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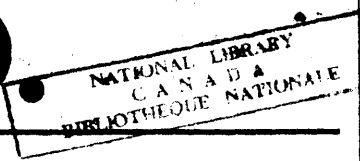
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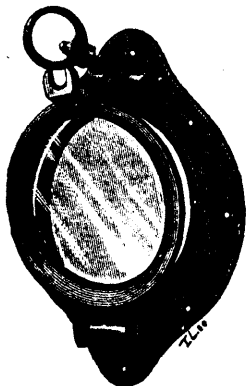
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TORONTO, CANADA, MAY, 1899.

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## Crow's Nest Pass Railway Location & Construction.

By J. L. Davidson.

The construction of the Crow's Nest Ry. was notable, from an engineering standpoint, for at least two features, the celerity of construction & the skill shown in overcoming serious obstacles. To build a road through the Rocky Mountains, with a maximum grade of 1%, seems well-nigh impossible, yet this has not been exceeded, & the railway is the best which crosses the mountains.

Location was commenced in April, 1897, at Lethbridge, Alberta, & since preliminary lines had been run in 1892-3, there was a good idea as to the general route to be followed. Starting from Lethbridge, it ran to Fort MacLeod, thence to Pincher Creek, following the middle fork of Old Man River to the summit of the Rocky Mountains, down Michel Creek to Elk River, thence to Kootenay River, to Cranbrook & to Moyie Lake, along Moyie Lake, down Moyie River to Goat River Summit, down Goat River to Kootenay Flats, round the west side of Kootenay Lake to the Narrows, & down the Narrows to Nelson; in all, a distance of 290 miles.

Location was carried on from 5 or 6 different bases; westward from Lethbridge, starting in April; westward from Elk River to Kootenay River, starting in May; westward from Warner to Moyie Lake in May; down Moyie River from the foot of Moyie Lake to Goat River Summit, starting in July; from the summit westward to Kootenay Flats in Nov., & from Kootenay Flats round the lake to Nelson in April, 1898. All the location proper was finished in March, 1898, although a good deal of re-location was going on during construction.

On leaving Lethbridge it is about a ¼ mile to St. Mary's River, where there is about 3 miles of trestle-work. A fly-line was run down along the side hill to the flats, so that the steam pile-drivers could be working below, as well as above. Three tracks were run along the course of the road, 1 outside of the trestle-work, & 2 inside. The steam pile-driver, driving the outside sloping piles, came first, followed by the one driving the upright piles. The 1st pile-driver was on 2 flat cars, 1 on each track, & was shifted from side to side as the piles were driven. With the upright piles the driving was done at the rear end of the cars, as the piles were driven in between the tracks. In the meantime, material was brought along on the track outside, a steam timber derrick putting it in place for the pile-driver. Pile-drivers were at work up above from the east end of the bridge. In this way the trestle was constructed in remarkably quick time. Temporary work was constructed under the span by means of decks, the decks being brought

along already made up. One deck was laid on top of another till the necessary height was reached; the span was then placed in position, & the temporary work taken away.

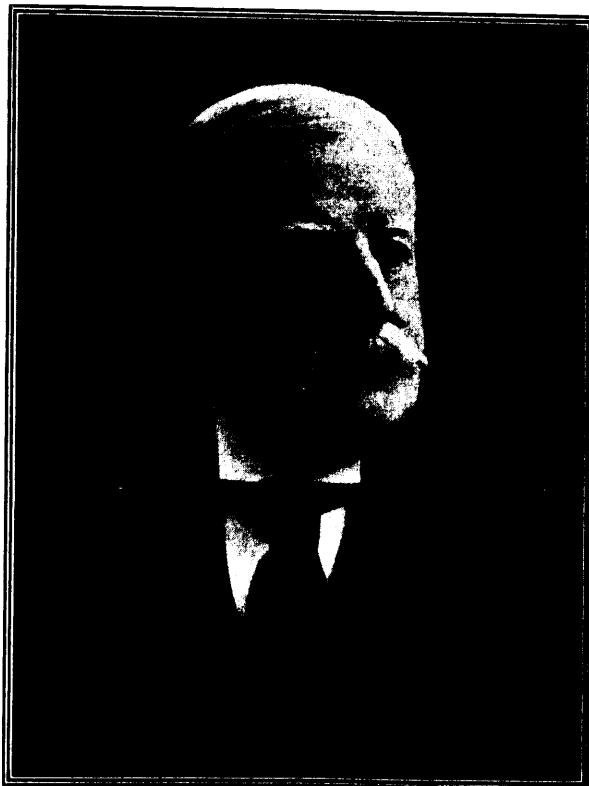
The line crosses the valley, swings around a 10° curve on the trestle, & follows along the coulees. Very heavy cuts are encountered here; one, after the slopes being taken out, was 120,000 cubic yards. A trestle, 900 ft. long, is next, with a 200 ft. span. Heavy cuts again intervene, & 6-mile coulee bridge is reached. Piles were driven to a height of 40 ft., & then decks of 15 ft. were strung across on the temporary work, & pulled up into position. A cable was stretched across

was reached. This is 800 ft. long & 133 ft. high, with 200 ft. span. The temporary work consisted of 3 decks for the span, 35 ft. each, the bents being 15 ft. apart.

The line now comes out on the rolling prairie, & no difficulty is encountered to MacLeod, 37 miles. The road then follows up the Old Man River, & crosses Pincher Creek, 22 miles distant, with a trestle 1,200 ft. long & 122 ft. high, with a span 250 ft. long. It then follows the south side of Old Man River, with a rising grade, till the south fork of Old Man River is crossed. This bridge is 840 ft. long, & 135 ft. high, 2 spans of 150 ft. each, piles 30 ft. & decks of 15 ft. bents; temporary work for spans, 15 ft. bents 15 ft. apart for 70 ft. in height, then 30 ft. deck to span. The road then winds in and out along the south bank of the Old Man River, & the foot-hills of the Rockies are soon reached. Heavy rock cuts are encountered now. A trestle was erected on a 4° curve over a dam, but the whole side hill, 1,200 ft. across, started to move toward the river; the trestle had to be abandoned, a lower grade taken, & a fill was made instead of trestling. It was necessary to keep ballasting this, as the grade kept sinking. The cause of this, from all appearances, is that there is loose material embedded in the hollow, the sides & bottom of which are solid rock.

The entrance of the pass is made at 92 miles. In the mountain division trestling & culverts are of the greatest importance, as they are used in very great numbers. The trestles consist of single deck trestles up to 40 ft.; on soft material piles are used & on hard ground mud sills are used. The standard trestles run up to 110 ft., with diagonal bracing on all over 2 decks. The culverts employed are box, pile & open; box culverts are the most used culverts in a mountainous country, & on this road are used in great numbers. Where there is a fill in a drain a culvert was put in, unless the water could be drained along the side of the dump. If there is a small stream the size is generally 3 x 3 ft. Box culverts vary in size from 2-4 ft. in width, & from 2-5 ft. high. Sometimes it was necessary to put in a double box culvert; these are generally 4 x 4 ft. Some of these on this road are over 100 ft. long. Open culverts are generally pile culverts, & are from 6-14 ft. in width. Mud sills used on hard ground. Open culverts are used up to a height of 5 ft. for spans of 12-14 ft. Eight stringers are used.

The line follows up and crosses the Old Man River with a single span. In 3 places the course of the river was changed, as a much better location was to be had by this change. There is a steady rise in the grade, heavy cuts & fills are now the order. Crow's Nest Lake is next reached at 100 miles from Lethbridge. Very heavy rock cuts are encountered along this lake, with grade still going up. The divide or summit of the



JOHN FOY,  
Manager Niagara Navigation Company.

the coulee, block & pulley were attached to the cable, & the bents placed in position one by one. It was impossible to locate around the hogs backs that jutted out from the side hill, so that it was necessary to have trestles & heavy cuts.

Eight-mile coulee trestle is next reached; this is 600 ft. long & 110 ft. high. The piles were driven to a height of 50 ft. There is a 15-ft. deck & bents up to grade here. After passing through a very heavy cut, a trestle 900 ft. long on a 3° curve was constructed in the same manner as the one above mentioned. Heavy cuts & fills with a few small trestles were encountered till 16-mile coulee trestle

over 100 ft. long. Open culverts are generally pile culverts, & are from 6-14 ft. in width. Mud sills used on hard ground. Open culverts are used up to a height of 5 ft. for spans of 12-14 ft. Eight stringers are used.

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Rockies is reached at a distance of 105 miles,  
which is passed at an elevation of 4,434 ft. Summit  
Lake is next reached, only a few hundred feet from  
Crow's Nest Lake, but the latter is drained to the east  
by the Old Man River, & Summit Lake is drained to the  
westward by Michel Creek.

By the contract with the Government 100  
miles were to be finished by January 1st, 1898.  
They were finished Dec. 13, 1897. There being  
no wagon road west of Crow's Nest Lake, it was  
necessary for the Co. to have one. It was started  
in July, 1897, from Crow's Nest Lake, & from Kuska-  
nook in Sept., these met on Moyie Lake in Nov. Over  
200 miles of wagon road were built in 4 months.  
The location being nearly all complete to Kootenay  
Flats, contractors were put in all along the line from  
Crow's Nest Lake to Kuskanook by Jan. 1, 1898.  
Storehouses were built on an average of 25 miles  
apart in the mountain divisions. Supplies were  
rushed in from MacLeod and from Nelson to Kuska-  
nook, & in the centre from Jennings, Mont',  
by Kootenay River to Wardner. Mail service  
was established along the line, and by Feb. between  
6,000 & 7,000 men were employed on the line.

On leaving the summit the grade begins to  
fall steadily, heavy rock cuts and fills are very  
numerous here, at  $4\frac{1}{2}$  miles from the summit  
the line enters the loop. A long narrow hill  
juts out from the side hill, which is between the  
main fork and south fork of Michel Creek. A  
tunnel was located here, which was to have  
been 1,100 ft. long, but this had to be aban-  
doned. The construction of the tunnel was  
first started at the east end, & about 40 ft. had  
been taken out when the whole side hill be-  
gan to cave in, and the casing of the tunnel  
began to sink; this will finally be made an  
open cut. Location was then made down the  
north side of Michel Creek, but this was im-  
possible unless a greater grade be used. The  
location was then started at the eastern end  
of the tunnel, down along the side hill, heavy  
gumbo cuts & fills & sharp curves of  $10^\circ$  &  $12^\circ$   
being mostly used till the nose of the hill is  
reached, which is about  $1\frac{1}{2}$  miles from the  
abandoned tunnel. The line turns on a  $20^\circ$   
curve around the nose of the hill, coming out  
of a 40 ft. gumbo cut on to a trestle 55 ft.  
high, which is also a part of the curve; spe-  
cial permission had to be given here for the  
 $20^\circ$  curve, as no greater than  $12^\circ$  is allowed.  
The reason the trestle was erected here was  
that the dump could not be made owing to the  
steep side hill, & the material would slide  
down the side hill to the dump below.

On rounding this curve the line follows up  
the east side of the south fork of the Michel  
Creek for 3 miles; sharp curves & heavy cuts  
& fills are numerous. At the end of the loop  
the line turns on a  $10^\circ$  curve, crosses the  
south fork of the Michel Creek, & follows  
down the west bank of the creek; sharp  
curves & heavy gumbo cuts are very numer-  
ous here. The grade is still dropping stead-  
ily. The south fork is again crossed, & the  
line follows down the east bank of the creek,  
& comes out of the loop at the bottom of the  
hill it went in on, some 350 ft. below. The  
track laying machine had great difficulty here  
in laying the rails, as the soft gumbo dumps  
kept sinking, & the machine was derailed  
every few hundred feet. The line follows  
down the main creek to Elk River. The main  
Michel Creek is crossed with a single span  
150 ft. long. The line follows down Elk  
River to Coal Creek (140 miles from Leth-  
bridge). Here is situated Fernie, which is a  
divisional point, a branch 4 miles long has  
been built up Coal Creek to the coal mines.  
The grade of the latter runs as high as  $3\%$ .

Coal Creek is crossed with 160 ft. span, the  
line follows down the east side of Elk River  
for 17 miles, & crosses at a distance of 157  
miles. The first location line that was run  
kept along the east side hill of the river, &

crossed 3 miles below the present crossing; this  
location necessitated 2 tunnels, 1 on each side  
of the crossing, & after crossing the line kept  
4-6 miles south of the present line. On cross-  
ing the river a 78,000 cubic ft. gravel cut is  
the first heavy work encountered, & a 945 ft.  
trestle on a  $4^\circ$  curve. Heavy rock and earth  
cuts are met with, & heavy fills. Rock Creek  
is crossed with a high trestle, & Sand Creek  
with 100 ft. span. Heavy earth cuts & fills  
are encountered every few hundred feet.  
Kootenay River is next reached; the line fol-  
lows along the east bank for 13 miles; heavy  
earth & rock cuts with 2 trestles, one 110 ft.  
standard, & 70 ft. trestles, till Kootenay River  
crossing is reached. This bridge consists of  
4 spans & a 180 ft. steel arch swing. Before  
the rails reached this bridge piles were driven,  
& temporary bents put in place; & the stringers  
were run across, & all was in readiness for  
steel swing. The steel swing was brought  
along on the construction train, & put up in  
11 days. The 1st train crossed the Kootenay  
bridge July 29, 1898.

From Wardner west to Kuskanook the  
dump was all completed but 12 miles on Aug.  
15, 1898, a distance of 112 miles. Kootenay  
River crossing is one of the lowest points on  
the line, having an elevation of 2,400 ft. On  
the west side of the crossing there are heavy  
rock cuts & fills. Wardner is reached, which  
is 188 miles from Lethbridge. The line fol-  
lows up the west bank of the Kootenay River  
for 6 miles, with a rising grade. The work  
to the Isidor Canyon is alternately light &  
heavy. The work in the canyon is very heavy.  
Rock cuts & heavy fills; there are also a  
large number of sharp curves. The grade is  
still rising till the summit of the canyon is  
reached, here heavy rock cuts are again en-  
countered, with heavy fills. The grade be-  
gins to drop till Cranbrook is reached; this is  
the next divisional point, a distance of 210  
miles.

From here there is a branch located to the  
North Star Mine; this branch runs north, &  
crosses the St. Mary's River at the St. Eugene  
Indian Mission, which is 5 miles north from  
Fort Steele, & then runs in a north-westerly  
direction to the North Star hill. This will tap  
the west part of the Fort Steele mining dis-  
trict. From Cranbrook to Moyie is down  
grade, & the work heavy. Palmer's Bar  
Creek is crossed with trestle on a  $4^\circ$  curve.  
Moyie River is crossed with a single span.  
Heavy rock & earth cuts are now encountered  
till Moyie Lake is reached; this lake is 10  
miles long, & the narrows between is 1 mile  
long. The grade along this lake is level  
at 3,000 ft. A tunnel 650 ft. long in solid  
rock on the East Lake was the heaviest piece  
of work. Two tracks were laid with a switch  
at the outer end. Horse cars side dumping  
were used to draw the blasted rock out.  
Work was started from both ends, so that the  
construction was done in remarkably quick  
time. The rock cuts are very heavy along  
this lake, very little of which was needed for  
fills. The grade is only 14 ft. above the level  
of the lake at low water, & 6 ft. at high water.

The line now follows down the Moyie River  
for about 22 miles. A great deal of piling was  
done on this section, as there were numerous  
marshy meadows. Irishman's Creek is crossed  
with a single span. The work is not very  
heavy till about 5 miles from Goat River  
Summit, where the grade begins to rise. Very  
heavy cuts & fills are encountered; the line  
follows along the north side hill, & swings  
around in a north-westerly direction, leaves  
the valley of the Moyie & follows up Summit  
Creek to Summit Meadow, the elevation of  
which is 2,860 ft. The line follows down the  
centre of the meadow, & it was necessary to  
pile the greater part of this. The line now  
follows Kid Creek, the grade begins to fall, &  
work becomes very heavy, & sharp crosses  
have to be used in great numbers. The line  
keeps to the west side of Kid Creek. A mile



L. L. MOON - THE FIREWORKS MAGAZINE

SCENES ON THE WHITE PASS AND YUKON RAILWAY.

& a half from the summit the line enters the loop on Carrol Creek, & winds up along the south side hill for  $\frac{3}{4}$  of a mile. Very heavy rock cuts & fills are encountered. The line then crosses Carrol Creek on a  $12^{\circ} 30'$  curve, the angle of the curve being  $228^{\circ} 110$  ft. Standard trestle is used here with a 150-ft. span. The cuts on both sides of the crossing are very heavy; 76,000 cubic yards of rock on the south side, 55,000 on north side. The line follows down the north side of Carrol Creek, & swings around on a  $12^{\circ}$  curve, & follows the valley of Kid Creek once more. Heavy cuts & fills are encountered. Kid Creek runs into Goat River, & the line follows down the west side hill of Goat River. The heavy work continues, & Goat River Canyon is reached. Very heavy cuts are met with; two especially heavy ones, one on each side of the crossing, 62,000 & 53,000. The river is crossed with a single span 200 ft. long, at a height of 165 ft. above the river bed. The walls of the canyon are solid rock, and nearly perpendicular.

The approaches of the bridge were all in readiness for the span, & as soon as the rails arrived at the bridge, work commenced at once on the span, it being brought along on the construction train. The span was completed in eleven days.

The line now follows down the east side of the valley, & passes on the right of Duck Lake. Duck Creek is crossed with a trestle & 70-ft. span. The work along the lake is heavy, rock cuts being the main feature. Another branch of Duck Creek is crossed with a span, & the work is heavy till the Kootenay River is again reached, after its wanderings in Montana and Idaho. The river comes out on what is known as Kootenay Flats, & is divided into 3 branches. To cross this flat  $4\frac{1}{4}$  miles of trestlework were necessary, with 3 bridges, with 3, 2 & 4 spans respectively, &

1 steel arch swing bridge of 200-ft. span. Temporary bents were driven, & the piles for the abutments; then stringers were strung across. These bents on the trestlework appeared to be much higher than they need be; this is on account of the height to which the water rises; at high water Kootenay Lake rises 38 ft.

The work ceases at the end of this trestle, but the charter and contract extends to Nelson, the Co. having 2 years' time from Oct., 1898, to build this in. The work around the west side of Kootenay Lake & the Narrows is the heaviest work on the line, being solid rock, & will cost on an average \$35,000 a mile. The distance is 53 miles. There is a transfer slip, which is used to transfer the cars from the line to the boats; this is very long, owing to the great height to which the water rises on Kootenay Lake. Barges are used to carry the cars across the lake; these are towed by the steamer. The cost of the road was heavy. The first 100 miles cost, on an average, about \$14,000, the second 100 about \$13,000, & the third 100 about \$19,000 a mile.

The foregoing paper was read by Mr. Davidson before the Engineering Society of the School of Practical Science, Toronto, by the kind permission of the officers of which it is here produced.

#### Surveys, Construction, Betterment, &c.

**The Atlantic & Lake Superior Ry.'s** large bridge at Bonaventure has collapsed, & traffic is suspended.

No information is forthcoming as to what, if any, construction work will be done this year.

**Brandon & Southwestern.**—It is said the promoters recently made application to the Manitoba Government for the usual Provincial aid of \$1,750 a mile for this line, between

Brandon & the International boundary. It is possible a grant may be given for a portion of the distance, probably that lying south of the Northern Pacific's Souris River branch, but it is hardly likely that the whole line will be bonused, as the feeling seems to be that there is no pressing necessity for the northern portion of the line. The promoters are reported to have stated that the Dominion Government has promised \$3,200 a mile, subject to the ratification of Parliament this session. It is not known who are behind the figurehead promoters, but the general impression is that they are backed by the Great Northern (U.S.A.) which has a branch to Bottineau, N.D., within about 12 miles of the International Boundary, & near to the southern point to which the B. & S. W. is projected. (Jan., pg. 11.)

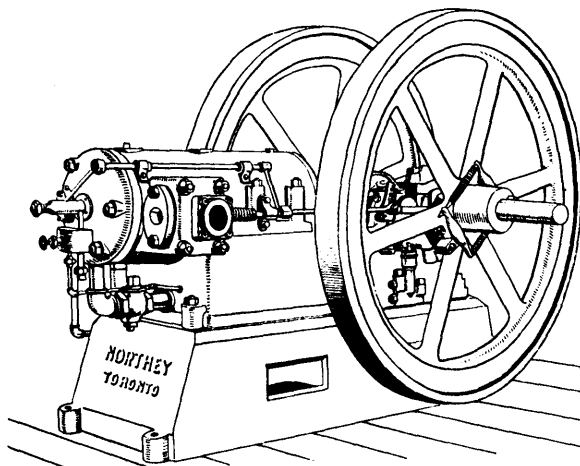
**Canada Atlantic.**—The trestle work at Arnprior is to be filled up to track level.

**Canadian Northern.**—It is expected that the portion of this line from Cowan, the end of last year's construction, to the Saskatchewan River, will be put under contract almost at once, & that that distance will be completed this year. (April, pg. 115.)

**Central Ontario.**—At the recent session of the Ontario Legislature this Co. was granted a cash subsidy of \$3,000 a mile for 21 miles, to assist it in extending from Ormsby, 5 miles from its northern terminus at Coe Hill. Whether the extension will be gone on with this year depends on the action of the Dominion Parliament as to granting a Dominion subsidy. If this be given, we are informed the Co. will immediately start to extend from Ormsby via Bancroft to either Barry's Bay or Whitney, on the Canada Atlantic Ry. The distance from Ormsby to Barry's Bay would be about 60 miles, & to Whitney about 75. Bancroft is about 20 miles from Ormsby, & it is not likely work would be carried beyond there this year.

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Railway Officials will find the Northey Engine to be a marked improvement over steam or other forms of power for this duty. It is simple of construction, and easily managed, necessitating only the turn of a fly-wheel to start, while it can be going at full speed in a few seconds and be shut down on the instant. Needs no engineer to look after it, the station hands can do all that is required, while it will run for hours at a time with little or no attention. The Engine is compactly built and of the best materials; it uses either gas or gasoline for fuel, and its safety and economy with either have proved it to be the most satisfactory power in the market.

We will cheerfully send Booklet and every information upon request.

The Northey Mfg. Co., Limited, <sup>1032</sup>KING ST. SUBWAY, Toronto, Ont.

J. D. Evans, Trenton, Ont., is the Co.'s Engineer, & will have charge of the work. G. Collins is General Superintendent & Secretary of the Co. (Feb., pg. 39.)

**Central of New Brunswick.**—It is reported this line, which now extends from the I.C.R. at Norton, to Chipman, 45 miles, will be extended to Fredericton this summer, that a preliminary survey has been made, & that the final survey will be started at once. When this road is finished it is said it will materially assist in opening up of coal mines.

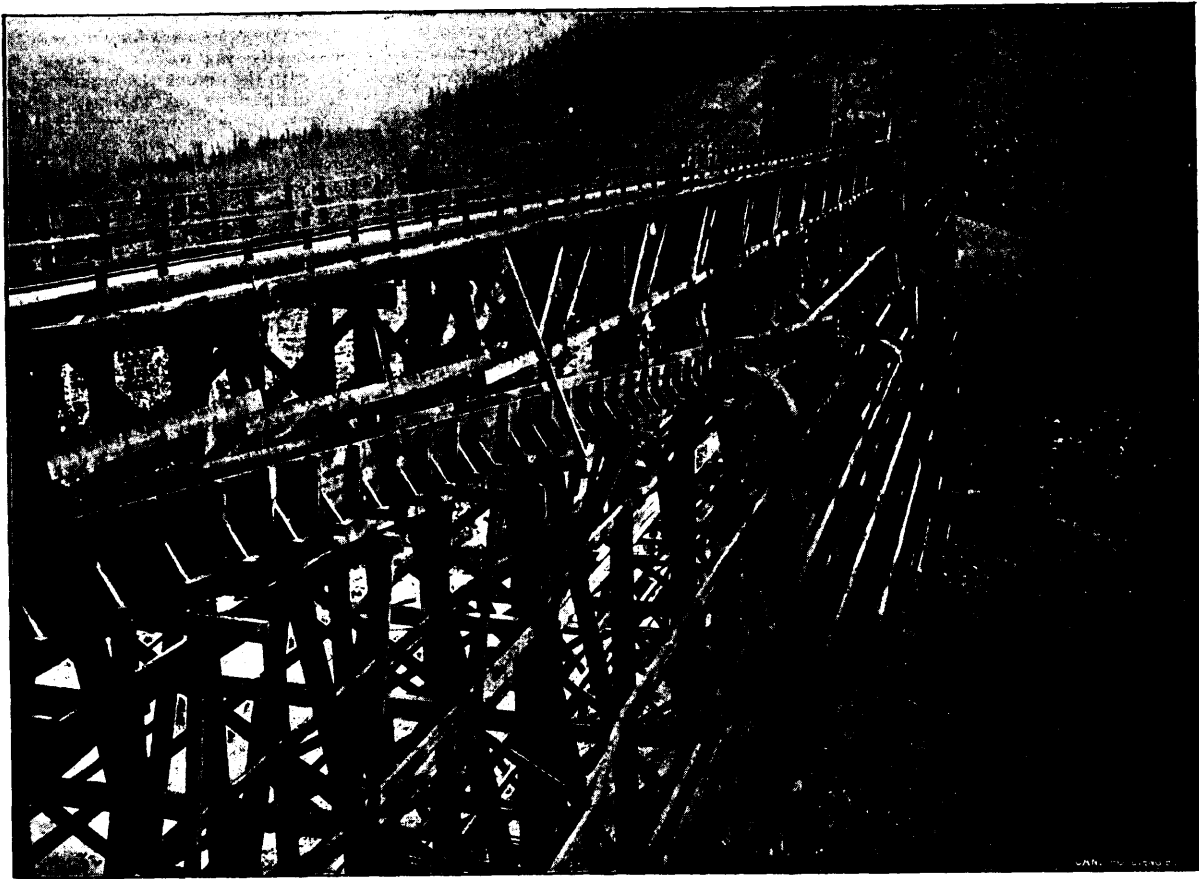
**Coast Ry. of Nova Scotia.**—Grading was resumed on this work in April, & is being pushed forward with all the men available. Townsend & Co., contractors, have advertised, asking for 500 men & 150 teams. A small force of Italians has arrived from Boston. With this exception all men employed are likely to be local. The balance of the

port, with the hope of opening to Shelburne before the end of the season.

The Provincial Engineer, in reporting on this Co.'s work, says the contract with the Government was made in Sep., 1896, & provided that 90 miles be in operation by Oct. 1, 1898, by which time only 31 miles, from Yarmouth to East Pubnico, were actually completed, 20 miles from East Pubnico to Barrington being under construction, & the 39 miles from Barrington to Lockeport having been surveyed & timber cleared off. He continues: "Early in the season 2 parties were in the field engaged on preliminary surveys between Shelburne & Halifax, & continued to survey during the summer. Further than a look over the plan & profile, which was afforded me in the Co.'s office at Yarmouth, the result has not been submitted. From what I could then observe & from my knowledge

tion in the Co.'s office in Halifax. The Government survey establishes a route without an objectionable feature, whilst the Co.'s survey shows a line that is below the standard of any railway in this Province respecting grades, although excessive in the cost of construction." (April, pg. 155.)

**The Dominion Eastern Ry. Co.** contracted in May, 1898, with the Government of Nova Scotia for the construction of a line from the Nova Scotia Steel Co.'s railway at or near Sunny Brae, to run via Melrose, Country Harbor Cross Roads & Country Harbor, to or near Guysborough, distance throughout not to exceed 76 miles. Work was to commence before July 17, 1898, & to be continuously & vigorously prosecuted; the first section of 30 miles was to be in operation before Dec., 1898, & the whole in operation by July 1, 1901, & in default the Co. to forfeit all claim to the



HYDRAULIC FILLING ON THE CANADIAN PACIFIC RAILWAY.

