

and have sometimes not only exposed on each bank a precipitous wall of columnar basalt one hundred and fifty feet in height, but even to a considerable depth eaten into the granite rocks beneath ; the whole excavation being of course entirely subsequent to the volcanic eruption, the lava of which flowed at the bottom of the then existing valley.*

Yet when did these fires burn ? When took place this amazing combination of volcanic eruptions and their terrible accompaniments ? How long ago was the last of them ? And by what intervals of time could we ascend, from that last, to the earlier eruptions ; and to the earliest of the—astounding number ?—These questions cannot be answered by any assigning of our measures of time, years and centuries. Such analogies as may be inferred by comparative examinations of the condition of *Ætna*, *Vesuvius*, and other active volcanoes, carry us to the contemplation of a period which runs back not to the age of Noah merely, but immeasurably beyond the date of the creation of man and his contemporary plants and animals. In mountainous countries many facts are presented to the eye which approach to a standard of measurement of the average action of the atmosphere and of running water, in decomposing and washing off the surface of granitic and basaltic rocks. That action is sure and constant : but it is slow, to such a degree that not years but centuries are requisite for its chronicle. Even the abrading of that description of rocks when they form the boldest sea-coast, by the violence of storms added to the ordinary action of water and weather, (an addition of great power,) has not materially altered the outline of such shores in Cornwall, the west and north of Scotland, Norway, and many other

* Quarterly Review, Vol. XXXVI. p. 464 ; 1827.