

Surveyors of The Past

BY CHARLES FAIRHALL

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NIPISSING & JAMES' BAY RAILWAY SURVEY

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On the evening of the 4th July last summer (1893) a party of travellers at the Union Station, Toronto, might have been seen boarding the G. T. R. train for North Bay. By the appearance of their outfit, consisting of transits, levels, rods, etc., it would be surmised that they were on a surveying expedition, and when it was said that they had a box car loaded with provisions, canoes, tents, blankets, etc., it was evident that the expedition was of no small importance. This was the survey and location of what might be called the first division of the Nipissing & James' Bay Railway. An enterprise that might well interest every citizen of this Province, as it concerns the development of the northern part of Ontario, an immense region hitherto comparatively unknown.

It was in April, 1884, that the charter was granted by the Dominion Government, since which time the enterprise has languished from want of encouragement from capital. But at last to set the enterprise on its feet, by a proper survey and estimate of the cost, a couple of public-spirited, enterprising gentlemen put their hands in their pockets and raised the necessary funds.

At the time when the charter was granted the attention of most enterprising men was directed to the possibilities of the North-West, and this Province was drained of men and money. Latterly the rest of the Province has occupied

public attention, railways and other public works being built, public money being thus far well utilized. But now the time has come for the development of this northern district, and to do this the railway is the great agent and pioneer, opening up a highway for traffic through the heart of the country and connecting the existing lines of railway, that permeate the rest of the Province on the south, with James' Bay, the southern prolongation of Hudson Bay, on the north.

The total length of the line will be about 360 miles. Commencing at the Town of North Bay, a thriving municipality on the north bay of Lake Nipissing, distant from Toronto 225 miles, connecting there with the Grand Trunk Railway—connection may also be there had with the Canadian Pacific Railway—the line takes a north-westerly direction, rising gradually with some interruptions till at 21 miles distance the elevation is 577 feet above Lake Nipissing, which is 642 feet above the sea, so that the total elevation at this point is 1,219 feet above the sea, this will be the highest point on the line. From there the line descends 270 feet gradually to the level of what might be called the Lake country at about the 30th mile a country dotted with innumerable lakes and lakelets, with short connecting rivers. The method of travelling in this northern district is by water, which consists of stretches of deep, still lakes or ponds, connected by streams interrupted by rapids and falls, around which the light canoes are portaged by hand. Traversing this country for forty miles, the line touches the north-east arm of Lake Tamagaming—the Indian word Tamagaming is of the Cree language, meaning "deep water"—the water being in some places 300 feet deep and same color as that of Lake Superior, is full of trout and white fish and has been one of the chief fishing grounds of the Hudson Bay Company for over one hundred years, supplying many of their posts with fish. This is a very extensive lake, having many extensive deep bays with many islands, and looks as if nature not having room to scatter all her lakes, threw the balance in a heap at this place. The Hudson Bay Company have a trading post on Bear Island, in the middle of the lake. It has two outlets—one flowing southerly into the Sturgeon River, thence to Lake Nipissing; the other northerly into the Montreal River, thence into Lake Temiscaming. The line continues from Lake Tamagaming 22 miles further to reach Lake Temiscaming, a total of 90 miles

from North Bay, descending over 300 feet from the general level of the lake country to this lake, which is about thirty feet lower than Lake Nipissing, its elevation being 612 feet above the level of the sea. In approaching Lake Temiscaming the line passes through a large district of fine agricultural lands, reported by actual surveys to contain about 95 per cent. arable land. Lake Temiscaming is a magnificent stretch of navigable water the largest and deepest of the whole course of the Ottawa, extending 75 miles without any obstruction to vessels of the largest tonnage. The name Temiscaming is from the Ojibway language and means "deep water" also, it consists of three lakes—the lower, middle and upper—connected by narrow straits, with its tributary the River Blanche, which enters at its northern end, navigation is continued many miles further into the interior. It is the great basin of the Ottawa and drains 19,000,000 acres. The land in this district is good, similar to the best in Canada, with a climate equal to any on the north shore of the St. Lawrence. To this lake would be the first division of the railway.