This is a view of the Mountain Creek Trestle, near the summit of the Selkirk Mountains, showing the sluice box fastened on the side of the trestle. A very complete description of this work appeared in our Dec., '98, issue, pg. 69.

masonry work of the Pubnico-Barrington section will only take a few weeks to complete & is under way. 2,500 tons of rails have been bought, to be delivered by June 1. A contract has also been given out for the rail fittings, angle-bars, bolts, spikes, etc., for delivery by June 1. Ties sufficient for the Pubnico-Barrington section are on hand at different points along the line of the road in operation, & with a large force of men the track laying can be very quickly completed. The ballast pit near Pubnico has been surveyed & cross-sectioned, & rails are on the site for ballast pit tracks. Townsend & Co. are preparing to sub-let contracts for fences & station buildings; but will perform the balance of their contract without sub-letting. The management hopes to open the line to Barrington sometime in July, & to push construction work forward to Shelburne & Locke-

port, with the hope of opening to Shelburne before the end of the season. The Provincial Engineer, in reporting on this Co.'s work, says the contract with the Government was made in Sep., 1896, & provided that 90 miles be in operation by Oct. 1, 1898, by which time only 31 miles, from Yarmouth to East Pubnico, were actually completed, 20 miles from East Pubnico to Barrington being under construction, & the 39 miles from Barrington to Lockeport having been surveyed & timber cleared off. He continues: "Early in the season 2 parties were in the field engaged on preliminary surveys between Shelburne & Halifax, & continued to survey during the summer. Further than a look over the plan & profile, which was afforded me in the Co.'s office at Yarmouth, the result has not been submitted. From what I could then observe & from my knowledge

subsidy. The Co. made a preliminary survey of the line throughout, & submitted a number of plans. The Provincial Engineer reports that no material progress has been made to satisfy the conditions of contract; a few men, 5 or 6, have been doing some work at Sunny Brae, but no satisfactory progress has been made.

**Great Northern.**—Ross, Barry & McRae will sublet the contract for the 88 miles to be built between Shawenagan & Hawkesbury. They will build the substructure of the Hawkesbury bridge themselves.

**Great Northern (U.S.A.)**—The Railroad Gazette having stated that at a meeting of officials of this Co., held in Vancouver, B.C., recently, maps of the section between Vancouver & New Westminster were gone over, & the question of building a line between the two cities from the south side of the Fraser



River was thoroughly discussed, President Hill writes that there is no truth in the report that the Co. contemplates building a line between the cities named.

A B.C. correspondent writes: "Engineers of the Great Northern are locating a line into the Lardeau & Trout Lake district to tap them. It is said this is a scheme of Mr. Hill to extend the Bedlington & Nelson Ry. up to the east side of Kootenay Lake, to ultimately connect with a line in the Trout Lake district. The C.P.R. does not view this intrusion with favor, & has decided to offset it by losing no time in building into the country itself. Mr. Hill has shown himself so active that the C.P.R. will lose no more time in checkmating him."

**Great Northwest Central.**—We are advised that Engineer Dancer is out with a party surveying a line east from Rapid City, Man., in the interests of this Co., which, it is said, intends building an extension from Rapid City eastward towards McGregor, Portage la Prairie, or some other point on the main line of the C.P.R. This line if built would occupy the territory between the main line of the C.P.R. & the Manitoba & Northwestern Ry., over which the Northern Pacific has been preparing to build an extension from Portage la Prairie. The G.N.W.C. now starts from the main line of the C.P.R. at Chater, one station east of Brandon, & runs nearly due north to Rapid City, & thence to its terminus at Hamiota. The eastward extension spoken of would give a very direct line from Hamiota eastward, & would considerably shorten the distance to Winnipeg.

**Intercolonial.**—In answer to a recent question in the House of Commons, as to whether contracts had been entered into for the supply of 5,000 tons of steel rails for the I. C. R., & 1,000 tons for the P. E. I. Ry., the Minister of Railways replied that tenders had been asked & the contract given to F. E. Came, of Montreal, who was the lowest tenderer, at \$19.25 per ton, delivered, but Mr. Came declined to enter into a contract. Subsequently the Government entered into an arrangement with the Illinois Steel Co. & the Cambria Steel Co. to supply 5,000 tons each at \$20 a ton delivered. Neither of these companies were among the original tenderers.

Rhodes, Curry & Co., Amherst, N.S., have secured the contract for building the grain elevator at St. John, N.B. It is said the price is about \$175,000.

The Dominion estimates for 1899-1900 contain the following items. For purpose of comparison the 1898-99 items are also given.

	1899-1900	1898-99
Original construction . . . . .	\$ 2,000	\$ 2,000
Increased accommodation at		
St. John . . . . .	445,000	250,000
Strengthening iron bridges . . . . .	100,000	50,000
Excavating roof, Morrisey		
Rock Tunnel . . . . .	3,000	
Drop pits . . . . .	6,000	
Enlarging engine houses . . . . .	15,000	

**Inverness & Richmond.**—No definite announcement has been made as to when construction will be gone on with, but it is understood that financial arrangements to that end are in progress. The Co. has a Dominion subsidy of \$3,200 a mile for the 53 miles from Port Hawkesbury to Port Hood & Broad Cove. The County of Inverness has voted \$1,000 a mile for 100 miles, & the County of Richmond has voted \$1,000 a mile for the 6 or 7 miles which will be within its borders, on condition that the line runs south to Cariboo Cove, and connects with the I.C.R. The Nova Scotia Government has not made any grant, but it has the power to do so to the extent of \$3,200 a mile by Order-in-Council.

**Kingston & Pembroke.**—A start has been made replacing the wooden bridges over streams with iron structures.

**Kootenay Railway & Navigation Co.**—We are officially advised that construction on the Bedlington & Nelson Ry., & the Kootenay Valley Ry. is being pushed to completion with all possible haste & that it should be completed by the end of Aug., possibly earlier. (April, pg. 117.)

**Manitoba and Northwestern.**—Considerable work will be done this season, including the strengthening of bridges, making them permanent by filling in approaches and renewing abutments; also ballasting the line. Large quantities of ties are being floated down the rivers to be accumulated at Minnedosa & Birtle, & distributed from there over the line.

**Manitoba & Southeastern.**—A contract has been let to Neil Keith for the completion of this line, from La Broquerie, to which point it was built last year, to the International Boundary, some 50 miles. When in Winnipeg recently W. Mackenzie said he hoped to be able to reach Rainy River by fall, but of this he could not speak with positiveness, as there might be difficulties of engineering & other contingencies to contend with that had not yet presented themselves. The line had been located to the river, & the connecting link from the east had also been located for the greater part of the distance, & it was his Co.'s intention to have the line in operation to the head of navigation just as soon as possible.

H. Baxter, C. H. Childs, C. E. Sanford, E. W. Hawley & D. W. Knowlton have been incorporated in Minnesota with a capital of \$1,000,000 as the Minnesota & Manitoba R.R. Co. to build the portion of this line which runs through Minnesota between the International Boundary & Rainy River. (Apl., pg. 117.)

**Midland of Nova Scotia.**—Contracts have been let for the superstructures of the bridges between Windsor & Truro. There will be a bridge of 5 spans of 220 ft. & a 34-ft. lift draw over the Shubenacadie river, & two spans of 120 ft. & a 34-ft. lift draw over the St. Croix River. There will also be 9 spans, plate & lattice girders, 30 ft. to 100 ft. openings. It is expected track laying will commence in June, & that the line will be opened for traffic this year. (Mar., pg. 72.)

In reporting on this line, Provincial Government Engineer Murphy says the work is being conducted in a very satisfactory manner. Work throughout last season was vigorously prosecuted. There have been no complaints respecting payment for wages or for materials. Evidently, the works have not been carried on with the object of completing short lengths to enable the Co. to draw subvention on 10 mile sections; operations extend throughout, & payments are being promptly made as they proceed. The line is favorably located for heavy freight traffic. It begins & terminates at about the same level, just above the littoral of the Bay of Fundy. Its greatest elevation is on the summit of the water shed dividing the Kennetcook & Five Mile Rivers, & that is only 145 ft. above tide. Of the 57 miles in its extent, 22 will be operated on level rails; there is no heavy gradient anywhere on the line. The curvature is also very favorable. Beginning within the station ground of the Dominion Atlantic Ry. at Windsor, the route follows the St. Croix River, crossing it at 3½ miles. It follows the Hibert River Valley from the 5th to the 8th mile. It follows the Kennetcook River from the 11th to the 34th mile, and from thence descends the valley of the Five Mile River to its confluence with the Shubenacadie River at the 41st mile, thence along the foot hills bounding the river to near Black Rock; from here it runs through Clifton, following the Salmon River to Truro.

**Musquodoboit.**—This project, so long advocated & so frequently urged upon the consideration of both the Federal & Nova Scotia Governments, for constructing a line from Dartmouth through the settlements of Waverley, Meagher's Grant, Little River, & Upper & Middle Musquodoboit, has been again re-

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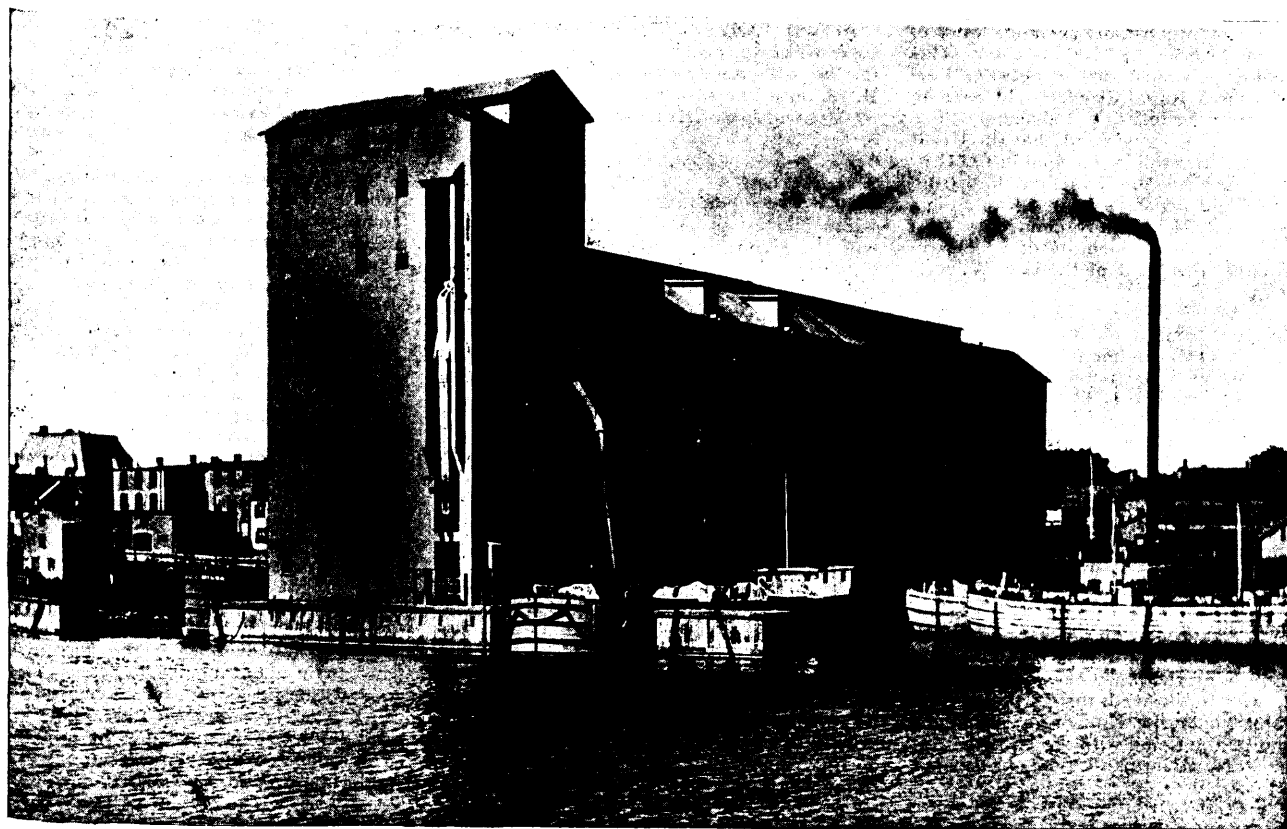
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vived. The branch line, recently constructed, from Dartmouth to Windsor Junction, follows nearly the same route as that formerly laid down by the promoters for the Musquodoboit Ry. to follow, & thereby contributes to shorten the length & reduce the cost of the present enterprise. In 1898 the N.S. Legislature incorporated the Musquodoboit Ry. Co. to build a line from or near Windsor Jct., on the I.C.R., easterly by the Musquodoboit Valley, 40 miles to near Parker's Corner, or from Dartmouth easterly to Musquodoboit Harbour, thence up the valley of the Musquodoboit to Parker's Corner. The Co. has also power to extend the line to Halifax, Dartmouth, or to other points approved by the Governor-in-Council. The Government agreed to defray the cost of the engineering for a survey, the Co. to pay for such ordinary labor as might be required. The Co. expressed its desire to select the line of route & the intermediate

From the 25th to the 48th mile, the profile shows a rough rugged surface, that would be expensive to construct a line through, & expensive to operate traffic over, owing to heavy gradients. However, considering the greater length of 25½ miles so favorable for construction & operation, with the gradients reduced to our normal standard, the alignment on the whole, taken all in all, should not be condemned or pronounced impracticable. W. Yorston, C.E., was in charge of the survey. After the plans & reports on the survey were submitted, some persons interested suggested a deviation of route to obtain lighter work & easier gradients at one or two points. The request for further examination was complied with, & F. A. Creighton, C.E., was authorized to proceed with any survey for a diversion of the line they wished to make. Improvements in any preliminary survey can always be effected. No engineer can assert that he has absolutely

the survey has not been all that we could wish, yet it serves a good purpose by representing to the promoters the class & character of the line they may expect over the route they have selected, & it gives some data for making a close estimate of the probable cost. Still more, it indicates the necessity for further reconnaissance. It may yet be considered advisable to adopt a more easterly route from Dartmouth to connect with the Valley of the Musquodoboit River, although a longer one, & thus avoid the range of high ground that trends across the route surveyed over. The problem is:—which course is the most advisable, over the hills with steeper gradients yet practical route, or around them with a longer line but one more favorable, to construct & less expensive to operate?"

**Newfoundland.**—During the past year there has been completed the Placentia branch from Whitbourne, N.F., to Placentia, 27 miles;



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This elevator, built in 1895, is 280 ft. long & 72 wide, with a storage capacity of 1,000 bus. The depth of water at the front is 20 ft., & at the sides, where barges are loaded, 14 ft.

points to be connected along its course; and the survey made last year followed its direction. It commenced at Upper Musquodoboit & proceeded via Little River & Wise's Corner to a point on the Dartmouth Branch of the I.C.R., as near as practicable to Windsor Junction.

Provincial Government Engineer Murphy reports on it as follows:—"For the first 25½ miles, from Upper Musquodoboit to Wise's Corner, a very favorable location is available; the work of construction would be light & the traffic operation could be cheaply conducted. In the next 3¼ miles, between the 25½ and the 29th mile, there is an ascent of 274 ft., 1 mile of which would require gradients of from 90 to 100 ft. per mile. This 3½ miles of heavy gradient is a very objectionable feature; but it may be improved by increasing the length. From here to the Junction with the Dartmouth Branch the maximum inclination at any place need not exceed 1.50 per 100, or 79.2 per mile.

laid down the best line of location over a broken, undulating country. One thing is clear in this respect. A summit of 370 ft. above Musquodoboit river has to be approached & crossed in a distance of 6 miles, 270 ft. of which has to be overcome in a distance of 3½ miles. We may obtain easier gradients by winding about the slopes of the hill-sides, which is necessary & desirable in making the ascent, but the summit has to be reached all the same, & it takes the same mechanical power to get over it whether in the long or short way. Still there is the very material difference that we can, with the power at command, carry on traffic with greater ease & with greater economy over moderate inclines than we can over heavier gradients. If the Musquodoboit Ry. is to be a competing line for heavy traffic, the gradients over which the traffic is to be moved should not exceed those of the other lines that may enter into competition with it. Although the result of

the Brigus & Carbonear branch, from Brigus Junction to Carbonear, 38.34 miles, & the Tilton & Carbonear branch, from Whitbourne to Tilton, 15 miles. In addition to these the main line is completed from St. John's east across the island to Port aux Basques, 548 miles. The proprietor is at present building the Burnt Bay branch from Ouinette north to Burnt Bay, 9¼ miles. He proposes soon to build an extension from Dunsmere to St. John's at the west end terminus, some 9 miles. Of this 6½ miles is to be completed in 1899.—*Railroad Gazette.*

**Northern Pacific.**—For some time past the settlers west of Portage la Prairie, Man., between the main line of the C.P.R. & the M. & N.W.R., have been agitating for the construction of a railway from Portage la Prairie to Rapid City. In our Feb. issue, pg. 35, we gave particulars of 2 notices of application to the Manitoba Legislature to incorporate a company to build from Portage la Prairie

northwesterly & westerly between the lines of the C.P.R. on the south & the Manitoba & Northwestern & the Great Northwest Central on the north, to near Hamiota, thence northerly & northwesterly to or near Birtle, thence northerly to the north boundary of the Province; & a branch running from the main line, in range 18 or 19 west, to Brandon. It is said this application is in the interest of the N.P.R. It is also said that at a recent meeting of the N.P. directors it was decided to build at least a part of these proposed lines this year, for which it is expected that the Province will give a cash bonus of \$1,750 a mile. In addition to building from Portage la Prairie to Hamiota, it is said the N. P. Co. also proposes to build a short branch from Portage la Prairie northerly to Clandeboye Bay, or some other point on Lake Manitoba.

But if a recent report from Winnipeg is well founded there is likely to be a race for possession of the above mentioned territory. It is said the C.P.R. is surveying a line from its main line at McGregor, 22 miles west of Portage la Prairie, to Rapid City. This would make an almost air line between Portage la Prairie & Rapid City & would leave no room for any other line to get business. The impression is gaining ground that the Great Northwest Central will be merged in the C.P.R. system, & if so the projected line from McGregor could connect with it at Rapid City. C.P.R. officials disclaim any connection with the survey referred to, mention of which will be found under the head of the G.N.W. Ry., on page 134.

The N.P. Souris River branch, which was built last year from a point on the Brandon branch, 3 miles from Belmont, is likely to be extended this year to the C.P.R.'s Souris River branch, which it is likely to strike at Hartney or between there & Lauder. This branch will undoubtedly be pushed on further west, though perhaps not this year. (Feb., pg. 40.)

**Nova Scotia Southern.**—It is said J. J. Taylor, C.E., is about to start a survey for this line from Shelburne via Liverpool to New Germany on the N.S. Central Ry. The Co. was incorporated by the N. S. Legislature in 1888 as the Annapolis & Atlantic Ry. Co., the name being changed to the N.S. Southern in 1894. By the Dominion Subsidy Act of 1892 a subsidy, taking the place of one previously granted, was authorized for 75 miles from Sand Point, Shelburne Harbor, to Annapolis Royal and to a junction with the N.S. Central at or near New Germany, the subsidy limit being \$240,000.

**Ontario and Rainy River.**—The rock work on the contract for the first 20 miles from Stanley west, on which work has been proceeding all winter, is nearly finished, & the contractor is building camps to open out the whole work remaining on the contract as soon as frost is out of the ground. The pier & abutments for the bridge across the Kaministiqui River are all but completed, & a large quantity of timber & ties has been taken out. No decision has yet been come to as to whether the line will run south or north of Shebandowan, but the survey to determine this is being pushed. West of the height of land 3 parties are locating along the Atikokan & Seine Rivers. Soundings have been made across Rainy Lake to determine the depth & description of bottom, & several crossings of Rainy River in the townships of Worthington & Attwood have been surveyed & sounded to determine where the best crossing is to be had. Further examinations of crossings are being made near the mouth of the river.

At Rat Portage it is rumored that Rainy Lake will be crossed at Squall Point, & that the line will continue through Indian Reserve B. 18, on a line with the northern boundary of the township of McIrvine, thence northerly & westerly, through the townships of Carpenter & Dobie, to the township of Attwood, near Beaver Mills, passing 2½ miles north of Fort Frances. It is also rumored that Rainy River will be crossed, & connection made with the Manitoba & Southeastern extension in Minnesota, near Beaudette River.

The Ontario Legislature has voted the Co. a cash bonus of \$4,000 a mile for the whole line from Stanley to Rainy River, about 280 miles. It also has a Dominion subsidy of \$3,200 a mile for 80 miles, this to be increased to a further subsidy of 50% on so much of the average cost of the mileage subsidized as is in excess of \$15,000 a mile, the whole subsidy not to exceed \$6,400 a mile. It is understood the Co. is now seeking Dominion aid for the whole 280 miles, & that it wants \$6,400 a mile irrespective of the cost of construction. (Mar., pg. 72.)

It is expected contracts for 80 miles, beyond the 20 already under construction, will be let this month, to be completed this year.

**Orford Mountain.**—The Quebec Legislature has extended the time for the completion of this line from Kingsbury to Richmond until Dec. 31, 1902. The present line, from Eastman to Kingsbury, was built in 1892. On the route of the proposed extension the St. Francis River will have to be bridged at a cost of some

\$75,000. The management is not prepared to make any statement as to when work will be gone on with.

**Ottawa & Gatineau Valley.**—It is doubtful if the proposed extension from the present terminus at Gracefield, 60 miles from Ottawa, to Maniwaki, 28 miles, will be gone on with this year. (Feb., pg. 40.)

**Ottawa & New York.**—On Apl. 22 the Chief Engineer advised us that the work of completing the bridge over the north channel of the St. Lawrence, at Cornwall, had not been started.

Work has started on the reconstruction of the south channel bridge which collapsed with such fatal results last fall. A Cornwall correspondent says:—"It is now generally known that the cause of the disaster was that too many chances were taken, & that the nature of the bottom was not fully & thoroughly ascertained before loading it with the tremendous weight involved in a concrete & stone pier & a span of steel. The investigations in the north channel go to show that the action of the current for unnumbered years has scoured the clay thoroughly, & the piers are standing on a solid rockbed. But in the south channel the same thing did not occur, as the current is much slower. When the cribs for holding the concrete were anchored on the site of piers nos. 2 & 3 a diver was sent down, who tried the bottom with a crowbar & maul to an extent that was considered satisfactory, & the sub-structure was begun & ended on that information. Subsequent investigations developed the fact that there was only a thin crust of hard bottom, 18 inches or so, & under it a mass of blue clay, the shifting nature of which caused the collapse of the pier & bridge. It was also found that pier no. 3, although it appeared all right, was in such a condition that it would be unsafe to trust it, & it will have to come down & be rebuilt on a plan dictated by recent experience. The depth of blue clay at the site of the piers is variously estimated at from 20 to 30 ft., & the contractors will have to go down until they get bed-rock, & this they purpose to do by the pneumatic process, which is in brief the sinking of an air-tight chamber, in which the work of excavation is done by men furnished by compressed air. There is about 30 ft. of water in the channel, & the current runs at the rate of about 9 miles an hour. To protect the caissons it is proposed to drive piles above them & make a breakwater. This is a plan that has not yet been tried in the St. Lawrence. The reconstruction of pier no. 2 will first be undertaken, & it is expected it will be com-

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pleted in July. The pulling down & rebuilding of pier no. 3 will take until Oct. The shore span will be erected as soon as pier no. 2 is ready, & the other will only be the work of a few weeks. The removing of the debris will be gone on with at once. It is expected the bridge will be open for traffic by the end of the year. (Feb., pg. 40.)

It is said the Co. will erect shops in Ottawa East as soon as litigation over the expropriation of the land is determined. The building will comprise roundhouse, car sheds & general repair shops.

**Prince Edward Island Ry.**—See under head "Intercolonial Ry.," on pg. 134, respecting rails, etc., for this line.

The Dominion estimates for 1899-1900 provide \$10,000 to shorten main line by removal of curves, against \$15,000 in 1898-9.

The Provincial Government is prepared to enter into an arrangement with the Dominion Government for the building of a bridge for railway & vehicles across the Hillsboro River at Charlottetown. If the Dominion Government will build the bridge the P.E.I. Government will pay \$12,000 annually towards the interest on its cost. The bridge would be a toll bridge, & would serve for the proposed branch of the P. E. I. R. to Murray Harbor. In the House of Commons, May 1, Mr. Martin, M.P., made a strong speech in favor of the construction of this branch. Sir Louis Davies said he was not without hope that the Government would make some proposition on the subject this session, but he was not prepared to promise anything definite. Mr. Macdonald, M.P., advocated the construction of a short branch to Elmira.

**Pontiac Pacific Jet.**—Work is about to commence on the extension of this line from Aylmer to Hull, Que., about 8 miles. The line, which will run between the Ottawa River & the Hull-Aylmer Electric Ry., will render the P. P. J. independent of the latter & enable it to connect in Hull with the Interprovincial Bridge, now under construction. It is expected to complete the extension by Sep. (Feb., pg. 40.)

**Quebec Bridge Co.**—We are officially informed that 7 tenders for the erection of this Co.'s bridge, either cantilever or suspension, have been received. The services of Theodore Cooper, consulting engineer, New York City, have been secured for a thorough investigation of all the tenders & designs, which is now well under way, & the Board is waiting for his report before awarding the contract. It is expected work will start at the beginning of summer. The Secretary advises us that the city of Quebec is pledged by a recent statute to a grant of \$500,000 towards the bridge, that a subsidy of 33% has been promised by the Dominion Government, & that nothing can now defer the execution of the enterprise. The rapid rise in price of metal makes it urgent to proceed at once with the work. (Mar., pg. 73.)

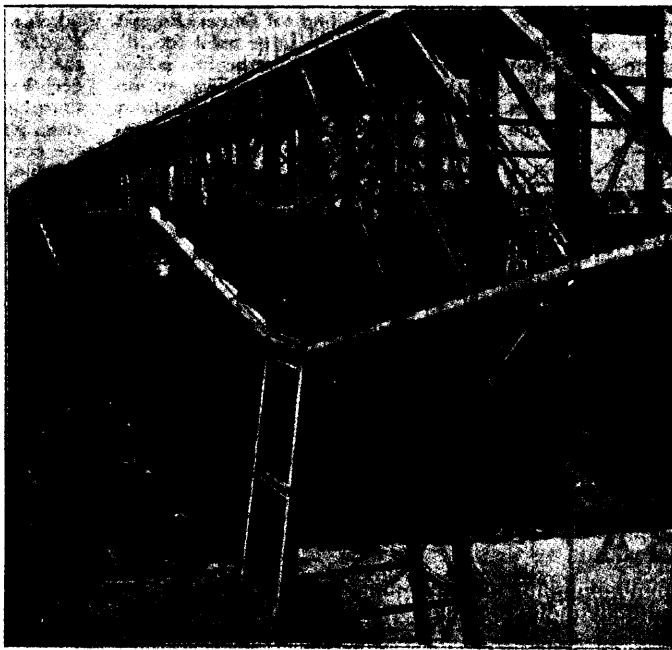
**Rutland-Canadian.**—It is stated that rapid progress is being made on the line which is to connect the Rutland road with the Canada Atlantic Ry., and that the line will be ready for traffic by Dec. 1. (Mar., pg. 73.)

**St. John Valley River Ry.**—It is said J. E. McIntyre and other New Yorkers have secured the charter for this line, which is projected to run along the south side of the St. John River from Fredericton to Woodstock, N.B., paralleling the C.P.R. line on the opposite side. It has been surveyed, more than half the right of way secured & about 5 miles

graded. The only name so far mentioned except J. E. McIntyre is G. A. Evans, who is trustee for the syndicate. A local paper says: "Much interest centres in the purchase to see in what connection it is to be operated. The line alone would hardly pay, but it may offer a new outlet to St. John for either the I.C.R. or G.T.R. via the Temiscouata road & the continuation of the St. John Valley line from Fredericton to St. John, about 70 miles, through a well-settled country." It is said construction will be started this spring.

**Thunder Bay, Nipigon & St. Joe.**—Some of our U.S. contemporaries were rather previous in stating that contracts had been let for work on this line, & that the Co. was in the market for equipment. So far the Co. has only been incorporated by the Ontario Legislature, no subsidy has been given it and no work will be done this year at least. (Jan., pg. 13.)

**Toronto, Hamilton & Buffalo.**—Barton Township Council having refused the application of this Co. for permission to build its spur line on Trolley St. to King St., from which point right of way to the Hamilton Blast Furnace would have been purchased, is



MICHIGAN CENTRAL CANTILEVER BRIDGE, NIAGARA.

believed to have blocked the building of the proposed spur. (Apr., pg. 117.)

**White Pass & Yukon.**—The last advices report grading completed 30 miles from Skagway to near Log Cabin, B.C., & track laid for 26 miles. (Mar., pg. 68.)

