

Elastic fluids thrown into the atmosphere may act locally on the barometer, not by their mass, which is very small, compared to the mass of the atmosphere, but because, at the moment of great explosions, an ascending current is probably formed, which diminishes the pressure of the air. I am inclined to think that in the majority of earthquakes nothing escapes from the agitated earth; and that, when gaseous emanations and vapours are observed, they oftener accompany or follow, than precede the shocks. This circumstance would seem to explain the mysterious influence of earthquakes in equinoctial America, on the climate, and on the order of the dry and rainy seasons. If the earth generally act on the air only at the moment of the shocks, we can conceive why a sensible meteorological change so rarely precedes those great revolutions of nature.

The hypothesis according to which, in the earthquakes of Cumana, elastic fluids tend to escape from the surface of the soil, seems confirmed by the great noise which is heard during the shocks at the borders of the wells in the plain of Charas. Water and sand are sometimes thrown out twenty feet high. Similar phenomena were observed in ancient times by the inhabitants of those parts of Greece and Asia Minor abounding with caverns, crevices, and subterraneous rivers. Nature, in her uniform progress, everywhere suggests the same ideas of the causes of earthquakes, and the means by which man, forgetting the measure of his strength, pretends to diminish the effect of the subterraneous explosions. What a great Roman naturalist has said of the utility of wells and caverns* is repeated in the New World by the most ignorant Indians of Quito, when they show travellers the guaicos, or crevices of Pichincha.

The subterranean noise, so frequent during earthquakes,

* "In puteis est remedium, quale et crebri specus præbent: conceptum enim spiritum exhalant: quod in certis notatur oppidis, quæ minus quantuntur, crebris ad eluviem cuniculis cavata."—Pliny, lib. ii, c. 82 (ed. Par. 1723, t. i., p. 112.) Even at present, in the capital of St. Domingo, wells are considered as diminishing the violence of the shocks. I may observe on this occasion, that the theory of earthquakes, given by Seneca, (Nat. Quæst., lib. vi., c. 4—31), contains the germ of everything that has been said in our times on the action of the elastic vapours confined in the interior of the globe.