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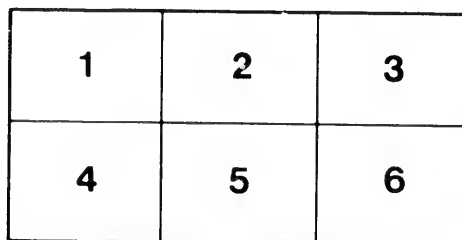
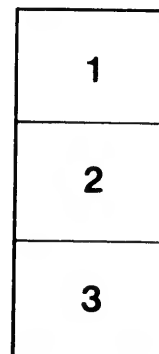
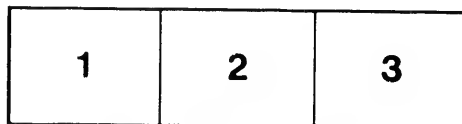
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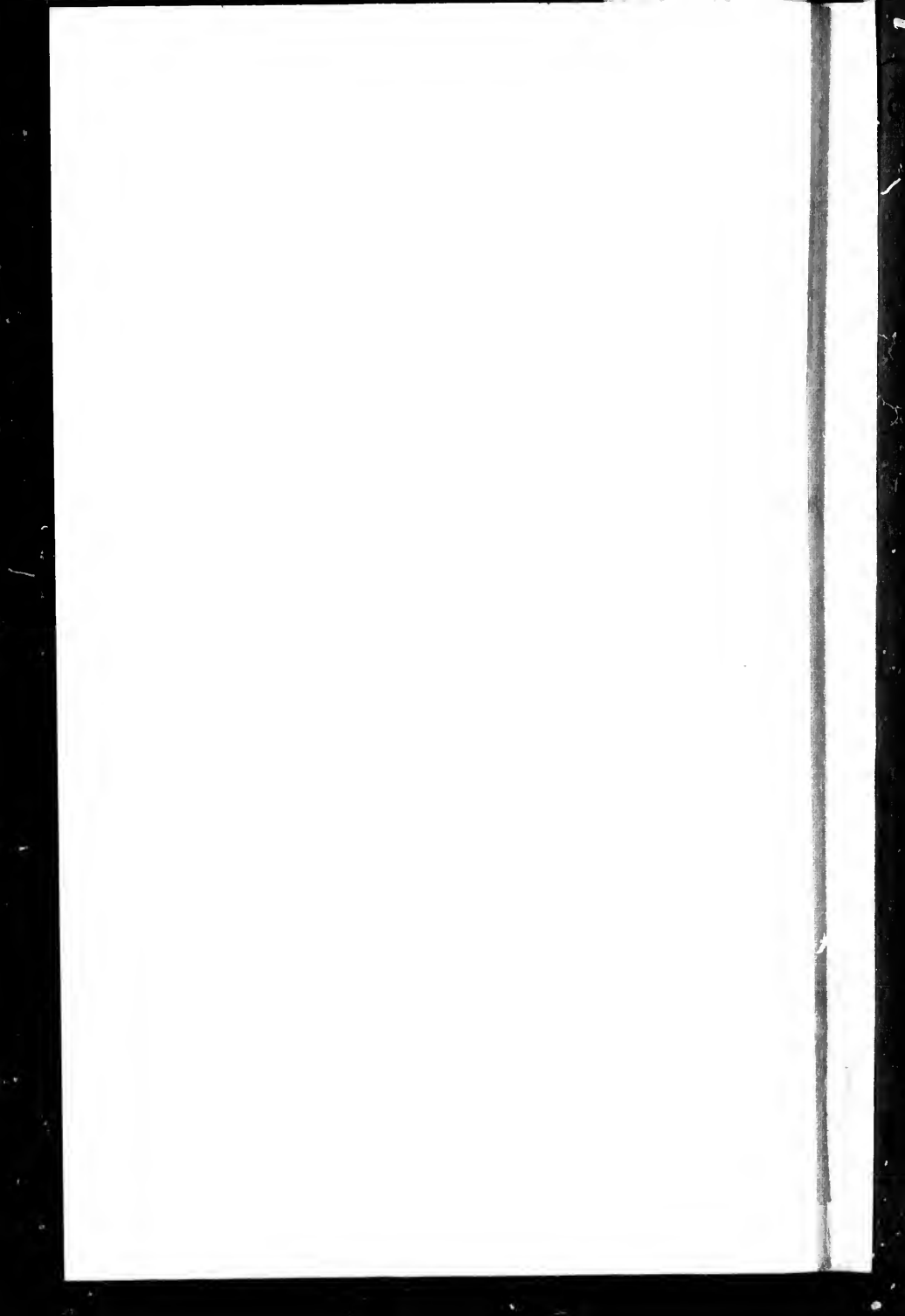
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OVERLAND ROUTE

FROM

Canada to British Columbia.

THE urgency of a direct communication between the Canadas and the Pacific, through British Territory, is becoming every day more and more evident. In a political point of view, and as a natural consequence of the late Confederation, it would contribute essentially to its prosperity; for so long as there is no direct Overland route, any connexion with British Columbia must remain a myth, and the Red River Settlement continue isolated, instead of becoming a valuable annex to the Union. At present England has no other postal communication with the Pacific but by New York and San Francisco; and in case of war with the United States, the only possible postal line would be through her own Territory across the Rocky Mountains; whereas by opening an Overland Communication immediately, a mail service would be established forthwith, not only to British Columbia and Vancouver Island, but before long to Australia and Asia. In the United States the Central Pacific Railroad passes over what is commonly called the great American Desert, a vast tract of country, destitute of wood and water, dry, barren and unfit for the habitation of man; yet in spite of this drawback, and though San Francisco possesses no coal, it is progressing rapidly, and the time is not far distant when it will be opened. Passengers, mails, and the lighter, costlier kinds of goods will pass over it; it is calculated to divert a great part of the trade of China and Japan from the Old to the New World, and if we do not wake up, we shall bitterly regret the lost opportunity, and an important traffic, which might so easily pass over our own territory, and which, from our position, ought naturally to belong to us.

The cost of an Overland Railroad, with a single line of rails, from Ottawa to the Pacific, may be roughly calculated as follows:

| | MILES. |
|--|--------|
| Distance from Ottawa to Fort Garry, partly over difficult ground | 1150 |
| From Fort Garry to Jasper's House [foot of Rocky Mountains], level plain | 1050 |
| From Jasper's House to the Head of Bute Inlet | 620 |
| Total | 2820 |

Two Thousand Eight Hundred and Twenty miles at \$30,000 per mile—\$84,600,000, or with contingent expenses say \$100,000,000.

This sum, if correct, would be too great for present possibilities or contemplation. But if such a magnificent project as that of an Inter-oceanic Railroad cannot be entertained for the present, nature has gifted this portion of British Territory with water communications of the very first order, which only require a few connecting links to make them available, and which offer a quick and easy mode of conveyance for mails and passengers during seven to eight months in the year, and for goods at one-third of the price by railway carriage, and what is most important, through a temperate climate.

Unlike the barren wilderness of the American desert, inhabited by fierce and hostile Indians, this line would pass over one of the richest, most beautiful and fertile regions in the world; extending from near the Lake of the Woods to the foot of the Rocky Mountains, and containing from 60,000 to 100,000 square miles, or from forty to sixty millions of acres; lying directly between the two Colonies of Canada and British Columbia, and possessing every possible qualification for agricultural purposes. A line of communication, where prairies covered with luxurious grasses and immediately available for the plough, are mingled with stretches of woodland, and well watered by numerous lakes and streams, and which would soon be followed up and fed by an agricultural population from one extremity to the other.

