

In following the foot of the slope, the Great Western Railway is met at about a mile and a quarter from the mouth of the ravine. As this forms a governing feature in the location, its course in the vicinity may be briefly described as follows:

The line crosses the present Canal at Lock No. 12, about two miles below Thorold. It then runs in a general direction a little south of east towards the Suspension Bridge, traversing the 10 mile Creek about  $1\frac{1}{4}$  miles from Thorold Station, and entering the long cutting by which the "Mountain" is ascended at about a mile further to the west. The grade is here 33.54 feet to the mile, and in the valley of the creek there is a considerable curve in heavy embankments.

Thus, looking northward from the mouth of the ravine at the Cement Quarry, a sort of triangular shaped area presents itself, formed by the line of the Great Western Railway, and the east and west sides of a deep indentation in the line of the "Mountain," converging to the point referred to. Down the centre of this space the Ten Mile Creek runs northward to the Lake, crossing the Railway as above described. Its mouth is about three miles to the east of Port Dalhousie.

The whole of the eastern slope between the Ravine and the Railway has been carefully surveyed and covered with a net work of levels. The cross sections were also continued to the north of the latter, until the ground ceased to present any difficulty in projecting a Canal line.

As it was soon apparent that if the large natural excavation of the Ravine described could be utilized, a practicable route might be formed for connection with the present canal above the Village of Thorold, this gully was measured and closely levelled throughout; and the ground between the bend referred to on Hoover's Farm and Marlatt's Pond, was also cross sectioned over an area of about three-quarters of a mile in length by half a mile in width.

The result of these operations has been that a fair location can be had between Marlatt's Pond and the Great Western Railway, which is the most difficult part of the route, from Thorold to Port Dalhousie.

I shall now proceed to describe this more particularly, submitting my reasons in favor of the projected line.

The difficulty of choosing a proper point for divergence from the present Canal has been greatly increased by the construction of the Welland Railway.

This line runs from Port Colbourne to Port Dalhousie on the eastern side of the Canal. Behind Thorold it is located in the ravine formed by the Ten Mile Creek (previously described), this being obviously the best way of reaching the lower level. The grade down the ravine is nevertheless between 80 and 90 feet to the mile, and this rate of inclination is continued for nearly three miles. It is manifestly desirable to utilize as much of the existing Canal as possible, and in this view the new line should begin at as short a distance above the mountain locks as could judiciously be done. At the same time, it is clear that the ravine affords the best line for enlargement by reason of the great saving in excavation, consequent upon its adoption.

A trial line was therefore run, diverging from the middle of the "Little Deep Cut," and striking for the ravine as directly as its position would permit. This would be a short and cheap line between these points.

But, after careful examination, it was considered inadvisable to adopt it, inasmuch as the Railway would have to be crossed at a great angle of skew—between the banks of a narrow gully—and at a point where the grade of the track is from 80 to 90 feet per mile.