

The Niagara escarpment, (here called the "mountain"), runs in a general direction west of Queenston Heights to Hamilton, and at a distance from 6 to 8 miles from the shore of Lake Ontario, with a summit level of 350 to 360 feet over the service of the latter, near Thorold. This is one of the most formidable obstacles to be surmounted in the construction of a canal connecting Lakes Ontario and Erie.

Although at many places it presents a nearly perpendicular face, yet there are valleys, or indentations, which break the general regularity of its outline, and where the slope is much less steep. Down these the streams that drain the northern part of the upper plateau, find their way to the plain below.

Advantages have been taken of the bed of one of these water-courses, in the construction of the existing canal.

The Twelve Mile Creek, which has its sources amongst the "Short Hills," about half way across the peninsula dividing Lakes Ontario and Erie, runs into the former at the Village of Port Dalhousie, where lower entrances of the canal is situated.

By damming the mouth of this creek, its waters were set back to the second lock, in the Town of St. Catharines, about 3 miles inland. At the 3rd lock, the canal leaves the main stream, and runs up to a crooked branch of it to the foot of the "mountain," which is reached at the 15th lock from Lake Ontario. The face of the slope is then ascended obliquely by a series of six locks known as the "Mountain Range,"—at the head of which the canal curves sharply to the south, and is continued along the western side of the incline until the level of 318 feet over the lower lake, is attained at lock 25 in the Village of Thorold.

An examination of that portion of the line between Thorold and what is known as "Collier's Bend," clearly shewed that all the ground available there for canal purposes was occupied by the existing work, together with its reservoirs, mill sites, &c., &c., and that it would be as impossible to locate another line alongside of it, as it was admitted to be to enlarge the existing one to the required dimensions.

This being the case, attention was directed to the ground on the east side of the valley of the Ten Mile Creek, as it seemed to offer the easiest descent towards Lake Ontario.

This creek rises about the centre of the northern part of the Township of Stamford, and on the plateau above the Niagara formation. Its course is almost due west for about 4 miles to Peter Hoover's farm, on lot 15 of Thorold Township, and immediately in rear of the village.

Here the stream, (which is quite small), turns sharply to the north, at right angles to its previous direction, and running down a ravine of about half a mile in length, deeply worn into the clay, falls over a ledge of rock which marks the edge of the "mountain," at Brown's Cement Quarry.

The fall occurs at the mouth of the ravine, where the banks of the latter are about 40 feet high. The level of the stream below is about 80 feet under that of the plateau. This place may be described as the southern point or head of a deep valley, up a portion of the western slope of which the present canal is carried, as above referred to.

Where the ravine opens out into this valley, the banks are, as above stated, high, and from thence the ground inclines downwards along the base of the cliff towards the north-east, exposing more and more of its rocky face, until the eastern points of the valley is reached, where it shews an almost perpendicular height of over 100 feet.