins.
" total engine.....	22 ft. 2 ins.
" total engine and tender, about.....	52 ft. 0 ins.
Weight on driving wheels.....	120,010 lbs.
" on truck, front.....	25,220 lbs.
" total engine.....	145,230 lbs.
" total engine and tender, about.....	245,000 lbs.
Tank capacity.....	5,000 gal.
Tender, wheels, No. 8.....	diameter, 33
" journals.....	4 1/2 ins. x 8 ins.
Service.....	freight

The Duluth, South Shore and Atlantic Ry., which extends some 400 miles along the south shore of Lake Superior, having its eastern terminus at Sault St. Marie and the Straits of Mackinac and its western terminus at Duluth, Minn., has followed the example of the C.P.R., by which it is controlled, by inaugurating its own sleeping car system. It has had five sleepers built. The Railway Age says they have 10 sections, stateroom and smoking compartment, and are 64 ft. 9 ins. long over end sills, 10 ft. wide over side sills and are about 4 ins. higher than the standard U.S. sleeping car. This allows 2 ins. more head room for lower and upper berths, a feature which will be appreciated by the travelling public. The cars are equipped with all modern improvements for safety and comfort. The ends are fitted with wide vestibule, standard steel platforms and anti-telescoping device, which consists of sandwiched iron plates on the end frame and sills on the under frame, making a very rigid piece of construction practically indestructible in case of collision. The style of architecture is of the Empire period, modernized to meet the demand for sanitary conditions. In place of using the heavy relief carving and ornaments of brass used with the original Empire style, the designers have employed marquetry or inlaid work for the ornamentation of the woodwork. This feature gives a smooth surface, besides adding color to the ornamentation made possible by the use of rare woods in their natural color, which, by a careful study in their selec-

tion, produce a highly artistic effect. The main room, corridors and toilet rooms are of St. Jago mahogany and the state-room in prima vera, or white mahogany. There are many new features used in connection with these cars, the most notable being the curved end of the seats, which adds to the comfort as well as the general effect of the main room. Special care has been given to the formation of the ceiling. The deck windows are treated very artistically, being half elliptical in form, with tapering arches beautifully inlaid with marquetry and supported by corbels. The glass in the windows is rich colored cathedral set in metal frames. To make this handsome design prominent, the ornamentation usually used on ceilings has been omitted and a soft green color has been used, making a rich background and effecting an unusually handsome, plain appearance. Wilton carpets, frieze plush window shades and draperies are of a delicate green color, harmonizing with and complementing the rich shade of the St. Jago mahogany. The cars are mounted on 6-wheel trucks, having 33-in. steel-tired wheels, and are equipped with steam heat and lighted by combination oil and electric lights. Each seat has a special electric light for reading purposes.

The Mineral Range division of the Duluth, South Shore and Atlantic Ry., a subsidiary of the C.P.R., has recently received 4 single consolidation locomotives, which rank well up in the list of powerful and heavy freight locomotives. The design is compact and appearance graceful. The straight top type of boiler with narrow firebox and "D" slide valve is adhered to. The total weight of the engines is 193,000 lbs., of which 17,000 are on the truck wheels and 176,000 on the drivers. A working boiler pressure of 200 lbs. is utilized, and with driving wheels of 55-in. diameter together with cylinders of 22-in. diameter by 30-in. stroke, a tractive power of 44,880 lbs. is developed. The adhesive force, based on 25% of the weight on drivers, is 44,000 lbs., so that there is a surplus tractive effort of practically 1,000 lbs. which may be utilized on grades and at starting by means of increasing adhesion through sanding the rails. The weight on driving wheels to each sq. ft. of heating surface is 60.6 lbs., and the total weight to each sq. ft. 66.4 lbs. The driving wheel centres are of cast steel and the tires O.H. steel, all flanged, 3 1/2 by 5 3/4 ins. The material of the axles is steel and the dimensions of the journals 9 by 12 ins. Spoke-centre engine truck wheels 33 ins. in diameter are fitted. The driving wheel base is 16 ft. and the total wheel base of engine, 24 ft. 2 ins. Steel is the material used in the construction of the boiler, the thickness of sheets in barrel and dome course being 3/8 in., and the crown, tube and side sheets of the firebox, 7-16 in., 3/8 in., and 3/8 in., respectively. The outside diameter of the front of boiler is 78 ins. The engines are designed to burn bituminous coal, and some further particulars of the boiler are as follows:

Heating surface, tubes.....	2,904 sq. ft.
" firebox.....	218 "
" total.....	3,122 "
Grate area.....	35.87 "
Tubes, diameter.....	2 ins.
" length.....	13 ft. 11 1-16 "
" thickness.....	No. 11
" number.....	398
" material.....	C.C. iron
Grate, length.....	About 126 ins.
" width.....	41 "

The water capacity of the tender is 5,000 gals., and the underframing is steel, the members being 10-in. channel sections. The trucks are of the diamond arch-bar type with double plate chilled cast iron wheels 33 ins. in diameter. The brake beams are of "1" section. The engines are equipped with two 3-in. safety valves, one muffed and one plain; two no. 10 injectors; triple sight feed lubricators; 18-in. round case headlight; Westinghouse-American brakes; sectional lagging;

pneumatic bell ringer, and double pneumatic sanding device. The driving springs are of the half-elliptic form.—Railway and Engineering Review.

An Hotel Telephone System.

The Bell Telephone Co. has just completed the instalment of a telephone system in the Windsor Hotel, Montreal, which is one of the best and most up-to-date of its kind in America. It is of the same general plan as the system in the Auditorium hotel, Chicago, and the ones now being installed in the Holland house, and the Manhattan hotel, New York. It is arranged so that the various rooms can inter-communicate or call the hotel officials and employes, thus saving much time to guests. In addition, city and long distance connections in the Bell Telephone Co.'s system can also be had without the necessity of going to the public pay station. All instruments are of the long distance common battery type, having the parts arranged in the most compact manner possible.

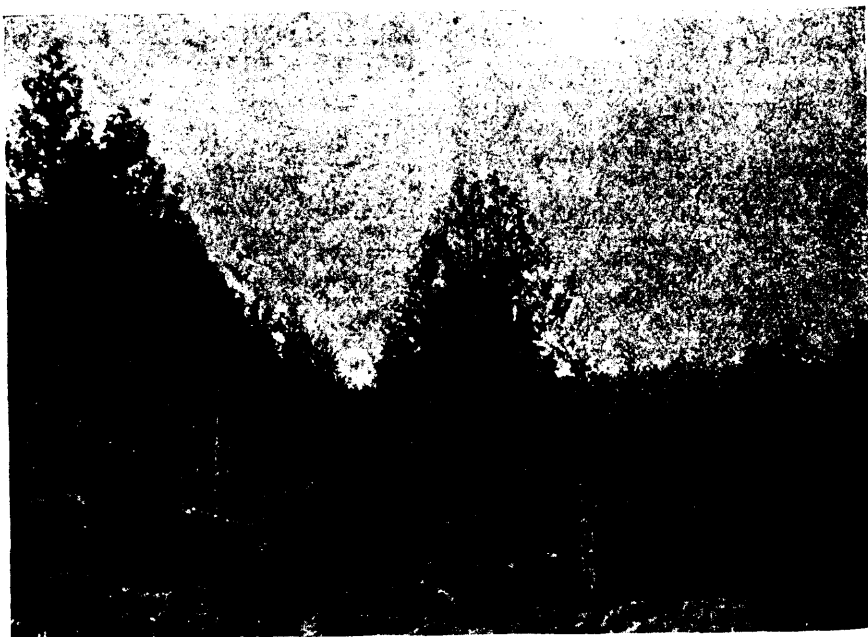
From the instruments rubber covered wires are carried along the corridors in a hollow wooden moulding, painted to match the walls, to either a ventilating or elevator shaft, where they are connected to switchboard cables which run down the shafts in wooden moulding, and which in turn are connected to lead covered cables in the basement. These last cables are run to a small iron distributing frame similar in design to those used in central offices. While the wires, cables and connecting boxes are concealed completely, they are readily accessible for repairs or alterations without disturbing any of the arrangements of the hotel. From the second side of the distributing frame the lines are carried in switchboard cables up to a room immediately above on the ground floor, in which is situated the switchboard. This room opens on to the rotunda near the office, and is used as a public telephone pay station, as well as an operating room, four booths being installed for this work. The switchboard is of the usual common battery style, and is arranged for three operators' positions and 600 lines, 400 of which are installed. The line signals are of the electro magnetic type, and the supervisory are small incandescent lamps. The woodwork of the switchboard, counter and booths is of mahogany, handsomely finished, the whole presenting a fine appearance. The power to operate the system is obtained from storage batteries placed in the same room as the distributing frame, but partitioned off from it. Two sets of cells are provided, one being charged while the other is discharging, the charging being effected by a two h.p. dynamotor run from the house circuit. One one-sixth h.p. dynamotor designed to run from the batteries is used to furnish current for ringing the bells. The switches, starting boxes, fuses, ammeter and voltmeters are all mounted on a slate and iron switchboard in the same room.

To call the operator it is only necessary to remove a telephone from its hook, this operates a signal in front of the operator, who replies by inserting one of a pair of plugs in the jack in the usual way. If the call is for an employe of the hotel it is switched through to the proper department by inserting the second of the pair of plugs in the jack connected with the line of the department wanted. In front of the pair of cords are two small incandescent lamps. When a call is answered the lamp connected with the cord used in answering does not light up, but when the second of the pair of cords is inserted in the jack the lamp connected with it remains lit until the party called for has answered. As long as the conversation continues, and the two telephones are off the hook, the two supervisory lamps remain dark, but as soon as the telephones are placed on the hook,

again these lamps light up, notifying the operator that the conversation is finished and to disconnect. This obviates the necessity of the operator cutting in to ascertain whether the conversation is finished, as the lamps lighting in front of her are a positive signal to her to disconnect. If a city call is required, the call is switched to one of the central

offices, and is there handled exactly like a local call would be.

C. W. Johnston, who has been appointed G.T.R. travelling passenger agent at Montreal, was heretofore clerk in the Bonaventure station ticket office there.



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Miscellaneous Notes.

The Dominion Coal Co., Sydney, N.S., has contracted to deliver at Montreal, this year, coal for the C.P.R., and next year for the G.T.R. The aggregate of the two contracts is 500,000 tons.

A span of the international bridge at Sault Ste. Marie collapsed and fell into the U.S. canal, June 5. Traffic through the canal was blocked for six days, but it will be some time before the bridge can be repaired.

T. W. Goulding, local manager of the G.N.W. Telegraph Co. at Vancouver, B.C., has been appointed District Superintendent of the W. U. Telegraph Co. for British Columbia and the State of Washington, with office at Seattle, Wash.

Toronto and Niagara Power Co.—J. Ross, Montreal; W. Mackenzie, H. M. Pellatt, F. Nicholls and S. G. Beatty, Toronto, were incorporated under this title at the last session of the Dominion Parliament to develop electrical power at Niagara Falls, and to deliver the same in Toronto. (May, pg. 161.)

The American Association of Travelling Passenger Agents will hold its annual convention in Canada this year, meeting in Montreal Sept. 15 and 16, where the Place Viger hotel will be headquarters. Last year the Association met at Los Angeles, Cal., when Philadelphia was selected for this year's meeting, but the anti-pass agreement proved an obstacle, and Montreal was therefore substituted. There will be a special train from Chicago, and special sleepers from Detroit and Buffalo. The itinerary will include a day in Muskoka, a day's trip down the St. Lawrence from Kingston to Montreal, two days in Montreal, one in Ottawa, two days in Quebec, and a boat trip from Quebec up the Saguenay and return.

SHIPPING MATTERS.

Notices to Mariners.

The following notices to mariners have been issued by the Department of Marine:

No. 34, May 16.—Ontario—122. River St. Lawrence, uncharted shoal 2 miles west of Brockville. 123. River St. Lawrence, Thousand islands, uncharted shoals west of Lindoe island lighthouse. 124. River St. Lawrence, Thousand islands, uncharted islands and shoals north of Grindstone island.

No. 35, May 16.—British Columbia—125. Vancouver island, Nootka sound, Guaquina or Muchalat arm, uncharted rock. 126. Vancouver island, entrance to Esquimalt harbor, Grant Knoll, signal tower erected.

No. 36, May 20.—Nova Scotia—127. South coast, Cape Sable, change in period of light. 128. Gut of Canso, termini of railways, hydrographic notes. Newfoundland—129. South coast, Ile aux Morts, harbor light.