Leaving this lake, the line again rises to the upper level of what might be called the table land, which may be described as a level clay plain, with a number of rocky hills and ridges protruding. At about ninety miles distance Lake Abitibi is reached, which is about thirty feet below the ordinary level of the plain described. This is also a very extensive lake. The outlet is by the Abitibi River, which flows northerly to the Moose River and thence to James' Bay. This would form what might be called the second division of the railway. From Lake Abitibi to Moose Factory, situated on an island in the mouth of Moose River—where it enters James' Bay—the distance is about 180 miles. After leaving the locality of Lake Abitibi the line begins to descend rapidly till it comes to the level of an immense plain, covered with belts of timber, intersected with stretches of peat beds; the soil is clay, so that there are large stretches of good strong alluvial soil.

James' Bay, named after Capt. James, who wintered there in 1632, begins at Cape Jones on the east side of Cape Henrietta Maria on the west, and runs south about 360 miles, with an average breadth of 150 miles. It is merely a prolongation of Hudson Bay. With many people Hudson Bay is apt to be associated with the Polar regions, yet no part of it comes within the Arctic circle. The latitude of its southern extremity James' Bay begins about 51 degs. north, is south of London, England. It never freezes over, and is connected with the

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- (b) That this decision be published in:
- (i) local newspapers; and
 - (ii) The Ontario Land Surveyor Quarterly, and that the Ministries of Natural Resources and Consumer and Commercial Relations be notified and that the Registrars of the Registry Offices in the Township of Russell, and the Township of Cambridge, and any other Registry Offices in which plans of survey of Mr. Donnelly are deposited, be so notified forthwith.

Atlantic by a wide passage. This great Canadian sea, including James' Bay, abounding with whale, porpoise, salmon and white fish, and to the further north with seal, is about 1,000 miles long north and south, and more than 600 miles wide at its north part; total area about 500,000 square miles. At Moose Factory, farming and gardening are carried on by the officers of the Hudson Bay Company. Oats, barley, beans, peas, potatoes, turnips, beets, carrots, cabbage, onions, tomatoes, etc., are grown without any more care than is required in other parts of Canada. Horses and cattle are kept and plenty of fodder is found for them.

Professor Bell says:—"Around James' Bay and up the eastern sides of Hudson Bay lie great deposits of iron and coal so close together that this district about James' Bay may yet become another Pennsylvania."

Another explorer says of the district about James' Bay:—"This district is the richest mineral region in the Dominion, perhaps on the continent. Coal and iron are also to be found in abundance along the rivers south of James' Bay."

Another explorer in his report to the Ontario Government says:—"There are also in the neighborhood of James' Bay, north of the height of land, enormous peat beds, perhaps the largest in the world, from eight to twenty feet thick, besides lignite or Brown coal, "Kaolin and Iron."

Other resources of James' Bay are: Furs, oils, whalebone, feathers, quills, fish, castoreum, lead ore, lumber, ivory, tallow, gypsum. The iron ore is particularly valuable, as it contains a great amount of carbonate of magnesia, making it available for the manufacture of Bessemer steel.

The district from around Lake Abitibi to James' Bay, with its clay formation, has endless resources for the production of aluminium, which by newly discovered processes, can now be produced at less than 25 cents per pound, and when produced in the quantities that this district warrants the supply of, it will take the place largely of silver, copper and tin. The Kaolin deposits are extensive, and the very best qualities of china and porcelain may be also manufactured; there are also beds of the finest sand for the manufacture of glass. Large quantities of gypsum, fire-clay, brown and yellow ochre are to be found; there are also many signs of petroleum and natural gas.

All these valuable resources lie waiting development. Now is the time to revive and stimulate the business of the country by the building of this railway; but such an undertaking needs the back-

ing and co-operation of both the Provincial and Dominion Governments to a much greater extent than at present proposed.

