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Vol. 1. No. 8.

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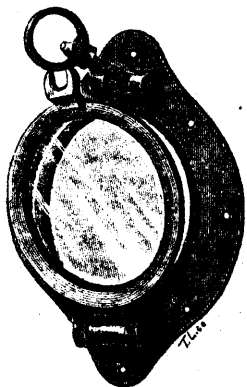
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VOL. 1., No. 8.

TORONTO, CANADA, OCTOBER, 1898.

\$1 A YEAR.

The C.P.R.'s Vice-President.

Thomas G. Shaughnessy, an excellent portrait of whom is given on this page, was born in Milwaukee, Wis., of Irish parentage, Oct. 6, 1853. He started in the railway service in the purchasing department of the Chicago, Milwaukee & St. Paul Ry. in 1869, subsequently becoming General Storekeeper of the line, a position he held when W. C. Van Horne left the Co.'s service in 1881 to become General Manager of the C.P.R. In 1882 Mr. Van Horne selected him as General Purchasing Agent of the C.P.R., with headquarters at Montreal. After occupying that position for some two years he became Assistant to the General Manager, & then in succession Assistant General Manager, Assistant President, & then a director & Vice-President. He is also director of a number of other companies in which the C.P.R. has interests.

In religious belief Mr. Shaughnessy is a Roman Catholic. He resides at 1149 Dorchester St., Montreal, & has as a summer residence at St. Patrick, Que., the house similarly occupied for so many years by Sir John Macdonald. He is a member of all the chief clubs in Canada.

A biographer has pertinently remarked of Mr. Shaughnessy:—"From the first day of his life as a railway man, there was no doubt in the minds of those who knew him that he would be a success. The qualities of his mind are thoroughly modern, & fit exactly the service of this greatest branch of modern public service. Ardent & untiring, he has the ability to do much work, & his shrewd common sense & prodigious memory enable him to guide that work to the very best advantage."

Manitoba & N. W. R.

In our July issue, pg. 126, we mentioned that the bonds of this Co. had been secured by a syndicate headed by E. B. Osler, M.P., Toronto, & gave a good many particulars about the line, its financial statistics, earnings, &c. In September we were enabled to state (pg. 178) that W. Hendrie, of Hamilton, was also a member of the syndicate, & that in addition to the bonds, the interests of the Allan family, of Montreal, had also been secured by the syndicate, giving them possession of the road. As we then foreshadowed, H. M. Allan, of Montreal, who was one of the receivers, has retired, & Mr. Osler's partner, A. M. Nanton, of Winnipeg, who was the other, has been appointed sole receiver. The old board, headed by A. Allan, President, & H. M. Allan, Vice-President, has retired, being succeeded by the following:—President, E. B. Osler; Vice-President, W. Hendrie; other directors, H. C. Hammond, R. A. Smith, W. D. Matthews, A. R. Creelman, Q.C., F. G. Osler, & G. C. Loveys. Messrs. Osler & Matthews are both C. P. R.

directors, Messrs. Hammond & Smith are members of the firm of Osler & Hammond, Mr. Creelman is a partner of Mr. Osler's brother, B. B., Mr. Loveys is the accountant of the McCarthy, Osler & Creelman firm, & F. G. Osler is E. B.'s son, & is in his office.

It is said that Mr. Osler & his friends have been quietly picking up the bonds of the M. & N. W. for several years past. In Jan. last, probably fearing that the Northern Pacific or some other line might step in ahead of them & secure control, they made an offer through Coates, Son & Co., of London, Eng. to pay 86 per cent. for each £100 certificate, on condition that they secured a clear majority of the bonds. Coates, Son & Co. did not



THOMAS G. SHAUGHNESSY.

disclose the names of the persons for whom they were acting, & this, of course, gave rise to all sorts of rumors. The bond-holders promptly accepted the offer, & about £490,000 of bonds out of a total of £540,000 were transferred. Then the Allan family had to be dealt with. They had sunk a very large amount in the road & owned practically all of the Co's capital stock, besides owning the rolling stock, which they held in the name of the Canadian Improvement Co. The Osler syndicate bought these interests out. It is announced that there will be no change in the general policy of the Co., & for the present at least no change in the officials. A despatch from Winnipeg recently announced a very extensive programme for improvements to the

property, which, we understand, was considerably exaggerated. We are officially informed that all the Co. intends to do this year is to make some very necessary repairs to the road-bed & to some bridges, including the placing of the bridge across the Assiniboine River at Millwood on a permanent foundation. This latter, however, may not be done before next spring. A couple of stalls will be added to the roundhouse at Minnedosa & the same at Portage la Prairie, & small stations will be built at Macdonald & Franklin. Thirty stock cars of the most modern pattern are to be added to the equipment.

We still adhere to the opinion expressed in our July issue, that this line will ultimately be either sold or leased to the C.P.R. & operated as a branch of that system. Certainly with Messrs. Osler & Matthews on the M. & N. W. board, the line is not likely to fall into anti-C.P.R. hands.

A meeting of the Winnipeg creditors of the Co. was held there recently, at which E. B. Osler was present & stated that there was a large sum due to H. M. Allan for working expenses, & that a considerable amount would be required for putting the road in proper repair, etc., which he claimed should be charged to working expenses. The result would be that the amount of money available in the Receiver's hands would only pay a comparatively small amount upon the creditor's claims. H. M. Allan, he stated, was selling out his claim for some 40c. on the dollar. The purchasers of the road were anxious to treat the local creditors in a much more liberal manner than outsiders, & as soon as the proposed act of the Dominion Parliament, which would be applied for next session, was granted to the purchasers to take over and consolidate all the interests in the property, the Receiver would pay the Winnipeg creditors the par amount of their claims without interest. This offer was unanimously accepted by the creditors present.

Rhodes, Curry & Co., Amherst, N.S., have an order to build 15 cattle cars for the Quebec & Lake St. John Ry.

A. G. Peden has resigned the auditorship of the Canada Atlantic, which he has held for 15 years, & will retire from railway service. He was with the old St. Lawrence & Ottawa at one time.

The Maritime Board of Trade recently considered the promotion of tourist travel in the Maritime Provinces, the subject being introduced by H. L. Chipman, agent of the Plant Line at Halifax, & adopted a resolution urging local boards to devote attention to the subject by the formation of associations for the purpose of advertising their localities, entertaining visitors, & securing the establishment & improvement of hotel accommodation necessary to keep pace with the increasing travel.

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Sir William to Sir Rivers.

A letter written by Sir Wm. Van Horne to Sir Rivers-Wilson, on the eve of the latter's departure from Canada, after his recent inspection trip, has been made public as follows:

MONTREAL, Sep. 1, 1898.

DEAR SIR RIVERS,—In order to guard against any possible misunderstanding, I beg leave to state in writing our position concerning the questions we have recently discussed. The two main questions between our respective companies are:—

- 1st. The existing demoralization of transcontinental & local passenger rates.
- 2nd. The future use of the G.T. line between Toronto & North Bay as a means of connection between the C.P. Co.'s lines in Middle & Southern Ontario & its main line.

The 1st question is of immediate & pressing importance to the G.T. & the C.P. Cos., & to all of the trunk & transcontinental lines as well.

The 2nd question is a domestic matter in which lines other than the G.T. and C.P. are not necessarily interested.

As regards the 1st question, the C.P. was indisputably the party attacked, & while we felt quite justified in our demand that rates & conditions ante bellum should be restored as a condition precedent to a meeting of the lines interested, looking to a new arrangement, we proposed later on that disinterested arbitrators should determine whether the rates & conditions should be restored in whole or in part, or not at all, as a condition precedent to such a meeting. The fairness of this was recognized by your own Co., which assented to it, as did all the other lines interested, save two of your western connections—the Great Northern & the Northern Pacific. So matters stood until, quite recently, a proposition from a disinterested source was made to the lines interested that the transcontinental passenger rates should be restored & the question of differentials to the C.P. submitted to arbitration, & pending such arbitration the C.P. should be allowed $\frac{1}{2}$ the differential it formerly enjoyed. We indicated our willingness to join the other lines in the restoration of rates on these conditions, & we have indicated to you our willingness to agree that as between the C.P. & G.T. all passenger rates should be restored at the same time to the ante bellum basis.

You have emphatically stated that the termination of the North Bay arrangement by the G. T. had no connection with or relating to the transcontinental rate question. Certainly the question of the future use of your North Bay line for our traffic has no relation to the transcontinental rate matter.

Whether or not we shall make use of your North Bay line for our Ontario traffic, instead of using our own longer line as we are now doing, or instead of making a new & shorter line of our own, we cannot permit anybody to determine for us. That is not a proper subject for arbitration. We may or may not be able to agree with you for the use of your line, but there is no reason why negotiations concerning this matter should in any way be complicated with or delay the settlement of the passenger rate difficulty.

Yours truly,

W. C. VAN HORNE, President.

Sir C. Rivers-Wilson, G.C.M.G., President
G. T. R. Co.

Commenting on the above on Oct. 15, when it was made public in England, the Financial Times said the C. P. R. was not so utterly unreasonable in its attitude as would be inferred from words uttered by Sir Rivers-Wilson in his recent speech.

The Financial News expressed the opinion that if Sir Wm. Van Horne refused much longer to arbitrate there would be a grave suspicion that he was swayed more by personal feeling than by real regard for the interests of C. P. R. shareholders.

A London cablegram of Oct. 17 said:—"Sir Rivers-Wilson will not let the C. P. R. side of the case, as set forth in Sir Wm. Van Horne's comments on the rate war, pass unnoticed. He is preparing a lengthy reply. All correspondence relating to the North Shore line & the rate war will be issued late to-night. In the reply it will be denied that the G. T. is responsible for the rate war. The blame is placed on the U. S. roads. The C. P. R. seeking to penalize the G. T. is declared to be neither equitable nor practical. Sir Rivers-Wilson will ask for a restoration of local rates now that the transcontinental difficulty is ended. Further, the G. T. President will offer to submit differences to arbitration, suggesting as the board of arbitration the Joint Traffic Association & ex-Attorney-General Olney of the U. S. to refer all matters in dispute."

Pacific Coast Passenger Rates.

Transcontinental passenger rates were restored by the C.P.R., Sep. 5, to about ante bellum figures, but it would appear that the war is likely to break out again at any moment. The C.P.R. Passenger Traffic Manager stated early in Oct. that the U.S. lines were again cutting rates, & now the Great Northern makes a similar charge against the C.P.R. General Passenger Agent Whitney, of the G.N., has addressed a letter to the Chairman of the Western Central, Trunk Line, East & New England Passenger Associations, charging that the C.P.R. Agent at Dyea, Alaska, had as late as Oct. 1, sold orders on Seattle for tickets from that point to Minneapolis for \$10, the lowest point reached during the war. The letter intimated that the Great Northern might be forced to protect its own interests. It is charged that with this low rate the C.P. secured all the miners returning from Alaska. It is said the Western U.S. lines will attempt to convince the Interstate Commerce Commission that the C.P.R. has not kept its promise to restore & maintain rates. The Great Northern & Northern Pacific may decide to make an open reduction in rates to meet those of the C.P. The Eastern lines & those reaching St. Paul hope the transcontinental rate war, which cost them millions of dollars, will not be renewed.

The C.P.R.'s Passenger Traffic Manager stated on Oct. 19 that he had sent in his reply to the Great Northern's charges to the interested associations. It was to the effect that the accuser was making mountains out of mole hills. The fact of the matter was, he said, that they had not had time to notify their Alaska agent of the restoration of rates. As soon as the news reached Dyea of the present condition of affairs the cause of the complaint would be removed.

The Ontario Rate War.

So far the C.P.R. shows no sign of restoring local rates in Ontario, & the Passenger Traffic Manager has publicly stated that so long, to use his own words, "as the G.T.R. shows a disposition to play into the hands of the U. S. lines, against the interests of the Canadian Northwest, by diverting traffic to the U.S., so long will the present form of punishment for the G.T.R. be maintained." With the restoration of western rates, the C.P. has to compete with the G.T. on even terms, so far as rates are concerned, in the Manitoba & Northwest business. This is something the C.P. has never had to do before, & it is undeniable that upon even terms the G.T., with its U.S. connections, is bound to secure some of the business that has hitherto gone to its rival. One result of the restoration of rates to the west is sure to be that the C.P. will lose some of its business there, & the same will occur in regard to Manitoba travel. Under these circumstances the C.P. is probably anxious to secure from the G.T. a differential on Manitoba business, & it is said in railway circles that it is withholding the restoration of rates in Ontario in order to force the G.T. to come to its terms.

Canadian Ticket Agents' Association.

The annual meeting held at Ottawa, Oct. 12 & 13, was well attended, over the usual average number being present, as well as a large number of travelling representatives of U.S. lines. The following officers were elected: President, W. E. Rispin, Chatham, Ont.; 1st Vice-President, S. O. Perry, St. Thomas, Ont.; 2nd Vice-President, G. Duncan, Quebec; 3rd Vice-President, W. H. C. McKay, St. John, N.B.; Sec.-Treas., E. de la Hooke, London, Ont.; Auditor, S. H. Palmer, St. Thomas, Ont.; Executive Committee, J. A. Macdonald, Arnprior, Ont.; W. H. Harper, Chatham, Ont.; C. E. Morgan, Hamilton, Ont.; T. Long, Port Hope, Ont.; A. Calder, Winnipeg.

It was decided to hold the next meeting at Winnipeg, Oct. 13, 1899. The following presentations were made: To W. T. Dockrill, Travelling Passenger Agent C.P.R., gold watch; to Alderman Black, Chairman of Reception Committee, gold-mounted umbrella; to J. A. Walsh, Assistant General Passenger Agent, Canada Atlantic, gold-mounted walking-stick, the two latter being for attentions during the meeting.

Washington County.—This line, which was described in our June issue, pg. 100, is almost completed. The branch to Eastport, Me., has been completed, giving connection with Calais, Me., & with the C.P.R. at St. Stephen, N.B. The rumor that this line is owned by Russell Sage, of New York, is denied, but it is expected that it will be amalgamated with his South Shore Line, running between St. Stephen & St. John, N.B. He controls a charter for a bridge over the St. Croix River, which would have to be built to connect the 2 lines. The J. P. McDonald Co. Calais, Me., are the contractors & H. J. Ensling is their Superintendent.

C.P.R. Freight Differentials.

The arbitrators on the question of whether the C.P.R. should be allowed a 10% differential on transcontinental freight rates, held a preliminary meeting at the Auditorium in Chicago, Oct. 11. J. W. Midgely, ex-Chairman of the Western Freight Association, represented the C.P.R., W. R. Day, Special Counsel to the Interstate Commerce Commission, represented the U.S. lines, & E. S. Washburn, President & General Manager of the Kansas City, Fort Scott & Memphis Ry., was the third arbitrator, chosen by the other two. It is said considerable friction arose over the question of whether the hearing should be an open one, & it was decided that it should be behind closed doors.

The arbitration opened Oct. 12, when R. Kerr, Traffic Manager of the C.P.R. lines west of Lake Superior, & Freight Traffic Manager Bosworth, presented the case for their Co. They argued that the C.P.R. labors under many disadvantages in laying down freight on the Pacific coast, particularly at San Francisco & at points farther south. The road has no direct inlet to the country south of Vancouver & Portland, Ore., & it is obliged to reload from cars to boats & break bulk in order to make shipments to points off its own rails. For these reasons it contends that it should be permitted to make lower rates than competitors which do not labor under such disadvantages.

Third Vice-President Stubbs, of the Southern Pacific, occupied the whole of Oct. 13 & part of Oct. 14 in stating the case for the U.S. lines. He said that at first the C.P.R. might have labored under serious disadvantages as compared with its U.S. competitors. It had no direct connections to the district south of its terminal on Puget Sound, its track was new & not in good condition, it could not make as fast time as the other roads, & it was new to the field. For that reason it was permitted to make lower rates than the U.S. lines, not by agreement, but by surference. Ever since its inauguration as a transcontinental line it had insisted upon making rates lower by 10% than its U.S. competitors. He argued that the disadvantages under which the C.P. line labored at first no longer are in evidence. He claimed that it operated on an equal basis with the roads of the U.S. If it is at a disadvantage as compared with the Southern Pacific for south Pacific coast traffic, the Southern Pacific is at an equal disadvantage in competing with it for north Pacific coast traffic. For these reasons he argued that the C.P.R. should be obliged to make as high rates for hauling freight from points in the U.S. to Pacific coast territory within the bounds of the U.S. as the U.S. lines make. He pointed out that while Congress makes every provision for domestic shipments in U.S. ships it permits a foreign railway to enter the U.S. & take freight destined to other points in the U.S. at rates which U.S. roads cannot make. Mr. Stubbs' argument was for the entire abolition of a differential in favor of the C.P., & an insistence that it should be compelled in freight business, as in passenger business, to make the same rates as are used by the roads of the U.S.

On Oct. 19 it was announced that the arbitrators had decided that the C.P.R. was not entitled to a differential, the decision being worded as follows:—

The undersigned, who were appointed arbitrators, under the following resolution, adopted at a meeting of interested lines, which convened at Brown's Palace Hotel, Denver, Colo., Aug. 22, 1898, viz.:

“Resolved, That provided the C.P.R. will join with the U.S. lines in a co-operative agreement designed to secure the maintenance of reasonable rates on the freight traffic interchanged with San Francisco, Cal., by other points in the U.S. & Canada, that the

lines here represented will submit to arbitration the question of whether the C.P.R. is or should be entitled to a differential under the rates made by the U.S. lines for the carriage of the freight in question, and if any differentials, what those differentials shall be. The board of arbitration to consist of 3 members, 1 to be selected by the C.P.R., 1 to be selected by the American lines interested, they 2 to select a 3rd, & that the decision of 2 members of said board of arbitration shall be final, conclusive & binding upon all.”

After hearing the evidence & arguments of the interested parties, & having duly considered the same, respectfully submit their decision as follows:—The C.P.R. is not nor should it be entitled to a differential under the rates made by the U.S. lines for the carriage of the freight in question.

EDW. S. WASHBURN, W. A. DAY.

I do not concur in the above conclusion.

J. W. MIDGLEY.

THE C.P.R.'S POSITION.

On Oct. 21 Vice-President Shaughnessy made the following statement in regard to the decision:—“The arbitrators have rendered a decision adverse to the C.P.R., but we are told that the decision is based upon a technical construction of the language of the resolution that purported to describe the question which was to be left to arbitration. That resolution, after reciting certain provisions, reads:—‘That the lines here represented will submit to arbitration the question of whether the C.P.R. is, or should be, entitled to a differential under the rates made by the U.S. lines for the carriage of the freight in question.’ It appears that the arbitrators held that, under this language, the only question they could try was whether the C.P.R. had an inherent title to a differential, & that they could not go into the question as to whether, under existing conditions in accordance with railway practice on this continent, the Vancouver route should be considered a differential. The Co.'s Traffic Manager, who attended the Denver meeting at which the resolution was passed, clearly understood that it contemplated a bona fide submission to arbitration of the material business question, & not merely a technical philological interpretation of the word ‘entitled.’ No sane man would claim that the C.P.R., or any other railway, had an inherent title to any differential.

“If we are correctly informed as to the basis of the arbitrators' decision the question must be submitted again in such form as to obtain a decision on the broad merits.

Intercolonial West Bound Freight.

It was recently stated in Montreal that arrangements had been made whereby all west bound through freight originating on the Government system would be turned over to the G. T. R. at Montreal, instead of being given to the C. P. R. at St. John, N. B., as was heretofore the case, & that in return for this the G. T. R. would give the I. C. R. its share of freight bound east, more especially export cargoes of grain & the like.

Enquiry at Intercolonial headquarters fails to elicit any further information than that “part of the statement is true & part is not.”

The Traffic Manager of the G. T. R. informs us that the statement is not altogether correct, & that the facts are that the G.T.R.'s agreement with the Government system is based upon the ordinary railway principles of exchange, & contemplates that the Government line will take advantage of its long haul from the East to Montreal, & there exchange the traffic with the G.T.R., the latter agreeing to give the Government railway traffic at Montreal instead of hauling it to Chaudiere Jct., as was done in the past.

The U. S. Roadmasters Association.

At the annual meeting of this Association at Denver, Sept. 13 & 14, the following officers were elected: President, T. Hickey, Michigan Central; 1st Vice-President, J. M. Meade, P.R.R.; 2nd Vice-President, C. B. Teller, D. L. & G.; Sec.-Treas., J. B. Dickson, C. & N. W. President Hickey is Roadmaster of the M.C.R., at St. Thomas, Ont. The Times of that place says he is a native of Ireland & came to America with his parents when 7 years old, settling at Angona, Indiana. In 1872 he took his spade in hand & began to transfer gravel & real estate from one point to another. At night he found rest in one of the sleeping cars attached to a work train, afterwards he became a section boss & was promoted to be a Lake Shore road train conductor. Not long afterward he secured a position as extra gang foreman on the M.C.R., then became Assistant Roadmaster & finally General Roadmaster, which position he has held ever since. He has been prominent in the history of the Roadmasters Association during the past 15 years.

I. C. R. Official Changes.

Since pgs. 204 & 205 of this issue, on which some appointments, &c., were announced, were printed, the following information has reached us.

General Freight Agent Wallace issued the following circular Oct. 19:—“W. Robinson has been transferred to Toronto as General Traveling Agent. W. G. Robertson has been appointed Division Freight Agent, St. John, N.B. His district will extend St. John to Moncton inclusive, north of Moncton to and including Eel River, east of Moncton to and including Spring Hill Jct. and Point du Chene Branch. D. A. Story has been appointed Division Freight Agent with headquarters at Halifax, N.S. His district will extend Halifax to Salt Springs inclusive, Truro to Sidney and North Sydney, and the Oxford, Pictou & Pictou Landing branches.”

Further particulars about Messrs. Robinson & Robertson will be found on pg. 205. Mr. Story was station agent at Halifax.

General Passenger Agent Lyons issued the following circular Oct. 21:—“H. A. Price, District Passenger Agent, Halifax, has been transferred to Montreal, with headquarters at 143 St. James St. Territory, Dalhousie and west. J. B. Lambkin, District Passenger Agent, Montreal, has been transferred to Halifax, N.S., with headquarters at 132 Hollis St. Territory, east of Dalhousie.”

It is said M. L. Tracey, Moncton, becomes Superintendent of car cleaning over the whole system.

Intercolonial Equipment.

Contracts for 3 postal & baggage cars, & 4 baggage cars, all 60 ft. long, have been awarded to Rhodes, Curry & Co., Amherst, N.S. A contract has also been let for 6 second-class sleeping cars. There are not any particularly new features on any of these cars.

The Railroad Car Journal stated in its October issue that a contract had been given the Wagner Palace Car Co. for 28 passenger cars. General Manager Pottinger informed us on Oct. 17 that this information was not correct.

Tenders have been asked for 15 consolidation locomotives, which will be modern in every respect, & conform to the best American practice. They will weigh, in working order 160,000 lbs., & have driving wheels 56 ins. diameter. One of them will be fitted with the Cleveland patent cylinder as a further experiment. Tender & engine truck wheels to be wrought iron; main driving

wheel, centre of steel, all others of cast iron or steeled cast iron. Axle boxes & cross heads of cast steel. Iron tender frames with heavy 10 in. channel beams. M.C.B. automatic couplers to be applied on both engine & tender. Toughened steel crank pins & piston rods. Steel cab. Westinghouse train signal. Muffled pop valves. Metallic packing all around, including air pump. Chime whistle. Double latch reversing lever.

It was recently telegraphed from Moncton that Mechanical Superintendent Joughins had sold to the Government road, through a Montreal agency, trucks for 400 freight cars, or that trucks of his invention were to be used on that number of cars, & that he would get a royalty on them. We have looked into this matter carefully, & are satisfied that there was no foundation for such a statement. Steel trucks are to be used, but not Mr. Joughins'. An order has been given to a foundry to make for trial use 10 pairs of trucks, of a pattern designed by Mr. Joughins. It is a pity that political papers cannot confine themselves to legitimate criticism of the policy adopted by the political head of the road without singling out permanent officials for attack. Mr. Joughins came to the I.C.R. with an excellent reputation, & it is most unfair that unfounded charges of this nature should be made against him.

Equipment Notes.

The Erie & Huron cars are being given an overhauling at the L. E. & D. R. R. shops at Walkerville, Ont.

The Manitoba & Northwestern Ry. is about to add to its equipment 30 stock cars of the most modern pattern.

The G.T.R. has started work at its Point St. Charles works, Montreal, on the 1st of 6 large modern locomotives. They will be practically the same as the Moguls recently purchased by the Co. for the lines west of the Detroit & St. Clair rivers, of which we gave a full description in our May issue, pg. 61, & an illustration in our June issue, pg. 89.

Sir Wm. Van Horne's Western Trip.

Sir Wm. Van Horne left Montreal Oct. 3, on his annual trip to the Pacific Coast, being accompanied by Principal Peterson, of McGill University; R. B. Angus, one of the C.P.R. directors, & W. W. Ogilvie, the flour mill owner. At Winnipeg the party was joined by E. B. Osler, M.P., another C.P.R. director, who had gone on a day or two ahead, in connection with matters relating to the purchase of the M. & N.W.R. by himself & associates. Western Manager Whyte met the President at Fort William & accompanied him to the Pacific Coast & back. The trip was made by special train, going over the short line from Montreal to Ottawa, thence by Fort William to Winnipeg. As usual, Sir Wm. travelled most of the way by daylight only, so as to see the whole of the lines. From Winnipeg a rapid run was made over the southwestern branches, the actual running time for the 410 miles being 9 hours & 15 minutes. On returning to Winnipeg from this run Sir Wm. said that the appearance of the country had undergone a great change in the past few years. The solitary farm-house of five years ago was now a village, & the village of a few years ago was now a town substantial & prosperous. There was plenty of wheat on all sides, but the farmers in many instances were late in stacking.

THE KETTLE RIVER RAILWAY.

The President & his party, as well as the Council of the Board of Trade, were entertained at luncheon at the Manitoba Club by A. M. Nanton, President of the Winnipeg Board of Trade, who, in proposing Sir William's health, alluded to the community of in-

terests that exists between the C.P.R. & the people of the west, & said that, owing to its geographical position, Winnipeg ought to secure the trade of the rich mining regions of British Columbia.

Sir William, replying, discussed the question of the trade of British Columbia, which he said belonged naturally to the merchants of Winnipeg, & not to the traders of Spokane. He thought the best means of insuring that trade to Winnipeg, was by shutting out U.S. railway competition in British Columbia, which would divert the smelting business south of the line & allow the Spokane merchants to secure the trade. Last session a Mr. Corbin applied to the Dominion Parliament for a charter to build a railway to do this very thing. Parliament had, however, fortunately, thought Sir William, refused the charter. The Winnipeg Board of Trade had helped the C.P.R. in its fight before Parliament to keep foreign competition out, & the Co. had succeeded. But the Corbin interest had passed into the hands of the Great Northern Ry. Co., & another application would be made to Parliament next session for the charter. He trusted the Winnipeg Board of Trade would again be willing to lend a helping hand to keep the road out, as it would be in the interests of the merchants to do so.

IN AN INTERVIEW AT WINNIPEG

Sir William stated that the road-bed east of there was in magnificent condition; improvements were being constantly made & the permanent way was never in so good a condition as at the present time. From Fort William west, preparations for a double track were being made, & all the bridges & culverts were being widened & strengthened with this end in view. The whole line was being gradually laid with 75-lb. steel rails, which were more than sufficiently strong for any strain that they would be subjected to.

As to improvements in Winnipeg he stated they were going on all the time. There were other needs more important for the present than a new station, & these were being attended to. Within a few years, however, he

ventured to say that this much-talked-of new station would become a reality, & when the Co. did decide to build one, it would be one of which Winnipeg would have no cause to be ashamed. It might become necessary to enlarge the present building to a size enabling it to answer more fully for present needs, & these alterations might possibly be made in the near future.

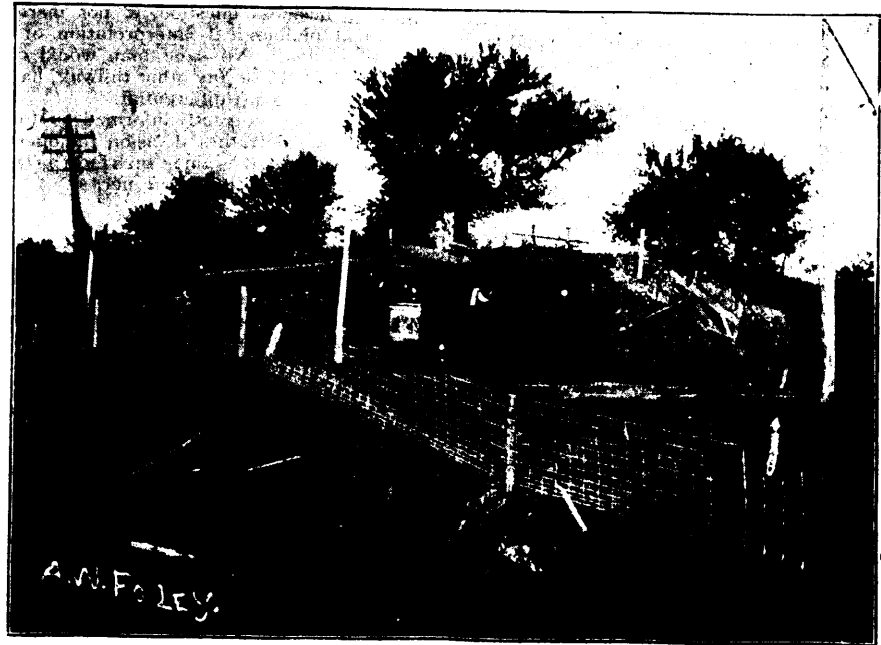
With regard to the fast 100-hour trans-continental service, of which so much was heard this summer, he said the time was not quite ripe for inaugurating it. Within a year he hoped the traffic would warrant such a service being put on. The roadway & rolling stock were quite equal to supplying such a service, or even one 28 hours faster; it was merely a question of volume of traffic.

