

PORT SIMPSON

Official Report on the Capacity of the Harbor and its Suitability as a Terminus for a Trans-Continental Railway.

The Railway Must Terminate at Port Simpson, as There is No Other Sea Port Eligible--Port Essington and Wark Channel Not Suitable.

Capt. Brundige, an Expert, Pronounces it Equal to the Finest Harbors in the United Kingdom--Mr. H. J. Cambie, Chief Engineer C.P.R. Pacific Division, Makes Favorable Report on Harbor and Skeena River Route.

In 1870 the Dominion Government was in doubt whether to adopt a southern or northern route through British Columbia for the Canadian Pacific Railway, and in order to be in a position to decide intelligently, Sir Sandford Fleming, then chief engineer of the Canadian Pacific Railway (which was being constructed by the Government of Canada), was instructed to send a party of engineers to examine Port Simpson and the route eastward via the Peace River and Pine River passes through the Rocky Mountains. The instructions of these engineers, their reports, etc., were published by the Dominion Government in book form in 1880 and form very interesting reading, giving, as they do, detailed information about the topography, soil and climate of Northern British Columbia, and of the Peace River and Edmonton districts, now proposed to be traversed by the Grand Trunk Pacific and Trans-Canada Railway from Quebec to Port Simpson. In his introduction to these reports Sir Sandford Fleming, on page 6, says:

"The objects of the examination were to discover the most favorable route from the coast to the Peace River District, on the eastern side of the mountains, and thence to the line already located near Edmonton; to gain full information with regard to Port Simpson, its advantages and disadvantages as a harbor; to verify the reports as to Wark Inlet being navigable by ocean sailing ships; to ascertain how far the country lying between the head of that sheet of water and the River Skeena and the Valley of the Skeena itself were suitable for a railway line; and to obtain such definite information respecting the nature of a portion of the line accessible to steamers from the ocean, as would admit of a contract for construction being at once let, in the event of a northern route being chosen."

"This examination really involved the determination of the problem whether the choice of the Burrard Inlet route should be sustained or abandoned; and if construction should be immediately commenced on the southern or on a northern line."

"The service was consequently one of importance. The instructions to the officers selected, together with their reports, are given in full in the appendix."

MR. CAMBIE'S REPORT

Mr. H. J. Cambie, now chief engineer of the C.P.R. Pacific Division, was chief of the party of engineers employed to make the examination, and the following extracts are taken from his interesting report, made to Sir Sandford Fleming, under date of New Westminster, January 20, 1880, on pages 38, 39, 40 and 55:

"Sir—I have the honor to submit the following report on the survey and explorations made, during the Summer of 1879, to determine if a northern route could be found by Peace River and the River Skeena, or any of their tributaries to Port Simpson on the coast of British Columbia."

Messrs. Macleod, Keefer, Gordon and myself left Ottawa on May 12th and reached Victoria, British Columbia, on the 24th. Dr. G. M. Dawson of the Geological Survey, and Mr. Horetzky, having joined us at San Francisco on the 19th.

We spent ten days in Victoria making preparations, and on June 3rd sailed northward in the Hudson Bay Company's steamer "Princess Louise."

The men and supplies were landed at Port Essington on the 5th and the steamer was then placed at our disposal for the examination of Port Simpson and the Wark Inlet.

We proceeded the same evening to Metlakatlah, where we had the advice and assistance of Mr. Duncan, the Church of England missionary, in engaging Indians with their canoes to take us up the Skeena, where we anchored for the night.

METLAKATLAH.
This is a poor harbor for large vessels, the channel being narrow and tortuous, and the inner part is so small as to afford but a very limited amount of accommodation. It is, however, admirably adapted for the use of canoes, as it is connected with a number of land-locked channels by which the Skeena River can be reached without facing the open sea.

PORT SIMPSON.
The following morning we got underway about 3 a.m., and passing northward between Finlayson Island and the mainland, entered Port Simpson by the channel to the eastward of the small known as "Harbor Reef." We remained in the harbor for about two hours, and the tide being out, had an opportunity of observing that, within the dotted circle marked on the charts around Harbor Reef, and which is there shown as being largely composed of kelp, the greater part was left bare at low water. By inspecting the chart it will be seen that within the southern part of the harbor, protected by this reef from the ocean swell, there is an area of about one-half mile by two, sheltered bay inside Birnie Island, about three-quarters of a mile square. These, with the land-locked bay east of Finlayson Island, afford about five miles of water frontage on the mainland, besides a large extent on the surrounding islands.

