

rate; they will of course constitute the first term of our geological division, and may be conveniently designated by the term *Alluvial*.

The products of active volcanos, though of so different an origin, will of course be referable to the same æra, but of these in treating of this country it is unnecessary to speak.

(*b*) *Diluvial*. Next in order to these, we find a mantle as it were of sand and gravel indifferently covering all the solid strata, and evidently derived from some convulsion which has lacerated and partially broken up those strata, inasmuch as its materials are demonstratively fragments of the subjacent rocks, rounded by attrition. The fragmented rocks constituting these gravel deposits are heaped confusedly together, but still in such a manner that the fragments of any particular rock will be found most abundantly in the gravel of those districts, where the parent rock itself appears *in situ* among the strata. In these deposits, and almost in these alone, the remains of numerous land animals are found, many of them belonging to extinct species, and many others no longer indigenous to the countries where their skeletons are thus discovered.

Between these accumulations of fragmented rocks and the vallies traversing the present surface of the earth, there clearly exists a close relation; that, namely, between the breaches which have been opened in the ruined strata, and the materials which have been removed from those breaches. The same causes that have excavated the one, have heaped up the other; and these causes have evidently (as appears from a general examination of the phenomena) acted at once on all the strata, and at a period subsequent to their original formation and consolidation: hence they must be assigned to the last violent and general catastrophe which the earth's surface has undergone, whatever has occurred since being either the quiet action of causes still continuing to operate, or convulsions, violent indeed, but of very limited and local extent.

It has therefore, from the most probable views concerning the nature of this great catastrophe, been proposed to designate these formations, which naturally constitute the second term of our geological series, *Diluvial*.

A strict adherence to the method of treating the formations regularly according to a descending series, would naturally lead us to detail the several facts, I. connected with the alluvial formations, II. connected with the diluvial formations; but many circumstances concur to render it advisable to separate the history of these posterior formations, from that of the regular series of strata which they cover. The history of the diluvial fragments of the pre-existing strata, could scarcely in-