**James Bay.**—The Ottawa, Arnprior & Parry Sound Ry. passes some 4 miles south of Parry Sound, making its Lake Huron terminus at Depot Harbor. The people of Parry Sound have been trying for some time to get the O. A. & P. S. to build a branch to the town, but without success. It is now said that arrangements have been made with the James Bay Ry. Co., by which it will build the link as part of its line, thus making the start required by its charter, & that pending further construction of the James Bay line north & south the link will be operated by the O. A. & P. S. Ry. The work will be heavy, there being a good deal of rock.

L. A. Hamilton, Land Commissioner C. P. R., Mrs. & Miss Hamilton, who have been spending several months in Europe, are expected to return to Canada about the end of May.

### A Yukon Pole Railway.

E. G. Tilton, of Victoria, President of the Miles Canyon & White Horse Tramway Co., writes regarding his road, which is probably the most northerly on this continent, being in latitude 62°. This Co., which was incorporated by the Dominion Parliament in 1898, was formed for the purpose of providing safe & speedy transit of goods around the obstructions to navigation at White Horse Rapids & Miles Canyon on Lewes River, one of the large tributaries which, in conjunction with the Hootalinqua & Pelly rivers, form the Yukon River. A route on the west side of Lewes River running from the entrance of Miles Canyon to the foot of White Horse Rapids affords the shortest & most accessible route to the Klondike, its entrepôts being Skagway & Dyea, on Lynn Canal, Alaska. There were several steamers traversing this route last summer, & ten or a dozen more are building on Lake Bennet to be ready for this season's traffic.

The White Pass & Yukon Ry. now building from Skagway to Lake Bennet is expected to be completed by the opening of navigation, & then travellers can make the journey from Skagway to Dawson by rail & steamer in 4 or 5 days. The trip two seasons ago, when the gold seeker had to take his outfit along either on sleds or by packing over the trails, & in a skiff or on a raft down the lakes & rivers, consumed months of time & was very difficult, & accompanied with much labor & often danger & disaster, particularly at the canyon & rapids, in which many wrecks occurred in the attempt to chute them, & frequent drownings occurred. The tramway was finished before the opening of navigation last year, & was operated during the entire season, as it will be again this season. Its length is about 4½ miles, & its alignment & gradients easy & favorable. Leaving the landing it ascends about 70 ft. to a bench which follows the river almost to the foot of the rapids; almost the entire distance on tangents, with a steady down grade of nearly 1%. The road is of 3 ft. gauge. The rails are of wood hewed out of black pine timber, which grows plentifully along the right of way, & is strong, tough & durable. Eventually it is hoped to replace

this temporary track with light steel rails. For the present, however, the wooden track serves the desired end very satisfactorily. Construction was necessarily expensive, as laborers' wages were \$7 a day, & supplies cost 50c. a pound to freight in from Skagway. This year, however, owing to the White Pass & Yukon Ry., & steamers on the lake, freighting is 80% lower. The rolling stock consists of 30 cars & 50 heavy horses.—Railroad Gazette.

### The Niagara Cantilever Bridge.

In our last issue, pg. 117, we mentioned the improvements about to be made to this Michigan Central bridge. The Railway Age says it was erected in 1883, & has required but little attention since outside of painting. But in recognition of the increasing weight of the rolling stock of the road, & in order to have accommodations with ample leeway for a further increase, the Co. is about to strengthen the bridge by the addition of another truss, which is to be run through the centre of the structure from shore to shore. Between the piers or abutments on the Canadian side & on the U.S.

side, a pier is to be constructed, on which will rest the bent that will support the new truss. This truss will practically be the same as the present trusses, & is expected to add to the strength of the bridge at least 50%. The iron will be placed during the coming summer. The work will naturally progress slowly, as there will be a great deal of field work to be done in placing the new iron. In advance of the construction of the new piers, the foundations of the old piers on both sides of the river are being carefully examined to learn their condition. On the U.S. side a diamond drill has been at work some weeks, & it has been ascertained that the foundation is in good condition, being of a boulder formation. At this point the river is rapid, & the various currents wash with some force about the shore near the base of the abutments, & it was to learn what effect this wash has had that the drill was set to work. A similar examination will be made on the Canadian side, where men are now at work stripping the rock. The current in front of the Canadian piers runs straight by, & has not the whirl that it has on the U.S. side. The work will probably consume all summer & fall, & its completion will give the M.C.R. as strong a bridge across the Niagara gorge as any of the structures there. The cantilever is a double-track structure, & its tracks are nearly 250 ft. above the water. See illustration on pg. 137.

**Grand Trunk Betterments, Etc.**

General Superintendent McGuigan says about 300 miles of new steel rails will be laid this year. The small gaps in the stretches of double track between Toronto & Montreal will be filled in, making double track throughout. The completion of the Victoria Jubilee Bridge has been somewhat delayed, owing to the difficulty in procuring material. It is expected that the date of the formal opening will be announced very shortly. At first there will only be train service over the bridge, no accommodation having yet been provided for foot passengers or vehicles.

In the construction of the general office building in Montreal, red granite will be used for the base, which will be 9 ft. high; this will be followed by grey granite to the top of the 1st floor, above which Wallace, N.S., blue stone will be used. The estimated cost of the building is now placed at \$500,000. A large number of contractors are preparing to tender.

A Montreal despatch of May 15 stated that the management had decided to build a second bridge over the Niagara River between Black Rock, N.Y., & Fort Erie, Ont., that plans were being prepared in the Chief Engineer's office, & that it was expected work would be commenced this year. We are officially informed that there was no foundation whatever for the despatch. The Niagara Falls & International bridges give the Co. all the facilities of that character that it has any possible use for.

**Canadian Pacific Betterments, Etc.**

**Windsor St. Station, Montreal.**—The Co. has now acquired nearly the whole of the property on the south side of Osborne St. from the station building to Olivet Baptist Church, & a part of this is to be used for the extension to be built on Osborne St., which will make the frontage of the building on that street about 325 feet, & will increase the floor space from 50,404 to 102,131 ft. The extension will form part of the main building, & will follow the original design closely & will be of the same material, Montreal limestone. There will be two entrances for passengers on Osborne St., & the station yard will be so extended as to permit the laying of more tracks if that should be found necessary. There are at present 4 tracks in use. The Baggage Department, which has suffered the most from congestion, is to have its space trebled. Passengers will have their baggage checked in sight of the ticket office, the location of which is to be changed in order to make it more central. The Baggage & Customs departments will be accommodated on the

ground floor, as well as the Baggage Master's office, with new elevator. The upper floors of the present & new structure are to be laid out as follows: On the 1st floor will be the Manager of the Eastern Lines & his staff, the telegraph office, the Superintendent of Car Service & staff, the Superintendent of Hotels & staff, the General Baggage Agent & staff, the Paymaster & Treasurer & staff, the Cashier & one of the heaviest & most perfect burglar-proof safes in Canada. On the 2nd floor will be the General Superintendent & staff & the Accountant's office, also a large fire-proof vault of steel construction, 21 by 9 ft. On the same floor will be the board-room, the President & Vice-President, with their assistants, the Secretary, the Comptroller, the General Passenger Department, the Passenger Traffic Manager, the solicitors, the Superintendent of Steamship Lines, the Freight Traffic Manager, the General Freight Agent, the General Freight & Claim Department, while room for two large fire-proof vaults has also been provided on the same floor. The whole of the 3rd floor will be occupied by the Comptroller's staff, while a good part of the 4th will also be used for the same purpose, the remainder being taken up by the offices of the Chief Engineer & draughtsmen. Here, likewise, is placed the cement testing-room, the Chief Engineer's assistant & other rooms. On each floor there will be large lavatories, & very high-class plumbing will be used. The walls of all the corridors on each floor will be finished in marble, the floors are to be in mosaic, & the entire building fire-proof throughout. On the ground floor there is to be a large smoking-room, with men's lavatory facing on Donegana St., all fitted up in the most approved manner. In the basement will be storage vaults, baggage store-rooms, kitchen & pantries, an audit office for conductors & porters, & store & supply rooms for sleeping cars, hotels, & news agents. The whole will be lighted by prismatic lights. It is expected work will be commenced at an early date.

**Heavy Rails.**—The Co. has ordered for immediate use 50 miles of 100-lb. rails, to be laid

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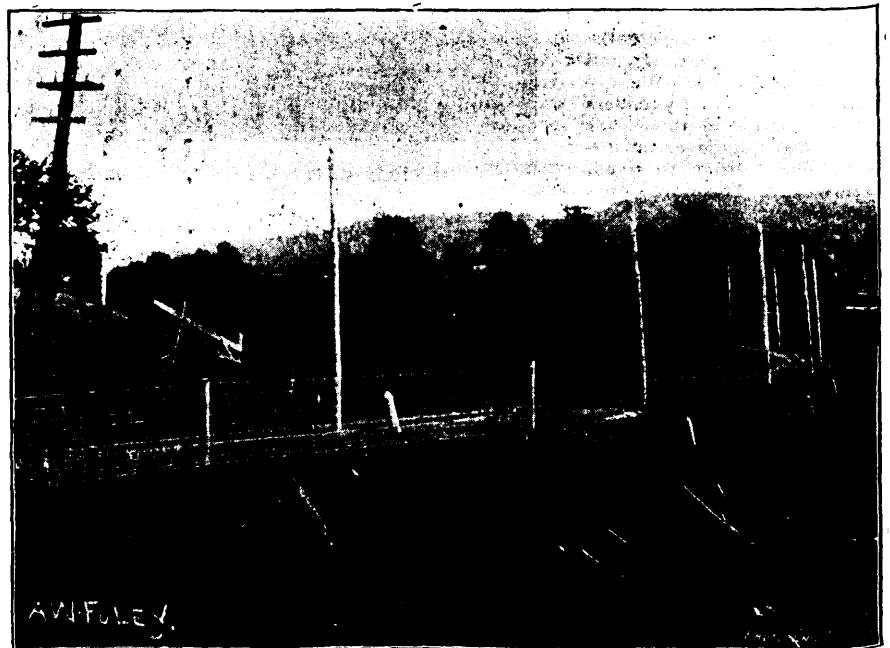
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on a portion of the short line between Montreal & Ottawa, & on the main line from Montreal Jct. southerly, over the St. Lawrence bridge. These rails are the standard section of the American Society of Civil Engineers, & will be laid with the Bonzano joint, which is now attracting great attention in railway engineering circles. It is a well-known axiom that by increasing the weight of the rail, not only is a greater smoothness imparted to the running of trains, & especially the running of heavy rolling loads, but the life of the rail is greatly prolonged. The difficulty in the way of increasing the weight of rails, however, has been the practical impossibility of strengthening the rail splices or joints, & this difficulty is said to be got over by the joint referred to, drawings of which are given on this page.

**Peterboro' County, Ont.**—At the request of the municipality of Anstruther & Burleigh the Co. recently sent H. W. D. Armstrong, C.E., over the ground from Norwood, on the Montreal-Toronto line, 18 miles east of Peterboro', to Apsley, in the northern part of the County, some 25 miles, to look into the desirability & probable cost of building a branch line.

**Woodstock, Ont.**—A handsome stone station is being built at this point.

**Sault Ste. Marie Bridge.**—On Apl. 25 the new swing bridge over the Canadian canal was swung for the first time. The superstructure, which is 408 ft. long, & is said to be the longest swing bridge in Canada, was

from there some 40 miles to Bonnet Portages on the Winnipeg River, a little north of Bonnet Lake. Manager Whyte has advocated the building of this line, which would pass through a heavily timbered district, principally tamarac & spruce, the last few miles being through pottery & brick clay beds. In an interview Sir Wm. said he did not think the branch would be built this year, but there was a possibility of its being gone on with in 1900.

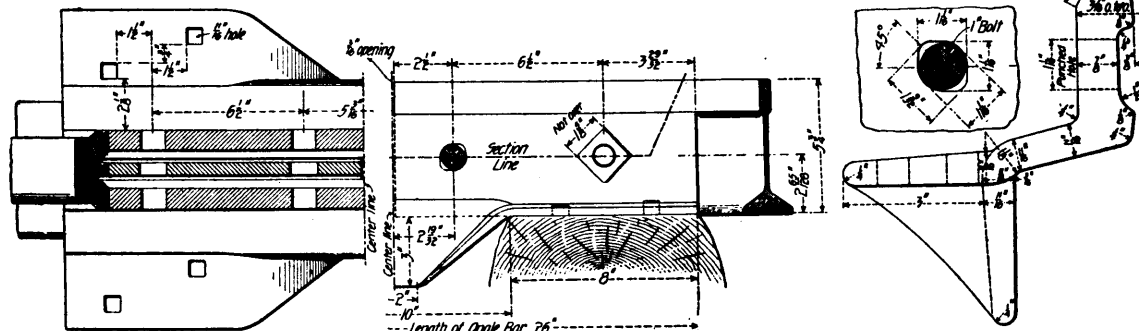
**Stonewall Branch.**—We were officially informed recently that no definite decision had been arrived at as to the extension of this branch beyond Teulon, to which point it was built from Stonewall last year. The Co. has a bill before the Dominion Parliament to authorize it to extend from Teulon to the west shore of Lake Winnipeg, between Gimli & Arnes. The latest map issued by the Co. does not show this line, but does show a projected line from Stonewall northwesterly across the narrows of Lake Manitoba to a connection with the Canadian Northern Ry. at Dauphin. (Feb., pg. 41.)

**From Portage La Prairie Northwesterly.**—See under head "Northern Pacific" on page 136.

**Pipestone Branch.**—About 19 miles of grading was done from Reston west last year, about 2 miles being laid with track. The track laying has been completed on the balance of the grade this spring, the end of track being about 3 miles west of Antler. It is expected grading will be resumed shortly & that

102 miles, 90% of the grade is completed. Grading has been carried as far as Eholt Summit, about 80 miles from Robson, & this section is ready for the rails from Eholt Summit to Greenwood. The work is light & road practically level. Track laying is completed for 22 miles west of Robson, & is being pushed as rapidly as possible. It is expected a train will reach Midway by July. The Boundary Creek Times says: "The C. & W. Ry. passes through a country that would strike terror into the hearts of ordinary men. But railways will tackle anything that nature places in their way. From Robson to Cascade almost the entire roadbed has been cut out of hard granite. Then there is a dozen miles of level country, which afforded comparatively easy work; but this is offset by the country along the north fork of the Kettle River. The 102 miles from Robson to Midway will for engineering difficulties & costliness average higher than any other road of equal length that has ever been constructed on the continent. The fact that the whole will have been completed within 12 months speaks volumes for the ability of those in charge."

Contracts have been let to Welsh & Co. for the construction of 21 1/4 miles of branch lines from the Robson-Midway extension as follows: From Eholt Pass south to Wellington Camp 8 1/2 miles, with a spur to Greenwood Camp 3 miles & 2 spurs of 1 mile & 1/2 mile each, & a spur to Summit Camp of 2 1/4 miles. From Greenwood northwest to Deadwood Camp 6



THE BONZANO JOINT AS USED WITH 100 LBS. RAILS ON THE C.P.R.

built in its place without any interruption of railway traffic. The new bridge does away with the objectionable pier which has stood in the centre of the canal as a menace to shipping, & which is now being taken out, so that in the coming season vesselmen using the Canadian lock will have an entrance 150 ft. wide, & one that no objection can be raised against.

**Fort William Round-house.**—The round-house having been burned Apl. 17, together with 7 locomotives, temporary stalls have been put up. The burned building will probably be replaced by a larger brick structure.

**Fort William to Winnipeg.**—A contract for the masonry of the permanent bridges to be put in preliminary to the double-tracking has been let to W. Garson, Rat Portage. H. D. Lumsden, C.E., who is making headquarters at Winnipeg for a time, will make an estimate of the cost of double tracking.

**Rat Portage.**—Plans have been prepared in Montreal for a station building to replace the present one & considerable expenditure is contemplated in yard extensions & improvements, but up to the date of our last official advices satisfactory arrangements had not been made with the town & nothing definite had been decided on as to when work would start, if at all this season. (Apl., pg. 112.)

**Bonnet Lake Branch.**—During his recent Western trip Sir Wm. Van Horne visited Tyndall, 29 miles east of Winnipeg, to look into the question of building a branch northeasterly

the line will be extended another 20 miles or so this year, into the Moose Mountain district. It is the ultimate intention to connect this branch with the main line at or near Regina. (Feb., pg. 41.)

**Deloraine to Waskada.**—The Co. has a survey party under H. D. Lumsden, C.E., at work between Deloraine, Man., & Waskada, where it is said a branch of some 20 miles will be built. The Northern Pacific is said to be also anxious to get into this district by running a line from its Souris River branch & there is an independent charter, the Waskada & Northwestern.

**Crow's Nest Pass Branch.**—No arrangements have been made for commencing work on the extension of this line from Kootenay Landing to Nelson & it is not believed it will be gone on with this year. It is said Vice-President Shaughnessy will go west shortly & while there will look into the question of building a branch line to the North Star mine. (Apl., pg. 112.)

**Columbia & Kootenay Branch.**—W. B. Tierney & Co., of Nelson, have the contract for improving the alignment of this line. There will be considerable rock work & there are a number of trestles to be filled. (Apl., pg. 112.)

**Columbia & Western Ry.**—The standardizing of this line between Trail & Robson, fully described in our last issue, is rapidly approaching completion. (Apl., pg. 112.)

On the extension from Robson to Midway,

miles. In the plan given herewith the heavier dotted line shows the portion of the C & W. Ry. between Grand Forks & Midway. The lighter dotted lines show the branches & spurs. Plans have also been filed at Victoria, B.C., for the following branches: From Grand Forks to Carson; from Cascade City to International Boundary; from Cascade City to Christina Lake, from Eholt Summit to Long Lake Mining Camp; extension from Midway to Rock Creek.



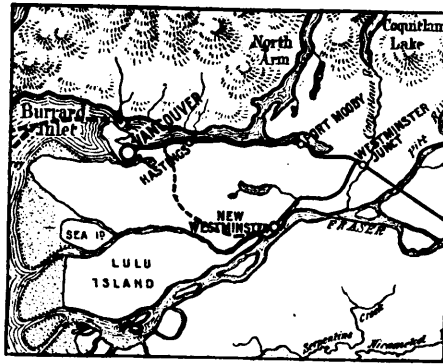
**Branch to Republic, Wash.**—There is no truth in the report that the Co. will build a branch from the Robson-Midway line to cross the International Boundary & run down the San Poil Valley to the new mining camp at Republic, Wash. (Apl., pg. 112.)

**Arrowhead to Kootenay Lake.**—A big fight is on between the C.P.R. & the Great Northern (U.S.A.) for the trade of the Lardo-Duncan districts of B.C. The Arrow Lake branch runs from the main line at Revelstoke along the east side of the Columbia River to Arrowhead, 27 miles. For some time past the C.P.R. has had engineers at work selecting a route for an extension of the branch to the north end of Kootenay Lake, it being understood the line would run from Arrowhead northeasterly up Fish River to Pool Creek, thence southeasterly to Trout Lake, along the west side of that lake, & along the Lardo River to or near Lardo or Argenta on Kootenay Lake. A short time since the survey parties stopped working at the Arrowhead end & went round by way of Nelson to the north end of Kootenay Lake, where they started to run northwesterly to connect with the surveys previously made from Arrowhead southeast. General Superintendent Marpole & Division Engineer Cambie visited the district a few days later, Mr. Marpole announcing that construction would begin from Kootenay Lake as quickly as possible & this was followed up by a contractor starting for the north end of the lake with a force of men. The Kootenay Ry. & Navigation Co., which is understood to be backed by the Great Northern (U.S.A.) has a charter for the Kaslo & Lardo-Duncan Ry. & has been making surveys for it from Kootenay Lake into the Duncan & Trout Lake districts. A strategic point in the route is the Duncan Pass & to prevent the C.P.R. getting possession the K. & L. D. Ry. Co. obtained an interim injunction stopping the C.P.R. from proceeding with construction through the Pass. The C.P.R. followed suit by getting an interim injunction restraining the K. & L. D. Ry. Co. from interfering with the C.P.R. men, or from trespassing on the right-of-way claimed by the C.P.R. in the Duncan Pass. The result is that the Pass is tied up, both companies being prevented from working in it until May 30, or until a motion is made by either side to dissolve the injunction.

**Seamons.**—A large force is at work on the station-hotel building, & the stone foundation is about completed. (Mar., pg. 72 & 75.)

**Westminster-Vancouver Loop Line.**—The plan here given shows the route likely to be adopted for this line, which will probably branch from the main line about 1½ miles

from the Vancouver terminus, turn south & east, cross over the bridge which separates Burrard Inlet from the Fraser Valley about half-way between the two cities, & reach the bank of the Fraser River about a mile below Westminster. The length of the new line will be about 12 miles, & from Vancouver to West-



minster Jct., via Westminster, will be 22¾ miles. The present main line via Port Moody is 16¾ miles from Westminster Jct. to Vancouver. It is understood work will not be started on the loop this spring, & there is no definite information as to when it will be gone on with. (Feb., pg. 42.)

**Vancouver Terminals.**—The plan on pgs. 144-145, which is on a scale of 400 ft. to 1 in., shows the improvements being made on the Vancouver water-front. The wharves have already been extended 500 ft. easterly & additional warehouses erected. In the near future the wharves will be extended 1,000 ft. still farther to the east to join the Co.'s Abbott St. wharf. All the Co.'s wharves are to be made permanent by sea walls in front & earth filling behind, which will extend to the shore, thus giving the Co. an esplanade in front of the town about ¾ mile long by 400 ft. wide, on which it is intended to lay a network of sidings with an engine-house, &c., so that ordinary trains, either passenger or freight, will not need to cross the town to the False Creek yard. The Co. has agreed to give a flag station at the east end of the town, near the sugar refinery. Under the agreement with the City, which gives the Co. exemption from taxation for a considerable period, on property actually used for railway

purposes, the Co. undertakes to expend \$700,000 on terminal buildings, wharfage, &c., by the end of 1906. The terminal buildings will be completed this year, but the wharves & water-front improvements will probably not be fully constructed for several years, the work being done gradually as increasing trade requires it. (Apl., pg. 113).

**Minneapolis, St. Paul & Sault Ste Marie Ry.**—The Railway World, Philadelphia, says:—"It is suspected that the chief object of the Soo Line in deciding to raise \$5,000,000 by an issue of 2nd mortgage bonds, is to get sufficient money to extend its line to Bismarck & possibly, into Montana, with a view of establishing a connection with the C.P.R. at some far western point, the real scheme being to more closely parallel the Great Northern than by the present Soo-Pacific route."

As a matter of fact the Soo line is already within about 40 miles of Bismarck, N.D., its Bismarck extension, which leaves the main line at Hankinson, 215 miles northwest of Minneapolis, having been completed 173 miles to Braddock, N.D. The completion of the extension to Bismarck would not require much expenditure. Sir Wm. Van Horne's explanation of the reason for the issue of the mortgage bonds referred to will be found in our Apl. issue, pg. 108.

#### Great Northern Railway of Canada.

The annual meeting was held at Quebec May 12. Following are extracts from the report:

The number of passengers carried during the year on the whole system was 185,851, compared with 153,669 in the previous year, & the freight 263,021 tons as against 199,459.

Several mills have been built during the year & are giving an increasing traffic in sawn lumber. The new pulp mill at Chicoutimi has furnished a large quantity of freight during the year, & its capacity is now being increased 50%. The paper mills at Grand'Mere were completed & put into operation in Dec. last. This is the largest industry of the kind in Canada, & furnishes the line a large traffic.

The Shawenegan Power Co. has given contracts for the development of its water power at Shawenegan Falls, which will be completed this year. This will give a large freight busi-



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ness in moving material during construction, & a much larger traffic in handling the output of these industries when they are completed. The works of the Jacques Cartier Power Co. on our main line are well advanced & will be completed in Aug. next.

The completion of the G. N. R. is now assured, contracts having recently been given for the construction of the gap of 88 miles required to make the connection between the Quebec end of the line & the Canada Atlantic system at Hawkesbury, Ont. The line is to be finished by July 31, 1900. To assure the G. N. Co. to secure the necessary capital, the directors agreed on Nov. 3 last to extend for a further period of 20 years the contract entered into Jan. 24, 1895, for sharing the traffic between Parry Sound & Quebec.

The Quebec Government has not yet come to a decision as to the granting of a land subsidy for the construction of a railway from Lake St. John to James Bay, a distance of 380 miles, although additional explorations made last year confirm the reports of previous explorers as to the great value of this great country, as regards timber, soil & minerals, & also as to climate. In the meantime the Ontario Legislature has voted a large subsidy, both in money & land, towards the construction of a railway from a point in that Province to James Bay. Should the Quebec Government see fit to give such aid as will ensure the building of a line from Lake St. John, its construction must necessarily give great additional value to the G.N.R. property.

The progress of the colonization movement to the Lake St. John district has continued during the past year in a very satisfactory manner. During the year 1,322 new settlers & their effects were transported by the railway free of charge. About half of these came from the U. S., & of the remainder quite a considerable proportion came from Nova Scotia & Ontario. In addition to these, 201 agricultural delegates, representing 90 parishes, visited the country to report as to its advantages. The movement is now becoming so considerable that better arrangements & accommodation for the new settlers, on arrival at Lake St. John, are necessary. Representations have been made to the Federal Government that in order to provide these additional facilities the present colonization subsidy should be increased. This negotiation is still in progress.

The report & statements having been adopted the following were elected directors: F. Ross, G. Lamoine, T. A. Piddington, E. Beaudet, J. T. Ross, Hon. P. Garneau, G. Moir, Hon. J. Tessier, E. Hanson, & F. W. Ross, in addition to whom the non-elective members of the board are Hon. S. N. Parent, Mayor of Quebec, Judge Gagne, representing Chicoutimi, & A. Robitaille, M.P.P., named by the Quebec Government.

**Manitoba & Northwestern Ry. Lands.**

A meeting of the holders of the coupons entitling vendors of bonds to land rights certificates to be issued by the Committee of the first mortgage bondholders of this Co. which was appointed in June, 1893, was held in London, Eng., April 28. Major E. F. Coates, who occupied the chair, said the business before them was important, seeing that they had to decide whether they should select their lands themselves or sell their rights to a firm which had made an offer for them. The present position was that the trustees held, on behalf of the bondholders & the land certificate holders, land warrants for 193,828 acres, besides a reversionary interest in the amount of land which was held by the Manitoba Government against the loan originally made to the railway. As to the land warrants in the possession of the trustees, these entitle the holder to select land in a certain reserved district

along the M. & N. W. line & further on in the Northwest Territories. The cost of selection would be considerable, & in addition, emigrants would have to be found to farm the land, & in many cases it would be necessary to make advances to the settlers. If, therefore, they did not care to provide working capital of, say £10,000, their only course was to enter into the proposed agreement for the sale of their land warrants. Before going further he had to explain that he was a member of the firm of Coates, Son & Co., the representatives of the Canadian firm (Osler & Hammond) who had made the offer. Roughly speaking, the proposal was to purchase the land warrants held by the trustees for the 193,000 acres already referred to, & the reversion of anything that might be got from the Manitoba Government in respect of the land that they held, for £20,500. Any land certificate holder or bondholder was to be at liberty to retain his present rights to the extent of 75%, the purchasers stipulating that they should find at least 25% of the necessary working capital of the company which would be formed on the other side to select & deal with the land. Out of the £20,500 there were two deductions to be made. One was a commission of £500 to his firm for negotiating the sale & giving a guarantee for its being carried into effect, & the other was about £400 to pay certain expenses incurred by the trustees. The remaining balance of about £19,500 would give the bondholders or certificate holders £3 11s.%, & that, added to what they received last year, would make a total return of 90% in respect of their old bonds. He concluded by moving a resolution authorizing the trustees to enter into the requisite agreements for carrying into effect the proposed sale. Mr. Ballance seconded the motion. S. Gardner, a member of the committee of bondholders, & others expressed themselves as favorable to the proposition. In reply to Mr. Chester, the Chairman gave further particulars as to the purchase scheme, & added that the amount of the original offer was only £15,000. The resolution was carried with one dissentient. A meeting of the 1st mortgage bondholders was afterwards held, Colonel Grey (one of the trustees) presiding, at which a similar resolution was passed. Some objection was raised, however, to the validity for voting purposes of certain endorsed bonds, & it was understood that the matter would be left to the decision of the Court, to which the results of both meetings have to be reported.—Canadian Gazette.

