

As regards the position of the ice front on the northern flank of the hill, it should be stated that as noted by Mr Gilbert the highest well defined and clearly demonstrable beach along this line is at 450 feet above sea level. But above this beach occurs a succession of rude terraces with coarse and often rather angular blocks from just above the 450 foot line to about 570 feet. Some of these are lines strikingly level for long distances; yet other parts of this system are inclined. All of them and particularly the highest show considerable cutting into the till cover of the hill. A till cliff is conspicuous at a number of localities on the north side of Covey hill near the 570 foot level according to my aneroid readings. Waterworn pebbles and characteristic beach wall structure are apparently absent. Mr Gilbert according to his notes in his search for beaches ruled all these higher lines out, if I understand his notes correctly, because of their lack of horizontality. Prof. A. P. Coleman who examined them in my company in 1903 hesitated at the time to pronounce them beaches. They lie for the most part in the zone of certain high and coarse beaches of angular and shingly debris which can be traced to the southeastward on the northern part of the Mooers quadrangle. The deposits deserve further study with careful leveling and mapping. If not due to powerful waves these terraces seem to me to demand powerful currents acting in the manner of the streams which Mr Gilbert and later Professor Fairchild have traced along the ice front in central New York between Syracuse and Rome. Such stream action between the ice front and the slope of the hill would cut effectively and make a part of the stream bed in the till with one bank of that material, and the other half of the bed might be formed by the ice with the bank on that side also of ice. It is to be expected that, as soon as the ice withdrew somewhat from the northern face of the upper part of Covey hill, the heavy discharge of waters which had taken place through the Gulf would have been diverted to the north side of the hill at a lower level. Farther south on the Champlain side there was a glacial lake with constantly lowering stages into which these torrential spillway levels would merge. Such is the interpretation which I have placed on these terraces above the marine limit of 450 feet on the northern flank of Covey hill.