

times, indeed, where the cells are numerous, their elongation in one direction gives a fissile structure to the rock.

A singular feature in many lava-streams are the tunnels and caverns already referred to (p. 377) as observable in them. These cavities have doubtless arisen during the flow of the mass when the upper and under portions had solidified and were creeping sluggishly onward, while the still molten interior was able to move faster and thus to leave empty spaces behind it. Such tunnels may frequently be seen among the Vesuvian lava-streams. Some remarkable examples are described from the highly glassy lavas of Hawaii, where they are sometimes from 2 to 10 feet in height and 30 feet broad, but with large lateral expansions. The walls of these Hawaiian lava-chambers are smooth and even glassy, and from their roofs hang slender stalactites of lava 20 to 30 inches long, while on the floor below little mounds of lava-stalagmite have formed. The precise mode of origin of these curious appendages is not yet understood.⁸³

In passing from a fluid to a solid condition, and thus contracting, lava acquires different structures. Lines of divisional planes or joints traverse it, especially perpendicular to the upper and under surfaces of the sheet. These sometimes assume prismatic forms, dividing the rock into columns, as is so frequently to be observed in basalt. They are described in Book IV. Part II., together with other forms of joints.

Vapors and sublimations of a lava-stream.
—Besides steam, many other vapors, absorbed in the original subterranean molten magma, escape from the fissures of a lava-stream. Such vapors are copiously disengaged at

⁸³ See Dana's "Characteristics of Volcanoes," pp. 209, 332.