standing water. Between the lowest of this group of frontal deposits on the north and the higher ones there intervenes the remarkable "flat rock" areas or spillways of Altona extending into the region northwestward as far as the international boundary at Covey hill, Canada.

Flat Rock spillways [*see* pl. 18]. These bared surfaces of the Potsdam sandstone mark the path of a torrential discharge of water held on the northern slope of the mountains along a line from the notch at "the Gulf" [*see* pl. 25] on the international boundary line to a point west of the village of West Chazy, a distance of about 19 miles. It is necessary to suppose that the ice front lay along the lower side of this spillway belt, which thus becomes quite as definite as a frontal moraine in the fixation of the position of the ice at this time. This line of evidence is confirmed by the occurrence of strong frontal deposits along the lower margin of the spillway zone near West Chazy at "Cobblestone hill" and northward [*see* geologic map of the Mooers quadrangle, pl. 29].

More important than all this is the evidence afforded by the torrential action concerning the hight of the standing water then in the valley of Lake Champlain. The lower margin of the stripped bed rock near West Chazy descends nearly to the 620 foot contour line; its upper limit in the district is approximately 900 feet; farther north its upper limit is as high as 910[1] feet, and in the Gulf there is a water pool [*see* pl. 19] at the base of an abandoned waterfall at 810[1] feet, and there is a lower lakelet in a chasm at 645[1] feet [*see* pl. 20]. These lakelets would not have been produced by a fall of water into this channel when it was deeply submerged. There are evidences of water standing at some episode in this phase east of the Gulf[2] at a level between

[1]These elevations are from Mr Gilbert's notes, but have been taken independently by myself.

[2]There is a brief account of the Gulf given by Ebenezer Emmons in the *Geology of the Second District.* [Clinton County, p.309–10, 1842] He reports the small lake at the bottom as "said to be 150 feet deep." He also states that "To account for the present condition of this rock, we have therefore to go back to a period when some current swept through this gorge with great force and power; for by no other means could the materials, which once filled the space between the present walls of the gulf, be removed." This is the first notice I believe of this spillway in scientific literature.