VESUVIUS AND ITS NEIGHBORHOOD.

Those who have visited Saratoga will perhaps remember the High-Rock Spring. It has its name from the circumstance that its water, containing much lime in solution, has formed a mound of calcareous matter some five feet high, with a well-defined central throat, up which the fluid column in former times ascended. This conical hillock must have had its beginning from the water in the first instance rising with force through the surface of the soil, and depositing a sheet of calcareous matter. The same process going on from year to year, minute strata accumulated, until the present altitude of the mound was attained. The falling of a tree then caused a fracture in the mass, since which occurrence the water, instead of flowing over the top, has found a lateral outlet.

We compare indeed small things with great, and slight with enormous energy; but the High-Rock Spring may serve to illustrate the manner in which volcanic hills are formed. An aperture is found, in the fissure we will suppose, in the crust of the earth; fluid matter is forced up from below, and, as it spreads itself out around the orifice from which it issues, it becomes solid; another ejection takes place: another thickness swells the dimensions of the growing mound: the process is repeated, until, in a succession of years, or in some instances in a few hours, a mountain is accumulated. A central channel is preserved, up which fresh matter still ascends, except when the energy below diminishes or a side-vent is opened.

All the mountain chains upon the globe, indeed, were probably thrown up by the force which we still see active in volcanoes. But with the majority of mountain chains there does not appear to have been any explosion. The elastic gases have lifted the superincumbent strata without forcing for themselves a passage. In many regions of the globe, semi-fluid granite just protruded itself through long fissures in the overlying deposits, and became *set*—a ponderous ocean at the time, in some localities at least—tending to depress and perhaps cool the uprising mass.

The mountains which we call volcanoes have, especially in regard to their upper portion and cone, grown by the accretion of ejected volcanic substances. In some volcanoes these ejections continue to take place from the original orifice or crater; in others, the interior force has become diminished, so as to be capable of thrusting the molten fluid only up to a certain point, where it continues in a state of ebullition either visible to the eye, or concealed by a crust of solidified lava; in others lateral openings are formed at points below the ancient crater; and in others the volcanic energy seems to have worn itself out.

Of the last class are the extinct volcanoes of Auvergne and Velay in France,