No. 37, May 22.—Ontario—130. River St. Lawrence, Macnair shoal buoyed. 131. Lake Erie, Kingsville, front range light re-lighted. No. 38, May 22.—Quebec—140. River St. Lawrence, traverse of St. Roch, characteristic of light at upper end. 141. River St. Lawrence, ship channel between Quebec and Platon buoyage. 142. River St. Lawrence, ship channel above Quebec, Cap Santé traverse, buoy discontinued. Newfoundland—143. Cape Rouge harbor, Ariege bay, Lark harbor, beacons disappeared.

No. 39, May 23.—Quebec—144. River St. Lawrence, ship channel between Montreal and Quebec, Lake St. Peter, hydraulic dredge to be avoided.

No. 40, May 29.—Nova Scotia—145. South-east coast, Little Dover, buoyage. 146. Arichat harbor, Jerseyman island, illuminating apparatus improved. 147. Lennox passage, Onetique island, illuminating apparatus improved.

No. 41, June 3.—General—148. A new edition of all the lights and fog signals in the Dominion of Canada, corrected to April 1, 1902, has just been published, and copies will be supplied to mariners free on application. Ontario—149. River St. Lawrence, Thousand islands, uncharted rock east of Lindoe island lighthouse. 150. Lake Erie, Pelee passage middle ground, gasbuoy discontinued. 151. Lake Erie, Pelee passage, Grub reef, gasbuoy established. 152. Lake Erie, Detroit river entrance, wreck of Mont Blanc marked by buoy. 153. Georgian Bay, Collingwood harbor dredging, buoyage directions for approach, etc. 154. Georgian Bay; Parry Sound, Depot Harbor, storm signal station established.

No. 42, June 3.—Quebec—157. River St. Lawrence, Manicouagan shoal, whistling buoy established.

No. 43, June 4.—New Brunswick—158. Bay of Fundy, Letite passage and village, orthography. Nova Scotia—159. Southeast coast, Port Felix, lighthouse established. 160. Lennox passage, Onetique island, hand foghorn established. 161. Lennox passage, Poulamon light station, hand foghorn established. 162. Lennox passage, Gabron shoal, change in character of buoy.

No. 44, June 7.—New Brunswick—163. Northumberland strait, Richibucto harbor entrance, range lights changed.

No. 45, June 12.—Ontario—164. Georgian Bay, Meaford harbor, east pier extension marked by a light. 165. Lake Superior, east end, Coppermine point, light established. 166. Lake Superior, east shore, Gargantua harbor, particulars respecting lighthouse and harbor. 167. Lake of the Woods, mouth of Rainy River, lighthouse destroyed by ice. 168. Lake of the Woods, mouth of Rainy River, bell buoy established.

No. 46, June 14.—Ontario—173. Lake Ontario, Burlington channel, pier inner lights temporarily discontinued.

The following notices have been issued by the U.S. Hydrographic office:—

No. 20, May 17.—Lake Huron, 681. Georgian Bay, Collingwood approach, directions, etc.

No. 23, June 7.—Lake Huron—783. Georgian Bay, Meaford harbor, east pier extension marked by a light.

No. 24, June 14.—Lake Erie—814. Buffalo, particulars of time signal.

No. 25, June 21.—838. St. Mary's river, Sault Ste. Marie, particulars of time signal. 840. Lake St. Clair, St. Clair flats buoy; lower entrance, east side; float light replaced by a buoy. Lake St. Clair, Grosse point light vessel to be replaced by a light buoy and later by light vessel No. 75. 842. Detroit river, Amherstburg reach, amended position and character of a float light. 843. Detroit river, Limekiln crossing, south light vessel replaced on station. 844. Detroit river, Limekiln crossing, lights on east side.

St. Lawrence and Chicago Steam Navigation Co.

The report for 1901 says the season was, on the whole, an average one. Two dividends were paid, amounting to 15%, and \$22,753.52 was carried forward. At a special meeting of shareholders Dec. 20, 1901, it was decided to increase the capital stock to \$500,000 and to issue \$100,000 of new stock, and the directors obtained supplementary letters patent accordingly. A contract has been let for building another steamer. Following is the financial statement:

ASSETS.

Steamer Rosedale.....	\$100,000 00
Steamer Algonquin.....	100,000 00
Balance in Dominion bank.....	62,753 52
	<hr/>
	\$262,753 52

LIABILITIES.

Capital.....	\$200,000 00
Reserve fund.....	40,000 00
Balance of profit carried forward.....	22,753 52
	<hr/>
	\$262,753 52

PROFIT AND LOSS.

Balance, Jan. 1, 1901.....		\$11,479 08
Steamships.....	\$52,057 83	
Interest.....	1,596 65	
	<hr/>	53,654 48
		<hr/>
		\$65,133 56
Insurance.....	\$6,949 06	
Telegraphing and postage.....	206 48	
Expense.....	923 41	
Salaries.....	4,000 00	
Taxes.....	301 09	
	<hr/>	\$12,380 04
Dividend, 5%, paid Aug. 1.....	\$10,000 00	
" 10%, " Dec. 17.....	20,000 00	
	<hr/>	30,000 00
Balance carried forward.....		22,753 52
		<hr/>
		\$65,133 56

The capital stock, which stood at \$200,000 at Dec. 31, 1901, was recently increased to \$300,000 by the issue of \$100,000 of new stock to the shareholders, and a further issue of \$50,000 new stock has brought the capital stock up to \$350,000. A dividend of 16 2-3% was recently declared payable July 2, out of accumulated funds. This really gives the \$50,000 of new stock to the shareholders free. The stock was listed on the Toronto stock exchange early in June when 160 was bid, but no sales were made till 180 was offered, at which and at 185 some small lots changed hands, but the stock is held very closely and is hard to obtain. The Co.'s new bulk steel freighter, now building at Toronto, is expected to be completed in Sept., and will be named the Tadenac.

Maritime Provinces and Newfoundland.

The city of Halifax recently voted a bonus of \$100,000 towards a shipbuilding plant in Halifax harbor.

The International Steamship Co.'s str. Cumberland, plying between St. John, N.B., and Boston, Mass., has been re-engined.

The str. Percy Cann is being operated under charter by the Dominion Atlantic Ry. Co., between Kingsport and Parrsboro, N.S.

The marine slip at Meteghan, N.S., has been sold by H. F. Deveau to A. Benson, and will be enlarged so as to accommodate vessels of 1,000 tons.

The Dominion Atlantic Ry. Co.'s steamer Prince Rupert is being re-engined, and the other vessels of the fleet have been thoroughly overhauled and repaired.

The Richard, of Montreal, a 10-knot steamer of 1,000 tons, has been bought by Capt. W. Hickey, of North Sydney, N.S., for the coasting trade in the Maritime provinces.

An order has been placed at Newcastle-on-Tyne, Eng., for a steamer to replace the Mira, recently lost, in the coal carrying trade between Sydney, N.S., and Boston, Mass.

The Department of Marine has placed an order at Halifax, and another at New Glasgow, N.S., for the building of two patrol steamers for the fishery protection service at Liverpool, N.S.

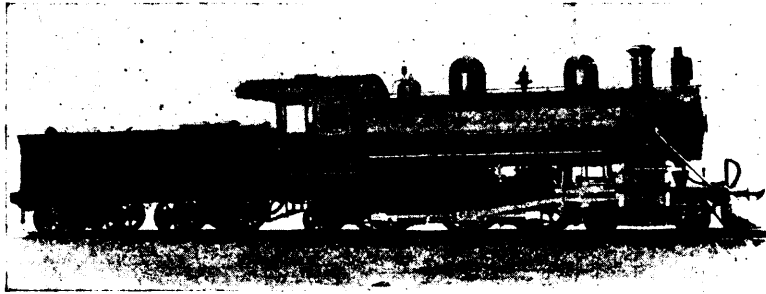
Efforts are about to be made to float the steamers Mira and Tiber, which were wrecked on the Nova Scotia coast during the winter. Both vessels were engaged in the coal carrying trade from Sydney.

The Dominion Coal Co. owns five steamships, two tugs, and five barges. During the winter the equipment was thoroughly overhauled, and the passenger steamer, Bonavista, was fitted with electric light.

The Minas Basin Steamship Navigation Co. has purchased the new str. Brunswick, to replace the Beaver on the route connecting

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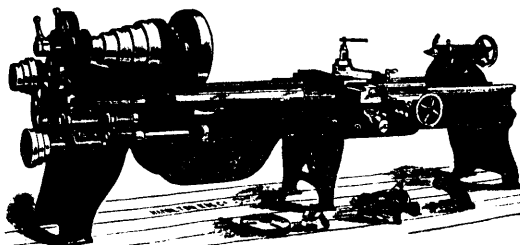
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The Canadian Pacific Railway lands consist of the odd-numbered sections along the Main Line and Branches, and in Northern Alberta and the Lake Dauphin District. The Railway Lands are for sale at the various agencies of the company in Manitoba and the 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 \$2.00 per acre, 1st instalment \$71.90, and nine equal instalments of \$66.
- 160 acres at \$2.50 per acre, 1st instalment \$83.90, and nine equal instalments of \$70.
- 160 acres at \$3.00 per acre, 1st instalment \$95.85, and nine equal instalments of \$80.
- 160 acres at \$3.50 per acre, 1st instalment \$107.85, and nine equal instalments of \$90.
- 160 acres at \$4.00 per acre, 1st instalment \$119.85, and nine equal instalments of \$100.
- 160 acres at \$4.50 per acre, 1st instalment \$131.80, and nine equal instalments of \$110.
- 160 acres at \$5.00 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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St. John, N.B., Spencer's Island, Parrsboro, Canning, Wolfville, Bass river and Maitland.

The Dominion Government has granted a subsidy of \$1,150 a trip for 12 round trips a year, to the Halifax and West India Steamship Co., between Halifax and Jamaica. The contract will continue in force until Dec. 31, 1906.

The Dartmouth Steel Shipbuilding Co. has been organized in Boston, Mass., with a capital of \$5,000,000, to take over the plant of the Nova Scotia Iron Works, and to carry on a shipbuilding and repairing business at Dartmouth, N.S.

The Red Cross Line str. Rosalind, of 1,634 tons net, and steaming 12 knots an hour, has arrived at St. John's, Nfld., and will be run between St. John's, Halifax and New York. G. S. Campbell & Co., St. John's, are the Newfoundland agents.

The Dominion Atlantic Ry. Co. is having built at Dumbarton, Scotland, a freight and passenger boat for the St. John, N.B.-Digby, N.S., route. She will draw 12 ft. 6 in., will be propelled by twin screws, and will make 15 knots an hour. She is expected to be in the service Nov. 1.

An act amending the St. John Graving Dock Act has been passed by the New Brunswick Legislature, authorizing the construction of a dock 625 ft. in length, instead of one of 800 ft. formerly contemplated. The Dominion Government is being asked to vote a subsidy towards the erection of the dock.

The Newfoundland Legislature passed an act at its recent session providing that all foreign-built vessels seeking to obtain a British registry in the colony, shall pay an ad valorem duty on the hull and machinery of 5%. The provision, however, does not apply to vessels purchased for use in the colony.

The Barque Mary A. Law Co., Ltd., has been incorporated under the Dominion Companies' Act, with H. Lewis, H. K. Lewis, G. L. Wetmore, Yarmouth, N.S.; W. F. Hagar, and J. W. Wilson, Philadelphia, Pa., as incorporators, with a capital of \$15,000, to carry on a general navigation business. Head office, Yarmouth, N.S.

The Springfield Steamship Co., Ltd., has been incorporated under the New Brunswick Companies' Act, with J. E. Moore, Beatrice E. Waring, St. John, N.B.; J. G. Downing, Springfield, N.B.; and A. Le B. Peatman, Greenwich, N.B., as incorporators, to acquire the str. Springfield, and to carry on a general navigation business. The Springfield is a side wheel steamer, built at Woodstock, N.B., her dimensions being: length, 110 ft.; breadth, 17.4 ft.; depth, 3.8 ft.; tonnage—gross, 233; net, 147.

The St. John Steamship Co., Ltd., has been incorporated under the New Brunswick Companies' Act, with T. McAvity, W. H. Thorne, W. H. Barnaby, H. W. Deforest, C. W. Deforest, H. Hayward, H. C. Smith, St. John; G. D. Prescott, S. T. Stevens, I. D. Prescott, of Albert county, N.B., as incorporators, with office at Rothesay, N.B., and a capital of \$10,000 to carry on a general navigation business. The Co. has purchased the str. Beaver to ply between St. John and Albert county ports.