From Winnipeg the party went direct to the Pacific Coast, spending some days

AT VANCOUVER & VICTORIA.

At the former place Sir William stated to an interviewer that the Co. would build a solid structure at New Westminster, & do what it could toward building up the city. Vancouver would soon have its handsome depot complete. The city had not had what could really be called a station before, & now it would have one that would not only be useful, but in addition, would be one of the finest buildings in the city. If Vancouver had pressed for a station some time back, another temporary building would have been put up. A good structure that would last 10 or 15 years, one that would have to do for several years yet, but not a really permanent depot. It was often the case that a city, by insisting on a new station before the Co. was ready to expend the money on it, only got another temporary structure, instead of a finer permanent building which would have been put up had it waited a year or two. When the Co. did build a depot, it tried to combine commodious & convenient premises with a handsome structure worthy of any city.

From the Coast the President & his party returned by way of Kootenay Lake & the Crow's Nest line, reaching Montreal Oct. 23.



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FINANCE, MEETINGS, &c.

The Grand Trunk's Semi-Annual.

In our Sept. issue we gave the Secretary's official notification of the result of the operations for the 1/2-year to June 30, since which the full report has reached us as follows:

The revenue statements & abstracts of working expenses are rendered on the amended basis adopted in the last 1/2-year's accounts. The accounts for the 1/2-year ended June 30, 1897, have been similarly adjusted for the purpose of comparison.

The following summary shows a comparison of the 1/2-year's revenue account with that of the corresponding 1/2-year, ended June 30, 1897:

June 30, '97.		June 30, '98.
£1,756,566	Gross receipts, as per account no. 7	£1,871,733 19 1
	Deduct—	
1,196,643	Working expenses, being at the rate of 66.46%, as compared with 68.12% in '97...	1,243,883 8 4
£559,923	Net Traffic receipts..	£627,850 10 9
	Add—	
14,469	Amount received from International Bridge Co....	12,930 12 9
5,856	Interest on Toledo, Saginaw, & Muskegon bonds.	5,253 11 11
3,087	Interest on bonds, &c., of Central Vermont Ry.....	3,087 10 8
65,102	Interest on securities of controlled lines acquired by the issue of G.T. 4% debenture stock.....	64,840 . 3
5,957	Balance of general interest account.....	16,709 14 6
£654,395	Net revenue receipts..	£730,672 . 10

Following are the net revenue charges for the half year:—

Rents (leased lines).....	£ 73,174 16 6
Interest on debenture stocks & bonds of the Co.....	431,771 18 8
Interest on debenture stock & bonds of lines consolidated with the G.T. Co....	80,648 16 5
Interest on Michigan Air Line bonds.....	7,750 . .
	£593,345 11 7
Amount advanced to Chicago & G.T. Co. under traffic agreements towards payment of interest on its bonds, 1/2-year to June 30, for which interest coupons are held.....	£ 8,392 1 4
Amount advanced to Detroit, Grand Haven, & Milwaukee Co., towards payment of interest on its bonds, under agreements, 1/2-year to June 30.....	22,282 9 4
	30,674 10 8
	£624,020 2 3
Leaving a surplus of.....	106,651 18 7
	£730,672 . 10

There was a balance at the credit of net revenue account on Dec. 31, '97, of £10,289 2s. 3d., of which \$50,000 or £10,273 19s. 5d. has been appropriated as the contribution for that 1/2-year towards the revenue proportion of the expenditure for the reconstruction of the Victoria Jubilee Bridge, leaving a balance of £15 2s. 10d. This amount, added to the surplus for the past 1/2-year of £106,651 18s. 7d., makes a total amount available for dividend of £106,667 1s. 5d.

The directors recommend the payment of the full 1/2-year's dividend on the 4% guaranteed stock, which will absorb £104,395 17s. 6d., leaving £2,271 3s. 11d., to be carried forward to the next 1/2-year's accounts.

The net revenue surplus for the 1/2-year ended June 30, '97, amounted to £2,708 12s. 10d. The result of the past 1/2-year's operations shows, therefore, an improvement of £103,943 5s. 9d.

The following table exhibits a comparison of the receipts for the 1/2-years ended June 30, '98 & '97:—

Description of Receipts.	1898.	1897.	Increase.	Decrease.
Passengers.....	£ 442,259	£ 467,915	£ 25,656	
Mails & express...	90,665	88,913	1,752	

Freight & live stock	1,285,819	1,186,549	99,270
Miscellaneous.....	52,991	13,189	39,802
	£1,871,734	£1,756,566	£115,168

The increase of £39,802 in miscellaneous receipts arises from rentals received from the C.P.R. Co. for use of the G.T. line between Hamilton & Toronto, from the Wabash Co. in respect of the running arrangements between Windsor & the Niagara Frontier; & from the Intercolonial Ry. for the use of the line between Ste. Rosalie & Montreal. The decrease of £25,656 in the passenger receipts is partly attributable to the running arrangements above mentioned, for which, however, a set off is obtained in the rentals paid by the several companies; while some portion of the decrease is the result of the reduction in local rates during the greater part of the half year.

Traffic Statistics.	1898.	1897.	Increase.	Decrease.
Passengers carried.....	3,009,641	2,948,309	61,332	
Average fare per passenger 2s. 11d. 3s. 2d.			2 1/2d.	
Tons of freight & live stock 4,437,449 4,049,878			387,571	
Average rate per ton.....	5s. 9 1/2d.	5s. 10 1/2d.	1d.	
Total earnings per train mile 51.32d. 50.65d.			0.67d.	

The average receipt per ton per mile on the entire freight business was 0.66 of a cent, compared with 0.65 of a cent in the corresponding 1/2-year.

The working expenses, including taxes, amounted in the 1/2-year to £1,243,883, or 66.46% of the gross receipts, as compared with £1,196,643 or 68.12%; an increase in amount of £47,240, but a decrease in the proportion to the gross receipts of 1.66%.

The following table exhibits a comparison of the revenue expenditure, including taxes, under the heads of the revised classification, for the 1/2-years ended June 30, '98 & '97:—

Description of Expenditure.	June 30, '98.	June 30, '97.	Increase.	Decrease.
Maintenance of Way and Structures	£186,986	£164,156	£22,830	—
Maintenance of Equipment.....	224,187	209,477	14,710	—
Conducting Transportation.....	769,673	758,326	11,352	—
General Expenses	50,717	51,184	—	467
Total.....	£1,231,568	£1,181,143	£50,425	—
Percentage of Gross Receipts..	65.80	67.24	—	1.44
Expenditure per train mile.....	33.76d.	34.06d.	—	0.30d.

The charge for taxes amounted to £12,315 compared with £15,500, a diminution of £3,185, in consequence of the appropriation of £3,082 in the corresponding 1/2-year on account of the "State of Maine Tax Suspense Account" being now unnecessary, that account having been finally closed on Dec. 31, '97.

The train mileage of the 1/2-year compares with that for the 1/2-year ended June 30, '97, as follows:—

Description.	June, '98.	June, '97.	Increase.	Decrease.
Passenger.....	3,069,188	2,984,677	84,511	
Freight.....	5,127,515	4,409,397	718,118	
Mixed trains...	557,120	929,578		372,458
Total.....	8,753,823	8,323,652	430,171	

The G. T. gross receipts for the 1/2-year show an increase of £115,168, or 6.56%; the working expenses, including taxes, an increase of £47,240, or 3.95%, & the train mileage an increase of 430,171, or 5.17%.

The working stock in service is as follows:—locomotives 811. First-class cars, ordinary, 372; dining 4; parlor 8, with compartments; smoking 35; baggage 27. Second class cars, ordinary, 149; immigrant sleeping, 11. Post office cars, ordinary, 19; with baggage & smoking compartment, 55. Baggage cars, ordinary, 163; with smoking compartment, 14. Horse boxes 2. Total passenger cars, 859. Box cars, brake vans 372; goods, 15,732. Cattle, 1,208; platform & coal 6,180. Total freight cars 23,492. Not used for traffic, auxiliary & ice scraper cars 101, snow

ploughs 69, dump cars 171, boarding cars 21, cinder cars 50, grand total 24,763. Of these the following are out of service: ordinary, 1st class 61, ordinary 2nd class 48, post office 5, horse boxes 2, brake vans 27, cattle cars 97, platform & coal 337, dump 85, total 106. No additions to the stock have been made at the expense of capital during the 1/2-year. Sixteen engines have been sold or broken up, & 20 new engines of modern type & increased capacity have been purchased on revenue account during the 1/2-year. There remained at June 30, '98, 16 engines in excess of the official stock. Three passenger cars, 500 thirty-ton box freight cars, & ten refrigerator cars have been provided at the expense of revenue, in part replacement of cars broken up. There remained out of service at June 30, '98, a balance of 23 cars in the passenger, & 4 cars in the freight equipment. At the end of the 1/2-year there was an amount of £27,440 3s. 10d. at the credit of the locomotive renewal fund, & of £58,102 11s. 11d. at the credit of the car renewal fund.

The charges for capital account for the 1/2 year amounted, less credits, to £93,944 8s. 7d., the chief items of expenditure being £53,194 8s. 9d., charged on account of the reconstruction of the Victoria Jubilee Bridge, & £39,158 9s. 6d. for the further equipment of engines & freight cars with air-brakes & automatic couplers, in compliance with the Safety Appliance Act.

Bonds of the Co. (Hamilton & North Western), amounting to £409,400, bearing 6% interest, matured on June last, of which £399,500 had been presented for payment, or exchanged for 4% debenture stock at the end of the 1/2 year. The substitution of 4% debenture stock for these 6% bonds will effect a saving in interest charges from June, 1, '98, of upwards of £8,000 a year.

The President reported to the proprietors, at the last general meeting, that in addition to the reconstruction of the Victoria Bridge at Montreal, it had been deemed necessary for the more efficient & economical conduct of the traffic to authorize the renewal during the next 2 or 3 years of the bridges on the section of the line between Montreal & Portland, & it has also been determined to renew certain bridges on the southern division used jointly by the Wabash Co.

The proportion of the expenditure for reconstruction of the Victoria Bridge, properly chargeable to revenue, has been fixed at £110,000, which, together with the cost of renewing the bridges between Montreal & Portland, & on the southern division, it is proposed to charge to revenue account, spread over a period of at least 5 years, so as to obviate any undue increase in the maintenance charges in any 1 year.

There had been expended to June 30, '98, on account of these renewals, an amount of £57,816, of which £10,274 has been as already announced, charged against the net revenue balance at Dec. 31, '97, & £15,402 is included in the maintenance charges for the past 1/2 year, leaving £32,140 at the debit of Bridge Renewal Suspense Account on June 30, '98.

The International Bridge at Buffalo it is also intended to renew at an early date, the cost of which will be charged against the revenue of the International Bridge Co.

The reconstruction of the Victoria Jubilee Bridge has progressed satisfactorily, & it is expected that the new double track will be available for traffic by Jan. 1 next. Meanwhile the traffic is being conducted over the single track as heretofore.

The gross receipts of the Chicago & G.T. Ry. Co. for the 1/2 year to June 30, '98, amounted to £376,387, against £301,436 in '97, an increase of £74,951. The working expenses were £294,541, against £262,591, an increase of £31,950; the net profit being £81,846, against £38,845, an increase of £43,001. The net revenue charges for the 1/2 year were

£90,238, against £88,919 in '97. There was, therefore, a deficiency in meeting the net revenue charges in '98 of £8,392, as compared with a deficiency for '97 of £50,074, being an improvement of £41,682. The above deficiency of £8,392 is payable by the G. T. Co., under traffic agreements. The number of passengers carried during the half-year was 539,084, against 529,177, an increase of 9,907, or 1.87%; & the passenger train receipts, including mail & express receipts, were £84,806, against £79,795, an increase of £5,011, or 6.28%. The quantity of freight moved during the half year was 1,122,161 tons, against 809,368 tons in 1897, an increase of 312,793 tons, or 38.64%, & the receipts from this traffic were £291,205, against £221,404 in 1897, an increase of £69,801, or 31.53%.

The gross receipts of the Detroit, Grand Haven & Milwaukee Ry. for the ½ year to June 30, '98, were £86,470, against £96,220 in '97, a decrease of £9,750; the working expenses were £71,379, against £78,634, a decrease of £7,255; leaving a balance of £15,091, against £17,586, a decrease of net revenue of £2,495 compared with the corresponding ½ year of '97. The net revenue charges for the ½ year were £37,373, against £37,670 in '97, so that there was a deficiency in meeting the net revenue charges of £22,282, as compared with a deficiency of £20,084 for the corresponding period of '97. The number of passengers carried during the ½ year was 228,832 against 242,963, a decrease of 14,131, or 5.82%; & the passenger receipts, including mails & express receipts, were £34,993, against £37,203, a decrease of £2,210, or 5.94%. The quantity of freight moved was 309,930 tons, against 288,394 tons in 1897, an increase of 21,536 tons, or 7.47%, and the receipts from freight traffic were £47,581, against £52,606 in 1897, a decrease of £5,025, or 9.55%.

The President & Vice-President have recently returned from a visit to Canada & the U.S., in the course of which they inspected various portions of the system & conferred with the General Manager & the other chief officers on many matters of interest to the Co. They also had conferences with the Canadian Pacific authorities for the discussion of the differences existing between the two Companies. Pending, however, a settlement of the transcontinental rate war between the C.P.R. & the American lines, no agreement could be reached. That controversy being now happily terminated, there would appear to be no valid reason why the local passenger fares reduced by the C.P.R. should not be restored, & all other points of difference in connection with the North Bay route be adjusted. Nego-

tiations with these objects in view are still in progress, which it is hoped may result in a settlement on a mutually satisfactory basis or in an agreement to submit all points of difference between the two companies to arbitration.

On June 30, 1898, the G. T. Ry., including lines east of St. Clair & Detroit rivers, & the Detroit & Michigan air lines, comprised 3,506 miles of roadway; 408½ miles of 2nd track; & 759¾ miles of sidings, a total of 4,674¼ miles. Of this, all was laid with steel, except 26 miles of track & 58¼ of sidings which have iron rails.

English financial papers generally comment most favorably on the report.

The Financial Post & the Bullionist both predict a future of prosperity for the Co.

The Financial News says the report undoubtedly is a very satisfactory showing, & that the shareholders must admit that they owe a heavy debt of gratitude to the new management.

The Financial Times says it exhibits a healthier condition than for years past, & affords justification for regarding the future with cheerfulness, but adds that the Co., in granting running arrangements to the Intercolonial, has deliberately invited into its territory a competitor which may be able to give more trouble than was bargained for. Neither the Wabash nor the Intercolonial, it thinks, has so far had the worst of the running arrangements.

THE HALF-YEARLY MEETING.

This was held at the Cannon St. Hotel, London, Eng., Oct. 13, Sir C. Rivers-Wilson presiding. As the directors entered the room they were loudly cheered by the large number of shareholders present. After reading the report Sir Rivers-Wilson referred at length to the revenue & working expenses of the line, remarking that the ½ year under consideration was the best the Co. had had since 1890. He referred to the very advantageous agreement with the Wabash, which had proved satisfactory to both roads, & said the Government had acted most wisely in its agreement with the G.T.R. regarding the entry of the Intercolonial Ry. to Montreal. The G. T.'s arrangement with the Central Vermont Ry. was virtually completed. The G.T. had secured all it had fought for. A trifling offer had been made to make the disused belt line at Toronto a bicycle track, but no satisfactory offer had been received for the purchase of the land. He regretted he had no message of peace & conciliation to bring from the C.P.R. The G. T.'s offer to submit the whole question to arbitra-

tion was refused, & the C. P. would continue to cut rates in Ontario & Quebec until the G.T. had come to an agreement on the question of passenger transportation to the North-west territories. It was absolutely impossible for the G.T. to accept the conditions imposed. They must leave Sir Wm. Van Horne's action to be judged by public opinion, & perhaps, also by the C.P. shareholders. The G. T. Co. was capable of taking care of itself. While in Canada he had noticed a great augmentation of traffic in the Muskoka district. He spoke in the highest terms of General Manager Hays & his staff. American interests would not allow the removal of the bonding privilege existing between Canada & the United States. He hoped that as a result of the deliberations of the International Commission, just adjourned at Quebec, bonding privileges would be included in a treaty, so as to remove the question from the field of American politics. He was frequently applauded during his speech.

Vice-President Jos. Price, endorsed Sir Charles' eulogy of the General Manager & his staff & said he found the track & other property in excellent condition.

Wm. Baker struck a discordant note by asking a number of questions, to which curt answers were given. These answers, however, satisfied the meeting, which adopted the report almost unanimously.

On the day after the meeting The Financial Times said editorially that Sir Rivers-Wilson's speech was not altogether cheerful, though it was optimistic in parts. The outlook for the G.T., it added, did not appear so rosy as it did a few days before, a fact made evident by the market.

The Financial News said it was a great pity that Sir Wm. Van Horne did not realize the great change that had taken place. The G.T. would no longer submit to the dictation of the C.P.

MEETINGS OF AUXILIARY COMPANIES.

The annual meetings of the various companies which make up the Grand Trunk system west of the Detroit & St. Clair Rivers were held during the 1st week in October, General Manager Hays attending them all. The following officers were elected:—

DETROIT, GRAND HAVEN & MILWAUKEE.—President, C. M. Hays; other directors, E. W. Meddaugh, C. Buncher, J. Pridgeon, jr., & W. J. Spicer, Detroit; G. B. Reeve, J. Hobson, C. Percy & F. H. McGuigan, Montreal; Secretary-Treasurer, J. H. Muir, Detroit.

CINCINNATI, SAGINAW & MACKINAW.—President, A. W. Wright, Alma; Vice-president,

INSURE IN

The Canadian Railway Accident Insurance Co.

OTTAWA, ONT. A PURELY CANADIAN CO.

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Subscribed Capital - - - \$175,000.

J. W. McRAE, President.

HON. E. H. BRONSON, Treasurer.

JOHN EMO, General Manager.

JOHN P. DICKSON, Secretary.

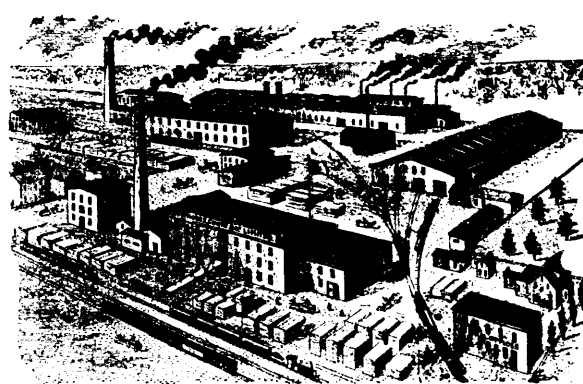
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C. M. Hays, Montreal; other directors, W. B. Burt & G. M. Stark, Saginaw; S. O. Fisher, Bay City; F. H. McGuigan, Montreal, & E. W. Meddaugh, Detroit; Secretary-Treasurer, J. H. Muir, Detroit.

TOLEDO, SAGINAW & MUSKOGON.—President, C. M. Hays; other directors, L. G. Mason, Muskegon; C. J. Church, Greenville; E. W. Meddaugh, Detroit; G. B. Reeve & F. H. McGuigan, Montreal; W. Cotter, Detroit; Secretary-Treasurer, J. H. Muir, Detroit.

MICHIGAN AIR LINE.—President, C. M. Hays; other directors, J. Bell, Belleville, Ont.; E. W. Meddaugh, W. J. Spicer, J. H. Muir, Detroit; Secretary-Treasurer, C. Percy, Montreal.

CHICAGO, DETROIT & CANADA GRAND TRUNK JUNCTION.—President, C. M. Hays; Vice-president, J. Bell; Secretary, C. Percy; other directors, E. W. Meddaugh & W. J. Spicer.

ST. CLAIR TUNNEL CO.—President, C. M. Hays; Vice-president, John Bell; other directors, Senator Vidal & C. Mackenzie, Sarnia, Ont.; W. J. Spicer & E. W. Meddaugh, Detroit; F. H. McGuigan, Montreal; Secretary-Treasurer, C. Percy, Montreal.

CHICAGO & GRAND TRUNK.—The old directors were re-elected, except W. Beasley, who was replaced by A. Dixon.

GRAND TRUNK JUNCTION.—No change was made in the directorate.

Grand Trunk Earnings, Expenses, &c.

The following figures, supplied from the Montreal office, include the G. T. of Canada, the Chicago & G. T., & the Detroit, Grand Haven & Milwaukee Rys.

	1898.	1897.	Increase.	Decrease.
July.....	\$1,860,884	\$1,992,628	\$131,744	
August.....	1,992,802	2,091,235	98,433	
Sept.....	2,261,148	2,341,960	80,812	
	\$6,114,834	\$6,425,823	\$310,989	

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

GRAND TRUNK COMPANY.

Revenue statement for August:

	1898.	1897.	Increase.	Decrease.
Gross receipts (less cartage, &c.).....	£333,542	£351,892		£18,350
Working expenses.....	218,588	232,319		13,731
Net Profit.....	114,954	119,573		4,619

Aggregate for the 2 months to the end of Aug.:

	1898.	1897.	Increase.	Decrease.
Gross receipts (less cartage, &c.).....	£642,023	£692,573		£50,550
Working expenses.....	426,161	456,280		30,119
Net Profit.....	215,862	236,293		20,431

CHICAGO & GRAND TRUNK COMPANY.

Revenue statement for Aug.:

	1898.	1897.	Increase.	Decrease.
Gro receipts.....	£55,482	£57,540		£2,058
Working expenses..	46,045	50,888		4,843
Net profit.....	9,437	6,652	£2,485	

Aggregate for the 2 months to the end of Aug.:

	1898.	1897.	Increase.	Decrease.
Gross receipts (less cartage, &c.).....	£113,112	£110,144	£2,968	
Working expenses..	92,650	99,223		£6,573
Net profit.....	20,462	10,921	9,541	

DETROIT, GRAND HAVEN & MILWAUKEE.

Revenue statement for Aug.:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£20,454	£20,655		£201
Working expenses..	13,068	13,580		482
Net profit.....	7,386	7,105	£281	

Aggregate for the 2 months to the end of Aug.:

	1898.	1897.	Increase.	Decrease.
Gross receipts.....	£36,715	£37,072		£357
Working expenses..	25,965	26,700		735
Net profit.....	10,750	10,372	£378	

An official note adds: "There were 27 working days in Aug., 1898, as compared with 26 in 1897."

RECEIPTS OF THE SYSTEM.

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

	1898.	1897.	Increase.	Decrease.
Grand Trunk.....	£1,025,605	£1,097,083		£71,478
Chicago & G. T.....	175,207	167,827	£7,380	
D., G. H. & M.....	55,661	55,459	202	
Total.....	1,256,473	1,320,369		63,896

C.P.R. Earnings & Expenses.

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

	Earnings.	Expenses.	Net Profits.	Increase or decrease.
Jan. \$1,672,372.04	\$1,156,744.45	\$515,627.59	\$142,284.49+	
Feb. 1,404,596.98	1,070,929.62	423,667.36	38,844.28+	
Mar. 2,079,479.06	1,326,245.55	753,233.51	233,000.67+	
April 1,958,461.88	1,241,371.19	717,090.69	89,973.35+	
May 2,252,909.16	1,326,336.85	926,562.31	51,092.47+	
June 2,138,110.04	1,320,714.67	817,395.37	68,731.93+	
July 2,051,363.27	1,320,674.48	730,688.79	183,670.08+	
Aug. 2,210,865.29	1,377,838.41	883,026.88	121,380.23+	

\$15,858,247.72 \$10,090,855.22 \$5,767,392.50 \$181,433.02+
+ Increase. - Decrease.

The approximate earnings for September, 1898, were \$2,341,000, against \$2,279,000 in September, 1897, an increase of \$62,000.

AUXILIARY LINES.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—The approximate earnings for Sept. were \$488,947, as compared with \$393,573 for corresponding period, an increase of \$95,374. For the 9 months ended Sept. 30, they were \$2,931,528.24, as compared with \$2,625,853.49 for corresponding period, an increase of \$305,674.75.

DULUTH, SOUTH SHORE & ATLANTIC.—The approximate earnings for Sept. were \$169,648, as compared with \$152,756 for the corresponding period, an increase of \$16,892. For the nine months ended Sept 30, they were \$1,375,009.26 as compared with \$1,184,880.27 for the corresponding period, an increase of \$190,128.99.

MINERAL RANGE, HANCOCK & CALUMET.—The approximate earnings for Sept. were \$35,364, as compared with \$26,943 for the corresponding period, an increase of \$8,421. For the nine months ended Sept. 30, they were \$265,001.57 as compared with \$213,341.05 for the corresponding period, an increase of \$51,660.52.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1898	1897	1898	1897
Jan.....	22,044	9,443	\$72,924.00	\$33,872.00
Feb.....	20,650	8,163	66,399.00	27,573.00
Mar.....	33,421	8,727	109,010.00	29,080.00
April.....	43,145	10,785	140,275.00	37,145.00
May.....	43,148	15,802	137,835.00	51,508.00
June.....	49,203	18,964	160,199.00	63,160.00
July.....	39,512	17,083	123,911.00	55,949.00
Aug.....	19,449	9,460	63,911.00	30,209.00
Sept.....	18,007	16,066	56,936.00	54,314.00
Totals.....	288,579	114,493	\$930,500.00	\$382,810.00

White Pass & Yukon Railway.

As mentioned in our Sep. issue, pg. 179, the British public were recently invited to subscribe for some \$750,000 debenture stock for the construction of the line, the American Manager of the Co. informing us that the issue had been successful. The prospectus which has since reached us was issued by the British Yukon Mining, Trading & Transportation Co., offering £250,000 of debenture stock, which will be a 1st charge on the 1st division of the line, from Skagway over the White Pass to Lake Bennett, about 50 miles. The rate of interest is 6% & the contractors guarantee it for two years. Following is a summary of the prospectus:—The White Pass has an elevation of 2,800 ft. The Co. is work-

ing under 3 charters, one obtained from Canada, another from British Columbia, and a third from the U. S. The first surveys were made in 1896. Since then Sir T. P. Tancred has had charge of the surveys. C. J. Hawkins, C. E., & J. C. Christie, C. E., endorse the opinions of the experts employed. J. Price, Vice-President of the G. T. R., is one of the directors; Hon. S. C. Glynn, director of the North London Railway Co., is another besides other equally prominent business men in England, Canada is represented by E. Hanson, of Montreal. An act of the U. S. Congress, giving bonding privileges to Alaskan ports, was signed by the President May 14 last. The railway, when completed, will go to Fort Selkirk. It is intended to build a telegraph also. "The great advantage of the White Pass route," the prospectus claims, "is, that the navigable waters flowing to the Yukon River are reached in less than 50 miles from Skagway Harbor, & through communication will be obtained with Dawson & the Yukon & Klondyke gold fields by boat in summer & by sledges in winter, even before the completion of the line to Fort Selkirk."

Financial Notes, &c.

Alberta Ry. & Coal Co.—The annual meeting will be held in London, Eng., Oct. 26.

Calgary & Edmonton.—The net loss in operating for Aug. was \$3,017.68, as against net earnings of \$12,057.38 for the corresponding period. This loss was caused by the large increase in expenses, \$14,878.97 being spent in maintenance of way & structures. The total expenses for Aug. were \$21,737.88, as compared with \$13,274.71 for corresponding period.

The annual meeting called for Oct. 5 was adjourned till Oct. 17, & then was again adjourned till Oct. 26 at Toronto.

Canada Atlantic.—At the annual meetings of this Co. & its auxiliary, the Ottawa, Arnprior & Parry Sound Ry. Co. at Ottawa Sep. 27, the only business done was the re-election of the old boards with the same executive officers. The meetings were adjourned until Nov. 29, "awaiting the receipt of certain reports."

Canada Central.—Twenty-one 5% 1st mortgage bonds of £500 & 64 of £100 each, in all £16,900, have been drawn for payment at Speyer Bros., London, at £105 per £100.

Central Vermont.—An agreement has been made by which all opposition to the immediate re-organization of the Co. will be withdrawn. The plan accepted by the 1st mortgage bondholders & the Grand Trunk will be carried out, with such modifications as will give the 1st mortgage bondholders par value in the new 1st mortgage 4% gold bonds. The interest will be guaranteed by the traffic contract with the G. T. (July, pg. 177.)

Dominion Atlantic.—The receipts for Aug. were \$58,600, compared with \$55,400 for corresponding period. For the 8 months to the end of Aug. they were \$329,968, as compared with \$310,799.

The receipts for Sept. were \$66,865, as against \$62,600, making for the 9 months to the end of Sept. \$396,833, as against \$373,399.

Great Northwest Central.—The annual meeting will be held at Toronto, Nov. 9.

Kootenay Ry. & Navigation.—The remaining 60% on issue of 5% debenture stock is payable in equal instalments Oct. 10 & Dec. 10.

Northern Ry. of N.B.—The name of the Kent Northern Ry. has been changed to the Northern Ry. of N.B. W. Brown is President, General Manager & Lessee, with office at Richibucto, N.B. J. D. Phinney is Secretary.

Qu'Appelle, Long Lake & Saskatchewan.—The net loss in operating for Aug. was \$2,728.78, compared with net earnings of \$236.06 for the corresponding period.

Quebec & Lake St. John.—The earnings for July were \$5,922 over corresponding period.

Quebec Central.—The net earnings for the 8 months to Aug. were \$96,965, compared with \$116,267 for corresponding period.

Quebec, Montmorency & Charlevoix. A special general meeting will be held at Quebec Nov. 2 to ratify & confirm the resolution passed at the special general meeting Sep. 13, whereby the directors were authorized to issue 1st mortgage bonds for \$1,000,000 in part payment of the purchase price of the property of the Montmorency Electric Power Co.

