

The different volcanoes over the earth's surface, when they are considered independently of all climatic differences, are acutely and characteristically classified as central and linear volcanoes. Under the first name are comprised those which constitute the central point of many active mouths of eruption, distributed almost regularly in all directions; under the second, those lying at some little distance from one another, forming, as it were, chimneys or vents along an extended fissure. Linear volcanoes again admit of further subdivision, namely, those which rise like separate conical islands from the bottom of the sea, being generally parallel with a chain of primitive mountains, whose foot they appear to indicate, and those volcanic chains which are elevated on the highest ridges of these mountain chains, of which they form the summits.* The Peak of Teneriffe, for instance, is a central volcano, being the central point of the volcanic group to which the eruption of Palma and Lancerote may be referred. The long, rampart-like chain of the Andes, which is sometimes single, and sometimes divided into two or three parallel branches, connected by various transverse ridges, presents, from the south of Chili to the northwest coast of America, one of the grandest instances of a continental volcanic chain. The proximity of

where there is a notice of the celebrated burning mud of the Lelantine plains, in Eubœa, i., p. 58, Casaub.; and Appian, *De Bello Civili*, v., 114. The blame which Aristotle throws on the geognostical fantasies of the Phædo (*Meteor.*, ii., 2, 19) is especially applied to the sources of the rivers flowing over the earth's surface. The distinct statement of Plato, that "in Sicily eruptions of wet mud precede the glowing (lava) stream," is very remarkable. Observations on Ætna could not have led to such a statement, unless pumice and ashes, formed into a mud-like mass by admixture with melted snow and water, during the volcano-electric storm in the crater of eruption, were mistaken for ejected mud. It is more probable that Plato's streams of moist mud (ὕγρου πηλοῦ ποταμοί) originated in a faint recollection of the salses (mud volcanoes) of Agrigentum, which, as I have already mentioned, eject argillaceous mud with a loud noise. It is much to be regretted, in reference to this subject, that the work of Theophrastus *περὶ ρυακος του εν Σικελια*, *On the Volcanic Stream in Sicily*, to which Diog. Laert., v., 49, refers, has not come down to us.

* Leopold von Buch, *Physikal. Beschreib. der Canarischen Inseln*, s. 326-407. I doubt if we can agree with the ingenious Charles Darwin (*Geological Observations on Volcanic Islands*, 1844, p. 127) in regarding central volcanoes in general as volcanic chains of small extent on parallel fissures. Friedrich Hoffman believes that in the group of the Lipari Islands, which he has so admirably described, and in which two eruption fissures intersect near Panaria, he has found an intermediate link between the two principal modes in which volcanoes appear, namely, the central volcanoes and volcanic chains of Von Buch (Poggendorf, *Annalen der Physik*, bd. xxvi., s. 81-88).