

Mr. Beasley and myself connected the thickness between the adjacent summit of the Medina group, which is 264 feet above the lake, by levelling (and allowing for dip) with the mouth of the well of which we had the record, and were thus enabled to calculate accurately the thickness of the formation.

Before advancing further we will give a tabular view of the four sections measured.

The first section is at the western end of Dundas, (near the place where the Artesian well was sunk.) The height of the mouth of the well was found to be 139 feet above Desjardin's Canal. Afterwards we levelled to the summit of the cliffs along the south-western side of the ravine, which is formed by the union of the two streams from Spencer's and Webster's Falls—the highest point of the exposed rocks being at the junction of the two glens, where the top beds are composed of the cherty bands of the same horizon as those which form the capping strata south of Hamilton. By means of this section and the Artesian well, we were able to ascertain the whole thickness of the Medina formation, the whole thickness of the Clinton formation, and the lower portion of the Niagara proper.

But the western side of the ravine is more than one hundred feet lower than the eastern side, although the rocks are nearly horizontal. This has been owing to the local denudation in the spur of rocks between two great valleys, which will be noticed in a future paper on the surface geology.

The ravine or *cañon* just referred to is more than 300 feet deep, if we calculate from its eastern (or rather north-eastern) side. Owing to the absence of the higher beds of the series, we levelled up the escarpment on the opposite side of the great glen, at the Linckilns, just east of the "Peak," where the highest rocks are 516 feet above the lake, although the soil rises a few feet higher a short distance to the northward.

By these measurements, and the necessary calculations in correlating the adjacent measurements, it was found that the whole thickness of the Niagara group is 800 feet at Dundas, of which the lowest 545 feet belong to the Medina series.

The second section is along the Sydenham road at Dundas. The third section is at Hamilton, between the head of James street and the Jolly Cut road. The fourth section, as we have seen, was taken along the Rosseau Creek to Albion Falls.