

relations to Transition and Secondary strata ; f. 6. represents an example of an extensive eruption of Basaltic matter, over Chalk and Tertiary strata, accompanied by an intrusion of vast irregular masses of the same materials into the body of the subjacent Primary and Transition rocks.

f. 7. represents strata of columnar Basalt, immediately beneath streams of cellular Lava, in regions occupied also by craters of extinct Volcanos. f. 8. represents similar beds of columnar lava in the vicinity of active Volcanos.

Trachyte and Lava.

The fourth and last class of intruded rocks, is that of modern volcanic Porphyries, Trachytes,* and Lavas. The undeniable igneous origin of rocks of this class forms the strongest ground-work of our arguments, in favour of the igneous formation of the older unstratified and crystalline rocks ; and their varied recent products, around the craters of active Volcanos, present gradations of structure, and composition, which connect them with the most ancient Porphyries, Sienites, and Granites.

The simplest cases of volcanic action are those of Trachyte (g. 1.) and of Lava (i. 5.) ejected through apertures in Granite ; such cases prove that the source of volcanic fires, is wholly unconnected with the pseudo-volcanic results of the combustion of coal, bitumen, or sulphur, in stratified formations, and is seated deep beneath the Primary rocks.†

* The appellation of Trachyte has been given to a volcanic Porphyry, usually containing Crystals of glassy felspar, and remarkably harsh to the touch, (hence its name from *τραχύς*) ; it does not occur in Britain, but abounds in the neighbourhood of almost all extinct and active volcanic craters.

† The occurrence of angular fragments of altered Granite, embedded in Pillars of columnar Lava, in the valley of Monpezat in the Ardèche, shews that these fragments were probably torn off during