This Co. will apply to the Governor-General in Council at Ottawa, Dec. 2, for approval of the purchase made by the Co. of the property of the Montmorency Electric Power Co., on Sep. 15.

Toledo & Ottawa Ry.—The following item is going the rounds of the daily press: "A Company that is being formed to purchase the Toledo & Ottawa Ry. is said to be backed up by the Grand Trunk. This line is now being built between Toledo & Detroit, & the idea is to have it connect with the G.T. at Detroit & make it a G.T. line. This would give the Grand Trunk an entrance to Toledo. The road is at present in the hands of a receiver." We are informed that there is no truth whatever in the statement that the G.T.R. is connected with the matter, & further that the line is merely an electric one, which is being built as a speculation by people who think they can dispose of it to some of the railways connecting with it at Toledo or Detroit.

Victoria & Sidney.—The annual meeting was called for Oct. 19 at Victoria, B.C.

White Pass & Yukon.—The remaining 50% on issue of 6% 1st mortgage debentures was due in London, Eng., Sep. 30.

RAILWAY PROJECTS.

Ashcroft to Cariboo.—A British Columbia paper says the charter for a line from Ashcroft, on the main line of the C.P.R., 204 miles east of Vancouver, to Cariboo, a distance of about 220 miles, which has been in existence for some years, has been taken over by an English Co.

Elk River to Revelstoke.—British Columbia papers say application will be made for a charter for a railway to connect with the Crow's Nest Pass Line of the C.P.R. between Wardner & Elk River, to run up the east side of the Kootenay River to Windermere, thence west to cross the river & up Toby Creek, then over the Selkirk Range to the foot of Lake Duncan, then up the Lardo River to Trout Lake, & from there north-west in as direct a line as possible to the Arrowhead Branch of the C.P.R.

Kootenay Railway & Navigation Co.—A Kootenay paper says this Co. will locate a line from the foot of Houser Lake to the Upper Duncan River, up as far as Hall Creek, which will open up an immense district.

Taku & Atlin Lake Tramway Co.—F. G. White, L. P. Duff & F. A. Bennet give notice of application for incorporation of a company under this title, under the British Columbia Tramways Co. Incorporation Act, to build & operate a tramway from the junction of the waters of the Atlintoo River & Taku Arm, Cassiar District, along the north side of the Atlintoo Valley, to the junction of the Atlintoo River & Atlin Lake, with power to build & operate branch lines, also telephone or telegraph lines.

Trail to Salmon River.—Gallier & Wilson, solicitors, Nelson, B.C., give notice of

application to the B.C. Legislative Assembly for the incorporation of a company to build a railway from, at or near Trail to Sayward on the Columbia River, thence to Salmo, thence following the Salmon River to its junction with the Pen d'Oreille River, with power to build branch lines, telegraph & telephone lines, & to carry on an express business.

Toronto Elevated Ry.—McPherson, Clark, Campbell & Jarvis, solicitors, Toronto, give notice of application to the Ontario Legislature for the incorporation of The Toronto Elevated Ry. Co. with power, subject to the consent of the municipalities affected, & subject to all other existing rights, to construct & operate a system of elevated railways in Toronto & adjoining municipalities, & in conjunction therewith a system of surface street railways in Toronto & other municipalities within a radius of 50 miles of the city.

The Winnipeg & Stony Mountain Ry. Co. has been incorporated under The Railway Companies Incorporation Act (Manitoba) to construct & operate a line from the main line of the C.P.R. west of Winnipeg, between Winnipeg & Bergen stations, northwesterly about 2 miles. The capital is \$10,000. The directors are C. H. Campbell, D. E. Sprague, W. McKenzie, W. A. Windatt & C. H. Endernton, Winnipeg.

Intercolonial Railway Changes.

The long rumored & well deserved promotion of J. E. Price, Superintendent at Truro, N.S., has come at last, General Manager Pottinger having issued the following circular on Oct. 14:

"J. E. Price has been appointed General Superintendent of the Intercolonial Ry., with headquarters at Moncton, N.B. The superintendents of districts, the superintendent of the parlor, sleeping & dining cars, & the Car Accountant will report to & receive their instructions from him.

"W. Rennels has been transferred to the Halifax & St. John District as Superintendent in the room of Mr. Price.

"G. M. Jarvis has been appointed Superintendent of the Moncton & Ste. Flavie District. "These changes take effect Oct. 17."

It is said Mr. Price's salary will be \$2,500 a year, & Mr. Jarvis' \$1,600.

G. M. Jarvis, who has been appointed Superintendent at Campbellton, N.B., has been Chief Despatcher at Moncton. It is said he will be succeeded as Chief Despatcher by H. B. Fleming, who will be succeeded by C. W. Price.

A. Le Blanc, of Shediac, has been appointed Freight & Passenger Canvasser.

Assessments in Toronto.

The assessment of a large number of corporations operating in Toronto has been considerably increased this year, as will be seen by the following examples:—

	1897-98	1898-99
Bell Telephone Co.	\$100,000	636,149
C. P. R. Telegraphs		8,317
Metropolitan Railway Co.		1,200
Tor. Ry. power house... ..	75,000	196,000
Tor. Ry. Co., Wards 1 to 6, rails, poles, wires, etc.	537,137	596,380
G. N. W. Tel. Co.	20,000	32,000
Toronto Ferry Co.		13,064
Toronto & Mimico Electric Ry.		10,410

Back Numbers Wanted.

We are anxious to obtain a few copies of the May & June issues of THE RAILWAY AND SHIPPING WORLD, the supply of both issues of which at our office has been exhausted, & through an oversight insufficient copies were retained for our files. If any of our readers who have copies of either or both of the numbers mentioned will mail them to the publication office, 33 Melinda St., Toronto, we shall esteem it a favor & will endeavor to return the obligation in some way.

W. H. Smith has been appointed General Auditor of the Canada Atlantic & Ottawa, Arnprior & Parry Sound Rys., vice A. G. Peden, whose resignation is referred to on pg. 205 of this issue.

Hamilton Abbott, of the Victoria, B.C., office of the C.P.R., has been promoted to the Passenger Agency at Portland, Oregon, vice B. W. Greer, appointed Freight & Passenger Agent at Victoria.

Established 1831.

Annual Capacity 1,000.

Baldwin Locomotive Works.

SINGLE EXPANSION AND COMPOUND LOCOMOTIVES.

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

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

Electric Locomotives and Electric Car Trucks with Approved Motors.

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

RAILWAY APPOINTMENTS, &c.

Bellingham Bay & British Columbia.—J. J. Donovan, who is Vice-President & General Superintendent of the Bellingham Bay & Eastern, has also been appointed General Superintendent of the B. B. & B. C. R.; to succeed C. L. Anderson, resigned.

Canadian Pacific.—B. W. Greer, Passenger Agent at Portland, Ore., has been appointed Freight & Passenger Agent at Victoria, B. C., succeeding G. L. Courtney, appointed General Freight & Passenger Agent of the Esquimalt & Nanaimo Ry.

Grand Trunk.—General Superintendent McGuigan issued the following circular Sep. 26: F. C. Kenny having resigned, the office of Trainmaster is abolished. A. S. Begg is appointed Superintendent St. Clair Tunnel & Terminals, embracing Port Huron Tunnel & City, & Fort Gratiot yards in Michigan, also Sarnia Tunnel & City & Point Edward yards in Ontario. He will also assume the duties of Agent at Port Huron Tunnel, at present performed by Mr. Kenny. Office Port Huron Tunnel station. His orders will be obeyed accordingly. Effective Oct. 1.

Sumner Hopkins, Manager Grand Trunk Despatch, announces that J. P. Faurot has been appointed Travelling Agent of the same, with headquarters at Brush St. Depot, Detroit. Appointment effective Oct. 1.

Trainmaster F. L. Corwin, Detroit, announces that C. H. Bevington is appointed Chief Train Despatcher of 27th, 28th, 29th Districts & C. S. & M. portion of 25th District, vice V. A. Cooper resigned. Effective Oct. 1.

General Superintendent Loud announces that C. J. Haigh having been appointed Manager Reading Despatch, Fast Freight Line, A. E. Rosevear is appointed Freight Claim Agent, with office at Montreal. Effective Oct. 1. Mr. Haigh came to Montreal from Buffalo as Freight Claim Agent. Mr. Rosevear was Accountant of the Reading Despatch at Detroit.

Intercolonial.—Wm. Robinson, Division Freight Agent at St. John, N.B., has been transferred to Toronto as General Travelling Agent in place of N. Weatherstone, who will be retired. Mr. Weatherstone has been in the employ of the Government railways for many years & much sympathy is expressed for him among railway men, it being felt that the removal is entirely owing to political reasons. Mr. Robinson was at one time G.T.R. Agent at Ingersoll, Ont., & afterwards Agent of the Great Eastern Line at Detroit, which position he gave up to enter the Government railway service when A. H. Harris became Traffic Manager last year. It is said Mr. Harris gave Mr. Robinson a 5 year contract, at \$2,000 a year. We are informed that it is probable the division office in St. John will be continued. It is said the duties pertaining to it will be discharged by Mr. Robertson, who has been agent of the I. C. R. at St. John for many years.

B. A. Ward, Chief Train Dispatcher at New Glasgow, has been transferred to the dispatcher's office at Moncton; L. S. Brown, of Campbellton, succeeding him at New Glasgow, & A. Dunn, of Moncton, succeeding Brown at Campbellton.

Queenston Heights Bridge.—Beatty & Co., Solicitors, Toronto, give notice that application on behalf of the Queenston Heights Bridge Co. will be made at the Department of Railways & Canals, on Nov. 21, for the approval of the Governor in Council of an agreement between this Co. & the Lewiston Connecting Bridge Co. of New York State, in relation to the bridge to be constructed across the Niagara River at Queenston Heights, under the Act of Incorporation of the Queenston Heights Bridge Co. as amended.

Personal Mention of Railway Men.

J. H. Burgis has been appointed acting city passenger & ticket agent of the G. T. R. at Chicago, vice L. R. Morrow.

F. S. Brown, M.C.R. Yard Master at Montrose, has been appointed Trainmaster with headquarters at St. Thomas, Ont.

F. C. McLeod, foreman in the G. T. R. erecting shop at Toronto, will be located in London, where he will be associated with Locomotive Foreman Mauer.

Lady Pauncefote & Miss Pauncefote, wife & daughter of the British Ambassador at Washington, were the guests of Sir Wm. & Lady Van Horne in Ottawa recently.

J. S. Glassford, of Brockville, general agent & yard master at Brockville for the past 2 years, has been given a position under G.T.R. Superintendent Cotter at Detroit.

Mrs. T. G. Shaughnessy & Miss Alice Shaughnessy, of Montreal, were passengers on the Parisian for Liverpool the first week in Oct. Miss Shaughnessy goes to complete her education in England & on the Continent.

On Oct. 8, on the eve of his marriage to Miss M. Marshall, J. J. Rose, Travelling Passenger Agent of the C.P.R. at Toronto, was presented with a cabinet of silverware by the town & outside agents of the Co. in Western Ontario.

F. P. Macdonald, recently promoted from the Assistant Superintendency of the C. S. division of the M.C.R., to the Superintendency of the Middle Division, has removed with his family from St. Thomas, Ont., to Jackson, Mich.

R. H. Cushing, C. E., has been appointed temporarily assistant engineer on the I.C.R. It is said he will look after the terminal work at St. John, N. B. He was employed as Assistant Engineer on the I. C. R. some 10 years ago.

Wm. Kingsford, C.E., who died recently at Ottawa, aged 79, was connected with the building of the Lachine Canal, the Hudson River Ry. & the Victoria Bridge at Montreal. He was also a historian, having written the "History of Canada up to the Union of the Upper & Lower Provinces in 1841."

J. McVeigh Lumsden, who died Sep. 27 at Galt, Ont., where he lived for many years after retiring from farming in that county, was a brother of H. D. Lumsden, of the C. P. R. engineering staff, & of Sir Peter Lumsden, the gallant soldier who did splendid work in India, & of the late Sir Henry Lumsden.

Collingwood Schrieber, Deputy Minister of Railways, left Ottawa at the end of September, going by the C.P.R. to the Pacific Coast, inspecting the Crow's Nest Railway en route, & intending to return by way of San Francisco. He had as guests on his private car Hon. Mr. & Mrs. Dobell, of Quebec; Mrs. L. K. Jones, & Miss Gwynne, of Ottawa.

The Editor of the Northwest Magazine writes:—"I hope that D. C. Corbin, of Spokane, in retiring from railroading, takes with him a competency. He is a man of energy, courage & mental capacity, & as a developer of new regions he has made a mark in Idaho & Washington, & also in British Columbia, which will cause him to be long remembered. When he began to build his railway to the Coeur d'Alenes, there was absolutely no way of getting into that region except over a bridle-trail or by poling a boat up Pritchard Creek from the river. He afterwards opened the Trail Creek & Kootenay mining regions in B.C. by building his Spokane & Northern Ry. As a promoter of legitimate transportation enterprises, he took a high rank. He did not build railways to speculate in their stocks, but to develop the country where he lived."

A Tribute to Sir Wm. Van Horne.

The Winnipeg Tribune of Oct. 4 had the following:—"Sir Wm. Van Horne, the distinguished head of the C.P.R., is once more in the city on his annual tour of inspection over the Co's property. Whatever differences of opinion may exist as to the policy pursued by the Co. there is but one opinion with regard to the singular ability with which the great railway is managed, & the feeling of our people towards the President, & indeed towards all the chief officials, who are men of marked ability, is one of kindness & respect. That feeling, we believe, is to a large extent emphasized towards the President himself. In administering the affairs of the C.P.R., Sir William has in no way departed from the general ethical standards that prevail in the financial world.

"Sir William is something more than a railway man; he is a patron of & a connoisseur in art. Indeed, he is no mean artist himself, as all who have either examined his pictures or spent an hour in his studio recognize. It is a pleasant sight to see the man whose capacious mind has been deeply engrossed all day in the consideration of railway matters, spending his evenings in his studio, busy with his brush, producing excellent works of art, which he takes pleasure in distributing amongst his most intimate friends. His fine home in Montreal is a veritable art treasure house, Sir William having surrounded himself with many of the beautiful things of the earth. He has one of the most valuable collections of Japanese pottery that is to be found on the continent. Many of the specimens are very rare & of great value. Many an evening has Sir William spent painting a catalogue of his collection, reproducing on paper the rich, rare & varied tints of the pottery itself. Sir William is a many-sided man, being thoroughly posted on the various questions of the deepest material concern to the public, & being an excellent & voluble talker, an evening spent in his company is profitable & enjoyable. Personally there are few more amiable & enjoyable companions than Sir William. The public see the brusque, business side of the man, but those who enjoy social intercourse with him, recognize & appreciate his amiable, social, liberal & charitable qualities."

Spokane & Northern Changes.

In our Aug. issue, pg. 147, we gave particulars of the changes in the directors & officials of the above-mentioned line, consequent on its transfer under the control of the Great Northern (U.S.). At the end of September meetings were held at Nelson & Rossland, B.C., at which the directors of the two auxiliary lines of the system which are situated in B.C. were changed as follows:—

NELSON & FORT SHEPPARD RY.—President, W. H. Thompson; Vice-President, C. Shields; Secretary-Treasurer, F. W. Bobbett; Directors, W. H. Thompson, F. H. Mason, A. Allen, Major Dupont & C. Shields.

RED MOUNTAIN RY.—President, W. H. Thompson; Vice-President, C. Shields; Secretary-Treasurer, F. W. Bobbett; Directors, W. H. Thompson, F. H. Mason, J. D. Farrell, Major Dupont & C. Shields.

Mr. Thompson is Division Counsel of the G.N.R. at Seattle; Messrs. Mason, Farrell & Allen are all of Spokane, & were stockholders in the B.C. roads under the Corbin regime. Mr. Shields is already known to our readers. Mr. Bobbett is J. J. Hill's appointee & has his office at Spokane.

Trainmaster Cunningham of the G.T.R. at London, Ont., has resigned.

THE QUEBEC BRIDGE.

Preparations for Early Construction.

At the recent annual meeting of this Co. in Quebec the financial statement showed capital stock subscribed, \$216,300. Receipts, \$50,363.69; expenditure, \$21,944.82. The following were elected: President, Hon. S. N. Parent; Vice-Presidents, R. Audette & Hon. R. R. Dobell; other directors, H. J. Beemer, J. Breakey, V. Boswell, J. B. Laliberte, G. Le Moine, Hon. G. A. Paquet, H. M. Price & N. Rioux; Treasurer, J. Breakey; Secretary, U. Barthe.

It was decided to at once invite tenders for the construction of the work.

THE DIRECTORS' REPORT

was as follows:—The last 12 months have been well employed. A good deal of preliminary business had to be despatched to put the Co. in such a shape as to enable it to call for tenders for the construction of the proposed bridge. The capital stock had to be completed, & calls on same made in compliance 60-61 Victoria, cap. 69. The financial statement which will be submitted will show that that part of our duties has been successfully accomplished.

There were also to be completed the technical studies & surveys essential to the execution of our enterprise. The surveys then in progress to connect the bridge with the railway systems on both sides of the River St. Lawrence, & of the bridge site itself, have been completed, with the plans and profiles of the same, & also those required by the Railway Committee of the Privy Council before approving of the bridge site, so as to show width of spans & clear headway required for navigation purposes; which have since been deposited according to the law, & approved by the Railway Committee & the Governor-General-in-Council.

Considerable expenditure has been forced on the Co. for making test-boring of the river bed at the most suitable points for pier locations, which work has been completed, & without which it would have been impossible to design any part of the foundations of the structure, particularly as all previous investigations and reports on the local conditions of the river at the bridge site were erroneous & entirely misleading.

General plans showing certain limiting dimensions & other essential data, with printed circulars, forms of tender, complete specifications for foundations, piers, & superstructure are now being sent to intending contractors, notice having been received on Sep. 1 that the specification for superstructure had been finally approved by the Chief Engineer of Railways & Canals.

It was your directors' intention to invite tenders at an earlier date this season, but they had to wait until the test borings were completed, in order to be able to furnish full specifications & data to the tenderers. The unavoidable long time spent in the submarine test borings which were commenced last winter well demonstrates the excessive hardness of the bottom of the river at the boring points. It is quite evident that, if that bottom was sand, as reported by some, it would not have taken 6 months of continuous work, from Feb. to Aug., to bore 9 or 10 useful holes at the different pier spots. As a matter of fact, the samples of material taken out from those holes through the core drills show that the bed of the St. Lawrence, where borings were made, is almost entirely composed of boulder gravel, the same material as that on which were built the immense cantilevers of the Forth Bridge in Scotland. Such river beds are so tough that the ordinary drills used at first last year could not penetrate through more than 4 or 5 ft.; wherefore the directors decided to secure the services of a specialist, Mr. Stearns, of Brooklyn, with a powerful plant of steam pumps & diamond drills. Even with that improved machinery the work went on with such difficulty that in some cases it took 3 weeks to bore a single hole.

This work being to the general advantage of the country, as it is designed to complete an important network of railways, is entitled to the generous assistance of the federal & provincial governments & of the city of Quebec. The sacrifices made by the Co. in the past, but more especially since last year, give it so much more right to such help. It can boast of having done its full share by taking bravely the initiative of a work of such importance & elaborately preparing all the preliminaries. Your directors are firmly convinced that when the time comes to face the financial question they will be substantially supported by those whose assistance was promised.

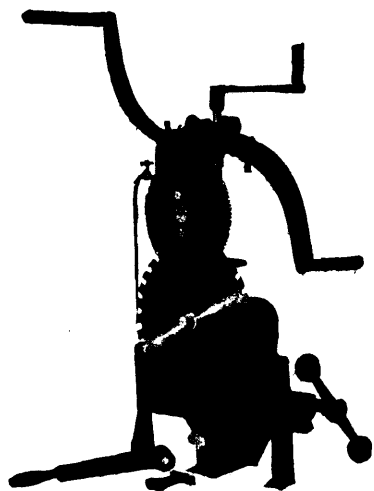
They have recently petitioned the Dominion Government for a subsidy of 33 $\frac{1}{3}$ % on the cost of the enterprise, & they have been assured that the subsidy will be voted next session.

Your directors might also take this opportunity of recalling the reasons which have caused the selection, since ratified by the Government, of the Chaudiere site in preference to all others. It is not a question of feeling, nor of preference, but purely & simply a question of engineering, on which most people must admit their incapacity to deal with the question. It is quite natural to desire that the proposed bridge be built as near as possible to the actual limits of our city; but it is equally obvious that when undertaking the construction of such a costly bridge, one should look to the narrowest point of the

river, & as a matter of fact the Chaudiere site is the narrowest point of the St. Lawrence on its whole length. The first consideration is the opening of a direct & constant all rail communication, in all seasons, & at all hours of the day, between the two shores of the St. Lawrence, which for a long distance east & west are deprived of that sort of connection. Business interests in this part of the Province are constantly complaining that railway tariffs are discriminative against them. A bridge at the Chaudiere will remove this objection by connecting the railways of both shores, by increasing traffic & consequently creating a legitimate competition in freight rates, & it will considerably reduce the freight account of the city & district of Quebec. It is the intention of the Co. to have its own independent line to give all railways access to the city. The location question is one of engineering, on which we must take the opinion of professional men. It is fully covered by the reports of Messrs. Shanly, Schrieber, Gauvin & Hoare, from which extracts are annexed to the present report.

Your directors have but a few remarks to add to these authorities. They would be the first to rejoice if it was practicable to build the bridge nearer the city. But it is a manifest impossibility. The question has been sufficiently considered, with all the elements of sound comparison, the local conditions such as the depth & width of the river at the different proposed sites, being well-known facts which cannot be altered by civil engineers. A bridge opposite the city would require a clear channel span of over 3,000 ft., supported by gigantic piers which could not even be built outside of navigable waters; it would moreover require a tunnel line underneath the city through the promontory, & on both shores trains using the bridge would have to make long & useless circuits to connect with the existing railways & to get at the shipping level. As to the Island of Orleans, that route is at once thrown out of consideration by a simple comparison of its 15,000 ft. of steel structure with the 3,310 ft. of metal as required for the Chaudiere bridge. The capital of this Co. & its range of resources are too limited for such gigantic schemes to be entertained. Before having the necessary capital subscribed, the revenue prospects have first to be determined, & your directors consider they have safeguarded the stockholders' interests when they decided to keep within practical limits. Their only choice was whether a bridge at Chaudiere, or no bridge at all.

They preferred the former, because they were convinced that what retarded the progress of the city & district of Quebec was the lack of free all rail connections the year round, which object would be as well gained by a bridge at Chaudiere as opposite the city,



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Office of the Quebec Bridge Company
(Limited.)

QUEBEC, September 29th, 1898.

Sealed proposals for the construction of a combined Railway and Highway bridge across the River St. Lawrence, near Quebec, will be received by the undersigned, until noon, Monday, January 2nd, 1899.

Forms of tender, with circular of conditions, specifications, &c., can be had on application to the undersigned.

The Company does not bind itself to accept the lowest or any tender.

ULRIC BARTHE,
Secretary.

& at all events certainly better attained by a bridge at Chaudiere than by no bridge at all. It is obvious that when the railways on the south shore can come to Quebec they will not lose the opportunity, & that the centre of gravity of such a well-situated seaport as ours cannot be displaced. Since 1891, the estimated cost of the bridge has been very materially reduced in consequence of the reduction in price of all kinds of bridge material.

Accompanying the report were the following professional reports.

OPINION OF WALTER SHANLEY, C. E.

In 1889 the Co. had a report made by W. Shanley on the three routes as designated below. Here are the comparative figures given by Mr. Shanley :

WIDTH OF RIVER HIGH WATER.	
The Citadel.....	4,281 ft.
Pointe a Piseau.....	5,468 "
Chaudiere.....	2,590 "
EXTREME DEPTH OF WATER ON PIER SITES.	
The Citadel.....	132 ft.
Pointe a Piseau.....	125 "
Chaudiere.....	43 "
EXTREME HEIGHT OF PIERS FROM BOTTOM OF RIVER TO UNDER SIDE OF BRIDGE.	
The Citadel.....	282 ft.
Pointe a Piseau.....	275 "
Chaudiere.....	193 "
STEEL BRIDGING, RIVER SPANS AND SHORE VIADUCTS.	
The Citadel.....	5,291 ft.
Pointe a Piseau.....	6,850 "
Chaudiere.....	3,100 "

Mr. Shanley continues as follows :—" The figures set out above make it plain to be understood that in respect of all natural difficulties the 2 lower sites, the Citadel & Pointe a Piseau, stand at an immense disadvantage when compared with the upper, or Chaudiere crossing. Construction plans applicable to each place have been sufficiently far advanced to allow of fairly correct comparative estimates of costs being made and the result leaves no room to doubt that the river could be bridged on the Chaudiere line for several millions less than at either of the two lower points. The difference between the cost of the Chaudiere project, carried out in its entirety, and that of either of the other proposed bridges is so immense that to speak of the two latter as rivals of the former would be a misnomer. . . . Except at Chaudiere, any attempt to bridge the river must be attended with risks ; notably the risk of under estimating cost because of the great height (upwards of 130 ft. in clear water) of the under surface portions of the structure which would have to carry the vast piers, or towers, rising to a height of 150 ft. above high tide level. In view, then, of the many millions certain expenditure that a bridge anywhere below the Chaudiere would involve in excess of a bridge at that point and in view of the risks and uncertainty of cost sure to attend the attempt to bridge the river anywhere else, and, finally in view of the commercial aspects of the project, I feel compelled to record my belief that the construction of a bridge either on the Citadel line or on the Pointe Piseau line is practically impracticable. In these days of great bridge spans by means of the Cantilever system, or principle, there are, so to speak, no engineering obstacles to prevent the bridging of the St. Lawrence on the Chaudiere site. The one main Cantilever span would have a stretch of 1,400 ft. The great bridge over the Firth of Forth, now nearing completion, has two openings of 1,700 ft. each."

OPINION OF COLLINGWOOD SCHRIEBER.

Following is an extract from a report prepared by the Chief Engineer of the Department of Railways & Canals, Feb. 18, 1891, after a special visit to Quebec. Speaking of E. A. Hoare's estimates on the cost of a bridge at the Chaudiere; the Chief Engineer says in substance :—" This site is really, it appears to me, unobjectionable. * * *

At the Pointe Piseau & Point Diamond sites 2 piers will stand in the channel, which may be objected to by the shipping interests. That at Point Diamond strikes me as very objectionable. The proposed site at the Island of Orleans may, I think, fairly be ruled out, as it would undoubtedly be very costly to construct. That it is feasible to construct a bridge over the river near Quebec, there is no manner of doubt."

The comparative figures given by Mr. Schriber were as follows :—

	Chau- diere.	Pte. Piseau.	Pt. Dia- mond.
	3,420 ft.	6,754 ft.	5,866 ft.
Extreme length of bridge...			
Width of river (water edge to water edge) high tide...	2,300 "	5,600 "	4,200 "
Width of river (water edge to water edge) low tide...	1,800 "	4,000 "	3,900 "
Deepest water in channel at low tide...	143 "	122 "	123 "
Height above high water...	150 "	170 "	170 "

ISLAND OF ORLEANS SITE.

	High Tide.	Low Tide.
Width of south channel...	5,000 ft.	4,000 ft.
" " north "...	8,000 "	2,000 "
	13,000	6,000
Deepest water in south channel at low tide...	92 ft.	48 "

OPINION OF C. E. GAUVIN, C. E.

In his annual departmental report, dated Nov. 2, 1896, Hon. E. J. Flynn, then Premier of the Province & Commissioner of Public Works, made a very favorable mention of a report prepared under his instructions by Mr. Gauvin, Superintendent of Surveys in the Crown Lands Department, which was a very complete review of the different sites proposed for the Quebec Bridge. After summing up the different bridge plans then submitted, Mr. Gauvin concluded as follows :—" To simplify this examination I will, first of all, eliminate two sites which can have no chance of success in the selection which will eventually be made : 1st, That of the Island of Orleans, owing to the great length of the two bridges, that over the north & that over the south channel ; to the consequent very heavy cost of maintenance of these two works, whose total length would be 15,075 ft., nearly 3 miles, that is to say about 5-2-3 times the length of the Chaudiere Bridge ; to the serious obstacle to the navigation of large vessels which would be presented by the bridge over the south channel, with its 16 piers in the river, which would, moreover, greatly impede the movement of the ice ; finally to the drawback which would result, especially for a line of such importance as that of the Quebec Bridge, of having to cross the River St. Charles over a drawbridge to enter the city, a drawbridge being the only means of crossing that river ; 2nd, That at Pointe a Piseau (Sillery), because if an expenditure of \$12,500,000 is to be incurred, it would be as well for a few hundred thousands of dollars more to build the bridge at Quebec itself. The choice, therefore, remains between the site at Cape Diamond & that at the Chaudiere. From a technical point of view, the Chaudiere site is far superior to its Quebec rival ; the length of the bridge there would be only half that of the bridge before the city, and the foundations of the piers of the first would reach only a depth of 40 ft. below the highest waters, while the supports of the 2nd would have to go down to 135 ft. below the same level. As a result, it is also the Chaudiere site which offers the most advantages as regards expense. According to E. A. Hoare, the cost of the bridge there would be only about 4-10 of that of the bridge before Quebec."

