From this point of view, an explanation suggests itself of the observed alternations in the character of a volcano's eruptions. These alternations may depend in great measure upon the relation between the height of the cone, on the one hand, and the strength of its sides, on the other. When the sides have been well braced together by interlacing dikes, and further thickened by the spread of volcanic materials all over their slopes, they may resist the effects of explosion and of the pressure of the ascending lava-column. In this case, the volcano may find relief only from its summit, and if the lava flows forth, it will do so from the top of the cone. As the cone increases in elevation, however, the pressure from within upon its sides augments. Eventually egress is once more established on the flanks by means of fissures, and a new series of lava-streams is poured out over the lower slopes (see Fig. 62).

In the deeper portions of a volcanic vent the convulsive efforts of the lava-column to force its way upward must often produce lateral as well as vertical rifts, and into these the molten material will rush, exerting as it goes an enormous upward pressure on the mass of rock overlying it. At a modern volcano these subterranean manifestations cannot be seen, but among the volcanoes of Tertiary and older time they have been revealed by the progress of denudation. Some of these older examples teach us the prodigious upheaving power of the sheets of molten rock intruded between volcanic or other strata. An account of this structure (sills, laccolites), with reference to some examples of it, will be found in Book IV. Part VII.[47]

Though lava very commonly issues from the lateral

[47] See particularly the description of intrusive sheets or laccolites.