

three hundred, and these may be divided into two classes : the *isolated* or *central*, and the *linear* or those volcanoes which belong to a *series*.*

The first are active volcanoes, around which there may be established many secondary active mouths of eruption, always in connection with some principal crater. The second are disposed like the chimneys of furnaces, along fissures extending over considerable distances. Twenty, thirty, and even a greater number of volcanic cones may rise above one such rent in the earth's crust, the direction of which will be indicated by their linear course. The Peak of Teneriffe is an instance of a central volcano ; the long rampart-like chain of the Andes, presents, from the south of Chili to the north-west coast of America, one of the grandest instances of a continental volcanic chain ; the remarkable range of volcanoes in the province of Quito belong to the latter class. Darwin relates that on the 19th of March, 1835, the attention of a sentry was called to something like a large star which gradually increased in size till about three o'clock, when it presented a very magnificent spectacle. "By the aid of a glass, dark objects, in constant succession, were seen in the midst of a great glare of red light, to be thrown up and to fall down. The light was sufficient to cast on the water a long bright reflection—it was the volcano of Osorno in action." Mr. Darwin was afterwards assured that Aconcagua, in Chili, 480 miles to the north, was in action on the same night, and that the great eruption of Coseguina (2,700 miles north of Aconcagua), accompanied by an earthquake felt over 1,000 miles, also occurred within six hours of this same time ; and yet Coseguina had been dormant for six-and-twenty years, and Aconcagua most rarely shows any signs of action.† It is also stated by Professor Dove that in the year 1835 the ashes discharged from the mountain of Coseguina were carried 700 miles, and that the roaring noise of the eruption was heard at San Salvador, a distance of 1,000 miles.

In the sea the *series* of volcanoes show themselves in groups of islands disposed in longitudinal series.

Among these may be ranged the volcanic series of Sunda, which, according to the accounts of the matter ejected and the violence of the eruptions, seem to be among the most remarkable on the globe ; the series of the Moluccas and of the Philippines ; those of Japan ; of the Marianne Islands ; of Chili ; of the double series of volcanic summits near Quito, those of the Antilles, Guatemala, and Mexico.

Among the central, or isolated volcanoes, we may class those of the Lipari Islands, which have *Stromboli*, in permanent activity, for

* "Cosmos," vol. i., p. 237.

† Darwin's "Journal," p. 291, 2nd edition.