

frequent theatre of the most tremendous catastrophes. The cone of Le Souffrière, in the island of St. Vincent, gave vent in 1812 to torrents of lava which desolated a wide tract of country, and ejected showers of ashes and stones to so great a height that the atmospheric currents bore them as far as Barbadoes.

Guadaloupe also contains an active volcano, which burst out into furious paroxysms in 1797. That of La Pelée, in Martinique, was in eruption in August 1851 ; it ejected no lava, but quantities of ashes and sulphurous mud.

All volcanic phenomena, we may observe, in conclusion—whether those of eruptions, earthquakes, geysers, hot springs, or mud volcanoes—originate in one and the same cause : the subterranean heat. The centre of the earth, at a varying depth, is filled with matter fused by the intense igneous forces into a liquid—a kind of molten sea—whose tidal motions produce those upheavals or subsidences of the ground which characterize the more violent earthquakes, and which are necessarily most felt where the intervening solid crust of the globe has its minimum density. Volcanic eruptions occur when, through some displacement of the earth's strata, the waters of the ocean, great lakes, or rivers obtain access to the highly-heated fused matter lying underneath ; the waters being raised above boiling-point, immediately on their encountering any subterranean cavity, generate into steam, and burst with a tremendous explosive force, like a discharge of gunpowder. Or the waters come in contact with veins or beds of certain metals—such as calcium, magnesium, aluminium, sodium—set them on fire, and produce a volcanic paroxysm. In support of this latter hypothesis, it may be mentioned that the majority of volcanoes are situated on the sea-coast, or in the neighbourhood of great lakes ; and the most violent eruptions proceed from those mountains which, like Vesuvius, Hecla, and Etna, are nearest the sea. And even in the case of inland volcanoes it is probable there may be fresh waters percolating to considerable depths in the immediate vicinity of their subterranean vents.