The islands and reefs which inclose the harbor being low, vessels would not be protected from wind should it blow a gale from the west. This, in the case of small sloops, such as those which now trade along the coast, might cause inconvenience, but large vessels may be considered safe when in calm water, and westerly winds are not the prevailing ones in the winter when gales most frequently occur.

The shores of Port Simpson rise gently from the water's edge and are well adapted for the site of a city.

There is much rain in summer and frequent snow storms occur in winter, but the snow seldom lies on the ground for more than a few days.

Were suitable lighthouses and fog-signals erected on some of the northern points of Queen Charlotte Islands and southern points of Alaska, as well as on other rocks and points near the harbor, it seems to me that Port Simpson would be in every way suited for the terminus of the Canadian Pacific Railway.

In this opinion I am partially borne out by Commander Pender, the naval officer who conducted the survey of that part of the coast. See the report of 1877, page 295, where, in reply to question 25, he describes Port Simpson as the "finest harbor north of Beaver Harbor in Vancouver Island."

On page 297, of the same report, in reply to question 28, Admiral Cochrane mentions that "little or no difference was found in the temperature of the sea at that latitude (Port Simpson) and at Vancouver," and mentions this fact amongst others to show that the climate is tempered by ocean currents.

We left Port Simpson by the Inskip passage, which is a magnificent entrance, being about half a mile wide and free from strong currents or obstructions of any kind, and steamed around to Wark Inlet.

WARK INLET.
A nautical survey of the coast of Northern British Columbia was made by Commander Pender, and no doubt the entrance is correctly placed on the Admiralty Charts, but the channel itself has not been surveyed, and is incorrectly sketched. It is situated, opposite the entrance and would appear from the

chart to be only about three and a half miles distant, while in reality it is little, if anything, short of eight miles distant. This is a matter of some importance, for it is the southern extremity of Alaska, and were it as close as shown, a battery placed there by the Government of the United States could prevent vessels entering or leaving Wark Inlet.

Wark Inlet is easily approached, there being plenty of seamark; the entrance is 1,500 or 2,000 feet wide; a mile farther in, it narrows to about 1,000 feet, but soon opens out again, and then averages one mile in width all the way to its head.

There is an 18 feet rise and fall of tide, which causes a swift current in the narrow entrance; but we saw no sign of eddies, though we passed through at about three-quarter ebb, when it had a velocity of, perhaps, four miles per hour.

We tried a few soundings and found bottom at 38 fathoms, about four miles inside the entrance, but failed to find it again with 76 fathoms of line, till within half a mile of the head of the inlet, where it is 56 fathoms deep, sloping gradually from that point to the beach, so that the space fitted for anchorage is very small.

The shores are well suited for the building of wharves, and would afford about two miles of water frontage; but their construction would be expensive, as the rock bottom would prevent the use of piles. The area of land suitable for a townsite is very limited, the head of Wark Inlet could be used as a temporary terminus, but the accommodation both for railway and shipping would be very much contracted.

In extending such a line down the "Simpson Peninsula" to Port Simpson, it would have to follow closely by the shore of Wark Inlet, and as the hills rise directly from the water's edge at slopes of one in two or one in three, except for about four miles nearly opposite the Quatnam Inlet, where their average perhaps one in one, much curvature would be required and the excavation would be in rock, but would not be excessive in quantity, except for the four miles above referred to, where there are also some snow-drifts to be provided against; these come, however, from heights of only 300 to 400 feet, and should not be classed with the "Alaskan" courses met in the valleys leading to Dean's Canal, Bute Inlet or on the River Skeena.

In rear of Port Simpson is a low tract of country extending across to Wark Inlet, so that a line could be brought to any part of the port with ease.

