

smoke disappear in an instant, whilst no shock whatever was felt. At that very moment, sixty-five leagues southward, between Chimborazo, Tunguragua, and the Altar (Capac-Urcu), the town of Riobamba was overthrown by the most terrible earthquake on record. Is it possible to doubt, from this coincidence of phenomena, that the vapours issuing from the small apertures or *ventanillas* of the volcano of Pasto had an influence on the pressure of those elastic fluids which convulsed the earth in the kingdom of Quito, and destroyed in a few minutes thirty or forty thousand inhabitants?

To explain these great effects of volcanic reactions, and to prove that the group or system of the volcanos of the West India Islands may sometimes shake the continent, I have cited the Cordillera of the Andes. Geological reasoning can be supported only by the analogy of facts which are recent, and consequently well authenticated: and in what other region of the globe could we find greater and more varied volcanic phenomena than in that double chain of mountains heaved up by fire? in that land where nature has covered every mountain and every valley with her marvels? If we consider a burning crater only as an isolated phenomenon, if we be satisfied with merely examining the mass of stony substances which it has thrown up, the volcanic action at the surface of the globe will appear neither very powerful nor very extensive. But the image of this action becomes enlarged in the mind when we study the relations which link together volcanos of the same group; for instance, those of Naples and Sicily, of the Canary Islands,* of the

* I have already observed (p. 113) that the whole group of the Canary Islands rises, as we may say, above one and the same submarine volcano. Since the sixteenth century, the fire of this volcano has burst forth alternately in Palma, Teneriffe, and Lancerote. Auvergne presents a whole system of volcanos, the action of which has now ceased; but in the middle of a system of active volcanos, for instance, in that of Quito, we must not consider as an extinguished volcano a mountain, the crater of which is obstructed, and through which the subterraneous fire has not issued for ages. Etna, the Æolian Isles, Vesuvius, and Epomeo; the peak of Teyde, Palma, and Lancerote; St. Michael, La Caldiera of Fayal, and Pico; St. Vincent, St. Lucia, and Guadaloupe; Orizava, Popocatepetl, Jorullo, and La Colima; Bombacho, the volcano of Grenada, Telica, Momotombo, Isalco, and the volcano of Guatimala;