A deputation from St. John, N.B., has asked the Government to expend \$800,000 on harbor improvements at that place. The Corporation, it was stated, has already spent \$750,000 on harbor improvements, but works to cost about \$1,000,000 more are urgently required. Considerable dredging is required, and berths for five additional ocean steamers are needed, for which plans prepared by the city engineer were submitted. The Minister of Public Works promised to visit St. John to see what was required, and how far the Government could aid the work.

Province of Quebec Shipping.

A contract has been let to R. McDonald, Toronto, for the construction of wharves for ocean-going steamers at Three Rivers, Que.

The Black Diamond line purposes making tests with oil as a fuel on its steamers trading between St. Lawrence ports and Sydney, N.S.

The hydraulic suction dredge, J. Israel Tarte, is reported to be doing good work in dredging on the 30 ft. channel in Lake St. Peter.

Bouchard Bros., Quebec, have bought the str. Gaspesian to run between Montreal and Grand River, Gaspé. She is 170 ft. long and 27 ft. 6 in. beam, and has been brought out from England.

The Montreal Harbor Commissioners have granted the Dominion Coal Co. an additional 400 ft. of wharf space at Windmill point. This gives the Co. a wharf frontage of 1,200 ft., with a depth of 275 ft.

The str. Ocean, owing to a failure of her engines June 5, in the Lachine canal lock at Montreal harbor, carried away two of the gates, and the current forced her into collision with the Allan liner Parisian. The Ocean was considerably damaged. The lock gates were replaced on the following day.

The pile foundation for the new elevator in Montreal harbor has been nearly completed. The work is being done under the supervision of A. St. Laurent, Assistant Engineer of the Department of Public Works, that department having relieved the Harbor Board of all responsibility in regard to the erection.

At a conference held June 16 between the Minister of Public Works, G.T.R. officials and the Montreal harbor commissioners, a plan is understood to have been approved of by which the ground at Windmill point is to be raised by the harbor commissioners, and the G.T.R. will erect an elevator on the site at a cost of \$750,000.

The Inverness and Richmond Collieries and Ry. Co. has accepted the 400 ft. of wharf accommodation at Windmill point, Montreal, offered by the harbor commissioners. The Co. will commence the erection of coal towers, etc., on the site in 1903, meanwhile accommodation will be found for its vessels in another part of the harbor.

The St. Lawrence Terminal Steamship Co., which was incorporated in 1901 to carry on a general navigation business and to lease terminal facilities on the line of the Quebec Southern Ry., has completed its organization with the following officers: President, H. A. Hodge, Montreal; Vice-President, F. D. White, Rutland, Vt.; Secretary, R. T. Hender, Montreal.

The Richelieu and Ontario Navigation Co.'s new steamer, Montreal, for the lower St. Lawrence river route, was successfully taken from Toronto to Montreal through the rapids, reaching the latter port, May 30. She drew 7 ft. 7 in., and touched bottom once while going through the Lachine rapids, but no material damage was done. The steamer is now at the R. and O. N. Co.'s yard at Sorel, having her fittings completed.

The Soulanges canal was opened for the season, May 1, when the new electrical apparatus for working the locks, gates, sluices, etc., were in successful operation. The gates are closed in one minute and the sluices in 45 seconds and everything works smoothly. Electric lights are placed all along the canal, and the dangers of night navigation are reduced to a minimum. A tug has been run through the 14 miles of canal with five lockages in two hours and ten minutes under the new system.

The Hamburg Steam Packet Co. brought an action in the Exchequer court against the King for damages to its str. Arabia by

grounding in the St. Lawrence. The court held that the Crown was not liable for the non-repair of the channel, and was under no obligation to keep it safe for navigation, and that the certificate given by the Portwarden, if improperly given, was not negligence for which the Crown was liable. The Co. appealed against this decision, but it was confirmed by the Supreme Court.

The Montreal Herald, reviewing the condition of the Montreal harbor, and the works in progress or contemplated for its improvement points out that there are already built 6,040 ft. of wharfage with a depth of 30 ft. at low water; 19,588 ft. with a depth of from 25 ft. to 27 ft. 6 in., and 3,518 ft. with a depth of less than 25 ft. Of this 5½ miles of wharfage, 6,000 ft. have been constructed since 1898. There are now under construction and nearly completed 3,500 ft. of wharfage with a depth of 30 ft. at low water, which will bring the total wharf frontage up to 32,646 ft., or about 6 miles.

The str. King Edward, engaged in the freight and passenger trade between Montreal and Quebec, and ports on the north and south shore of the Gulf of St. Lawrence, and owned by Holiday Bros., Quebec, was built at Hull, Eng., and not Hull, Que., as stated in our May issue. She was launched at Hull, Mar. 15th, and reached Quebec May 28. Her dimensions are: length over all, 156 ft.; breadth, 24 ft.; depth of hold, 11 ft. She has a gross tonnage of about 400 tons, is fitted with triple expansion engines capable of giving a speed about 14 knots an hour. The passenger accommodation is well arranged, and includes smoking-room and ladies' cabin, in addition to a large saloon. The vessel cost about \$60,000. Fortnightly sailings are made from Quebec to Natashquan and intermediate ports along the Gulf, about 500 miles; and from Montreal and Quebec to Gaspé and intermediate ports about 400 miles, either of which is a most attractive trip.

The Minister of Marine, after a conference with the shipping and marine insurance companies, and an investigation of the St. Lawrence route, has decided on having the following additional aids to navigation placed on the southern route: At Cape Race a quick flashing light is to be established and the whistle changed to syren. At Cape Pine a first-rate light and fog signal will be established, and as this is in Newfoundland it is proposed to invite the Imperial and Colonial governments to co-operate with the Dominion authorities. The light and signal at Cape Ray are to be improved, and the fog alarm at Cape Rosier is to be strengthened and the light made occulting. Entering the St. Lawrence by the Strait of Belle Isle, or northern route, a new light and fog alarm will be placed on the northeast end of Belle Isle. At Cape Bauld or Cape Norman one of the fog alarms will be changed, and a lightship will be placed at the east end of Anticosti. Between the point where the two routes above mentioned join, viz., Fame Point and Quebec, a number of improvements are contemplated.

Ontario and the Great Lakes.

The Niagara Navigation Co. has declared an interim dividend of 4%, payable July 2.

The Algoma Central and Hudson's Bay Ry. Co.'s bulk freight steel tow barge Agawa will be launched at Collingwood, July 12.

The plans for the new lock in the U.S. canal at Sault Ste. Marie, Mich., provide for one 1,350 ft. in length between gates, and 70 ft. in width.

The str. Iona, of Picton, owned by F. E. Hall & Co., was burned at the coal loading plant at Syracuse, N.Y., recently, one man losing his life.

The Elder-Dempster Co. is reported to have been making inquiries as to the cost of running passenger and grain vessels from Lake Superior to Montreal.

The steel hull for the dredge for use in the Port Colborne harbor improvement works was launched from the yard of M. Beatty & Sons, Welland, Ont., June 17.

The U.S. Congress has passed an act for the construction of a dam across the St. Lawrence river from Adams islands, Canada, to Les Galops, in U.S. territory.

The ferry str. Algoma sank at her dock at Sault Ste. Marie, Ont., owing to being overloaded, May 14, and was raised May 31. She was undamaged except by water.

The Ontario Legislature voted \$9,500 at its recent session for the lengthening of the lock at Port Carling, Muskoka, which work was completed for the opening of navigation.

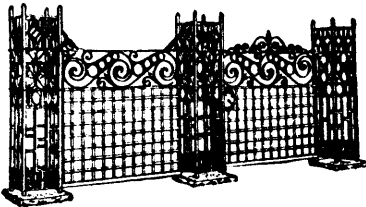
A new steamer, 100 ft. long, fitted with compound engines, has been placed on the route between South Lancaster, Ont., and Valleyfield, Que. Capt. Sicotte is the owner.

The str. Lincoln, at one time running between Toronto and St. Catharines, Ont., is now plying from Sault Ste. Marie to Thessalon, Ont., and intermediate points, making the round trip daily.

The Dominion Government has issued regulations for the operation of a ferry across the Ottawa river between Pembroke, Ont., and Allumette island, Que., to be operated by a steamer not less than 80 ft. long by 18 ft. beam.

The Port Stanley Navigation Co.'s str. Winona was launched at Port Stanley, May 26. She is 110 ft. long, 27 ft. beam, and is

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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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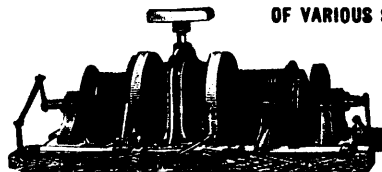
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fitted with a double compound engine. She is expected to carry 400 passengers.

A. B. Mackay, of Hamilton, has gone to England to look out for a steamer suited for the lake and canal traffic, to be operated in the passenger and package freight trade between Fort William, Ont., and Montreal.

Plans are being discussed in the U.S. shipping and other papers for raising the level of Lake Erie by erecting a dam across the Niagara river. It is asserted that the lowering of the level of the lake is caused by the Welland canal.

The str. Niagara has been refitted during the winter, some of the old machinery being replaced and a shade deck fitted. She will be operated during the summer by A. W. Hepburn, of Picton, in the excursion trade out of Toronto.

The traffic through the Canadian canal at Sault Ste. Marie from April 5 to May 30, was 532,188 tons against 151,679 to the same date in 1901. The U.S. canal passed 6,764,893 tons of freight to the same date, against 2,248,045 in 1901.

The Canadian Court of Admiralty has given the Georgian Bay Navigation Co. \$2,183 damages for the injury to its str. Carmona, as the result of being run into in 1899 by the U.S. steambarge Shenandoah and her tows the Crete and Granada.

The Supreme Court at Ottawa has reversed the decision of the Court of Exchequer, and upheld the contention of the Government that the steamer Minnie M., brought into Canada by the Algoma Central and Hudson's Bay Ry. Co. is liable to duty.

M. Burton, formerly connected with the old Black line, and later with the Northern Navigation Co., has been elected a director of the Algoma Navigation Co. It is understood that A. Miscampbell, M.L.A., will be appointed General Manager.

The Prescott Elevator Co.'s eight barges and tug are reported to have been sold by the liquidator to the Wolvin syndicate, which will operate them in connection with its grain transportation from U.S. ports to Quebec, where it has an elevator under construction.

The Turret Cape, Turret Court and Turret Chief, three ocean-going vessels formerly engaged in the coal trade between Montreal and Sydney, have been transferred to the Upper Lakes where they will carry grain between Fort William and Georgian Bay points.

C. Schreiber, Deputy Minister of Railways and Canals, has completed an inspection of the Sault Ste. Marie, Welland and Trent Valley canals. The concrete work of the lift lock on the latter at Lakefield has been completed, and the lock is expected to be opened shortly.

The New Ontario Steamships Co., Ltd., has been incorporated under the Ontario Companies' Act, with W. G. Walton, W. and F. J. Magee, R. O. and A. B. Mackay, of Hamilton, as incorporators, with a capital of \$100,000, to carry on a general navigation business. Head office, Hamilton.

The Polson Iron Works, Toronto, has just completed a handsome yacht for C. Macdonald, of New York, for his summer residence in the Thousand Islands. The yacht was named the Kate, and has a length of 63 ft., 9 ft. 3 in. beam, with a draft of 3 ft. 9 in. Her speed is about 12 miles an hour.

Two U.S. vessels have been seized at Amherstburg, Ont., at the instance of the Collins Bay Rafting and Forwarding Co., in connection with a suit being brought by that Co. for \$2,500 damages to the tow barge Muskoka, in St. Clair river, May 10, 1901, caused

by the Charles A. Street and Jeremia Godfrey colliding therewith.

The str. Chippewa, of the Niagara Navigation Co.'s fleet, has been thoroughly overhauled at the Kingston dry dock. To admit her the coping stones of the dock had to be removed, and the gates placed to the limit. These alterations are to be made permanent, so that the dock will be able to accommodate vessels up to 315 ft. in length.

The Ottawa and Rideau Lakes Rapid Transit Co., Ltd., has been incorporated under the Ontario Companies' Act, with F. W. Ashe, A. L. Ferguson, Smith's Falls; W. L. McLaren, Perth; J. Tilton and J. C. Judd, as incorporators, to carry on the business of a navigation and transportation company, with a capital of \$25,000. Head office, Ottawa.

The Ontario Divisional Court has sustained the appeal of Capt. Tyrie against the decision of the Welland police magistrate for a breach of the Lord's Day Act, by running his steamer from Buffalo to Welland on Sundays. The ground of the appeal was that the Ontario act could not apply to vessels trading from U.S. ports to Ontario ports, and this has been upheld by the court.

