

hills which have previously yielded passage to the fiery floods pressed upwards to the surface, from new orifices on the flanks or at the base of ancient cones, or from situations where volcanic action is a novelty. The effects vary according to the diversity of conditions. The materials issue in the form of melted rocks (lava), or are driven up in the state of ashes and dust (scoria, &c.), or burst forth as gas or steam. The lava, lifted by great mechanical pressure from some depth in the earth, rises in the tubular passage of the mountain toward its summit; and if the sides of the cone are strong enough to resist the accumulating pressure, it may even overflow the top, as has happened in the Peak of Teneriffe, to whose very summit Humboldt traced a stream of vitreous lava. But, generally, the slowness with which an eruption proceeds, is such as to allow of the lava making for itself lateral passages to the surface, on the flanks of the mountain, through fissures which yield to the pressure of the column above, or are opened by earthquakes. Such lateral eruptions have raised many minor cones on the slopes of Etna, and round the base of Vesuvius. Portions of the lava which enter fissures in the sides of the mountain, and are consolidated therein, may be compared to the dykes of the older pyrogenous rocks.

Lava, whatever be its chemical composition, puts on very different appearances, according to the circumstances which accompany its consolidation. The main circumstances which thus modify its aspect, are the volume of melted rock, the exposure of its surface to air or water, the nature and position of the surface on which it rests. Prismatic structures seldom appear in the rocks, except where the mass of the lava was great; cooled in sea-water, the lava of Torre del Greco became more dense than that which was cooled in air, and assumed rudely prismatic structures. On sloping surfaces it is found that the cellular cavities, common to lava which is cooled in the air, are elongated in a direction parallel to the slopes,—an effect clearly intelligible