The whole subject of the excavation of vallies by diluvial currents is discussed with great ability by this writer; but it is unnecessary to add, that much of erroneous observation, and more of unfounded inference, will be found in geological speculations of that age and school.

This passage has been already cited by Mr. Greenough in his Geological Essay, in a section devoted to the consideration of the present subject, which condenses much valuable information on the several points connected with it.

The proof, as above stated, is still further strengthened by the occurrence of broken fragments of the materials which once filled up these intervals, scattered over their surface. Not only do we observe these natural breaches bearing every mark of the violence which has produced them, but we find the ruins themselves strewn around; immense accumulations of debris torn from the adjacent rocks, and generally more or less rounded (as if by attrition against one another while rolled along by the action of strong currents), very generally cover the bottom of the vallies which traverse, and the plains which stretch beyond the base of the elevated chains. To the consideration of the phœnomena presented by these accumulations we shall presently return.

On these grounds, then, the proof that the vallies have been in many instances entirely excavated by the agency of powerful aqueous currents, and in all greatly modified by the same cause, seems as strong and complete as the nature of the case can possibly admit.*

* Mr. De Luc, in his travels through England, endeavouring to meet these arguments, adduces many instances of vallies in which, according to his account, the opposite sides consist of different strata, as a contradiction of the above theory of their formation; but since we can only expect to find any given stratum in the continuation of its plane, it by no means follows that all vallies excavated by water must necessarily present the same strata on both sides; this in fact is only a necessary consequence when the vallies are transverse, or cut across the direction of the strata; because in this case the plane of those strata will necessarily range along both the opposite sides. But in longitudinal vallies, ranging parallel to the direction of the strata, especially when the beds are very sensibly inclined to the horizon, we ought not to expect the same strata on both sides; for in this case the truncated edge of a superior bed may form the escarpment on one side the valley, and the opposite slope may be formed by the ascending plane of the stratum which emerges from beneath it; the figure illustrating the nature of stratification, page iii, may serve to shew the sectional profile of a series of such vallies. M. De Luc's instances are either of this kind or founded entirely in mistake (the fact being exactly the reverse of his representation) as we shall shew at length in the part of the work dedicated to this subject. In a great majority of instances (ninety-nine out of the hundred at least) the strata are regularly found in the continuation of their planes, whenever and however these planes are cut by the vallies. The