

The surfaces of the strata appear to have been exposed partially, at least, more than once to the action of these denuding causes, and even at very early epochs, while many of the more recent beds were as yet only in the process of being deposited; for among those beds we find many, as we have already observed, made up of water-worn debris which must have resulted from causes of this kind. Indeed whenever, and in whatever manner, the waters first receded from the emerging continents, currents which could hardly have failed to produce such effects must have taken place; but the most important agency of this kind appears to have been exerted at a more recent period, and subsequently to the consolidation of all the strata, by an inundation which must have swept over them universally, and covered the whole surface with their debris indiscriminately thrown together, forming the last great geological change to which the surface of our planet appears to have been exposed.

§ 11. To this general covering of water-worn debris derived from all the strata, the name of *Diluvium* has been given from the consideration of that great and universal catastrophe to which it seems most properly assignable. By this name it is intended to distinguish it from the partial debris occasioned by causes still in operation; such as the slight wear produced by the present rivers, the more violent action of torrents, &c. &c.; to the latter the name *Alluvium* has lately been appropriated; but many authors confound the two classes of phenomena together, describing them generally as alluvial. The phenomena of the diluvial debris, or gravel, are highly important and interesting. Its existence, as we have already seen, demonstrates the nature of the causes which have modified the present surface of our planet; its quantity may serve in some degree as a measure of the force with which they have acted; and its distribution may indicate the direction in which the currents swept it onwards. For instance, when we find rounded pebbles derived from rocks which exist in situ only in the mountains of the north and west, scattered over the plains of the midland counties, we may be sure that the currents drifted from the former point to the latter; and it often affords a curious and interesting problem to the geologist to trace these travelled fragments to their native masses, often hundreds of miles distant. The accumulations of this gravel above referred to, in the midland counties, especially along the plains at the foot of the escarpment of the chain of the inferior oolite on the borders of Gloucestershire, Northamptonshire, and Warwickshire, are of surprising extent, and the materials brought together are from so many quarters, that it would not be difficult to form a nearly complete suite of the geological formations of England from