

rock-bottomed trough which extends from the Georgian Bay to the eastern portion of Lake Ontario. The descending portion of this ridge may be represented by a contour of 250 feet above Lake Ontario, to which it approaches at Scarboro Heights. The composition of the whole thickness to lake level (more than 300 feet) is here shown and consists mostly of stratified sand and clay, with two intercalated beds of boulder-bearing clay.

There is a resemblance between the *Artemesia* ridges and the so-called Kettle Moraines of Wisconsin, Coteau des Prairies and Coteau de Missouri. There is a general parallelism between these ridges. The *Artemesia* gravel reaches 1700 feet above the sea—a height as great as portions of Coteau des Prairies.

From the structure of both the "*Artemesia* Gravel" and "Oak Ridge," there is no evidence of their being of morainic character. The deposits of the *Artemesia* gravel are simply around the high rocky floor of this portion of the country, and mark the recession of the waters in more or less perfect contour lines, with most of the material of local origin.

Whatever barriers may have separated the lake region from the sea, there seems no doubt that the whole area was submerged beneath the sea level to at least 1700 feet, for no glacial lake could account for the high level beaches. From the character of the deposits there appears to have been but little floating ice—perhaps not much more than the ice-fringes of the present day. The highlands south of the lakes do not rise to any such height as to permit a small amount of floating ice to barricade them to the height of several hundred feet.

As the continent was rising, the waters of this inland lake had many channels communicating with the exterior sea, across Ohio and New York, besides that by way of the St. Lawrence. However, local oscillations probably played an important part, but to what extent cannot yet be well determined.

Below 1200 feet above sea level of to-day, the principal old outlets are by the valley of Cayuga Lake, at 1015 feet; by Seneca Lake valley, at 865 feet; by the Mohawk River, at 434 feet, and by the present St. Lawrence River, at 247 feet above mean tide. In Ohio, Dr. Newberry enumerates various other outlets at 936, 968, 909, 910 and 940 feet above present ocean level.

There is a remarkable connection between these old outlets and the beaches which rise a few feet above them, in that they are conspicuous and are most widespread.

Many of the transported bowlders of crystalline rocks may have been carried by the floating ice of the great lake of the time; but the explanation of the Hudson River pebbles and