

Simcoe, with a few isolated light spots, indicating clearances, appear blue in the distance.

As the high ground of Osprey tends to the northward, it terminates in a rocky escarpment, sweeping round through the Township of Collingwood, parallel to the shore; its base has a steep descent towards the coast, heavily wooded with pine, cedar, birch, and hardwood. Here the Trenton Lime-stone crops out rich in fossils, of which a variety and a specimen of Bituminous Shale, probably of the Utica Slate, are laid on the table.

Commencing at the southern extremity of the Valley, on the dividing ridge which separates the drainage into Lake Huron from that into Lake Ontario, and following the course of any of the principal branches of the Nottawasaga, we pass through a high, broken country, cut up by deep ravines. Reaching the Township of Essa, the high ground begins to recede, leaving between a perfectly level plain, about 3 miles in width, through which the River flows between banks from 50 to 70 feet high. In approaching the north end of the Township, these banks gradually fall away, and we enter a vast tract of barren land, extending westward and occupying nearly the whole of the northern half of Tossorontio and Essa; the best portions are capable only of supporting a thin growth of scrubby pines, and many thousand acres have been overrun by fires, which seem to have destroyed such meagre vegetation as may once have struggled into existence. The main highway from Barrie to Owen Sound passes through about 8 miles of this dreary waste, and all who have travelled it can testify that scarcely any road can be more lonely, and few landscapes could be more monotonous than the "burnt land." Leaving this wilderness, and following the course of the River, we enter at once into another equally uninhabitable, but of quite a different character, viz., the "flooded land." Here, necessarily in a canoe, and at least sheltered from the scorching rays of the sun (to say nothing of mosquitoes) by a luxuriant vegetation, we glide smoothly along, and are amused by the picturesque forms into which the gigantic oaks are twisted and broken up by the herds of bears frequenting these groves, in certain seasons, to feed on acorns; and so stately are those noble trees, that they may, even in this country, be styled England's glory.

The River flows for about 12 miles through the flooded land, and enters a narrow gorge between banks about 60 or 70 feet high. The narrowness of this outlet must account, in some measure, for the annual inundations, it being insufficient in capacity for the passage of those immense volumes of water produced by the thawing of deep snows over an area of 700 or 800 square miles; and since the banks retain this height for a long distance, the possibility of draining is almost precluded.

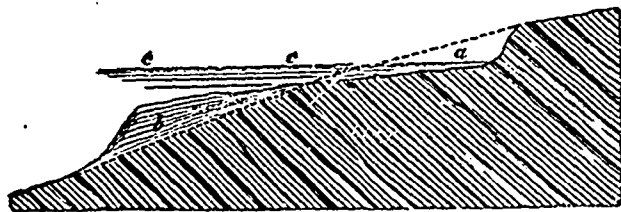
By referring to the Map, it will be seen that at one place the River approaches within a short distance of the Lake, is deflected in an easterly direction, and ultimately finds an outlet, after running parallel to the coast about 4 miles; the whole of this spit is composed of pure sand, with a little vegetal matter mixed up with the surface at the western end. The outlet of the River is found to advance gradually eastward, and the entire area is thrown up in a series of concentric ridges, perfectly parallel, and well defined, except where broken and blown up into dunes by the wind; these ridges are, in some places, so distinctly marked, that they resemble the furrows of a ploughed field on a gigantic scale. Seeing that the ridges have every appearance of having been washed up by the Lake, that the point is yearly moving eastward, and that the coast is now no more exposed to the prevailing wind than formerly, there is every reason to believe that the whole of the deposit is due to the agency of the wind and waves. The vegetation itself tends to confirm this opinion,

since, at the bend of the River (that portion supposed to be deposited first), the surface is covered with tall red pines, while, as we go eastward, these gradually diminish, both in size and numbers, until they entirely disappear. It is not here meant to be inferred that the deposit has been formed since any of these trees commenced to grow; but, that pure washed sand being at first unable to support any vegetation, through course of ages receives small accessions of organic matter, and gradually becomes more and more capable of supporting trees of stronger and stronger growth.

On the south side of that part of the River described as running parallel to the Lake, an upper and older sand ridge is found, from 80 to 100 feet above the Lake, and 40 or 60 feet above the country farther inland, its surface is cut up into sand hills which although now covered with trees have evidently been formed by the wind at a very remote period, they have all a long gentle slope towards the north-west (the prevailing wind) while the other ridge is quite precipitous—even at present the roots of the trees growing on the lee side are covered with blown sand, and those trunks which have lain on the surface for a considerable time are partially covered.

An opinion has been held by some Geologists that Dunes can only be formed on the margin of waters subject to the action of the tides, but these and other examples on the American Lakes, whose waters remain constantly about the same level, show that their formation must be referred to other causes than the rise and fall of the sea; and the discovery of these go far to confirm the opinion of those who hold that the wind is the sole agent of their formation.

There are appearances in various parts of this region which lead us to infer that the waters of Lake Huron like those of Ontario, formerly stood at higher levels than it at present occupies, parallel terraces and ridges of sand and gravel can be traced at different places winding round the heads of bays and points of highland with perfect horizontality and resembling in every respect the present lake beaches; one of them particularly strikes the attention in the Bay of Penetanguishene, at a height of about 70 ft. above the level of the lake, it can be seen distinctly, on either side from the water, or by a spectator standing on one bank, while the sun shines obliquely on the other, so as to throw the deeper parts of the terrace in shadow. The accompanying section sketched from a cutting a little below Jeffrey's tavern in the Village of Penetanguishene, will serve to show the manner in which the soil has been removed from the side hill and deposited in a position formerly under water, by the continued mechanical action of the waves.



Section of Terrace around the high ground enclosing Penetanguishene Bay.

The dotted line represents former surface; a, washed out by waves and deposited at b; c c, supposed former level of lake.

Not only does the peculiar stratification of the lower part of the terrace confirm the supposition that it was deposited on the shore of an ancient lake, but the fact that such excavations have been made in this land locked position, where the waves could never have had much force, goes far to prove that the Lake stood for a long period at this high level.