The location of a good railway line through this country is no small undertaking. After leaving the settlement in the vicinity of North Bay there are no roads of any kind, and the dense, pathless forest, with its heavy undergrowth, is entered. The instructions given were to secure the most direct possible line, the maximum grade to be 1.33 feet per 100 feet going northerly, and 1 foot per 100 feet going southerly; the sharpest curve to be not less than that of 1,146 feet radius. As an early report and estimate were desired two parties were sent out. The number in each party varied from ten to eighteen men, as circumstances required. On the first thirty miles, there being no lake or river convenient, the provisions and camp outfit had to be carried on men's shoulders, and the days that camp was moved were the great and eventful days of the survey. A trail or path through the bush having been opened out, three or four miles ahead in the direction the line was likely to go, all the surplus provisions, etc., having been carried forward by the packmen, and the survey and location having been completed in the district of the existing camp an earlier start than usual was made, and at daybreak blankets, tents, etc., were rolled up, each man making up his pack into as convenient a shape as possible for the mounting on his shoulders. Each pack being made up to include as much as each man could struggle with through the woods and was often a curious conglomeration of camp outfit. Blankets, pots and pans, pork and stationery, flour and grindstone, canned goods and personal clothing. The pack mounted on the shoulders at the back of the neck, the tump line or strap passing round the forehead by a loop, made the portager or packer sometimes top heavy, when he began to get weary, and if he passed too close to one tree, trying to dodge another, the recoil might send him stumbling headlong over the lying timber on the trail. One incident that might have been serious happened simply; the pack of one of the party was surmounted with the large tin bake pan, to rest and adjust his pack he backed up to a large lying pine, intending to deposit his pack on tree; he laid it down and just as he was about to take his head from the loop, the tin pan being bright and smooth, slid on the round tree and the whole pack of about one hundred pounds shot off over the tree like a catapult, took the stalwart portager at a disadvantage, carrying him with it head over heels.

A trial or preliminary line was al-

ways ran ahead first, and if not satisfactory, another and another, till the best line possible in that locality was got. Going to the camp or to the end of the survey line by short cuts through the bush was also an interesting part of the service; every moment of time possible was utilized in running in the line, and then in getting to camp across country as one best could, it sometimes happened that some adventurous spirit would overshoot the mark, pass beyond and thus be late in getting there, and, of course, would then be the recipient of much chaffing, as well as chaffing enquiries as to the country he had seen; had he explored a new route? It would, of course, be decidedly awkward to be benighted in the woods, as it darkens quickly and it is useless then attempting to travel, so one had better hang himself up on a limb till morning.

A number of fine pine trees had to be felled on the line, some over three feet through, regular monarchs of the forest. It was always a source of regret to the engineers to cut down such magnificent timber, also to the axemen on a hot day with the cry "Hurry up now, boys! Push her down!" ringing in their ears, as it is no easy job to throw down such giants hurriedly, but four good men would gather around and a merry chime would be rung, as the four axes swung, with clip! ! clip! —clip! ! clip! and then hurrah! cries of look out! and

"Beware the pine tree's withered branch," or dead limbs sometimes fly where least expected, and fall so close with sickening thud as to make one shiver.

This country is the home of the moose, of which there are a great many. Their paths were plentiful and sometimes well worn with great foot prints. One of the axemen said that "The woods were crawling with them!" It is difficult to understand how these immense beasts, with immense branching horns, get so fast through the dense bush; of course they have their runways, but when taken unawares they break off anywhere. They are protected by a prohibitory law till October, 1895. But of course a person may kill one in self-defense; it is said that the meat is very fine, particularly as a change from salt pork. As the party had started out with a certain quantity of provisions, calculated to last a certain time, and it was necessary to connect the two surveys at all hazards, as the provisions got lower, the axes seemed to ring quicker, till all the party got worked up to a state of enthusiasm to push ahead, and latterly the cry of "Line ahead." by the axemen to the transitman were frequent, and occasionally if there was any

