

violent commotion of water, is indeterminate. So, indeed, is that between the cessation of the diluvial floods (whatever they were) and the commencement of the actual stream. For if the great hollow was both excavated and afterwards filled before the chalk rose completely out of the sea water, we have no easy means of knowing when the whole became dry land, and admitted the descent of fresh water. If, however, the bones of quadrupeds which occur in the diluvium be thought sufficient to prove these accumulations to have happened on dry land, the actual stream may be looked upon as a feeble but immediate successor of the devastating floods.

Rock Terraces in Valleys.— There is a peculiar class of terraces in valleys, which indicate in the same manner the successive lowering of the level of descending water (or the successive rising of the land); these terraces are formed by solid rock, with little or no trace of gravel, or other detritus. Such cases are frequent in the mining dales of the North of England, which cut deep into the “Yoredale Rocks,” or upper mountain limestone series.*

In this varied series of limestone, sandstone, and shale, almost every limestone which overlies shale projects into a terrace; and this sometimes happens to strong sandstones similarly circumstanced. It is easy to see that, as this occurs in many of the branching lesser dales, as well as in the principal valley, it may plausibly be argued that the whole effect is due to atmospheric action. It is probable, however, that this is not a sufficient cause; since additional débris might thus be expected to be falling every day, or, at least, more of this accumulation should remain than we see. We must further observe, that the presumed levels of the water are only clearly marked by continuous terraces when the strata dip nearly in the plane of the valley. It appears, that just as, at this day, a mountain stream crossing the Yoredale Rocks

* Geol. of Yorkshire, vol. ii.