**Canadian Yukon Railway Suit.**

Chancellor Boyd heard evidence in Ottawa April 13, in the suit of the Alberta Ry. & Coal Co. vs. Mackenzie & Mann, to recover \$105,246 damages for breach of contract to purchase rails, plates, spikes, bolts, locomotives & cars for the Canadian Yukon Railway. When the Senate threw out the Yukon bill last year Mackenzie & Mann asked the Alberta Co. to cancel the order, which request was refused. The witnesses for the plaintiff were Assistant Engineer McNab, of the G.T.R.; Engineer Mountain, of the Canada Atlantic; President Galt, of the Alberta Ry., & H. Josephs, agent for plaintiff, who obtained the order from defendants. There was, in the first instance, a verbal arrangement between Mr. Joseph & Mr. Mackenzie; this was followed by a writing, of which the following is a copy:

"MONTREAL, Jan. 31, 1898.  
"Messrs. Mackenzie & Mann, Toronto.  
"DEAR SIRS,—As agreed verbally with Mr. Mackenzie, we have on behalf of the Alberta R. R. Co., sold you the following to be delivered as soon as possible, f.o.b., Lethbridge, N.W.T.:  
"80 miles of 28 lbs. steel rails with plates, spikes and bolts at.....\$20 per gross  
"4 Locomotives at.....\$3500 each

"100 Coal cars at.....\$150 each  
"4 Caboosees at.....350 "  
"The whole to be subject to inspection at Lethbridge. Terms: Cash on Nov. 1, 1898. Kindly state if this is satisfactory. We wired you on Saturday asking how many 35 lbs. rails you would be prepared to take on the same terms, if the Alberta Company would deliver same on July 1.

"Yours truly, H. JOSEPH & Co.  
"Correct with the exception of the caboosees, which is not to be considered a sale, it being our option whether we take them or not.  
"Yours truly, WM. MACKENZIE."  
The rails, &c., are quoted at "per gross." This probably meant gross ton, as the invoice read "per ton."

The evidence showed that there was no further interview between Messrs. Joseph & Mackenzie in regard to the contract. Chancellor Boyd held that the contract was an indivisible one, and that the writings showed that there was divergence in regard to the caboosees, and that the proposal made by Mackenzie that there should be an option on them was not assented to by the plaintiff, so that the whole contract was not expressed in the writings, and this being required by the Statute of Frauds, Sec. 17, the writings in this case were not sufficient to satisfy that section. The Chancellor also held that "80 miles of rails" meant 80 miles of single rails, not 80 miles of track. The action was dismissed, but without costs, as the defence of the statute was not put on the record until the trial.

**Grand Trunk Earnings, Expenses, &c.**

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

	1899	1898	Decrease	Increase
Jan.....	\$1,956,281	\$1,916,332	.....	\$39,949
Feb.....	1,824,434	1,674,453	.....	149,981
Mar.....	2,186,359	2,048,970	.....	137,389
April.....	1,942,543	1,918,477	\$5,295	.....
	\$7,909,617	\$7,558,232	.....	\$322,024

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

**GRAND TRUNK RAILWAY.**

Revenue statement for Mar., 1899:

	1899	1898	Increase	Decrease
Gross receipts.....	£354,200	£328,500	£25,700	.....
Working expenses.....	238,100	226,400	11,700	.....
Net profit.....	£116,100	£102,100	£14,000	.....

Aggregate for 3 months, from Jan. 1 to Mar. 31, 1899:

	1899	1898	Increase	Decrease
Gross receipts.....	£967,200	£920,006	£47,194	.....
Working expenses.....	688,200	674,053	14,147	.....
Net profit.....	£279,000	£245,953	£33,047	.....

**CHICAGO & GRAND TRUNK RAILWAY.**

Revenue statement for Mar., 1899:

	1899	1898	Increase	Decrease
Gross receipts.....	£79,600	£75,000	£4,600	.....
Working expenses.....	63,200	57,600	5,600	.....
Net profit.....	£16,400	£17,400	.....	£1,000

Aggregate for 3 months, from Jan. 1 to Mar. 31, 1899:

	1899	1898	Increase	Decrease
Gross receipts.....	£217,100	£194,051	£23,049	.....
Working expenses.....	178,400	155,341	23,059	.....
Net profit.....	£38,700	£38,710	.....	£10

**DETROIT, GRAND HAVEN & MILWAUKEE RY.**

Revenue statement for Mar., 1899.

	1899	1898	Increase	Decrease
Gross receipts.....	£15,400	£17,300	.....	£1,900
Working expenses.....	13,100	13,100	.....	.....
Net profit.....	£2,300	£4,200	.....	£1,900

Aggregate for 3 months, from Jan. 1 to March 31, 1899:



	1899	1898	Increase	Decrease
Gross receipts.....	£41,700	£44,508	.....	£2,808
Working expenses..	37,200	37,980	.....	780
Net profit.....	£4,500	£6,528	.....	£2,028

TRAFFIC RECEIPTS OF THE SYSTEM.

Traffic receipts, Jan. 1 to Apr. 30 :

	1899.	1898.	Increase.	Decrease.
Grand Trunk.....	£1,289,012	£1,238,126	£50,886	.....
Chicago & G.T.	270,693	255,413	24,280	.....
D., G. H. & M..	56,558	59,520	.....	£2,962
Total.....	£1,625,263	£1,553,059	£72,204	.....

DETAILS OF G.T.R. RECEIPTS JAN. 1 TO MAR. 31.

	1899.	1898.	Increase.	Decrease.
Passengers, number.....	1,262,251	1,312,748	.....	50,497
"    amount.....	£ 216,538	£ 200,235	£ 16,303	.....
Immigrants, number.....	874	1,157	.....	283
"    amount.....	£ 456	£ 598	.....	142
Mails, express, &c.....	£ 39,700	£ 39,413	£ 287	.....
Freight, tons.....	2,432,379	2,394,021	38,358	.....
"    amount.....	£ 678,286	£ 659,926	£ 18,360	.....
Miscellaneous receipts.....	£ 32,260	£ 19,953	£ 12,307	.....
Total receipts.....	£ 967,240	£ 920,125	£ 47,115	.....
Increase.....	.....	.....	£ 47,115	.....

C.P.R. Earnings & Expenses.

Gross earnings, working expenses, net profit and increases or decreases over 1898, from Jan. 1, 1899.

	Earnings.	Expenses.	Net Profits.	Increase or decrease.
Jan.	\$1,864,570.36	\$1,247,036.50	\$617,533.86	\$101,906.27+
Feb.	1,753,382.82	1,153,681.34	599,701.48	176,034.12+
Mar.	2,109,667.58	1,280,772.01	828,895.57	75,662.06+

\$5,727,620.76 \$3,681,489.85 \$2,046,130.91 \$353,602.45+ + Increase.

Approximate earnings for April, \$2,168,000, against \$1,925,000 in Apr., 1898; increase, \$243,000.

SUBSIDIARY LINES.

DULUTH, SOUTH SHORE & ATLANTIC.—Approximate earnings for Apr., \$170,705; increase over April, 1898, \$27,684.

Net earnings for Feb., \$41,868, increase over Feb., 1898, \$15,555.

MINERAL RANGE, HANCOCK & CALUMET.—Approximate earnings for Apr., \$27,863; increase over Apr., 1898, \$63.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—Approximate earnings for April, \$309,640; increase over Apr., 1898, \$6,731.

Net earnings, 8 months, to Feb. 28, \$1,559,077, a decrease of \$3,527 from corresponding period.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1899	1898	1899	1898
Jan.....	14,718	22,044	\$46,411.35	\$72,924.83
Feb.....	13,747	20,650	43,371.00	66,399.00
Mar.....	24,045	33,421	74,430.00	109,010.00
April.....	36,626	43,145	116,835.00	140,276.00
	89,136	119,260	\$281,047.35	\$388,609.83

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RAILWAY FINANCE, MEETINGS, &c.

The Alex. Gibson Ry. & Mfg. Co. has filed at the Department of State, Ottawa, a duplicate of the instrument of sale, dated Mar. 29, from the Canada Eastern Ry. Co. to this Co., ratified & approved as required by the statute of 1898.

Calgary & Edmonton net earnings for Mar., \$10,193.68, against \$21,310.33 in Mar., '98.

Canada Eastern.—There are no recent developments in regard to the rumored purchase of this line by the Government, to form part of the I.C.R. system. It is said the Minister of Railways is in favor of the purchase. The New Brunswick Legislature has passed a resolution recommending the purchase. (Mar., pg. 65).

Canadian Pacific.—On May 3, for the first time C.P.R. stock sold over par in London, sales being made at 101½, & in Montreal at 99¼. This was 9 points over any figure reached since the road was inaugurated. The lowest points the stock reached was in 1895, when the dividend was passed, & the common stock sagged off to 33. On two occasions it has been down to 35. In 1893 the highest for the common stock was 90¼, & the lowest 66. In the following year the 2 extremes were 73½ & 56. During the following 2 years the lowest was 33, & the highest attained was 62¾. In 1897 the stock ranged between 46½ & 82. In 1898 the lowest was 72, & the highest 90½. There is a good deal of talk of an increased dividend, & 5% per annum is spoken of. The dividend on com-

mon stock has run all the way from 5% to nothing. The first year of the 5% dividend was 1884, & this was followed by the same dividend in '90, '91, '92, '93 & '94. In 1883 the dividend on the common stock was 2½%, & in 1895 it was 4%. In 1886 & in 1889 it was 3%, while in 1896 & 1897 it was 2½%. Last year it was raised to 4%.

Columbia & Western.—This Co., now controlled by the C.P.R., recently applied to Parliament to extend its bonding powers on the line from Robson to Penticton & branches from \$25,000 to \$35,000 a mile, on the ground that the construction would cost much more than was estimated at first. Some of the western members opposed the application, contending that the line would not cost as much as the Co. asserted. An affidavit from Chief Engineer Peterson was put in supporting the Co.'s statements, & the Co.'s Solicitor stated the cost of the line would average nearer \$41,000 a mile than \$35,000, but that the Co. hoped to convert its land subsidy from the B.C. Government of 20,000 acres a mile into a cash bonus of \$4,000 a mile. The Minister of Railways stated, on the authority of the Deputy Minister & Chief Engineer of the Department, that he did not think the Co.'s estimate excessive, & that portions of the work would cost \$150,000 a mile. The Co. withdrew the application for an extension of bonding powers between Midway & Penticton, & the Committee, by a vote of 61 to 14, passed the bill giving the increase asked for for the line between Robson & Midway, & intervening branches.

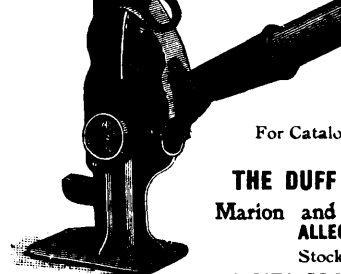
Columbia & Kootenay Ry. & Nav. Co.—At the annual meeting at Vancouver, B.C., April

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26, the following were elected:—President, H. Abbott; Vice-President, J. M. Browning; other directors, T. G. Shaughnessy, I. G. Ogden, W. F. Salsbury; Secretary, J. D. Townley. This line, which runs from Nelson to Robson, B.C., 27.70 miles, with an extension to the mouth of the Kootenay River, 0.80 miles, & a branch from Slocan Jct. to Slocan City, 32 miles, was leased to the C.P.R. Aug. 22, 1890, for 999 years, & all the bonds issued by the Co. are registered in the name of the C.P.R.

**Central Ontario.**—The annual meeting was held at Trenton, May 17. Following is the official list for the current year:—President, S. Burke, Cleveland, Ohio; Vice-President, H. S. Johnson, Cleveland, Ohio; General Superintendent & Secretary, G. Collins, Trenton, Ont.; other directors, C. W. Bingham & H. P. McIntosh, Cleveland, Ohio; G. G. Allen, Akron, Ohio; T. G. Blackstock, Toronto; Chief Engineer, J. D. Evans, Trenton, & Treasurer, R. H. Spencer, Trenton.

**The Chignecto Marine Transport Ry. Co.'s** annual meeting will be held in London, Eng., June 7.

**Dominion Atlantic.**—The annual meeting was held in London, Eng., Mar. 30, F. Tothill, President, in the chair. In referring to the operations of the year he indicated how adversely business had been affected by the Spanish-American war, which had influenced both passenger & merchandise traffic. The report & statements of accounts to Dec. 31, 1898, were submitted & adopted. The retiring directors & the Co.'s auditor were re-elected. A resolution was passed authorizing the directors to issue an additional sum of not exceeding £100,000 4<sup>th</sup> and debenture stock of the Co. like to the existing £250,000 2<sup>nd</sup> debenture stock, & to be in all respects entitled to rank equally therewith. The proceedings terminated with the usual vote of thanks to the chairman, etc.

Earnings for 3 months to Mar. 31, \$111,188; increase over corresponding period \$10,976.

**Grand Trunk.**—The London Financial Times says:—"There is another way besides traffics by which the G.T. will benefit & that is by improved credit. The Tyler administration left it at a very low level.—The Co. actually found it no easy task to issue 4% debenture stock at 80, but under the existing board the Co.'s credit has greatly improved, & it never stood higher than at present. Whilst a few years ago it had to pay 5, the Co. can now obtain as much as it is likely to require at less than 4%, so that the conservatism of the new administration has been to some purpose, particularly as in the next few years the Co. has large amounts of obligations falling due, which it will now be able to renew on extremely good terms. By this means £4,000 will be saved this half-year, and in 1900 a further £20,000 will be saved on the Chicago & Grand Trunk, 6% bonds falling due on Jan 1 next. From every point of view the present position of the Co. looks promising, & within the next few months we expect to see quotations considerably higher."

C. H. Hunter, formerly G.T.R. City Ticket Agent at Detroit, recently sued the Co. there to recover deductions of 2½% in his salary, which had been made monthly since about 1890, & paid into the G.T. Superannuation & Provident Fund Association, with headquarters at Montreal. To draw anything from the fund an employe of the Co. must have been in its service until he is 55 years old. Then he receives an annual allowance for the remainder of his life, equal to ¼ of his then salary. Mr. Hunter was relieved from duty by the Co. some months ago, & was thereby barred from realizing anything on the money paid into the Association, not having reached the age of 55. Judge Degraw gave judgment for the amount claimed.

**The Great Northern Ry. Co. (U.S.A.)** has issued a circular to stockholders announcing the decision of the directors to increase its capital stock \$15,000,000 for the purpose of acquiring all the bonds, debentures & capital stock of the Spokane Falls & Northern, the Nelson & Fort Sheppard & the Columbia & Red Mountain, aggregating \$9,776,200, & 75,000 shares of the capital stock of the Eastern Ry. of Minnesota. Stockholders of record of May 20 are offered the opportunity to subscribe pro rata at par for new stock. Shareholders will be entitled to subscribe for new stock at the rate of 1 share for each 5 shares of their present holdings. Books close May 20 & reopen May 22. The subscription price of new stock will be payable June 22. In accordance with these plans the Co. has filed amended articles of incorporation in Minnesota, increasing its capital stock \$15,000,000.

Gross earnings for 9 months to May 31, \$19,308,270; increase over corresponding period \$2,031,460.

On May 1 the Co. paid a quarterly dividend at the rate of 7% per annum.

**Great Northwest Central.**—The impression has prevailed for nearly a year past, that this Manitoba line was passing into the possession of the C.P.R., & it is now said that it has been purchased by Vice-President Shaughnessy & R. B. Angus, of the C.P.R. directorate, from Mr. Delap for \$550,000. Delap to settle all outstanding claims. T. G. Mathers, of Winnipeg, one of the solicitors for the Receiver, stated in a recent interview that the Receiver had not been notified of any change in ownership & added: "The road has probably had more litigation than any other road in America. It was built by means of English money furnished by Messrs. Delap & Curzon & was first known as the Souris & Rocky Mountain Ry. Mr. Delap has sunk probably \$550,000 in it, & A. Charlebois, the contractor, was nearly ruined in building it. It runs from Chater to Hamiota & was intended to go on to Battleford. The first few years of its operation it lost heavily, but since H. F. Forrest assumed its management in 1893 it has paid all running expenses & laid away a surplus of \$25,000 which is now in the courts to the credit of the road. When Mr. Forrest took it over it was in a very dilapidated condition; thousands have been spent in repairs & it is now in first-class shape. For a 50-mile road that is not a bad record."

**Inverness & Richmond.**—The Nova Scotia Government has agreed to give this Co. a cash bonus of \$4,000 a mile for 100 miles of its line from Port Hastings, on the Strait of Canso, to Cheticamp on the west shore of Cape Breton. For the first 8 miles to Broad Cove mines there is a Dominion grant of \$3,200 a mile, which it is said the Co. will endeavor to get increased to \$4,000 a mile, & the county of Inverness has voted \$1,000 a mile & free right-of-way. The people of Richmond county want the line extended from Port Hastings some 12 miles easterly to Cariboo Cove, where there is a splendid harbor, & the Council has voted \$1,000 a mile & free right-of-way therefor. It is now felt certain that construction will be gone on with this year. W. Z. Earl, C.E., was recently put in the field to make a location survey. The Co. has passed under the control of Mackenzie, Mann & Co. (Apl., pg. 116.)

**Irondale, Bancroft & Ottawa.**—There was a slight inaccuracy in the statement in regard to this Co. in our last issue, pg. 102. The Bank of B. N. A. holds the \$450,000 of bonds from Benjamin as collateral to notes & for other reasons & wishes to sell them, not to buy them as we stated.

**Kingston & Pembroke.**—A shareholders' meeting is called for May 27, to confirm the acts of the directors, in calling in the old stock & debentures, & issuing new stocks & bonds, & paying the interest & the liabilities of the

Co., all under the legislation of 1898, & for other purposes.

**Lake Erie & Detroit River.**—The Ontario Court of Appeal has sustained the judgment of Judge Rose quashing the by-law of the city of St. Thomas, granting a bonus of \$20,000 towards the extension of this Co.'s line from Ridgetown, (Apl., pg. 117).

**Michigan Central.**—The report for the year ended Dec. 31, 1898, shows gross earnings were \$14,046,149, an increase of \$349,000 over 1897. This increase was entirely in freight, passenger earnings having decreased \$143,000, due to a less number of passenger miles, the decrease in passengers moved 1 mile having been 9,899,567; the total movement was 144,505,752 passenger miles. This decrease was in through travel. The local passenger movement actually increased nearly 3,000,000 passenger miles, but the through fell off almost 13,000,000 passenger miles, or 36%. The average rate per passenger per mile increased from 2.175c. to 2.225. Considering the trolley competition, we should have supposed the local business would have declined rather than the through business. As it is, the cause of the change is left to conjecture. The freight movement showed a gain of 131,552,000 ton-miles & the total movement was 1,665,158,000 ton-miles. The rate fell off from 0.616c. to 0.597. The operating expenses & taxes were \$10,546,000, & the increase over the preceding year was \$296,000. The net earnings were \$3,500,000. After paying fixed charges there was a net revenue of \$4.40 a share, out of which a 4% dividend was paid, & \$70,000 was set apart for building a second track between Ypsilanti & Dexter, leaving a balance of \$4,734. The cost of all betterments & additions to property, excepting this \$70,000 & a further item of \$14,438, was charged to operating expenses. The item of maintenance of way & structures increased somewhat over the preceding year, while the item of maintenance of equipment decreased; but in neither case was the change important.—Railroad Gazette.

The old board has been re-elected, comprising C. Vanderbilt, F. W. Vanderbilt, E. D. Worcester, C. M. Depew, W. K. Vanderbilt, H. B. Ledyard, S. F. Barger, A. Pond & F. S. Winston.

**The Montreal Incline Ry.** wants the city to extend its lease of the Mount Royal Park Incline Ry. for 25 years, while the City Council appears disposed not to make an extension of more than 5 years, which the Co. it is said will not accept. The Co. is willing to sell out to the city for about \$45,000. The original capital was \$25,000, the actual cost of the main ascension. When the lower extension was made, 5 years ago, the capital was doubled, since which no dividend has been paid, the former dividends having been 4 or 5%. The revenue is about \$7,000 a year, & the running expenses, not including repairs & depreciation, \$4,000. Since dividends have been stopped the surplus revenue has been put into repairs & additions.

**New York, Ontario & Western.**—The following report was recently sent out from New York: "The G.T.R. will acquire the New York, Ontario & Western. The deal was consummated while General Manager Hays, of the G.T. was in England recently. English capital, represented by Jos. Price, is influential in O. & W. affairs, & as Mr. Price is also Vice-President of the G.T., a combination of the two interests would not be at all surprising. The proposed alliance is said to include some building on the part of the O. & W. from Oneida Castle to Cape Vincent, on the St. Lawrence, & if necessary, the construction of a line to parallel the Rome, Watertown & Ogdensburg division of the New York Central from Central Square to Suspension Bridge where the G.T. would be reached, while at Cape Vincent it would be

necessary to resort to a car ferry service across the St. Lawrence to Kingston. The projected combination is said to be the result of the disinclination on the part of the New York Central interests to take over the Ontario & Western as a tide-water line for its Beech Creek property, & if the plan is consummated it will give the G.T. a direct line from Chicago to New York city."

We are advised that there is no truth in the report as to the purchase of the N. Y., O. & W. by the G.T.

The Northern Pacific has declared a quarterly dividend of 1% payable June 5.

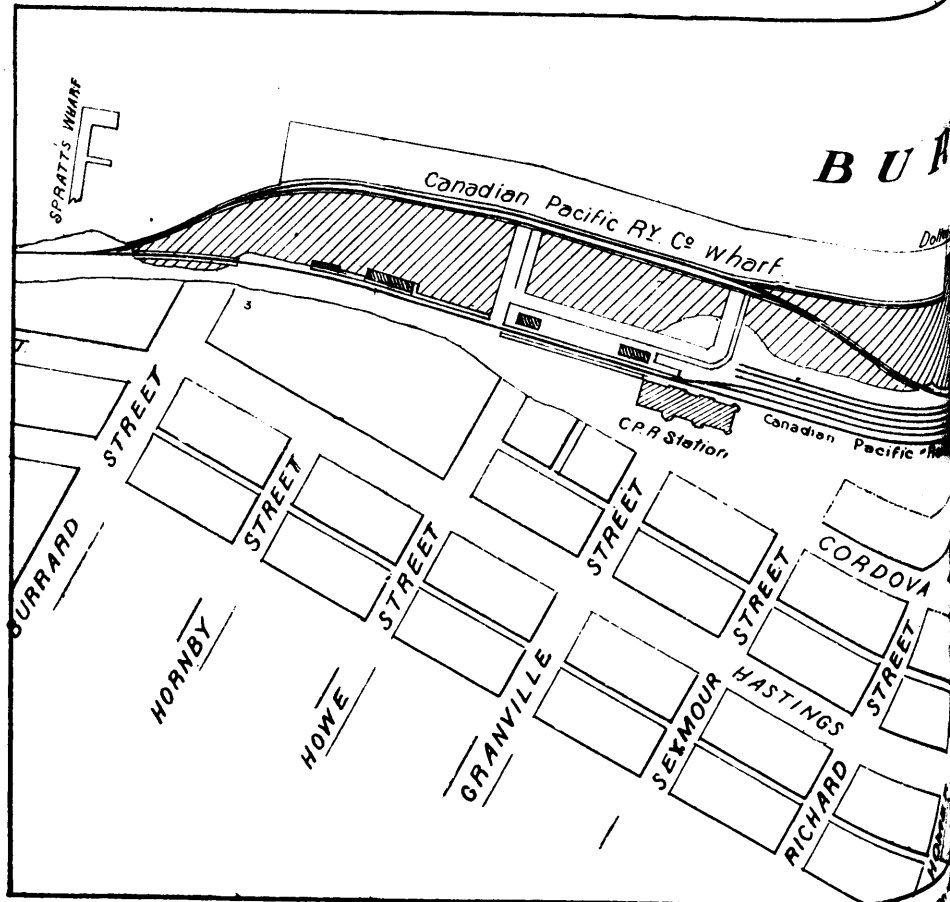
The Winnipeg Tribune recently published a statement, said to emanate from St. Paul, Minn., that offers had been received, it was believed from Mackenzie, Mann & Co., for the purchase of the Northern Pacific lines in Manitoba. The Tribune asserts it is in a position to say that overtures have been made, as reported, & the management of the N.P. is credited with taking the ground that unless the Manitoba Government facilitates it in further extensions, the lines will be sold, as it is held they must be extended to become profitable.

**Ontario & Quebec.**—The ½ yearly interest due June 1, on the 5% debenture stock will be paid on that date by Morton, Chaplin & Co., London, Eng., & the interest for the same period on the common stock of the Co. at the rate of 6% per annum will be paid on the same date at the Bank of Montreal, London, or at the office of Morton, Chaplin & Co., at the option of the holder. The debenture stock transfer books closed in London & in Montreal May 2, & the common stock transfer books closed in Montreal on the same date. The books at both places reopen June 2.

**The Ontario & Rainy River Ry. Co.** is applying to the Dominion Parliament for an Act authorizing it to acquire the railway, property & rights of the Port Arthur, Duluth & Western Ry. Co., & for all necessary powers in reference thereto.

**Ottawa & New York.**—General Manager Gays denies the report that this line will be sold to the G.T.R. & says there is no truth in it.

**Port Arthur, Duluth & Western.**—The Master-in-Ordinary, Osgoode Hall, Toronto, gives notice that tenders will be received up to Aug. 3, for the purchase of this line. This is merely a legal formality, the Toronto General Trusts Co. having some time since disposed of the line to Mackenzie, Mann & Co. See under head "Ontario & Rainy River Ry." above.



VANCOUVER WATER FRONT, SHOWING IMPROVEMENTS.

**Qu'Appelle, Long Lake & Saskatchewan.**—Net earnings for Mar. \$2,806.76, compared with \$494.47 in Mar., '98.

**Quebec Central.**—Traffic receipts for Apl. \$41,708.09. Increase over Apl., '98, \$6,431.96. Aggregate traffic receipts Jan. 1 to Apl. 30, \$126,384.16. Increase over corresponding period \$9,466.61.

The coupon due on the income bonds is now payable at the rate of 1¾% for 1898.

**Spokane Falls & Northern.**—The \$225,000 of 6% gold debentures of 1897 have been called for redemption at the Chase National Bank at par with accrued interest, interest to cease after July 1.

**Toronto, Hamilton & Buffalo.**—Annual meeting at Queen's Hotel, Toronto, June 6.

**Toledo & Detroit Shore Line.**—C. H. Haskell is quoted by the Railway World as saying that the right of way has been obtained, & the road will be built this year. A contract has been closed for a passenger station in Toledo near the centre of the city. Other roads now using the Union Station will be likely to seek the privilege of running their trains into the new one, owing to its central location. The new road is designed to be more of the character of a terminal line between Detroit & Toledo, affording a number of road advantages & facilities of great value they have not been able to secure. For years the Lake Shore & the Michigan Central have had a monopoly between Toledo & Detroit, & defeated every attempt made to break it, but

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Subscribed Capital - - - \$175,000.