The C.P.R. str. Athabasca struck a rock on May 16, five miles from Detour, Mich. Temporary repairs were made to enable her to reach Owen Sound, where a survey was made. She was towed to Collingwood where she was repaired, 29 plates at the bow having to be replaced. Her place on the Owen Sound-Fort William run was taken by the Northern Navigation Co.'s str. Majestic.

The People's Ferry Co. of Detroit, Windsor and Sandwich, Ont., and Delray, Mich., has been incorporated in Detroit, Mich., with a capital of \$25,000. The officers are: President, W. Livingstone, Detroit; Vice-President, J. L. Murphy, Windsor, Ont.; General Manager, C. L. Parker, Detroit. The Co. has purchased the ferry steamer Luna, and has commenced operating between Detroit, Mich., and Sandwich, Ont.

The Algoma Navigation Co. (Ltd.), operating the Georgian Bay-Soo line from Owen Sound, is advertising in the U.S. for a fast side or stern-wheel steamer of the following dimensions: length, 200 ft.; breadth, 42 ft.; if a side-wheel steamer; draught, 8½ ft.; and having a speed of 16 or 18 miles an hour. It is required that the vessel have at least 75 state rooms. A stern-wheel steamer operating on Lake Huron would be somewhat of a novelty.

The Muskoka Navigation Co. (Ltd.) has elected the following directors: President, A. P. Cockburn; Vice-President and Secretary, H. C. McLean; other directors, S. Barker, M.P., H. McLaren, R. A. Lucas, Hamilton; F. J. Phillips, Toronto; M. S. Wilson, Dundas, and G. Homer, Gravenhurst. During the winter the hotel on Lake Rosseau, opened last year, was completed, the total cost being stated as \$160,000. I. D. Crawford has been re-engaged as manager.

The U.S. lock at Sault Ste. Marie, Mich., was blocked from June 5 to 11, owing to a breakdown of the railway bridge, and the traffic was handled through the Canadian canal. The Marine Record says: "The one lock on the Canadian side took care of the entire Lake Superior traffic during the interval, and as well as possible, for which convenience lake interests are enormously indebted to our Canadian cousins, as represented by the Dominion government."

The following notice respecting the Welland canal is of importance: "Vessels using the canal between Port Colborne lock and Humberstone must be particularly careful this spring, as the deep water channel is very narrow. The eastern half of the canal is entire-

ly blocked, and only a narrow channel on the west side is at present available. Use the west channel of Stonebridge and cross over to the new lock just below the railway bridge. The channel is buoyed. Vessels drawing over 13½ ft. go at their own risk, if allowed to go at all."

The Huntsville, Lake of Bays & Lake Simcoe Navigation Co. has been incorporated under the Ontario Companies' Act, with G. F. Marsh, W. Duperow, Huntsville; W. H. Patton, E. A. Taylor and E. J. B. Duncan, Toronto, as incorporators, with a capital of \$100,000, to acquire the business carried on by G. F. Marsh as the Huntsville and Lake of Bays Navigation Co., to carry on a general navigation business, hotels, boarding houses, etc., to lay out summer resorts, and to hold shares in any other similar company. Head office Huntsville.

The St. Clair and Erie Ship Canal Co., which proposes to construct a canal from Lake St. Clair to Lake Erie, described on pg. 79 of our Feb. issue, was granted at the last session of the Dominion Parliament an extension of time for two years, within which the work is to be commenced, and of five years within which it is to be completed. An application for an act to incorporate J. McCarthy, J. T. R. Laurendeau, and A. Terroux, Montreal, and G. P. Magann, Toronto, under the title of the Huron and Erie Canal Co. was among the measures dropped at the close of the session.

The Northern Navigation Co. of Ontario has issued an additional 2,800 shares of capital stock of the par value of \$100 a share, amounting to \$280,000, the issue being at \$110, a premium of 10%. The proceeds are to be devoted to the payment of the balance of the stock of the Northwest Transportation Co., recently purchased by the N. N. Co., which now owns the entire stock, business, etc., of the N.W.T. Co., including the str. United Empire and Monarch, and the Huronic, recently completed. The new stock was offered to shareholders of record of May 31, in the proportion of 1 share of new stock to each 2 shares of old stock.

The St. Lawrence Terminal Co., Ltd., has been incorporated under the Ontario Companies Act, with G. S. Lynch-Staunton, A. O'Heir, C. S. Scott, Miss E. Gillies, of Hamilton, and J. H. Hoyt, Cleveland, Ohio, as incorporators, with a capital of \$100,000 to carry on a general navigation business. It is understood that the Co. has been formed in connection with the Great Lakes and St. Lawrence Navigation Co., of Duluth, Minn., of which A. B. Wolvin is the head, and represents the Canadian end of the undertaking, including the projected elevator at Quebec, as well as the floating elevator and tugs and barges recently acquired. The capital is \$100,000, which is all said to have been subscribed and paid up. The directors are likely to include: A. B. Wolvin, Duluth, Minn.; J. H. Hoyt, Cleveland, Ohio; E. Smith, Buffalo, N.Y.; G. T. Smith and J. W. Norcross, Quebec.

The Lake Erie Excursion Co., with headquarters at Buffalo, N.Y., operating excursion steamers on Lake Erie between Buffalo, N.Y., and Crystal Beach, Ont., has been registered in Ontario as an extra-provincial company, its attorney being its General Manager, J. E. Rebstock, Crystal Beach. The Co. has purchased the paddle-wheel str. Cambria from Dr. B. Nesbitt, M.L.A. The Cambria was originally the Champion, and was built at Levis, Que., 1887, her port of registry being Port Arthur. In 1888 she sank in Owen Sound harbor, and on being raised was renamed the Cambria, and for some time was run in connection with the Carmona from Owen Sound to Sault Ste.

Marie. Later on she ran along the Lake Huron shore from Detroit; from Toronto to the Thousand Islands, and from Toronto to Oswego and Charlotte, N.Y., and last year was unemployed. While being taken through the Welland Canal to Lake Erie, where her new owners purposed practically rebuilding her, she went ashore near Reid's Island. She will be stripped of her engines and fixtures, and broken up.

The Little Red Book for 1902 has recently been published by the Marine Review, Cleveland, Ohio. It contains in concise and convenient form for reference a list of about 2,000 vessels engaged in trading on the Great Lakes, arranged not only alphabetically, but the vessels of each owner or company are arranged, with their captains and engineers, under the name of the firm or company. There are 303 companies or owners listed, of which 22 are Canadian with 118 vessels, as follows: Algoma Central and Hudson's Bay Ry. Co., 10; Calvin Co., Garden Island, Ont.,

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Steamer "Urania."
Between Pt. Stanley and Cleveland.

Leave Pt. Stanley	Arrive Cleveland
Tuesdays } at 11.00 p.m.	Wednesd's } at 6.00 a.m.
Thursdays }	Fridays }
Saturdays at 11.00 a.m.	Saturdays at 5.00 p.m.
Leave Cleveland	Arrive Pt. Stanley
Mondays } at 10.00 p.m.	Tuesdays }
Wednesd's }	Thursdays }
Fridays }	Saturdays }

Between Rondeau and Cleveland.

Leave Cleveland	Arrive Rondeau
Mondays } at 8.00 a.m.	Mondays } at 1.30 p.m.
Wednesd's }	Wednesd's }
Fridays }	Fridays }
Saturdays at 6.00 p.m.	Saturdays at 11.30 p.m.
Leave Rondeau	Arrive Cleveland
Sundays at 11.30 p.m.	Mondays at 6 a.m.
Mondays } at 4.00 p.m.	Mondays }
Wednesd's }	Wednesd's }
Fridays }	Fridays }

NOTE.—There is no train connection with steamer to and from Rondeau on Sundays.

Route open about June 15th.

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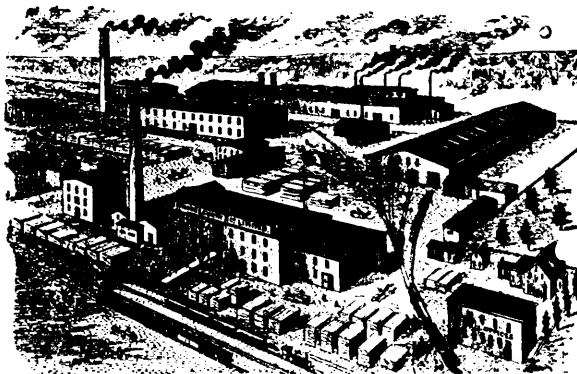
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10; Canada Atlantic Transit Co., 5; C.P.R., Owen Sound, Ont., 3; Collins Bay Rafting and Forwarding Co., Kingston, Ont., 3; J. and T. Conlon, Thorold, Ont., 2; Deseronto Navigation Co., 9; Fairgrieve & Co., Hamilton, Ont., 1; Lake Ontario and Bay of Quinte Steamboat Co., Kingston, Ont., 2; R.O. and A. B. McKay, Hamilton, 3; Matthews Line, Toronto, 4; Merchants' Line, Montreal, 2; Midland Navigation Co., Midland, Ont., 1; Midland Towing and Wrecking Co., Midland, Ont., 5; J. B. Miller, Toronto, 1; Montreal Transportation Co., 15; Niagara River Line, Toronto, 4; Northern Navigation Co. of Ontario, 7; Northwest Transportation Co., Sarnia, Ont., 3; Richelieu and Ontario Navigation Co., Montreal, 24; St. Lawrence and Chicago Steam Navigation Co., Toronto, 3; Sylvester Bros., Toronto, 1.

Manitoba and the Northwest Territories.

It is reported that a couple of steamers will be built at Lac du Bonnet this season, for passenger trade on the Winnipeg river.

The Dominion Parliament at its recent session voted \$22,000 to provide a dredge and a self-propelling snag boat for the Red and Assiniboine rivers.

The str. Petrel, trading on Lake Manitoba, has been given a thorough overhauling at Westbourne, and has been refitted for the accommodation of passengers.

The promoters of a scheme for the construction of a canal from Lake Superior to the Rocky Mountains for which notice for application for incorporation was given, did not place their proposition before the Dominion Parliament at its recent session.

The Peace River Roman Catholic mission's steamers and machinery have been transported to Athabasca landing. The consignment weighed 39,000 lbs., and consisted of: 1 steamer 60 ft. by 12 ft. in the "knock down," with 2 boilers and machinery complete; 1 launch 27 ft. by 6 ft., with machinery complete; and the machinery for a launch for which the hull has been built at Fort Chipewyan.

B. C. and Pacific Coast Shipping.

Ross & Howard propose, according to press reports, to construct a marine railway at Vancouver, B.C.

River traffic between Whitehorse and Dawson was opened May 18 when the first steamers arrived at the Yukon capital.

The C.P.R. str. Empress of Japan was damaged in Vancouver harbor, June 3, by being run into by a Japanese steamer.

The new str. Mount Royal, for the Hudson's Bay Co.'s Skeena river service, was given a trial trip at Vancouver, June 7.

A model has been completed for six new vessels of 1,000 tons each, to be built this year for the lumber trade at Moodyville, B.C.

Giggy Bros. are reported to be building a flat-bottomed, sternwheel steamer at Skagway, Alaska, for service on the Chilkat river.

The owners of the str. Blonde have been fined \$75 and costs by the Vancouver police magistrate for carrying passengers without being licensed.

The Canadian-Australian line str. Moana made a trip from Sydney, N.S.W., to Vancouver, B.C., recently in the record time of 22 days 10 hours 30 min.

The Canada-Australia line of steamships has decided to place an additional vessel for freight on the line during the summer to meet the call for extra accommodation created since

the steamers recommenced calling at Suva, Fiji.

The Sidney and Nanaimo Transportation Co. (Ltd.) has been incorporated under the B.C. Companies Act with a capital of \$100,000 to carry on a general navigation business, and to purchase the str. Iroquois and Strathcona.

The Klondike Mines Ry. Co. will, it is reported, build 20 barges with a capacity of 100 tons each, and 30 or 40 smaller barges at Whitehorse, to transport material from Whitehorse to Dawson for the construction of the railway.

The Revelstoke Navigation Co.'s str. Revelstoke arrived at Revelstoke, May 23, from Nakusp, where she was built. She will trade to La Porte and other points in the Big Bend district. Her engines were built by the Polson Iron Works, Toronto.

The C.P. Navigation Co. was at the recent session of the Dominion Parliament voted \$12,500 for a service between Victoria, Vancouver, waypoints and Skagway, and \$2,500 for a service between Victoria and the west coast of Vancouver island.