Further on the same engineer says :—" A bridge thrown over the river at Cape Diamond would undoubtedly present a magnificent appearance, and would, beyond contestation, possess advantages, as regards communication between Quebec & Levis, which a bridge at the Chaudiere, for instance, could never have. In the case of a construction of such importance, I would not have the aesthetic

question entirely put aside ; but as the bridge would not be thrown over the St. Lawrence merely to produce an artistic effect, or for the purpose of establishing a constant means of communication (not by railway) between the population of Quebec & Levis, I doubt very much whether consent would be obtained to spend from \$5,000,000 to \$6,000,000 for those two considerations, which, after all, are but secondary. What is the chief, I may say the only, object of a bridge over the river St. Lawrence at Quebec ? Is it to have direct & uninterrupted communication between the populations of Quebec & Levis ? No. The chief object of the bridge at Quebec, or in its vicinity, is to connect the networks of railways on the north & south shores, & also to provide for the three great lines, the Grand Trunk, the Intercolonial & the Quebec Central, a means of reaching the port of Quebec itself, that is to say, those vast docks which have been built at such great expense in the estuary of the river St. Charles, & which possess so many advantages for loading & unloading cargoes, & which are so admirably situated with a view to future enlargement. This is the main object of the bridge. Now, the Chaudiere site is, beyond doubt, that which will enable us to attain that end at the lowest cost. The importance now possessed by the steam ferry between Quebec & Levis is chiefly due to the fact that there is no junction at Quebec between the railways of the north & those of the south shore. When this junction will be affected—whether at Quebec or at the Chaudiere matters little—when freight & passengers for Quebec by the Grand Trunk, Intercolonial & Quebec Central can reach their destination without transshipment, & likewise when freight & passengers from Quebec destined for points on those lines can take the railway at Quebec itself & avoid the transshipment to which they are now exposed, it will be seen that what will remain of the traffic between Quebec & Levis will be inconsiderable ; too inconsiderable, in fact, to justify an additional expenditure of from \$5,000,000 to \$6,000,000. It is quite probable, moreover, that a bridge at Cape Diamond would only very imperfectly accommodate the purely local relations between Quebec & Levis ; for to reach by the bridge from the commercial part of Quebec, the lower town, to that of Levis, the portion situated at the foot of the cliff & vice versa, it would be necessary to make a long detour, to ascend a height of 170 ft. above the level of the river on one shore & descend the same height on the opposite one. We may thus believe that, in most instances, it would be much quicker & consequently more economical to cross the river in a steamboat, as is now done, than to make use of the bridge. It is therefore certain that, in the question of the selection of a site for the bridge, the consideration of purely local communications between Quebec & Levis can have but a slight influence."

Mr. Gauvin then answers certain objections brought up against the Chaudiere site in the report of Mr. Bonin in 1890, in which it was contended that during the construction of the bridge a new centre of population would form at a certain distance from Quebec which would become a connecting point of railways. Mr. Gauvin refutes that statement as follows :—" If the bridge be built before Quebec, during its construction a new centre will be formed in the vicinity of the work on the heights of Levis, which are admirably adapted for the purpose—the fact must not be overlooked that, on the Quebec side, a tunnel will immediately follow the bridge—when the work is ended this centre will remain & become the terminus of the line ; there will be the real junction of the C.P.R. & the other lines on the north shore with the railways of the south shore. Quebec will then, as it were, be served only by a secondary line ending in a cul-de-sac

& the trade of Quebec will be transferred to the new town so formed. To such an objection against the bridge before Quebec, the supporters of the latter will assuredly not fail to answer that the thing is impossible; that in any case at whatever spot the bridge may be built, Quebec, the seaport, must be the terminus & the point of junction of the railways on both shores; & they would probably add that if the transatlantic steamers & a fortiori small vessels could reach the heights of Levis as easily as they reach the wharves of the Harbor Commission, it would then be very different, & that under such circumstances only, could Levis dispute, with any chance of success, Quebec's claim to the honor of becoming the great commercial centre of the eastern portion of the Province. Now, in this order of ideas, what is not possible for Levis is not more possible for Cape Rouge, & this fear of seeing the trade of Quebec transferred to Cape Rouge, in the event of the bridge being built near the latter place, seems to me unfounded."

Another objection, that, with a bridge at Chaudiere, railway trains would only pass through Quebec, is thus answered by Mr. Gauvin: "We may be certain of one thing, that, even with the bridge before the city, freight or produce from the west shipped to points east of Quebec, or vice versa, would proceed direct to their destination. These goods would not have to undergo an unnecessary stoppage or transhipment merely because they passed through Quebec. We must not lose sight of the fact that freight trains merely passing through Quebec would bring in nothing to the city. Let us suppose, for instance, that the traffic on the eastern section of the C.P.R. should increase to such an extent that that line would bring an average of 100 freight trains daily to the port of Quebec. It would be a very fine thing for Quebec; but, I ask, what good would these hundred freight trains passing through ancient Lorette do to that place? None whatever. What advantage would the city of Quebec derive from trains merely passing through it? I do not see any. They would rather be a drawback on account of the noise, the smoke & the impeding of traffic in the streets through which the bridge line would run. I am told that in Toronto a movement has been commenced amongst its population to compel trains which merely run through the city without stopping to pass outside of its limits, the people being absolutely deafened by the noise caused by an almost uninterrupted succession of trains from which they derive no benefit. As to freight trains from Quebec, they will proceed to their destination as well if the bridge be at the Chaudiere, as if it were in front of the city itself.

"The junction line of the Quebec Bridge on the north shore has a peculiar feature which deserves special mention: that is the tunnel. Tunnels are always costly works (the one in question would probably cost not less than \$1,000,000), & they are very costly in maintenance, owing to the artificial ventilation which has sometimes to be kept up in them, & also to the constant watching they require. In my opinion, tunnels, & above all, curved ones, such as that needed for the Quebec bridge, should be avoided as much as possible. It is true that the final location of the junction line of the Chaudiere bridge with the C.P.R. has a tunnel under St. Foye Hill; but in this res-

pect there is a marked difference between the Quebec site & the Chaudiere site, which is to the advantage of the latter. The Quebec tunnel is inevitable, while for the Chaudiere bridge it can easily be dispensed with by slightly lengthening the junction line, & this solution, a much more economical one than the tunnel, would suffice for a long time for traffic requirements."

OPINION OF E. A. HOARE, C.E.

Under date of Sep. 3, 1898, the Bridge Co's Chief Engineer, reported: "As instructed by the board of directors, I beg to report on the results obtained from test boring at the site chosen for a bridge to be built across the River St. Lawrence above the Chaudiere basin, & to state the effect that the formation of the river bed will have on the pier foundations. The formation within the limits of high water was found to consist of rock underlying compact boulder gravel, with pockets of finer gravel nearer the surface. On the south side, above high water mark & extending from the cliff for a distance of about 150 ft., a pocket of clay containing boulders was found overlying the rock at a depth of about 80 ft. The minimum depth to the rock below river bed at any point within high water mark was found to be about 40 ft. The piers for the short approach spans will be on surface rock. The 2 main piers & a third pier will be the only piers that will be built within the limits of high water mark, & they will all be clear of the navigable channel. The piers for the centre span will be in 20 ft. of water at low tide, the foundations for which will be sunk from 50 to 60 ft. into an unyielding bed of boulder gravel by the pneumatic caisson process, which, comparatively speaking, is not uncommon for bridges of a similar size. The 3rd pier will be close to the north shore where the river bed is above low water. The foundations for this pier will be constructed in open caisson sunk about 16 ft. below river bed into the boulder gravel. Pier foundations on the south side between high water mark & the cliff will be of ordinary construction on dry land founded on the hard clay already mentioned. If it should be considered advisable to increase the channel span beyond the minimum allowance of 1,600 ft., to about 1,800 ft., & change the general design to suit, the 2 main piers would then be in 7 ft. of water, & it would only be necessary to sink the foundations from 30 to 35 ft. below the river bed. The plan to be finally adopted will depend upon the comparative merits of the proposals to be received from bridge construction companies. There appears to be a prevailing impression in some quarters that the maximum depth of the borings indicate the levels at which the foundations must be laid, that such is not the case is obvious from what has already been stated.

"It should be unnecessary to refer again to the old story of the best bridge site after so many well known opinions have been given in official reports. Nor should it be a perplexing question to conclude from the figures below that the Chaudiere is the only site that is not a commercial impossibility. The physical features of the Chaudiere & city sites compare as under:

Total length of bridging at Chaudiere...	3310 ft.
" "	Quebec... 5100 "
Width of river at low water at Chaudiere 1900 "	
" "	Quebec
(between wharves)...	3942 "

Width navigable water at Chaudiere...	1400 ft.
" "	Quebec... 3900 "

"The above figures should be self convincing without further comment. No reference, however, has been made to depth of water at any other site than the Chaudiere. The deepest water at low tide at Quebec for piers of channel spans equal in length to that proposed at Chaudiere will exceed 120 ft. Two piers would have to be placed in navigable water, which I have reason to know would not be permitted, thereby placing advocates of the Quebec site upon the same footing as the Co. formed for bridging the Hudson at New York were placed by the U. S. Government, the latter being compelled to design their bridge for unobstructed navigation between pier heads which required a clear span of 3200 ft. between towers; & even with this limiting span for the Quebec site 2 piers would still remain in navigable water but closer to shore. What I have stated applies equally to the advocates for the bridge at the Island of Orleans. Assuming an allowed limited channel span of about 3500 ft. at either of the 2 sites the supporting towers at either place could not be built in less than 40 to 50 ft. of water at low tide, & just consider the comparative cost of such a long span. The Chaudiere site has superior advantages for railway connections, which is of paramount importance to the City of Quebec. It is not the highway of foot passenger traffic that is going to enhance the commercial prosperity of the city, although this may be a very desirable convenience if it could be had at a reasonable outlay. The Chaudiere line will connect at a concentrated point with all the railways on the south shore, traffic from which can be taken to Quebec by either of 2 lines, one passing into the city along the coves on the north side of the river, & the other by St. Foye Village entering the city by the St. Charles River valley. The grades on both will be very favorable for all kinds of traffic. When this is accomplished a union station should be established for all railways centering at Quebec. With reference to the railway connections with a bridge at Quebec. You may not be aware that a costly tunnel will be required to connect the north end of the bridge with suitable ground to reach the terminus, & the elevation of tracks at the south end of the bridge will be about 160 ft. above the Grand Trunk, making a connection with their system impossible except by a very round about way."

It may be added that Chaudiere is up stream from Quebec about 6 miles. It is expected the bridge will cost from \$3,000,000 to \$4,000,000.

The Co. has invited tenders for the work to be sent in by Jan. 2 next. The tenders are to be accompanied by designs, & the Co. will consider tenders for a suspension bridge with stiffening trusses, & for a cantilever bridge with ordinary viaduct approaches; for the former tenders are to be accompanied by specifications adapted to that class of construction, with stress diagrams & other plans sufficiently detailed to enable a proper comparison to be made with other designs. The tenders & designs for both cantilever & suspension bridges are to be based upon the specifications prepared by the Co.'s Engineer. The Co. requires the option of dispensing with the 2nd railway track, electric tracks & roadways for the present.

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CANADIAN ROADMASTERS ASSOCIATION.

At a meeting of roadmasters held at Smith's Falls, Ont. Sep. 15, 1897, it was decided to organize The Canadian Roadmasters Association, the membership to be confined to roadmasters & assistant roadmasters in good standing on any regularly operated railway in Canada, members to be admitted by a majority vote of the Executive Committee. The membership fee was fixed at \$2. The officers elected were: President, W. Shanks; Vice-President, J. Jelly; Secretary, J. Drinkwater; Treasurer, J. Brennan. Other members of Executive Committee: A. McAuley, J. Shanks, W. Kelly, R. Shanks.

The 2nd meeting of the Association was held at Ottawa Sep. 20, 1898, President W. Shanks in the chair, there being a fair attendance of members.

In opening the meeting the President said: It is generally known that roadmasters are good speakers. It is customary for the chairman of such a meeting as this to open the proceedings with an address, but I am relieved very much on this score because I see many other better speakers than myself here to-day, & I will therefore make my address very short. I would say before proceeding to routine business that I am very pleased to see the large attendance at our meeting, though I would rather it had been a good deal larger. There is no doubt that meetings of this kind, if properly conducted, will prove beneficial both to ourselves & to the roads we represent. As I am not a speaker myself, & there are many here who are, I will not take up your time further, but will proceed with the regular order of business.

The Secretary read the minutes of the first meeting, also the Treasurer's statement, both of which were adopted. The roll was then called.

COMMUNICATIONS.

The Secretary reported having written to the management of the various Canadian railways requesting that facilities be given their roadmasters to attend the meeting, & read a number of replies, including the following:—

C. M. HAYS, General Manager G.T.R., wrote:—"I am sorry to learn that the Association did not select a more central location, convenient to the officers of our line, as in that event we should have been glad to have had as many of our roadmasters attend as could be conveniently spared from their work, but in view of the fact that the latter part of September, the date set for the meeting, is an unusually busy period for all of our roadmasters, of which you are doubtless aware, I fear that most of our men will not find it convenient to attend, as, with the exception of 1 or 2, it would mean an absence from duty of 3 or 4 days at least. If the next meeting could be arranged to be held at a more convenient time & place, central to our line, I would be glad to have as many of our roadmasters attend as could find it convenient."

D. POTTINGER, General Manager Government Railway System, wrote:—"There is no objection to our roadmasters attending the meeting of the Association if they desire to do so, & if the Chief Engineer can spare them from the work. We have a good deal of work going on at this season of the year & it will not be closed up in September, & it is not always convenient for the men looking after such work to be away from it."

W. WHYTE, Manager C.P.R. Western Lines, wrote:—"The date of your meeting is about the very worst time of the year for our roadmasters to leave their tracks, as our fall rush of traffic will then be on us. However, applications from any of our roadmasters will, no doubt, be considered by their Superintendents."

T. TAIT, Manager C.P.R. Eastern Lines, wrote:—"I am very glad, indeed, to hear that

the roadmasters in Canada have formed an Association with the object of discussing matters in connection with the maintenance of roadbed, &c., as I think that such discussions & exchange of experience & opinions cannot but be productive of good results. I have written our general superintendents asking them, on application from their roadmasters, to give as many of them as they can spare leave of absence & transportation to enable them to attend the meeting at Ottawa."

E. J. CHAMBERLIN, General Manager Canada Atlantic & Ottawa, Arnprior & Parry Sound Rys., wrote offering to extend the courtesy of those lines to roadmasters attending the meeting.

T. HICKEY, Roadmaster Michigan Central, wrote regretting inability to be present owing to the Roadmasters Association of America meeting at Denver, Col., Sep. 13 to 15, & suggesting that future annual meetings of the Canadian Association should be fixed so as not to clash with meetings of the U.S. Association.

OFFICERS ELECTED.

The following were elected by acclamation: President, W. Shanks, C.P.R., Carleton Jct., Ont.; Vice-President, J. Leslie, O. A. & P. S. Ry., Ottawa; Sec.-Treas., J. Drinkwater, C.P.R., Winchester, Ont. Other members of Executive Committee: J. Shanks, C.P.R., Montreal; W. Wallace, C.P.R., Ottawa; M. Keefe, O. & N.Y. Ry., Ottawa; J. R. Brennan, Gatineau Valley Ry., Ottawa.

The Secretary's report showed a membership of 31, the following lines being represented: Canadian Pacific, Intercolonial, Canada Atlantic, Ottawa, Arnprior & Parry Sound, Gatineau Valley, Pontiac & Pacific Jct., Central Ontario, Michigan Central, Manitoba & Northwestern.

THE DUTIES OF SECTION FOREMEN.

The committee, J. Shanks, J. Brennan & J. Leslie, reported as follows: The duties are in summer to keep track in proper surface, level & line, renew ties, also change broken & worn-out rails, keep switches & frogs in good order & keep same properly blocked to prevent trainmen from getting caught in them, to keep all track bolts properly tightened, keep all farm & all public crossings in repair, also do light repairs to right of way fences, keep track to good gauge & adze down ties on curves where rails roll outward, keep ditches properly cleaned out. In winter to keep track properly shimmied up & prevent same from spreading, keep all switches & frogs & sidings clear of snow & ice, see that snow plough signs are put up & kept up all winter at crossings, keep the right of way clean & tidy & free of old ties, brush, weeds, &c. Foremen should ride over their sections on passenger, light or freight engines when opportunities occur, say once a week.

MR. JELLY.—Is this report supposed to cover the whole of a section foreman's duty?

THE PRESIDENT.—This report was drawn up that it might be discussed & amendments proposed if necessary.

MR. JELLY.—In moving the adoption of this report I would like to make a few remarks. I presume that different roads have different rules in connection with these matters, & I also presume that none of them have more for their foreman to do than the C. P. R. has. However, I think the report as a whole, as far as I can see, is all right. Nevertheless, the duties of a section foreman very often exceed those mentioned, but I think the chief duties are enumerated.

MR. MORIN.—I notice one very good idea in this report; that is the suggestion that foremen be permitted to ride on engines over their sections. Permission should be given to section foremen to ride on engines or passenger trains over their sections, so that they will be able to see all the bad spots on the sections. If this could be arranged with the

superintendents it would be a great benefit to the roadmaster & to the company. Another thing, I think that section foremen should visit all of their sections after a storm or high wind, & should go over the section personally both day & night. Just at present I do not notice anything else that calls for special mention.

MR. DRINKWATER.—Referring to the point taken by Mr. Morin, as to foremen riding over sections on engines, I may say that this has been the custom on our division for about a year. It was an understanding arrived at with the General Superintendent, and the Locomotive Department were advised to allow section foremen to ride over their own sections & such parts of adjoining sections as was necessary, on engines pulling passenger trains. This has been practiced on our division for about a year, & I find that it has been very beneficial. Of course you sometimes get a foreman who is afraid to ride over any section but his own (laughter), but there is much difficulty experienced in picking out bad spots without doing so. We all know how difficult it is for a foreman to locate a bad spot unless he knows within half a mile or so of where it is, & this new arrangement has brought about a great deal of help to section men, & gives roadmasters considerably less to do, & of course that is what we are all after. (Laughter.) I was under the impression that this was being practiced all over the system.

MR. JELLY.—Might I ask if it was through the order of the Superintendent that this was arranged?

MR. DRINKWATER.—It was arranged through an order of the Superintendent & Master Mechanic to allow section foremen to ride on engines over their own sections from one station to another, & we have instructions to have them ride over their sections at least once every 2 weeks.

MR. MALLOY.—I approve of this report as a whole, but, like Mr. Jelly, I think there are many duties of a section foreman other than those named. Besides these duties it is certainly the duty of a section foreman to go wherever his duty calls him, & at any time. However a section foreman's duty is very well expressed in the report, though there are many unforeseen duties which are perhaps hard to get at & express. I am in favor of adopting the report as it stands.

MR. KELLY.—I have very little to say, but like those who have spoken I think there are many duties of a foreman which are not included in the report, though I am in favor of adopting it as a whole, & think perhaps that it is not necessary to name all the duties which a foreman may be called on from time to time to attend to. For a foreman to ride on an engine over his section once a week is a very good thing, & as Mr. Morin has said, I think all foremen should go over their sections after a heavy storm.

MR. KEEFE.—I favor the adoption of the report as it stands, as I think it covers practically all the duties of a section foreman. It is a standing rule with some companies that a sectionman is at liberty to ride over his section on an engine, & as far as visiting track after storms or high winds is concerned, it is the usual custom, I suppose, to go over the section if there is any prospect of danger whatever.

THE PRESIDENT.—I think that the report covers about what our rules cover, with the exception of riding on engines. I think this would be a very good feature.

The report was then adopted.

ELEVATION OF CURVES.

The committee, R. Shanks, W. Kelly & J. Jelly, reported as follows: We believe in curve easement at the tangents & that the elevation should commence to run off at the same point on the curve that the easement com-

mences, the elevation to run off $\frac{1}{2}$ in. to each 25 ft.

On very sharp reverse curves perhaps this might not be enough if the distance between curves would permit more, & where this distance is not long enough the speed should be reduced.

We are not in favor of elevating any curve more than 6 ins., where trains do not attain a maximum speed of 35 miles per hour.

For a rate of 35 miles an hour we would elevate the curve 1 in. for each degree up to 3 degrees. For 4 degrees add $\frac{3}{4}$ in. & $\frac{1}{2}$ in. for each additional degree above 4 degrees.

We consider no rule can be laid down that will meet all cases, & the elevation may have to be varied according to circumstances. For a rate of 50 miles an hour elevate the curve $1\frac{1}{4}$ in. to the degree up to 3 degrees. For 4 degrees add 1 in. & for each additional degree add $\frac{3}{4}$ in.

On all curves raise the outer rail rather than depress the inner.

The adoption of the report having been moved, it was discussed.

MR. DRINKWATER.—I do not wish to be too inquisitive, but there are a few portions of the report that I do not understand very well. I can raise no objection to the substance of it, but the 1st paragraph is not very plain to me. I do not thoroughly understand it, nor the following: "Elevation to run off $\frac{1}{2}$ an inch to every 25 ft." On very sharp curves, or reverse curves perhaps this would not be enough. I believe in curve easement at the tangents, & that elevation should commence to run off at the same point on the curve that easement commences.

MR. R. SHANKS.—That is, your elevation would start to decrease at the point where your curve starts to ease off?

MR. DRINKWATER.—Yes. I think this report meets my views fairly well, judging from my small experience of curves, for I have been fortunate enough to have a road so straight that I can see from one end of it to the other. It is true that no rule can be laid down that will meet all cases. Any of us who have had any experience—we have all had some I suppose—know that this is the case. On a curve on a 1% grade, or whatever grade it may be, a train going down grade, whether freight or passenger, will run 45 or 50 miles an hour, & going in the other direction will run maybe 15. In other cases trains run from 45 to 65 miles an hour in both directions. There are many instances of this kind in 150 miles of road that only close attention & practical experience can deal with properly. This has been my experience, & I think that one clause in the report covers that point.

MR. MORIN.—I am waiting for some of the older heads to say something on curves. I think there is a good deal of judgment to be used in ascertaining correct elevation. It depends a good deal on where the curve is located. It is on a down grade it would, of course, require more elevation than on the top of grade where the speed would not be so

great. I believe the elevation mentioned is not too much for sharp curves, where the outside rail gets worn. I believe that in a case of that kind the curve should be well elevated & well braced on inside & outside. I would like to hear from some of the old hands who have been at the business a long time.

MR. KEEFE.—From what experience I have had of curves, & we have some pretty bad ones on the other side of the river, I would say that I have been accustomed to give from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch to a degree, & found that sufficient. In many cases I have had to take elevation out of curves on a grade down to $\frac{1}{2}$ an inch, sometimes less. The fast trains would require more elevation, but the slow trains dragged over the top of the inside rail. In regard to running out elevation on curves, I have struck places where we have had to run out at the rate of an inch to the rail, but I presume you do not get that on the C.P.R. or some other lines, & in fact on the new line which we are building here the curves are very light. I have always found that wherever track was elevated from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch that we had to take the elevation out on account of tipping the inside rail. As Mr. Drinkwater says, it is necessary to use a good deal of judgment on account of the different speeds of train.

MR. R. SHANKS.—Have you had no trouble with the outer rail cutting on grades of which you speak, with $\frac{1}{2}$ to $\frac{3}{4}$ inch elevation?

MR. KEEFE.—Yes. Also with the inch elevation; with the inner rail.

MR. JELLY.—Would it not be better to tip the inside rail, instead of having the rail cut?

MR. KEEFE.—It does not make any particular difference.

MR. LESLIE.—There are some very considerable curves in our line. I find that to elevate for 50 or 60 miles an hour for 8 degrees is as near as we can come at it. We have curves between Depot Harbor & Eganville 8 degrees, & between Eganville and here the sharpest curves are four degrees. I elevated them for 60 miles an hour & found it sufficient. The inner rail is now showing slight signs of wear on heavy grades. I elevated for 45 miles an hour & found it too much for heavy freights crawling up grade at a slow rate. I think this question is a pretty hard one to decide on, & it depends, of course, on the circumstances what elevation must be given. Passenger trains running at 60 miles an hour & freights crawling along at 15 to 20 miles require different treatment, & it is hard to provide for both. We feel like giving more elevation when trains are running fast.

THE PRESIDENT.—On what speed is the report based?

MR. R. SHANKS.—On a speed of 35 to 50 miles an hour.

MR. DRINKWATER.—What do you take for a basis in starting easement of curves?

MR. R. SHANKS.—The only way that you can work it successfully is that you can hold your curves in. Of course the proper way to get easement is to put it in in constructing the

road. If you do not ease your curve in you will certainly sharpen your curve.

THE PRESIDENT.—How you are going to ease a curve without changing the whole curve I do not understand.

MR. DRINKWATER.—Would it not be simply taking work away from the engineer that he had left undone at construction to do that.

MR. R. SHANKS.—We are not disputing that the work should have been done by the engineer.

MR. DRINKWATER.—If you take a 3 degree curve it is easier than a 4 or 5 degree, but the points are the same as the centre. If you ease the curve you make the points of curve easier than you make the centre; you can ease it in either way. If you line the whole curve in you make another curve; you do not change that one at all, you make another one. I do not take the position that the curve is not easier, but you do not make the points any easier than the rest of it. If you put in easement you do not leave the same curvature at the points as in the centre, & leave the centre where it was. That is exactly what the engineer would have done if he had made that style of curve when the road was under construction.

MR. R. SHANKS.—We do not recommend the changing of all curves, but the easement of curves.

MR. JELLY.—The curve could be lined all the way around, & then easement could be made on the end, & curvature made the same as formerly, & have an easement on the end as well. But of course if you ease portions you certainly make the balance of it sharper.

THE PRESIDENT.—If the easement is put in when the road is constructed then you have something that is worth something. Then you commence to slacken elevation where easement commences, so that your train will pass on to curves without getting that knock which it is so customary to get when striking curves. First your car comes over on a straight line where it should not come over, & there is no question in my mind, but that if we had roads laid out with easement they would ride much better, but I fail to see how you can get this & have curve ride well unless the whole curve is eased. That is my opinion in connection with easements. So far as elevation is concerned I find that I cannot get good results at 50 miles an hour with less than an inch to a degree up to at least 4 degrees. If you get beyond 4 degrees I would not be in favor of putting an inch to a degree. I am of the same opinion as one of the road masters (I forget his name) of the New England Roadmasters' Association, that is that after you get a certain elevation, I think it is 7 inches, that I would not elevate over that. Where it is necessary to elevate over 6 or 7 inches, you must reduce speed.

The report having been adopted, the meeting adjourned till the following day.

RAIL JOINTS.

The committee, J. Drinkwater & W. Shanks, reported as follows: In connection with our

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work there is no one thing of so much importance, or that affects tracks so much, as the joints. Considering from this fact the importance of the subject & the amount of money, time & study that has been expended on attempting to perfect rail joints, & yet your committee are strongly of the opinion that the best that has been produced that they have had practical experience with is still lacking, or has failed to fully meet the requirements. Our experience is from the old wrought iron chair to the plain fish-plate with the tie directly under the joint. Then came the 2 tie angle bar & later the 6 hole 40 ins. angle bar supported with 3 ties, & later still the 44 ins. angle bar supported the same as the 40 ins., with 3 ties, & at present we have a 4 hole angle bar supported on 2 ties.

Our experience has been that wherever joints have been supported with a tie directly under them, whether with the plain fish-plate, or the 3 tie 6 hole angle bar, the results have been better than with the 4 hole angle bar with the joint suspended between ties. The new angle bar with 4 bolts & 2 ties, suspended joint, is, we consider, a decided improvement over the old one in its general make-up. Instead of slats in the edges for spikes the holes are through the web or flange. This gives the full benefit of the 4 spikes against spreading, but with the improvements in this joint over the old 2 tie suspended joints we have been unable to see where the defect has been remedied, or the cause removed, or the necessity provided for that we have found to exist with a suspended joint.

The 40 & 44 ins. angle bars have the appearance of a waste of material, & this of course means expense for which no benefit is derived.

Up to the present our experience is & we beg to report, based on experience, that the suspended joint has been a failure, & even with the improvements on the present suspended joint we do not feel free to recommend it as being all that it should be, but, to the contrary, believe that they must get their support from underneath, and we consider that the energy spent & the efforts put forth to produce a satisfactory joint have not been productive of the result desired.

The adoption of the report was moved:

MR. JELLY.—I have had in use the 44-inch angle bar supported joint, also the 4-hole joint non-supported, & I find so far that the supported joint 44-inch angle bar is the best I have used. I do not at all approve of the suspended joint. With the old style we have had in use 56-lb steel, & have had the suspended joint & also the plain angle bar, & you could tell the very first rail length when you had left the suspended joint. The rails with the supported joint were in good order when the others were all battered down in the joints & in very bad shape. I consider that there is a difference of at least 3 years in the life of the rail between the supported & the suspended joints in favor of the supported joints. Of course, so far as the joint is concerned, I do not know that the long angle bars meet with my entire approval. I find that it is too long & that the quarter gets down at the back about 5 or 6 ft. from the joint, & I find that is the weak point. Of course you cannot shorten up the angle bar so long as you have 3 ties under it, but, so far, that is the best rail joint I have had anything to do with.

MR. R. SHANKS.—From what experience I have had I do not favor the suspended joint, but at the same time I cannot altogether approve of the 44-inch bar. I find that in quite a number of cases you have to tighten up bolts. Like Mr. Jelly, I have had a good deal of trouble with the rail giving back from the end of the bar about 2½ ft.

MR. KELLY.—I am much of Mr. Shanks' opinion. I find some difficulty with the 44-inch angle bar. The expansion is the greatest difficulty. I do not find the rails giving

so badly in the quarters, but the expansion is very troublesome. The 73-lb rail has a much higher neck than the lighter one, & with it the suspended joint makes a fairly good joint when well-tested, but with the light rail I think that the suspended joint is a complete failure.