SOLAR EPHEMERIS NOVEMBER 1981

For 0^h Universal Time or Greenwich Civil Time

Day of Month & Week	The Sun's Apparent Declination	Diff. in Decl. for 1 hour	Equation of Time			GHA of Polaris
			True Sol. Time = LCT +			
			Eq. of Time	Differ. for 1 hour		
1 SU	S14 19.8	0.80	+16 22.0	0.06	006 28.0	
2 M	S14 35.0	0.79	+16 23.4	0.03	007 27.1	
3 TU	S14 58.0	0.78	+16 24.0	0.01	008 26.2	
4 W	S15 16.7	0.77	+16 23.8	0.04	009 25.4	
5 TH	S15 35.1	0.76	+16 22.8	0.07	010 24.5	
6 FR	S15 53.3	0.75	+16 21.1	0.11	011 23.7	
7 SA	S16 11.2	0.74	+16 18.5	0.14	012 22.9	
8 SU	S16 28.9	0.72	+16 15.0	0.18	013 22.1	
9 M	S16 46.3	0.71	+16 10.8	0.21	014 21.3	
10 TU	S17 02.4	0.70	+16 05.7	0.25	015 20.5	
11 W	S17 20.2	0.69	+15 59.8	0.28	016 19.6	
12 TH	S17 36.7	0.67	+15 53.0	0.32	017 18.8	
13 FP	S17 52.9	0.66	+15 45.4	0.35	018 17.9	
14 SA	S18 08.7	0.65	+15 37.0	0.39	019 17.0	
15 SU	S18 24.3	0.64	+15 27.6	0.42	020 16.2	
16 M	S18 39.6	0.62	+15 17.5	0.46	021 15.4	
17 TU	S18 54.5	0.61	+15 06.4	0.50	022 14.6	
18 W	S19 09.1	0.59	+14 54.5	0.53	023 13.8	
19 TH	S19 23.3	0.58	+14 41.8	0.57	024 13.1	
20 FR	S19 37.2	0.56	+14 28.2	0.60	025 12.4	
21 SA	S19 50.7	0.55	+14 13.8	0.64	026 11.6	
22 SU	S20 03.9	0.53	+13 58.5	0.67	027 10.9	
23 M	S20 16.7	0.52	+13 42.5	0.70	028 10.2	
24 TU	S20 29.1	0.50	+13 25.6	0.73	029 09.4	
25 W	S20 41.2	0.49	+13 08.0	0.77	030 08.7	
26 TH	S20 52.9	0.47	+12 49.6	0.80	031 07.9	
27 FR	S21 04.2	0.45	+12 30.4	0.83	032 07.1	
28 SA	S21 15.1	0.44	+12 10.6	0.86	033 06.4	
29 SU	S21 25.6	0.42	+11 50.0	0.89	034 05.6	
30 M	S21 35.6	0.40	+11 28.7	0.91	035 04.9	
31 TU	S21 45.3		+11 06.8		036 04.2	

Hourly differences in declination and equation of time are for the 24-hours following 0-hours of date in left column.

SOLAR EPHEMERIS DECEMBER 1981

For 0^h Universal Time or Greenwich Civil Time

Day of Month & Week	The Sun's Apparent Declination	Diff. in Decl. for 1 hour	Equation of Time			GHA of Polaris
			True Sol. Time = LCT +			
			Eq. of Time	Differ. for 1 hour		
1 TU	S21 45.3	0.39	+11 06.8	0.94	036 04.2	
2 W	S21 54.6	0.37	+10 44.2	0.97	037 03.6	
3 TH	S22 03.4	0.25	+10 21.1	0.99	038 02.9	
4 FR	S22 11.8	0.33	+09 57.3	1.01	039 02.3	
5 SA	S22 19.8	0.31	+09 33.0	1.04	040 01.6	
6 SU	S22 27.3	0.30	+09 08.1	1.06	041 01.0	
7 M	S22 34.4	0.28	+08 42.7	1.08	042 00.4	
8 TU	S22 41.1	0.26	+08 16.9	1.10	042 59.7	
9 W	S22 47.3	0.24	+07 50.5	1.12	043 59.0	
10 TH	S22 53.1	0.22	+07 23.8	1.13	044 58.3	
11 FR	S22 58.4	0.20	+06 56.6	1.15	045 57.6	
12 SA	S23 03.2	0.18	+06 29.0	1.16	046 57.0	
13 SU	S23 07.6	0.17	+06 01.1	1.18	047 56.3	
14 M	S23 11.6	0.15	+05 32.8	1.19	048 55.7	
15 TU	S23 15.1	0.13	+05 04.2	1.20	049 55.1	
16 W	S23 18.1	0.11	+04 35.3	1.21	050 54.5	
17 TH	S23 20.7	0.08	+04 06.2	1.22	051 53.9	
18 FR	S23 22.7	0.07	+03 36.9	1.23	052 53.4	
19 SA	S23 24.4	0.05	+03 07.3	1.24	053 52.8	
20 SU	S23 25.5	0.03	+02 37.6	1.24	054 52.3	
21 M	S23 26.2	0.01	+02 07.8	1.25	055 51.7	
22 TU	S23 26.4	0.01	+01 37.9	1.25	056 51.1	
23 W	S23 26.2	0.03	+01 07.9	1.25	057 50.5	
24 TH	S23 25.4	0.05	+00 38.0	1.25	058 49.9	
25 FR	S23 24.2	0.07	+00 08.1	1.24	059 49.3	
26 SA	S23 22.6	0.09	-00 21.8	1.24	060 48.7	
27 SU	S23 20.4	0.11	-00 51.6	1.23	061 48.1	
28 M	S23 17.8	0.13	-01 21.2	1.23	062 47.6	
29 TU	S23 14.7	0.15	-01 50.6	1.22	063 47.0	
30 W	S23 11.2	0.17	-02 19.8	1.21	064 46.5	
31 TH	S23 07.2	0.19	-02 48.8	1.20	065 46.0	
32 FR	S23 02.7		-03 17.5		066 45.5	