GENERAL RESULTS.
As the result of the season's explorations, the following conclusions may be arrived at: that a northern route for a railway can be found from Port Simpson via the Rivers Skeena, Babine, Driftwood, Omicema and Finlay to the Peace River Pass; and that some other, though more circuitous routes are available by which the same pass could be reached.

The Peace River, which is the lowest known pass through the Rocky Mountains, offers a wonderfully favorable line for a railway through that range, and for sixty miles east of its main summits.

The Pine River Pass is also a remarkable one, and though the elevation is much greater than that by the Peace River, the works in passing through the mountain range would be lighter. A favorable line can be found from the valley of the Skeena via the Watonagan River, Fraser Lake and Fort McLeod to connect with this pass, but such a line would be very circuitous and many miles longer than the northern one.

(Signed) H. J. CAMBIE,
SANDFORD FLEMING, ESQ., C.M.G.,
Engineer-in-Chief Canadian Pacific Railway, Ottawa.

REPORT OF HENRY

A. F. MACLEOD

Ottawa, 7th February, 1880.

Sir—I have the honor to report that I made an exploration of the country lying between Port Simpson, B.C., and Edmonton, N.W.T., by way of Peace River, in accordance with your instructions dated 12th and 13th May, 1879.

PORT SIMPSON.

The steamer, drawing 10 feet, entered the harbor of Port Simpson at low tide by the southern entrance, after waiting for an hour she passed out by the northern entrance. The main entrance is from the west between Birnie Island and extensive reefs lying to the south about a mile distant. Many of these reefs are uncovered at low tide and form a good breakwater to the western sea.

The harbor is good, and is sheltered from the S. W. round by south to the N. W. Westerly winds would sweep with considerable force across the harbor, but would not be accompanied by much sea. Captain Lewis of the Hudson's Bay Co., who lived there for some time and has had long experience on the coast, considers it a very fine harbor. He says the most prevalent gales are from the S. E. in summer and from the N. E. in winter. The ground is not high around the shores and is sufficiently even for the site of a large town.

The approach from the ocean is good, the rocks known as the Pointers are rather to the south of the track taken by vessels from the ocean, and can be utilized as "sides" for light-houses, no soundings being obtainable except within a short distance of the entrance to the harbor.

On leaving Port Simpson we sailed to the entrance and up to the head of Wark Inlet. The mouth of the inlet is narrow and deep, and the current with ebb tide was about four miles an hour. The width increases inside from one to two miles, and the depth of water is considerable; near the entrance the sounding was 28 fathoms, thence to head bottom was found at 70 fathoms, at 500 feet from the shore the depth is 25 fathoms, so that we found no part of the inlet suitable for anchorage.

About three miles from the entrance there is a low pass to Port Simpson between the hills—thence, going south-easterly there are benches near the shore line, which disappear, and are succeeded by side hills, getting steeper as the head of the inlet is reached. In this latter portion five small tree slides were noticed, 50 to 200 feet wide, extending from 300 to 400 feet up the hill side.

There is hardly any level land at the head of Wark Inlet, but there is probably a length of a mile where wharves can be built to advantage.

REPORT OF GEORGE

A. KEEFER

Port Simpson—A Good Harbor and Good Site for a City—Wark Inlet Not Suitable for a Railway Terminus—Good Route Up the Skeena.

New Westminster, B.C., January 23, 1880.

Sandford Fleming, Esq., C. M. G., Engineer-in-Chief.

Dear Sir—In accordance with the substance of your instructions, my work for the past season has been confined to a trial location from the head of the Wark Inlet, through the "divide" to the Skeena River, and thence as far eastward, following the north or right bank of the river, as the season would admit; also embracing an examination of the shores of Wark Inlet with a view to the ultimate extension of the line to Port Simpson, and a general opinion as to the adaptability of that point as a terminal harbor for the Canadian Pacific Railway.

On the 3rd of June last in company with Messrs. Cambie and Macleod, I left Victoria on the Hudson Bay Co.'s steamer "Princess Louise," landing my party and supplies at Port Essington on the 5th.

Port Essington, or Spuckstuck, is a small Indian village or trading post at the mouth of the Skeena, and about nine miles below the southern or Skeena entrance to the divide, leading to Wark Inlet.

