

Terraces of modified drift occur along rivers in all parts of the world. In South America, Mr. Darwin has described several along the coast; in one part there were seven of them in the distance of 150 miles, rising at length to 1,200 feet. The great chain of lakes in North America have them. Prof. Agassiz speaks of "six, ten, and even fifteen in one spot, forming as it were the steps of a gigantic amphitheatre," on the north shore of Lake Superior. Around the great Salt Lake in Utah, there are not less than thirteen terraces, the highest 200 feet above the plain. In the valley of the Mississippi the *Bottom Prairie* and the *Bluff* are deposits of the terrace period. The latter is somewhat consolidated, and contains fresh water fossils in abundance. It has been worn down by the river in many places, leaving perpendicular banks called *bluffs*, whence the name. It is probably contemporaneous with the *Loess* of the Rhine, which is a silt or fine calcareous clay, without lamination, containing fresh water fossils, and interstratified with beds of volcanic ashes thrown out at intervals by the Eifel volcanos, now extinct.

*Changes in the Beds of Rivers.*—There are two kinds of deserted ancient river beds. The first and most obvious are depressions in alluvial meadows, connecting at the extremities with curves in the stream. Many of them were occupied by the river since the memory of man. The second kind show a deserted rocky gorge, where once the stream flowed at a higher level than at present. The proof of such a change is found in the existence of pot holes in the rock, situated in a valley connecting with different parts of the principal stream.

In Orange, New Hampshire, on the summit level between the Connecticut and Merrimack rivers, there are pot holes 682 feet above the Connecticut, in the lowest place between the two rivers. They are so situated as to indicate that the current flowed from the Connecticut to the Merrimack. A barrier probably existed at Bellows Falls, so high as to force the Connecticut, or a part of it, into the valley of the Merrimack.

There is proof of the existence of rivers in different channels from the present upon a former continent. On the west bank of the gorge, three miles below Niagara Falls, for instance, at the Whirlpool, the continuity of the bank is interrupted by a deep ravine, filled with gravel and sand. This ravine can be traced to Lake Ontario, four miles west of the present mouth of the gorge, and must have been the bed of the river formerly; for the water must have flowed in the lowest channel. When the continent was under water, this ravine became filled with drift materials so much that the river was forced to seek a new route, and since then has worn away the gorge between Queenstown and the Falls.

In Stratton, Vermont, there is a large pot hole upon the summit level between the waters of the Deerfield and Connecticut rivers, say 1,600 feet above the latter. It is so situated as to make it necessary to suppose the existence of a current to the north, and there is no stream in the neighborhood