MR. LESLIE.—We have about 80 miles of 44-inch angle bars & about 50 miles of suspended joints on our Eastern Division. My opinion is that the long angle bar with supported joint makes the better joint. We have not had a very great experience with either long or suspended joints, & do not know what the results may yet be; but up to the present the long angle bar has in my opinion proved to be a good substantial joint. Of course, as Mr. R. Shanks said, there may be a tendency to prevent the expansion from closing, thus causing the rail to sink where the shoulder is weak. I find that this is the case very often. Still it comes nearer to making a good substantial joint than anything I have had anything to do with.

MR. MALLOY.—In regard to the question of joints, I am of the same opinion as many others who have spoken, that is that we have not a perfect joint yet. The 40-inch angle bar, though, I find is the nearest perfect that I have yet seen in my experience as a foreman. The only objection I have to the 40-inch angle bar is that I have to expend extra labor on our rails back from about 2½ to 6 ft. from the end of fish plate to give it more support. We always give that part of the rail the preference in order to keep it from sagging down. Otherwise this is the best joint I have ever used. I have always found that the supported joint was the best & gave the most satisfaction, & have always noticed the difference when you got on to the suspended joint, even when sitting in a coach. As far as expansion is concerned, I have had very little experience with the 40-inch bar where the shoulders were narrow, but I did find that the bar hugged the rail the tightest of any angle bar I had anything to do with. However, I do not altogether approve of it, as there is far too much support for the rail back from the end. The full strength of the fish plate is in that part of the rail more than it is at the extreme point. Otherwise I believe it is the best joint we have as far as I have had any experience.

MR. BRENNAN.—I would prefer the plain strap to any other for my part, but I have had little experience with suspended or supported joints.

MR. J. SHANKS.—I have had some experience with the iron angle bar used on 60-lb. rails, & find it to be a complete failure, as the rails cut into the angle bars so badly that they are split right up & down the same as if there was no support under the head of the rail at all. Of course the old plain fish plate did very well with the 56-lb. rail when supported by a good joint tie. As for the angle bar, for the heavier 72-lb. rail, I could not really find any fault with that. As far as I have had any experience of it it has answered the purpose very well. I have not been bothered any with rails bending, but I think it is a waste of material, & might be shortened up to about 40 inches or as short as could be used on 3 ties to prevent the creeping of the rail. As for throwing out of line on account of hot weather, I have not been troubled with anything of that kind, but this may be caused from a number of trains going over the road, which shakes them around considerably & causes rails to creep. With only a few trains it might possibly be worse, & in using the 40-inch angle bar, or something as short as we can use to use slots on the next side to the joint, I think it would be an improvement to use the ¾ bolt with a square nut. As to the hexagonal nut I do not think very much of it, as it is impossible to keep wrenches in good enough condition to tighten up the bolts properly, & it is only a matter of time until

some of them will become nearly round, which would make it impossible to tighten them, & they would have to be renewed. As for the suspended joint that we use on the 73-lb. rail, there is no doubt it is a great improvement over the old iron ones we used to use on the 60-lb. rail, as we get the strength of our inside spikes on account of being directly through the angle parts of the fish plate. At the same time I think that the rail as a general thing batters worse on a suspended joint both on heavy & light rails.

MR. MORIN.—I have not had much experience with 72-lb. steel rails. I have only been a little while with Mr. Shanks, & have not had much time to learn about joints. Of course I have always had the old 56 & 60-lb. rail with straight fish plate & angle bar fish plate, & find the old angle bar of very little use. The old fish plate answered fairly well with the 56-lb. rail. I have not had much experience with these new fish plates. With double tracks I think it would be a very good idea not to have both ties the same size on the joint, but have one large & one small, because when the wheel gets off one end of rail the other goes down more. Where there is good ballast we used 73-lb. rail with 4 bolt holes, & results are pretty good as long as the joints are properly fixed & the ties pretty well together—not more than 4 inches between each. There is a good deal of trouble on account of ties not being properly fixed up & bad ties being used. Of course the old straight fish plates would answer better for such places.

An amendment by Messrs. Jelly & Graham, that the report be laid over for future discussion, was carried.

MISCELLANEOUS BUSINESS.

MR. LESLIE.—Some years ago the New England Roadmasters' Association adopted the principle of putting the big end of tie inside of curves. No doubt some of the roadmasters here can enlighten us as to this practice. I have been trying that method & would like to ask gentlemen here what their opinion of this is.

THE PRESIDENT.—I think it would be well to have this subject brought up at our next annual meeting.

MR. CARON exhibited to the members his patent nut lock.

It was decided to hold the next annual meeting of the Association at Toronto on the third Wednesday of September, 1899, & the following subjects were decided on for discussion, the names appended to each being those of the Committees appointed to report on them.

1. TRACK TOOLS.—J. Drinkwater, A. McAuley, & W. Shanks.

2. EXPANSION OF DIFFERENT WEIGHT OF RAILS.—J. Shanks, J. Graham, & J. Leslie.

3. PLACING OF TIES & TRIMMING BALLAST.—E. Murphy, T. Hickey, & J. Malloy.

The question of publishing the proceedings in pamphlet form was left to the Executive Committee.

On motion of Messrs. Jelly & Graham it was decided to recognize THE RAILWAY & SHIPPING WORLD as the organ of the Association.

On the motion of the same members a resolution was adopted expressing condolence with the family of the late Mr. Thomas Newman, C.P.R. Roadmaster at Schrieber, Ont.

THE PRESIDENT.—Before closing I would like to say a few words in connection with the Association. I believe it was organized for the purpose of getting together & discussing railway matters, which would eventually prove a benefit to each member & also a benefit to the roads represented by roadmasters who attend these meetings. Now, I think the roadmaster is in perhaps a little different position than any other employe of a railway. In fact, he is in rather a peculiar position. He is all right when he starts from the beginning as a

section hand & can look up to the foreman to get advice & information. If he is a bright, intelligent man, in the course of time he will become capable of taking charge of a section. Then, when he has charge of a section, he has the benefit of the experience of the roadmaster & can get information from him in regard to railway work which will help him very much in his progress. But when he gets to be a roadmaster he is in a different position altogether. I fail to see who we are going to look to to get any information from that will be of any benefit to us with regard to the practical side of our work. I do not wish to say anything that will seem to throw any reflection on superintendents or engineers, but as you all know, as a rule at least, superintendents, managers of roads & engineers & all such officials have not started at the foot & worked up. Of course there may be a few exceptions. I know of one at least who became manager of a road who started as a brakeman; & I know of one, in the United States, who reached the position of manager who started as a section hand. But that is not the rule. Our superintendents start as a rule as operators. From that they become despatchers, & from despatchers, trainmasters, superintendents, etc., but they never have any experience in connection with our work. On some roads roadmasters come directly under the engineer. The engineer, as a rule, has the theory of his profession from schools & colleges, but he has not practical experience, & therefore the roadmaster has no one to go to for advice in connection with his work, & for this reason I believe that this Association will open up a way in which roadmasters can get together & receive the benefit of the views & experience of other roadmasters who have perhaps been in the business many years longer & placed in such circumstances as to be able to gather together more information. Some roadmasters are placed off on side lines where there is no chance of seeing neighboring roadmasters, & cannot get information that they very often would like to have. I trust that this Association will, to a large extent, rectify that loss, & I think we will work together harmoniously & try to benefit each other, & that the Association cannot fail to result in a benefit to all of us. I do not think there are any of us who feel as though they had learned the whole business & cannot learn any more. There are none of us but can keep on learning from year to year. I would like to have our officials know that it is the object of this Association to improve roadmasters along these lines, & I think that when they know this they will only be too glad to assist us & to do all they can to further the objects of the Association. Now, there is another point I want to refer to, that is that roadmasters are, I think, tied up a little too closely. It is very seldom that a roadmaster gets out on another line to see how another man is doing his work. I think if a roadmaster could get out once or twice a year that he would take more pride in his own work & would certainly get the benefit of, perhaps, in a great many cases, more experienced men, men who have been in the business longer, & I think if our railway officials saw it in that light they would make it a point to let us get out a little more than in the past. I know that I never have passed over a line but I have noticed things that I did not consider any improvement on what we had on our own line, but, on the other hand, I never passed over another line but I saw improvements, & I think that as a rule roadmasters make a point to see how other roadmasters are doing their work when passing over other roads. There is another point, of course it would not affect all roadmasters, but in a great many cases it does, that is that roadmasters are kept in their offices doing office work when they should be out on the road. Of course there are a great many who have clerks, but a great many more

who have not. I think it is a mistake on the part of officials that roadmasters are not furnished with clerks, so that they can spend the whole of their time on the line, where they are supposed to be. In a great many cases roadmasters are kept in their offices for 2 or perhaps 3 days from the first of the month until returns are all in & work is completed. To my mind during these 2 or 3 days it is very easy to lose more to the company than it would cost to pay a clerk for the whole month. I would like to hear the opinion of other members regarding these matters.

MR. KELLY.—I think you have expressed our views so fully as to make it unnecessary for us to say anything more on the subject.

MR. J. GRAHAM.—Our company furnishes clerks.

MR. J. SHANKS.—What mileage has the Canada Atlantic?

MR. J. GRAHAM.—183 miles of track.

MR. LESLIE.—I have 130 miles, & am supplied with a clerk.

MR. MALLOY.—I would like to ask it it would be constitutional for roadmasters of electric railways to become members of this Association?

THE PRESIDENT.—On looking over the constitution I do not see anything to prevent this; it would entirely depend upon the definition of the word "railway;" but I think the duties of roadmasters on electric & steam railways are widely different.

The meeting then adjourned.

Constitution & By-Laws.

The following were adopted at the first meeting at Smith's Falls, Ont., Sep. 15, 1897:

The object of the organization is to secure more perfect harmony among roadmasters, to impart more general information, & to promote the general welfare of each other & of the roads represented by the members.

ARTICLE I.

Section 1. The name of the organization shall be the "Canadian Roadmasters' Association."

ARTICLE II.

Section 1. The officers of this Association shall be a President, Vice-President, Secretary & Treasurer, & Executive Committee of seven, including the President, Vice-President, & Secretary & Treasurer. The President shall be Chairman of the Executive Committee.

Sec. 2. All the officers shall be elected by ballot at the annual meeting. A majority of all the votes cast shall be necessary for a choice.

Sec. 3. The President, or, in his absence, the Vice-President, shall preside at all meetings. In case of the absence of both President & Vice-President, the members may elect a President to act pro tem.

Sec. 4. The Secretary shall keep the records of the Association & Executive Committee, audit all correspondence, & issue notice of all meetings of the Association & Executive Committee, & collect all fees & dues, pay them over to the Treasurer, taking his receipt therefor.

Sec. 5. The Treasurer shall keep the accounts & be charged with all the funds of the Association, & disburse them under the direction of the Executive Committee. He shall, at the annual meeting, or at any other time, if required by the Executive Committee, furnish a statement of funds, income & expenditures to the Association.

Sec. 6. All bills against the Association must be approved by three members of the Executive Committee before they shall be paid.

Sec. 7. The Executive Committee shall have the general management of the Association. Three members of this Committee shall con-

stitute a quorum at any regular or special meeting of the Committee.

Sec. 8. Vacancies can be filled pro tem by the President, or permanently by a majority vote of the members present at any regular or special meeting.

Sec. 9. All officers of the Association shall continue in office until the close of the meeting at which their successors are elected.

ARTICLE III.

Section 1. Regular annual meetings of the Association shall be held at some place in the Dominion of Canada, on the ... Special meetings may be called by the Executive Committee, or by vote of the members at any regular or special meeting. Seven members shall constitute a quorum of all meetings of the Association.

Sec. 2. The order of business shall be as follows:

1. Reading of minutes of last regular & intervening meetings of the Association.
2. Secretary's Report.
3. Treasurer's Report.
4. Roll Call.
5. Enrolment of New Members.
6. Reading of Communications.
7. Election of Officers.
8. Report of Committees.
9. Unfinished Business & Miscellaneous Business.

Sec. 3. The place of holding next annual meeting shall be decided by a vote of members present, or by the Executive Committee, of which all members shall receive due notice.

ARTICLE IV.

Section 1. Any Roadmaster or Assistant Roadmaster, in good standing on a regularly operated railroad in the Dominion of Canada, on securing the majority vote of the Executive Committee present at any meeting of that Committee, or majority vote of members present at any regular or special meeting of the Association, and signing the Constitution and By-laws, paying an entrance fee of two dollars, shall become a member of the Association, & shall remain so as long as he pays all dues and assessments promptly, unless expelled.

Sec. 2. Whenever the fee shall prove insufficient for the current & necessary expenses of the Association, then the Executive Committee shall cause to be levied on each member a further assessment, the whole to be approved by a majority vote of the members present at any regular or special meeting.

Sec. 3. Every member of this Association shall be notified by the Secretary at least two weeks previous to a special meeting of the Association & of his assessments; if he shall fail to pay the same on or before the next annual meeting, he shall then cease to be a member of this Association, unless his dues are paid or remitted by a vote of the members at any regular or special meeting.

Sec. 4. Any member may be expelled from this Association by a two-thirds vote of the members present at any regular meeting.

ARTICLE V.

Section 1. Any portion or the whole of these By-laws may be amended or others substituted instead, by a two-thirds vote of all members present at any regular or special meeting of the Association.

Canada Metal Co.—W. G. Harris, the enterprising proprietor of this Co., has shown commendable enterprise in restarting after the disastrous fire which destroyed the premises on William St., Toronto, on Sep. 18. The Co.'s 7 furnaces were buried under 15 ft. of debris, but are again in full blast, & the Co. will very soon catch up with its orders for solder, babbitt, piano-key leads, stereotype, linotype, & monoline metal.

THE APPLICATION OF ELECTRIC POWER ON TRUNK-LINE RAILWAYS.

By George Forbes.

In accepting the invitation of the Editor to write an article upon electric traction with special reference to its probable extension to trunk lines, it is not my purpose to instruct engineers in the duties of their profession, or to suggest to manufacturers any new directions in which to work, but simply to give those who are financially interested in railways the results of disinterested and careful study and extensive calculation. After casting a retrospective glance over what has been accomplished I will endeavor to indicate the directions in which electric traction is advancing, & to state in broad & general terms the conclusions that I have arrived at as to the cost of works & facility of carrying them out.

In dealing with this subject, it must be borne in mind that circumstances differ. The street railway has developed to a marvellous extent in America, whereas in some European countries it has not found general favor. The cause of this lies largely in the differing circumstances. Countries are also affected in varying degrees by the amount of their suburban traffic, while the introduction of electric traction must also depend on the amount of underground communication in large towns. And other special features arise, such as the facility of obtaining water power for generating electricity, or the difficulty of getting water for the generation of steam.

The first town to be thoroughly equipped with electric street railways was Richmond, Va. (in 1878, on the Sprague system), & from that date their development has been by leaps & bounds. Moreover, it has been continuously in the same direction, &, while competitive systems have at various times come forward & may prevail at some future time, yet the overhead trolley system has so far almost monopolized the field. The consequence is that the general methods of working have remained tolerably uniform, although there have been decided improvements in the details of machinery. In the U. S., where this development has been most rapid, the systematizing of methods has become as complete as in the case of steam railways, & this applies to construction as well as equipment. The figures showing the present state of development are startling to those who have not yet realized them. It is impossible at present to get details of what has been done up to the present moment; the following figures are for 1895, up to which date sufficiently correct estimates have been prepared. At the end of 1895 in the U. S. there were 12,583 miles of electric street railways in operation. The capital invested in electric street railways at the same time was \$1,400,000,000; the net gross receipts, \$164,250,000; expenses, \$113,500,000; number of passengers carried, 3,000,000,000. These figures alone are sufficient to impress anyone accustomed to deal with the development of large industries.

A good many years ago I was in attendance at a meeting of electrical engineers in New York, & after numerous statements had been made about the progress of electric street railways in the United States, I was invited to give information as to what was being done in England. I then confessed that progress in electric tramways on the other side of the Atlantic had been very slow, but I described the principal development of electric traction which had taken place, & characterized it as being on new lines, saying that possibly this single instance might turn out to be almost equal in value to the street railway work which had already been described. I referred to the City & South London Railway, which cannot be looked upon as a tramway in any sense of the word, but

is a solid railroad properly constructed, its great distinction from the electric tramways being in the fact that the trains were hauled by electric locomotives. Several of my brother engineers in America grasped this fact at once, & were quite prepared to admit that, in the development of the electric locomotive, of which this was the first step, there might be a future worthy of comparison with what had been done in the propulsion of individual cars on street tramways. No assertion was made that the adoption of the locomotive was opening a new era; the statement was simply that the London experiment was one of great interest to all electrical engineers who wish to have a hand in moulding the future of this department of engineering. Since that date electric locomotives have been used on many railways. The facts are not generally known to the public, & it is not out of place here to refer to special cases.

NIAGARA FALLS PARK AND RIVER RY.

This railway is 12 miles long, of double-track, resembling in every way the standard adopted by the Canadian Pacific Ry. The maximum speed attained is 30 miles an hour. Trolley wires are used. There are 2 motor houses; one at the falls, worked by water-power; the other a small auxiliary station at the Queenstown end of the road, with steam plant. There is 15 minutes headway between cars, the average speed, including stoppages, being 13 miles an hour. Locomotives, in the ordinary sense of the term, are not used, but 22 motor cars supply this service, & are followed by trailers, etc. Some of the cars, when fully loaded with passengers, weigh more than 20 tons. There are 8 regular stopping-places along the line, furnished with platforms.

This railway has been referred to, not because of any special merit which it possesses, but because it is not a street railway, & because it shows a method of working. In fact, reference is made to it partly to draw attention to the extremely objectionable feature of it. When water power was available, it was not good policy to use steam power at a distance of 12 miles. Of course, if the electric pressure were only 500 to 600 volts, there would be a great waste of energy or an enormous expenditure of copper in carrying the current to even that short distance; but there would have been no difficulty in transmitting electrical power at high pressure, transforming it down, & converting it into a continuous current. This would have saved nearly the whole expense of working the steam plant. It is important to give attention to this matter of the use of water power on trunk railways. There has been an absurd hesitation to undertake the transmission of power to great distances. If engineers who have had experience in the transmission of power & in the conversion of alternating into continuous currents would look into this question they would be convinced that where water power is available it is generally economical to transmit electrical power hundreds of miles for working railways. As an example it can be proved that, if the railway companies of Scotland were to combine to work their trunk lines by means of electric motors, the electric current being developed by the water power which exists in that country, then the whole of that service might be carried on without the use of steam locomotives.

Another lesson to be drawn from a careful consideration of the subject is that the waste of coal on steam locomotives is not by any means compensated by the extra cost & loss of power in electrical transmission. Estimates have been prepared which show that not only is the cost of copper prohibitive, but that the efficiency of the electric system renders the consumption of coal with stationary engines about as great as with locomotives. This is certainly not the case. The cost of electric

transmission, when properly affected, is not comparable with what it is as calculated on the lines adopted in the past; &, on the other hand, the efficiency of dynamos & motors has not been sufficiently considered in street railway practice in the U. S. A very large part of the success of the Liverpool Overhead Ry. is due to the high efficiency of the electrical machinery.

THE BALTIMORE TUNNEL.

This is a section of the Baltimore & Ohio Railway which it was found desirable to work electrically. The tunnel runs under Baltimore city, & is 7,339 ft. long, 27 ft. wide, & 22 ft. high. There is a steady grade of 0.8% from south to north. The passenger trains are pulled through the tunnel, & the freight trains are pushed the entire distance, steam locomotives in the latter case assisting them in the open. The calculations were for a maximum weight of 500 tons per passenger train, including locomotive, with a speed of 35 miles an hour; for freight trains, a weight of 1,200 tons & a speed of 15 miles an hour. The locomotives have 4 gearless motors, 2 to each truck. All the freight & passenger trains are run through the tunnel by electric locomotives. The following are examples of what has been done on this line: A train weighing 1,125 tons was hauled up a gradient of 42 ft. to a mile by the electric locomotive. At the end of 1 minute the train was moving at 10½ miles an hour. In another case, with a total weight of 1,068 tons, the electric locomotive gave a drawbar pull of 25,000 lbs. as measured by a dynamometer; with a speed of 11½ miles per hour, & a train of 1,600 tons, the drawbar pull was 45,000 lbs. On another occasion a train weighing 1,900 tons was started in the tunnel, & the maximum drawbar pull was 60,000 lbs. at 12 miles an hour. This case is cited as showing that electric locomotives are capable of doing all that can be done by steam locomotives. The first locomotive has been running steadily since Aug. 4, 1895.

NANTASKET BEACH ELECTRIC RAILWAY.

The electric railway is a branch of the New York, New Haven & Hartford Ry. It is 7 miles long, with some sharp curves, & there is a gradient of 34 ft. to the mile. There are stops about every quarter of a mile. Motor cars are used with trailers, with a drawbar pull amounting in some cases to 8,000 lbs. Further extensions of this railway in the same direction have been made, with the use of a third rail between the ordinary rails as a conductor for electricity. These extensions are from New Britain to Berlin & from Hartford to New Britain. There are 22 grade crossings, at each of which the third rail is replaced by underground cable. This electric railway is cited as the first instance of the supplanting of steam by electricity on a standard American railway.

LIVERPOOL OVERHEAD RAILWAY.

The length of this line is 6¾ miles, of standard gauge. A third-rail conductor is laid between the ordinary rails. There are 2 motors on each train, 1 at each end, each motor being of 40-horse power. This line was designed with the utmost care. The machinery was not taken from stock patterns, but specially designed to give high efficiency, the benefits from which have been thoroughly appreciated. This line deserves consideration as comparable with the one next to be considered, & as illustrating the advantage of applying motive power to the wheels of the train instead of to a locomotive, wherever possible. It can be shown that the greatest advantages are attained when the electric power is applied to every axle of the train, & this is the direction in which engineers 10 or 15 years ago expected that electric traction on railways might be developed. The inconveniences & expense, however, of replacing the whole of the old

rolling stock by new, & the unsuitability of the system generally to existing lines as worked by steam, have rendered the use of a locomotive of the utmost importance in all applications to railroads where steam has been used.

CITY AND SOUTH LONDON ELECTRIC RAILWAY.

This railway has $3\frac{1}{4}$ miles of double line. It is driven by electric locomotives, each of which has 2 motors, giving in all 100 horsepower. A third rail is used for the electric conductor. This was the first electric railway introduced in London, & its operation has been studied by engineers & railroad men with great interest.

The remarkable economy of operating the Liverpool Overhead Ry. has surprised all those whose experience in electrical traction has been limited to street railways. The reasons for this excellent performance lie partly no doubt in the cheapness of fuel & of labor, but far more in the good quality of the track & the care taken in designing & supplying efficient machinery.

The examples chosen must not be looked upon as an exhaustive list of cases where electric traction has been successful in competition with steam. They are typical cases, each illustrating some point which it is desirable for the public interested to have knowledge of. There has been no example of a long trunk line worked electrically, but, from the examples already given, it can be taken as thoroughly established that this is not due in any way to want of capability in the electric locomotive. The reason why trunk lines have not been worked by electricity is that, rightly or wrongly, those who have had the matter to decide have considered the cost of transmitting electric power too great. There would be nothing experimental in carrying out such a work, & the estimates of cost can be made out with the greatest accuracy. In an article like the present, intended for business men, as well as technical experts, such estimates should not be introduced; but it is necessary to draw attention to the fact that, in a great deal that has been written on the subject, it has been assumed that the electric pressure upon the feeders is only some 600 or 700 volts. Without assuming to advance any new idea upon the subject, I may cite as indisputable the fact that the feeders may be supplied with current at 10,000 volts or more, which may be in the form of continuous current, but which is more manageable as an alternating current. At different stations along the line it would be reduced in pressure by means of transformers, & converted into continuous current by means of a commutating machine. It is in this point that machinery for working the proposed system has been the least developed. The commutating machine now on the market, introduced first by Mr. Shuckert in Germany, & applied in various factories at the Niagara works, is usually called a rotary transformer. It does its work admirably, but it is expensive, cumbersome & requires continual attention. This last fact renders it impossible to lay such machines along a trunk line at distances of a few miles. But I have prepared the designs for a transforming & commuting machine free from all the defects referred to, which can be manufactured at small cost. For years I have impressed upon manufacturers the desirability of such a machine, & it is only a matter of time when they will find that it is to their own interest to provide it. Viewed in the light of the adoption of very high electric pressures, the cost of transmitting the power electrically is not at all the serious matter that it has been considered, but, in spite of this fact, human inertia may prevent rapid progress in the direction of working trunk lines electrically. After wide experience & a laborious study of the whole question, my opinion is that, as a rule, electric locomotives, with the power de-

veloped by steam, would, if the work were carried out on proper lines, be cheaper than the steam railroad up to a distance of between 40 & 50 miles from the power station. If water power were available for generating the electricity, the distance at which steam power would begin to be cheaper on a busy line is several hundred miles. These statements are the result of calculations with coal at \$1.50 a ton. This economy arises from the well-known fact that in the best trial tests of locomotives 5 lbs. of coal are required for the horse-power hour, & from the fact equally well known, that so good a result is rarely attained, in nearly every case the consumption of coal being several times as much as that indicated. These conclusions, however, do not give much encouragement for the substitution of electricity for steam, except in special cases. A time may come when special railroads will be built over long distances to be worked electrically, & in that case there are advantages of a totally different character which will favor electricity, depending upon the fact that the locomotive will be abolished & power applied to every axle of the train.

In 1881, in the course of some correspondence from the Paris Electrical Exhibition to the London Times, I drew attention to the possibilities of electric traction on railways. That article was really the summary of a lecture which had been delivered before Anderson's College, in Glasgow, in 1879. In that article I drew attention to the remark made by Captain (now Sir) Douglas Galton, in the concluding paragraph of his report on experiments conducted by himself & Mr. Westinghouse on the air-brake when used with trains going at high speed. In that report Sir Douglas Galton said: "The advantage which thus evidently ensues from utilizing the adhesion of every wheel of a train suggests the further consideration as to whether it would not be a more scientific arrangement, as well as more economical in regard to the permanent way of railways, to utilize the adhesion of every wheel of a train for causing a train to move forward, instead of depending for the moving force upon the adhesion of one heavy vehicle alone—namely, the locomotive." I then pointed out that this fertile suggestion might be carried out by the employment of electric motors on the wheels or axles of each carriage. I further pointed out that such a system would result in a saving of wear & tear of the permanent way, a diminution of shocks & injuries to passengers & goods, & a facility in going around curves. Besides this, the wheels would not slip when going up steep inclines, & in starting from a station, speed could be obtained in a small fraction of the time now required. As a secondary advantage, the construction of the permanent way would be very much less costly. This is undoubtedly the way in which an electric railway should be worked. It was supported by able engineers, & many of us can remember the admirable writings of Mr. Sprague upon the subject, in which he made it abundantly clear that such a system of traction would be beneficial in every way.

Although the method of working just described is ideal, it can be applied only to a trunk line about to be constructed in total independence of existing steam railroads. If anything is to be done on a large scale with trunk railways, it must be by means of locomotives, & the advantages of an electrical system using locomotives are not nearly so great as in those cases in which electricity is applied to every axle of the train. It is owing to the great importance of these considerations that so much money has been spent on, & attention devoted to, the Heilmann locomotive, in which steam is generated on the train for the purpose of creating an electric current to be applied to motors driving all the wheels of the train. Without saying that this compli-

cated system has proved a success, still there is no doubt that those who have invested capital in the experiment have been satisfied that there is enough advantage in this method of propulsion to justify the carrying on of extensive experiments. The whole of the advantage lies in the fact that power is delivered to every wheel of the train, no advantage being gained from the cheaper use of fuel at a stationary engine.

The examples given, while they indisputably show that electric traction, under certain conditions, is well able to compete with steam, are not sufficient to overcome the natural conservatism which holds to existing methods.

Hitherto reference has been made chiefly to the great trunk lines, but special attention must be given to the conditions of suburban traffic. Most of us remember, not so very many years ago, the surprise with which we learned that several short steam railways were having to give way to the electric tramways which had been started. In later years it is the great steam railway companies which have been noticing with alarm that their receipts are being largely diminished by the competition with electric tramways for suburban traffic. That this competition is so successful is due to several causes. One is that the natural roads & streets have been employed for the purpose, so that little or no purchase of land has been necessary. But, perhaps, the most important cause is the rapid succession of independent cars which becomes possible under this system, affording a great convenience to the travelling public, & enabling them in many cases to start from their places of business in town & be landed at the doors of their houses in the suburbs. These are very serious matters from the point of view of the railway companies, because many of the companies are really dependent for their profits upon suburban traffic, & if this source of revenue is to be taken away, it will seriously endanger the financial position of the railroad, as a whole. These matters have become more evident in the U.S. than in any other country.

At the first glance it seems almost impossible for a railway with fixed railway stations to be able to compete in convenience with an electric tramway, passing along the ordinary thoroughfares, picking up & letting down passengers at all parts of the journey. Most persons, however, who know the conditions of traffic in the neighborhood of large towns in the U. S., will probably agree that this matter of convenience does not apply to every household, & that householders want, so far as this point is concerned, would be fully met if the stopping places on the trunk line were in direct communication with the local street railways of the place.

A great deal has been written upon the comparative cost of working the suburban traffic upon trunk lines by steam & electricity. The question of a slight difference in cost one way or the other is of far less importance in the matter than the question whether it is possible for the suburban lines to run independent trains at a shorter headway—a system practically impossible with steam locomotives, but advantageously workable from a central electric power station. If the public felt certain of being able to find a car or train ready to take them along the well-laid trunk railroads to their destination, so that they would never have to wait more than a few minutes at the station, there is no doubt that a great preference would be shown for travelling along these well-equipped lines. This appears to be the only solution that affords the railway companies a hope of escape from the competition which they now have to face.