The Eastern portion of the country thus to be opened was thoroughly explored for this purpose, as far as the Red River Settlement and the lower end of the Great Saskatchewan, in 1857-8, at the expense and by order of the Canadian Government; and the chief object of the present notice is to furnish the necessary details concerning the remainder or more westerly portion. The writer has spent over five years in studying the question, and has laid out considerable sums, in connexion with it, towards opening the first link from the Coast to the Cariboo mines. He was at perfect liberty to choose the road best suited for the purpose, and made up his mind entirely to avoid New Westminster, not only on account of the many objections it offers as a seaport, but as being impracticable for a railroad. Besides which, he had acquired the conviction that the Passes through the Rocky Mountains, between Mount Hooker, in Lat. $52^{\circ} 17'$ and the Boundary Line, which would connect that Port with the South Saskatchewan, are inferior in every respect for a railway to the line by the North Branch and the Yellow Head or Tete Jaune Pass. This will be clearly shown when describing the geography of British Columbia; in the meanwhile, the writer's reasons for adopting the Northern route in preference may be summed up as follows:

1.—The arid nature of the country traversed by the South

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Saskatchewan, the greater part of which is unfit for settle-
ment, its proximity to the Boundary line, and the hostile feel-
ings of the Indians.

2.—The much greater altitude of the passes, the sharpness
of the grades and curves, and the great amount of snow.

3.—The circuitous course the route would be obliged to
follow through the Rocky Mountains after having crossed the
main crest or watershed, amounting to nearly 250 miles of
most expensive if not impossible railroad.

4.—The enormous expense, if not impossibility, of continu-
ing the railroad in this latitude through the Cascade range
and down the Frazer to New Westminster.

5.—The utter worthlessness of the greater part of the
country thus traversed.

6.—The well-known difficulties of access to the Port of
New Westminster, which render it totally unfit for the
terminus of an Overland Railroad.

PER CONTRA.

1.—The well-known fertility of the whole country drained
by the North Saskatchewan, and commonly called the Fertile
Belt.

2. The greater navigability of the North Branch, and the
presence of large seams of coal on several points.

3.—The facility of the road by Jasper's House and the
Yellow Head Pass. This pass, or rather valley, presents a
natural roadway through the Rocky Mountains, its greatest
altitude is only 3760 feet above the sea, the Indians cross
over it in winter, nor does the snow render it impassable at
any time.

4.—The ready and easy communication offered for 280
miles by the Upper Fraser, through a comparatively open and
fertile tract of country.

5.—The facility for getting to the gold mines in and around
Cariboo, which at present can only be reached by 360 miles
of wearisome mountainous wagon road; so that only the very
richest claims have been hitherto worked.

6.—The opening up of the Chilcoaten Plain, the only
one of any extent in British Columbia, and which offers every
temptation to settlers, as soon as opened.

7.—The facilities offered by the Bute Inlet Valley, present-
ing a level break, 84 miles long, through the Cascade range,
and the only one for constructing a Railroad to the saltwater.

8.—The superiority of the harbor at the head of the Inlet,
its proximity to the coal Mines at Nanaimo, and its easy and
safe connexion with Victoria, Vancouver Island, and the
ocean.

With these premises, I will now proceed to give the follow-
ing detailed statement of the proposed communication by
Land and Water :

**INTERCOLONIAL AND OVERLAND COMMUNICATION BETWEEN
HALIFAX, NOVA SCOTIA, AND BUTE INLET, BRITISH
COLUMBIA.**

| Sections. | Railroad | Steam Navig'n. | Rise |
|---|-----------------------|-------------------|-------------|
| Miles. | Miles. | Miles. | Feet |
| 1 Railroad from Halifax to Truro | 61 | | |
| 2 Railroad from Truro to Riviere du Loup Bay, Chaleur's route [in course of construction] | 486 | | |
| 3 Railroad from Riviere du Loup to Quebec | 126 | | |
| 4 Railroad from Quebec to Richmond | 96 | | |
| 5 Railroad from Richmond to Montreal ; Victoria Bridge | 72 2 | | |
| 6 Railroad from Montreal to Toronto | 74 345 | | |
| 7 Railroad from Toronto, by Kenipeufelt Bay [Lake Simcoe] to Collingwood, on Nol- lanoassaga Bay, | 97 | | |
| Railroad existing or in construction | 1285 | | |
| 8 From Collingwood across Georgian Bay to Cabot's Head | 75 | | |
| Past Cove Island Lighthouse and across the entrance to Lake Huron; along the Great Manitoulin Island to the Group of Duck Islands | 85 | | |
| Thence through the Mississaga Channel, between Cockburn Island and the Head of the Great Manitoulin, along Drummond and Joseph's Islands to St. Marie River, and through the American Canal [1½ mile long] | 94 | | |
| Thence across Lake Superior, to between Isle Royale at its north-western extremity and Thunder Cape [1350 feet high] into Thun- der Bay and to Current River, with a good harbor, 6 miles N.E. of Fort William. | 280 | 534 | |
| N.B.—Lake Superior is 600 feet above the sea, according to Sir W. Logan and Keefer. The ice on Lakes Huron and Superior breaks up a little before the end of April. | | | |
| 9 From Thunder Bay, near Fort William [situated in a fertile valley on the north bank of the Kaministiquia and one mile from its mouth] to Dog Lake, by a sur- veyed line. | Stage- road. 28 | | 718½ |
| N.B.—The Kakabeka Falls, on the river, enter for 182 feet, and the Dog Portage 3 miles below the Lake for 347 feet in this rise. | | | |
| 10 Across Dog Lake with its gently rising banks. Up Dog River, a sluggish circuitous stream, about 80 feet wide, with flat, swampy slopes, in a valley about one mile wide, to the Prairie Portage | 10 25 | | level 18 |
| This last portion navigable for steamers by making a dam 16 feet high across the out- let of Dog Lake, at an estimated expense of £2000. | 35 | 35 | |
| 11 Prairie or Superior Portage, over the summit or Divide, between Lakes Superior and Winnipeg, 893½ feet above the former and 1493½ feet above the sea, | 22½ 24 | | 157 569 |
| | 24 | 29 | 569 |

