lava, sand, and scoriæ, inclining outwards from the axis of the mountain in an angle of from 30° to 45°: a section would exhibit the structure here represented (Pl. 8, fig. 1). The fissures and rents produced in the cooled lavas and beds of volcanic products, by the earthquakes which generally precede eruptions, become filled up by subsequent ejections of melted matter, and form dikes and veins (Tab. 142); when these are injected into masses of materials which readily decompose, the solid and durable matter of the dike remains in the form of vertical walls, of which many striking examples occur in Etna, and are figured and described by Mr. Lyell.*

Lava is a term applied to any rock liquefied by heat; when consolidated by cooling, it may be in a state of scoria, pumice, basalt, obsidian, trachyte, &c. according to its mineral composition, and its slow or rapid refrigeration. The chief constituents of lavas are the substances termed felspar and augite, and titaniferous iron, and the lavas are classed according as either of these ingredients predominates. When the felspar prevails, the mass is called *trachyte*, which is generally of a coarse grain, with a harshness of texture, and a degree of porosity; when the grain is fine and compact, but irregular, it constitutes *trachytic porphyry*; when the particles are so fused as to have a resinous or glassy texture, it forms *pitchstone* and *obsidian*. If augite or titani-

* See Principles of Geology, vol. iii. figs. 102, 105.