J. W. MCRAE, President.

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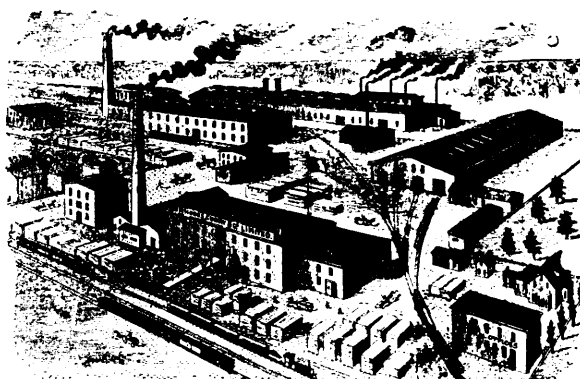
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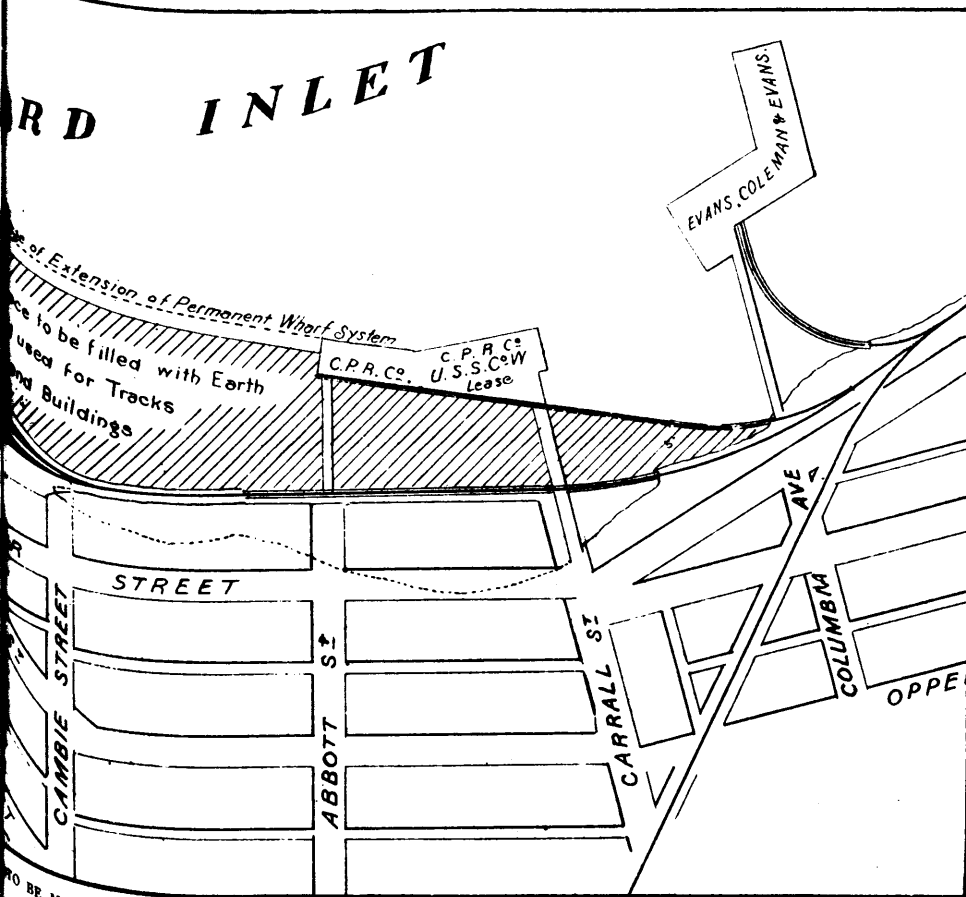
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### Central Vermont Reorganization.

At a meeting of directors April 21 the following directors were elected: C. M. Hays, Montreal; J. Bell, Belleville, Ont.; E. H. Fitzhugh, Toronto; E. C. Smith, St. Albans; David D. Rantlett, St. Albans; J. W. Stewart, Aldace; F. Walker, Rutland; W. S. Webb, Shelburne; J. C. McCullough, Bennington; E. H. Baker, Boston; S. F. Kilmer, New York; C. M. Wilds & H. B. Day, Boston. The directors elected these officers: Chairman Executive Committee, C. M. Hays; President, E. C. Smith; Vice-President & General Manager, E. H. Fitzhugh; Clerk & Treasurer, R. H. Ingram; Auditor, M. M. Reynolds. Subsequently G. B. Reeve, General Traffic Manager of the G. T. R., was also appointed General Traffic Manager of the C. V. in charge of through traffic with headquarters at Montreal, & J. Pullen, heretofore Division Freight Agent of the G. T. R. at Hamilton, Ont., was appointed General Freight Agent at St. Albans.

E. H. Fitzhugh was born in Danville, Mo., in 1853, & entered the car department of the St. Louis, Kansas City & Northern at St. Louis in 1872. He rose gradually until 1879, when he held the position of Chief Clerk in the office of the General Superintendent. In that year the road was absorbed by the Wabash, & Mr. Fitzhugh entered the employ of the latter. In 1889 he was made Master of Transportation of the western division of the road, with headquarters at Moberly, Mo. In December, 1895, he came to Canada with Mr. Hays, & for about 6 months acted as his Secretary in Montreal. On the reorganization of the divisions of the G. T. R. in July, 1896, Mr. Fitzhugh was appointed Superintendent of the Middle Division, with headquarters in Toronto.

In an interview on the day of the meeting above referred to Mr. Hays said: "The reorganization of the C. V. property has been

unique in character, in that the relations between all interests have been adjusted satisfactorily & the property has been put on a sound financial basis without an assessment made on any class of security holders—the only instance of the kind known in modern railway organizations. We think the C. V. never had such a board of directors as that which met to-day, as regards men of experience in railway affairs & men of high standing & character. There was Gen. J. G. McCullough, formerly Chairman of the board of the Erie, & now President of one of its most important lines. There was Col. Walker, Chairman of the board of the Atchison, Topeka & Santa Fe & one of the leading railroad men of the U. S. There was Mr. Day, of R. L. Day & Co., one of the largest & most prominent banking firms of Boston. We had Mr. Baker, who is with the well known Boston firm of Lee, Higginson & Co., & who is a member of the executive committee. We had Dr. Seward Webb, who is now the chief railway man of Vermont, & various other men of high standing in railway circles.

"The G. T. interest is represented by Mr. Bell, our General Solicitor, who has been with the Co. for 40 years, & by Mr. Fitzhugh, who has been elected Vice-President & General Manager of the C. V. Mr. Fitzhugh is a native of Missouri, & the greater part of his railway experience was gained on the Wabash in different capacities, particularly in the transportation & operating departments. He has been with me in charge of the middle division of the G. T. during the past 2 years, his jurisdiction covering some 1,200 miles of railway. The new Clerk & Treasurer was formerly Assistant Comptroller of the Louisville & Nashville, & at one time he was Assistant to the General Manager of that road.

"As to the financial condition of the C. V. road, the new corporation will take possession of the road without a dollar of indebtedness & with money in the treasury. During the receivership the earnings have been expended in betterments & improvements to the property. With the new rails bought by the receivers this spring we will have all the main lines laid with the heavy rail & all the important bridges have been rebuilt & brought up to the present standard; so that we consider the securities of the Co. a first class investment & we hope to make them rank in value with those of any other Vermont railroad property."

"The policy of the management will be to operate the property as a strict business proposition. We shall expect to give the public good, prompt & efficient service, & keep fully abreast of the times in everything that goes to make the property a first class road in the estimation of the public. Our idea in making the directorate so largely Vermont in its character is to correct any impression that might exist that the road was to be managed by what has been called an 'alien' corporation. The question of the future operation of the property must be dealt with as the situation develops. No radical change will be made in the existing order of affairs so far as pertains to the operation of the road. The relations of the G. T. with the Santa Fe have been of the most friendly character, & the election of Col. Walker to the directorate of the Central Vermont will not tend to impair those relations. With a car from Boston running over the C. V. & the G. T. to Chicago it is possible for the passenger to step from one car to another at the latter point & go over the Santa Fe road to San Francisco with but one change of cars."

At one minute after midnight of May 28 possession of the railway & property of the C. V. R. R. Co., branches & leased lines was transferred by receivers C. M. Hays & E. C. Smith to the C. V. Ry. Co., in accordance with a decree of the U. S. Circuit Court. Mr. Fitzhugh at once took charge, & since then the

with the Shore Line in the field & paralleling them, they will not be able to dictate to either shippers or the roads dependent upon them for privileges. It will let the G. T. R., & possibly the C. P. R., into Toledo, & it is said to be well understood that the road will be used also by the Hocking Valley, the Ohio Central, the Wabash & perhaps the Cincinnati, Hamilton & Dayton & the Pennsylvania.

A despatch from Toledo recently stated that in closing a deal for terminal site the Shore Line people had stated that the G. T. R. & the C. P. R. were interested in the line. We are informed that the G. T. R. has no financial interest in the project. In the event of the line being built the G. T. R.'s relations with it will probably be as friendly as they now are with the existing lines between Toledo & Detroit.

**Vancouver, Victoria & Eastern.**—W. Mackenzie is reported to have stated in Ottawa recently that Mackenzie, Mann & Co. will proceed against the B. C. Government to recover damages for the cancellation of the contracts respecting the construction of this & other projected lines.

**Winnipeg & Hudson's Bay.**—During 1898 the Province of Manitoba paid \$12,821.72 to the holders for interest on bonds of the Province issued in 1886 in aid of the Winnipeg & Hudson's Bay Ry. & Steamship Co., which makes the indebtedness of this Co. to the Province \$255,986.66 for the principal, & \$153,781.26 for interest, or a total, exclusive of compound interest, of \$409,767.92. Nothing has been paid by this Co. on account of principal or interest since these bonds were issued. An arrangement has now been entered into between the Government of Manitoba & the Winnipeg & Great Northern Ry. Co., whereby the Province has received from the said Co. 256,000 acres of the land grant within the Province in full settlement of the claims of the Province in respect of the said bonds & interest in aid of the Winnipeg & Hudson's Bay Ry. & Steamship Co.

following appointments and announcements have been made.

The office of General Superintendent is abolished & heads of departments are to report to the Vice-President & General Manager. F. W. Baldwin, heretofore General Superintendent, is appointed Superintendent, Northern Division. Office at St. Albans. D. McKenzie is appointed Superintendent, Southern Division. Office at New London, Conn. H. R. Stoughton is assigned to other duties.

For convenience in operation, the line has been divided into divisions and districts, as follows:

Southern Division—New London to Brattleboro. Brattleboro to South Londonderry. New York City Terminals.

Northern Division—Windsor to St. Johns. Burlington to Essex Jct. Montpelier Jct. to Barre. Barre Jct. to Williamstown. Essex Jct. to Cambridge Jct. Swanton Jct. to Rouses Point. St. Albans to Richford. S. S. & C. Jct. to Waterloo. Farnham to St. Lambert. St. Cesaire Branch.

1st District—New London to Brattleboro, including New York City Terminals.

2nd District—Brattleboro to South Londonderry.

3rd District—Windsor to St. Albans. Burlington to Essex Jct. Montpelier & Williamstown Branches. Lamoille Valley Branch.

4th District—St. Albans to St. Johns. Swanton Jct. to Rouses Point. Missisquoi Valley Branch.

5th District—S. S. & C. Jct. to Waterloo. Farnham to St. Lambert. St. Cesaire Branch.

The new Co. has filed a mortgage for \$12,000,000 with the American Loan & Trust Co.

as trustee. This secures an issue of 4% gold bonds due 1920. The proceeds are to be used for acquiring & operating the Central Vermont & the Burlington & Lamoille Valley; also for buying the leases of the New London Northern & the Montreal & Vermont Jct.

A special meeting of G.T.R. shareholders will be held in London, Eng., May 29, to approve an agreement dated May 1, 1899, between the G.T.R. Co. & the C.V.R. Co., for working arrangements between the 2 companies.

#### Canadian Freight Association.

The 16th annual general meeting was held at Montreal, Apr. 6, 37 members present. The following were elected members: Active—R. M. J. McGill, Central Ry. of N.S. (vice J. Brignell); E. Fisher, Toronto, Hamilton & Buffalo Ry.; A. E. Rosevear, G.T.R. (vice C. J. Haigh); R. McEwan, Richelieu & Ontario Nav. Co. Honorary—C. J. Haigh, General Manager Lehigh Valley Fast Freight Line.

Chairman Earls reported that the new classification no. 11 was still at Ottawa awaiting approval. He also reported a number of additions & amendments which the Committee recommended. These amendments, if approved, to be incorporated in the new classification if possible; if not, to be promulgated as a supplement by the Committee. The report, including the amendments to the classification, was adopted.

It was decided that the classification be revised so that all freight now at 4th class C.L. shall not have a lower minimum than

16,000 lbs., & at not less than 4th class. Also that the Chairman recommend at next meeting an arrangement of minimum weights for cars over 40 ft. long.

Reports of the Freight Inspection, Car Service & Executive Committee were adopted. The Car Service Department has now been in operation nearly 2 years. As was to be expected, some opposition on the part of the public, as well as the local agents of the railway companies concerned, was developed at first. This has to some extent been removed after practical experience has demonstrated the fact that the companies were serious in their determination to carry out the rules adopted. A great improvement is apparent in the financial results of the working of the department during the past year, as illustrated in the Manager's report of money collected; but the number of cars still detained beyond the free time limit appears yet too large in proportion to the number of cars handled. The reasons given by the agents are in many cases sound so far as they are concerned, but the wish to accommodate a customer & stand in well with a shipper is still paramount in the mind of some of the agents, so as to render it difficult on their part to administer the rules without fear or favor. In many cases the serious delays to cars are attributable to causes beyond the agent's control, such as "want of sufficient engine power," "insufficient siding accommodation," "inability to place cars in the order of arrival," etc., etc. These are matters well worthy the consideration of the railways concerned, as the prompt handling of cars at all points must be of incalculable benefit to the railway companies.

## C. P. R. LANDS.

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

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

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

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

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

#### TERMS OF PAYMENT.

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

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

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

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

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

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

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

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& it is recommended that the attention of superintendents, or other general officers concerned, be directed to this subject as one calculated to greatly benefit their respective companies. The Committee recommended the adoption of amended rules & regulations to take effect May 1, & suggested that all the railway companies concerned re-issue these rules to all their agents within the territory embraced under the arrangement, with positive instructions to carry them out in their integrity.

A report of the special committee on uniform release & other special contract forms was adopted.

It was agreed that when shippers request railway cartage companies to distribute a carload of goods addressed to 1 consignee, to 2 or more parties, that an additional charge covering the extra expense of the several deliveries shall be collected, & the railway companies request the cartage companies to come to an agreement for the adoption of a uniform charge for this service. It is understood that railway agents will not accept orders for this distribution of freight, & will not assist the cartage company in sorting or handling—the extra deliveries being considered a matter entirely between the shipper & the cartage company.

The subject of payment for telegrams from shippers, re rates, etc., was discussed, & it was the sense of the meeting that such telegrams should be paid for by the shippers.

The officers & standing committees for the ensuing year were elected. A list of them is given on pg. 130.

The Executive Committee was empowered to fix the time & place of the summer meeting.

### Railway Committee of Privy Council.

At a meeting in Ottawa, Apl. 21, the following cases were heard:

**Bedlington & Nelson Ry.**—The application made by this Co., at the meeting on Feb. 22, for running powers over a portion of the C.P.R.'s Crow's Nest Line was resumed. As mentioned in our Mar. issue, pg. 86, the B. & N. Co. first asked to run over some 15 miles of the C. N. line, but at the second hearing this was reduced to 8½ miles. The engineers estimated that it would cost the B. & N. Co. \$31,000 a mile to build a parallel line. G. M. Clark, for the C.P.R., intimated that this was not a case where the application should be granted. In any case, in the fixing of the terms, the C.P.R. did not think that the applicant should be allowed to make use of this paying stretch of the Crow's Nest line without paying for a certain proportion of the approaches on either side, which pass through a region which is not so profitable.

The Minister of Railways announced that the decision of the committee was that the principle of the application should be concurred in. In the matter of terms, it was agreed to give the parties one month to come to an understanding, the committee to confirm the same by an order at its next meeting. Mr. Clark assured the committee that the C.P.R. would facilitate a speedy adjustment.

**G.T.R. Crossings.**—D. D. Rogers, M.P., appeared in support of an application for the G.T.R. to place electric alarms or other protection at the crossings at Collins Bay, Cataraqui & Perth roads. W. Wainwright, for the G.T.R., stated that an alarm was already being installed at Collins Bay, & an investigation would be made into the matter.

**The Brandon & Southwestern Ry. Co.** applied for approval of the plans of crossings of the Pembina & Southwestern branches of the C.P.R. in Manitoba. G. M. Clarke, for the C.P.R., consented to the crossing of the Pembina branch near Deloraine being made. In the case of the crossing of the Southwestern branch near Carroll, the natural difficulties are

much greater, & the parties will confer as to the best means of providing due safeguards.

At a meeting in Ottawa, Apl. 28, the following cases came up:

**The United Counties Ry.** asked permission to cross the Central Vermont Railway at Irberville. The case was struck out.

**Montreal Electric Lines.**—In the application of the G.T.R. re the fixing of the additional expense at the crossing of the G.T.R. by the Montreal St. Ry., it was announced by counsel that an amicable arrangement had been arrived at.

The Montreal Island Belt Line Ry. Co.'s application for permission to cross the Montreal St. Ry. on St. Catherine & Notre Dame streets was next reached. Mr. Mullarky, for applicants, asked that the case be postponed by reason of the unavoidable absence of their counsel, J. N. Greenshields. The Minister of Railways took the position that as the City of Montreal was not represented, & as the matter was of consequence to it, it should be given an opportunity for making its views known. Consideration of the application was accordingly deferred for a week.

### Losing Cars out of Trains.

A recent press despatch from Bloomington, Ill., said railway men there were marvelling over a phenomenal occurrence on the Chicago & Alton. A freight train was going west on the Kansas City division. When near Prentice, Ill., on account of a broken wheel, one of the cars was thrown from the track into the ditch, nearly 15 ft. from the rail. The track was not injured. The couplings at both ends of the car were automatic, & the car slipped out without breaking those on the two cars next to the derailed car. The two sections of the disunited train soon came together again & coupled automatically. The air connection was broken, but, although the train stopped, & the air was again connected, the trainmen did not miss the car, & it was not missed until the conductor looked over his train at Roodhouse. The car was found in the ditch next morning by the road-master.

The Editor of THE RAILWAY & SHIPPING WORLD, remembering having heard Mr. Whyte, Manager of the C.P.R. western lines, speak of a case of a car getting lost out of a train without the trainmen knowing anything about it, wrote him calling his attention to the incident in Illinois, & asking for his experience. Mr. Whyte replied as follows:—"The only case where a car was lost out of a train unknown to any of the trainmen, that came under my own observation, was a good many years ago on the Grand Trunk. It occurred with a freight train from Toronto to Belleville. When the train reached Port Hope a coupling had to be made on account of a broken link or pin, I forget which, but this attracted no attention, as it was chiefly down grade from the station west of Port Hope, Newtonville, to Port Hope, but when the train reached Belleville the checker informed the conductor that he had one car less than he had waybills for. The conductor at first denied it, & was only satisfied after going out in the yard & checking his train. The missing car was found on the edge of Lake Ontario down at the foot of an embankment. The occasion that you mention of a car leaving a train between Winnipeg & Rat Portage occurred some few years ago, but the car simply jumped clear of the track, & the trainmen saw it. A more remarkable occurrence took place a couple of months ago on the Manitoba & North Western, when the boiler of the engine on a train exploded. The train had started on a down grade when the explosion took place. The engine, tender & refrigerator car left the track completely & quite unknown to any of the trainmen or passengers on the train, which

was a mixed one, & it was only ascertained when the train came to a stop that there was no engine on it."

### New Brunswick Legislation.

At the recent session of the Legislature the following acts were passed, among others:—

To amend 54 Vic., chap. 2, so far as it relates to the Gulf Shore Ry.

To confirm an agreement between St. John city & the C.P.R. Co., & to enable the city to make tax exemptions in favor of the Co.

To aid in the construction of a graving dock at St. John.

To revive the act incorporating the Fredericton, Gibson & Marysville Electric Ry. Co.

To incorporate the Imperial Dry Dock Co., of St. John.

To continue the act incorporating the St. Louis, Richibucto & Buctouche Ry. Co.

To confirm a conveyance from St. John city to the C.P.R. Co., & for other purposes.

To incorporate the Shediac Coast Ry. Co.

### From Winnipeg Town Topics.

Jones—"There goes a fellow who whistles at danger."

Smith—"Ah, he must be a very brave chap. Who is he?"

Jones—"Jim Brownlee, the locomotive engineer."

**Passes for Members.**—The oft-discussed question of members of Parliament accepting free railway transportation was discussed in the House of Commons recently, when Mr. Bostock's bill to compel railway companies to issue passes came up. The bill was opposed by Sir Charles Tupper, who asserted that the members of Canada were unswayed by any such motives as were held to be the result of accepting a pass from the railways. Sir Wilfrid Laurier suggested that the bill be withdrawn, but this Mr. Bostock declined to do. The motion for the second reading was declared lost on division.

**Niagara District Guide.**—Under the title of "The Indispensable Tourist & Wheelman's Guide to the Niagara District," J. M. Dixon, F.R.S. Edin., has written a most interesting & valuable pamphlet, which will enable anyone visiting this historic & beautiful district to see it to the greatest possible advantage. It contains a very complete description of the Falls & the vicinity, with historical notes, a carefully prepared series of routes for cyclists & other visitors, & a series of appendices in which the chief historic events in the district are faithfully described. The pamphlet is issued by the Niagara Falls Advertiser, Niagara Falls, Ont.

**Manitoba Railways.**—The speech from the throne at the recent opening of the Manitoba Legislature contained the following paragraph:—"Railway construction within the Province during the past year has been carried on to a very considerable extent, & the districts affected have been materially benefited thereby. In particular I may refer to the Swan River country, which a year ago was void of settlers, but is now a well-peopled district. A considerable portion of the railway to the southeastern part of the Province has also been built, with great advantage to the districts through which it runs, & with a promise of great & lasting benefit to the whole Province when it is completed to its objective point. The building of the Northern Pacific & Manitoba Ry. branch from Belmont westward has also been highly advantageous to the farmers in that district, whilst the settlers along the Foxton branch & the Reston extension of the C.P.R. have been equally benefited."

## RAILWAY APPOINTMENTS, &amp;c.

**Canadian Pacific.**—The air has been full of rumors lately about supposed impending changes, & some of the daily papers have made out an extensive slate of appointments, etc. The old story that Sir Wm. Van Horne will resign the Presidency in favor of Vice-President Shaughnessy, & take the Chairmanship of the Board, has been revived, but it has not been confirmed, & Sir Wm. has declined to be interviewed on the subject. As we stated last month, it is almost certain that something will be done to relieve Mr. Shaughnessy of some of his present very heavy work, & we incline to the belief that the Passenger Traffic Manager, D. McNicoll, will receive promotion, & be next in command to Mr. Shaughnessy, though it is impossible to say what his title will be. Should this take place it would cause a number of other changes, & while we have no authority for so stating, we should not be surprised to see R. Kerr, now Traffic Manager of the western lines at Winnipeg, go to Montreal as Passenger Traffic Manager. C. E. McPherson, now Assistant General Passenger Agent at Toronto, would be likely to succeed him at Winnipeg, in which case the office there would likely be divided, & the freight business given to some one else, possibly to W. R. McInnes, now General Agent of the Freight Department at Chicago. A. H. Notman, now Assistant General Passenger Agent at St. John, N.B., would probably be promoted to Toronto, & this vacancy would likely be filled by a promotion from the St. John or Montreal offices.

The headquarters at Pittsburg, Pa., of F. W. Salsbury, Commercial Agent, have been removed from 427 Fifth Avenue to 409 Smith Building.

C. E. Bunting, of the Toronto ticket office, has been appointed Ticket Agent, a new position in Toronto, the office having heretofore been under the direct management of the Assistant General Passenger Agent.

**Duluth, South Shore & Atlantic.**—Notice is given that the office of the General Freight Agent of this line & of the Mineral Range

R.R. & the Hancock & Calumet R.R. is now located in the general offices at Marquette, Mich. All communications on freight traffic matters should be addressed as follows: Wm. Orr, General Freight Agent, Marquette, Mich.; W. W. Walker, Assistant General Freight Agent, Lyceum Building, Duluth, Minn.

**Grand Trunk.**—The reorganization of the Central Vermont has caused a number of changes in the G.T.R. Middle Division. E. H. Fitzhugh having been appointed Vice-President & General Manager of the C.V., has been succeeded as Superintendent at Toronto by G. C. Jones, heretofore Joint Superintendent of the Southern Division of the G.T. & Wabash lines at St. Thomas, Ont. Mr. Jones came to Canada shortly after Mr. Hays, & was for a time Assistant Superintendent at London, Ont. He is a comparatively young man, but has had considerable experience, & is looked on as a very efficient operating official. On leaving St. Thomas he was presented with a handsome pair of diamond cuff studs by leading citizens there.

The joint superintendency of the G.T. & Wabash at St. Thomas, vacated by Mr. Jones, has been given to L. J. Ferritor, heretofore Assistant Superintendent at London. Mr. Ferritor has been succeeded at London by F. W. Egan, heretofore Trainmaster at Belleville, Mr. Egan's place being taken by W. W. Ashard.

J. Pullen, appointed General Freight Agent of the Central Vermont, has been succeeded as Division Freight Agent at Hamilton by J. E. Dalrymple, heretofore Private Secretary to the General Traffic Manager, his territory being the portion of the Middle Division, south of the main line between Weston & Point Edward, & including the portion of the Northern Division between Stewarton & Hamilton. After leaving school in 1883, Mr. Dalrymple went into the G.T.R. Treasurer's office, serving there in various capacities until 1890. He then went to Chicago as Secretary to Mr. Reeve, then Traffic Manager of the Chicago & G.T.Ry., & returned to Montreal in 1896, when Mr. Reeve went there to assume the same duties for the system at headquarters. The territory which Mr. Dalrymple now

has under his direction represents about 800 miles of railway, & includes Hamilton, Brantford, London, St. Thomas, Windsor, Sarnia, Chatham, Buffalo, Woodstock & Galt. It is considered the most important after the Chicago division.

E. J. Bedbrook has been appointed Private Accountant to the General Manager, succeeding R. H. Ingram, who has gone to the Central Vermont as Clerk & Treasurer.

L. Macdonald, Chief Clerk of the General Traffic Department, has been appointed Private Secretary to General Traffic Manager Hays, succeeding J. E. Dalrymple. G. A. McNicoll succeeds Mr. Macdonald.

W. Mullins, Chief Clerk in the General Superintendent's office, Middle Division, under Mr. Fitzhugh, is now Chief Clerk to Mr. Fitzhugh in the C.V. General Manager's office. He has been succeeded at Toronto by W. White, for some time Private Secretary to General Superintendent McGuigan.

J. Powell, Chief Clerk of the Motive Power Department, has been appointed Chief Draughtsman.

The following station agents were installed during April:—Stark, N. H., J. H. O'Connor; Titus, Que., T. D. Ward; Whites, Que., C. H. Richardson; Oshawa (Frt.), Ont., D. J. Kain; Whitby, Ont., T. H. Coppin; St. Johns, Mich., W. H. Burke; Holly, Mich., R. G. Ward; Lenox, Mich., J. J. Waite.

Capt. W. Dewson has been appointed Station Agent at Windsor, Ont., succeeding T. Dow, who died Apl. 28, after 45 years' service.

P. Caron, for many years Conductor, has been appointed Station Agent at Bonaventure, Montreal, succeeding W. C. Wright, who died at Chatham, N.Y., early in Apl., as the result of an operation.

F. G. Hutchins, heretofore Relieving Agent, has been appointed Ticket & Passenger Agent at Point St. Charles.

**Intercolonial.**—The suspension of District Superintendent Ouellette, of the Montreal & St. Flavie, having resulted in his leaving the service, he has been succeeded by W. A. Dube, who up to the time of his appointment had been in the G.T.R. service for 25 years. At the early age of 18 years he had charge of

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the running of trains between Montreal & Island Pond, & was made Chief Train Despatcher at the age of 23, which position he held for 15 years.

**Minneapolis, St. Paul & Sault Ste. Marie.**—W. S. Thorn, Assistant General Passenger Agent, has, in addition, assumed charge of St. Paul City office, vice H. E. Huntington, transferred to the General Passenger Department. H. B. Carter has been appointed Travelling Passenger Agent, vice H. A. Olmsted, resigned.

### Government Railway Officials.

The Civil Service List recently issued gives the following particulars of Government railway officials who are members of the service: C. Schrieber, Deputy Minister & Chief Engineer, born 1831, appointed 1892, salary \$6,000.

D. Pottinger, General Manager, born 1843, appointed 1892, salary \$6,000.

T. Williams, Chief Accountant & Treasurer I.C.R., born 1846, appointed 1882, salary \$2,400.

J. J. Wallace, General Freight Agent I.C.R., born 1847, appointed 1892, salary \$2,100.

J. M. Lyons, General Passenger Agent I.C.R., born 1850, appointed 1892, salary \$2,100.

E. T. Trites, Paymaster I.C.R., born 1844, appointed 1873, salary \$1,600.

J. R. Bruce, Traffic Auditor I.C.R., born 1848, appointed 1883, salary \$1,500.

W. T. Huggan, Accountant & Auditor P.E. I. Ry., born 1851, appointed 1882, salary \$1,500.

### Mainly About People.

H. Upton, Auditor of the United Counties Ry. at Montreal, has also been appointed Traffic Manager.

Lord and Lady Mount Stephen dined at the Ritz Restaurant in Paris recently with the Prince of Wales.