ETWEEN
BRITISH

| Steam nav'g'n. | Rise | Sections. | Over | Miles. | Stage Road. | Ste'm Nav. | Fall. |
|-------------------|---------|---|------|--------|----------------|---------------|--------|
| | | | | | | | |
| Miles. | Feet | | | | Miles. | Miles. | Feet. |
| | | Middle Portage, between the Dog and Savanne Rivers: | | 23 | 28 | 569 | 16 |
| | | Savanne Portage, very swampy but easily drained. | | 1 1/2 | | | 32 |
| | | Total, through an easy country. | | 5 | 5 | | |
| | | 12 Down the Savanne River, a meandering stream from 40 to 70 yards wide, with muddy banks and much embarrassed by driftwood, to the Lac des Mille Lacs. | | 19 | | | 7 |
| | | Through the Lake with its numerous Islands and bold rocky scenery, many of them, however, containing tracts of good soil. | | 36 | | | 4 |
| | | Down the River Seine [increasing gradually from 100 feet wide and winding through a flat wooded valley] to the Little Falls at the Junction of Fire Steel River. | | 10 | | | 37 1/2 |
| | | This last portion navigable for light steamers by a dam about 26 feet high, above the Falls. | | 65 | | 65 | |
| | | 13 From the Little Falls [24 1/2 feet high] down the Valley of the Seine, now bounded by low hills, of the primitive formation, to the upper entrance of Rainy Lake. | | | 66 1/2 | | 367 |
| | | N.B.—A broken navigation for bateaux, with 5 portages, could be easily established on this portion of the River. | | | | | |
| | | 14 Down the upper and narrow portion of Rainy Lake, 20 miles; then through the main Lake with its rocky shores, and two miles beyond, down Rainy River [with 6 feet fall] to Fort Frances, at Rainy Falls, in all, | | 50 | | | 10 |
| 534 | | The Islands in this Lake [over 500 in num- ber] are mainly composed of pale red granite and chloritic and greenstone slate, and though picturesque, presents a barren and desolate appearance. The Lake freezes over about the 1st of December. There is a population of 1500 Indians here: | | | | | |
| | | Portage at Rainy Falls, 171 yards, requiring two Locks. | | | | | 23 |
| 718 1/2 | | From Fort Frances down Rainy River [from 250 yards to a quarter of a mile wide, and very winding], through a beautifully fertile alluvial country, studded with maple, birch, poplar and oak, and containing at least 160,000 acres of the very best soil, to the Lake of the Woods. There are two in- significant rapids 31 miles below the Fort, which a steamer of moderate power could stem with ease. | | 74 | | | 26 1/2 |
| | level | Across the Lake of the Woods, 55 miles, and thence through a navigable channel, 66 feet wide, with two small bars of loose friable slate, in all 140 feet long, to the north-western extremity of Lac Plat or Shoal Lake, in all | | 84 | | | 7 |
| 35 | | N.B.—The Indians grow large quantities of maize on the Islands, and wild rice grows in the greatest abundance in the whole | | 208 | | 208 | |
| 157 | | | | | | | |
| 569 | 899 1/2 | | | | 99 1/2 | 842 | 530 |

| Sections. | Over | Miles | Stage Road. | Steam Navig'n. | Fall |
|--|--|-------|-------------|----------------|--------------------------|
| | | | Miles. | Miles. | Feet |
| | district, forming the chief sustenance of the Indians. | | 99½ | 842 | 539 |
| 15 | From Lac Plat to Fort Garry, near the confluence of the Red River and the Assiniboine, and 647 feet above the sea. This line has been surveyed, and a very good route can be obtained over a level and favorable country, of which the first 60 miles wooded | 60 | | | 280 |
| | And the remainder level prairie. | 31½ | | | 36½ |
| | | 91½ | 91½ | | |
| <p>These 90 miles of road would replace 580 miles of cartage to St Paul's, where the inhabitants of Red River now get their supplies. The expense has been roughly estimated by Mr Dawson at £22,500; and the total cost of opening the communication by land and water, as above described, from Lake Superior to Fort Garry would probably amount to about £80,000. The Red River Settlement contains a population of from 10,000 to 12,000 and begins 10 miles south of Winnipeg Lake, extending 60 miles up the Red River and 60 to 70 miles West up the Assiniboine. The land has been truly named, "a Paradise of fertility." Many farms have been cultivated for 40 years, without any appreciable falling off; and as to climate, maize never fails to ripen, and melons grow with the utmost luxuriance in the open air, and ripen in August. The Red River, which is 600 or 700 miles long, is 200 to 350 feet wide, below Fort Garry, and navigable for steamers of light draft. It generally freezes up about the middle of November or a little later, and reopens towards the middle of April.</p> | | | | | |
| 16 | From Fort Garry, through the Settlement, down Red River, and then through 6½ miles of marsh at the mouth of the River to Lake Winnipeg, 628 feet above the sea. | 42 | | | 19 |
| | From the south end of Winnipeg Lake to its north-western extremity and the Grand Rapid 2 miles beyond, on the Great Saskatchewan. | 255 | | | 865½ |
| | | 297 | | 297 | level |
| 17 | Portage at the Grand Rapid, 3 miles, with 62 feet fall, and a small rapid above [in all 5 miles], along a steep barren ridge of magnesian [upper Silurian or perhaps Permian] limestone, on the north side of the Great Saskatchewan. | | 5 | | Rise above Lake Winnipeg |
| | N.B.—This Portage, and more especially another rapid further up, above Cross Lake, might be avoided by passing from Lake Winnipeg up the little Saskatchewan, | | | | 70 |
| | | | 196 | 1139 | 70 |

| am g'n. | Fall | Sections. | Over | Miles. | Stage Road. | Steam Nav. | Rise. |
|------------|---------------------------------------|-----------|--|--------|----------------|----------------|-------------|
| 42 | Feet. 539 | | | | Miles. 190 | Miles. 1130 | Feet. 70 |
| | | | the Manitoaba and Winnipegous Lakes, and across the Mossy Portage, which separates the latter from Lac Bourbon, and which is 4½ miles wide; but the navigation would be most circuitous, and the distance lengthened 83 miles to little purpose. | | | | |
| | 280 | 18 | From the Grand Rapid up the Great Sas- katchewan and through Lac Travers or Cross Lake to the Rapid immediately above, which would perhaps require a lock or a dam | 13 | | | 18 |
| | 36½ | | Thence 3 miles up the Great Saskatchewan and then through Lac Bourbon, in all | 53 | | | 10 |
| | | | Thence up the Great Saskatchewan to near Cumberland Lake and House | 115 | | | 208 |
| | | | Thence to the Forks of the Saskatchewan, where there are large beds of tertiary coal [lignite] | 190 | | | 45 |
| | | | From the Forks up the North Saskatchewan to Carlton House [south bank]. The river here is a quarter of a mile wide and at the lowest waters 12 feet deep. The ice sets in about the 20th of October and breaks up about the 10th of April | 73 | | | 162 |
| | | | From Carlton House, passing the limit of the tree forests at the end of about 30 miles, and then entering on the Fertile Belt, through a rich and beautiful open country, to Battle River | 98 | | | 220 |
| | | | Thence to Fort Pitt [in the upper and middle cretaceous formation] | 115 | | | 343 |
| | | | Thence to Fort Edmonton, on the north bank of the North Saskatchewan [300 miles below its numerous sources in the Rocky Mountains] | 215 | | | 664 |
| | | | The north branch of this noble river, which gathers its waters from a country greater in extent than that drained by the St Lawrence and all its tributaries, is here 250 yards wide at low water, and so far perfectly navigable for steamboats; for which I have Sir James Douglas' authority. Indeed the Hudson Bay Co. thought seriously of placing a steamer on this part of the line during the excitement of 1858-9. Above Edmonton it is navigated by the bateaux of the Company, drawing 4 feet of water, up to Rocky Mountain House, 140 miles higher; and there can be no doubt that the lower half of this distance up to the rapids, below Brazeau river, is naviga- ble for light steamers. Cumberland House and Fort Edmonton are two of the most northern points on the whole of this Over- land route. The latter is in Lat. 53° 30'. 2100 feet above Lake Winnipeg and 2728 feet above the sea. A bed of coal, 10 feet thick, of the tertiary (?) coal formation crops out here, and beds are again found cropping out on Battle River, the Pembina, the Athabasca and elsewhere, dipping | | | | |
| | 19 | | | | | | |
| | 865½ | | | | | | |
| | level | | | | | | |
| 297 | Rise above Lake Wini- peg | | | | | | |
| | 70 | | | | | | |
| 139 | 70 | | | 872 | 196 | 1130 | 2100 |

