

gently declining, as the stream runs, but nearly level in the transverse section. If, by any change of the physical conditions, the stream should cut its way to a greater depth, the banks would have that terrace form which belongs to the Lune, the Ouse, the Tees, the Tyne, and many rivers of the North of England. It not uncommonly happens, that two such terraces, at different levels, can be traced for some distance on the sides of a valley, as on the Lune; — occasionally, in the midst of a valley, rises a low hill of gravel corresponding to the lateral terraces. In most valleys, the materials of the terraces are such as the rocks on the sides of the mountains yield; but this is not the case on the Lune about Kirkby Lonsdale, or the Tyne above Newcastle, in both of which situations, boulders and gravel from the Cumbrian mountains constitute a considerable part of the deposit. For this reason, they would probably be called diluvial deposits by some writers, and described as raised breaches by others. The confused aggregation of the pebbles, sand, &c. is such as to imply sudden and violent inundations, which delivered a vast body of detritus in a short time, and perhaps followed the line of the valley, but deposited the coarse earthy matters near the sides when the velocity was lessened, as powerful streams are always found to do.

71



H. W. High water mark.

1. Surface of chalk excavated by water in some ancient period.
 2. Surface of ancient tertiary sands, or alluvial sediment left in the chalk valley.
 3. Surface of detrital (diluvial) deposit extended over hill and valley.
- Surface of comparatively modern alluvial deposit in the valley of the diluvium, consisting of chalk and flint gravel.

Existing valleys have, then, in many cases, been traversed by floods of water which have left evidence of their volume, force, and direction. Did they excavate the