On the following day, Mr. Cambie having secured the steamer for that purpose, an examination of Port Simpson and Wark Inlet was made, and returning to Port Essington, I joined my party the same evening.

As Mr. Cambie has in his report given a full and exhaustive description of the points embraced in that part of your instructions relating to Port Simpson and Wark Inlet, it will be unnecessary for me to give more than a brief notice, confining myself more particularly to the portion covered by my trial location.

As all nautical authorities have instructions upon the advantages of Port Simpson over any existing harbors on the northern coast, there only remains the question of its capacity and the facilities of its land approaches, to determine whether it may be considered as a final terminal point for an important railway, and if filling the requirements

consequent upon such an important selection.

The area of the harbor is sufficient for the purpose, possessing an anchorage of over four square miles. It is sheltered to the north and west by the shores and outlying islands, but is exposed in part to the S. W. wind; the sea, however, is broken by a reef or bed bed forming a natural breakwater, but which does not prevent the full force of the wind being felt from that direction, and would possibly prove awkward for vessels exposed to its full force, but there is still a comparatively large area of sheltered anchorage left.

The shores are low, sloping back gradually, easy of approach and suitable for extensive wharfage, and possessing a building area of sufficient extent to meet any requirements of the future.

The entrance to Wark Inlet from the Portland Channel, some eight miles wide at this point, is easy of approach, but not exceeding 2,000 feet in width, with deep water to the "base of the cliffs" forming the shores on either side.

In the extension of the line from my initial point at the head of Wark Inlet northward to Port Simpson, some 32 miles, the work may be classed as very heavy, and some six miles extensively so. The outline of the shore, although generally direct, is very irregular, sharp indentations are frequent, varied by projecting points of either rock or broken rocks, all in profile varying from slopes one, one and a half and two to one. Although the tide rises and falls some 18 feet there is no marked or easily available for the embarkment, and the line must therefore be almost entirely in cutting, which will be heavy and through very expensive material, as I fancy little but solid rock would be encountered in its construction. A depression through which the line can be carried without difficulty runs from the harbor of Port Simpson through to Wark Inlet.

The head of the inlet cannot be considered as in any way suitable as a terminus, even as a temporary one, as it has many disadvantages. The area of anchorage assumed at 30 fathoms, extends only at the extreme end, and is of very limited extent, having only a frontage of about a mile in length and width not exceeding 500 feet from the shore. The bottom is of rock and had holding ground, and consequently artificial means in the shape of anchoring buoys would have to be provided, and no vessel could approach her anchorage under all weather conditions.

From the nature of the wharfing would have to be of cribbing, as I have no idea that piles of any description could be used successfully. The shores are so precipitous that but little room can be found for building purposes. In the valley of the two streams emptying into the inlet at this point, there is a small area, but the greater portion of this space would be required for the railway.

The result of my season's work may be assumed as demonstrating the feasibility of this portion of the line, the entrance to the "divide" a railway. Work on the Skeena, proper is not excessively heavy, the cost being more owing to the nature of the material than from any great excess of quantities. The tributaries crossed are easily bridged and in all cases have a light depth of water.

From the nature of the "divide" and extension to Port Simpson the work becomes rather formidable, but with nothing exceptionally difficult in construction.

REPORT OF REV.

D. M. GORDON

Port Simpson is a small village that has gathered around an old Hudson's Bay Company's post (from which it is sometimes called Port Simpson), and is occupied, almost entirely by Indians.

The harbor is most favorably situated. Easy of access for steam navigation, through the channel by which we entered it from the south, it is easy of access for sailing ships or steamers approaching from the west, through Dixon Strait, that separate the Queen Charlotte Islands from Alaska; and it is as safe as it is accessible. Facing the west it has two approaches—Dodd Passage between the south-western extremity of the harbor and a reef of rocks and Inskip Passage, which separates this reef of rocks on its northern side from Birnie Island. Between Birnie Island and the northern extremity of the harbor, there is a choked passage not fit for any navigation, save that of canoes or other light craft.