| Sections. | Over | Stage Road. | | Steam Navig'n. | | Rise |
|--------------------------------|--|-------------|--------|----------------|-------|-------|
| | | Miles. | Miles. | Miles. | Feet. | |
| | towards the East. The finest wheat is raised at Edmonton, and at St Albans and St Ann, two Settlements in the neighborhood. | 872 | 196 | 1139 | 2100 | |
| | From Edmonton up the North Saskatchewan, as far as its bend towards the south, a little below the rapids and about 6 miles below the Junction of Brazean River, | 80 | | | 250 | |
| | | 952 | | 952 | | |
| 19 | Thence across the plain, nearly due west, and over the Pembina and McLeod Rivers, two clear shallow streams flowing over pebbly beds about 80 feet below the plain, to the swift turbid Athabasca, a little above the Roche à Miette and Jasper's House opposite [3372 feet above the sea]. A coach and six could be driven over a great part of this plain | | 140 | | 394 | |
| 20 | Thence south up the Athabasca to Henry's House, at the Head of Navigation and the foot of the Tête Jaune Pass | | | 29 | 88 | |
| 21 | Thence in a WNW direction up the narrow, rocky valley of the Miette, a deep, tortuous, rapid stream, 30 yards wide, and along a small tributary called Pipe Stone River, to the Summit or Watershed of the Tête Jaune Pass, 3760 feet above the sea. This Pass is described in "Milton & Cheadle's North-west Passage by Land," 6th Edition, p. 250, as follows: "In the course of our morning's journey we were surprised by coming to a stream flowing from the westward. We had unconsciously passed the height of land and gained the watershed of the Pacific. The ascent had been so gradual and unperceptible, that, until we had the evidence of the water flow, we had no suspicion that we were even near the dividing ridge." | 22 | | | 300 | |
| Total rise above Lake Winnipeg | | | | | | 3132 |
| | | | | | | Fall. |
| | Thence across the summit, 3 miles, and along the north side of Cowdung Lake [about 7 miles long and 1 mile wide] | 10 | | | 50 | |
| | Then across Moose River, joining and following the Fraser, for 8 miles | 8 | | | 300 | |
| | Then along the north shore of Moose Lake [15 miles long] through an open country | 15 | | | 10 | |
| | Then along the Fraser, partly between cliffs of slate rock, to the north Fork, and 10 miles beyond, in all 25 miles, to opposite the Tête Jaune Cache | 25 | | | 900 | |
| | Thence along the Fraser north to the Rapide des Fourneaux, reputed Head of Navigation | 10 | | | 90 | |
| | | 90 | 90 | | | |
| | | | 426 | 2120 | 1350 | |

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Sections.

Over

- N.B.—Rich gold prospects are said to have been found about 35 miles below this rapid.
- 22 From the Rapide des Farrneaux down the Fraser and past the Long Rapid to Fort George. The Long Rapid may be about 70 miles below the Rapide des Fourneaux. Some of the boulders, it is said, might require blasting when the waters are at the lowest, in order to clear the channel
- N.B.—The portion of the Fraser, between Bear River and Fort George, waters a rich, open country, fully 80 miles in length, and extending many miles back on each side of the river; with a climate milder than that of Canada, and capable of raising wheat or any other kind of crops. The river itself is not less than 6 feet deep in the shallowest parts and 500 feet wide where narrowest, and the current is slow, more like a lake than a river.
- From Fort George, past the Isle des Pierres or Stone Rapid and the Grand Rapid, to the Mouth of Quesnelle River, 1490 feet above the sea
- The Isle des Pierres Rapid is about 20 miles below Fort George, and only awkward when the waters are very high. The Grand Rapid is 19 miles above the Mouth of Quesnelle, and much more rapid, but straight, and it is believed, on good authority, can be surmounted by a steamer of tolerable power
- 23 From Quesnellemouth, a small rising town, SW across the fine Chilcooten plain, by Obisicut, Benchee and Tailla Lakes, to the watershed and gap at the entrance of the Cascade Mountains, on the Bute Inlet route [2347 feet above the sea]
- Thence through the Cascade range, by a level valley to Waddington Harbor, at the Head of Bute Inlet
- N.B.—The particulars of this last Section, with the reasons for adopting this line to the Coast in preference to any other will be given further on.

| | Stage Road. | Steam Nav. | Fall. |
|--------|-------------|------------|-----------|
| Miles. | Miles. | Miles. | Feet. |
| | 426 | 2120 | 1350 |
| 187 | | | 635 |
| 93 | | | 285 |
| 280 | | 280 | 2270 |
| 137½ | | | Rise 857 |
| 84½ | | | Fall 2347 |
| 222 | 222 | | |
| | 648 | 2400 | |

The foregoing figures represent the distances, with all the tortuosities of the route

**POSSIBLE FUTURE SHORT CUT FOR A RAILROAD IN PLACE OF
THE FRASER NAVIGATION.**

| Section. | | | Rail | Steam | Rise. |
|---|--------|--------|-------|----------|----------|
| | Miles. | Miles. | Road. | Nav. | |
| | | | | | Feet. |
| Over | | | | | |
| 1 From opposite the Tête Jaune Cache, South across the Fraser, then up the valley of the Cache, over easy undulating sandy ground, and across Cranberry River to the watershed of Canoe River | 14 | | | [?] | 240 |
| Thence down to the bed of Canoe River, worn to a considerable depth in the sandy soil | 2 | | | [?] | Fall 150 |
| From the Canoe River, SW, over rocky ground to the Divide from the North Thompson, 2900 feet above the sea | 5 | | | [?] | Rise 360 |
| Thence down to the North Thompson | 9 | | | Fall [?] | 450 |
| Thence in a WSW direction over mountainous ground to the Divide from Clearwater River | 5 | | | [?] | Rise 200 |
| Thence down to the River | 7 | | | Fall [?] | 300 |
| From Clearwater River to the Divide from the Great Quesnelle Lake | 3 | | | [?] | Rise 150 |
| Thence through a mountainous country SSW to the South-eastern end of the Lake [2040 feet above the sea] | 10 | | | [?] | Fall 460 |
| | 55 | 55 | | | |
| 2 Thence along Quesnelle Lake to its South-western angle | | | | | 45 level |
| 3 From Quesnelle Lake across a slightly rolling fertile country, to the Mouth of Deep Creek, on the Fraser and below Soda Creek, viz: From Quesnelle Lake WSW to the Divide, near Round Tent Lake | 17 | | | | Rise 160 |
| Thence to Deep Creek | 10 | | | Fall | 125 |
| Along Deep Creek west to the Fraser [1450 feet above the sea] with bridge and approaches | 8½ | | | | 625 |
| | | | | | 750 |
| Thence WSW across the Chilcoaten Plain to the old Fort on the Chilcoaten River | 58 | | | Rise | 697 |
| Thence in the same direction to the mouth of the Gap at the entrance of the Cascade Mountains, on the Bute Inlet route | 47 | | | Rise | 200 |
| | 140½ | 140½ | | | |
| Railroad | | 195½ | | 45 | 897 |
| Steam Navigation | | 45 | | | |
| Total miles | | 240½ | | | |
| AGAINST | | | | | |
| 1 From opposite Tete Jaune Cache to the Rapide des Fourneaux, railroad | 10 | | | | |
| 2 Navigation on the Fraser | 280 | | | | |
| 3 From Quesnellemouth to the Gap, as above | 137½ | 427½ | | | |
| Less distance | | 187 | | | |
| Increase of Railroad | | 58 | | | |