It must not be forgotten that there are some cases where electric traction is perfectly certain to take the place of steam, but, as a rule, there are special cases. Such super-

sedure will never be possible with trunk lines, except where water-power is easily available. For a railway through a desert there cannot be the slightest doubt that electric locomotives would facilitate, not only the construction but the working of the lines. During a recent visit to, & inspection of, the military railways on the Upper Nile I was impressed with the enormous difficulties of carrying the railway from Wady-Halfa across the desert, where no water could be obtained for a distance of 230 miles, to Abu Hamed. The difficulty consisted in the fact that, after the first 150 miles had been laid, for every train carrying rails & sleepers there had to be 3 or 4 trains carrying coal & water to supply the locomotives. I took occasion to impress the fact upon the authorities, & to show that, if the construction were to be entirely carried out as proposed, from the Wady-Halfa end of the line, it would be almost essential to work by means of electric locomotives. While these pages are being written, the Sirdar has succeeded in capturing Abu Hamed, & doubtless the most important result of this success is that it enables him immediately, during the flood-season, to carry rails & sleepers to Abu Hamed, & to carry on the construction of the line from both ends, so diminishing the difficulty which threatened.

Another case in which electricity is bound to supplant steam is that of underground railroads, especially in London; & the great increase in the number of electric railroads in London is the surest evidence that before long the whole of the underground system will change from steam to electricity. This change would have been accomplished long ago were it not for the expense of the transition stage, & certain difficulties which attached to the necessary change from steam to electricity on trains coming from the country into the underground system of London. These difficulties have been much exaggerated, & there is really nothing to prevent the immediate introduction of electricity in the underground system of London.

The conclusions derived from study extending over many years are as follows:

In cases where water-power is always available within a few hundred miles of a trunk line of railway, it is probable that economy would be served by introducing electric traction.

In the case of an independent system of railway to be constructed in a new country utterly unaffected by the traffic from steam railroads, power can be applied to every axle of the train; wherefore it will be economical in such a case, in construction & in operation, to use electric propulsion in preference to steam.

For desert railways, where water cannot be obtained, electric traction is eminently suitable.

In underground railways, such as the Baltimore Tunnel & the London underground system, where economy is not so important as convenience & comfort, electricity must be employed; & where such railways are to be constructed, economy makes electricity advisable.

In cases of suburban traffic electricity would help to overcome the competition with street railways by supplying the public with separate & independent cars running at very frequent intervals on a well-maintained track. —Engineering Magazine.

The Miles Canyon Tramway, which was built by an English company under a charter obtained last session of the Dominion Parliament by A. A. Clark, of London, Eng., has been in operation this season & is reported to have done well. It was built to avoid the rapids of the Lewes River between Marsh or Mud Lake & Lake Labarge. It is worked by horse power & has wooden rails.

ELECTRIC RAILWAYS.

British Columbia Electric Ry. Co.

Last month we published the speech of the Chairman of this Co. at the annual meeting in London. The directors' report was not then before us, but has since come to hand. It is the 1st annual one & the accounts appended to it are up to Mar. 31 last. Copious extracts from it will doubtless interest our readers & are appended.

The Co. was formed & commenced business in April, 1897, when it took over the management, but the railway & lighting business was purchased as a going concern as from Oct. 15, 1896. After discharging the liabilities & collecting the book debts, & the payment of working & special management expenses & of the ½ years' interest, due April 15, 1897, on the debentures, the revenue for this interim period showed a surplus of £836. 10s 7d., which the directors transferred to reserve account. During the year the purchase of the business & property which the Co. was formed to acquire has been completed. Non-cumulative 6% income bonds, to the amount of £44,200, up to Mar. 31, & since to the amount of £56,100, have been issued at par, & the proceeds devoted to improvements. Little revenue, if any, was derived from these improvements until Dec., as the first works of any importance were only then completed, & by far the larger portion of the works, namely, the installation of water power at Victoria, was only completed in Sep. of this year. The future increase in revenue from this latter source is estimated by Mr. Campbell at \$44,365 a year.

Although the directors had before them reports of several experienced engineers employed by the Co.'s predecessors, strongly recommending the installation of water power in Victoria from the falls at Goldstream, as a means both of effecting large economies & of greatly increasing the amount of electrical power, they decided to have an independent report before proceeding to the very large expenditure involved, & asked F. Nicholls, of Toronto, President of the American Institute of Electrical Engineers, as to the most reliable engineer to employ for this special purpose. Mr. Nicholls recommended J. M. Campbell, whose services were secured, & he entirely confirmed the experts who had previously reported, & placed the additional profits to be derived from the installation as above. A careful examination of the various other water powers near Victoria showed them to be impracticable, & the lease from the Esquimaux Water Works Co. for the exclusive use for electrical purposes of their power at Goldstream, on which Mr. Campbell's estimate is based, was concluded for 40 years. The Co. has recently secured the permanent services of Mr. Campbell as Chief Engineer.

The custom of reading electric light meters at the end of each month made it inconvenient to close the books on April 14, when the Co. completed its first year, & Mar. 31 was adopted as a more convenient date. In consequence, in the period under review, only 11 ½ months are included. The net profits in B.C. for the 11 ½ months amount to \$97,692 @ 4.85 £20,142. 14s. 1d. From this the directors declared in Mar. last the full dividend of 6% on the income bonds; & after deducting the interest on the debentures, the expenses in London & fees of the trustees of the two issues, there remains £5,098. 13s. 5d. available for distribution. The directors do not recommend a dividend on the shares, but propose that £1,218. 8s. 6d. be applied to writing off 20% of the preliminary expenses, & £8. 15s. 9d. to writing off the small item for office furniture in London; that £3,663. 9s. 5d. be transferred to the reserve account, making that up to £4,500, & the balance of £207. 19s. 9d. be carried forward to next year.

The progress made in the year under review, & since Mar. 31, has been most encouraging, & is about equally distributed between the railway & lighting departments, & between the branches at Vancouver, Victoria & Westminster; it is also well spread over all periods of the year.

Following is a statement of earnings & expenses for the 11 ½ months from April 15, 1897, to Mar. 31, 1898:

Railway, Vancouver	.....	\$52,789
" Westminster	.....	60,947
" Victoria	.....	73,538
		<u>187,274</u>
Lighting, Vancouver	.....	\$73,008
" Victoria	.....	44,870
		<u>117,878</u>
Total Earnings	.....	\$305,444
Expenses	.....	207,752
Net Profit	.....	<u>\$ 97,692</u>

Percentage of expenses to gross earnings 68.01.

The directors are aware that the proportion of operating expenses is very high compared to many other similar companies, but this is due to abnormally large expenditure on maintenance account, owing to the Co's predecessors having allowed the rolling stock, road bed, &c., to get into a bad state of repair. In the period under review there is a steady improvement in this respect, which the directors hope will be still more accentuated this year. The following comparison with the statistics of some of the leading companies known on the London Market and carrying on the same business will be of interest:

	Receipts.	Expenses.	Profit.	Percentage of working expenses to gross receipts.
Montreal S. R. Co.	\$1,342,367	\$736,428	\$605,939	55.05
Ottawa Elec. Ry. Co.	223,801	151,462	72,339	67.67
Toronto Ry. Co.	1,077,612	525,801	551,811	48.81
London S. Ry. Co.	101,365	58,451	42,914	57.66
Twin City Rapid Transit Co. (Minneapolis and St. Paul)	2,009,120	1,068,550	940,570	53.18
B. C. Elec. Ry. Co.	305,444	207,752	97,692	68.01

The rolling stock has been put in excellent condition, all the cars having been thoroughly done up &, where needed, the old type of truck replaced by modern trucks of the most approved pattern, and the motors renewed. The road bed & track on the Vancouver & Westminster branches are in excellent condition, & with a few small alterations, now nearing completion, the Co. will have an excellent permanent way throughout these two branches. With very slight exception the road is laid with 40-lb. rails, & where the old 25-lb. rails remain they are in such good condition that the management has not considered it wise to discard them; whenever they are worn out they will be replaced with heavier metal. On the Victoria branch the road was not in good condition & the rails are light, but as they & most of the ties will do good service for some years yet, the road has been brought into a temporarily efficient state, & a system of improvement has been entered upon by which the road bed & track will be entirely renewed over a period of a few years.

The Co's land grant & town lots have increased in value during the year, owing principally to the expansion of trade, which has been experienced in Victoria, Vancouver & Westminster. The population of these cities has largely increased. Building operations have been undertaken on a large scale to satisfy the new demands for business premises & residences, & consequently the unoccupied town lots have increased in value. Settlement along the line between Vancouver & Westminster has also increased; & the settlement of Central Park has sprung into a place of considerable size, yielding substantial traffic. Other stations on the railway at which there have hitherto been extremely few residents, & scarcely any business, are now developing.

The plant & machinery have been maintained in good condition during the year, but the increase in business will necessitate much re-arrangement in Vancouver during the coming year. The improvements & extensions authorized to June 30 involve the expenditure of \$246,770, say £50,879, of which £24,095 4s. 5d. has been already charged to account at Mar. 31, 1898. The larger part of this is on account of the installation of water power at Victoria, & the re-organisation of that branch in accordance with Mr. Campbell's recommendations, which absorbs approximately \$120,000. The double tracking of Government Street, re-arrangement of switches & other improvements were completed towards the end of Feb., but the branch was not worked by water power before Sept. The Oak Bay suburb of Victoria, hitherto unreached by the Co.'s lighting system, is being added to the area of its operations, & a large number of new subscribers has been secured.

On the Westminster branch new trolley wire & feeder copper has been added to increase the capacity of the leads, & the whole line has been put in excellent order, the old motors have been replaced by modern ones of approved pattern, & additional switches have been put in, greatly reducing working expenses, & enabling a more frequent train service as the increase in business justifies it. A considerable increase in the freight business, & in the sale of fire-wood obtained from the Co.'s lands, has been secured by the purchase of 2 additional special cars. A station has been built at Central Park. A long distance telephone has been erected between Vancouver & Westminster, & the intermediate stations.

In Vancouver an extension of the railway to Stanley Park, via Pender Street about 1 1/4 miles, was completed in Nov., which enables the Co. to handle efficiently the large summer holiday traffic to the Park on Saturdays, Sundays & holidays. New engines & dynamos were purchased & installed towards the end of Mar., thus enabling the Co. to take fresh lighting business, which it would not otherwise have been able to cope with next winter.

Besides the installation of water in Victoria, the following improvements are now under construction:—In Vancouver a double track is being laid on the small portion of Hastings Street which remained with a single track, & also along Westminster Avenue. This will complete the double tracking of the whole of the main line in the business & more important residential sections of the city. The Co. is also extending its line through Powell Street, with a view of securing traffic from the east end of the town, & the important manufacturing, foundries & sugar refinery situated along that part of the water front.

During the present year, the directors propose to carry out the following improvements, which they are advised will prove remunerative:—The reconstruction of the Vancouver power-house is urgently needed, as it is now cramped with the new machinery recently placed in it, & is for other reasons at present unsatisfactory & uneconomical. Acting on the advice of the General Manager & Mr. Campbell, the directors propose to put up a suitable building in stone & brick, with all modern improvements, & to do away with the 2 existing power-houses on the Vancouver & Westminster lines, combining their machinery & driving both branches from one house. This will effect a considerable economy. It is also proposed to install a separate metallic circuit of large capacity for the purpose of supplying electrical power, for which there is a demand. The management estimate that the increase of business during the current year will justify the expenditure of from £6,000 to £8,000 in extending the lighting plant & mains, & a further £2,000 will be needed to thoroughly rearrange the lighting circuits in Vancouver on a more economical & scientific basis than that at present employed. The present circuits

were designed when the business was very much smaller, & are unable to cope economically with present requirements. The directors propose to build an extension from the Westminster city line to Sapperton, on the Fraser River, which has been petitioned for by the inhabitants, & which the General Manager recommends as a profitable investment, in view of the traffic created by the salmon canning industry. They also propose to extend the Vancouver line along Denman Street to the beach. This is a very short extension, but one, it is believed, which will produce considerable increase of traffic in the summer, when the beach is thronged by bathers. The approximate cost of the foregoing programme is estimated at £30,000, which the Directors propose to raise by the sale of shares, & in addition they propose to redeem the £56,000 of 6% income bonds by the same means. They therefore recommend the shareholders to increase the ordinary share capital by £100,000, & to authorize them to dispose of the shares as, & when they think it to be in the best interests of the Company to do so.

All the foregoing propositions made by the directors were adopted.

The authorized capital of the Co. when established was £250,000, of which £200,070 was subscribed. Up to Mar. 31 last the Co. had issued 4% 1st mortgage debentures amounting to £250,000 & non-cumulative 6% income bonds amounting to £56,100 being part of an authorized issue of £75,000.

The directors are: R. M. Horne-Payne, Chairman; F. S. Barnard, J. Horne-Payne, A. C. Mitchell-Innes, R. Northall-Laurie, G. P. Norton & R. K. Sperling. Mr. Barnard resides in Victoria, the other directors being in England. The head office is at 1 & 2 Great Winchester St., London, E.C.

The officials in Canada are: J. Buntzen, General Manager, Vancouver; J. M. Campbell, Chief Engineer, Victoria; E. H. Wilcock, Asst. Comptroller, Vancouver; A. T. Goward, Asst. Comptroller, Victoria; C. Aird, Supt. of Traffic, Vancouver; H. Gibson, Supt. of Traffic, Victoria.

Under date of Oct. 8 General Manager Buntzen wrote us that it had not then been definitely decided to build either the Sapperton branch or the Denman St. line in Vancouver.

In the directors report reference is made to the installation of water power at Victoria from the falls at Goldstream. About 16 miles from Victoria, the waters of the Sooke Mountains form a lake covering 150 acres, into which empties Goldstream River, which is tapped 3 miles from its source by an artificial lake or reservoir covering 7 1/2 acres, 1,122 ft. above sea level. From this reservoir the water passes through a steel pipe, 33 in. in diameter, 6,700 ft. to the electric power house which is 460 ft. above sea level, thus giving a fall of 1,000 ft. from the main lake, through which 15,000,000 ft. of water pass every 24 hours, forming 1,500 h. p.

Maritime Province Lines.

Dartmouth, N.S.—A proposition has been made to the Minister of Railways to run the Dartmouth Branch of the I.C.R., by electricity. This branch extends from Windsor Jct. to Dartmouth, 13 miles.

St. John, N.B.—The Co. has spent about \$100,000 this year in enlarging & adding to the equipment of its Union St. power house, so as to concentrate there all the power for the railway & for electric lighting, & to abandon the Wentworth St. power house. The equipment of the Union St. power house now includes 12 engines from 250 to 600 h.p. each, & boilers rated 1,250 h.p. The new smoke stack is 175 ft. high. The Co. has added 5 open motors & 2 closed cars to its rolling stock this year. There have been no extensions of track.

Yarmouth, N.S.—It is said the Yarmouth Electric St. Ry. will be extended to Port Maitland next spring.

Ontario Lines.

Brantford.—At a recent meeting of the City Council the Clerk was instructed to notify the St. Ry. Co. that unless the terms of the charter were complied with steps would be taken to forfeit it. This was the result of complaints as to the service.

Galt, Preston & Hespeler.—J. W. Leonard, General Superintendent of the O. & Q. division of the C. P. R., has been elected a director of this Co.

The Hamilton, Grimsby & Beamsville has issued a pamphlet describing its line & the tributary districts. The reading matter is well prepared, but unfortunately it is printed with a pale ink. It is profusely illustrated & no doubt the original photographs from which the illustrations were made were very attractive, as there are some charming views along the line, but they have been spoiled in the lithographic reproduction. Our advice to the management is to suppress the balance of the edition, if it has not all been distributed, & to get out for next season an up-to-date pamphlet with first-class half-tone illustrations.

A deputation of farmers & fruit growers from Vineland and Louth Township recently waited on the H. G. & B. directors to urge an extension of the line from Beamsville to St. Catharines. The directors stated that the cost of building a line over the ravines, either on the stone road or the middle road, would be great, & they would not think of undertaking it without a substantial bonus from St. Catharines & also from Louth Township. It would also be necessary to get the Co.'s charter amended. J. Paterson, C. E., has since reported to the directors that 11 big ravines would have to be crossed between Beamsville & St. Catharines, which would cost over \$100,000. When Mr. Paterson's estimate for the whole work for the extension is before the board a decision will be come to. At present there is considerable doubt as to whether the work will be gone on with.

The Co. recently applied to Barton township council for permission to change its route by running a line along Main St. to Trolley Avenue. As the Hamilton St. Ry. Co. contemplates extending its line to Barton Hill, the Council agreed to pass a by-law to have the line used in common by the 2 companies, but this did not suit the H. G. & B. people.

The village of Grimsby is trying to get an injunction to prevent the H. G. & B. from obstructing Murray St. by leaving cars standing on the crossings.

Besides having increased its passenger traffic the Co. is doing a very heavy freight business this year. Fruit growing has developed marvellously along the line. Strawberry shipments commenced in June, & the season for other fruit shipments will extend to Christmas. The road has handled as many as 100 tons of grapes a day.

Hamilton Street.—The term extension by-law having gone into effect, it is said some improvement will be made in the system as soon as financial arrangements are completed.

Hamilton Radial.—It is said the line will be extended east to the Guelph Road, near Port Nelson.

London.—A board of county judges having confirmed the assessment of the Co.'s cars by the City, the Co. has taken the matter to the Court of Appeal.

Ottawa.—The crowds during the recent Central Canada Exhibition were so large that the Street Railway had difficulty in handling them, the equipment being insufficient. A number of open cars will be built during the winter.

Port Arthur.—W. Phillips, Manager of the Niagara Falls Park & River Ry. has been inspecting the Port Arthur & Fort William Electric Ry. on behalf of the Dominion Government.

St. Catharines & Niagara Central.—Haines Bros., of New York, who recently bought this line, have paid over \$3,529,91, being 10% of the purchase price under the judicial sale. As we mentioned last month their intention is said to be to electrify the road & make a number of improvements. An extension from St. Catharines to Beamsville, to connect with the Hamilton, Grimsby & Beamsville Electric Ry. is talked of. Haines Bros. have applied to the Council of Niagara Falls, Ont., for permission to extend the line from its present terminus on Bridge St. to the Mowat Gate. (July, pg. 118; Sep., pg. 179 & 193.)

Thamesville to Rondeau.—At a meeting at Ridgetown, Oct. 10, of which R. Ferguson, M.P.P., was Chairman, & W. E. Gundy, Secretary, it was decided to apply for a charter for an electric railway from Thamesville to Ridgetown, Morpeth & Rondeau as soon as the necessary funds were secured.

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

	1898	1897	Increase.	Decrease
Jan.	\$86,562.36	\$74,545.55	\$12,016.81	
Feb.	82,402.19	69,744.61	12,657.58	
Mar.	92,818.12	78,891.45	13,926.67	
April.	86,898.83	73,756.38	13,142.45	
May.	92,670.35	82,461.51	10,208.84	
June.	94,119.32	91,533.44	2,585.88	
July.	104,302.92	105,381.64		\$1,078.72
Aug.	110,300.54	93,224.33	17,076.21	
Sep.	138,021.74	113,672.44	24,349.30	

On the September earnings of this city received \$10,900.37 as percentage, compared with \$9,137.87 in Sep., '97, & \$8,522.36 in Sep., '96.

The Co. recently sued the Siemens & Halske Electric Co., of Chicago, for the recovery of \$20,326.27, amount paid for a large generator for its power house. The Co. got the machine in 1896, & found after using it a time that it was not up to the guarantee given, & cost a large amount to keep it in repair. The Co., therefore, concluded it was useless, & sought to recover the amount paid for it. No defence was offered, & the evidence of a couple of the Co.'s officials was sufficient to cause the Chancellor to give judgment for the full amount with costs. J. Bicknell appeared for the Co.

Province of Quebec.

Montreal Park & Island.—The sale of this line, advertised to take place Sep. 22 in the sheriff's office, did not come off. It was stopped by a large number of oppositions by parties having claims against the road. Oppositions were filed, among others, by W. B. Lambe, Collector of Provincial Revenue, J. Cousineau et fils, & the Maison St. Joseph, of Sault au Recollet, E. N. Senecal & others. The Court will have to pronounce on the value of these oppositions before the sale can take place.

At the recent annual meeting the old board was re-elected as follows: H. S. Holt, W. Strachan, A. Brunet, Hon. A. A. Thibadeau, J. R. Thibadeau, D. Morrice & Hon. L. Beaubien. The annual statement was read & adopted without discussion. It is said it was very satisfactory & showed increased earnings.

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

	1897.	1896.	Increase.
Oct.	\$116,292.09	\$109,110.38	\$7,181.71
Nov.	110,939.60	100,818.57	10,121.03
Dec.	113,128.91	103,116.02	10,012.89
Jan.	110,140.83	89,620.55	20,520.28
Feb.	102,625.49	89,951.68	12,673.81
Mar.	114,677.91	99,441.87	15,236.04
April.	110,819.37	103,045.93	7,773.44
May.	123,568.09	116,337.03	7,231.06
June.	133,164.61	130,676.78	2,487.83
July.	143,986.62	129,245.92	14,740.70

Aug.	143,801.19	131,431.77	12,369.42
Sep.	136,564.80	120,634.57	15,930.23

\$1,449,640.51 \$1,323,431.07 \$126,209.44
The Co. declared a dividend of 2½% for the quarter ended Sep. 30, payable on & after Nov. 2. The annual meeting will be held Nov. 2.

The question of the liability of the Co. for accidents indirectly attributable to the narrowness of the space between the double track & the sidewalk on both sides of Notre Dame Street, Maisonneuve, has been decided by Judge Loranger in a sense favorable to the Co. The action had been brought by the Dominion Transport Co., the complaint being that one of that Co.'s waggons, loaded with iron beams, was being driven along Notre Dame Street, destined for the asylum at Longue Pointe. The waggon was being driven on the tracks on the right side. A car came up behind, & the driver of the waggon, being unable to turn to the right of the track on account of the space being occupied by another vehicle, turned to the left track, leaving the way clear for the electric car. When that car came alongside, however, the wheel of the waggon—the driver continuing to drive to the left—caught in one of the tracks. One of the iron beams, sticking out behind, struck the electric car. The shock frightened the horses, & they bolted, one running against a post & receiving injuries which made it necessary to shoot him. The Transport Co. sued for the value of the horse; but the court exonerated the Street Ry. Co. No negligence had been proven against that Co. or its employes. The space between the tracks was at the disposal of the public, but it was only reasonable that vehicles should give way to street cars, the latter being handled with proper prudence.

The West India Electric Co. which is a Canadian Concern, the principal stockholder being Jas. Ross, of Montreal, expects to have about 22 miles of electric railway in operation at Kingston, Jamaica, by March next. Mr. Holgate is Manager & Chief Engineer, & F. P. Brothers is Manager of Construction.

SHIPPING MATTERS.

Iron Shipbuilding in the Maritime Provinces.

The Maritime Board of Trade is composed of delegates from the various Boards of Trade in New Brunswick, Nova Scotia & Prince Edward Island, 17 of these boards being represented on the Maritime Board by delegates. At a recent meeting at Truro, N.S., the question of iron shipbuilding in the Maritime Provinces was discussed. It was introduced by J. M. Carmichael of New Glasgow, N.S., who began by presenting the following figures to show the decline of shipping in the Maritime Provinces during the past 20 years. He selected for comparison 1878, when the shipbuilding industry had reached its zenith, & 1895, which was the last of which he had any official record. The figures were as follows:

	1878—Tons	1895—Tons	Loss—Tons
New Brunswick	335,965	122,417	213,548
Nova Scotia....	553,368	343,356	210,012
P. E. Island....	54,250	19,323	34,927
	943,583	485,096	458,487

The enormous decline in our mercantile marine revealed by this statement was, he said, surely calculated to arrest the attention of all interested in the development of the trade of these Provinces. Indeed, it was a marvel that this great industry had been permitted to go so far on the way to extinction, without some effort on the part of the press or the public men of the country to arrest its backward progress. The fact was that,

whereas, in days not long gone by, the ships built & owned in these Provinces not only monopolized the foreign trade from our own ports, but were also competitors for the carrying trade in all parts of the world; to-day most of our large ships had disappeared, & the tonnage remaining upon our registry books was made up largely of the small craft around our coast.

The reason of this alarming decline in our shipping was perfectly obvious. Iron & steel had superseded wood, & sailing ships had given place to steamers. But it was evidence of small enterprise on the part of Provincial shipowners that they allowed the march of progress in this direction to drive them out of a business in which they had been eminently successful, & for which the people of these Provinces were so well adapted. A few Provincial shipowners had not been content to abandon a business to which they had devoted their lives, & finding it impossible to get ships of iron built in this country they had gone to Great Britain for their tonnage. Had this practice been more generally adopted there would now be a constituency of shipowners of the larger class, which would warrant the erection of extensive plants capable of turning out ships of 4,000 or 5,000 tons capacity. This advantage we have lost, but inasmuch as there is evidently a growing disposition to purchase ships in the British market for the home & foreign trade, we may hope that in a few years the situation will be entirely changed so far as large tonnage is concerned. This is a practice that should be encouraged by those who desire to see steel ships of the largest class built in the Maritime Provinces. The more quickly our people get back into the carrying trade, no matter where they get their ships for the first few years, the more quickly will large ship-yards be established here.

In the meantime there is nothing to prevent the construction of a smaller class of steel vessels immediately. Indeed, such had already been built by the firm with which the speaker is connected, & the experience gained had demonstrated that vessels of moderate dimensions could be built in the Maritime Provinces at this hour as efficiently & as cheaply as anywhere else in the world. He had no doubt that vessels of any size could be built to compete with British builders whenever we had a demand for them sufficient to warrant the undertaking. But our duty at the moment in these Provinces was with the class that we were able to build to-day. Numbers of small vessels such as fishing vessels, tugs, ferry boats, barges & coasting craft were constantly being required. Owners were content with wooden hulls for such purposes whereas steel was a better material, & for equal efficiency, quite as cheap, if not cheaper. The chief thing to be done was to convince the owners of such craft to build their vessels of the better instead of the inferior material. There was also a large trade in the West Indies done by small steamers of from 1,000 to 1,500 tons capacity. This trade to-day was largely in the hands of the Norwegians & was a profitable business. There was no reason in the world why our people should not take it up & have their boats built in the Maritime Provinces.

It was a mistake to suppose that there was any great difficulty in building iron ships. It might be a formidable undertaking for some people, but not for Nova Scotians who had built ships for half a century. The very men who are best qualified to undertake the actual work are the ship carpenters who are accustomed to building wooden ships. Such men would find themselves at home in an iron shipyard in a week, whereas the work of rivetting & fitting could be done by less skilled hands. In fact, we have the very men to carry out iron shipbuilding, & in many ways they are superior to the old country workmen. Indeed, one of the chief advantages we possess is in

the sobriety & versatility of our workmen, & in the fact that we could get the very best men for wages considerably less than are being paid to platers, riveters, &c., in the British yards, where it is not uncommon for men to earn 15s. to 25s. a day.

The question was often asked whether a very expensive plant was not required to build steel ships. Much, of course, depended upon the size & character of the ships to be built. For battle ships & fast Atlantic liners a very large & very expensive outfit was certainly wanted, but to build cargo vessels of 500 to 2,000 tons capacity, which was as much as was within our reach at the moment, a very modest plant was needed. Indeed, the plant of a shipbuilding yard is a very elastic thing, & the department in which we find ourselves weakest is the engine & boiler department. We can build bigger ships at this moment than we can machinery to run them.

There is no difficulty whatever about material. We can purchase our angles & plates either in Britain or the U.S., & lay them down in our yards practically at the same price as the Belfast shipbuilders buy theirs. It is a mistake to suppose that the steel is such a large factor in the cost of a ship. In a steel vessel of 180 tons register built by his firm he had made a calculation & found that the angles & plates cost less than 10% of the whole ship. It would be well if these materials could be manufactured at hand, but so far as the shipbuilder was concerned it was of little consequence where they were made, so long as he got them cheap enough. There was no trouble whatever about angles & plates. The other materials, such as forgings, castings, brassware, canvas, &c., gave him more concern, as there was a heavy import tax upon them. This import tax was the chief hindrance to the advancement of shipbuilding, & some means should be adopted by the Government to relieve the shipbuilder from such a handicap. There was not an ounce of protection given to ships built in the country. It was well known that ships built in Britain were admitted into Canada free of duty, consequently it was not asking any special advantage from the Government to ask them to make the materials composing ships at any rate as free as the ships themselves. When this matter was properly represented to the Government they would doubtless remedy this anomaly in the tariff. But the main thing required to advance shipbuilding interests in these Provinces was to restore the interest of the mercantile class in the shipping trade which had been the glory of these Provinces in past years. When the people became aroused to the loss we had sustained by our apathy towards this great business we would see scores of ship yards established in these Provinces.

In conclusion Mr. Carmichael moved: "This Board recognizes that the business of wooden ship-building, which, 20 years ago, was a flourishing industry in the Maritime Provinces, has become practically extinct. It is of opinion that no insuperable obstacle to the construction of steel shipbuilding exists, but on the contrary it is a business peculiarly suited to the genius of our people. The Board, therefore, urges the importance of this matter upon the attention of all persons interested in the development of the resources of the Provinces, & that the Government be requested to remove any hindrances now in the way of the prosecution of iron shipbuilding in the Maritime Provinces."

GEO. ROBERTSON, St. John, N.B., seconded the resolution. He recognized that the men who had engaged in wooden shipbuilding were well-adapted for iron shipbuilding. He believed there was as cheap labor here as on the Clyde. He referred to the growth of Belfast as due largely to her iron shipbuilding industry, & he thought the Government might do for the iron & steel shipbuilding industry what it is at present doing for other industries.

If anything in the tariff was an obstacle, they should ask the Government to ameliorate that condition.