This reef of rocks, though hidden at high tide, is treacherous at low water, and the keel of the ship attached to it, and it serves as a partial breakwater for any sea that might roll in from the Pacific, while Birnie Island completes the protection of the harbor on the western side. The extent of the harbor may be set down at not less than three miles in length, with an average breadth of nearly one mile. Its only exposure is to the west, especially through the approach known as Inskip Passage, but no severe gales ever visit it from that quarter. Finlayson Island and the Dundas Islands protect it to the south-west and south, while any gales from the northeast, east or southeast (the prevailing quarters for high winds in this locality) can scarcely have any influence on its waters, as it is so well defended on these sides by the high surrounding land. The anchorage is reported by Captain Lewis to be excellent at the above place.

Wark Inlet is quite narrow at the entrance, and only 32 fathoms deep. Entering about a mile the water deepens to 100, and above that all the way up, there is no anchorage, in any part of it, except the little bay opposite Port Simpson, where I ran the line across.

PORT SIMPSON.
After having made a thorough examination of Port Simpson and its approaches from the Pacific Ocean, I may say there are few harbors in the United Kingdom of Great Britain and Ireland to equal it.

REPORT OF CAPT. BRUNDIGE

Port Simpson one of the Finest Harbors in the United Kingdom.—No Currents, no Serious Obstructions to Navigation.

From pages 123, 154, 156, 157, 158, 159, 160 of Government report, 1880, headed "Notes on an examination of the harbors and rivers of the coast of British Columbia, by Captain J. C. Brundige, dated Port Simpson, 12th March, 1880."

Captain Brundige, in accordance with the letter of instruction from the Engineer-in-Chief, sailed from Victoria on 27th June, 1879, for the northern coast of British Columbia, arrived off the mouth of the Skeena on the 13th July, and proceeded at once to make careful examination of the several harbors and coast line of the northern portion of the province, with the several approaches from the sea, embracing a thorough examination of the Dixon Entrance to the north of Queen Charlotte's Islands, and also the approach from the Pacific southward of this group.

Captain Brundige prosecuted his surveys of the outer approaches until November, when the weather became too wintry for his further continuance, since which time, and up to date of his report, 12th March, 1880, he has been engaged in making further soundings in Port Simpson, tidal measurements and full weather observations for the months of November, December, January, February and the first part of March, the tables of which, also published herewith, are of great interest as showing the character of the winter months on the northern coast of British Columbia. The following notes are condensed from his report.

PORT ESSINGTON.

Port Essington is situated on the River Skeena, about eleven miles from the mouth. Here there is a large basin about four miles long and two wide, from four to seven fathoms water, with a muddy bottom. Tide runs out from five to six knots per hour, and up from three to four knots. The spring tides rise and fall 20 feet, and the neap 15 feet.

A heavy cross-sea is caused by strong winds from N. W. to S. E. and vessels riding at anchor in the current here during a gale of wind, would be sure to foul and trip their anchors.

I ascertained from several traders and others who had been in this locality for many years, that during the months of December, January, February, and even into April, heavy masses of ice, with large trees, drift up and down with the tide, which would render this port useless during the winter, and cause destruction to any wharves that might be constructed.

PORT SIMPSON.

Port Simpson is the most northern harbor of British Columbia, and is situated in latitude 54 deg. 34 min. N., longitude 130 deg. 23 min. W. It embraces over four square miles of water, from four to twenty fathoms deep, with muddy bottom and good holding ground, and free from rocks and shoals. It possesses great facilities for dockage, as the four-fathom water is found close to the banks. It is easy of access from sea, having no current tide, but merely rise and fall, well sheltered from all winds except from the west, which here seldom blows. The prevailing winds are south-west and north-west, from the effects of which the harbor is so well protected that a little dingy boat can be rowed over it with safety in all seasons of the year. Ships could lie alongside of docks at all times, and would require no towage either in entering or going to sea.

From accurate measurements made thru a period of years, months, days and nights in which it would have been impossible to save to navigate vessels into port. I have no hesitation in saying that it is one of the best harbors I was ever in.

In Dixon entrance the temperature of the water was found to be off Ross Spit 50 deg. and off North Cape 54 deg. Mean of climate from the 14th July to 24th August, 68 deg., lowest 54 deg., and highest 63 deg. The above readings of the thermometer were in the shade, and from the 27th June to the 24th August, I experienced only four parts of days of rain and a little fog, the wind light and variable; this is the most even climate I was ever in.

