dated 1835, gives it as his opinion that the Peninsula "was one of the many ridges deposited at the bottom of a vast lake which existed before the present Ontario and Erie were formed out of its drainage," and "that it had not materially altered for a vast length of time, probably not since it emerged from the waters."

It may be thought presumptuous in me to present anything in opposition to the judgment of that respected and eminent gentleman; but from careful observations and measurements, and a comparison of these with surveys made at different times by others during the last half century, having found that the deposit both above and under water has received additions so extensive, and which so closely resemble in character its older portions, I may be permitted to suggest, instead of the Peninsula being a sedimentary deposition of the tertiary periods, as thought by Sir R. Bonnycastle, that the whole of it belongs to the present era, and that at least one of the agents of its formation, is at this day as actively engaged in changing and enlarging the outline of the deposit in question, as it has been hitherto in gathering together the materials, and modelling them into its present shape.

I shall first endeavour to show that the inferior portion or base of the Peninsula has been washed from the valley of the Don by that river at an early date; second, that the materials composing the superior and more recently formed portions have been gradually transported along the shore from the eastward, and that this westward progressive motion of the sand and gravel beach is now the sole cause of the extension and enlargement of the Peninsula, and of the danger at present threatening the entrance of the Harbour.

First—That the groundwork of the Peninsula enclosing the Harbour is, or has been, a delta of the River Don.

It is generally believed that at one time Lake Ontario stood at a higher level, and covered a far greater area than it at present occupies. A barrier may have then existed at its outlet, where probably the Thousand Islands are now seen, over the top of which the primeval St. Lawrence flowed: this great river, rushing over the barrier with tremendous velocity, would, through course of time, wash away its softer parts, and leave standing those numerous isolated rocks and picturesque islands which now covered with foliage, adorn so much the landscape of that section of the country. If this be not the approved way of accounting for the lowering of the level of the waters, a gradual upheaval of the land generally, or even a subsidence of the ocean may be brought forward; it is unnecessary for our present purpose however to enter into a geological disquisition on this point, if we allow that the whole of the country bordering on Lake Ontario was at one time submerged under the same extensive sheet of water; and that the level of this great lake, or it may be this arm of the ocean, was through course of time depressed, and its outline contracted until it was reduced to the present Ontario. A supposition so strongly supported by the discovery of several ancient beach lines, terraces and parallel ridges in the vicinity of Toronto and other parts of the country at various but corresponding levels, that it may without much difficulty be admitted.

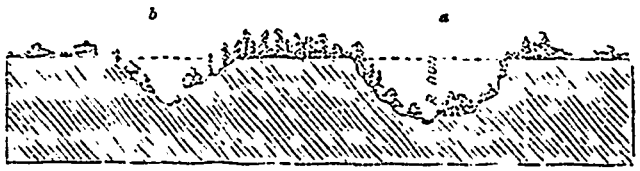
As the land gradually emerged its appearance would be bleak in the extreme; a flat or but slightly undulating surface unbroken by rivers or ravines, and uncovered for a length of time with vegetation; on the ancient shallows of the great lake various kinds of plants would, through course of time, take root, grow up, and wither; the continued reproduction and decay of which would gradually coat the surface with organic matter, and thus enriching the soil, enable it to produce more luxuriant vegetation. Now, (prior to the settlement of the country,) after a lapse of many centuries, we find the great hardwood forest growing over soils of an argillaceous character, and the ancient *sand shoals* of the great lake clothed with lofty pine.

We can easily imagine the general character of the present shores of Lake Ontario when they first became dry land—a vast undulating plane ascending as at present from the lake into the interior, but totally devoid of water channels for the surface drainage—here a bed of clay,—there a tract of sandy soil; and as it is only reasonable to suppose that rains fell in those days as at present, the water produced by them on the surface, in flowing from a higher to a lower level, would most easily wash out channels in the softest material; and these little streams, collecting together in their downward course towards the lake, would form the commencement of a river course.

The newly formed rivers, having the same fall towards the lake as the surface itself, their beds being but slightly under it, would be much more rapid than they are now, and rushing down with violence after thaws and heavy rains, would, proportionally with their greater rapidity, during the first years of their existence, be more effective in scooping out the sand drift, and transporting it to the Lake; from year to year the water channels would thus grow larger and larger, and although the rivers as they were depressed, lost much of their force and rapidity, yet continually undermining the banks and transporting the debris downwards, would, through course of ages, form those deep ravines in which many of them now flow.

That the rivers in this section of the country have originated in this manner, is inferred from the fact, that they are found almost universally to flow in flat-bottomed vallies or ravines, the banks of which are the abrupt terminations of the level country on each side; and that these ravines are generally found where the drift is of a light and sandy nature.

The accompanying section across the River Don, taken a little above the Cemetery, will show clearly the first proposition; the second also is established by the well-known character of the soil of which the banks are composed. The surface of the country extends for miles to the right and left of the river without any material change of level, except where broken by a secondary ravine of a tributary stream. Doubtless, then, the inference is correct as far as regards the Don, and that the dotted line stretching from bank to bank on the drawing, was the surface prior to the scooping out of its channel.




*Section across the Don about ½ miles from its mouth.*

*a.* The valley of the Don about ½ of a mile wide, and upwards of 100 feet deep—the river here is on a level with Lake Ontario.

*b.* A tributary of the Don, running through Yorkville, it is cut obliquely by the section and forms a junction with the Don about ½ a mile further down.

The dotted line is about 120 feet higher than the lake, and the surface maintains very nearly the same level for a long distance on either side in a direction parallel to the shore, with a gentle slope at right angles to it—on part of this slope the City of Toronto is built.

Nor is the Don singular in these respects, of all the streams I am acquainted with to the east and west of Toronto, the same scooping out of the ravines can be shown, and generally the same sandy character of the country immediately traversed, as indicated by the dark green belts of pine running into the interior of the country through the hardwood forest which flourishes better on