This road would, however, pass over a wild, unknown, uninhabited, mountainous, barren tract of country, between Quesnelle Lake and the Tete Jaune Pass, which would present considerable difficulties and be vastly expensive. Very different from the fertile district on the Fraser and the facilities for immediate navigation.

| SYNOPTICAL TABLE OF THE PRECEDING DISTANCES BETWEEN HALIFAX, NOVA SCOTIA, AND BUTE INLET, BRITISH COLUMBIA. | | | Stage. | Steam Nav. | Railroad |
|--|-------|--|--------|---------------|----------|
| Miles. | Feet. | | Miles. | Miles. | Miles. |
| | | From Halifax to Collingwood, by Railroad | | | 1285 |
| [?] 240 | | From Collingwood to Current River, 6 miles NE of of Port William, Lake Superior | | 534 | |
| Fall | | From Lake Superior to Dog Lake | 28 | | |
| [?] 150 | | Up Dog Lake and River | | 35 | |
| | | Portage to Savanne River, easy ground | 5 | | |
| Rise | | Down the Savanne River, the Lac des Mille Lacs and the River Seine, to the Little Falls | | 65 | |
| [?] 360 | | Thence along the Seine to Rainy Lake | 66½ | | |
| all [?] 450 | | Through the Lake, down Rainy River and across the Lake of the Woods, to the North-west end of Lac Plat or Shoal Lake | | 208 | |
| Rise | | Thence over the Plain to Fort Garry, Red River Settlement [with 12,000 inhabitants] | 91½ | | |
| [?] 200 | | Down Red River, to the North-west end of Winnipeg Lake, and the Grand Rapid, 2 miles beyond, on the Great Saskatchewan | | 297 | |
| all [?] 300 | | Portage along the North Fork | 5 | | |
| Rise | | Thence up the Great Saskatchewan and its North Branch to below the Junction of Brazan River, 80 miles above Fort Edmonton, and the Settle- ments of St A'ban and St Ann | | 952 | |
| [?] 150 | | Thence to Jasper's House, Lat. 53°12', at the foot of the Rocky Mountains | 140 | | |
| Fall | | Thence south up the Altrabasca to the foot of the Yellow Head Pass | | 29 | |
| [?] 460 | | Through the Pass to the Upper Fraser | 90 | | |
| | | Down the Fraser to Quesnellemouth [road to Cariboo] at the Junction of Quesnelle River | | 280 | |
| 45 level | | Across the Chilcoaten Plain, 137½ miles, and through the Cascade range, 84½ miles, by a level valley to Waddington Harbor, Head of Bute Inlet | 222 | | |
| Rise | | | 648 | 2400 | 1285 |
| 160 | | Total 4333 miles, requiring from 20 to 23 days' travel. | | | |
| Fall 125 | | | | | |
| 625 | | | | | |
| 750 | | | | | |
| Rise 697 | | | | | |
| Rise 200 | | | | | |
| | | RECAPITULATION | | | |
| | | | Miles | Miles | Miles |
| | | Railroads built or in construction | | 1285 | |
| 45 | 897 | Bute Inlet Road | 222 | | |
| | | Other portions to be built | 426 | 648 | 1933 |
| | | Steam Navigation | | | 2400 |
| | | Distance from Bute Inlet to Halifax | | | 4333 |
| | | Distance from Halifax to Liverpool | | | 2467 |
| | | Against 8200 miles by Panama | | | 680 |

| | Miles | Miles | Miles |
|---|-------|-------|-------|
| Railroads built or in construction | | 1285 | |
| Bute Inlet Road | 222 | | |
| Other portions to be built ; | 426 | 648 | 1933 |
| Steam Navigation | | | 2400 |
| Distance from Bute Inlet to Halifax | | | 4333 |
| Distance from Halifax to Liverpool | | | 2467 |
| Against 8200 miles by Panama | | | 680 |

The expense of opening the portion between Lake Superior and Fort Garry, comprising roads, bridges, drainage, clearing of driftwood, and several small dams, has been estimated, as before mentioned, at about £80,000; towards

which the Red River Settlement would probably contribute the 91½ miles of surveyed road to the Lake of the Woods, estimated at £22,500. Governor Douglas proposed to the Home Government, in 1862-3, to build the wagon road between Fort Edmonton and the Fraser for £50,000; and Mr Waddington has undertaken the portion between the Fraser and Bute Inlet, which he is about to make over to an influential Company in England. The Hudson's Bay Company were already on the point, some years ago, of putting on steamers between the Red River Settlement and Edmonton; this they would now probably do, as well as on the Upper Fraser; and private parties would be glad to do as much on the three other portions of Lake and River between Fort Garry and Lake Superior. Thus the whole line could be opened in less than two years, and England, instead of running the risk, as at present, of losing the trade of the East, would for a sum less than £150,000 (and pending the construction of the railroad which must soon follow), have an immediate high road of its own, with the finest harbors in the world (Halifax and Esquimalt) and abundance of coal at the termini; and which, when completed, will be the shortest and most direct possible to China, Japan, and perhaps even to India.

PORTION THROUGH BRITISH COLUMBIA.

So far, only a slight mention has been made of the reasons, for which the road is made to go by the Yellow Head Pass, in preference to any of the other known passes through the Rocky Mountains; nor why it crosses the Chilcoaten Plain to Bute Inlet, instead of following the Fraser to New Westminster. But as the difficulties of connecting an Overland Railroad with the Pacific through British Columbia are not generally known, I have thought it desirable to collect and embody them in the following pages, so as to show at one view and more clearly how they are avoided by this route, when every other one has been found to be next to impracticable.

The Colony of British Columbia is to a great extent occupied by two ranges of mountains, running NNW, but gradually diverging from each other towards the north, where they enclose a vast plain, of which more will be said hereafter. That on the East side bears the name of the Rocky Mountains, and the other that of the Cascade or Coast range. They have one feature in common, which is, that their Eastern edge rises in both cases abruptly from an elevated plain; and in the Rocky Mountains the highest crest or ridge is also on that side; whereas the descent on the Western slope, though greater, is extended over a wider distance, and, therefore, in general more moderate.

The Main crest of the Rocky Mountains, several of the peaks of which rise to a height of 16,000 feet, forms the

Eastern limit of the Colony, and runs from its SE corner at the Boundary line, in a NNW direction, to beyond the Northern limit of the Colony, in Lat. 60°. I say the main crest, because what generally bears the name of the Rocky Mountains, is composed in British Columbia of three distinct ranges, divided from each other by rivers and deep depressions, and having each its own crest or ridge. Of these, the two western ones, though less elevated, are chiefly composed of metamorphic rocks, and, therefore, generally speaking, more distorted and abrupt than the rounded granitic peaks and domes of the main crest. The whole forms a triple fence as it were to the Colony, or one vast sea of mountains, averaging from 150 to 160 miles wide.

