these commotions at the Mission of Encaramada, a country entirely granitic, where they were accompanied by loud explosions. Great fallings-in of the earth took place in the mountain Paurari, and near the rock Aravacoto a small island disappeared in the Orinoco. The undulatory motion continued during a whole hour. This seemed the first signal of those violent commotions which shook the coasts of Cumana and Cariaco for more than ten months. It might be supposed that men living in woods, with no other shelter than huts of reeds and palm-leaves, could have little to dread from earthquakes. But at Erevato and Caura, where these phenomena are of rare occurrence, they terrify the Indians, frighten the beasts of the forests, and impel the crocodiles to quit the waters for the shore. Nearer the sea, where shocks are frequent, far from being dreaded by the inhabitants, they are regarded with satisfaction as the prognostics of a wet and fertile year.

In this dissertation on the earthquakes of Terra Firma and on the volcanos of the neighbouring archipelago of the West India Islands, I have pursued the plan of first relating a number of particular facts, and then considering them in one general point of view. Everything announces in the interior of the globe the operation of active powers, which, by mutual reaction, balance and modify one another. The greater our ignorance of the causes of these undulatory movements, these evolutions of heat, these formations of elastic fluids, the more it becomes the duty of persons who apply themselves to the study of physical science to examine the relations which these phenomena so uniformly present at great distances apart. It is only by considering these various relations under a general point of view, and tracing them over a great extent of the surface of the globe, through formations of rocks the most different, that we are led to abandon the supposition of trifling local causes, strata of pyrites, or of ignited coal.*

The following is the series of phenomena remarked on the northern coasts of Cumana, Nueva Barcelona, and Caracas; and presumed to be connected with the causes which pro-

* See "Views of Nature,"—On the structure and action of volcanos in different parts of the world,—p. 353 (Bohn's ed.); also "Cosmos," pp. 199—225 (Bohn's ed.).