The Vancouver Ship Yard (Ltd.) has been incorporated under the B.C. Companies' Act, with a capital of \$20,000, for the purpose of acquiring the boat building business of W. Watts, to construct a marine railway, and to engage in a general shipbuilding business at Vancouver.

The Pacific Coast Steamship Co. is reported to have bought the steamers Mainlander and North Pacific, trading between Puget sound ports and Vancouver, B.C., and the Co. is also negotiating for the purchase of the steamers trading between Seattle, Wash., and Victoria, B.C.

A rate war has been started from Puget sound ports to Skagway. The Alaska Steamship Association declined to admit the Pacific Clipper line into the Association, and the White Pass and Yukon Ry. declined to give through rates, consequently the P.C. Line is selling tickets to Skagway at cut rates.

The engineers in the employ of the White Pass and Yukon Ry. Co.'s steamer service on the river have an engagement for a season of six months, and are paid \$1,500 for the first engineer, and \$1,000 for the second; overtime to be paid at the rate of \$250 a month, dating from May 25, until their return to Vancouver, with passage out and home.

The Yukon river improvements have been recommenced at Lake Laberge. It was found that to confine the water into a regular channel it was necessary to construct three dams. The first of these is 1,800 ft. long, the second 400 and the third 2,430. Of this work 610 ft. of the first, all of the second and 1,080 ft. of the third have been completed, leaving 2,090 ft. which is being done this year.

The C.P. Navigation Co. is having built at the B.C. marine railway, Esquimalt, B.C., a steamer for the coast service of the following dimensions; length, 215 ft.; breadth, 36 ft.; depth of lower hold, 14 ft.; between decks, 8 ft. She will be fitted with triple expansion engines, driving a single screw, and is calculated to make 12 knots an hour. She is expected to be ready for service in Mar., 1903.

The str. North Star, which for a number of years plied on the Kootenay river between Jennings, Mont., and Fort Steele, B.C., has been moved from the Kootenay to the Columbia river, through the abandoned canal. The locks which were too short, had to be torn out, and temporary locks were built up with sacks of earth to get the steamer through. The North Star will run down the Columbia to Golden.

The C.P. Navigation Co.'s steel steamer, now under construction at Newcastle-on-

Tyne, Eng., will, it is reported, have a draft of 14 ft., and will be modelled on the lines of an ocean-going vessel. She will have three decks, and on the upper deck will be two observation rooms, one forward for ladies, and the other astern fitted as a smoking room. The steamer will be fitted with twin screws, driven by separate triple expansion engines of 6,000 h.p., giving a speed of 20 knots an hour. This steamer is for the Vancouver-Victoria route.

The Minister of Marine recently stated that the disposition of the amount voted for aids to navigation in B.C. had not been made, but it was proposed to send the Chief Engineer of the department to B.C. at an early date, to decide on the spot what additional aids are most urgently required. Three different routes need to be protected: (1) The route outside Vancouver island on the great circle route to Japan, principally for the safety of the C.P.R. steamers; (2) the inside routes to Ladysmith, and other coal shipping centres, for the protection of the large freight steamers now engaged in carrying coal to the U.S. and other places, a traffic that is rapidly increasing; (3) the coasting trade of B.C., largely increased by the rapid development of lumbering, fishing and mining industries, and Yukon trade in all the inlets and inside passages from the boundary line north to Fort Simpson.

The Victoria Shipmasters' Association of B.C. was formed Dec. 21, 1901, for the purpose of associating together all duly qualified shipmasters for mutual protection, to uphold the legitimate status of the profession, to create an authoritative tribunal for the speedy and equitable adjustment of matters affecting shipowners and mariners, to discuss all matters of interest affecting the shipping industry, and generally to act in harmony with shipowners and brokers for the promotion of shipping interests. The Association had at its organization 45 members, and is working in harmony with council no. 6 of the National Association of Marine Engineers of Canada. At a joint meeting a number of resolutions were passed under which the engineers will not take orders away from the home port except from the captains; that the captains favor the employment of association engineers on their steamers; that disagreements between captains and engineers shall be referred to the councils of the associations instead of to the employers; that the sliding scale code of signals be adopted on Yukon boats, and that sufficient notice be given by captains to engineers before landings are made. J. J. Martin is secretary of the Association.

Press reports state that a proposition will be made at the next session of the Dominion Parliament to sanction the return to Peterson and Tate of the \$50,000 deposited as security for the carrying out of the contract entered into by them in 1897 to put on a fast line of freight and passenger steamers between Canada and Great Britain.

The Minnetonka, one of the two steamers, each 448 ft. in length, built at Cleveland, Ohio, for the American Navigation Co., New York city, was successfully taken through the St. Lawrence canals in two sections, and is being joined together in the Levis, Que., drydock. The second vessel, the Minnewaska, was not so fortunate, one of the sections grounding in the river near Ogdensburg, N.Y. The two sections were lashed together, but were wrenched apart and the stern section went aground.

An act amending the coasting regulations was passed at the last session of the Dominion Parliament, the effect of which will be that after Sept. 1 foreign built vessels seeking

to engage in the coasting trade of Canada will be subject to a duty of 25% on the fair market value of the vessel, whether having a British registry or not. Under the law hitherto in operation a vessel could be purchased in the U.S. and by calling at St. John's, Nfld., could obtain a British registration, and be free to engage in the coasting trade in Canada.

The Dominion Government has approved of new regulations for the examination of masters and mates of steam ferry boats, which are now in force, and replace those of May 8, 1894. A man must be 19 years of age, and have been 2 years afloat, and must pass an examination in seamanship before he can obtain a mate's certificate, and must be 21 years

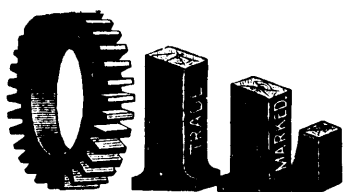
of age and 3 years afloat, one year as mate, and pass an examination in navigation and seamanship before he can obtain a master's certificate.

The report showing the progress made during the year ended June 30, 1901, in the survey of the tides and currents in Canadian waters, was presented at the recent session of the Dominion Parliament. Tidal observations were taken at Vancouver, B.C., and observations of the current at the First Narrows, forming the entrance to that harbor; additional tide observations were taken in Northumberland strait, N.B., and in Cabot strait, N.S.; and extended levels were taken in Sept. at the head of Cumberland basin, on

the Bay of Fundy. The results of these observations have been tabulated in the office and published.

The ship subsidy bill which has been passed by the U.S. Senate provides for the payment of certain subsidies to ocean-going vessels registered and built in the U.S. and trading exclusively to foreign ports, for five years, and an additional subsidy for vessels exceeding 1,000 tons register, built after the passing of the act. It is also provided that the subsidy shall not be paid to any foreign built vessel, and that no foreign built vessel purchased by U.S. citizens or companies shall be registered at U.S. ports. The bill is still before the House of Representatives.

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MANITOBA

The Government Crop Bulletin issued Dec. 14th, 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
Cattle..... 263,168
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.

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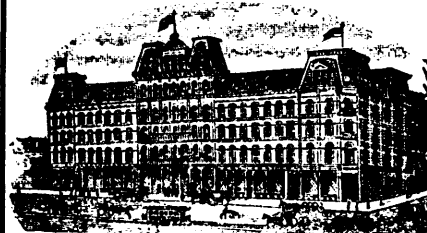
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At a recent meeting of the Royal Society of Canada in Toronto the following resolution was passed, stating that the society highly appreciated the work done by the Dominion Government for the benefit of navigation through the tidal survey department, representing that the further and speedy extension of the work is of the highest practical importance to shipping, and renewing its representations in favor of the establishment, under the Minister of Marine, of a hydrographic survey department, for the sea coasts, similar to those found necessary by other maritime nations. A committee was appointed to present the resolution to the Government.

The U.S. treasury department has advised the customs department that an inspection fee of \$8, and a tonnage tax of 8c. a ton has to be collected on Canadian vessels entering U.S. lake ports. This decision was given on the protest of the Niagara Navigation Co. against the charge of \$305 for inspecting its four steamers. There is no fee charged for inspecting U.S. vessels in Ontario, but the U.S. authorities instruct their officers to collect fees from Canadian vessels until "the Department is officially informed that the Dominion has enacted a similar reciprocal law in regard to inspection" as is in force in the U.S.

Among the Express Companies.

The Canadian Ex. Co. has closed its offices at Blackstock, Falkenberg and Forestville, Ont.

The Alaska Pacific Ex. Co.'s service on the Yukon river was opened for the season on June 1.

M. J. Lampkins, who for a number of years was an agent for the American Ex. Co., died at St. Catharines, Ont., recently.

The Dominion Ex. Co. has opened offices at Republic, Wash.; Bonanza, and Marysville, B.C., and Mt. Tremblant, Que.

The Alaska Pacific Ex. Co. has issued a tariff of rates from Dawson to Yukon river points between Dawson and St. Michael's.

The Dominion Ex. Co. has reduced its rates between points on the Crow's Nest and Boundary divisions of the C.P.R. from 10 to 30%.

The Canadian Ex. Co. has opened offices at Flat Lands, N.B., Allan's Mills, St. Louis, St. Octave and Valcartier, Que., and Glanworth and Stevensville, Ont.

The Canadian Ex. Co. has opened a route on the Midland Ry. of Nova Scotia, with offices at Brooklyn, Mira, Scotch Village, South Maitland and Windsor.

The Dominion Ex. Co. has moved into its new offices at the corner of George and Granville streets, St. John, N.B. The Halifax, N.S., office has been moved to 16 King st.

The British America Ex. Co. has closed the following offices: Blind River, Brient, Cutler, Garden River, Josephine, Kagawong, Port Findlay, Port Elgin, Spragge, Tremby, Ont.

The Montreal Park and Island Ry. Co. put in operation on its lines on June 2 a system of parcel delivery by special car. The service will be continued during the summer months.

The Dominion and U.S. Ex. Co.'s joint office arrangement at Detroit, Mich., was cancelled May 15, when the Dominion and Pacific Ex. Cos. established a joint city and station office there with T. H. McCort as joint agent.

The Dominion Express Co. has withdrawn its service from the lines of the Canadian Northern Ry., from Fort Frances, Ont., to Erwood, Sask.; and the Winnipegosis and Gilbert Plains branches, being succeeded by the Canadian Northern Express Co., June 1.

The Dominion Ex. Co. offered to transmit free of charge all money subscribed towards the relief of the suffering and distress occasioned by the recent colliery explosion at Fernie, B.C.

The Western Ex. Co., controlled by the Dominion Ex. Co., and operating on the Minneapolis, St. Paul, and Sault Ste. Marie Ry., and the Duluth, South Shore and Atlantic Ry., has closed its offices at Milwaukee, Wis., and Chicago, Ill. It has also withdrawn from its connection with the U.S. Ex. Co.

W. S. Stout, Vice-President and General Manager of the Dominion Ex. Co., left Montreal June 9, on the car Canada, on a trip to the Pacific coast, which he expected to occupy five or six weeks. He was accompanied by V. G. R. Vickers and W. Walsh, general agents at Montreal and Toronto, respectively.

The Dominion Ex. Co. has opened the following routes for the season of navigation:—Deseronto Navigation Co., between Deseronto, Northport, Belleville and Picton, Ont.; Niagara River Line, between Toronto, Niagara-on-the-Lake and Queenston, Ont.; Rainy River Navigation Co., between Rat Portage and Fort Frances, Ont.

The Alaska Pacific Ex. Co. has completed arrangements to operate on the steamers of the North-Western Commercial Co., the Centennial and Oregon, in addition to those of the Pacific Clipper Line, the Nome City and John S. Kimball, which affords good service for all express shipments to Cape Nome until the close of navigation late in Oct.

The Canadian Ex. Co. has removed its headquarters from St. Francois Xavier st., Montreal, to the new G.T.R. general office building on McGill st. The receiving offices are in the basement, the financial and money order departments on the first floor and the general offices on the fifth floor. A branch office has been opened at 136 St. James st., Montreal.

The Northern Pacific Express Co. withdrew its service from the Emerson, Morris, Brandon, Hartney, and Delta branches of the Canadian Northern Ry., and from Winnipeg to Beaver, June 1, being succeeded by the Canadian Northern Express Co. These lines are the branches of the Northern Pacific Ry. Co., in Manitoba, and are now leased to the Canadian Northern Ry. Co. The N. P. Express Co. will retain an office in Winnipeg.

Instructions issued May 10 by the Secretary of the U.S. Treasury, require that shippers' manifests be filed at the customs house for all shipments to non-contiguous territories of the U.S., i.e. Alaska, Hawaii and the Philippine islands. These instructions are important and positive, and all shipments transferred to the Alaska Pacific Ex. Co. at Seattle, destined to Alaska, must be accompanied by manifests or invoices showing contents and value, otherwise such shipments will be refused until regulations are complied with.

