

is due to the erosive power of a pre-historic river.

Everyone is familiar with the manner in which Niagara is wearing away the rocks, and one can easily imagine the time when the falls were roaring where Brock's monument now stands. But still farther back in time, before Erie was born, the labors of Spencer have shown that that section of country was drained by a river. This pre-glacial stream swept round Long Point down an old channel now occupied by the Grand River, and emptied into the Ontario River through the Dundas valley. Coursing on towards Oswego, it received innumerable tributaries. Although the basin of the future lake was traversed by a great river, it was not excavated by it. One by one the raindrops fell on the whole area drained by its affluents. Rills, rivulets, creeks and streams, all carried down their quota of material for the great river to deposit in the sea. The valleys of the Don and Humber, the Moira and Napanee, have, in later times, been excavated by the same erosive power of water. The gorge of Niagara and the cañons of Colorado attest the mighty power of flowing water. The Grand Cañon is over 300 miles long and from half a mile to a mile and a quarter deep. This immense quantity of rock has been carried off by water. There is no need to call in the aid of mythical forces when the common fluvial one is so competent.

Yet a third school of geologists—and an influential one—enamoured with the glacial theory, drags it in to explain the origin of the great lakes. That glaciers have excavated the basins of some lakes is probably true. That moving ice has enlarged the old river basin of Ontario is likewise probable. But that glaciers, moving over a plain, should excavate solid rock to a depth of 500 feet is hardly probable. Indeed, observations on the erosive power of existing glaciers are decidedly against such a theory. Moreover,

this hypothesis takes no notice of the pre-glacial drainage, which must have been in existence. The second theory has this merit—that it recognizes the erosive power of both water and ice. And, so far as it assigns to each a due proportion of power, does it deserve our credence.

In Tertiary times the tributary streams were not those of to-day. The Niagara was not born. The Tonawanda and Chippewa creeks, or some small stream from that neighborhood, flowed for a short distance over the future bed of the modern Niagara. From the Whirlpool, this Tertiary stream excavated a rocky bed through the escarpment to St. David's. Its course can be traced through Port Dalhousie on its way to join the main stream, near the centre of the present lake.

The Dundas river had its source in the Maunee in southern Michigan. The Sandusky and Cuyahoga, with channels now well-filled, were tributary from the south. A still larger stream, draining Western Ontario, joined the main river near Long Point. This river flowed down, what is now up, the valley of the Grand as far as Seneca. From there the waters ran by Ancaster and Hamilton into the valley of the future lake.

Near Scarboro', in the opinion of Professor Spencer, a "Laurentian river," draining the region of the future Lake Huron and Georgian Bay, passed, on its way to the prehistoric Ontario river. Other streams from the north, probably as far east as Brockville, emptied into the main river before it reached Oswego.

At this period, Superior was drained into Michigan and thence by the Wisconsin, or Illinois, into the Mississippi. The climate was then mild and equable. Evergreen magnolias, figs and palms probably flourished in Ontario. Instead of an average temperature of 45° F., the fossil plants would indicate that the isothermal line of 60° F. passed to the north of the present