J. Slavin has been appointed Master Mechanic of the Spokane Falls & Northern, vice C. H. Prescott resigned.

Mrs. E. Tiffin, wife of the General Freight Agent of the C.P.R. at Toronto, has returned from a visit to California.

T. Tait, Manager C.P.R. eastern lines, left Montreal May 13 by S.S. Californian for Liverpool, intending to be away about 2 months.

Miss Maud Dwight, daughter of the President of the G.N.W. Telegraph Co., has gone to Europe for a year, with her aunt, Miss Helliwell.

Mrs. Fisher, wife of the Superintendent of the Toronto, Hamilton & Buffalo Ry., died in Philadelphia Apl. 13, & was buried at Detroit, Mich.

Mrs. Tait, wife of the Manager of the C.P.R. eastern lines, will spend the summer at Birch Point, Muskoka, with her parents, G. R. R. & Mrs. Cockburn.

W. Stitt, of the C.P.R. Passenger Department, Winnipeg, has returned from his trip through California, the Southern States & British Columbia, having entirely regained his former health.

Jas. Bell, at one time Superintendent of the Montreal & Champlain division of the G.T.R., after which owing to failing health he became agent at Port Hope, resigning about a year ago, died in Toronto, May 15.

G. H. Watson, General Freight & Passenger Agent of the Ottawa & New York Ry., having resigned, the duties have been assumed by General Manager Gays. J. O. Hibbard, General Agent at Ottawa, having resigned, the office has been abolished.

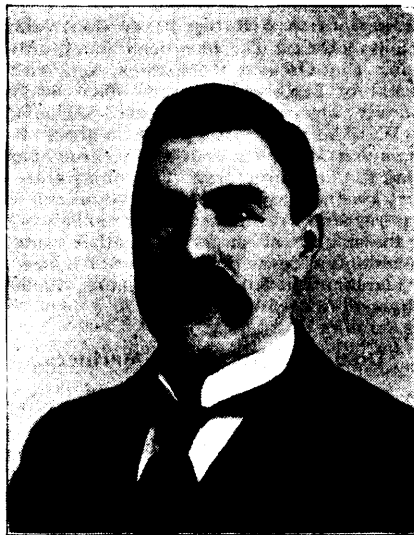
J. F. Stevens, who resigned as Chief Engineer of the Great Northern (U.S.A.), July 1,

1898, has been reappointed to that position, succeeding N. D. Miller, & will have charge of the location & construction of all new lines, & of bridges, buildings, tracks & structures. Headquarters, St. Paul, Minn.

Sir Wm. Van Horne left Montreal about the middle of April for a trip to California, going by Chicago & returning by Vancouver & the C.P.R. He was accompanied by W. D. Matthews, Toronto, a director of the C.P.R., T. G. Roddick, M.D., Montreal, & R. M. Wells, Toronto, Solicitor of the Co.

The engagement is announced of Miss Mary Shaw, daughter of Col. Shaw, Watertown, N.Y., formerly U.S. Consul at Toronto & Manchester, Eng., & B. Folger, jun., of Kingston, Ont., General Passenger Agent of the Thousand Islands Steamship Co., & American Line. Miss Shaw is in Germany completing her musical studies.

Jno. Burton, representative of the G.T.R. on the Joint Traffic Association, died at Peak's Island, Me., May 16, & was buried at Hamilton, Ont. Mr. Burton entered the service of the Great Western Ry. in the 60's. At one time he was Secretary to Sir Jos. Hickson, when the latter was Manager of the G.T.R. He afterwards went into the service



T. HICKEY,  
President Roadmasters' Association of America.

of U.S. lines. In 1889 he returned to the G.T.R., becoming General Freight Agent & in 1896 was appointed the Co.'s representative on the Joint Traffic Association.

J. Pullen, who has been appointed General Freight Agent of the Vermont Central, entered the service of G.T.R. as junior in the division freight office at Sherbrooke, Que., when G. B. Reeve, now General Traffic Manager of the G.T.R., was Division Freight Agent there. In 1881 he went with Mr. Reeve to Chicago as Secretary. In 1889 he was appointed Agent of the West Shore fast freight line. Subsequently he became Agent of the Reading Despatch & the Lehigh Valley Ry., until 1896, when he was made Division Freight Agent of the G.T.R. with headquarters at Stratford. After a year in that post he was promoted to be Division Freight Agent at Hamilton.

T. Hickey, President of the Roadmasters' Assn. of America, whose portrait appears on this page, commenced railway work at the age of 17, in 1872, as laborer on a gravel train on the Fort Wayne & Jackson R.R. at Angola, Ind., now a part of the Lake Shore system. He started section work as a laborer in 1873, & in 5 months was appointed Section Foreman, being in the same year given

charge of a road train as Conductor, which position he held for 8 years, resigning in 1881 to accept one as Extra Gang Foreman on the Eastern Division of the M.C.R. In 1882 he was appointed Assistant Roadmaster of the same division, being located at Ypsilanti, Mich. In 1884 he was appointed General Roadmaster of the same road, with headquarters at Jackson, Mich., which position he held until 1892, when he was transferred to St. Thomas, Ont., as General Roadmaster of the Canada Southern division of the M.C.R., which position he still holds.

John Foy, whose portrait appears on the first page of this issue, was born in Toronto some 55 years ago, his father, Patrick Foy, being a member of the well-known firm of Foy & Austin, wholesale grocers. After being educated at Usshaw College, Durham, Eng., he travelled through France & Algiers & on returning to Toronto entered the service of Frank Smith & Co., wholesale grocers, remaining with them for a number of years & taking special charge of the confidential business of the head of the firm, Mr., now Sir Frank Smith, in whose interest he spent several years in London, Eng. On the organization of the Niagara Navigation Co. in 1878, Mr. Foy became a director, & in 1879 was appointed Manager, holding the position ever since & discharging its duties to the combined satisfaction of the Co. & the public. Mr. Foy, who is one of the best known transportation men in Canada, is certainly also one of the most popular. He married a daughter of Sir Frank Smith & resides in Toronto having a charming summer residence a Niagara-on-the-Lake.

**Direction Signs for Trains.**—The Winnipeg Telegram says: "The C.P.R. has adopted a system of sign-boards for all its out-going trains at Winnipeg. The system was found necessary on account of the large number of local trains leaving, & of the consequent numberless enquiries as to where each one went. In future as soon as the train is ready placards will be set up announcing the principal stations on the route, so that there will be no excuse for anyone taking the wrong train or missing the right one." The signs which have been adopted are made of enameled iron, & were supplied by The Acton Burrows Co., Toronto.

**The G.T.R. & Muskoka.**—From June 5 to 10 the G.T.R. will have about 30 of its passenger agents from various points in Canada & the U.S. visiting Lakes Simcoe & Couchiching, Magnetawan River, the Lake of Bays, Georgian Bay & the Muskoka lakes; the object of the trip being purely an educational one. All the members of the party are engaged in securing tourist business, & the trip has been arranged for the purpose of letting them know intelligently what the attractions of the districts to be visited are from a tourist standpoint. The week's tour will enable them to thoroughly familiarize themselves with the tourist resorts and surroundings reached by the G.T.R. in Ontario.

**Great Northern (U.S.A.)**—It is said this Co., or persons allied with it, have acquired the Duluth, Mississippi, & Northern Ry., which starts from Swan River, on the Eastern Minnesota Division of the G.N.R., 93 miles west of Duluth, running northeasterly to Hibbing, 37 miles, & it is rumored that it is the intention to extend it some 80 miles, to Koochiching, which is situated on the Minnesota side of Rainy River, opposite Fort Frances on the Canadian side. From Koochiching connection could easily be made with the Ontario & Rainy River Ry., now under construction; & it is said that if the scheme is carried out an attempt will be made to secure running power over the O. & R.R. Ry. & the Manitoba & Southeastern to Winnipeg.



### WHAT WE THINK.

—For the information of the officials of the Kootenay Ry. & Navigation Co. who have their headquarters in London, Eng., we may state that Toronto is in Canada. The tired feeling that comes over us when we receive from officials of a Canadian railway, mail matter addressed "Toronto, U.S.A.," is beyond description.

—Our esteemed contemporary, the Railroad Gazette, of New York, informs its readers that application has been made to "the Railway Committee of the Primitive Council" at Ottawa for running powers on the Crow's Nest Pass Ry. for the Nelson & Bedlington. What have Mr. Blair and his colleagues done that they should be thus libelled?

—The Minister of Railways will do well to give careful consideration to the unanimous demand of the Nova Scotia boards of trade for improved passenger service in Cape Breton. The scenic beauties & splendid climate of that district have brought it to the front ranks as a summer resort, & it is every year becoming more popular, especially with visitors from the United States. It is also increasing in business importance, & requires a faster service than has been, which should be provided for the summer season, if not for the year round.

—As anticipated in our March issue the action of the Dominion Government in regard to the construction of a telegraph line to the Yukon Territory has resulted in a claim for compensation from one of the chartered companies. We have no objection to the Government building the line, though we think it could have been done more economically by a company, but the two charters to companies should not have been granted if the Government had any intention of building. If the decision to build by the Government was arrived at after the granting of the charters the companies should have been notified immediately to prevent them from incurring liabilities. Mr. Roche, M.P. for Kerry in the Imperial Parliament, recently stated that the company in which he is interested gave large orders for materials & supplies, & it is understood the company will ask compensation. We see no reason why it should not succeed in its claim if justice is done.

—The Rossland, B. C., Miner accuses the C.P.R. Co. of laying old rails on the Crow's Nest Pass line. As a matter of fact, better rails were put down than were required by the contract between the Government & the Co. That contract called for steel rails of a minimum weight of 56 lbs. a lineal yard for the whole length of the line. As will be seen by reference to the report of the Government Superintending Engineer, on pg. 114 of our April issue, rails of that weight were only used on the prairie sections & on the river bottoms,

where tangents & light curvature occur, the balance of the line being laid with a percentage of 60 lb. rails & fully 26% of the whole line having 73 lb. rails. The C.P.R. Co.'s record is of itself sufficient answer to any charge of scamping work. Even the Government standard is not good enough for it, as evidenced by the fact that when the Co. took over the B.C. section of the main line between Savona's Ferry & Emory's Bar it was found to be so much below the Co.'s standard that after most exhaustive arbitration proceedings the Co. was awarded \$579,255.20 to be spent in bringing it up to the C.P.R. standard. There is no doubt whatever that when the Crow's Nest line is fully completed it will be found just as good as the main line, but as Sir Wm. VanHorne has pointed out the management knows better than to put its heaviest rails on new earthwork, where they would be damaged during construction & early operation. On a great part of the Crow's Nest line the heavy rails are already laid, & the rest will follow in due course, & as soon as it is deemed wise to put them down. If the Rossland Miner wants to make points against the C.P.R. it will have to select some subject other than the quality of the Co.'s construction work, which is above criticism.

The Ontario & Rainy River Contracting & Supply Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$80,000, & head office at Port Arthur. The incorporators are, J. Conmee, A. W. Thompson, A. J. McComber, Mrs. Conmee & Mrs. Whalen, the first three named being the first directors. The objects are to carry on the business of contractors for the construction of railways & other public works, for the sinking of shafts & for other work in connection with the development of mines, & to manufacture & sell timber, ties, lumber, pulpwood & cordwood.

### Dominion Notices to Mariners.

The Dept. of Marine has issued the following notices:—

No. 11, Apl. 18. British Columbia. 1. Change in the character of Sisters Rocks light. 2. Intervals between Prospect Point fog bell strokes.

No. 12, Apl. 20. Ontario. 1. Change in Parry Sound buoyage. United States inland waters. 2. Niagara river range rear light station. 3. Cleveland west breakwater light station. 4. Light on Carlton Island.

No. 13, Apl. 26. British Columbia. 1. Amended description of shoal off Cole Bay. 2. Possible uncharted dangers off the west coast of Vancouver Island. 3. Beacons in Baynes Sound destroyed. Empire of Japan. 4. Murotozaki lighthouse. 5. Taitatate lighthouse.

No. 14, Apl. 26. Ontario. Georgian Bay & North Channel pilot, 1899.

No. 15, Apl. 27. British Columbia. Garry Point light temporarily discontinued.

No. 16, Apl. 27. Quebec. Change in Platon beacons. New range lights.

No. 17, May 1, British Columbia. 1, Garry Point light again in operation. 2, Note on the use of the red sectors in Fiddle Reef light.

No. 18, May 10, Nova Scotia. 1, Color of Peases' Island fairway bell buoy. 2, Change of name of Hobson's Nose lighthouse. U.S.A. Maine. 3, Change in characteristics of fog signals.

No. 19, May 2, Nova Scotia. Government rifle ranges, McNab's Island.

No. 20, May 4, Ontario. 1, Burlington Bay inner light. 2, Discontinuance of Michael Point light. 3, U.S.A. The Great Lakes-Fort Gratiot range light station. 4, St. Mary's Falls canal, westerly entrance. North pier light discontinued. Vidal Shoal channel range lights. South pier light.

No. 21, May 5, Nova Scotia. 1, Harbor light at Port Medway, Quebec. 2, The Barre à Boulard range lights in operation.

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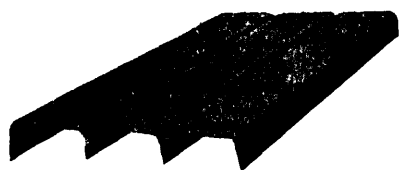
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**Montreal**

No. 22, May 10, Quebec. 1, Changes in buoyage between Quebec and Portneuf. 2, Numbering of ship channel buoys.

No. 23, May 12, Ontario. 1, Beacons in entrance to Midland. 2, Lights at Point Edward discontinued.

No. 24, May 13, Quebec. Changes in buoyages between Portneuf & Montreal.

No. 25, May 13, Prince Edward Island. West Point whistling buoy not in position.



BURT VAN HORNE.

No. 26, May 15, British Columbia. 1, Buoy off Johnstone Reef. 2, Buoy off Governor Rock replaced. 3, Buoy off Indian Reef improved.

No. 27, May 15, Nova Scotia. Soundings off the South coast of Nova Scotia.

No. 28, May 16, Ontario. Improvements in Murray Canal entrance lights.

### Steamers for Newfoundland Service.

There are at present building in A. & J. Inglis' yard at Glasgow, 7 steamers for R. G. Reid, proprietor of the Newfoundland Ry., for service between that island & the Labrador coast, & also to maintain a coasting service around the island of Newfoundland. The vessels are handsome looking models, with fine lines, having clipper stems & top-galant forecastles, & every provision has been made for the comfort & convenience of passengers. A complete installation of electric light, including a powerful search-light, will be fitted, & special attention has been paid to the heating of dining-saloon & all staterooms. A complete system of steam radiators, with copper piping for supply & exhaust steam, is being fitted throughout the vessels.

In the Labrador vessel accommodation is provided for 42 1st class passengers amidships, a very commodious cabin being set apart for ladies, & all lavatory conveniences are of the latest & most approved type. Sleeping accommodation is provided for 75 2nd class passengers forward of 1st class rooms, with independent lavatories, etc., all complete; while in the afterpart of the ship a cosy smoking-room is furnished with all requisites. The officers' & engineers' cabins are alongside the machinery casing, all comfortably fitted up. The dining-saloon is situated on the main deck amidships & is handsomely panelled & fitted, a feature of the design being the arrangement of small side tables for the convenience of passengers dining in small parties. In the vessels which are intended for the coasting trade around Newfoundland the accommodation is on the same lines, but of less extent, but all the rooms are fitted with the same comforts & in the same style.

Special attention has been paid to the extra strengthening of all these steamers, in view of the conditions of their service, & a complete system of water ballast tanks in a cellu-

lar double bottom is fitted in all, while the Labrador vessel has in addition peak tanks for trimming purposes. Steam steering gear of the most approved type is fitted in all the steamers, & steam winches for the speedy handling of cargo. The upholstery-work in dining-saloon & all staterooms is of the most approved designs & of best quality. The vessels will be rigged as schooners with 2 pole masts & everything required about hull or machinery will be of the best description. The engines & boilers are being constructed by the builders, & the vessels will fully maintain the reputation for speed, comfort & efficiency that the steamship Bruce has obtained for herself. The Bruce runs between Port-aux-Basques & Sydney, N.S., & was also built by A. & J. Inglis, Glasgow.

### Improvements in Murray Canal Lights.

Official notice is given that the Department of Railways & Canals has improved the character of the lights at the east & west entrances of the Murray Canal, adjoining the Bay of Quinte and Presqu'ile Bay, Ont. The former lights were fixed red lights shown from small lanterns standing on brown pyramidal open frames. The new lights which are now in operation are fixed white lights elevated 27 ft. above the level of the water & visible 5 miles from all points of approach. The illuminating apparatus consists of large pressed glass lenses. The light buildings, which stand on the same sites as the old frameworks, viz: 30 ft. from each end of the north pier of the canal, are enclosed hexagonal galvanized iron cabins, with cylindrical columns surmounted by the lenses rising from the apexes of the roofs. Each is 18 ft. high, from the deck of the pier to the lens, & is painted white. By a very ingenious contrivance the lamp is elevated to top of signal from inside, so that it comes exactly in proper focus for the fresnel lens, which produces a powerful & brilliant light, the operator not requiring to go outside at all, the hexagon house at base forming a perfect protection from the weather as well as a convenient storeroom for oil, lamp chimneys, &c. The house & tube through which the lamp is conducted to the lens are made of heavy galvanized steel, & are practically indestructible. An iron ladder is provided on the outside to enable the attendant to clean the lens, which is 12 ins. in diameter, made of best flint glass in 3 sections. Mariners will appreciate the great advantage of the new lights, as the entrance to the Canal will be thoroughly marked, & if the red lights on the bridge are in range a straight course for the entrance is assured. The manufacturers & patentees are Noah L. Piper & Son, Toronto.

### ELECTRIC RAILWAYS.

#### International Traction Company.

The consolidation of the electric railways of Buffalo, Lockport & Niagara Falls, N.Y., & Niagara Falls, Ont., has been completed under this title, the Co. being organized under the laws of New Jersey. B. Franklin has been elected President, & C. McVeagh, Secretary & Treasurer. It is the belief that these officers are only temporary, & that in the course of time W. C. Ely will become President of the Co., in fact, all signs point to this. The merging of the various companies now controlled by the syndicate under the new organization is gradually going on. In all, 16 companies are concerned, with a total of about 318 miles of track. It is the belief of the men who have invested in the new deal that the various lines can be operated by the new organization with much greater economy than has been the experience of the several companies that formerly operated them, &

that in this way a great saving will be effected. One of the first steps taken by the new syndicate was to reorganize the Buffalo Railway Co., which was done at a meeting in the office of J. P. Morgan & Co., New York, when an election of officers took place with this result: President, W. C. Ely; Vice-President, D. S. Lamont; General Manager, B. Van Horn; Sec.-Treas., R. F. Rankine.

The Niagara Falls Park & River Ry. was transferred to the Co. at a meeting held in Toronto, April 18, when the following officers were elected: President, W. C. Ely, Buffalo; Vice-President, W. B. Rankine, New York; General Manager, B. Van Horn, Buffalo; other directors, E. B. Osler, T. G. Blackstock, W. H. Beatty, Toronto; W. Hendrie, Hamilton; Sec.-Treas., R. F. Rankine. We have been officially informed that it is understood none of the Canadian employes will be removed, but there is likely to be some rearrangement & changes in operation.

The financial strength of the new syndicate is apparent from a review of the names of some of the men. C. H. Coster is of J. P. Morgan & Co., of New York. T. De Witt Cuyler comes from Philadelphia. D. S. Lamont was Secretary of War under President Cleveland. F. L. Stetson is Vice-President of the Niagara Falls Power Co., & W. B. Rankine is Secretary of the same Co. C. C. Cuyler is of the firm of Cuyler, Morgan & Co., of New York. W. C. Ely is making a reputation as a great electric road financier, & is a man of wealth & ability; to him is given all credit for putting the big deal through successfully. R. F. Rankine, who is Secretary & Treasurer of the Co., is a brother of W. B. Rankine. His assistant will be J. S. Beacher, who held a position under the old Co.

It is said the Co. proposes to spend \$500,000 in improvements during the coming summer & will make changes in the schedule & service wherever they will be for the advantage or convenience of passengers. Currency was recently given to a report that important extensions would be made to the Canadian part of the system, including a line from Fort Erie to Point Albino, & another line from Fort Erie to Chippewa, also a branch from Fort Erie to the race track, & to the grove at Erie Beach. Mr. Van Horn recently informed us that the Co. was not contemplating building any more lines on the Canadian side.

J. C. Brewster, Superintendent of the Niagara Falls & Suspension Bridge Ry. since 1891, has resigned. Under his management



W. CARYL ELY.

the road has been changed from a horse car line to an electric railroad. This Co. is included in the absorption by the International Traction Co., & for the present C. K. Marshall will manage this property in connection with the Buffalo & Niagara Falls Ry.

We are indebted to the Street Railway Review for the photographs of Messrs. Ely & Van Horn, given on this page.

**The Lines in Western Canada.**

**B. C. Electric Ry. Co.'s earnings and expenses for March :**

	1897-8.	1898-9.	Increase or Decrease.
<b>GROSS EARNINGS.</b>			
Railway—Vancouver branch	\$4,920	\$6,003	\$1,083+
Victoria "	6,734	6,475	257-
Westminster "	6,438	6,402	36-
Lighting—Vancouver	8,240	9,875	1,635+
Victoria "	4,399	5,259	860+
<b>Gross earnings</b>	<b>\$30,729</b>	<b>\$34,014</b>	<b>\$3,285+</b>
<b>Working expenses</b>	<b>\$20,336</b>	<b>\$22,376</b>	<b>\$2,040+</b>
<b>Net profits</b>	<b>\$10,393</b>	<b>\$11,638</b>	<b>\$1,245+</b>

**Aggregate Gross Earnings,**  
April 1 to March 31 ..... \$305,152 \$410,099 \$104,947+

**Aggregate Net Profit, April 1 to March 31** ..... \$97,400 \$159,734 \$62,334+  
+ Increase. - Decrease.

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

The directors have declared a dividend at the rate of 5% per annum on the preference shares. The profits for the year ended Mar. 31, 1899, after deducting fixed charges & the preference dividend, amount, subject to final audit, to £16,283, & the directors recommend a dividend on the ordinary shares of 4% per annum free of income tax, absorbing £8,275, carrying £8,008 to special & general reserves.

The Co.'s offices in Vancouver have been moved to the new terminal buildings, corner of Hastings & Carrall streets.

The Co.'s tracks are being connected with the C.P.R. siding at the Co.'s Vancouver terminal building, so that freight cars may be transferred to the Vancouver-Westminster electric line.

Contracts were recently let for the two miles of track mentioned in our Apl. issue, pg. 118. Orders have been placed for 2 closed & 2 open motor cars.

**Nelson.**—W. A. Macdonald, solicitor, acting for the British Electric Traction Co., has asked for a 35 years' franchise for an electric railway in Nelson. It is thought the Council will grant the application, but will not agree to exemption from taxation for more than 10 years, while a complete transfer system & cheap rates for school children is likely to be insisted on. If the project goes through, the first line will probably be built from the C.P.R. station along Baker st. to Bogustown, with a branch up Stanley st. 2 miles in all. Ultimately another line will probably be built along Vernon st., forming a belt line that will include Baker st., the cars running one direction on one street & the opposite direction on the other.

**The Winnipeg Electric St. Ry.** has placed an order for two "1,000" 2-motor equipments.

The Co. is experimenting with fenders. R. P. Roblin, M.P.P., wants the Legislature to give the City of Winnipeg power to decide whether the cars shall run on Sunday. Now it is prohibited by a general act.

**Maritime Provinces Electric Lines.**

**Bedford Electric Co.**—The prospects for the speedy completion of the electric tramway from Halifax to Bedford & along the shore are said to be very good. A Halifax paper reports that the work will go ahead this summer, & that an engineer from England will be there shortly in connection with the matter. The work of building the tramways, as well as the proposed pulp mill at St. Margaret's Bay will, it is said, be carried on simultaneously, & may begin about the same time.

**The Halifax Electric Tramway Co.** recently paid a quarterly dividend at the rate of 5% per annum.

**Ontario Electric Railways.**

**The Brantford St. Ry. Co.** is installing six "800" railways motors.

**Cornwall Electric St. Ry. Co.**—In the case of Kirkpatrick vs. this Co., the Co. has appealed from the judgment of Chief Justice Armour, in favor of plaintiffs in a mortgage action for foreclosure & payment of \$100,000, upon the grounds that the mortgage deed contained no covenant for payment & no acceleration clause; that the mortgage could not be extended to property other than that which it specifically included; that the defendant had no power to hypothecate any property except its real & personal property, & could not, as it professed to do, charge its franchises & income.

**Goderich to Kincardine.**—An electric line between these towns is talked of. J. J. Wright, of the Point Farm, Goderich, is interesting himself in the proposal.

**Guelph.**—G. Sleeman, owner of the street railway, says he has been approached by the Cataract Power Co. for an option on his line.

The Board of Trade has been discussing the building of electric lines to Hespeler, Arthur & Erin. The first-mentioned line is the most favored. It would run via Puslinch Lake & connect with the Galt, Preston & Hespeler St. Ry. A local paper gives this estimate of cost :

11 miles grading	\$ 6,000
20,000 ties	5,000
1,000 tons rails	27,000
Anchor bars, poles & spikes	4,000
Laying track	1,000
1,000 posts	1,500
1,000 post holes	500
11 miles of wiring	6,000
4 cars	8,000
	<b>\$59,000</b>

This does not include power, which could probably be obtained from the Guelph St. Ry., nor right of way. It is thought \$25,000 capital would be enough to raise, & that the line could be bonded for the balance. Guelph people do not seem to favor the idea of an electric

line to Hamilton, thinking it would take trade away from them.

**The Hamilton, Ancaster & Brantford Electric Ry. Co.'s** annual meeting, fixed for May 3, was postponed to May 20, to permit of the continuance of negotiations with New Yorkers in regard to financing the enterprise.

**Hamilton Projects.**—J. Patterson, of Hamilton, has written Col. Higinbotham, of Guelph, as follows:—"We propose to build a double track line from Hamilton to the brow of the mountain, near Clappison's Corners. We will cross the G.T.R. & Desjardines Canals about 40 ft. higher than the present G.T.R. track in order to be able to ascend the mountain easier. After getting on top of the hill one branch will go through Millgrove in, as nearly as possible, a straight line to Guelph. The other one will go over towards Greensville & Bullock's Corners, & from there in a straight a line as possible through Galt & Preston to Berlin & Waterloo. We do not know about the extension of which Dr. Burns speaks to Mount Forest. The present ideas of our Co. are only to build to Guelph, but if we can see any business at all we would continue up to Fergus & Elora. This we think is quite probable. We expect the line to be built very much in the style of a first-class railway, & not in the manner in which many electric roads are built. If it is properly constructed, as we propose, there will be no difficulty in hauling freight, & in running an hourly service between Hamilton & Guelph, making the distance in three-quarters of an hour. At Hamilton we propose erecting a very large cold storage warehouse, & connecting all the electric roads with it, as well as the G.T.R. & C.P.R. We propose by this to establish connection with England. Refrigerator cars will be run, connecting with fast steamers, & a very large business can be worked up in this direction. We also think it will make a very central distribution point for the fruit trade.

T. E. Hillman has made a survey for the line between Hamilton & Guelph.

In our last issue, pg. 119, we gave particulars of the plan to secure control of the Hamilton St. Ry. & the electric lines running from Hamilton, by J. Patterson, for the Cataract Power Co. The deal includes the Hamilton St. Ry., the Hamilton & Dundas Electric Ry.,

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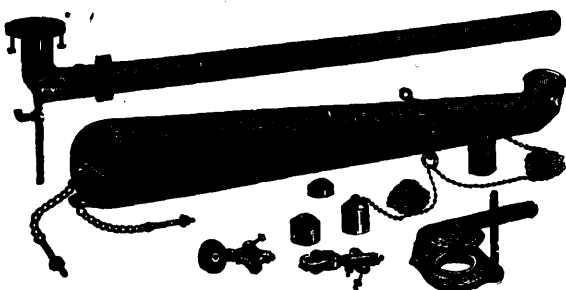
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& the Hamilton Radial Electric R., also the Hamilton & Caledonia, & the Hamilton & Guelph projected lines, while the Galt, Preston & Hespeler Electric St. Ry. is also mentioned in connection with the deal, which with completed & projected lines would give a system of about 150 miles. The purchase of the Hamilton, Grimsby & Beamsville Electric Ry. has not been mentioned, & it may be contemplated to build another line to Niagara Falls. The capital stock of the Hamilton St. Ry. is \$205,000, with a bonded indebtedness of \$500,000. It was recently announced that \$103,000 of the stock had been secured at par, but some of the persons who are alleged to have given options have not transferred the stock, & proceedings have been taken against one of them, B. E. Charlton, to compel delivery of 179 \$50 shares. The idea is to operate the lines with power from DeCew Falls.