At the recent session of the Dominion Parliament G. Taylor, M.P., called attention to what he described as an abuse of the postal system, the post office, he said, practically doing an express business. The Postmaster-General, in reply, stated that public opinion would not support any proposal to restrict the use of the mails for postal matter only; the carrying of small parcels was inaugurated a number of years ago and was popular, and every precaution was taken in order not to delay the delivery of letters because of the parcels.

The Canadian Northern Ex. Co. was incorporated at the last session of the Dominion Parliament with W. Mackenzie, D. D. Mann, Z. A. Lash, K.C., E. W. McNeill, Toronto, and R. J. Mackenzie, Winnipeg, as incorporators, to carry on a general express business. The Co. commenced operations on the Canadian

Northern Ry. June 1. The officials of the railway company are for the present acting for the C.N. Ex. Co., and communications should be addressed to D. B. Hanna, General Superintendent, Winnipeg. Agents are located at the following points: Atikokan, Emo, Fort Frances, Fort William, Kasha-boiwe, Mine Centre, Port Arthur, Rainy River, Stanley Jct., Ont.; Beaudette, War-road, Minn.; Altamont, Baldur, Beaver, Bedford, Belmont, Brandon, Carman, Dauphin, Delta, Dunrea, Elgin, Eli, Emerson, Ethelbert, Gilbert Plains, Gladstone, Grand View, Hartney, Hilton, Homewood, Letellier, Makinak, Methven Jct., Miami, Minnitonas, Minto, Morris, Minette, Oakville, Plumas, Portage la Prairie, Roland, Rosebank, Rounthwaite, Somerset, Sperling, Sprague, Steinbach, Ste. Agathe, Ste. Anne, St. Boniface, St. Jean, Swan Lake, Swan River, Wawanesa, Winnipeg, Winnipegosis, Man.; Erwood, Sask.

The Dominion Ex. Co. is erecting a building at the Union Station, Toronto, as the premises it at present occupies there are required for additional baggage accommodation. The new building is located to the west of the present express room, and immediately north of the train shed. It measures 80 ft. from north to south and 84 ft. from east to west, with an alley way 13 ft. wide between it and the present express room. As at present planned, it will be two stories high, with walls sufficiently strong for an additional two stories, if such should be required. The parcel office will be located in the northwest corner, and the staircase to the offices on the upper floor on the northeast corner. A large vault is being placed on the south wall against the train shed. Receiving and shipping doors will be placed on all sides of the building. The upper floor will consist of one large room for clerks, with a private office near the staircase. The vault will be carried up for the use of this flat. Cloak rooms and lavatories will be placed on the east wall. The floor girders will be of steel, having long spans and as few columns as possible, which will also be of steel, in order to give as little obstruction as possible to the handling of goods on the ground floor. The exterior will be faced with red brick, and will harmonize, generally, in design, with the present buildings. The cost will be about \$20,000. The architects are Burke & Horwood.

Telegraph and Cable Matters.

The C.P.R. telegraph department is stringing an iron wire on the Lake Erie and Detroit River Ry. between St. Thomas and Walkerville, Ont., 130 miles.

The G.N.W. Telegraph Co. has laid a submarine cable from the mainland near Windermere, Ont., across Lake Rosseau to the Royal Muskoka hotel.

The C.P.R. telegraph department has ordered 200 tons no. 9 copper wire, or about 1,900 miles, from the Eugene F. Phillips Electrical Works, Montreal.

It is proposed to purchase the line belonging to the C.P.R. telegraph department between Papineauville and Cheneville, Que., and use it as a telephone line.

The Marconi Wireless Telegraph Co. is reported to have made arrangements with two telegraph companies in Canada for the inland transmission of messages received from the station in Cornwall, Eng., or from vessels at sea.

The Pacific Commercial Cable Co., which proposes to lay a cable from San Francisco, Cal., to the Philippine Islands, via Honolulu, has increased its capital from \$3,000,000 to \$12,000,000. The first section of the cable will, it is reported, be laid this year.

The G.N.W. Telegraph Co.'s branch at the Montreal stock exchange is now working with

the Boston stock exchange over a new copper wire. The wire is of hard drawn copper, 270 pounds to the mile, the standard for telegraph purposes, and will be worked duplex.

A cable will be laid by the Department of Public Works between Anticosti and the Magdalen islands, 116 miles, this year. The cable will be manufactured in England and brought out on the Newfield, one of the new vessels being built for the Government in Paisley, Scotland.

The C.P.R. telegraph department is stringing a no. 9 copper wire between Montreal and St. John, N.B., and will also improve its connection between Montreal and Sault Ste. Marie, Ont., by adding a copper wire. These lines will be strung out of the 200 tons of wire recently ordered.

The G.T.R. Co. has increased the minimum pay of its telegraphers and agents by \$2 a month and \$5 a month for relay agents. Agents on branch lines who work overtime to meet trains are given \$1.50 a month increase; and overtime to others is increased from 15c. to 20c. an hour.

The C.P.R. telegraph department has completed stringing a no. 9 copper wire between Sydney and Halifax, N.S., in place of an iron one. This is the first copper wire strung by the Co. in Nova Scotia, and is one of the lines

for which an order was placed for 200 tons of wire, sufficient for 1,900 miles.

The C.P.R. telegraph operators recently asked for a minimum monthly wage of \$53. After some negotiations the Co. offered an increase of a smaller figure which was accepted, and the details of the settlement are being worked out. The amount of the increase has not been made public.

A fourth telegraph line will probably be completed into Nelson, B.C., this year. J. Wilson, Superintendent of the Pacific division of the C.P.R. telegraph department, states that the new line will extend from Kaslo to Lardo, thence along the railway now being completed to the head of Arrow Lake.

The C.P.R. telegraph department has ascertained that the break in the second cable connecting Vancouver island with the mainland between Beechy bay and Port Angeles, is about 3½ miles from Beechy bay in deep water. The cable has been out of repair for two years, but will probably be repaired this year.

Arrangements have been completed with the Niagara Navigation Co. for the installation on its vessels of the necessary instruments for the transmission of messages by the Marconi system of wireless telegraphy. Press reports state that stations are to be built in

Toronto and on the other side of Lake Ontario in connection with this installation.

In accordance with the views expressed by members of the House of Commons at the recent session, the Minister of Public Works put into operation on June 1 a reduced tariff for messages on the Yukon line. The new rate is \$3 for 10 words instead of \$4.75 as heretofore. The C.P.R. telegraph department announced a corresponding reduction in its rates for messages through to Dawson and other points in the Yukon.

The Dominion Department of Public Works has under consideration tenders for the construction of a telegraph line from St. Peters to Main-à-Dieu, N.S., about 84 miles, and a further section of 6 miles on Scatari island; and a line from Gaberus to North Sydney, N.S., about 35 miles. D. H. Keeley, General Supt. of Government Telegraphs, says the extension to Scatari will complete the circuit of the coast of Cape Breton island. The 125 miles of line are to be completed within four months after the signing of the contract.

The buildings at Table Head, N.S., for the Marconi wireless telegraph station comprise four towers 210 ft. in height, 28 ft. square at the base and tapering to 10 ft. square at the top. Within the square formed by the four towers are the power house and operat-

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ing room. The former is 55 by 51 ft., and the latter 70 by 51 ft., and both are 20 ft. in height. A short distance away is the manager's residence 70 by 35 ft. The station was expected to be completed by the end of June. Rhodes, Curry & Co. (Ltd.) of Amherst, N.S., were the contractors. Two transformers and two dynamos have been constructed in Montreal for the station.

The following sections of the all-British Pacific cable have been laid and are in operation: New Zealand to Norfolk island, 750 miles; Queensland to Norfolk island, 850 miles; Norfolk island to Suva, Fiji, 1,000 miles. The cable steamer Anglia is now loading the section of the cable to be laid between Suva and Fanning island, and the 8,000 ton steamer Colonia, specially built for laying this cable, is on her way to Vancouver with the 3,500 miles of cable to be laid between Vancouver island and Fanning island. C. Reynolds, Chairman of the Pacific Cable Board, has been in Vancouver inspecting the work in progress at the station being constructed at Bainfield creek, and arranging for the work to be done on the arrival of the Colonia in August.

W. Mackenzie, D. D. Mann, Z. A. Lash, K.C., E. W. McNeill, Toronto, and R. J. Mackenzie, Winnipeg, were incorporated at the last session of the Dominion Parliament under the title of the Canadian Northern Telegraph Co., with a capital of \$5,000,000, to operate the telegraph lines on the Canadian Northern Ry. and elsewhere in Canada. Power was also sought to operate telephone lines, but the clause was struck out, and certain clauses were inserted protecting the rights of municipalities through which the lines will pass. The Co. started operating the lines along the railway June 1, the Canadian Northern Ry. Co.'s officers having charge. The Co.'s lines extend from Port Arthur, Ont., to Winnipeg, thence over the lines formerly owned by the Northern Pacific Ry. Co. in Manitoba; on the Canadian Northern Ry. to Erwood, and on the branches constructed last year in Manitoba, a distance of about 1,250 miles.

At the recent session of the Dominion Parliament the following sums were voted on capital account for construction of telegraph lines in British Columbia: Quesnel-Atlin line, \$107,000; Port Simpson-Hazleton line, \$25,100; and on income account: extension from Romaine to Belle Isle, on the north shore of the Gulf of St. Lawrence, \$25,000; from Golden station, B.C., on the C.P.R., to Windermere, with extension to Athalmer and Peterboro, \$1,620; Belle Isle, line between extreme ends of island, \$5,000; Byron island to Anticosti cable, etc., connection, \$25,000; extension of Magdalen islands telegraph system to Byron island by submarine cable, \$9,000; Mabou to Port Hawkesbury, N.S., \$5,600; Magdalen islands land lines, renewal of wiring, \$2,000; St. Peters to Louisburg and Scatari island, extension Gabarus to North Sydney, N.S., \$4,900; St. Peters to Canso—line and cable connection between Port Mulgrave and Port Hawkesbury, N.S., \$13,900; line from Ste. Anne du Saguenay to St. Charles, Que., \$1,000; line—St. Peters to Louisburg, with extension to Main à Dieu and Scatari Island lighthouse, \$2,250; line—Chicoutimi to St. Charles and St. Ambroise, Que., \$1,600; land line from St. Albert to Rivière qui Barre, Alta., \$1,500; Alberni-Clayoquot, B.C., line—to complete (revote \$2,500), \$3,500; branch from Port Simpson-Hazleton, B.C., main line to Aberdeen, \$1,500; 150-Mile House to Quesnel Forks and Horse Fly, B.C.—telegraph lines (revote \$2,818, lapsed, and revote \$2,450), \$7,500; Victoria and Cape Beale, B.C., telegraph line—renewal of poles, etc., \$2,500. The sum of \$140,000 was voted for the operating expenses of the Yukon telegraph system, and \$70,593.17 for other lines.

General Telephone Matters.

The Bell Telephone Co. is installing a metallic circuit in Perth, Ont.

The Bell Telephone Co. is repairing its cables connecting Windsor, Ont., and Detroit, Mich.

The Vernon and Nelson Telephone Co. is reported to be about to instal a metallic circuit in Trail, B.C.

The Bell Telephone Co. has refitted its exchange at North Augusta, Ont., which was destroyed by fire recently.

It is reported that a telephone line will shortly be strung between Lower Stewiacke and Chaswood, Halifax county, N.S.

The citizens of Fort William and Port Arthur, Ont., have voted in favor of the installation of a municipal telephone system.

The Bell Telephone Co. is reported to have decided to construct a metallic circuit between Winnipeg and Portage la Prairie, Man.

The Nova Scotia Telephone Co. is stringing a metallic circuit between New Glasgow and Pictou in addition to reconstructing the old line.

A private line, 18 miles in length, has been constructed connecting Harrietsville, Gladstone, Mossley, Avon and Putnam, near St. Thomas, Ont.

The Bell Telephone Co. has offered Colingwood, Ont., a free telephone for the municipal buildings, and \$90 a year, in return for an exclusive franchise.

The Bell Telephone Co. has presented a complete set of its latest type of apparatus for long distance transmission to the department of physics of Toronto University.

The Hammond Plains Telephone Co. has completed its line between Hammond Plains and Bedford, N.S., and has completed a connection with the Nova Scotia Telephone Co.'s line into Halifax.