The Middle range, which as before said, is somewhat lower than the main one, and which takes the names of the Purcell, Selkirk and Malton ranges successively, is separated from the main ridge by the Kootanie River, the Upper Columbia, the Canoe River and the Upper Fraser; and presents one uninterrupted line of mountains, some of them 12,000 feet high, parallel to the main range, for 240 miles from the Boundary line to the Great Bend of the Columbia, in 52° N Lat. The Columbia River here runs toward the North, and after separating the above Middle or Selkirk range from the Rocky Mountains, cuts through it at the Big Bend, and turning South, again separates it in its downward course from the third or more Westerly range. But the travellers who have discovered the different passes [such as they are in this latitude] through the Rocky Mountains were unable to push their explorations further than this Eastern or upper portion of the Columbia, excepting near the Boundary line; so that neither the Middle range nor the Western one, which were, perhaps, supposed, as being less elevated, to present less difficulties, had been hitherto examined. In consequence, however, of the gold discoveries at Kootanie and the Big Bend, or in connexion with them, they were carefully explored last year; but no practicable pass could be discovered through the Selkirk range, which thus presents an impenetrable barrier for a railroad in that direction.

A scheme, it is true, has been broached and even patronized in the interest of New Westminster, for overcoming this difficulty, by making use of the Columbia for 100 miles north, from the Eagle Pass in the next Range and in Lat. 50°:56, to the Boat Encampment and the Big Bend of the Columbia, in Lat. 52°, and then 60 miles south to Blaeberry River; from which point the road would follow Howse Pass, 6347 feet high, over the main crest of the Rocky Mountains. But forty miles above Eagle Pass the navigation of the Columbia is interrupted by the Dalles de Mort or Death Rapids, and the formidable bluffs on either side of the river would hinder the construction of a wagon or railroad, supposing there were no greater difficulties beyond. Such a road may do very well on paper or to show in England, but practically speaking, could never be carried out.

The Third or more westerly range is the least elevated of the three, though still ranging from 4000 to 8000 feet high. South of Fort Shepherd and the Boundary line, where it forms numerous sharp ridges running north and south, it bears the name of the Kulspelm Mountains, and further north of the Snowy Mountains or Gold range. The Bald Mountains in Cariboo, 6000 to 8000 feet high, are also a continuation of this range, which after crossing the Fraser, below Fort George, lowers towards the North, and takes the name of the Peak Mountains. The only good pass from the Columbia through this third range is to the South end of Sounshwap Lake, and was discovered last year by Mr Moberly, the Government Engineer, at Eagle Creek, in Lat. 50°56'. An important feature in both the middle and western ranges just described, is their gradual depression north of Cariboo to where the Upper Fraser, after separating the middle range from the Rocky Mountains, abandons its North-westerly course, and makes a circular sweep through the depression from east to west and then south to below Fort George. This depression forms a large tract of level, flat country on each, but more particularly on the south side of the Fraser, and as the country and climate are both well adapted for settlement, offers every inducement and facility, (if indeed it be not the only pass) for a future railroad through these two ranges of the Rocky Mountains.

The Cascade range forms the Coast line of the Colony, which it follows from near the Mouth of the Fraser into the Russian [now American] Territory. Its average width is about 110 miles, and it may also be considered as a sea of mountains, some of which attain, if they do not exceed, a height of 10,000 feet. Its crest, starting from Mount Baker, a few miles south of the Boundary line, passes a little north of the Head of Jervis Inlet, some 25 miles north of the Head of Bute Inlet, 22 miles east of the Head of North Bentinck Arm, and crosses Gardener's channel about 20 miles west of its Head. From Mount Baker the Cascade range throws out a spur east and north, in the direction of the Great Okanagan Lake and Fort Kamloops, so as nearly to join the Gold range; and it entirely envelops the Fraser from a little above Harrison River [55 miles above New Westminster] up to its junction with the Thompson at Lytton, and even a few miles beyond, on both rivers. But the most rugged portion in this direction lies between Yale and Lytton, where mountain succeeds mountain, and where those along the river present the most formidable aspect; bluff after bluff of solid perpendicular granite, intermingled with steep slides of rolling rock, washed by a deep impetuous stream, and 1500 to 2000 feet high. In short, not only has this portion of the Fraser valley been declared to be utterly impracticable for a railroad by Major Pope and other competent authorities, but it is so fenced in with mountains, that there could be no reasonable way of getting at it with a railroad, if it were. It is over these mountains that the present wagon-road

passes, at an elevation, in one place for 40 miles, of 3600 feet above the sea—The only road to the Cariboo mines and the North of the Colony, and a lasting monument of Sir James Douglas' energetic and provident administration. Unfortunately, the difficulties [as may be seen in "Milton & Cheadle's North-west Passage, p. 356," where there is a good sketch of one of them] were alpine. Many places are most dangerous, the endless ascents and descents fatiguing and laborious in the extreme, and as the sharp turnings, besides many other portions, have had to be built up to a great height on cribs or cross timbers which must soon rot, the repairs will form a heavy charge on the Colony.

So that, supposing the difficulties through the Rocky Mountains to be got over, the Cascade range still intercepts all direct communication by railroad between the Eastern part of the Colony and New Westminster. To say nothing of the utter worthlessness of the greater part of the country to be traversed, amounting to over 520 miles out of the 600 from its Eastern limit. Add to this, that the navigation across the Gulf of Georgia and at the entrance to the Fraser, *by a narrow, intricate channel, through shifting sands, full five miles long*, is both difficult and dangerous, and that the river itself is frequently frozen up in winter for long periods; and it will be evident to every impartial mind, that New Westminster with its 700 or 800 inhabitants, can never become the terminus of an Overland Railway to connect with Victoria and the ocean.

Further north along the Coast, there are numerous inlets, which penetrate into the Cascade range, but the greater part either terminate abruptly, like the fiords in Norway, or are too distant; or like Gardener's Channel, Dean's Canal, and the Skeena, are too far off to the north-west to be available for any present communication with the mines or the interior. There are, however, two exceptions: The North Bentinck Arm, by Milbank Sound, in Lat. 52°:13, and Bute Inlet, opposite Vancouver Island, with a safe and easy inland communication by steam to Victoria, distant 185 nautical miles. Both these inlets terminate in a valley of some extent; and as attempts have been made to open both of them, it becomes necessary to explain why the writer gave a decided preference to Bute Inlet, for a wagon road and *a fortiori* for a railroad, over Bentinck Arm or any other line.

SUPERIORITY OF THE BUTE INLET ROUTE.

The advantages of the Bute Inlet Route consist: In its central position; fine townsite and harbor; or rather two harbors, accessible at all seasons of the year; its easy and safe connexion with Victoria and the ocean, and the proximity of the coal mines at Nanaimo. The Port of New Westminster, on the contrary, is difficult of access, in consequence of its constantly shifting sand-banks; and closed, as aforesaid,

by ice during 2, and even occasionally 3 and 3½ months in the winter. The following certificate of a licensed pilot will give some idea of the extent and importance of the first objection :

"I piloted H.M.S. Tribune safely into Fraser River, and "was on board when she struck going out; her draught of "water, 19 feet 7 inches. . . . In the actual channel, by which I "took H.M.S. Tribune into the river, there are not now more "than five feet of water at low water."

Given under my hand this fourteenth day of September, 1866.

(Signed)

JOHN S. TITCOMB.