HARVEY GRAHAM, New Glasgow, N.S., followed, emphasizing the fact that steel shipbuilding cannot be successfully carried on in Nova Scotia till all the material is made in this country, & it cannot be made without a protective duty. That is where we are, but there is a way out of it. Let there be a bonus to the shipbuilder, as there is a bonus to the butter maker or others who have such an inducement to develop business. The great difficulty is not in putting the materials together, but in the engineering department for the manufacture of articles required. He showed how greatly beneficial to the country would be the establishment of such an industry as steel shipbuilding to Nova Scotia.

G. J. TROOP, Halifax, thought this iron shipbuilding must be overcome by individual enterprise—all agreed that it would be a grand boon for the country. The difficulty of cost of construction must be overcome. To make a complete success of iron shipbuilding in the Maritime Provinces, the firm which starts the enterprise must be able to build as cheaply as firms in Scotland build. Parties who want iron ships built will go where they can get them constructed the cheapest. He was in favor of starting this enterprise, but to be practical, it must be shown how cheaply, comparatively, iron ships can be built in these Provinces. If the Government is in any way hampering this industry, the Board should try to have the obstacles removed.

The resolution was unanimously adopted.

In this connection it will be of interest to reproduce the remarks of Ex-Mayor Geo. Robertson, of St. John, N.B., on this subject in a report he recently presented to the city council there on a visit he paid to England this year in connection with matters relating to that port. He said:—"A word or two with respect to iron shipbuilding. After having been shown through one of the noted yards on the Clyde, & having seen the scientific skill, the machinery capable of doing almost every part of the work, the vast army of mechanics & skilled artisans employed building vessels for the British navy, for the navies of the world, you may say, & for the mercantile fleets of the world, why should not the citizens of St. John give serious thought to the possibility of her citizens taking up this great industry & prosecuting it with success? It is along the line of the past history of our city & the genius of our people. We have the coal & the iron & the need for ships (the ever-increasing ocean commerce of the world can only be carried by iron steamships now & in the future). It is not a mere day dream, it is not an impossibility, it is not something that we cannot hope to attain because we have neither the material, resources or the name; but it is well within the legitimate hope & aspirations of our people, & it only requires a beginning—a beginning made by determined men, men of enterprise & pluck, to make iron shipbuilding in the port of St. John a success, & doubtless the results in time, aye, maybe in a very short time, would not be less than the results that have already accrued on the Clyde & in Belfast & at other great centres of the iron shipbuilding industry in Great Britain."

At a recent meeting of the Maritime Electrical Association at Halifax, F. A. Hamilton read a paper on electric gong buoys, audible vs. visual signals. The idea formulated was briefly as follows: To connect by means of a submarine cable a system of buoys fitted with powerful electric gongs. The buoys to be placed in the offing in such position that vessels could, without risk, run to leeward of them & consequently come within range of the gong signals.

The Baltic Insurance Case.

On Jan. 2, 1897, the Great Northern Transit Co., of Collingwood, commenced action in the High Court of Justice for Ontario against the companies mentioned below, claiming payment for loss by fire to the S. S. Baltic which was covered by fire policies in each of the companies, and which was destroyed by fire Sep. 5, 1896, while lying at the town dock in Collingwood harbor. The Insurance was as follows: Commercial Union, \$2,500; Alliance, \$2,500; London Assurance, \$2,500; Atlas, \$1,000; Waterloo Mutual, \$1,500; National of Ireland, \$1,500; Keystone, \$2,000.

Each of the policies contained the following description printed on a small slip attached to the body of the policy:—"On the hull of the S. S. Baltic, including engines, boilers, etc., on board said steamer whilst running on the inland lakes, rivers & canals, during the season of navigation. To be laid up in a place of safety during winter months from any extra hazardous building. Ordinary outfit to be allowed in winter & spring."

The Baltic, at the time the insurances were effected, was laid up at the town wharf in Collingwood, & had not been in commission since the close of 1893, i.e. during the currency of any of the policies. The insurance companies claimed that they were not aware of the fact that the steamer was not in commission. The insurance was effected through a broker, & no applications were made to the companies. The case was tried before Chief Justice Armour with a jury, at Toronto, Sep. 23 & 24, 1897. The only questions submitted to the jury were as to the value of the boat & of the salvage. The defendants moved for a nonsuit on the ground that the policies never attached, owing to the fact that the Baltic was not in commission & did not therefore come within the definition of the risk "whilst running," &c., contained in the policies. The Chief Justice, however, directed judgment to be entered for the plaintiff, holding that the word "inland" was the emphatic word, & that the proper meaning to be given to the whole clause was that it distinguished inland from ocean insurance.

The cases were carried by the defendants to the Court of Appeal, which gave judgment Oct. 4, instant. The court of 4 judges was evenly divided & the judgment of Chief Justice Armour therefore stands, the appeal being dismissed with costs. Burton, C. J. O., & Osler, J. A., agreed with the contention of the defendants & held that the words "whilst running" mean "in commission" & that they form part of the definition of the risk & form a condition precedent, so that they were of opinion that in this case the policies had never attached. Maclellan & Moss, J. J. A., held that the policies were time policies in force for one year & that as it was obvious & admitted by the defendants that a strictly literal meaning could not be given to the words "whilst running" that they should not be held to form part of the description of the risk in the manner laid down by the two other judges. They held further that if the words "whilst running" must be considered to constitute a condition, that such a condition must be held to be void as not being indicated on the policy as an addition or variation to the statutory conditions in the manner required by the Ontario Insurance Act R. S. O., 1897, cap. 203.

The amount involved in each individual case is not sufficient to entitle the defendants to go direct to the Privy Council, but it is apparently probable that they will carry an appeal to the Supreme Court of Canada. McCarthy, Osler, Hoskin & Creelman acted for the Great Northern Transit Co., & Beatty & Co. represented the insurance companies.

The Port Stanley-Conneaut Ferry.

The illustrations on this & pg. 221 give 2 views of the car ferry Shenango No. 1, which is being run between Port Stanley, Ont., & Conneaut, Ohio, in connection with the Lake Erie & Detroit River Ry. The ferry formerly ran between Port Dover, Ont., & Conneaut, connecting at the former point with the G.T.R. To accommodate the ferry the L. E. & D. R. Co. has built docks at Port Stanley, costing about \$45,000, the approaches costing about \$10,000 more. The main object is to get a good connecting link between the coal & iron regions of Ohio & Pittsburg respectively, & the west, by means of the ferry & the Port Stanley Ry. to London. During the past 2 years the Co. has handled a large quantity of coal & iron for London by the lake route, but the greatest drawback, especially in the coal trade, was experienced in the trouble of having to transfer it from schooners to cars, entailing considerable expense & loss of time.

The Shenango No. 1 is a large vessel, costing \$150,000, & has a capacity of 26 cars,

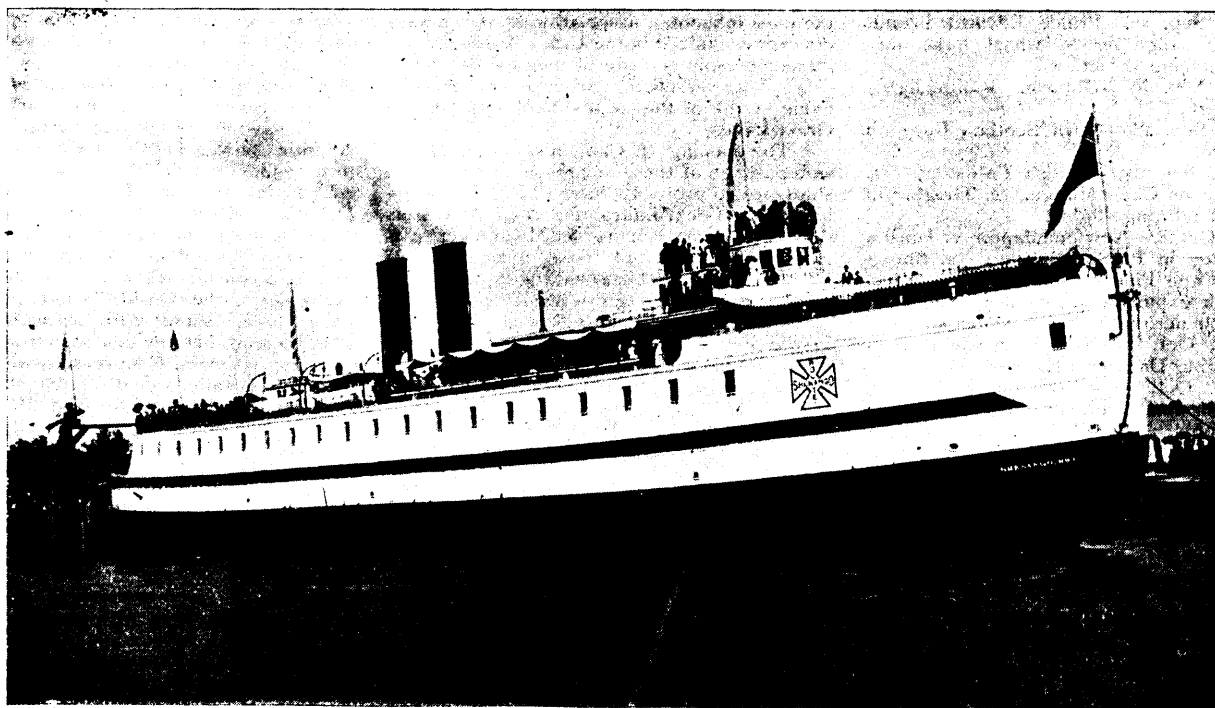
The Atlantic Steamship Service.

At a meeting of the Dominion Cabinet, Oct. 12, a contract for the winter Atlantic mail service was awarded jointly to the Allan & Dominion lines for 6 months up to May 1, 1899. The service will be a weekly one from St. John, N.B., to Liverpool, calling at Halifax both ways. The Allan steamers used will be Parisian, Numidian & Californian, & the Dominion steamers will be the Labrador, Vancouver & Scotsman. The subsidy is £500 a trip. Tenders are now being invited for a 2 years contract from May 1, 1899, & it is said that when that is disposed of negotiations will be commenced for a fast service.

Henry Norman, the English press correspondent, proposes an International fast Atlantic line. Great Britain & Canada & the U.S., ought, he thinks, to join in establishing a really first-class service. The U.S. is paying pretty dearly for a fast service of its own which sails from New York, and it is not, after all, the fastest service. The contract, which carries a subsidy of about \$1,250,000 annually, has

John's, Nfld., to which the southern fogs reach, & that in this clear zone Green Bay & its sea route to Galway is. It is said that a Turbinia steamship, making all allowances for delays, would do the sea voyage between the two ports well inside of 3 days. The London Spectator, which has always been a stout advocate of the railway tunnel project between Scotland & Ireland, sees in this fast Atlantic service proposal a strong argument in favor of the immediate carrying out of its favorite work, which it believes would unite the interests of Ireland & Great Britain as nothing else has been able to do. From Green Bay, in Newfoundland, a short branch line would connect with the Newfoundland & Western Railway to Port au Basque, giving an almost direct route to Sydney, & by way of the Intercolonial & connecting lines to Boston & New York, & a short route via the C.P.R. main line from St. John, N.B., to Montreal & Canadian points.

In this connection it may be mentioned that 2 boats, now in process of construction at Wallsend-on-Tyne, are exciting the liveliest interest in naval circles, not only in England,



THE PORT STANLEY-CONNEAUT CAR FERRY SHENANGO NO. 1.

having 4 tracks, the 2 centre tracks holding 7 cars each, & the two outside ones 6 cars each. In addition to this she can carry 1,200 excursionists on her upper deck, & is fitted with staterooms for regular passenger business. She is propelled by twin screws, steered by steam, & lit by electricity, & is owned by the U.S. & Ontario Steam Navigation Co., of Conneaut.

The distance from Conneaut to Port Stanley is 58 miles; Port Stanley to St. Thomas 9 miles; & Port Stanley to London 24 miles. By this new route Western Ontario is practically placed in direct connection with Pittsburg & the central states, from which a large amount of business comes into Canada. The L. E. & D. R.'s direct connection at Conneaut is the Pittsburg, Bessemer & Lake Erie Ry. (largely owned by the Carnegie Co.), which works direct with the Baltimore & Ohio, the Pennsylvania & other railways running out of Pittsburg.

The schooner Delphine was seized at Port Gilbert, N.S., recently, with over \$2,000 worth of smuggled spirits on board.

yet a considerable period to run, & they are not likely to do anything more until they see how their present project develops. The U.S. people are very friendly towards the British people at present, but they have not ceased to be exceedingly anxious to look after number one in all matters of international trade, commerce & industry, & a proposition to support a fast passenger steamship service between Canada & Great Britain would strike the average United Stateser as out of the question, no matter how clearly it might be proved that such a line would best & most cheaply serve the U.S.

The newest thing in fast Atlantic steamship service projects, is, says the Montreal Witness, the Newfoundland and Ireland one. The idea is to secure vessels of the Turbinia type, which will steam between 30 & 40 knots an hour, & place them on the route between a port in Galway & Green Bay, on the northeast coast of Newfoundland. There would be on this route an almost clear, uninterrupted course of open sea navigation. It appears there is a zone which is seldom foggy, between a point south of Belle Isle, down to which the northern fogs come, & a point north of St.

but on the European continent generally. They are to be fitted with the new system of turbine propulsion, which proved so brilliant a success on the Turbinia. They are both much larger than the pioneer vessel, & both are guaranteed by the builders' contract to attain a minimum speed of 35 knots. It is hoped that they may reach 50. One of them is for the British admiralty, while the ownership of the other is uncertain.

A London, Eng., cable of Oct. 10 says three 17 knot steamships have been purchased for the Canadian line between Milford Haven & Pasbebiac, Que., the first sailing in Nov., & that satisfactory arrangements have been made for a special service of trains between London & Milford Haven.

The Ontario Court of Appeal has recently held, reversing the Court below, that while under the Merchants Shipping Act unregistered equitable interests can be enforced as between the parties immediately affected, a purchaser from the registered owner takes a title free from unregistered equitable interests even though he has notice of them.

Notices to Mariners.

The Dominion Department of Marine has issued the following notices since Sep. 1.

No. 51, Sep. 5.—British Columbia. 1. Rocks in Templar channel. 2. Denny Rock reported not dangerous. 3. Position of Mouse Rock. 4. Perrin anchorage. 5. Lighthouses in course of erection.

No. 52, Sep. 9.—Nova Scotia. 1. Pease's Island fairway bell buoy. 2. Lockeport fairway bell buoy.

No. 53, Sep. 12.—Nova Scotia. Buoy on Chester Rock.

No. 54, Sep. 16.—Ontario. Improvements in the entrance to Parry Sound. 1. Old, or north, channel adopted. 2. Gas buoy on Hooper Island Shoal. 3. Gas buoy on Spruce Island Shoal. 4. Gas buoy on Seguin Break. 5. Probable improvement of buoy on Knight Shoal. 6. Removal of lighthouse from Hugh rock to Carling rock, & establishment of lighthouse on Cousin Island. 7. Proposed buoys off Carling rock & on Davy rock. 8. Discontinuance of temporary range lights marking south channel. 9. Lighthouse on Depot Island. 10. Sailing directions.

No. 55, Sep. 16.—Prince Edward Island. Annandale range lights, wharf light, day beacon & sailing directions.

No. 56, Sep. 19.—Ontario. Range lights at Baymouth.

No. 57, Sep. 28.—Nova Scotia. Buoy on Gull Ledge.

No. 58, Sep. 29.—British Columbia. 1. Lighthouse on Cape Mudge. 2. Heights of Yellow Island range lights.

No. 59, Oct. 8.—Newfoundland. 1. Harbor light & buoy in Port-au-Basques. 2. Shoals between Cape Pine & Cape Race. 3. Cleopatra rock expunged from charts. 4. Telephone cable across St. Pierre roadstead.

No. 60, Oct. 8.—New Brunswick. New buoy entering Dalhousie Harbor.

No. 61, Oct. 10.—British Columbia. 1. Rock in Queen Charlotte channel. 2. Hydrographic notes, Active Pass.

No. 62, Oct. 11.—Nova Scotia. Improvement in light on Freestone Islet.

UNITED STATES MARINE NOTICES.

The Notice to Mariners for the Great Lakes, issued by the U. S. Hydrographic Office Sep. 15, contains the following among others:—

144. Lake Superior, Superior Bay, Duluth Harbor. Raising of dredge no. 4.

145. Lake Superior, St. Louis Bay, East & west ranges. Change in character of lights.

146. St. Mary's River, Middle Neebish cut. Government tug in attendance. Signals.

151. St. Clair River, Woodtick Island. Marine city shoal buoy established.

152. St. Clair River, Woodtick Island. Establishment of spar buoy.

153. Detroit River, Limekiln crossing dredged channel. Temporary substitution of lantern on float for lightvessel (south) no. 64.

Transfer of Lake Shipping.

The following from Seaboard, a New York marine publication, will be read with interest: "If the Canadian canals will accommodate vessels 270 ft. long, 45 ft. wide, & 14 ft. draught, next year, one of the most remarkable exoduses of vessels ever witnessed may follow. It is said that there are as many as 100 modern steamships on the Great Lakes, within the dimensions named above, capable of carrying cargoes of 3,000 tons on the coast or ocean, which are unprofitable to their present owners in competition with the more modern lake carriers, which carry cargoes of 6,000 & 7,000 tons on a draught of 16 & 17 ft. The latest of the lake carriers are the only ones that are able to earn profits in the lake trade. It is only in about 2, or at the most 3 months in the year

that the smaller carriers—those capable of carrying not to exceed 3,000 tons on the lakes—are able to earn anything, & their earnings during that short period do not permit them to pay dividends on their cost & repair expenditures.

"In our coastwise, our Central & South American & our West Indian trade, vessels of just the cargo-carrying capacity of these lake vessels are now engaged. It is unlikely that the lakers could successfully compete in the coastwise trade, for the reason that vessels better adapted to that trade, capable of making better speed, are now engaged therein. But in the other trade, the trade with the West Indian Islands, Central & South America, where British & Scandinavian ships now do the bulk of the carrying, our 3,000-ton lake carriers ought to be able to supersede them. There is no doubt that they would soon drive foreign ships out of our entire carrying with the islands & countries of this hemisphere, if Congress would give a preference to U. S. vessels in competition with foreign vessels in that trade. The lake vessel interests are very strong & powerful. The Lake Carriers' Association is one of the most successful, because the most influential, association of vessel owners ever organized in the U. S. A majority of its membership is made of men holding interests in lake vessels that are now unprofitable, living in all of the states bordering on the Great Lakes.

"The opening of Canada's canals to the safe passage of these at present unprofitable ships, would probably have the effect of relieving the Great Lakes of a class of vessels that have been superseded by larger carriers that could not pass through those canals. That there would be a rapid exodus of them if Congress would pass a bill extending a preference to U. S. ships engaged in the carrying of U. S. imports & exports, goes without saying, because there would be a profit to attract them from a trade in which profits have long since vanished. It would have the effect, too, of making the lake marine trade more profitable, because it would permit vessel owners to exact a living rate, instead of a losing one.

"If the trade between Cuba & Porto Rico is confined to U. S. vessels, & the coastwise trade of those islands also so confined, this legislation alone would provide a market for more than half of the lake vessels that are capable of much usefulness on the ocean, but which are unprofitable on the lakes. Sea board, therefore, urgently invites the attention of the Lake Carriers' Association to the possibilities of a profitable market for their at present unprofitable ships in the West Indian, Central & South American trade, under reasonable & necessary protective legislation by Congress—legislation that has been solemnly promised by the party which is in the majority in Congress & which is in full accord with the administration.

"It would be a most remarkable & gratifying result of the opening of Canada's canals to the passage of vessels 270 ft. in length next year, as is promised, if such a great boon were conferred upon the present owners of unprofitable modern lake carriers as we have suggested, & which, the more we contemplate it, seems attainable, if the powerful & influential association of lake vessel owners, of which Senator Hanna is a member, would exert itself to secure the passage of such long-promised & much-needed legislation as would provide profitable employment for U. S. ships in its foreign trade.

"Evidently the opportunity for rehabilitating U. S. shipping in a portion of our foreign trade is to be afforded through the enterprise of our Canadian friends in conjunction with a wise exertion of the potential influence of the Lake Carriers' Association. This would be a case, indeed, where the British have 'built better than they knew.'"

Early in October a deal was effected whereby the Atlantic Transportation Co., of New York, secured the transfer from the Great Lakes to the Atlantic coast of 4 steamers & 39 barges, with an aggregate carrying capacity of 69,500 tons & an insurance valuation of \$1,184,500. The Marine Review publishes a list of the craft, showing that the steamers capacity in net tons runs from 1,700 to 2,500 & the barges from 1,000 to 2,500. All of the vessels are on their way by the St. Lawrence route, it being the intention at the time of writing to have them in Montreal by Oct. 15, though it was doubted if this would be accomplished.

Shipping & ship building interests on the Atlantic coast, which were at the outset decidedly apathetic regarding the effect of this accession of tonnage, have, says the Review, in some degree been aroused, now that its actual consummation has been recorded. Schooner owners & agents on the coast express the fear that the transfer of this large number of barges from the lakes will ruin the schooner business, & in justification of their opinion point to the number of coastwise vessels which have been laid up on account of freight rates.

Vessel men on the lakes, have, in some instances, been surprised by the statement that the older wooden vessels, such as have been chartered, although in some cases unable to secure insurance of any kind on the lakes, would have no difficulty on that score on the Atlantic coast. That such is the case is due to the route on which the vessels will be placed. From Newport News, the terminal, to Delaware breakwater is only 110 miles, & from Delaware breakwater to New York is only 125 miles. Above New York the vessels can, for a considerable portion of the distance, make use of the "inside" route, passing between Long Island & the mainland. It will thus be seen that the course is a remarkably safe one, whereas these vessels, when engaged in lake trade, would be obliged to make runs very much longer & decidedly more hazardous. In almost all cases the captains who have been on the vessels will be retained. Most of them are quite as pleased with the prospect of winter work as is the owner with the opportunity to draw checks for the use of his vessel during the months when, had she remained on the lakes, she would have been laid up.

Maritime Province Shipping Companies.

Dominion Letters Patent have been issued incorporating J. T. Hamilton, H. McC. Hart, G. Musgrave, C. W. Outhit, R. T. Braine, T. Dixon, W. J. Butler, F. J. Phelan, L. Hart, W. N. Wickwire & J. A. Johnson, of Halifax, as the Briardene Steamship Co., with a capital of \$60,000.

Notices of application for incorporation under The Companies' Act (Dominion) are given as follows:—

The Ship Harvest Queen Co., headquarters Wolfville, N.S., capital \$25,600. Incorporators, C. R. Burgess, Wolfville; N. V. & M. Munro, Bridgetown; A. E. Forsyth, Windsor; T. E. Blagden, Halifax; & J. A. McBride, of New York City. Directors, C. F. Burgess, N. V. Munro & A. E. Forsyth.

The Barquentine Skoda Co., headquarters Wolfville, N.S., capital \$16,000. Incorporators, C. R., R. E., & A. B. Burgess, Wolfville; R. Lee, Aylesford; C. E. Dixon, London, Eng. Directors, C. R. & R. E. Burgess, R. Lee.

The Ship Kambria Co., headquarters Wolfville, N.S., capital \$28,800. Incorporators, C. R. Burgess, J. F. Tufts, G. W. Borden, W. H. Chase, Wolfville; J. J. Brownell, Baie Verte, N.B.; W. Y. Fullerton, Port Williams; C. E. Dixon, London, Eng. Directors, C. R. Burgess, W. H. Chase, J. F. Tufts.

The Ship Kings County Co., headquarters Wolfville, N.S., capital \$32,000. Incorporators,

tors, C. R. Burgess, J. F. Tufts, G. W. Borden, Wolfville; N. V. & M. Munro, J. W. Salter, Bridgetown; C. E. Dixon, London, Eng. Directors, C. R. Burgess, J. F. Tufts, G. W. Borden.

The Barque Conductor Co., headquarters Wolfville, N. S., capital \$19,200. Incorporators, C. R., R. E., & A. B. Burgess, Wolfville; J. C. Lombard, Kingsport; C. E. Dixon, London, Eng. Directors, C. R. & R. E. Burgess, J. C. Lombard.

The Ship Canada Co., headquarters, Wolfville, N. S., capital \$32,000. Incorporators, C. R. Burgess, Wolfville; N. V. Munro, Bridgetown, T. E. Blagden, Halifax; J. A. McBride, New York City; C. E. Dixon, London, Eng. Directors, C. R. Burgess, N. V. Munro, J. A. McBride.

New Winter Steamer for P.E.I.

The Minister of Marine has awarded to Gourlay Bros. & Co. of Dundee, Scotland, a contract for a steamship to take the place of the Stanley on the winter run between Prince Edward Island & Pictou, N.S. The price is £36,050. The specifications call for a single-screw steamer. Length between perpendiculars, 225 ft.; breadth moulded, 32½ ft.; depth moulded amidships, 20½ ft. The engines are to be of not less than 2,900 h.p. As copious extracts from the original specifications were given in our July issue, pg. 131, we will merely refer to some of the most important changes which have since been made. The extreme draft aft is not to exceed 14½ ft. with all equipments on board, steam up, & 50 tons of coal in the bunkers.

To have a straight stem, forged of the best selected scrap iron, or cast steel with 5% nickel if preferred.

Cellular double bottom not to be made 6 ins. deeper than usual to give better room for cleaning, as originally provided.

Platforms to be provided for four 6-lb. quick firing guns, 2 forward & 1 on each quarter, instead of 2 only. Magazine to be provided 12 x 6 ft., zinc or copper-lined & fitted with sea cock for flooding.

Officer's bridge to be strongly built of steel angles, instead of galvanized angles.

Donkey boiler to be fitted in to stoke hole 5½ ft. diameter by 11 ft. high, 90 lbs. working pressure.

The vessel, when completed & finished, with steam up, 50 tons dead weight, coal & cargo on board, not to exceed in draught 14½ ft. The vessel to be tried at or near Dundee, & over a series of 4 consecutive runs, to ascertain the results as per contract, & that the requirements thereof have been complied with in all respects to the satisfaction of the Minister or his representative. The vessel to be finished in every respect ready for sea, & delivered with compasses adjusted, at Dundee Aug. 31, 1899.

Engines to be not less than 2900 h.p., H. P. cylinder 26 ins. diam., I. P. 41 ins., L. P. 65 ins., stroke 39 ins. Pistons extra deep to dispense with tail rods.

Crank shaft of Siemens-Martin steel, of sufficient increased size, not less than 20% over Lloyd's requirements to give the required strength.

The propeller to be of approved diameter, pitch & surface.

Boilers to be of such dimensions as to supply a constant full pressure of steam of 170 lbs. a sq. in. when the engine is working under the full pressure stipulated of 2900 h.p. Boilers to be fitted with forced draft on the closed stokehold principle, having 2 fans, & capable of working under natural draft at less power when required. The boilers to be designed to obtain the stipulated results with the forced draft.

The Minister has not yet decided on a name, but it is said to be probable the vessel will be called the Minto, after the incoming Governor General.

Mr. Tarte on Transportation.

Speaking in Montreal recently, the Minister of Public Works, Mr. Tarte, dwelt at length upon the question of transportation. The deepening of the canals to 14 ft., which he hoped would be accomplished by the opening of next season, would bring the grain fleets from Duluth & the west to Montreal. The

fast line service is not a sinecure, & experience shows that we must at least make efforts without delay to have a line, a business line, if I may so style it, in the sense of which I have spoken. I think this whole question of transportation is the question of the hour. But, you say, money will be needed. No doubt; but the people of this country are a thrifty people. They are also a people of progress & of enterprise. Other people spend money on their harbors. In Boston they are about to add \$20,000,000 to \$50,000,000 already expended. There have been only \$3,000,000 spent on the Montreal harbor as yet. If we want to contend advantageously with our competitors we must have the means."

Freight on the Great Lakes.

