

vated strata. Occasionally not a trace of this inclosure is visible, and the volcano, which is not always conical, rises immediately from the neighboring plateau in an elongated form, as in the case of Pichincha,\* at the foot of which lies the city of Quito.

As the nature of rocks, or the mixture (grouping) of simple minerals into granite, gneiss, and mica slate, or into trachyte, basalt, and dolorite, is independent of existing climates, and is the same under the most varied latitudes of the earth, so also we find every where in inorganic nature that the same laws of configuration regulate the reciprocal superposition of the strata of the earth's crust, cause them to penetrate one another in the form of veins, and elevate them by the agency of elastic forces. This constant recurrence of the same phenomena is most strikingly manifested in volcanoes. When the mariner, amid the islands of some distant archipelago, is no longer guided by the light of the same stars with which he had been familiar in his native latitude, and sees himself surrounded by palms and other forms of an exotic vegetation, he still can trace, reflected in the individual characteristics of the landscape, the forms of Vesuvius, of the dome-shaped summits of Auvergne, the craters of elevation in the Canaries and Azores, or the fissures of eruption in Iceland. A glance at the satellite of our planet will impart a wider generalization to this analogy of configuration. By means of the charts that have been drawn in accordance with the observations made with large telescopes, we may recognize in the moon, where water and air are both absent, vast craters of elevation surrounding or supporting conical mountains, thus affording incontrovertible evidence of the effects produced by the reaction of the interior on the surface, favored by the influence of a feebler force of gravitation.

Although volcanoes are justly termed in many languages "fire-emitting mountains," mountains of this kind are not formed by the gradual accumulation of ejected currents of lava, but their origin seems rather to be a general consequence of the sudden elevation of soft masses of trachyte or labradoritic augite. The amount of the elevating force is manifested

\* [This mountain contains two funnel-shaped craters, apparently resulting from two sets of eruptions: the western nearly circular, and having in its center a cone of eruption, from the summit and sides of which are no less than seventy vents, some in activity and others extinct. It is probable that the larger number of the vents were produced at periods anterior to history. Daubeney, *op. cit.*, p. 488.]—*Tr*