The harbor at Bella Coola, on the Bentinck Arm trail [the only other feasible route to the mines], is situated 435 miles further to the north, and has been pronounced by Captain Richards, Hydrographer of the Royal Navy, to be totally unworthy; presenting no shelter, no good anchorage, no good landing place; but a vast mud flat, with a mile of swamp, intersected by a shallow river barely navigable for canoes. Or to quote the words of Lieut. Palmer, of the Royal Engineers, in his official report on the Bentinck Arm Trail: "A large flat shoal, extending across the Head of the "Arm, composed of black fetid mud, supporting a rank "vegetation; bare at low spring tides for about 700 yards "from high water mark, and covered at high tide with from "1 to 8 feet of water, and at a distance of 800 yards from "shore, terminating abruptly in a steep shelving bank, on "which soundings rapidly increase to 40, and soon 70 "fathoms." The whole is, moreover, subject to violent winds and powerful tides.

On the Bute Inlet Route the snow, owing to the more moderate elevation, and its more southern latitude and aspect, melts fully three weeks sooner than on the Bentinck Arm Trail; and the road is dry, entirely exempt from snow-slides, and level the whole way through. Unlike the endless mountains on the Fraser route, or the steep, unavoidable ascent from the sea, and numerous swamps by that of Bentinck Arm; so well described by the few packers who have been over both routes, and who have declared in their picturesque language, that the Bentinck Arm Trail could not show a candle to that by Bute Inlet. The Bute Inlet Trail *cuts through* the Cascade Mountains by a deep valley studded with rich bottoms affording plentiful pasture, and rising imperceptibly for 80 miles, when it nearly attains its greatest height [2,500 feet]; from which point forward in the plain, it was free from snow for 25 miles in February, 1862. The Bentinck Arm Trail, on the contrary, is obliged to *climb over* the range, owing to the valley, when 35 miles from the Inlet, turning abruptly to the SSE and running longitudinally with the range, instead of cutting through it; so that the trail attains, in the course of a very few miles from that point, a height of 3,840 feet, as will be better shown by the following table compiled from Lieut. Palmer's report :

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| | Gradients. | | | | Altitude Feet |
|---|------------|--------------|--------|-------------|------------------|
| | Miles. | Per Mile | One in | Rise. | |
| From the Inlet to Shtoolht, at the turn of the valley | 35 | | | say | 500 |
| Thence to Cokelin, "by a narrow gorge, hemmed in by steep and continuous cliffs." | 14 | Feet 43 6 | 121.1 | Feet 610 | 1110 |
| From Cokelin to the Great Slide | 5 | 356 | 14.8 | 1780 | 2890 |
| From the Great Slide to the Precipice | 11 | 86.3 | 61.2 | 950 | 3840 |
| Or supposing it possible to equalize these grades [a thing next to im- practicable] we should have. | 30 | 111.3 | 47.4 | 3340 | |

"After which the trail continues to rise gradually, the soil becoming shallow and meagre, the vegetation thinner and inferior, for 60 miles more, till it crosses the summit ridge "at an altitude of 4,360 feet" [Lieut. Palmer's report.] And it then only enters on good soil some 20 miles before crossing the Bute Inlet Trail at Benchee Lake; whereas along the latter line the bunch grass peculiar to the country flourishes over thousands of acres.

Finally, the distance from Bute Inlet to the mouth of Quesnelle river is fully 25 miles less than that by the Bentinck Arm Trail, and not much more than half of that from New Westminster [222 against 393]; besides having no portages or mountains. Thus presenting an open communication during the whole winter, which exists on neither of the other routes; and a diminution of nearly one-half in the time and cost of conveyance, as compared with that by the Fraser. Lieut. Palmer in his report admits "the geographical advantages of the Bute Inlet Route over the others"; indeed they were so evident, that a company which had been formed for opening the Bentinck Arm Trail, abandoned the project, when they learned that the Bute Inlet Route was going to be carried through.

Another item in favor of the Bute Inlet Route is its great *Strategical Security* in case of any difficulties with our American neighbors. The Fraser river, from Fort Hope downwards, runs for 80 miles parallel to the boundary line, and at a distance varying from 6 to 12 miles from that frontier; whilst the only road from New Westminster to Hope and the interior has been constructed between them. So that a detachment of a few hundred men could at almost any point intercept all communication, and literally starve out the whole colony. The Bute Inlet Route, on the contrary, would be perfectly safe and its approaches impregnable.

A proof of the feeling here with regard to the Bute Inlet Route is, that a petition to have it opened had 1031 signatures against 7 refusals, comprising all the members of the House of Assembly less one, the Speaker, the Mayor of Victoria, the members of the Common Council, and every merchant or person of note in the place. It was forwarded to Mr. Cardwell, then Secretary of State for the Colonies,

through our Governor, in June, 1865, but remained without any result, nor was any notice even taken of it in New Westminster.

EXTRACT FROM A CIRCULAR OF MESSRS. JANION, GREEN & RHODES, MERCHANTS, VICTORIA, JANUARY 1, 1864.

"There is another route being opened from the head of Bute Inlet by an enterprising gentleman who was convinced of the existence of another route to the interior than that through the valley of the Fraser, and who has, by his own unaided efforts, worked out the problem in the most surprising manner, in the face of numerous difficulties. He now reports his trail, as nearly ready. When this trail, or rule road, is converted into a wagon road, it must greatly reduce the cost of transit to Cariboo, as it shortens the land travel about one-half, and the road is so level as to offer no difficulty to the construction of a railroad."

The Indian hostilities, the plunder of all my property and general massacre of my men, commenced April 29th following, and only ended in the middle of May. This frightful event was mainly owing to the removal of Governor Douglas, whom the Indians had so long known, and whom they had learnt to respect and to fear; to the removal at the same time of the only troops in the colony, under Colonel Moody; and to the absence of every precaution by the local government in consequence of these changes; such as the appointment of an Indian agent, a Justice of the peace or even a constable: though I had paid nearly \$2000 or £600 of taxes *levied on the enterprise*. Since then I have in vain petitioned for an indemnity, and not only has the little amount of protection which would have been necessary to enable me to carry on the works, been constantly refused me, but I have been cautioned by the Government in New Westminster not to continue them.

GENERAL FEATURES OF THE GROUND OVER WHICH THE RAILROAD WOULD PASS FROM BUTE INLET TO THE MOUTH OF QURSNELLE RIVER.

The valley of the Homatheo river, which falls into Eate Inlet, presents a deep cut or fissure through the Cascade Mountains, varying from three miles to less than a quarter of a mile in width; is 80 miles in length, and rises imperceptibly to a height of 2,400 feet or more above the sea, at the point where it enters on the plain beyond the mountains. For the first 31 miles, up to the canyon or defile, the bed of the valley is composed of diluvial soil, consisting of a sandy clay or loam, and forming a hard, dry bottom. The canyon itself is exactly one mile and a quarter in length. Beyond the canyon the valley again forms and opens for about six miles, the soil partaking of the nature of the rocks from which it is derived and becoming more gravelly and of a reddish cast. The river after this is again confined to a narrow bed, but the country is more open, and the road passes for

six other miles near the river along the foot of the mountains; until the valley once more opens and recovers its flat, level aspect, which it maintains up to the plain.

The mountainous region thus traversed is composed for the first forty miles, up the neighborhood of Tiedeman's Glacier, of brittle quartzose granite, hard to drill, but yielding easily to the blast. The rock then becomes more feldspathic and contains more Hornblende, the former element decomposing into a roddish-white, greasy clay. This continues until a short distance below the First Lake, where the granite ceases and is replaced for six or eight miles by a clay slate of variegated colors bearing the marks of igneous action. This slaty zone is supposed to be auriferous, and is in all probability a continuation of the Bridge River diggings. It is followed by beds of stratified granite, of apparently more modern origin, and which are intersected here and there for a short distance by veins of augitic rock, varying from six inches to two feet in thickness. The valley now opens more and more, till at a distance of 80 miles from the Inlet the mountains cease abruptly, and the road enters on the plain beyond.