The season of navigation on the Great Lakes is, says the Marine Review, of Cleveland, Ohio, of Oct. 8, closing to the entire satisfaction of the vessel interests. The volume of business will again be largely in excess of previous years, & conditions attending the closing months of the season are such as prompt activity in the shipyards, not only in repairs, but also in new ships. The Atlantic Transportation Company, of New York, takes 43 ships (39 barges & 4 steamers) from the lakes to engage in the coal trade on the Atlantic coast. The combined capacity of these vessels is 69,500 net tons. They are all vessels of the past in the matter of earnings when compared with the modern steel ship, but they were nevertheless a factor in lake freights. A conservative estimate as to their capacity for a full season is 1,251,000 net tons of freight. This is based on 18 cargoes in a season for each of the vessels, & that number of cargoes is undoubtedly low when the steamers are taken into account, & when it is understood also that several of the barges—those of the Mack-Becker fleet, for instance—were so engaged that they would carry nearly double that number of cargoes in a season. The loss of these vessels will be felt especially in the coal trade at the so-called out-of-the-



REAR VIEW CAR FERRY SHENANGO, NO. 1.

way ports, & in the ore trade at places like Tonawanda, at all of which ports modern dock machinery must be provided to care for vessels of a larger class that will take the place of those leaving the lakes. The advancing of freight rates, due mainly to a large grain crop, has more than equalled the expectation of vessel owners. Chicago has taken care of all vessels offered for nearly a month past at grain rates based on 1¼ c. for corn to Buffalo, & on the northwestern wheat crop, moving through Duluth, a rate of 2¼ c. to Buffalo has been well maintained. Contracts covering 2,000,000 bus. of Duluth & Fort William grain, to be moved to Buffalo during the first half of Nov., were made in Duluth a few days ago at a 2½ c. rate. It was said that 1,000,000 bus. of this grain was taken by the Bessemer Steamship Co. (Rockefeller fleet), but the management of that Co. would say nothing on the subject when inquiry was made regarding the transaction. Sep. ore shipments were about 200,000 tons short of shipments in Sep. of last year, & it is now evident that the output of 14,500,000 gross tons of ore for 1898, figured on some

Parry Sound Ry. was another great avenue of trade to which he had frequently drawn attention. The fight over the improvements to the harbor of Montreal was over, & the completion of those works assured, but more was needed. The channel between Montreal & Three Rivers must be deepened, & the system of buoys, lighthouses & pilotage must be improved. "When we have equipped, as I have told you," said Mr. Tarte, "our railways, our canals & our river route, we will want ships, & the C.P.R. will be obliged, if it wishes to keep its place, to fit up fleets of steamers on the lakes to transport to Montreal the grain received at Fort William. But we will also have to equip the fleets of steamers that will come to Quebec & Montreal in summer, & to St. John & Halifax in winter. I am not quite free to tell my whole mind, but there is one thing at least I may express, the desire to see ships arrive in Montreal like the steamers Canada. Do you not believe, if we had ships at 17 to 19 knots, with passenger accommodation & freight capacity, we should be sure to have an immense current of passenger & freight traffic? The establishment of the

way ports, & in the ore trade at places like Tonawanda, at all of which ports modern dock machinery must be provided to care for vessels of a larger class that will take the place of those leaving the lakes. The advancing of freight rates, due mainly to a large grain crop, has more than equalled the expectation of vessel owners. Chicago has taken care of all vessels offered for nearly a month past at grain rates based on 1¼ c. for corn to Buffalo, & on the northwestern wheat crop, moving through Duluth, a rate of 2¼ c. to Buffalo has been well maintained. Contracts covering 2,000,000 bus. of Duluth & Fort William grain, to be moved to Buffalo during the first half of Nov., were made in Duluth a few days ago at a 2½ c. rate. It was said that 1,000,000 bus. of this grain was taken by the Bessemer Steamship Co. (Rockefeller fleet), but the management of that Co. would say nothing on the subject when inquiry was made regarding the transaction. Sep. ore shipments were about 200,000 tons short of shipments in Sep. of last year, & it is now evident that the output of 14,500,000 gross tons of ore for 1898, figured on some

time ago, will not be reached. A general shortage of mining labor in the Lake Superior region & high grain freights are the causes of restriction in ore. The output will probably not exceed 13,500,000 tons. There is satisfaction in the shortage to both ore & vessel interests, however, as it means reduced stock piles on Lake Erie docks next May. Rates on ore up to this time have been held down to 75c. from the head of Lake Superior, 60 to 65c. from Marquette & 55 to 60c. from Escanaba, but at these figures, which are lower than the grain rates, the ore shippers have secured only a small part of their share of vessel capacity during the past 10 days. It is more than probable that quite a little chartering could be done from the head of the lakes at 80c. if vessels were to be had at that figure.

Yukon Navigation Matters.

The 2 sternwheel steamers, Dalton & Walsh, built at Port Blakeley, Wash., for the C.P. R., for the Stikine trade, but which did not go into commission owing to the slump in Yukon traffic, are to be wintered in the fresh water of the Fraser River, opposite New Westminster, where another C.P.R. steamer has been moored for some time. The Dalton is a passenger boat with accommodation for 200, & the Walsh was built to carry 300 tons of freight.

In our Sept. issue we mentioned that the Canadian Development Co. was running the steamer Anglian between Teslin Lake & Fort Selkirk. She made 1 trip from Teslin Lake to Dawson & 2 trips from Dawson to White Horse, & was returning to Teslin late in the season but could not ascend the Hootalinqua & had to turn back. On the way down she struck a rock & was beached at the mouth of the Hootalinqua. Capt. Foster, of Victoria, who took the steamer Canadian to Dawson, was sent to the Hootalinqua to attempt to float the Anglian, & to get her to Fort Selkirk for winter quarters.

A despatch to the Globe, dated Teslin Lake, Sep. 8, said:—"The last detachment of the Yukon force & supplies reached Teslin Aug. 24. The steamer Anglia, due by contract Aug. 25, not having returned, the remainder of the force, numbering about 140, with the officers & 3 Victorian Order nurses, left Teslin for Selkirk, a distance of 400 miles, in scows & small boats. Four large scows, with about 13 tons of freight, & 5 small boats constituted the fleet. The scows when loaded with supplies drew about 18 in. of water, & were navigated with sails & oars. Capt. Thacker, in a small boat, went half a mile in advance, seeking a channel; Major Young came 2nd, & was in signal communication with the 1st boat. There was a space of 100 yards between each scow, each being in charge of an officer & carrying about 30 men. The procession was considerably over a mile in length. It is expected an average of 25 miles per day will be made, & that a camp will be made on shore each night. Selkirk is expected to be reached in about 15 days. The down-river current on the Hootalinqua is 4 miles an hour."

Another dispatch, dated Dawson, Sep. 16, said:—"The scow fleet, carrying the main body of the Yukon force & supplies, have reached Selkirk, all well. The trip, 450 miles, was made in 13 days. The river was beautiful & navigation excellent. On Sep. 1 the steamers carrying the winter supplies were reported at Rampart, 700 miles below Dawson. They will probably arrive before winter sets in."

There is war among steamboat men, & if the breach widens much further the rates will be down so low that it will be cheaper to travel than to stay at home. Since the disruption of the Puget Sound Steamship Association in

September the breach between the different companies has been steadily widening, until now from day to day there is no prophesying what passenger rates between Victoria & Vancouver & Lynn canal will be. The smaller companies have, in the main, stood by the first Skagway cut to \$25 & \$15 for 1st & 2nd class, which went into effect when the Association was dissolved, but it seems that the Pacific Coast S.S. Co. has stolen a march on them & been getting business at a much lower rate. The rates now quoted by them are \$15 & \$10 to Skagway & Dyea, & \$12 & \$8 to Juneau. The competitors soon found out that a cut had been made, & immediately met their rivals. Some have, it is said, gone the P. C. S.S. Co. one better, & there is promise, a well-known steamship man says, of more slashing, & people who have been watching the progress of events say they should not be surprised if one could soon go to the head of Lynn Canal for \$5, & have the best cabins at that. The rates down the inner passage have not had a fixed ratio in many weeks. Any figure that will sell tickets seems to have been the controlling influence of agents, & some passengers are known to have been brought to Victoria from Skagway for \$10 1st class. The Alki carried a number for \$12 & \$7.50 1st & 2nd class. The local agent at Skagway explained that the cut was made as a special rate to a crowd of railway men.

Should the rush northward of last spring be repeated next spring there will be no stronger competition in the transportation than that which the C.P. Navigation Co. has for the last year been making preparations for. The Co.'s fleet will probably be no larger next year than it is now, but it will be much better equipped & suited to the handling of crowds. The Danube was the first to receive attention after last spring's rush & her overhaul & improvements effected every part of the ship. Her deck-house was enlarged & alterations internally were made so that her passenger accommodation would be greatly increased. Afterwards, the Islander was laid up & considerable money expended in improving her. Now the Tees, which has been a busy ship from the day she arrived from England, is to be treated somewhat after the fashion of the Danube. Her deck forward is to be done away with & the little house on the after deck extended to where the pilot house is now, so that when the alterations are complete the upper works of the Tees will be very similar to those of the Danube. In addition to these 3 ships the Co. has now the Queen City & Beaver, neither of which were in service last spring. There are, too, belonging to the Co.'s fleet, the Yosemite, the R. P. Rithet, Charmer, Willapa, Transfer & Maude. The Yosemite has replaced the R. P. Rithet on the Fraser run & the latter has been retired to winter quarters.

Although the Pacific Coast S. S. Co. has cut B.C. out of its Alaska schedule, it has practically decided to reverse its decision to have its northern steamers give Victoria the go-by. The Puget Sound Superintendent of the Company was in Victoria recently looking over the situation, & came to the conclusion that the prospects for business from that port were too good to allow the boats to pass by.

There has been much talk on the part of the Boston & Alaska Transportation Co. of putting the Laurada on the Honolulu-Seattle route. Recently it was announced that she would not go to Honolulu, but was to make a trip to Vladivostok & other Siberian ports with freight. It was stated that she was to leave as soon as repairs were completed & the cargo taken on board. It now seems that the Co. has changed its plan, & intends to put her on the Lynn Canal route. There are at present 8 steamers on the run. The presence of another vessel is unwelcome to the other companies.

The Victoria steamer Barbara Boscowitz, was driven on a rock 4 miles above Kitkatlah, Sept. 16, while on her way northward, by the swift current, & is a total loss. At high tide she is all but covered. The passengers, crew & most of the freight were taken ashore in Indian canoes, the salvage party being still aboard when the Boscowitz keeled over & sank, until she rested on the rocks with only her upper works visible. She was built in Victoria in 1883 & was 120 ft. long, 23 ft. beam, & 10 ft. hold. She was built by Capt. J. D. Warren, her present owner, although she has not been in his possession ever since, having been sold about 12 years ago to Capt. J. S. Williams, for \$20,000. He cleared \$22,000 on her the first season. She was a money maker from the day she was launched.

The little Lynn Canal steamer, Lady of the Lake, one of the Pacific Coast Co.'s Northern fleet, lies on the rocks off Haines Mission, probably a total wreck. She went ashore in one of the storms that swept along the South-eastern Alaskan coast late in September. She was on her way to Skagway with 2 big barges in tow. The wind was so strong that she was compelled to anchor, but still held on to the barges. The wind veered round & her anchors began to drag. There was no way to keep her off shore & she went on the rocks taking the barges with her. The crew escaped with some difficulty. She may be raised, but she is under water entirely at high tide. The barges were not badly damaged. She was an 80-ton steamer of considerable power. 68 ft. long & 16 ft. beam. She was built at Seattle in 1897 & was considered a staunch craft.

The C.P.R. Co's steamer Yukoner is said to have made the fastest round trip in the history of the traffic between St. Michael & Dawson, doing it in 30 days, 14 days being occupied in going up the river, 9 days tied up at Dawson & 7 days returning. She was under command of Capt. J. Irving, the Co's Manager. The Midnight Sun says, that when leaving Dawson, the Yukoner backed out, & under full steam turned completely round, going ahead at a rapid rate. It was a fancy trick of Capt. Irving, & showed what could be done with her. On returning to St. Michael, Capt. Irving sold the Yukoner to P. Galvin for \$50,000.

Advices received at Vancouver, Oct. 11, stated that navigation on the Yukon had closed. The last steamer to leave for St. Michael was the Sarah. The steamer James Domville went aground near Rink Rapids & the steamer Clara is aground in a slough close to Indian River. Both steamers were going up the Yukon.

Three men left Lake Bennett, just over the White Pass, 5 months ago, in a galvanized iron boat 25 ft. long, rivetted & soldered, which they made themselves. In this they went down the Yukon, shooting White Horse Rapids, & calling at Dawson only for provisions. Nine hundred miles further along they replenished supplies at St. Michael's & continued their voyage across Behring Sea to Unalaska. Thence they were sailing to San Francisco, when overtaken by a gale which cost them their provisions. The Viva picked them up off Clayoquot, & they went in to re-outfit. Their voyage in the open boat covers more than 8,000 miles.

It is stated at Tacoma, Wash., on good authority, that the Northern Pacific S. S. Co. is arranging to put under the U.S. flag 6 British steamers which it is operating to China & Japan from Tacoma. These steamers include the transport Arizona, which was sold to the Government last July; the Tacoma, Olympia, Columbia & Argyle. It is believed that the Arizona will be transferred back to the Northern Pacific at Hong Kong when the Government no longer needs her.

Maritime Provinces Notes.

At the annual meeting of the Canada Atlantic & Plant S. S. Co. at Halifax Aug. 30, the following were elected: H. B. Plant, President; M. F. Plant, Vice-Pres. & Mgr.; R. B. Smith, Treasurer; H. L. Chipman, Secretary & Canadian Agent; H. E. Jacobs, Auditor.

The S.S. Halifax, of the Plant Line, running between Nova Scotia & Boston, carried a larger number of passengers during Sept. than in the corresponding month of any previous year. Her passenger list from Halifax to Boston averaged over 400 each trip. The Plant Line will add another steamer to its fleet next spring.

R. G. Reid, owner of the steamer Bruce, which runs between Sydney, N.S., & Port-au-Basque, Nfld., is said to be having several large & fast steamers built in Glasgow, to be ready by the spring. One of them, it is said, will run between St. John's, Nfld., Halifax & Boston, while the others are principally for the coastal service.

Geo. Robertson, of St. John, N.B., whose scheme to secure a dry-dock there was explained in our Aug. issue, pg. 185, recently visited Ottawa to see the ministers about a subsidy. A St. John's dispatch says that on his return there he was reticent, saying he got encouragement, but that he seemed to have no definite assurance.

It is rumored that the Sydney Ferry Co. has sold the S.S. Vega to the Richmond S.S. Co.; that arrangements are being made at Lunenburg for the construction of a steamship hull, & that the Richmond S.S. Co. will place the engine & boiler of the S.S. Vega in the new hull, & will secure a suitable steamer for the St. Peter's-Mulgrave route.

The steamer Newfoundland, of Halifax, caught in attempting to run the blockade at Havana, July 19, & condemned by the U.S. District Court at Charlestown, S.C., together with her cargo, to forfeiture as a lawful prize of war, has been released, but the case has not yet been concluded. Further evidence will probably be taken at Washington during the winter. In the meantime the ship has been delivered up to the owners on the personal undertaking of Capt. Farquhar.

The Yarmouth S.S. Co's steamer Express, which was wrecked off Port Latour, Sept. 16, as described in our Aug. issue, pg. 186, has been abandoned. Arrangements were made for an attempt to raise her, but the storms in the 3rd week of Oct. completed her destruction. She was insured for \$60,000. The Co. has put the steamer City of St. John on the south shore route, in her place, leaving Yarmouth every Friday at 7 a.m., & returning, leaving Halifax every Monday at noon.

The Tartar & the Athenian.

These steamships, which, since being taken off the Yukon trade have been lying at Vancouver, have afforded a fertile subject for the daily press. A few weeks ago it was stated in a Vancouver paper that the C.P.R. Co. had decided to establish a regular line between Vancouver & Vladivostock, & that the Tartar & Athenian would be put on that run. The information was incorrect. The two vessels have been put into the Co.'s regular Pacific trade between Vancouver, Japan & China, & incidentally on the first outward voyage they take some flour & merchandise from Puget Sound to Vladivostock, & will then proceed to Japan for freight.

A few days later the London correspondent of a Vancouver paper wrote that the C.P.R. Co. had sold both vessels at a profit of several thousand dollars. We are officially informed that "the statement has not a symptom of truth in it."

In British Columbia Waters.

A tug 85 ft. long, 16 ft. beam, is being built at Nelson, to handle the C.P.R. freight barges on Kootenay Lake & River between the temporary terminus of the Crow's Nest Ry. at Kuskanook & Nelson.

The wrecking tug Pilot, which was fully described in our June issue, pg. 104, made her first trip from Victoria Oct. 6, to Departure Bay, Nanaimo, & other points on the east coast of Vancouver Island. Capt. J. W. Butler has been given command of her, with A. Warren as Chief Engineer.

The lumber rafts which are sent from Puget Sound & the Columbia River to San Francisco on the coast run, including those between Victoria, B.C., & San Francisco. Many of the booms are broken up by storms, the logs being sent adrift in every direction.

Under date of Oct. 6 the Canadian Pacific Navigation Co's management advised us of being in the midst of negotiations for a new steamer for the Vancouver-Victoria run, but matters had not advanced far enough for any definite announcement to be made in this issue. (July, pg. 134., Aug. pg. 161, Sep., pg. 188.)

The U.S. commissioners of navigation have instructed all collectors of customs on & after April 1, 1899, to require British yachts visiting U.S. ports to enter & clear & pay tonnage taxes the same as merchant vessels. This step is said to be taken in consequence of Great Britain imposing light dues on U.S. yachts visiting English ports.

TELEGRAPHS & CABLES.

Western Union Telegraph Co.

At the annual meeting, Oct. 12, the following statement of business for the year ended June 30, was submitted.

Surplus, July 1, 1897.....	\$7,647,541 06
Revenues.....	\$23,915,732 78
Expenses.....	17,825,581 52
	6,090,151 26
	\$13,737,692 32
From which there was applied:	
Dividends.....	\$4,867,911 25
Interest on bonds.....	896,534 95
Sinking funds appropriations.....	9,991 00
	5,774,457 20
Surplus, June 30, 1898.....	\$7,963,235 12
The expenses of the year were:	
Operating & general expenses.....	\$12,749,272 76
Rentals of leased lines.....	1,570,006 41
Maintenance & reconstruction of lines.....	2,688,283 42
Taxes.....	566,224 51
Equipment of offices & wires.....	251,794 42
	\$17,825,581 52

The revenues were \$1,276,873.62 more than for the preceding year.

The increased revenues made necessary an increased outlay for operating & general expenses of \$655,111.63. For reconstruction & maintenance, to preserve the efficiency of the property, \$342,913.91 more was spent than for the preceding year, & the cost of equipment of new offices & improving old equipments was increased \$48,371.51. Taxes were \$144,033.50 more than during the fiscal year 1896. Rentals of leased wires were \$3,491.09 less. The net increase in expenses for the year was \$918,925.49.

The average tolls received were 30.1c. a message. The average cost per message was 24.7 c. It cost 4 mills a message more to handle business than in the year previous.

The decrease in the average tolls received, & the increase in the average cost per message, are accounted for by the large number

of Government & press messages, consequent upon the war, transmitted during the latter part of the fiscal year, on both of which classes of messages the tolls are the lowest, although the highest grade of operating service has to be employed for their efficient transmission.

The cost of construction of new property for the year was \$1,117,651.61. The surplus account was increased \$315,694.06.

J. Stillman was elected a director in place of R. G. Rolston, deceased.

The report shows there are 189,847 miles of poles & cables, 874,420 miles of wire, & 22,210 offices in the system; 62,173,749 messages were handled during the year, against 58,151,684 the previous year.

The Co's extension of lines from Wooley, Wash., via Fairhaven, Blaine & New Westminster, was completed to Vancouver, B.C., early in October, & an office opened at the latter point, in charge of T. W. Goulding, formerly of the G.N.W. Co's Winnipeg staff. The W.U. Co. has built its lines in B.C. under the powers contained in the G.N.W. Co's charter, & the offices are conducted in the latter's name.

W. J. Dee is Manager of the office which has been opened at Victoria. It is said the Co. is contemplating a further extension of its lines in B.C.

The Grand Trunk Telegraphers.

A committee of the employes of the G.T.R., who are members of the Order of Railway Telegraphers, have arrived in Montreal from different parts of the system, & are seeking a conference with General Superintendent F. H. McGuigan. It is their purpose to request a readjustment of wages, looking to an increase. The telegraphers have had under consideration for some time the perfection of the organization of their union on the G.T. system, the same as on the C.P.R., & it is likely further steps may now be taken in that direction. Grand Organizer Davis, of the Order of Railway Telegraphers, represents the Executive of the order at the meeting. He has been working along the G.T. system for some time, under instructions from the head office in Peoria, Ill. It is not unlikely that the Grand Chief of the order, W. V. Powell, may also put in an appearance at Montreal before the work of the committee has been completed. The committee of the men meets at the Richelieu Hotel, going thoroughly into the question of what demands will be presented when they are prepared to go before Mr. McGuigan. One of the chief things the men want adjusted is the hours. They claim they are obliged to work 12 hours for an average wage of \$1.25 a day, with, perhaps, a few exceptions. They say the position of telegraphers is one of great responsibility as regards the safe running of trains, & their remuneration, they claim, is out of all proportion to the work performed. It is claimed there is not another class of employes where the responsibility is so heavy who are so poorly paid, owing, they say, to the fact that they have never been organized until just recently. When the meeting between the interested parties takes place, it is said the telegraphers will firmly insist on getting what they want, failing which, other means of a settlement may be resorted to.

Great Northwestern Telegraph Co.

At the annual meeting in Toronto, Sep. 28, the following were re-elected: H. P. Dwight, President & General Manager; A. Brown, Hamilton, Vice-President; H. N. Baird, J. Hedley, A. S. Irving, W. C. Matthews, Toronto; R. Fuller, Hamilton; Hon. W. McDougall, Ottawa; C. A. Tinker, New York, other directors; G. D. Perry was reappointed Secretary & Auditor, & A. Cox, Treasurer.

The Co. does not issue an annual report, but we are informed that the statement of the year's business showed a considerable improvement over the previous year, & the opinion was expressed that with the new connections & extensions of the Co. it might reasonably look for a still further improvement during the current year.

Alex. Hunter, assistant chief operator of the Co. at Toronto, & who had been in the service of the Co. & its predecessors for over 30 years, died Oct. 3, aged 57, of typhoid, leaving a widow, 2 sons & 3 daughters. He went to the front with the Queen's Own in the Fenian Raid of 1866.

Canadian Pacific Railway's Telegraph.

The Co. is stringing a wire between Truro & Halifax, N.S.

The new commercial office in Winnipeg is being fitted up under the personal supervision of Electrician Camp, of Montreal.

The Co. recently assumed control of the 74 miles of telegraph lines formerly owned by the Erie & Huron Ry. Co., extending from Sarnia to Rondeau, which it is now operating as it does the lines on the other part of the L. E. & D. R. R. Co.'s system.

The new copper wire from Montreal received a practical test recently, when a message was sent from Vancouver to Montreal & reply transmitted in the space of one minute. The wire was duplexed. The handling of 2 messages took just a minute.

The Postal Telegraph Co. is extending its lines from Rossland, B.C., to Spokane, Wash., which will give the C.P.R. telegraphs another U.S. connection. The only line between these points at present is operated in conjunction with the Western Union.

A Yukon Telegraph Line.

Last session the Dominion Parliament granted a charter to some English & Canadian investors, empowering them to construct a telegraph or cable line from the coast of Alaska through to Dawson City by way of the valleys of the Yukon & its affluents. The promoters allowed the summer to slip away without making a move towards construction, & now the charter has fallen into other & more active hands. J. Roche, M.P., has charge of the scheme for a number of English capitalists, including Sir John Pender, of cable fame. Mr. Roche has secured the transfer of the franchise, & has been in Ottawa arranging with the Government in regard to the importation of the plant & location of the line. The plan is to construct a double land line from Skagway via Lake Tagish & Fort Selkirk to the Klondike. It is said the work will be begun forthwith, & that the line is expected to be in operation by Jan. 1 next. It is also said that as soon thereafter as possible a cable will be laid to connect Vancouver with the land line at Skagway.

Telegraph Office Changes.

CANADIAN PACIFIC.

OPENED: Fernie, B.C.; Cascade City, B.C.; Cranbrook, B.C.; Ferguson, B.C.; Grand Forks, B.C.; Greenwood, B.C.; Kuskanook, B.C.; Wardner, B.C.; Cache Lake, Ont.; Masokama, Ont.; Ostersund, Ont.; Woman River, Ont.; Darwin, Man.; Dauphin, Man.; Hargrave, Man.; Macdonald, Man.; Midway, Man.; Plumas, Man.; Sifton, Man.; Winnipegosis, Man.; Ernfold, N.W.T.

CLOSED: Stanley, B.C.

GREAT NORTHWESTERN.

OPENED: Myrtle, Man.; Oakville, Man.; Marieapolis, Man.; Rosebank, Man.; Dunham, Que.

CLOSED: Glanworth, Ont.; Treadwell, Ont.; Aylwin, Que.; St. Janvier, Que.

Queen Victoria & other members of the royal family have shown great interest in experiments in wireless telegraphy which have been conducted at Osborne, Isle of Wight, by Mr. Marconi, the inventor of the system. Many messages were exchanged between Osborne House & the royal yacht, having on board the Prince of Wales, & during a period of 10 days the Queen received a morning bulletin of the condition of the Prince. The yacht was anchored 2 miles from Osborne House, the positions being intercepted by a hill. All the messages were successfully transmitted, some of them while the yacht was under steam.

Among the old-time telegraphers of Ottawa, Ont., who have become prominent in other walks of life, are C. W. Spencer, now a General Superintendent of the C.P.R.; O. Higman, now Superintendent of Standards & Chief Electrical Engineer of the Inland Revenue Department; W. Y. Soper, an electrical engineer & capitalist; T. Ahearn, an electrical engineer & capitalist; N. W. Bethune, Superintendent of the G.N.W. Telegraph Co.; G. F. Macdonald, Superintendent of the Ottawa fire-alarm system; J. A. Parr, Chairman of Public School Board; H. B. Spencer, a Superintendent of the C.P.R., & D. C. Dewar, now Local Manager of the Bell Telephone Co. in Montreal.

TELEPHONES.

The Bell Telephone Company.

The following, from the Carberry, Man., Express, is a sample of the nonsense that finds its way into recklessly conducted newspapers:—"The long distance telephone scheme which was announced some weeks ago, has fallen through, owing to the action of the directors of the C. P. R. It appears that the directors of this big corporation are also directors of the Bell Telephone Co., & on hearing of the steps being taken to extend the long distance telephone throughout the province, a hurried meeting of the directors was called at Montreal, when it was decided that as the long distance telephone would, to a certain extent, hurt the telegraph business of this country, a quietus should be put on the scheme, at least for this year. The poles were on the spot & everything was in readiness to commence building the line from Carberry to Neepawa, but the C. P. R. has spoken & operations have ceased. It is lucky that they had no control over the private line to Wellwood."

The directors of the Bell Telephone Co. are C. F. Sise, R. Mackay, J. E. Hudson, R. Archer, W. R. Driver, H. Paton, C. Cassils, & T. Sherwin. We fail to recognise any of the C. P. R. directors in this list, & it would be interesting to know on what the Carberry paper based its information. Is it aware that the Bell Co. has its long distance lines throughout Ontario & Quebec? If the C. P. R. Co. had any control over the Bell Co., & wanted to stop long distance extension, is it not likely that it would have exercised it in the most populous provinces?

We are informed there was no warrant for the publication of the rumor to which we referred in our Sept. issue, pg. 196, to the effect that it had been decided to establish a long distance service in Manitoba. The Carberry Neepawa line may be constructed this fall.

The Co. has declared a quarterly dividend of 2%, payable Oct. 15.

The application of the People's Telephone Co., of London, for a franchise in Kingston, Ont., was refused by the City Council.

Spokane & British Columbia T. & T. Co.

The controlling interest in the Spokane & British Columbia Telephone & Telegraph Co., which operates the line from Spokane, Wash., to Republic, & nearly into Rossland, B.C., has been transferred from W. H. Oakes to C. O'Brien, Reddin & Co., of Rossland. The deal involved stock of the par value of \$255,000. The capitalization of the Corporation is \$500,000 in \$5 shares, & the purchasers secured 51,000 shares. The Company's lines reach from Sheep Creek station into Spokane, & all the business at present transacted by telephone between Rossland & the Washington cities is conducted over its system in connection with the wires of the Vernon & Nelson Telephone Co., which connect between Rossland & Sheep Creek. It is possible the new management of the Co. will extend its own lines into Rossland. It has a franchise for that purpose. The extension would give it independent service between Spokane, Rossland, Greenwood, Republic & all way stations. C. O'Brien, Reddin & Co. have not yet announced how they will handle the controlling interest which they have acquired. The purchase, they say, was for themselves & not for clients.

Telephone Items.

A contemporary recently stated that a telephone exchange was being established at Indian Head, Assa. Several telephones have been installed there for private use, but hardly on the exchange system.

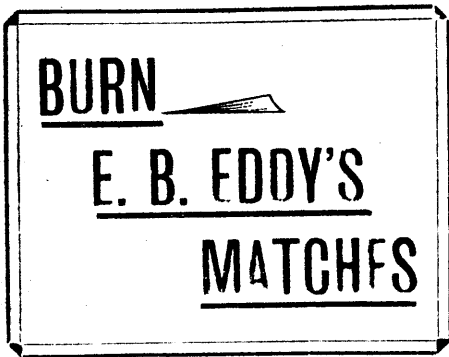
The Baltimore & Ohio Ry. is stringing copper telegraph lines between Baltimore & Pittsburg, 340 miles. They will be so arranged that when necessity arises they will be available for long-distance telephone communication, & if the experiment proves a success, other lines of a similar nature will be put up.

The New Brunswick Telephone Co. has recently been put to considerable trouble by parties breaking insulators on telephone poles & cutting wires, & the Co. offers a reward of \$10 for information that will lead to conviction. The Co. is now stretching copper wires on the eastern section, & near Moncton some miscreants climbed the poles & cut the wires in 7 or 8 different places.

At the annual meeting of the Merchants' Telephone Co., in Montreal, Oct. 4, it was decided to increase the capital \$100,000. The directors were re-elected as follows:—President, A. S. Hamelin; Vice-President, J. E. Beaudoin; Treasurer, L. E. Beauchamp; other directors, A. S. Delisle, L. H. Henault, S. L. Archeveque, J. B. Thibodeau, J. N. Ducharme, R. Beauchamp.

The People's Telephone Corporation, of New York, was incorporated at Albany Oct. 12, with a capital stock of \$5,000,000, to operate a telephone system in New York City & other cities, towns & villages in New York & other States, & in Canada. The capital stock is divided in \$2,000,000 preferred & \$3,000,000 common stock. The directors are S. B. Dutcher, J. E. Nichols, E. S. A. Deluna, F. C. Travers, F. Brainard, J. F. Ackerman & D. R. James, of New York City.

A contemporary says:—"An effort is being made in Winnipeg to establish a rival telephone system which promises very much reduced rates. Two wealthy U. S. telephone manufacturing firms are said to be backing the scheme." No doubt. They are probably acting in line with the People's Telephone Co., which has been operating in Ontario, but which, up to date, has not accomplished much. We are probably not far wrong in expressing the opinion that what the "wealthy U. S. manufacturers" want to do is to sell instruments.



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General Waiting Room	Men's Toilet	Freight Office	Lunch Room
Ladies' Waiting Room	Baggage Room	Ticket Office	Smoking Room
Men's Waiting Room	Agent's Office	Telegraph Office	No Admittance

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