delay in the transit, the cry was heard ringing down the line, "Come ahead with your lorry" till finally the wonder ceased at the moose running in the woods so. The party all seemed as active as moose. Some one was heard to say that the spirits of murdered moose had entered into the party. Anyway the surveys were connected and a good line located. The first thirty and odd miles ready for construction, the rest of the distance has yet to be run over again. As soon as the line reached the Lake country, birch bark canoes were used to travel in and move camp with. They were light and portable, as it was necessary to carry them across from one lake to another when the rivers did not connect. It might be noted here that similarly as the axemen said of the woods with moose, he also said of the lakes with fish, "They were fairly crawling wid them"—black bass, pike, trout and white fish.

Regarding the timber, which is so plentiful through this country, it has been estimated that there is enough pine alone to supply traffic for the railway when built for seventy years. Experts were sent out specially who after careful and exhaustive explorations made their reports and estimates. Then there are lots of fine cedar, black spruce, black birch, tamarac, etc., the whole country is densely covered with all sorts of timber,

and what is not required for lumber is suitable for making pulp. The quantity of pulp wood is illimitable and there are so many convenient water falls that mills for the manufacture of pulp can be put up as required. And when it is noted that the new processes for manufacturing the pulp when produced are so much improved now, that a texture equal to the finest silk can be produced, it is evident that this district may yet become a richer producing country than the cotton fields of the South. For it is certain that many kinds of cloth and paper will be superseded by this material, and when clothing can be manufactured better and cheaper of pulp, why should not Ontario yet become the great **Manchester** of the world?

Again the question might well be asked: Why do the enterprising Americans value so highly their bit of northern country called Alaska, while Canadians are apparently satisfied to sleep peacefully with a larger, more valuable expanse of territory, lying north of James' Bay, through Hudson Bay to Baffin Bay, with its whale, porpoise, seal, feathered game and minerals, and all that fur-producing country that has made the English shareholders of the Hudson Bay Company so wealthy? Why is this? Echo answers why?

It surely must be because they are asleep, and yet people prate about hard

times, the dulness of trade, with all these avenues of trade lying dormant at their back door, and no other country to interfere with it.

Many rich Toronto men, lacking enterprise, would rather sit down on a few corner lots in the city and wait till they rise in value. Aldermen would rather squabble over putting on or taking off half a mill taxation, than stir outside and bring in trade.

If the construction of this railway could be commenced at once, immediate employment would be given to thousands of men. While the development of the various avenues of trade that would result therefrom would give continued employment to all classes of skilled and unskilled labor for generations. This is the only practical solution of the difficulties of the labor question that present themselves to us now in all our cities.

The Ottawa and Ontario Governments might well turn themselves loose on these matters, and metaphorically kill the "Giant Hard Times" in Canada.

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