

heat and chemical decompositions are manifested by evolutions of particular gases, and the issue of hot springs.

*Geographical Distribution of Volcanos.*

Though volcanic accumulations abound in all quarters of the globe, the area which they occupy on the land is not to be compared to that of any one of the systems of stratified rocks, and is inferior to that of most of the individual formations. On a first view, volcanic mountains seem to be so many insulated points of ignition, productive of distinct mineral compounds, and subject entirely to independent local conditions. The history of eruptions, though very incomplete, is, however, sufficient to destroy this notion, by showing on the line of the Andes corresponding movements of the land, and ejections of ashes into the air, at points very far removed from each other.

Thus, a few days after the earthquake which destroyed Concepcion, on the 20th of February, 1835, several volcanos within the Cordilleras, to the north of Concepcion, though previously quiescent, were in great activity, and the island of Juan Fernandez, 360 miles to the north-east of the city, was violently shaken. The volcanos of Osorno, Aconcagua, and Coseguina (the first and last being 2700 miles apart), burst into sudden activity early on the same morning (June 20. 1835).

This connexion and sympathy of the phenomena of volcanos and earthquakes at considerable distances, is an important element for the determination of the true condition of the subterranean spaces where these phenomena are excited. The town of Riobamba, near Tunguragua, was destroyed by a tremendous earthquake on the 4th of February, 1797; and at this moment, the smoke which had been seen to issue in a thick column from the volcano of Pasto, 65 leagues north of Riobamba, suddenly ceased. Volcanic mountains appear to act as safety-valves to a boiler, and some of them