The Hamilton St. Ry. Co.'s receipts for the quarter ended Mar. 31, were \$26,083.36 against \$23,403.63 for corresponding period in 1898. The percentage paid the city for the 1st quarter of this year was \$1,565, & mileage \$1,854.96.

Threatened difficulty between the Co., the city & the employes has been averted by the Co. agreeing to work the men not more than 60 hours a week, & to pay not less than 15c. an hour. The Co. employs 70 regular & 18 spare men, & it is said they average \$450 a year each.

Kingston Electric St. Ry.—B. W. Folger says the Co. will extend its tracks to Cataract this summer.

London St. Ry. — Gross earnings for Mar. \$8,911.46, an increase of \$1,124.14 over Mar., '98. Gross earnings for Apl., \$7,760.89, an increase of \$181.48 over Apl., '98.

The employes have asked Vice-President Smallman to arrange a meeting, at which their alleged grievances may be discussed, & Mr. Smallman has replied, asking the men to send the directors a written statement of grievances. The men hold their case is set forth in the copy of the new agreement which they wish the Co. to sign; that they have received no answer from the Co. regarding it, & that they wish to discuss with the directors their reasons why the agreement should be made.

In the case of Fraser vs. the Co., the Co. recently appealed from the judgment of the Divisional Court (29 O. R., 411) sustaining a verdict for plaintiff in an action for negligence, while reducing the amount of the verdict from \$3,300 to \$2,000, or directing a new trial if the plaintiff should refuse to consent to the reduction. The plaintiff, while standing on the foot-board of one of the defendant's cars, was struck by one of the side-posts of a bridge over which the car was passing, the space between the post & the side of the car being only 14 ins. The Court below held that an invitation to the plaintiff to stand on the foot-board must be implied, & while there he was entitled to be carried safely, which the improper construction of the bridge prevented. The plaintiff has also appealed from the judgment of the Divisional Court reducing the amount of the verdict. Defendant's appeal has been dismissed. Judgment has been reserved as to plaintiff's cross appeal.

The Ottawa Electric Ry. Co. will extend its track 2 miles to Rockliffe rifle range, if the Dominion Government will give satisfactory assistance.

This Co.'s bill, now before Parliament, has occupied a large amount of time both in committee & in the Commons. The principal fight has been over the proposal to operate on Sundays. An early statute affecting the Co. forbids this. It seems probable this provision will be repealed, & that the Co. will be left subject to Ontario legislation in this respect. The Co. is also asking power to build

through the townships of Hintonburg & Nepean.

The Peterboro & Ashburnham St. Ry. Co. not being able to extend & improve its line so as to make it a profitable undertaking, is said to be desirous of selling it to the town or of securing some assistance from the corporation.

Port Arthur Electric Ry.—The Port Arthur Commissioners are complying with the demands of W. Phillips, of Niagara Falls, who was sent by the Ontario Government to inspect the line to Fort William, & are putting in a heavier trolley wire and other improvements.

St. Thomas St. Ry.—This Co. is putting in a signal system. According to the St. Thomas Times the grades, curves & single track require a signal which will operate positively & hold the cars on switches until the track between switches is clear. This system is a manual one, & this method has the advantage of making the conductor responsible for maintaining the right of way. The system is operated as follows: A conductor before entering a section between switches pushes a switch rod which sets a signal at the turnout ahead, a magnet operating a red semaphore & incandescent lights behind a red disk. This makes the signal visible both night & day. This semaphore stays set until he reaches the switch ahead; then the conductor opens the circuit which sets that track behind him at safety. If on reaching the switch he finds the semaphore is set to danger, he has to wait on the switch until the car passes. Conductors only set semaphores ahead of them & release them behind. The car is controlled by the semaphores operated by the conductors of cars passing it at the switches, & the signal systems for cars operating in opposite direction are entirely independent. In each signal box there is also a pilot lamp which is extinguished when the section of track is opened & illuminated when the section is closed. This gives the conductor knowledge that his signals have properly operated at the distant switch. As the first signal set gives the right of way, there is no meeting between switches. It is operated from the trolley current & will be the first system of the kind installed. Companies heretofore which operated single track roads have been entirely dependent on the telephone, which, at its best, for this class of work has been an annoyance and delay. With this new system a conductor can tell the moment he reaches a switch if his meeting car is coming & if the track ahead of him is clear. If it is clear he immediately protects his own car by setting a signal at the switch ahead & goes on. In this way if one car is delayed the others can continue to run on time.

The Co. has added 2 open cars to its equipment.

Smith's Falls to Gananoque.—The Ontario Legislature, at its last session, incorporated a Co. to build an electric line between these points by way of Merrickville.

Toronto Railway.—The gross earnings are:

	1899.	1898.	Increase.
Jan. ....	\$95,600.12	\$86,502.36	\$9,187.76
Feb. ....	91,860.30	82,402.19	9,458.11
Mar. ....	103,234.88	92,318.42	10,916.46
April. ....	95,212.37	86,898.83	8,313.54
	\$385,997.67	\$348,121.80	\$37,875.87

A city by-law provides that the Co. shall, during Nov., Dec., Jan., Feb. and Mar., maintain vestibules upon its cars for the protection from inclemencies of weather of those who have charge of them. The Co. placed vestibules upon the front ends of cars, but not upon the rear, contending that that was all that was required by the law. As previously stated in these columns, an action was brought against the Co. before a police magistrate to compel the placing of vestibules

upon the rear ends, and judgment was rendered against the Co., imposing a fine & costs for the delinquency. An appeal was taken to the Divisional Court to set aside the judgment, & Judge Macdougall has sustained the lower court, dismissing the appeal. By this decision the Co., if sustained on further appeal, will be obliged to provide all cars with closed vestibules on the rear end as well as in the front during the months mentioned in the by-law. The Judge said the question he had been required to decide was whether the defendant, according to the by-law, was bound to provide a vestibule for each end of the cars, & to protect, by a vestibule, the conductor as well as the motorman. Evidence as to the convenience of vestibules on the rear end has been offered, but it was beside the mark as far as his jurisdiction was concerned. Referring to the contention that the Toronto Ry. was a Dominion concern, & in consequence not bound to submit to any other authority than the Dominion Government, he said that the objection could not be sustained. As to the merits of the case, he held that the language of the by-law forbade the operation by the Co. of any street car unless it was supplied with proper & sufficient vestibules. That meant that there must be 2 vestibules, not "a vestibule." The defendant had argued that the words motorman & other persons in charge of the car while engaged in operating the car did not include the conductor. He was of the opinion that the conductor was in charge of the car within the ordinary & common-sense meaning of the expression, & had it been meant otherwise the by-law would read to protect "the motorman in charge of the car." The conductor gave the signals by which the car started and stopped, & was consequently the person in charge of the car, the duties of the motorman being much the same as those of a locomotive driver on a steam railway. He thought that without a doubt both the conductor & motorman were engaged in operating the cars, and in support of that quoted a judgment of Chancellor Boyd. The conclusion he arrived at was that the meaning & interpretation of the by-law was plain, & that the conviction should be affirmed.

The Co. is experimenting with a device to relieve the overcrowding. A car has been supplied with 2 rows of automatic seats, which can be folded over the ordinary seats when not in use, & which do not in any way interfere with the comfort of the passengers. By the new arrangement, the seating capacity of the car will be almost doubled. The new rows of seats run the full length of the car & are raised higher than the ordinary seats.

Superintendent Gunn was recently given a complimentary dinner by the roadmasters.

### Quebec Electric Railways.

The Hull Electric Co. has paid the C.P.R. \$100,000, the purchase price of the Aylmer branch, from Hull to Aylmer, Que., 7.5 miles.

The Chateaugay & Northern Ry. Co. is asking Parliament for power to construct & operate a railway from any point on the boundary between the Province of Quebec & the State of New York, thence to a point in Soulanges County, to connect with the Montreal Island Belt Line Ry., & follow the same route to the Island of Montreal, thence north-easterly across the Island of Montreal, through Hochelaga, in rear of the mountain, to a point on the Great Northern Ry. in the County of Joliette, passing near L'Assomption, to Joliette. The Co. also wants permission to construct & operate an extension of its main line to & through Berthier, & to construct & operate by electricity circuit lines of railway in towns, villages & parishes along its main line & branches.

**The Montreal Island Belt Line Ry. Co.** is asking Parliament to amend its amended Act of incorporation, to alter & change its bonding sections, to increase its bonding powers, to amend and extend its powers concerning branch lines, to change its corporate name, to purchase or otherwise acquire, in whole or part, the railway, charter rights, franchises & privileges of the Chateaugay & Northern Ry., to ratify & confirm agreements with other companies, &c., & to further amend its charter powers.

Judge Burbridge has granted an application to make orders of the Exchequer Court two orders of the Railway Committee of the Privy Council which authorize this Co. to build a branch line from its main line along Davidson St., Montreal, to the Montreal Cotton Mills Co.'s factory. The application of the Co. for permission to cross the Montreal St. Ry. tracks on St. Catherine & Notre Dame Sts., is still before the Railway Committee of the Privy Council. The M.S.R. Co. is stoutly opposing the M.I.B.L.R. Co.'s attempt to run cars within the city limits. The latter Co. says that if it gets the right to run into the city it will double-track its line through to Bout de L'Isle.

The Co. has purchased the str. Mansfield, which has been running between Ottawa & Gatineau Point, & will use her as a ferry between the end of its line at Bout de L'Isle & Charlemagne & Repentigny, on the opposite side of the river.

The Co. will run the Bout de L'Isle Hotel this year under the management of R. Houle.

**The Montreal Park & Island Ry.** has made many improvements recently. A number of new cars have been added, & all the summer cars have been remodelled. The equipment throughout is in the best & most modern condition.

**Montreal St. Ry.**—The gross earnings are:

	1898-9.	1897-8.	Increase.
Oct.....	\$133,419.69	\$116,093.09	\$17,326.60
Nov.....	125,126 10	110,628.98	14,427.12
Dec.....	127,678.00	113,029.33	14,648.67
Jan.....	125,276.04	110,155.96	15,120.08
Feb.....	113,238.02	102,425.99	11,412.03
Mar.....	123,754.11	114,476.98	9,277.13
April.....	130,405.96	110,619.27	19,786.69
	\$879,497.92	\$777,499.60	\$101,998.32

On May 1 the Co. paid a dividend of 2½% for the quarter ended Mar. 31.

In 1894 the Co. entered into an agreement with the City Corporation, under which the latter was to remove snow from the streets occupied by the Co., the Co. to pay \$1,650 a

year per mile of street, which was estimated as half the cost. For the 5 years, 1893-4 to 1897-8, the total cost of removing snow was \$393,315.68, of which the Co. paid \$255,360.71, the City paying only \$137,954.94. The management contends that the City has failed in its obligations, not having expended sufficient to effectually remove the snow, & that the Co.'s operations have been hampered thereby, rendering it impossible to furnish a satisfactory service.

The judgment of the Superior Court in the case of Leipschitz vs. the Co., has been reversed by the Court of Appeal. The plaintiff claimed the recovery of \$500, amount of 2 cheques signed by him & delivered to the Co. under the following circumstances: A party named Alder having bought from the Co. for \$500 a quantity of old material which it periodically sells, subsequently applied for the purchase of another lot, but his demand was refused on the ground that the previous purchase had not yet been paid for. Thereupon Alder went to Leipschitz & got 2 cheques from him, one for \$400, to the order of the Co., & the other for \$100, payable to bearer, for the intended purchase of the old iron by Leipschitz. However, when Alder paid in the two cheques the proceeds were applied to Alder's own previous debt, & when Leipschitz came to get the material he found it had been sold to a third party. The Court below dismissed the action, but the Court of Appeal reversed that judgment & held that Leipschitz was entitled to recover the amount of his cheques, as in accepting them the Co. had placed itself in the position of trustee towards him; it was obliged to render him an account, & had no reason to apply the money to the payment of his agent's debt.

The views on page 155 show the improved summer cars of this Co., which have been specially designed to meet the requirements of a northern climate, where the mornings & evenings are cool, & the middle of the day excessively hot. The cars are partly closed with wooden sheeting on the devil strip side, & are equipped with curtains which, when closed, make them absolutely weatherproof. A considerable number of these cars are already running, & it is expected to have 100 in operation by the middle of June. They are meeting with entire approbation by the public.

The Côte des Neiges line has been built to Pine Avenue, within 1,800 ft. of the summit of the hill, to which point the City is endeavoring to get the Co. to continue it.

A large amount of track is being relaid, the ordinary rail being replaced by 83 lbs. girder rails.

The Co.'s shops will be transferred from Coté street to Hochelaga in a few months, when the new buildings are completed there. When the Coté street shops are abandoned it is intended to use them for car storing purposes.

As soon as arrangements with Verdun municipality are made by the council of that place, the Co. intends completing its line from the city limits to Rielle avenue.

**Quebec Bridge.**—The project of connecting the mainland with the Island of Orleans by a bridge is being seriously agitated. The proposition is to erect a cantilever bridge from the Island to the Beauport shore for vehicles, foot passengers & electric cars. The shoals run out so far both from the Island & from the Côte de Beaupre, that the distance to be bridged would not be unusually great. At certain seasons of the year, the residents of the Island are now perfectly isolated from the rest of the world. Constant, easy & rapid communication between the Island & the mainland, would, it is thought, quickly double the value of property on the Island, while the circuit of it by means of an electric railway would make it a fashionable summer resort.

**The Quebec St. Ry. Co.** has gone into liquidation, its property having been acquired by the Quebec, Montmorency & Charlevoix Ry. Co.

### Openings for Electric Lines.

J. C. Langelier, in recently reporting to the Quebec Woods & Forests Department on the great field for the manufacture of pulp & paper in the Lake St. John district, said:—"There is probably no other place where electric railways could be built under such exceptionally advantageous conditions. In addition to the fact that the ground is level & building timber right on the spot, there would be all along the line, at comparatively short intervals, water powers capable of giving an unlimited supply of electricity. Starting from the west there are the Mistassini falls, & a mile further those of the Mistassibi; 9 or 10 miles further to the east the White falls on the Little Peribonca; 9 or 10 miles still further east, the falls of the Great Peribonca. From these falls to those of the Little Discharge is less than 20 miles. At the same distance from the Little Discharge

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**TORONTO.**

### Canada Southern Railway Company.

The annual general meeting of the Canada Southern Railway Company for the election of directors & other general purposes, will be held on Wednesday, the 7th day of June, 1899, at the hour of eleven o'clock in the forenoon, at the Company's head office, in the City of St. Thomas.

NICOL KINGSMILL,  
Secretary C. S. Ry. Co.

May 1st, 1899.

### Sarnia, Chatham & Erie Railway Company.

The annual general meeting of the Sarnia, Chatham & Erie Railway Company, for the election of directors & other general purposes, will be held on Wednesday, the 7th day of June, 1899, at the hour of eleven o'clock in the forenoon, at the offices of the Canada Southern Railway Company, in the City of St. Thomas.

NICOL KINGSMILL,  
Secretary, S. C. & E. Ry. Co.

April 20th, 1899.

### Leamington & St. Clair Railway Company.

The annual general meeting of the Leamington & St. Clair Railway Company, for the election of directors & other general purposes, will be held on Wednesday, the 7th day of June, 1899, at the hour of eleven o'clock in the forenoon, at the offices of the Canada Southern Railway Company, in the City of St. Thomas.

NICOL KINGSMILL,  
Secretary, L. & St. C. Ry. Co.

April 20th, 1899.

### Niagara River Bridge Company.

The annual general meeting of the Niagara River Bridge Company, for the election of directors and other general purposes, will be held on Wednesday, the 7th day of June, 1899, at the hour of eleven o'clock in the forenoon, at the offices of the Canada Southern Railway Company, in the City of St. Thomas, Ontario.

NICOL KINGSMILL,  
Secretary.

Toronto, 20th April, 1899.

### Canada & Michigan Bridge & Tunnel Company.

The annual general meeting of the Canada & Michigan Bridge & Tunnel Company, for the election of directors & other general purposes, will be held on Thursday, the 8th day of June, 1899, at the hour of one o'clock in the afternoon, at the Crawford House, in the City of Windsor.

NICOL KINGSMILL,  
Secretary, C. & M. B. & T. Co.

20th April, 1899.

### Niagara Grand Island Bridge Company.

The annual general meeting of the Niagara Grand Island Bridge Company, for the election of directors & other general purposes, will be held on Wednesday, the seventh day of June, 1899, at the hour of eleven o'clock in the forenoon, at the Company's head office in the City of St. Thomas.

NICOL KINGSMILL,  
Secretary, N.G.I.B. Co.

20th April, 1899.



SUMMER CAR, MONTREAL STREET RAILWAY.

are the falls of the au Sable river, 1249 ft. high. Six miles further & 12 miles from St. Alphonse is the Chicoutimi river, which could also supply power for producing electricity.

"It would be equally easy to establish an electric line between Mistassini & Roberval, the western terminus of the Quebec & Lake St. John Ry. From Mistassini to the Chamouchouan, there is barely more than 16 miles, & about midway the Tecouapee river could supply water-powers capable of providing an abundance of electric power.

"On the Chamouchouan the Bear falls could be utilized for the same purpose. From the Bear falls to Roberval, about 30 miles, the Salmon, Iroquois & Ouaitchouaniche rivers, nearly at equal distance from one another, also have waterpowers capable of supplying the electric power required for a tramway.

"The construction of an electric tramway between Montreal & Roberval, about 250 miles, could be effected under the most favorable conditions. The summit to be got over or the difference of level between the two places is about 725 ft. There would only be 2 bridges at all costly, those of the rivers des Prairies & St. Maurice.

"From Bout de l'Isle to the river Mastigouche, about 50 miles, there would be only the water-power obtained by damming the river L'Assomption for producing electricity by hydraulic power; but the Mastigouche, whose rapids & cascades could develop considerable motive power, there are the falls of the river a la Chienne, one 200 ft., the other 75 ft. high. The rapids of the Pabelognang & of the Vermillion, whose course is nothing but a series of cascades & falls; beyond the St. Maurice are the falls of the river Trenche, 6 miles from its mouth; those of the river Croche, & those of the river Ouaitchouaniche, which fall into Lake St. John at Roberval village. Finally, from the Mastigouche, 200 miles, water-powers capable of supplying an electric railway are not at greater distance from one another than 25 miles, so that there is no place where the current would have to be transmitted more than 25 miles.

"The traffic supplied by the paper mills would suffice to assure the success of such a railway, but there will also be many other sources, as it would serve to supply the great lumbering establishments on the Upper St. Maurice. It would likewise develop the settlements in the valley of the Mattawan, especially in the rich & fertile territory between the rivers Trenche & Croche, where there are nearly a million acres of the best farming lands, with a climate more favorable for farming operations than that of the neighborhood of Three Rivers."

#### Birmingham Tramways Company.

Jas. Ross, of Montreal, presided at the annual meeting in Birmingham, Apl. 5. The re-

port showed an available balance of £49,979, & recommended a dividend on the ordinary shares of 5%, while £33,686 was to be carried to reserve for depreciation of assets, redemption of debentures, & general purposes. In moving the adoption of the report Mr. Ross said that during the year large increases had been made in wages, & considerable had been expended on rolling stock, yet the net results were most satisfactory, & for the first part of this year there was a substantial increase in earnings. The property was in excellent condition, & improvements were being made continually. No progress had been made in arriving at a settlement of the difficulties with the City Corporation, which body had recently adopted a report in favor of the municipalization of the tramways. The Co. was formed in 1896 upon a resolution passed by the Council agreeing to give it 21 years' lease of the tramways, & he still relied upon the good faith of the Corporation & people of Birmingham to see that the Co. received fair treatment. The directors were at all times ready & willing to deal with the Corporation on the basis of any arrangement that would leave the Co. in as good a financial position as it was now in. He had hoped long before now to have taken part in a work of great public benefit by substituting a convenient & rapid electric service for the cumbersome & antiquated steam trams that ran in the streets of Birmingham.

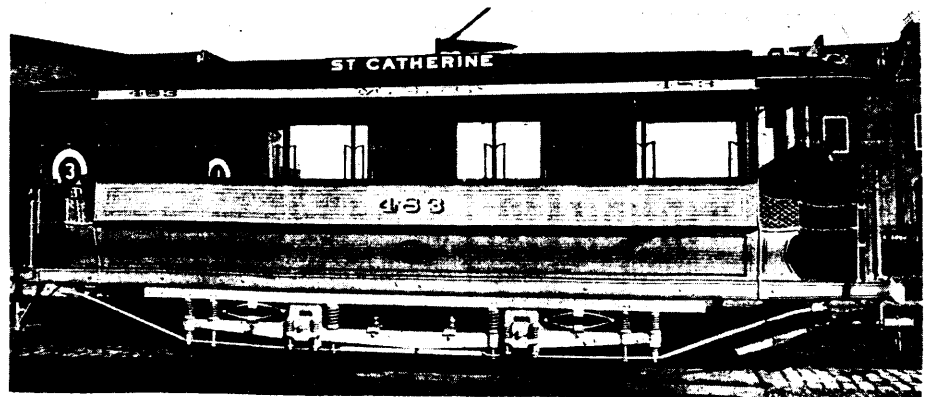
H. Buckley, in seconding the resolution, said the Co. carried over 36,000,000 people last year. A resolution was adopted approving of the payment of dividends at the rate of 5% per year on the preference & ordinary shares. The retiring directors, J. Ross & H. Buckley, were re-elected.

H. Smith, in acknowledging the re-election of his firm as auditors, congratulated the shareholders upon the wise financial policy which the directors had marked out, by setting aside what they had done as provision

towards the repayment of capital. There had recently been letters in the Birmingham newspapers referring to some imaginary risk of the return of the capital when the leases fell in. Looking at the matter on the supposition that no further negotiations took place, & that the leases did fall in, he considered the course taken by the directors was the wisest they could take. At Dec. 31st last there was close upon £200,000 of what might be called cash assets in the bank & on deposit. The first leases did not fall in for about 8 years, & if the directors continued to put aside profits at the rate they had done it would mean an addition, leaving out the accumulation of interest, of between £200,000 & £250,000. So that by the time the first leases expired they would have over £400,000 cash assets, which was practically sufficient to provide for the repayment of debentures & more than half of the preference shares. They would retain for 5 years more certain other leases, which included the cable route, the most valuable of all, so that when those leases expired they would have another £200,000 roughly, which would more than provide for the remainder of the preference shares, & leave a very considerable sum for the repayment of the ordinary share capital. In addition to that, there were assets which would not fall to the Corporation, such as equipment, horses, cars, buildings, & outside lines.

#### Cuban Electric Railway Co.

E. Hanson, Montreal, writes: "The Company is now organized, the directors being A. F. Gault, E. Hanson, W. M. Doull & F. Paul, of Montreal; W. D. Matthews, of Toronto; B. F. Pearson, of Halifax, N.S.; Col. G. B. M. Harvey, of New York; P. Farquhar, of New York & Havana & Mr. Melvin, of New Jersey. F. S. Pearson, of New York, Consulting Engineer of the Metropolitan Traction Co., is the Chief Engineer of the Co., & under his supervision plans have been made for electrifying the railway belonging to the Co., which runs from Regla to Guanabacoa & through each of these two towns. We expect to have the work completed by Aug. 1, when we shall have the first electric cars in the Island of Cuba. As the steam railways of Havana are in a very dilapidated & fifth-rate condition, & as our line will be thoroughly equipped with heavy rails & the newest pattern cars, bright & airy, we have no doubt that we shall control the large suburban business at present done by the United Railways Co. as well as our own, & the Co., we think, may confidently look forward to a very successful future. The Co. also owns what is known as the Regla Ferry, running from Havana to Regla, & there connecting its electric line, & in connection with this ferry the Co. also owns first-class wharf property in Havana as well as in Regla, which is very useful as also very valuable."



SUMMER CAR, MONTREAL STREET RAILWAY.

**The Gorge Route.**—Work was started early in April to clear the track of the Niagara Falls & Lewiston R.R., but several more falls of rock occurred, some of them consisting of thousands of tons, & the work was abandoned. It is not expected that the line will be operated again this year.

**A Newfoundland Electric Railway.**—R. G. Reid, of Montreal, proprietor of the Newfoundland Ry., is about to build an electric railway in St. John's, Nfld. Power will be generated 8 miles from the city. Orders have been placed for cars, apparatus, plant, etc., & it is expected the line will be completed this year.

**The Maritime Electrical Association** met in Halifax April 18, when a number of interesting & valuable papers were read, one of which will be found in full on page 157 of this issue. The following officers were elected:—President, F. A. Huntress, Halifax; Vice-President, P. R. Colpitt, Halifax; Sec.-Treas., R. T. Mackeen, Halifax; Executive Committee, H. Brown, St. John, N.B.; J. Eddington, Moncton, N.B.; J. A. Weddell, Charlottetown, P.E.I.; S. G. Chambers, Truro, N.S.; W. Pickles, I. Smith, J. A. Anderson & F. A. Hamilton, Halifax.

## TELEGRAPHS & CABLES.

### The G. N. W. Company's Defence.

Our Jan. issue, page 29, gave very full particulars of the suit to annul the agreement of 1881, by which the G.N.W.T. Co. assumed the control and operation for 97 years of the lines of the Montreal Telegraph Co., at a yearly rental of \$165,000. The plaintiffs are H. M. Morrow & W. A. Clark, jun., of Boston, Mass., who, as holders of 750 shares of the G. N. W., claim that the Co. had no power to enter into such an agreement, nor had the Western Union Telegraph Co. power to guarantee the rental, as it really did. The plaintiffs say the G. N. W. is in reality the Western Union, & that H. P. Dwight, who holds most of the G. N. W. shares & is President of the Co., is really an agent of the Western Union. They further say that the agreement in dispute is "an attempt by a foreign corporation, through possession of the majority stock of the G. N. W., to exercise & use the statutory powers & franchise of that Co. solely in their own interests; an attempted misuse & abuse of statutory powers & franchises."

In its statement of defence recently filed in the Ontario High Court the G.N.W. insists upon the validity of the agreement & the power of the Western Union to guarantee the rental thereunder. It says the agreement was made in the interest of all parties, & has for over 17 years been faithfully carried out.

Another paragraph of the statement of defence says:—"The holder of the shares now alleged to be held by the plaintiffs at the time of the entering into the agreement was Erastus Wiman, who was one of the most active shareholders in procuring the assent of the

companies to the agreement. The shares were used to vote upon, & by them the agreement was entered into. This defendant (the G.N.W.) submits such shares cannot now be used for the purpose of invalidating the same agreement, & that the plaintiffs are disentitled from using them for such purpose."

The other parties to the defence, the Montreal & Western Union companies, & Mr. Dwight, should the court consider him a co-defendant, set up the same pleas, with one or two additions. The Montreal Co. adds that even if the agreement, when it was made, was not strictly within the powers of the companies concerned, it was executed in good faith, & has been acted upon & carried out for nearly 20 years by the companies; that since then new rights & interests have arisen. For instance, the stock of the Montreal Co. has been purchased, & is now held as an investment, & the Co. says that the court should not interfere with the vested rights of innocent holders of such stock, but protect them.

The G.N.W. says the amalgamation was necessary to end the injurious competition that previously existed, & was advantageous to all parties. It also states that the dividends paid by the G.N.W. after the agreement was made were very high. Then, as the statement of defence relates, other telegraph lines came into existence, followed by a season of financial depression. It is added that but for the guarantee it would have been necessary to call upon the shareholders of the G.N.W. to make good the rental in arrear to the W.U. And that had not the shareholders of the G.N.W. insisted on receiving the \$325,000 as profits on their stock, there would have been ample to have paid a reasonable dividend of 6%, & also to have discharged the total liability guaranteed & paid by the W.U. But the prospects, it is said, are that the Co.'s earnings will be sufficient within a reasonable time to discharge the indebtedness to the W. U., & then pay reasonable dividends.

