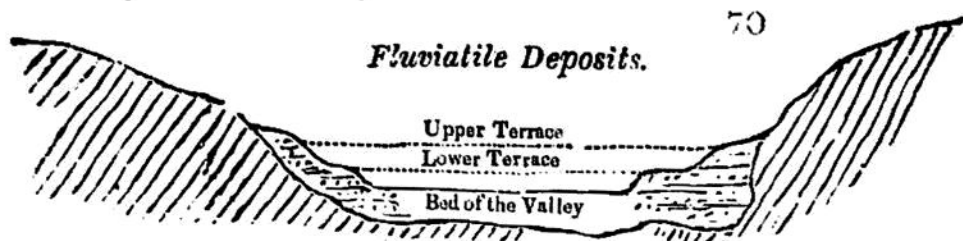


ANCIENT VALLEY FORMATIONS.

I have some time ago proposed this term, for the purpose of combining in one point of view a great number of remarkable ancient phenomena, attesting the former action of water *in existing valleys*, but flowing at higher levels than the actual stream, unless the land has been raised and sunk. Deposits of gravel at the mouth of a valley, in the form of terraces, abound in most mountain countries (*e. g.* foot of Glen Roy), on the sides of a valley (as in Tynedale, above Newcastle), at the head of a valley (as at the head of several Cumberland glens).

In Glen Roy, at a very high level, are two parallel lines, or terraces, which run round the mountain sides, and communicate with other drainage streams. The deposit called Löss, on the Rhine, appears of the same nature, so far, at least, as to indicate the deposition of sediments in water flowing at a level many hundred feet above the present River Rhine, and extending beyond what is now its proper valley on the north side of the range of the Ardennes.*

In some of these cases, there is sufficient proof that the water was not marine, land shells being not unfrequently found in the deposits, especially the finer sorts of sediments. The level character of the terraces, which is the most usual form of these accumulations, seems to indicate the existence of ancient lakes at a high level in the valleys where they occur.



This, however, is less certain than may be commonly imagined; for streams like the rough Arve scatter the detritus brought down from the glaciers over a surface

* Lyell, in Geol. Proc.