The American Telegraph and Telephone Co. is reported to be about to construct a new through line via Syracuse, Brewerton, Watertown and Ogdensburg, N.Y., across the St. Lawrence into Canada.

The St. Martin's, N.S., Telephone Co. recently elected the following: President, W. Allan; vice-president, C. D. Truman; other directors: C. M. Bostwick, W. E. Skillen, and R. McLeod; secretary-treasurer, A. W. Macmickin.

The Prince Edward Island Telephone Co. has placed a new switchboard in operation in its central office at Summerside. The construction of an additional trunk line between Summerside and Charlottetown is under consideration.

The Parrsboro Shore Telephone Co. has placed a new line in operation to River Herbert, N.S., and is completing a line to Amherst. An exchange has been fitted up in Parrsboro, and the lines in the town are being extended. H. C. Jenks had charge of construction.

The Bell Telephone Co. expects to have in operation by the middle of July a long-distance line from Winnipeg to the International boundary at Gretna, with an extension from Rosenfeld to Morden, Man. At Gretna connection will be made with the long-distance lines of the U.S.

O. W. Rogers, promoter of telephone companies, says he intends to ask the Toronto city council for a franchise, and that he will agree to the insertion of clauses enabling the city to purchase the Co.'s property at its face capital, and preventing it selling out to the Bell Telephone Co.

A telephone line has been strung from Watson's Corners to McDonald's Corners, near

Perth, Ont. The construction was paid for by private subscription, and the line is to be handed over to the North American Telephone Co. on condition that the Co. will operate it and keep it in repair for 30 years.

The Rat Portage town council is considering plans to raise \$58,190.30, the amount at which the undertaking of the Citizens' Telephone and Electric Co. was valued by the arbitrators. The Co. offered its property to the council at \$55,000, but the offer was refused and the question referred to arbitration.

Tenders were recently invited for the installation of a telephone system in Gladstone, Man., with a connection of 16 miles with Plumas, where another exchange will be fitted up. The line will be owned by the Gladstone Electric Light and Telephone Co.; and E. S. Harrison, of Winnipeg, will be in charge of construction.

The Nova Scotia Telephone Co. has increased its rates for long distance lines from 35c. to 40c. per 100 miles, with a night rate of 25c., where the day rate would be 50c. or less, and one-half the day rate when the day rate would be over 50c. The Co. offers discounts of 5% on monthly accounts between \$3 and \$5; 10% between \$5 and \$10; 15% between \$10 and \$15; and 20% on \$15 and over.

The Spokane and B.C. Telephone Co. has commenced an action in the U.S. courts at Spokane, Wash., against the Pacific States Co., to vacate the order of dismissal of the old suit, and to reinstate that action. The P.S. Co. was originally known as the Inland Telephone and Telegraph Co., and the action was for \$205,000 damages for the alleged cutting of the S. and B.C.T. Co.'s wires.

The Windsor hotel, Montreal, is having a complete house telephone system installed by the Bell Telephone Co. The switchboard is placed in what was recently the parcel and cloak room, in which there are four public pay telephone boxes. There are 400 long distance telephones in the hotel, one in each room, connected with the hotel central. In the installation 100,000 ft. of wire and 500 ft. of cable have been used.

The Telephone Co. of La Petite Nation has been incorporated under the Quebec Companies Act, with Rev. V. Pelon, Rev. A. C. Guillaume, St. Emile de Suffolk; H. Lefebvre, H. Locas, Cheneville; A. Aubry, J. B. St. Pierre, Ripon; J. Bauline, N. Chene, A. Telmosse, St. Andre Avelin, as incorporators, to purchase the telegraph line belonging to the C.P.R. between Papineauville and Cheneville, Que., and operate it as a telephone line, and to purchase or construct other lines. The capital is \$5,000, and the head office is at Cheneville.

The New Brunswick Telephone Co. has reached an agreement with the St. John city council for the laying of its conduits underground. The Co. agrees to give the city all the telephones it may require, including those at present in use, but excluding the Silver Falls line, at \$20 a year; also that it will indemnify the city against all liability in connection with the installation and maintenance of the underground system, and that the privilege granted shall not be considered as exclusive or in any way prevent the city itself or any other company having the city's permission, using the streets for similar purposes as fully as the N.B.T. Co. may do.

The following particulars relating to telephone companies in Canada were recently given in the House of Commons:—No of companies, 55, of which 6 have been sold to the Bell Telephone Co., 1 sold to the Bellechasse Telephone Co., 1 amalgamated with the New Westminster and Burrard Inlet Telephone Co., and 3 were not operated in 1901, leaving 44 companies operating in 1902. The

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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.	

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- 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.
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- 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.
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Year.	Total Membership.	Benefits Paid.	Total Surplus.	Surplus per Capita.	Death Rate per 1,000.
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1882	1,134	12,068 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	3,642	26,576 99	29,802 42	8 18	7.76
1886	5,804	28,499 82	53,981 28	9 30	4.85
1887	7,811	59,014 67	81,384 41	10 44	5.78
1888	11,800	89,018 16	117,821 96	9 98	6.43
1889	17,349	116,787 82	188,130 36	10 84	5.85
1890	24,604	181,846 79	283,967 20	11 54	5.18
1891	32,303	261,436 21	408,798 20	12 65	6.40
1892	43,024	344,748 82	580,597 85	13 49	6.25
1893	54,484	392,185 93	868,857 89	15 76	5.47
1894	70,055	511,162 30	1,187,225 11	16 94	5.47
1895	86,521	685,000 18	1,580,733 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	4,433,364 44	24 81	6.53

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 Or Any Officer or Member of the Order.

number of offices is 1690, and the total mileage of wire is 113,294, of which 2,956 miles are in Ontario; 99,677 in Quebec; 3,215 in N.S.; 1,680 in N.B.; 400 in P.E.I.; 60 in N.W.T., and 5,308 in B.C. The Bell Telephone Co. has 94,314 miles of line in Quebec, Ontario and Manitoba, which mileage is all included in the figures given under Quebec.

The Bell Telephone Co. was authorized at the last session of the Dominion Parliament to increase its capital from \$5,000,000 to \$10,000,000. Sec. 3 of the act of 1892, under which the Co. could not increase its rates without the consent of the Government, was repealed, and other sections added at the instance of municipalities. The added clauses provide that upon application the Co. is compelled to instal phones of the latest improved design then in use in the locality, and to afford services to all premises where the instrument is within 200 ft. from highways where lines already exist. The rates for telephone service may be either increased or diminished by order of the Governor-in-Council upon application either of the Co. or municipality. In the event of any such application the Governor-in-Council has power to order a judicial enquiry into the merits, charging the expenses either to the municipality or Co. The control of rates includes not only telephone services, but tolls for local and long-distance messages. Acting on the powers given the Co. has decided to increase its capital from \$5,000,000 to \$6,000,000 by the issue of \$1,000,000 of new stock. Shareholders of record of May 22 are entitled to subscribe to one share for every five held at the allotment price of 125. This is equal to a bonus of about \$8 a share.

The Ottawa city council has under consideration two offers for a telephone service, one from the Bell Telephone Co. offering \$3,000 a year for a five-year franchise, and \$5,000 a year for a 10-year franchise. The Co. asks the right to place its poles where it pleases, but will accommodate the fire alarm telegraph on them without charge, and proposes to charge \$30 for instruments in residences and \$45 for those in places of business. The offers of O. W. Rogers, who proposes to give an independent service, set forth as follows: "The ordinary proposition for Ottawa is as follows: Population, 50,902; business telephones, 1,500; residence telephones, 1,500; business rates, \$15; residence rates, \$10; average length of lines, three-quarters of a mile; percentage in circuits, 50 cents. These rates are had in many places in the west, and can be had anywhere. In some places the farmers are serving themselves with \$5 telephones. In all present systems a metallic circuit should be had between every subscriber and the switchboard. Such are figured here. The Bell Co. in Ottawa has a small percentage of conduit system. Fifty per cent. conduits will take the poles out of half your town. Cost—Central equipment, \$5 a telephone, \$15,000; subscribers' equipment, \$10 a telephone, \$30,000; lines in conduits, \$9,000; lines on poles, \$45,000; buildings, \$5,000; total, \$185,000. At the prices quoted responsible companies will furnish the automatic equipment. These figures are standard, and given upon commercial experience and from tables of the report of an U.S. commission which gathered evidence upon the subject. Capitalization per phone \$61.67 (President Sise has said that the cost per phone to his company has grown to \$130, with an average rate to subscribers of \$29). Depreciation, 3% in conduits, 6% other plant, \$8,400. (These figures are based upon commercial experience.) Working expenses—Management, \$1,500; maintenance, \$6,000; clerical staff, \$3,000; heat, light, \$1,500; total, \$12,000. Revenue, \$37,500. Net profit (percentage of profit 9%), \$17,100. The automatic switchboard reduces the cost of operation, and as the exchange grows

larger the cost per subscriber is reduced instead of increased, as is the case where more girls or other help are required. If no better proposition were possible, then insist that it is your duty to move for a municipal telephone system, and upon these figures you can safely and surely move. This you can do yourselves." The offers have been referred to a committee, which at a recent meeting was considering the advisability of installing a municipal system.

Hamilton and Toronto Telephones.

The Hamilton, Ont., Herald says: More than a month has gone by since O. W. Rogers, the telephone man, was to come here and save Hamilton from the Bell telephone monopoly by organizing a company, installing a plant, and furnishing an up-to-date service, charging only \$15 for business telephones and \$10 for house telephones. Where is Oscar? Those who pinned their faith upon the voluble and volatile conversationalist feel like Mariana in the moated grange:

They only say, "The prospect's dreary—
He cometh not," they say.
They say, "We are weary, weary—
Oh, Oscar, step this way."

The Herald doesn't know why Oscar cometh not; but perhaps one reason may be that he has promised far more than he can perform, and knows it. While this journal has all along been doubtful of Mr. Rogers' ability to make his glowing predictions come true, it has not dogmatized on the subject, not being presumptuous enough to pose as an expert authority on the telephone business. But there is at least one expert and disinterested authority who lacks faith in Mr. Rogers' project. This person is F. J. Dommerque, M.E., who does Mr. Rogers the honor of making him and his Canadian telephone projects the subject of an article contributed to the Telephone Magazine and printed in the May number of that periodical. Let it be understood that the Telephone Magazine is not an organ of the Bell Telephone Co. It is devoted to the interests of the independent telephone companies, and is opposed to the Bell Co. And for these reasons the publication of Mr. Dommerque's article in the magazine is all the more significant. Mr. Dommerque has nothing to say about the figures quoted by Mr. Rogers to the Hamilton aldermen, but deals with the projector's promise to supply Toronto with 5,000 business and 6,000 house telephones, the rates to be \$18 and \$12 respectively. He makes an elaborate estimate of the cost of installing an automatic telephone equipment for 6,000 subscribers. To reprint his calculations in detail would require two or three columns of space; we will therefore quote only the conclusions at which he arrives. According to his estimates, the cost of conduit work would be \$162,000; of pole line work, \$143,679; wiring, \$72,000; total cost of wire plant, \$502,749. The depreciation on wire plant would amount to \$53,516.25 annually, or \$9 per subscriber, and the annual charge for interest would be \$30,164.94, or \$5 per subscriber. For switchboard equipment, \$125,000 would have to be provided, and for subscribers' stations \$66,000. The annual depreciation on account of switchboard installation and subscribers' stations would amount to \$19,100, or \$3.18 per subscriber, and the annual interest charge on this account to \$11,460, or \$1.91 per subscriber. The annual cost of operation is set down at \$30,000, or \$5 per subscriber; the current supply at \$1,500, or 25c. per subscriber; fixed annual charges, \$24,000, or \$4 per subscriber; rent, say \$1 per subscriber. Adding the various items of annual expense, according to Mr. Dommerque's estimate, we find they amount to \$29.34 per subscriber. Leaving off the cost

of operating, and assuming that an automatic switchboard will not cost any more than a manually operated switchboard, the total annual expense per subscriber would be \$24.34. But Mr. Dommerque adds: "Making, however, a comparison between an automatic system and a non-automatic system, the above figures cannot be taken into account, because we know that an automatic system is more expensive to maintain than a non-automatic system, and surely an automatic switchboard and subscribers' stations must be more expensive to build than a manually operative switchboard." In the light of such figures as these, it is not singular that Mr. Rogers finds it uphill work to organize companies in Canadian cities to supply these cities with telephone services at rates as low as \$10 and no higher than \$18.

Duplicate Telephone Systems.