The G.N.W. also submits that if, for any reason, the court should hold the agreement of 1881 to be invalid, that the plaintiffs should be compelled to repay the large sums of money received by them as shareholders under the agreement, in order that the accounts, as between the G.N.W. & the W.U. may be adjusted.

The case will be heard at the next assizes.

### C.P.R. Company's Telegraph.

Offices closed—Acadia Iron Mines, N.S.; Bass River, N.S.; Economy, N.S.; Five Islands, N.S.; Highland Village, N.S.; Mount Rose, N.S.; Port-au-Pique, N.S.; Shakespeare, Ont.; Woodslee, Ont.; Seguin Falls, Ont.

New offices—Camp McKinney, B. C.; Columbia, B.C.; Fort Steele, B.C.; Moyelle, B.C.; Angus, Que.; Bishops Crossing, Que.; Hall's Stream, Que.; High Forest, Que.; Marbleton, Que.; Randboro, Quebec.; Sawyerville, Que.; Hull Station, Que.

Since the Front St. fire, which badly damaged the C.P.R. wires, the various lines have been carried into the Toronto office by cables from the street poles. The protection against heavy electric light, or electric railway currents has been altered by substituting fuse wires for the electro magnetic breakers which have been in use for some years.

The first floor of the Burns & Murray building in Halifax, N.S., which was purchased by the Provincial Government a short time ago, has undergone a great transformation, & is now one of the finest office floors in the Dominion. The entrance on Hollis street, as well as the whole interior, is finished in American quartered oak, all panelled. The steps from the vestibule are of marble, & the floor is tiled in a pretty design of brown, grey & white. The ceiling is a neatly designed metal one. A hallway leads from the entrance in the centre to the stairways in the rear, & on either side are the telegraph & cable offices. The Commercial Cable Co.'s office is situated in the northwest corner, to the left of the entrance, & has oak counters the same as the other departments. The whole of the remainder of the north side of the floor is occupied by the C.P.R. telegraph offices, splendidly lighted from the windows on the Cheapside end of the building, while opposite, the south half of the floor is occupied by the Halifax & Bermuda Cable Co. The recorder & transmitter of the cable offices, & the operators' tables in the C.P.R. rooms are in view over the wide counters. The C.P.R. has always used a duplex wire to Montreal. To this equipment it is now adding quadruplex instruments, which make it possible at the same time, on one wire, to send 4 messages—2 simultaneously each way. All the operators in the C.P.R. office are expert typewriters, & the tables have been arranged for the use of either the pen or typewriter. In the rear of the respective operating rooms are the private offices of the Superintendent of the Cable Co., & the Manager of the C.P.R. Telegraphs. A portion of the basement floor is fitted up for the batteries, of which there are 500 cells of the gravity type. Adjoining this is the messengers' room. Another portion of this floor is used for the testing apparatus, etc., of the Cable Co. The wiring of the office was done by F. T. Jennings, Inspector of the Eastern Division C.P.R. Telegraphs, & is a very neat piece of work. Cables were used throughout. The new quarters are splendidly situated, are well lighted, airy & attractive, & by combining the three companies in what is practically one room, the interchange of business is greatly facilitated. The upper floors of the building are to be fitted up for Government offices.

At the annual convention of the Brotherhood of Railroad Telegraphers, which opens at Peoria, Ill., May 12, the C.P.R. telegraphers will have 9 representatives, & the G.T.R. 5. This will be the first time the G.T.R. men have been represented.

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**MATCHES**

### Great Northwestern Telegraph Co.

Offices have been opened at Burketon, Ont., & Les Ecureuils, Que. The office at St. Scholastique, Que., has been closed.

An elevator is being installed in the Co.'s office in Montreal, where a number of handsome suites have recently been fitted up & are under lease to two or three steamship lines.

The Co. has appealed against the municipal tax on its poles in Quebec city, on the ground that the by-law imposing the tax is ultra vires, the corporation having no power to pass it.

The proposed extension of the Northern Pacific Ry. in Manitoba, over which the G. N. W. has exclusive working arrangements, will open up for the Co. some new territory, embracing several places of considerable importance west of Portage la Prairie. The telegraph line along the Souris River branch has been completed, & some half dozen places have been given telegraphic communication for the first time.

The wiring in the Head Office, Toronto, is being re-organized. At present all wires come in through the tower on top of the building & are brought from there through grooved boards to the switch. The change now being made is doing away entirely with the tower & grooved boards, the wires being brought in directly back of the switch where all lightning arrestors & other protectors against foreign currents will be placed.

The officials are congratulating themselves on the success of their service between Eastern Canada & Vancouver & Victoria, B.C. The time made on mining quotations between Toronto & Vancouver recently has been a feat of which they claim to be justly proud. Toronto mining quotations are being got through & delivered in Vancouver inside of 10 minutes, a service which they say it would be only possible to surpass on a direct wire between these points, which does not exist. The business of the Company between Eastern Canada & Vancouver is said to be making rapid strides.

The Commercial Cable Co.'s report for 1898 states that the net traffic earnings from cables & land lines increased \$107,409.83 over 1897. Out of the balance to the credit of revenue account there has been set aside \$350,000 as an addition to the reserve, & also \$100,000 to the fund for the insurance of stations, apparatus & repair steamer, & these sums will be invested in first-class securities. The reserve now amounts to \$3,037,103.43, & the insurance fund to \$200,000. During the year there have been issued \$2,000,000 4% 1st mortgage bonds. The proceeds have been partly expended in acquiring the property of the Pacific Postal Telegraph-Cable Co., & further extensions of land lines, thereby adding to the Co.'s land line system 3,449 miles of poles, 12,841 miles of wire, & 468 offices. After providing for all operating expenses & reserves, the balance of net revenue, including the amount brought forward from 1897, amounts to \$1,908,758.83, out of which have been paid interest on bonds & debenture stock \$704,296.48, & dividends & bonus on capital stock, \$800,000, leaving a balance of \$404,462.35, to be carried forward to the present year.

The Yukon Telegraph.—It is said the telegraph construction party sent out by the Dominion Government has lost no time in getting to work on the line from Lake Bennett to Dawson, Yukon. At the end of April the poles were cut down as far as White Horse, & the wire will very soon be strung to Cariboo Crossing. Two camps are operating, one from Bennett, & one from Cariboo Crossing, but as soon as the lake & rivers open, the construction corps will be divided into three parts, the men living on camp scows, which will drop down the river, keeping abreast of the work. The materials & supplies will be delivered on scows. It is expected the line will be completed this year.

D. C. Corbin, of Spokane, Wash., D. Ross, of Greenwood, B. C., & others have a bill before the Dominion Parliament to incorporate the Northern Telegraph Co., with a capital of \$50,000 & head office at Greenwood. Power is asked to construct & operate lines in Yale & East & West Kootenay.

The Northern Commercial Telegraph Co. is applying to the Dominion Parliament for an Act amending its charter by providing that the majority of its directors need not be resident in Canada; that branch lines built by it shall not exceed 70 miles in length; & to increase its capital stock; & for other purposes.

Mr. Carter, an old time Canadian operator, tells an interesting story of his work with Edison 25 years ago. The two were working at Stratford, Ont., where Edison was station telegraph operator. There was a mistake in some order, & a collision was narrowly averted. Edison, in consequence, had to face the Superintendent at the old Union Station, Toronto, who rated him roundly for his "criminal carelessness." It was more than the young genius could stand, & quietly exclaiming that he had had enough, Edison slipped on his coat & then severed his connection with the Co. A short time ago Mr. Carter visited Edison at Jersey City, & the two laughed over the Stratford episode.—Canadian Electrical News.

A New York despatch of Apl. 26 says:—"The record for long distance practical telegraphing was broken yesterday by the Associated Press on its regular system of wires, leased from the Western Union Telegraph Co. A continuous circuit of 6,000 miles, reaching from New York city to the Pacific coast, & from Chicago to New Orleans, touching Philadelphia, Pittsburg, Cincinnati, Atlanta, Memphis, St. Louis, & Kansas City, Omaha, Denver, San Francisco & all the larger intermediate points south & west, was successfully worked for several hours. There were 41 operators copying from a sender in New York with newspapers being served directly from this one circuit in 38 of the leading cities of the U.S. Longer circuits have been worked for short periods, but as far as known yesterday's record has never been equalled considering the number of operators copying, the number of newspapers served, & the territory covered by the circuit."

### TELEPHONE MATTERS.

#### Long Distance Transmission.

By J. H. Winfield, Eastern Superintendent  
N. S. Telephone Co., New Glasgow, N.S.

Long distance work is every day becoming a more important factor in the telephone business, & toll lines, instead of (as a few years ago) being regarded as mere accessories to the city exchanges, are now recognized as absolute necessities. We are talking over longer distances almost every month. A few years ago 500 miles was considered quite a feat, to-day we have conversations carried on over 1,900 miles of wire with perfect ease. In view of this it may not be amiss to speak of a few of the difficulties that are encountered in the design, construction & operation of these long lines.

The apparatus used in making a toll line connection may be divided into three parts: 1. the line; 2. the instruments; 3. the switching apparatus. The chief factor in extending the talking limit, has been the improvement in the line. Grounded circuits of iron wire are now practically obsolete, the recognized standard being a metallic circuit of hard drawn copper wire, generally no. 10 B. & S., weighing 170 lbs to the mile, but sometimes for short distances of no. 12, weighing about 104 lbs to the mile. The New York & Chicago line is constructed of wire, weigh-

ing 435 lbs to the mile, but that is an exceptional case.

In speaking of the line I shall confine myself to the electrical rather than the mechanical difficulties that have been met with and overcome. Our object is to so construct the line & arrange the apparatus, that the sounds at the receiving end shall possess the following characteristics: loudness or volume; clearness; quality. Of these three clearness is by far the most important, for a faint sound, if clear, is perfectly intelligible, & a change in quality may only have the effect of disguising to some extent the speaker's voice. Volume is affected by any conditions which alter the amplitude of the wave.

Clearness is affected by any conditions which alter the position of the waves in regard to each other. Quality is affected by any conditions which alter the form of the wave. Therefore, the volume is reduced by resistance, leakage, static induction, & self-induction, the effect of these properties being to reduce the amplitude of the wave.

Clearness is reduced by static induction, & self-induction, these tending to alter the inter-relations of the waves; static induction causing a rounding off of the top of the wave, thereby involving a loss of sharpness, & both static induction & self-induction produce an unequal retardation of phase for vibrations of different periods, thus causing interference & a resulting deformed wave. In other words, the telephone current being an alternating current of a frequency varying from 200 to 1,500 periods a second, according to the sound produced, static induction & self-induction produce a greater retardation on the waves of high frequency than on the lower ones, thus mixing up the waves to some extent, & rendering the speech muffled.

Quality is changed by all the properties which reduce the clearness, & by self-induction in another sense as well, this effect of self-induction being to reduce the amplitude of the overtone waves to a greater extent than of waves of a longer period.

Evidently then, in order to accomplish good telephonic transmission of speech we must make the self-induction & electro static capacity of our line & apparatus as low as possible, resistance & leakage being of less importance, though of course they should not be lost sight of. A small & well distributed leakage is often an advantage, as it allows the static charges to escape, clearing the line & to some extent neutralizing the effect of capacity, the slight loss in volume being more than counter-balanced by the gain in clearness. When iron wire is used there is a much further deformation of the waves than is caused by the increased resistance, due to the fact, the wire is circularly magnetized & this magnetism has to be reversed twice in every vibration. There is also a considerable increase in self-induction due to the magnetic properties of the metal.

The self-induction of a copper metallic circuit of no. 10 or 12 wire is very small, but the self-induction of the apparatus which always forms part of a telephone circuit is sometimes very high & has a considerable effect on the current. Long distance lines would be particularly liable to disturbance from cross-talk if no means were taken to prevent it. There are two cases in which cross-talk will not be produced on a metallic circuit by a neighboring wire. The first is when the disturbing wire is at an equal distance from each of the wires of the metallic circuit. Were it always possible to string wires in this manner, there would be no trouble from cross-talk; but a little consideration will show that this is only possible for two circuits. The second method is known as transposing. The two wires of the metallic circuit are transposed at regular distances, or, in other words, they change places, A changing to the pin B was on & B going to the pin A was on, the effect being to



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Certificate fee.....	1 00	" " \$3,000 " " 7 00	
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Year.	Total Membership.	Benefits Paid.	Total Surplus.	Surplus per Capita.	Death Rate per 1,000.
1881	1,019	\$ 1,300 00	\$ 4,568 55	\$ 4 48	4.50
1882	1,134	12,058 86	2,967 93	2 61	11.00
1883	2,216	9,493 68	10,857 65	4 91	4.73
1884	2,558	13,914 31	23,081 85	9 01	4.23
1885	3,642	26,576 99	29,802 42	8 18	7.76
1886	5,804	28,499 82	53,981 28	9 30	4.85
1887	7,811	59,018 67	81,384 41	10 44	5.78
1888	11,800	89,018 16	117,821 96	9 98	6.43
1889	17,349	116,787 82	188,130 36	10 84	5.85
1890	24,604	181,846 79	283,967 20	11 54	5.18
1891	32,303	261,436 21	408,798 20	12 65	6.40
1892	43,024	344,748 82	580,597 85	13 49	6.25
1893	54,484	392,185 93	858,857 89	15 76	5.47
1894	70,055	511,162 30	1,187,225 11	16 94	5.47
1895	86,521	685,000 18	1,560,733 46	18 03	5.67
1896	102,838	820,941 91	2,015,484 38	19 60	5.50
1897	124,685	992,225 60	2,558,832 78	20 52	5.56
1898	144,000	1,176,125 14	3,186,370 36	22 12	5.67

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- 1.—Social and Fraternal Privileges of the Court Room.
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- 3.—A Sick Benefit of \$3 to \$5 per week, subject to provisions of the Constitution and Laws of the Order; optional, and when taken cost's extra.
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- 5.—An Old Age Benefit consisting of exemption from payment of premiums and Court dues after age 70.
- 6.—An Old Age Disability Benefit of one-tenth of face value of policy payable yearly for ten years, on being declared totally and permanently disabled by infirmities of age after the seventieth birthday.
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Or Any Officer or Member of the Order.

place each wire of the circuit at an average distance from the disturbing wire or wires. As the number of wires on a pole increases, the difficulty of planning the transpositions increases also. With two circuits it is an easy matter; if, however, we have a third & transpose it, the same as we did the second, there will be cross-talk from the second to the third, because their relations to each other are the same as if there had been no transpositions at all. To get over this difficulty we must transpose the third twice as often as we did the second. A fourth circuit may be transposed at the middle points of the third, & so on. It has not been found necessary to transpose each circuit so that the induction currents are exactly balanced, & it is possible to use the same transpositions for every second cross-arm, so that the 1st, 3rd & 5th are alike, also the 2nd, 4th & 6th. Transpositions are usually placed half a mile or a mile apart.

There has been very little change in the instruments in the past few years. The transmitter usually used is of the Hunnin's type, & is known as the solid back; it does its work remarkably well. Some of them require a little attention now & then on account of the packing of the carbon granules, but a judicious tap generally puts matters to rights. The ringer magnets of the call bells should be wound to a resistance of 1,000 ohms on long spools, bringing the wire close to the core, & thus giving them a high co-efficient of self-induction, which effectually prevents any shunting of the high frequency telephone, while allowing the ringing current to pass freely, the ringers being bridged across the circuit.

In order to connect a metallic circuit to a grounded line, what is known as a repeating coil or transformer must be used, otherwise the balance of the circuit would be destroyed and the line would become noisy. This piece of apparatus is nothing more than a specially made induction coil, the metallic circuit being connected to the primary & the grounded line to the secondary, the other end of the secondary being put to ground. In connecting together two metallic circuits through an intermediate office, the connections should be so arranged that the lines are directly connected, & the two transformers cut out; otherwise, as a transformer only has an efficiency of from 85 to 90%, there would be a serious loss in volume.

All apparatus at intermediate stations should be bridged across the lines & the parts that are permanently in connection should have a high self-induction in order to avoid shunting the telephone current when the line is being used to stations farther on. Ring off drops should be wound to 1,000 ohms resistance & also bridged. It is a good plan to use a tubular drop, as it not only increases the self-induction, but it also tends to prevent cross talk between the coils themselves, which is a frequent cause of disturbance and often not suspected.

Long distance lines should always be well equipped with protective devices. The best form for protection from lightning consists of two carbon blocks, separated by a thin sheet of perforated mica, one block being connected to line & the other to ground. These have proved very efficient & when properly installed generally prevent any damage to instruments or transformers. They also prove useful in another respect, as the static charges seem to find their way across from one plate to the other, clearing the line to a great extent. Many lines could be improved by a judicious use of these protectors at different points such as the way stations. A fuse is also generally inserted in order to prevent the entrance of heavy currents which might otherwise do considerable damage, when, as sometimes happens, an electric light or power wire comes in contact with the circuit.

In regard to the operation of toll lines, long

distance telephony is much more expensive than telegraphy, as may easily be seen when we consider that a single iron telegraph wire can easily transmit 40 messages an hour & when duplexed the number is doubled; whereas in the telephone work we have to use 2 wires & they must be of copper instead of iron, and even then under the best conditions it is hard to get more than 7 or 8 messages through in an hour. Add to this the fact that the sender of the message is aware of every minute of delay, & is usually very impatient when he has to wait a few minutes for the line, where in sending a telegram he just hands it in at the office & thinks no more about it even though the message may not be sent for half an hour or longer; & it is easily seen that not only must the telephone message cost more than a telegram, but the lines are apt to be choked with business during a few hours in the middle of the day & comparatively idle the rest of the time. A great deal can be done by keeping the subscribers posted in reference to the hours when the lines are rushed, & very often they can so arrange their business so that it will not come in the rush hours. They would thus save themselves the annoyance of having to wait for a connection & the lines would be worked more steadily.

The foregoing paper was read at a recent meeting of the Maritime Electrical Association in Halifax. In the discussion which followed Mr. Hamilton expressed surprise that telephone communication between cars on trains had not become more popular. Mr. Freeman stated that telephones were used for that purpose in Pennsylvania.

### The Bell Telephone Company.

In the Ontario Divisional Court, May 3, in the case of Bonn vs. Bell Tel. Co., Judges Boyd & Robertson gave judgment on motion by defendant to set aside verdict & judgment for plaintiffs in action for damages for injuries sustained by them, caused by the buggy in which they were driving coming in contact with a telephone pole planted in Main St., Wallaceburg, 14 ft. from the south limit of the street & leaving a passage way on the north of 22 ft. The Erie & Huron Ry. Co. had procured authority from the corporation to run its line over the town streets & subsequently made an agreement with defendant to use its wires, the defendant on its part to keep the poles in order, the pole, the cause of the accident, being placed there by it, the former one placed by the railway having worn out. Defendant contended that the pole was not an obstruction of the highway. The jury found that the public right was sensibly interfered with by the pole being placed where it was, & that it formed a place of danger, owing to the proximity of the railway track, which laterally encroached on a great part of the street. Held that the defendant had no right to use the streets without legislative sanction, either directly or indirectly, though the action of properly authorized municipal bodies & the right of the public was to have the whole width of the roadway preserved free from obstructions, & it is not confined to that part which is used as the *via trita*. The effect of Canadian legislation is to legalize the obstruction created by the poles so far that they cannot be abated or complained of as a public nuisance, but the defendant may be liable for particular injury to a traveller if the obstruction is found to be dangerous, as in this case. Motion dismissed with costs.

Wm. Quinn, of Lindsay, has been appointed Manager of the Co.'s branches at Port Hope & Cobourg, Ont.

The Co. has decided to place its wires on Main St. & Portage Avenue, Winnipeg, under ground, as asphalt pavements are to be laid shortly.

Underground conduit cables & wires are

being placed in a number of additional streets in Toronto. Similar work is being done in Hamilton.

A plan to prevent non-subscribers using telephones without paying is being introduced in Montreal. The number of people who use other people's 'phones throughout the city, particularly those in the drug stores, during the course of the year, would doubtless number thousands. Druggists & most store-keepers are usually repaid for the use of their telephones by the popularity which they suppose it attaches to their stores & some of them have provided an extra 'phone with a switch, so that it can be placed in a convenient position for the use of their customers in particular & the public generally. Lots of places in Montreal have 50 to 100 people a day use their 'phones in that way, & the Bell Co. has been seeking for a plan to derive some financial benefit from the telephone borrower. The new system will be distinct from the ordinary telephone in the store, having no connection therewith. The person who desires to use the instrument will call up Central, when he will be requested to put 5c. in the slot & the required number will be called. If the person desiring to speak does as requested an indicator before Central will signal that the money has been deposited & everything will be all right, but if no money goes in the slot that ends the matter so far as Central is concerned. Central will be supposed to keep a strict watch on all private 'phones where a slot one is available to see that no one but those who are entitled to use it are permitted to do so. The girls in the exchange will become so well acquainted with the voices of those who ordinarily operate them that it will be easy in most of the cases for them to detect who should & who should not use the various instruments. Among the advantages of this scheme is that people who cannot afford to keep a telephone will be able to use a convenient one without being under an obligation to any person. Another advantage is that druggists & others who have telephones will be saved a great deal of inconvenience.

In the recent case of Atkinson & others vs. the Bell Co., before Judge Ferguson, in Toronto, it was shown that the Co. had planted a pole on a street 66 feet wide under the superintendence & with the sanction of the Corporation & by agreement. The pole was 12 feet from the centre line & near an angle formed by a sharp turn in the street & far enough from the sidewalk to allow a beaten track for carriages to pass. The plaintiffs were driving a sleigh to which were attached a team of horses, along the street in daylight, when the driver lost control at some distance from the angle & the sleigh was dashed against the pole by which it, the horses & one of the occupants were injured. The Judge held the plaintiffs should recover. That the pole was an obstruction & defendant had notice & knowledge of it & of its dangerous character. That the fact that the team of horses had once before run away would not help defendant & that the Corporation could not recover from the Telephone Co.

After negotiations extending over 2 years, during which the Co. has paid nothing for a franchise in Brantford, Ont., the city has granted it an exclusive franchise for 5 years for \$450 a year.

The Co. will put up a copper-metallic line between Ottawa & Arnprior, Ont.

### Telephone Items.

It is proposed to convert the Nicola, B.C., telegraph line into a telephone line.

The Pontiac Telephone Co. recently offered for sale its rights & plant, including about 60 miles of line.

A bill to enable towns of 1,000 people & over to acquire & operate electric light & telephone

plant for public service, is before the Manitoba Legislature.

The Inverness & Victoria Telephone Co. has about completed its lines between Baddeck, Little Narrows, Margaree, Orangedale & Whyocomagh, N.S.

The New Westminster & Burrard Inlet Telephone Co. has decided to string an additional wire between Vancouver & Westminster, B.C., & from Westminster to Steveston.

A London cablegram of Apl. 5 says: "The story reaches here that during the recent violent storm, the telephone wires between Brussels & the suburb of Ixelles being broken & communication interrupted, it was suggested that telephoning without wires be attempted. This was tried, with satisfactory results, & since then the inhabitants of Ixelles have been telephoning to Brussels with the greatest ease. Electric experts here more than doubt the story so seriously set forth. Telephoning demands conditions so different from those requisite for telegraphing that they declare telephony without wires is practically impossible."

A Kingston, Ont., despatch says: "A. T. Smith, District Superintendent of the Bell Telephone Co. at Kingston, has invented special instruments of unique design for communication between the attendants on the surface and the diver at the bottom of the river, where he is engaged in the work of raising the Cornwall bridge. The ordinary diving apparatus has been dispensed with, & supplemented by special diving bells, so constructed as to withstand the pressure of the current. They are also protected by heavy metal shields. The telephone is put inside the bell, & electric alarms give the signal when either party desires to converse. Anybody can operate the ingenious mechanism."

H. W. Kent, Superintendent of the Nelson & Vernon Telephone Co., which owns & operates all the lines in Kootenay & Yale, B.C., states that from Bossburg to Spokane the line is but a single wire, grounded, which is owned by the Spokane & B. C. Telephone Co. This

does not give very satisfactory service, although the Nelson & Vernon part of the line north of the International boundary is a metallic circuit. The Inland Co., however, owning the exchange in Spokane, Wash., has built a metallic circuit to Rossland, is now building to Republic & will build from Bossburg to Russell, at the boundary, shortly. When this is done, the Nelson & Vernon Co. will have all its connections with the Inland Co., & will have a metallic circuit throughout. It is believed this will give a satisfactory service. In the meantime, the Columbia Telephone & Telegraph Co., a subsidiary flotation of the Spokane & B. C. Co., has let a contract for the poles for a line to parallel the present Nelson & Vernon line into Greenwood, & also, it is stated, to go on to Camp McKinney. Whether all these lines will be built this year remains to be seen. But the chances are that some of the contracts will go through, & that the whole Boundary Creek country will have a greatly improved telephone service.

#### Among the Express Companies.

The Western has notified agents to discontinue issuing money orders payable at Havana, Cuba.

From May 1, during navigation on the St. Lawrence, all matter for Europe will be routed via Montreal.

The Dominion has opened offices at Dunmore Jct., Assa., Fort Steele, B.C., Cowan, Man., Ethelbert, Man., Garland, Man., Pine River, Man., Sclater, Man.

Capt. J. Irving, formerly manager of the Canadian Pacific Navigation Co. is said to be organizing in Victoria, B.C., the Irving Express Co., for the quick handling of goods to the Atlin district.

The B. C. Ex. Co. has issued a folder with a map and time-table of the route travelled by its stages which carry the mail from Ashcroft to all points in Cariboo & Lillooet besides passengers & express. The head office is at Ashcroft; J. A. Bremner is Secretary-Treasurer.

General Manager Stout, of the Dominion & Western, left Toronto May 10 on an inspection trip to the Pacific Coast. He is accompanied by Superintendents Stewart, Boswell, & Ford, Auditor Burr & Tariff Clerk Meyer, of the Dominion, & by Superintendent S. A. Davis, of the Western.

Live stock cannot be shipped from a point located within the Northwest Territories to any point outside the Territories, without first obtaining a certificate from an inspector of brands, setting forth that he has made an inspection of stock & recorded the age, sex, brands & marks of every head of such stock.

The B. C. Express Co. does not allow examination of shipments sent c.o.d. until full amount of c.o.d. & all accrued charges are paid, except c.o.d. shipments destined to Barkerville, Clinton, Lillooet, Quesnelle & Soda Creek, B.C. All packages destined to offices of that Co. should be enclosed in oilcloth or other strong or waterproof coverings, as a protection against rains.

The Canadian laws require importers of cattle, sheep & swine to produce a declaration stating that they are intended for breeding purposes only, and that there is no disease existing among the animals in the particular locality from which they come. The following are the declared cattle quarantine stations: Halifax, N.S., St. John, N.B., Quebec (Levis) Que., Point Edward (Sarnia) Ont., Emerson, Man., Estevan, Assa., Huntingdon, B.C., New Westminster, B.C., Vancouver, B.C., Victoria, B.C.

The Dominion has opened a wagon route between Fort Steele Jct. & Fort Steele, B.C. The following routes have been opened: Kootenay Lake Steamboat Route, between Nelson & Kootenay Landing, B.C.; Rainy River Navigation Co., between Rat Portage & Fort Frances, Ont.; Toronto, Port Dalhousie & St. Catharines Steamboat Line, between Toronto & St. Catharines, Ont., re-opened for season of navigation; Bay of Quinte Navigation Co., re-opened for season of navigation; Navigation on Georgian Bay re-opened for summer season.

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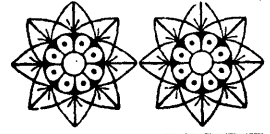
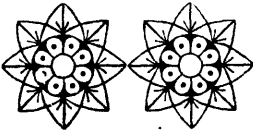
# The Purchasing Agents' Guide

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

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

# HUDSON'S BAY COMPANY

INCORPORATED 1670



## TRADE DEPARTMENT

THE COMPANY HAVE GENERAL STORES AT

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 FORT FRANCES  
 FORT WILLIAM  
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 LOWER FORT GARRY  
 LETHBRIDGE  
 MACLEOD  
 MATTAWA  
 MORDEN  
 NELSON  
 PINCHER CREEK  
 PORTAGE LA PRAIRIE  
 PORT SIMPSON  
 PRINCE ALBERT  
 QU'APPELLE  
 QUESNELLE  
 SHOAL LAKE  
 TOUCHWOOD HILLS  
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