

errupted succession : *as agents in geological changes trap and granite are identical.*\* The same eminent observer remarks, that it is a mere dispute about terms to refuse the name of submarine lavas to trap or basalt. "They are as much the product of extinguished volcanoes, although they do not now emit fire or smoke, as are those of Italy, where the volcanic action has ceased." Beds of basalt or trap, of a friable and coarse texture, are often found in the older rocks, and these Mr. Murchison has satisfactorily shown are volcanic grits, that have been formed at the bottom of the sea during the accumulation of the sedimentary matter with which they are associated. In some places they appear as currents, or sheets of pure volcanic materials ; at others they envelope marine remains, pebbles, sand, and fragments of rocks : some layers consist of fine volcanic scoriæ passing into sand ; and all these varieties alternate with beds composed exclusively of shelly and marine sediments, so that no doubt can be entertained that the diversified masses thus arranged in parallel strata, must have been formed during the same period of igneous action. These evidences of ancient volcanic operations are similar to those observable in the modern deposits of Sicily, where banks of existing species of marine shells, now at considerable heights above the sea, are so interlaced with volcanic matter, that no other inference can be drawn than that the whole were of

\* System of Geology, vol. ii. p. 100.