The rise in the valley, though apparently uniform, presents considerable variations. Thus the canyon presents a rise in 30½ miles of only 860 feet above the sea. The river then becomes much more rapid, and gives for the next thirteen miles an ascent probably of 780 feet, after which for 40 miles and up to Fifth Lake, the rise diminishes to 630 feet; beyond which there is a sharp ascent for a couple of miles more, of say 150 feet, when the summit, or watershed, is attained.

We shall thus have the following gradients:

| Feet | Feet |
|------------------------|-------------------------------|
| Rise 865 in 30½ miles— | 28.36 per mile, or 1 in 186.2 |
| " 780 in 13 " | 60.00 " or 1 in 88 |
| " 630 in 40 " | 15.75 " or 1 in 335.2 |
| " 150 in 2 " | 75.00 " or 1 in 70.4 |

Total 2425

The above figures must of course be considered as only approximate.

The plain consists of a deep sedimentary soil, watered by numerous lakes and small streams, and varied by occasional elevations formed of sandstone belonging probably to the lower series of the chalk formation, and apparently owing their upheaval to plutonic action, which has hardened or calcined the rock. They form here and there conical elevations varying from 500 to 800 feet in height. Such, for instance, are Mount Palmer to the north of Bench Lake, and several others that figure on my map. These elevations, and the low spurs or ranges of hills that accompany them, necessitate but few deviations from the straight line, and the plain in general offers every facility for the establishment of a railroad. Towards the mouth of the Quesnelle there is a gradual descent for some miles, but unattended by any difficulty; and at the terminus on the bank of the Fraser there exists a rich plateau of cultivable soil.

AGRICULTURAL RESOURCES ON THE LINE.

The valley, above described is in general heavily timbered, but studded, as aforesaid, with rich bottoms, capable of producing any kind of crops, and offering open spots for small farms. The plain itself [the only one in British Columbia of any extent] has been admired by all who have seen it, on account of its vast pasturages and park-like scenery. Its width, where it is crossed by the Bute Inlet trail, is about 120 miles, and it stretches from the SW end of the Great Quesnelle Lake and the neighborhood of the Fraser, in a NNW direction, more than 300 miles to the Skeena, beyond which river it has not been explored. It contains millions of acres of good ground, and some of the best along the proposed route, where large tracts of land are sure to be taken up as soon as the first communications are established. Some objections have been raised as to its elevation, which averages 2500 feet above the sea in the southern part, though gradually lowering towards the Skeena, where the climate, in consequence, becomes considerably milder. But this makes it none the less valuable for grazing purposes, which will be by far the most profitable branch of farming in the country, when there are means of conveyance. At present, the cattle consumed in Cariboo, are driven overland some 500 or 600 miles from Washington Territory.

Cereals can also be cultivated with success, as is fully proved by the following list, showing some of the crops which were raised last season on the Fraser route, together with the corresponding latitudes and altitudes :

| | Lat. N | Altitude | |
|--------------------------|--------|----------|---|
| | | | Feet. |
| Deep Creek | 52:17 | 2255 | 100 acres of oats |
| William's Lake | 52:12 | 2135 | 200 acres of oats, barley and wheat |
| Cut off Valley | 51:10 | 2973 | 200 acres oats, barley, potatoes and a little wheat |
| Mr Cornwall | 51:00 | 1508 | 70 acres oats, barley, and 300 bushels wheat |

But the above localities are all to the East of the Fraser, and it must be born in mind, that as the isothermal lines approach the Pacific, they extend diagonally towards the North, in the proportion of about 1° of Latitude to 2° of Longitude. Thus at Benchee Lake, on the Chilcoaten plain, in the same latitude as William's Lake, and rather more elevated, but 2° more to the west, and therefore very probably identical in climate. I saw in the autumn of 1863 a small crop of oats, barley and turnips, which Mr Manning had raised on trial, and which had perfectly succeeded; whilst some potatoes, which had been planted in an exposed situation to the south, had been frost-bitten. The Indian horses pass the winter out of doors without fodder or stabling; the best proof that the winters are not very severe.

The superiority of the Bute Inlet route [the only one

which opens a communication, available for a railroad, with this magnificent plain] being thus proved, it remains to say a few words on the different passes which have been explored through the Rocky Mountains on British Territory; leaving out the Athabasca Pass by Peace River, in Lat. $56^{\circ}28'$, as being too far north for present purposes :

| NAMES OF THE PASSES. | Ridge or Divide. | | |
|--|------------------|--------|-------|
| | Lat. | Long. | Alt. |
| | Deg. | Deg. | Feet. |
| 1 Yellow Head Pass, from the Athabasca to the Upper Fraser | 52:54 | 118:33 | 3760 |
| 2 Howse Pass, from Deer River by Blaeberry River to the Upper Columbia | 51:57 | 117:07 | 6347 |
| 3 Kicking Horse Pass, by Bow River and Kicking Horse River, to the Upper Columbia | 51:16 | 116:32 | 5420 |
| 4 Vermillion Pass, from the South Saskatchewan by Fort Bow [4100 feet] to the Kootanie. | 51:00 | 116:15 | 4944 |
| 5 Kananaski Pass, from Fort Bow by Pamsay River to the Kootanie [with a short Tunnel] | 50:45 | 115:31 | 4600 |
| 6 Crow's Nest Pass, by Crow River to the Kootanie | 49:38 | 114:48 | — |
| 7 British Kootanie Pass, by Railway River to the Kootanie | 49:27 | 114:37 | 5960 |
| 8 Red Stone Creek or Boundary Pass, from Waterton River to the Kootanie, [partly on American ground] | 49:06 | 114:14 | — |

With the exception of the Yellow Head Pass in the above table, which is comparatively straight and short, and the three last which are tolerably so, but too near the Boundary line to be available; the four others describe the most circuitous routes, among a labyrinth of glaciers, and mountains covered with perpetual snow. Besides which, the approach to the mover the plain by the South Saskatchewan; is for nearly one hundred miles, through an arid, sandy, treeless district forming the northern limit of the great American Desert; instead of the rich Fertile Belt drained by the North Branch, which is also the more considerable one of the two. And it is in the very latitude of this Belt, that the great barrier of the Rocky Mountains is cleft asunder, so that the road runs along this fertile zone in a direct line up to the lowest and easiest Pass, as to a natural gateway leading to the Pacific. But we have already seen, that all the southern Passes [and Captain Palliser wishes it to be distinctly understood that he considered these as far from being the best that could be discovered] are intercepted further west by the Selkirk range, which presents an impenetrable barrier, and renders them so far next to useless. When, therefore, we consider their relative altitude, their necessary precipitous nature, and the great depths of snow [27 feet or more], under which they lie buried during eight months of the year, there can be no hesitation [and such indeed is now the general opinion] in regarding the Yellow Head Pass through the Rocky Mountains, as the only easy gradients and low elevation, as the only feasible one for a

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railroad. But the same has been shown with respect to the Upper Fraser and the Bute Inlet valley, through the Cascade range. It is therefore clearly demonstrated, that these passes, which connect naturally with each other, offer the best and indeed the only really practicable line for a railway to the Pacific through British Columbia.

ALFRED WADDINGTON.

Victoria, V. I., June 7th, 1867.

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