The City Council of Spokane, Wash., by a vote of 7 to 3 has, after exhaustive enquiries from other cities in the U.S., refused a competitive telephone franchise to a local company. A feature of the hearing was the presentation of a petition from telephone subscribers, representing 600 telephones, protesting against a dual telephone system. Among the replies to enquiries sent out was the following letter from Cleveland, Ohio, which is a fair sample of the conditions in cities maintaining two systems. Those who are agitating for competition would do well to weigh the results before investing their money on the invitation of unknown promoters.

"Cleveland, Ohio, April 8, 1902.—L. F. Boyd, City Clerk, Spokane, Wash.—Dear Sir: Yours of March 28, to the Mayor, has been referred to me for reply. Very much could and has been said regarding the matter on both sides of the question. So far as Cleveland is concerned, the experiment of competition in the telephone business has been little less than a public calamity. Many of the telephone users are paying for two telephones instead of one. A comparison of the directories of the two companies shows over 5,000 subscribers who have instruments from both companies. Five thousand phones, at the lowest legal rate (\$36 a year) of the independent company would amount to \$180,000 a year. The properties of the syndicate which was operating the independent companies are in the hands of its creditors. I am unable to state at this time what the final settlement will develop. The independent company's franchise allows it \$48 a year for business phones, \$36 for residence or \$72 a year for two phones to the same subscriber. It has exchanges in other cities and towns with various rates. If any of your people are desirous of investing in so-called independent telephone properties, they may be able to purchase in this vicinity at a much less rate per phone than it would cost them to build in your city, and their chance of receiving a return on their investment would probably be as promising, judging from your statement of rates. I can understand why a manufacturer of telephone apparatus and supplies would directly or indirectly advocate the building of an independent exchange in your city. It would add to his business, and presumably to his profit, but I cannot conceive of any benefit that would occur to your people by the establishing of another exchange with your present rates. Both companies are giving good service, and always have. Briefly, the results of telephone competition in Cleveland have been as follows: The streets are encumbered with many poles that would be unnecessary if we had only one company; the present users of telephones are paying probably \$175,000 or \$200,000 a year more in rentals than they would with one system. There is the inconvenience of looking through two directories

instead of one to find subscribers' names; many small investors and some larger ones have made investments which have not up to the present time proved desirable, resulting in unpleasant combinations much to be regretted. GEO. M. HOAG, City Electrician."

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THOS. C. IRVING, Gen. Man. Western Canada, Toronto.

JOHN A. FULTON, Gen. Man. Eastern Canada, Montreal.

PURCHASING AGENTS' GUIDE.

(Continued from third page of Cover.)

Steel Buildings	Dominion Bridge Co.	Montreal.
Structural Metal Work	Dominion Bridge Co.	Montreal.
Switches	Canada Switch and Spring Co.	Montreal.
Switch Lamps	Hiram Piper	Montreal.
Switch Locks	N. P. Macmullan & Co.	Montreal.
Switch Targets	Acton Burrows Co.	Toronto.
Telegraph and Telephone Office Signs	Acton Burrows Co.	Toronto.
Tobacco and Cigars	The Hudson's Bay Company.	
Tollet Paper	The Hudson's Bay Company.	
Tools	Rice Lewis & Son.	Toronto.
Track Jacks	James Cooper	Montreal.
	Duff Manufacturing Co.	Allegheny, Pa.
	N. P. Macmullan & Co.	Montreal.
	W. H. C. Mussen & Co.	Montreal.
	A. O. Norton	Coaticook, Que.
Track Tools	F. E. Came	Montreal.
	Canada Switch and Spring Co.	Montreal.
	James Cooper	Montreal.
	Rice Lewis & Son.	Toronto.
	W. H. C. Mussen & Co.	Montreal.
Tramway Equipment	James Cooper	Montreal.
	J. J. Gartshore	Toronto.
Trucks (Electric Car)	Baldwin Locomotive Works	Philadelphia, Pa.
	Canada Switch and Spring Co.	Montreal.
Trucks (Warehouse and Express)	Rice Lewis & Son.	Toronto.
Turntables	Dominion Bridge Co.	Montreal.
Varnishes	McCaskill, Dougall & Co.	Montreal.
Vessels	Polson Iron Works	Toronto.
Waste	Rice Lewis & Son.	Toronto.
	N. L. Piper Ry. Supply Co.	Toronto.
	The Queen City Oil Co.	Toronto.
Wheelbarrows	James Cooper	Montreal.
	Rice Lewis & Son.	Toronto.
Window Blinds	The Hudson's Bay Company.	
Wines and Liquors	The Hudson's Bay Company.	
Wire & Wire Rope	Dominion Wire Rope Co.	Montreal.
	Rice Lewis & Son.	Toronto.
	W. H. C. Mussen & Co.	Montreal.
	The Wire and Cable Co.	Montreal.
Wire, Copper	E. F. Phillips Electrical Works, Ltd.	Montreal.
Wire, Electric	E. F. Phillips Electrical Works, Ltd.	Montreal.
	The Wire and Cable Co.	Montreal.
Wire, Insulated Copper	E. F. Phillips Electrical Works, Ltd.	Montreal.
Wire, Telegraph and Telephone	E. F. Phillips Electrical Works, Ltd.	Montreal.
	The Wire and Cable Co.	Montreal.
Yachts	Polson Iron Works	Toronto.

NIAGARA NAVIGATION CO., Limited.

NOTICE is hereby given that an interim dividend of four per cent. upon the capital stock of the company has this day been declared, and that the same will be payable at the office of the Company, 54 King Street East, Toronto, on the Second of July, 1902, to shareholders of record on the books of the Company on the 16th June, 1902.

The transfer books of the company will be closed from the Seventeenth to the Thirtieth of June, 1902, both days inclusive.

By order of the Board.

JOHN FOY, MANAGER.

Toronto, 13th June, 1902.

The Purchasing Agents' Guide

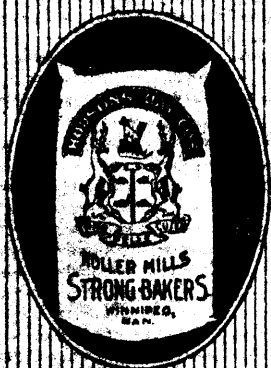
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Aerated Waters E. L. Drewry. Winnipeg.	Enameled Iron Signs Acton Burrows Co. Toronto.	Oakum Rice Lewis & Son. Toronto. The Hudson's Bay Company.
Air Brakes & Fittings Westinghouse Mfg. Co. Hamilton, Ont.	Engines, Stationary & Marine Polson Iron Works. Toronto.	Oils Galena-Signal Oil Co., Franklin, Pa., & Toronto. The Imperial Oil Company. The Queen City Oil Company. Toronto.
Alas E. L. Drewry. Winnipeg.	Engraving Acton Burrows Co. Toronto. Toronto Engraving Co. Toronto.	Office Signs Acton Burrows Co. Toronto.
Anchors Rice Lewis & Son. Toronto.	Expanded Metal Expanded Metal and Fireproofing Co. Toronto.	Packing Gutta Percha and Rubber Mfg. Co. Toronto.
Axles Rhodes, Curry & Co. Amherst, N.S.	Express Office Signs Acton Burrows Co. Toronto.	Pinch Bars The Hiram L. Piper Co. Montreal.
Babbit Rice Lewis & Son. Toronto.	Fencing Page Wire Fence Co. Walkerville, Ont.	Pipe Covering Mica Boiler Covering Co. Montreal.
Blankets & Bedding The Hudson's Bay Company.	Fireproofing Expanded Metal and Fireproofing Co. Toronto.	Plushes The Hudson's Bay Company.
Block & Tackle Dominion Wire Rope Co. Montreal. Rice Lewis & Son. Toronto.	Flags Rice Lewis & Son. Toronto. The Hudson's Bay Company.	Pneumatic Tools F. E. Came. Montreal. N. P. Macmullan & Co. Montreal.
Boat Fittings & Hardware Rice Lewis & Son. Toronto.	Foghorns Rice Lewis & Son. Toronto.	Porter E. L. Drewry. Winnipeg.
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Boilers Polson Iron Works. Toronto.	General Supplies The Hudson's Bay Company.	Printing The Hunter, Rose Co. Toronto. The Mail Job Printing Company. Toronto.
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Bolts Rice Lewis & Son. Toronto.	Groceries The Hudson's Bay Company.	Rails (New) James Cooper. Montreal. Drummond, McCall & Co. Montreal. J. J. Gartshore. Toronto. Rice Lewis & Son. Toronto.
Brake Beams Simplex Railway Appliance Co. Montreal.	Hardware Rice Lewis & Son. Toronto. The Hudson's Bay Company.	Rails (for relaying) James Cooper. Montreal. J. J. Gartshore. Toronto.
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Bridge Numbers Acton Burrows Co. Toronto.	Illustrations Acton Burrows Co. Toronto.	Rope Rice Lewis & Son. Toronto. The Hudson's Bay Company.
Bridges Dominion Bridge Co. Montreal.	Interlocking Plants Canada Switch and Spring Co. Montreal.	Rubber Goods Gutta Percha and Rubber Mfg. Co. of Toronto.
Buoy Lighting Safety Car Heating and Lighting Co., New York	Iron Rice Lewis & Son. Toronto.	Scales The Gurney Scale Company. Hamilton, Ont.
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Cables, Feeder E. F. Phillips Electrical Works, Ltd., Montreal.	Japans McCaskill, Dougall & Co. Montreal.	Semaphores The Hiram L. Piper Co. Montreal.
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Carpets The Hudson's Bay Company.	Launches Polson Iron Works. Toronto.	Ships Polson Iron Works. Toronto.
Car Pushers N. P. Macmullan & Co. Montreal.	Life Insurance Independent Order of Foresters. Toronto. Travelers' Insurance Co. Montreal.	Shovels James Cooper. Montreal. The Hudson's Bay Company. Rice Lewis & Son. Toronto.
Cars Rhodes, Curry & Co. Amherst, N.S.	Lights, Contractors and Wrecking James Cooper. Montreal. W. H. C. Mussen & Co. Montreal.	Side Bearings Simplex Railway Appliance Co. Montreal.
Car Wheels Rhodes, Curry & Co. Amherst, N.S.	Linoleum and Floor Coverings The Hudson's Bay Company.	Signal House Numbers Acton Burrows Co. Toronto.
Castings Canada Switch and Spring Co. Montreal. Rhodes, Curry & Co. Amherst, N.S.	Locomotives (Compressed Air) American Locomotive Co. New York, N.Y. Baldwin Locomotive Works. Philadelphia, Pa. N. P. Macmullan & Co. Montreal.	Signals The Hiram L. Piper Co. Montreal. N. L. Piper Railway Supply Co. Toronto.
Chains Rice Lewis & Son. Toronto.	Locomotives (Electric) American Locomotive Co. New York, N.Y. Baldwin Locomotive Works. Philadelphia, Pa. N. P. Macmullan & Co. Montreal.	Signs Acton Burrows Co. Toronto.
Concrete Mixers W. H. C. Mussen & Co. Montreal.	Locomotives (Steam) American Locomotive Co. New York, N.Y. Baldwin Locomotive Works. Philadelphia, Pa. Canadian Locomotive Co. Kingston, Ont. James Cooper. Montreal. N. P. Macmullan & Co. Montreal.	Snow Ploughs Rhodes, Curry & Co. Amherst, N.S.
Contractors' Plant M. Beatty & Sons. Welland, Ont. James Cooper. Montreal.	Locomotives (Rack) American Locomotive Co. New York, N.Y. Baldwin Locomotive Works. Philadelphia, Pa. N. P. Macmullan & Co. Montreal.	Splikes Rice Lewis & Son. Toronto.
Cross Arms, Top Pins & Side Blocks The Firstbrook Box Co. Toronto.	Machine Tools John Bertram & Sons Co. Dundas, Ont.	Springs Canada Switch and Spring Co. Montreal.
Curtains The Hudson's Bay Company.	Matches The Hudson's Bay Company.	Station Name Signs Acton Burrows Co. Toronto.
Cuts Acton Burrows Co. Toronto.	Milepost Numbers Acton Burrows Co. Toronto.	Steamboats Polson Iron Works. Toronto.
Ditchers M. Beatty & Sons. Welland, Ont.	Mohair The Hudson's Bay Company.	Steamboat Signs Acton Burrows Co. Toronto.
Derricks M. Beatty & Sons. Welland, Ont. James Cooper. Montreal.		Steam Couplers Safety Car Heating and Lighting Co., New York
Door Signs Acton Burrows Co. Toronto.		Steam Shovels M. Beatty & Sons. Welland, Ont. James Cooper. Montreal. W. H. C. Mussen & Co. Montreal.
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