I ran a line across from Wark Inlet to Port Simpson Harbor, at the lowest part of the peninsula, course was S. 50 deg. W. 4,500 feet distant from water to summit, about 60 feet. I cannot see any difficulty in bringing a line down the south side of Wark Inlet and then across to Port Simpson at the above place.

Wark Inlet is quite narrow at the entrance, and only 32 fathoms deep. Entering about a mile the water deepens to 100, and above that all the way up, there is no anchorage, in any part of it, except the little bay opposite Port Simpson, where I ran the line across.

PORT SIMPSON.
After having made a thorough examination of Port Simpson and its approaches from the Pacific Ocean, I may say there are few harbors in the United Kingdom of Great Britain and Ireland to equal it.

It is easy of access by the Dixon Channel, which is ten miles in width at the narrowest part. I consider this entrance free from danger, with the exception of the Devil's Ridge, previously described, which only requires a bell buoy to guide the mariner.

I would rather run thru Dixon Entrance to Port Simpson on a dark night, as it is, than the North Channel thru the Mull of Canine and its currents, or St. George's Channel from the Tuskar Light to the Mull of Galloway, with all the lights and fog signals, and I fall to see on what grounds the Naval officers founded the views set forth in their report, namely, "That Ross Spit would always be a large element of danger in using this channel."

The Spit in question is well defined, but, of course, as with the beach of rocks on any shore, is not the proper position for any vessel. No ship-master who knows his duty would run his vessel on the shoal water at the Spit, when there exists a channel twenty-four miles wide, free from shoals or other dangers, in which the tide is regular ebb and flow.

Ships coming from the south and west can make Cape St. James in Safety, just as ships make Cape Clear on entering St. George's or Bristol Channel.

They will have a good landmark, free from all danger, and a beautiful strait to sail up in good soundings, 25, 40 and 70 fathoms. As they sail up they can enter Ogden, Eddy or Brown's Passages, either of which is superior to San Juan, having very little current and no fog, the currents being the regular ebb and flow.

I believe if this coast was properly surveyed, soundings would be found to the west of Queen Charlotte's Islands to guide the mariner in approaching the land, as I see the Naval officers of the United States report finding a bank to the west of Prince of Wales Island, Alaska, on which they caught some fine codfish. This bank is just to the north of Graham Island, and I have no doubt that it extends south.

This whole coast requires to be surveyed and re-charted, as none of the charts are correct. It would not be much expense, and the greatest information to have them corrected. I feel certain the Queen Charlotte's Islands are placed some miles too far east, as I have taken several lunar observations, and find from ten to twelve miles out in the different places. The latitude of Cape St. James is correct, as is also Port Simpson.

CLIMATE.

I was reliably informed at Port Essington that the months of June, July and August are the finest; that in September, October and November there is a considerable amount of rain, cloudy and strong winds, but with very little fog, similar to the northwest coast of Ireland.

During December, January and February, strong gales, cold and frost, rain and snow, the latter falling sometimes to a depth of two feet, but does not remain long on the ground. It is unusual for the thermometer to fall below zero. March, April and May comprises the principal rainy season at Port Essington, but, strange to say, the climate varies very much, for ten to fifteen miles off it is quite different.

I again visited the Skeena during the latter part of December, and found large quantities of ice drifting up and down the river. Ships could not remain at Port Essington during the months of December, January, February, and March, and well into April. The north channel of the Skeena is blocked off of ice nearly all winter, but it seldom reaches down as far as Kennedy Island.

Port Fleming is free from ice. I also visited Eslington during the month of February for several days, and found large quantities of ice in and around it. The snow-fall here has been about 6 feet on the level. I measured the snow at several places and found 3 feet at Port Fleming, and 11-12 feet at Inverness.

I herewith enclose weather table. It is to be regretted that the winter I have passed here has not been nearer an average season, as the record of it may deceive many.

This has been the most severe winter ever known here. The severity of the weather has, according to the opinions of residents of 20 years' standing, never been equalled.

The average winter here is moist, and just as free from fog as this one has been, with north and southeast winds. Ten degrees of frost is considered very low temperature. So entirely were the residents unprepared for such unprecedented weather, that all the vegetables have been frozen, as none of the cellars were constructed to guard against a temperature with the thermometer at zero.

