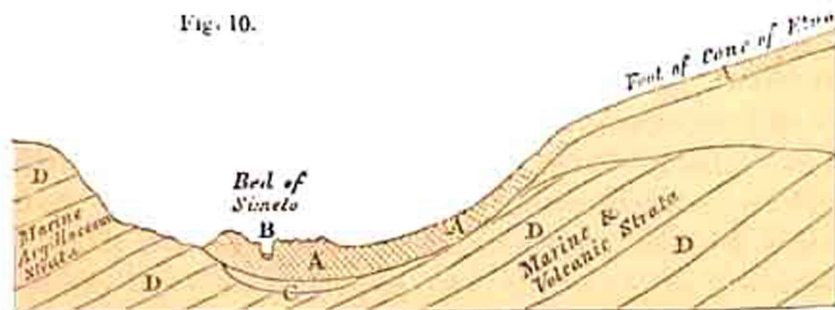


The gradual erosion of deep chasms through some of the hardest rocks, by the constant passage of running water, charged with foreign matter, is another phenomenon of which striking examples may be adduced. Illustrations of this excavating power are presented by many valleys in central France, where the channels of rivers have been barred up by solid currents of lava, through which the streams have re-excavated a passage, to the depth of from twenty to seventy feet and upwards, and often of great width. In these cases there are decisive proofs that neither the sea, nor any denuding wave or extraordinary body of water, has passed over the spot since the melted lava was consolidated. Every hypothesis of the intervention of sudden and violent agency is entirely excluded, because the cones of loose scoræ, out of which the lavas flowed, are oftentimes at no great elevation above the rivers, and have remained undisturbed during the whole period which has been sufficient for the hollowing out of such enormous ravines.

Recent excavation by the Simeto.—But I shall at present confine myself to examples derived from events which have happened since the time of history.

At the western base of Etna, a current of lava (A A, fig. 10.), descending from near the summit of the great volcano, has flowed to the distance of five or six miles, and then reached the alluvial plain of

Fig. 10.



Recent excavation of lava at the foot of Etna by the river Simeto.

the Simeto, the largest of the Sicilian rivers, which skirts the base of Etna, and falls into the sea a few miles south of Catania. The lava entered the river about three miles above the town of Aderno, and not only occupied its channel for some distance, but, crossing to the opposite side of the valley, accumulated there in a rocky mass. Gemmellaro gives the year 1603 as the date of the eruption.* The appearance of the current clearly proves, that it is one of the most modern of those of Etna: for it has not been covered or crossed by subsequent streams or ejections, and the olives which had been planted on its surface were all of small size, when I examined the spot in 1828, yet they were older than the natural wood on the same lava. In the course, therefore, of about two centuries, the Simeto has eroded a passage from fifty to several hundred feet wide, and in some parts from forty to fifty feet deep.

* Quadro Istorico dell' Etna, 1824.