

proximity to the ice front. This is a particularly important conclusion in its bearing on the clays shown on the opposite side of the river at Fishkill Landing.

The clays at Fishkill and Dutchess Junction border on the river and are apparently free from overlying gravels and sands; but higher up at 140 to 160 feet are sandy terraces apparently referable to the Newburg stage. The details of glacial structure here require further study in the light of better sections than those exposed in the season of 1900. Enough is known however to show that after the ice front had withdrawn to the north side of the Highlands, it lay along the western side of the river at the back of the Newburg terrace while deposits of gravel, sand and clay were making in the Hudson gorge in front of it.

The southern end of the ice at this stage lay near West Newburg. Marginal kames occur between Newburg and Dickson lake. At the base of Snake hill there are morainal mounds curving eastward. At Windsor station one appears to be outside of the frontal moraine. An old overflow channel or crease is well shown $\frac{1}{4}$ mile southeast from the railroad station west of New Windsor. It runs through the southwestern part of a cemetery at an elevation of 140 feet. The channel is from 300 to 400 feet wide, cut in outwash sands which rise in the southern part of the cemetery to the height of 160 feet, showing that while the ice still remained in this field the level of standing water in the neighboring river was much below that of the 160 foot terrace. Terraces made in the presence of ice are invariably above the level of standing water in the extraglacial region. From the facts at New Hamburg described below it would seem as if the water in the open Hudson gorge was at this stage not much above 100 feet higher than it now is.

North of Newburg the surface facing the river on that side has an eroded appearance, blending with the glaciated region of the western side of the valley. It suggests to the eye the occupation of this part of the valley by the ice while the Newburg terrace was forming; in other words, the ice front here approached and crossed the river. That it crossed the river somewhere between this locality and New Hamburg is shown by the decisive evidence as to the ice front at the latter place.