three levels; and part may have been occasioned by the contributions of side valleys, and unequal resistance to wear. On account of this feature the formation is often called the *Terrace formation.*

On the Connecticut the upper flood plain or terrace is, for the most of the way, 150′ to 250′ above the river. Large deposits of clay occur in the lower part, and others of less extent at various levels to the top. The stream owes its abundant waters to the high mountains about its sources, of which the White Mountains were the highest. The depth of water may have been 50′ or 100′; there is no basis for a satisfactory estimate.

Along the Hudson River the height of the upper terrace is 100′ to 280′, and finally 340′ between Albany and Schenectady. As before stated, the heights increase to the northward, where the Champlain subsidence was greatest.

The Connecticut River had a dam at the narrows below Middletown, Conn., as the fall off in the terraces below it shows; another, as stated by B. K. Emerson, near Northampton, Mass., between the opposite trap ridges, Mount Tom and Mount Holyoke; and possibly others. Just above the Northampton dam, where the upper terrace-plain is about 200′ above the river, a portion of the flood-waters escaped over the west bank near Florence, passed to the west of Mount Tom, and took a southward course along the Farmington valley, as the levels of the terrace-plain show, to New Haven, Conn., where it was discharged by the bay into the Sound — resuming thus a route followed by the whole Connecticut stream or estuary in Triassic time. An ice-dam, or drift-dam, closed a narrow gorge through the trap ridge above Hartford, Conn., which was the channel of the Farmington River, and another deep gorge through sandstone above Cheshire, Conn., that of the Quinnipiac River, so that the new discharge-course of the Connecticut secured the upper parts or heads of both the Farmington and Quinnipiac rivers as its tributaries, and took possession of the valley of the small stream called Mill River to reach the Sound. On the terraces of the Connecticut valley, see the author's papers of 1870 to 1884; also E. Hitchcock, 1841, 1857; C. H. Hitchcock, *Vermont Geol. Rep.*, 1861, and *New Hampshire Geol. Rep.*, 1878; W. Upham, *New Hampshire Geol. Rep.*, and later papers.

W. B. Dwight states that at the clay-beds, near Newburg, north of the Narrows, the clay fills large conoidal depressions in the sand-beds. One of the three there observed is elliptical in section, about 80′ by 50′ in diameter at bottom, 150′ in longer diameter at top, and 90′–100′ in depth. The clay is straticulate, the layers concave, with the wall of the mass rather firm; and the sand and gravel beds outside bend downward at the wall. The clay contains a few bowlders.

In western Pennsylvania, plains of great extent have a height of 275′ to 300′ along the Monongahela, and of 300′ on the Ohio 5 miles below Pittsburg; their height above the sea level is about 1050′. Nothing of marine origin, however, has been found in the region to suggest the presence of the sea. On the lower Ohio occur terraces 160′ to 100′ in height above the river. They exist also along the Mississippi in Kentucky, and farther south.

Kettle-holes, although characteristic of many moraines, also occur at times over the stratified fluvial deposits of the Champlain period. An example occurs in the plain on which the city of New Haven, Conn., is built, one to four miles north of the center of the city. The terrace formation of the region consists chiefly of sand and fine gravel. The small depressions represented on the accompanying map. Fig. 1555, are the kettle-holes. They are often 100 to 150 feet in diameter, and 30 to 40 feet deep. The ice had left the region long before deposition of the beds had taken place. On the map, the depression in the plain lettered Beaver Pond Meadows has a depth of 25