

trachytes, at a distance of eighteen or twenty-five leagues from the present coast of the Pacific Ocean.* Permanent communications, or at least communications frequently renewed, between the atmosphere and the interior of the globe, have been preserved only along that immense crevice on which the Cordilleras have been upheaved; but subterranean volcanic forces are not less active in eastern America, shaking the soil of the littoral Cordillera of Venezuela, and of the Parime group. In describing the phenomena which accompanied the great earthquake of Caracas,† on the 26th March, 1812, I mentioned the detonations heard at different periods, in the mountains (altogether granitic) of the Orinoco. The elastic forces which agitate the ground, the still-burning volcanos, the hot sulphurous springs, sometimes containing fluoric acid, the presence of asphaltum and naphtha in primitive strata, all point to the interior of our planet, the high temperature of which is perceived even in mines of little depth, and which, from the times of Heraclitus of Ephesus, and Anaxagoras of Clazomenæ, to the Plutonic theory of modern days, has been considered as the seat of all great disturbances of the globe.

The sketch I have just traced contains all the formations known in that part of Europe which has served as the type of positive geology. It is the fruit of sixteen months' labour, often interrupted by other occupations. Formations of quartzose porphyry, pyroxenic porphyry and trachyte, of grauwacke, muschelkalk, and quadersand-

* I believe the first hypotheses respecting the relation between the burning of volcanoes, and the proximity of the sea, are contained in *Ætna Dialogus*, a very eloquent though little-known work by Cardinal Bembo.

† I stated in another place the influence of that great catastrophe on the counter-revolution which the royalist party succeeded in bringing about at that time in Venezuela. It is impossible to conceive anything more curious than the negociation opened on the 5th of April, by the republican government, established at Valencia in the vallies of Aragua, with Archbishop Prat (Don Narciso Coll y Prat), to engage him to publish a pastoral letter calculated to tranquilize the people respecting the wrath of the deity. The Archbishop was permitted to say that this wrath was merited on account of the disorder of morals; but he was enjoined to declare positively, that politics and systematic opinions on the new social order had nothing in common with it. Archbishop Prat lost his liberty after this singular correspondence.