

The Gt. Western ascends 753 ft. in 44 miles.			
The Grand Trunk	"	967	" 38 "
The Grey & Bruce	"	1398	" 52 "
The Northern.....	"	748	" 27 "

"The total rise on the Pacific line north-westerly from Lake Nipissing to the highest summit east of Lake Superior is 690 ft., and the ascent is spread over a distance of 110 miles: thus indicating an average rate of ascent much more favorable than on the railways alluded to.

"The above will be sufficient to show that a route has been found, through a long section of the country, much more favorable than was hitherto expected, or even thought possible."

"Between the crossing of Red River and Lake Ellen on the Nepigon river, the distance is about 416 miles. The former point is 763 feet above the level of the sea, while the latter is 604 feet; the height of land to be crossed is 1580 feet above the same level and about three hundred miles easterly from Red River.

"In passing through to Lake Superior from the west, a rise of 817 feet has therefore to be overcome in 300 miles, and a descent of 976 feet in about 116 miles.

"The Grand Trunk Railway, between Montreal and Portland, running easterly from Montreal, makes an ascent of 1360 feet in 144 miles and a corresponding descent in 153 miles."

"Comparisons of this nature do not take into account intermediate undulations in either case; they are presented simply for the purpose of bringing out the salient features of the route found for the Canadian Pacific Railway. They suggest firstly, that the works of construction for this line will not be heavy, and secondly, that it will be quite possible to secure remarkably easy ascending gradients, in the direction of the heavy traffic."

"The information obtained suggests that it will be possible to secure maximum easterly ascending gradients, between Manitoba and Lake Superior, within the limit of 26 feet to the mile, a maximum not half so great as that which obtains on the majority of the railways of the continent."

"With regard to materials for building purposes, I have every reason to believe, that no great difficulty will be experienced on this score. The woodland region fortunately possesses an abundant supply of timber, suitable for Railway work, and will be able to furnish all that may be required in the Prairie Region."

We have already given the figures of distances by the proposed Pacific Railway and other routes in former numbers of the *Year Book*, but the following extracts on this point are interesting:—

"Assuming that portion of the Canadian Railway from Manitoba to Lake Superior to be established, and thus a Canadian port on that lake placed in the same relative position as Duluth, we may draw a comparison between the railway routes projected from these ports easterly.

"Taking a common point near the south-east angle of Lake Nipissing, the distance to Nepigon is under 560 miles, while the distance to Duluth is about 675 miles. The Canadian route would, accordingly, involve the construction of 115 miles less railway, than the most direct line *via* Sault Ste. Marie through the United States to Duluth. Comparison No. 3 establishes the fact that by the former route Toronto and Montreal

would be from 120 to 150 miles nearer Fort Garry than by the latter.

"The Canadian route must, therefore, remain unrivalled.

"These comparisons, moreover, undoubtedly suggest that the Canadian line will not only command the traffic of Manitoba and the whole northwest, but that it will be in a position to draw traffic from Minnesota and the territories of the United States, south and west of Pembina."

On the question of extent of country to be traversed, we take the following from the Report:—

"A glance at a map of North America will show that the field of enquiry extends from 76° west longitude on the eastern side, to 120° west longitude on the western side, while it is bounded on the south by the 45th parallel of latitude, and on the north by the 55th parallel.

"Its extreme limits thus embrace fifty-four degrees of longitude, and ten degrees of latitude, and, reduced to miles, the territory under examination will be found to cover fully twenty-seven hundred miles in length, a breadth ranging from three to five hundred miles.

"This extensive territory, with an area of one million square miles, drains into three oceans; the Atlantic to the east, the Arctic to the north, and the Pacific to the west.

"We are accustomed to regard the Great American Lakes, and the St. Lawrence, which they feed, as natural features of great magnitude in one of the important hydrographic basins of the continent. It is not a little astonishing therefore, to find that the basin of the St. Lawrence occupies such a limited portion of the vast area under consideration. While about one-fifth of the whole area drains, through several channels, into the Pacific, and seventy per cent. of the whole drains towards the north, the St. Lawrence basin only occupies about one-tenth of the whole territory.

"The counterpart of this territory in the old world, with respect to geographical position, extends from the French coast across Belgium, Holland, Germany, Prussia, and Russia, to the Ural Mountains in Asia, and embraces a very large portion of all these countries.

"Having arrived at a proper conception of the extent of the territory under consideration, it is important to describe in a few brief paragraphs its prominent physical characteristics.

"The leading botanical, in conjunction with the geological and topographical features of the country divide it naturally into three great regions. The Eastern is densely wooded; the Western is wooded and mountainous; the Central is a vast lowland plain, for the most part prairie."

Respecting the Central Prairie Region, Mr. Fleming states that it may be described as an isolated triangle with a base of 1500 miles in length, and sides of from 900 to 1000 miles:—

"This vast triangle, containing about 300,000,000 acres, may be described generally as a great plane, sloping gently downwards from its apex to its base. Its apex at the foot of the Rocky Mountain chain, between the sources of the Missouri and the South Saskatchewan, is estimated to be about 4,000 feet above sea level, while its base, lying along the series of lake expansions from Lake of the Woods to Great Slave Lake, will not, it is believed, average a