

"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 only enters on good soil some 20 miles before crossing the Bute Inlet Trail at Bonchsee 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."

Another item in favour of the Bute Inlet Route is its great *Strategical Security* in case of any difficulties with our American neighbours. 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 impenetrable.

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

The valley of the Homathco river, which falls into Bute 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 84 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 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.