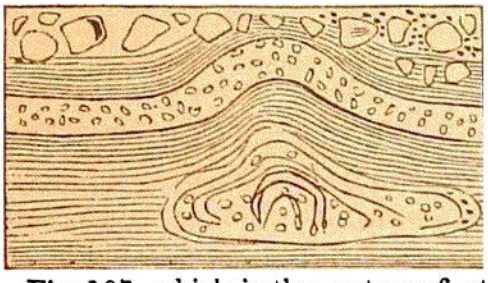
surface than those from lakes and rivers, and less perfectly stratified. 2. These deposits occur sometimes in positions (as when they fringe the side of a mountain, where there is no corresponding elevation opposite), where no rivers can ever have existed.

1. Deposits by lakes and rivers are found on the sides of valleys, or wide basins, or at the *debouchure* of smaller into larger valleys. 2. These deposits usually slope downward in the direction in which the river runs, and at the same or a more rapid rate than the river. 3. Fluviatile deposits are generally made up of more perfectly comminuted and finer materials than oceanic deposits; as if the former were made in more quiet waters.

Fig. 106.

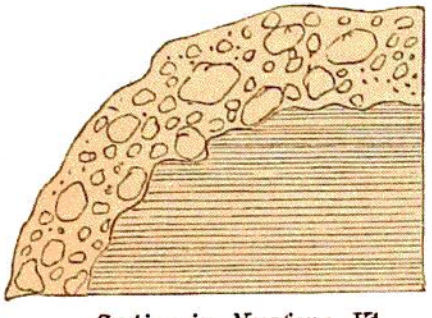


If masses of ice are moved along over the surfaces of stratified sand and gravel, it is obvious they will plough furrows or pile up a ridge in front, and in various ways disarrange the layers. Or masses of ice might be mixed among alluvial deposits, and produce irregularities in the strata by its melting. The curvature in Fig. 106 may have been produced in this way.

Fig. 107, which is the section of a terrace in Newfane, Vt., shows how very coarse modified drift may succeed unconformably to fine clay.

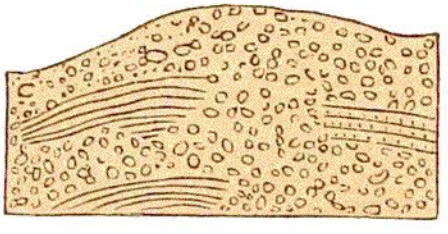
Fig. 108 shows an interesting case in Palmer, Mass. The cliff is mostly gravel, sand, and coarse bowlders, yet in the midst of it are deposits of fine blue clay.

Fig. 107.



Section in Newfane, Vt.

Fig. 108.



Deposits of loose materials from water alone are distinguished by two circumstances. 1. The materials are, as a general fact, arranged in horizontal layers; although in some places of limited extent they may be urged down a slope, and present a lamination considerably inclined. 2. The materials are sorted into finer and coarser, and arranged into layers one above another; often passing into each other by the most delicate gradation. Hence, wherever we find a deposit possessing both these characters, we may be sure that it is the result of the action of water.

Forms of Modified Drift.—Modified drift occurs in the form of moraine terraces, osars, escars, ancient subaqueous ridges, ancient sea beaches and sea bottoms, and terraces. Stratigraphically they all lie above the unmodified drift.

Moraine Terraces.—These are generally accumulations of modified drift, and are often arranged in heaps and hollows, or conical