The snow-fall (at Port Simpson), although not very great, has continued on the ground longer than known before.

Mr. Hall of the Hudson Bay Company, for instance, records the budding of trees at Port Simpson on the 10th February, 1878, and at that time flowers were in bloom in his garden.

The extremely severe weather of the present winter has been by no means alone, as by accounts received from the north and south of us, as well as from the interior, such weather has never been known.

THE SNOW-FALL AT PORT SIMPSON.
During this winter did not exceed 28 inches altogether, and from information gathered respecting other winters the average MAXIMUM 18 INCHES, MINIMUM 18 INCHES, and it never remains more than a day or two.

The mean temperature of the water in the harbor was 34 deg. during December, January and February; it never fell to freezing point thruout these months.

highest sea in the harbor was 9 inches, at the tide pole, which is placed at the most exposed part of the harbor.

SIR SANDFORD FLEMING

ON THE PROPOSED CONSTRUCTION OF ANOTHER TRANSCONTINENTAL RAILWAY.—THE ROUTE FAVORED BY CANADA'S NOTED ENGINEER.

Quebec to Port Simpson—Rejected as Prospect of Early Construction of Line He Favored a Quarter of a Century Ago.

Sir Sandford Fleming, the most celebrated engineer in Canada, who inaugurated the great project of a Pacific telegraph cable from Canada to Australia, and who has an intimate knowledge of the country to be traversed by the Trans-Canada Railway, was recently interviewed by a reporter, when it was announced that the Grand Trunk Railway contemplated building a Trans-Continental route.

He then said: I am inclined to think that Mr. Blair is on the right track in proposing to extend the Intercolonial Railway to the Pacific. It seems to me, however, that it would be a mistake to try to form a new trans-Continental line in a haphazard way by connecting various fragments of railway which have been located without any general plan. This effect would be to lengthen the whole line and unduly lower its engineering character, and almost certainly give it features which would forever be regarded as blemishing to a great trans-Continental line. To realize Mr. Blair's conception of a new national railway, it should, in my judgment, begin at the Quebec bridge, now building, where it would form a direct connection with the Intercolonial, and it should extend from Quebec by the most direct route to Port Simpson on the Pacific. From there it would extend to the westward, and it should be a line, with splendid engineering features, with ordinary care, be secured, it would pass away to the north of the rugged shores of Lakes Huron, Superior, Nipigon and Winnipeg, thru a vast region reported generally of alluvial soil, with an abundance of wood and water.

First—The Quebec bridge is in progress. That structure I have always favored, but it would have been a bold man to have proposed such a work a quarter of a century ago. The Quebec bridge will give the needed connection with the Intercolonial, and will be the Grand Trunk Railway, and along with a junction with these railways across and across to and from Atlantic points at all seasons.

Second—the greater part of the vast region through which the new line might pass between Quebec and Port Simpson is wooded, and we have today a new value to the timber, which was undreamed of 25 years ago. The territory to be traversed is the natural home of pulp wood, and in this vegetable substance the uncultivated regions of Quebec and Ontario have an inexhaustible crop ready for harvesting. A crop of perennial character, which, in extent, I venture to say, is unsurpassed in the North American Continent—perhaps in the whole world.

I have already expressed my doubts as to the wisdom or expediency of proceeding in a haphazard way to establish a new trans-Continental railway. I regard the shortest line obtainable between the tide waters of the two oceans as quite long enough. For that and other cogent reasons I would advocate the most favorable route which can be had between the Port of Quebec and Port Simpson for a new Dominion Grand Trunk line, and at the same time to have in view the establishment of railway service with all desirable points by branches judiciously laid out. By having regard to these leading principles, and having in view, in my judgment, result: It seems to me that there is ample room for the new railway. It would in no way interfere with any other line, and it may be regarded as a natural development of the railway system of Canada. I am, as you know, a strong advocate to establish a splendid national railway on the route proposed, with the best ocean ports as its terminal. With a Rocky Mountain passage very much lower than that of any railway yet constructed across the North American Continent, and with general engineering features even more favorable than those obtained on