volcano broke out near the city of Mecca some centuries after its submission to the Mahometan faith. Extinct volcanoes are traceable in the vicinity of Mount Sinai, and from thence to the Dead Sea. The indications of volcanic action in Persia, and in various parts of the Asiatic continent, are too numerous to be cited: some of the mountains far removed from the sea still emit smoke and vapour.

Pseudo-Volcanoes.—To the accidental combustion of beds of coal, the Germans have given the name of Pseudo-Volcanoes. There are instances of coal mines having been on fire for many years; but they are too limited in extent or activity, to bear any comparison with volcanic fires. Near Bilston in Staffordshire, there are coal mines which have been continually burning for a long period; the effect of the fire on the beds of clay deserves notice, as it converts them into a substance resembling jasper.

There have been instances of portions of the cliffs of England taking fire spontaneously, and burning for a considerable time: this is, at present, the case in a cliff near Weymouth. In the last century, after a hot summer, and heavy rains, the cliff near Charmouth in Dorsetshire took fire, and continued burning for several months. When portions of the cliffs near Whitby in Yorkshire fall upon the beach, and become moistened, they are sometimes spontaneously ignited. The same effect takes place in the Staffordshire coal mines; when parts of the bed of indurated clay which forms the roof of the coal fall down, and become moistened, it takes fire spontaneously: and hence this combustible clay is provincially called *tow*.

All these instances of spontaneous combustion admit of a satisfactory explanation. The cliffs of Charmouth and Whitby are composed of lias clay, much intermixed with bituminous and carbonaceous matter, and the sulphuret of iron, (iron pyrites:) such is also the composition of the inflammable clay which forms the roof of the coal in Staffordshire; and the clay which forms the cliffs near Weymouth is similar in composition to the lias clay of Charmouth and Whitby, though it belongs to an upper part of the secondary strata. Iron pyrites abound in these cliffs; and it is a well known property of this mineral, to decompose rapidly, when laid in heaps and moistened with water. During this rapid decomposition, sufficient heat is evolved to ignite the bituminous matter in the clay: and the clay, when once ignited, will burn for a long period;—this is proved in the process employed for making alum at Whitby. There can be little doubt that this spontaneous combustion might be imitated, artificially, by mixing pyrites and bituminous clay or shale, and moistening the heap with water. The experiment of Lemery is well known: he mixed twenty five pounds of powdered sulphur with an equal weight of iron filings; and, having made with water a paste of the mixture, he put it into an iron pot covered with a cloth, and buried it a foot under ground. In about eight hours, the earth swelled and cracked, and hot sulphureous vapours were exhaled; a flame was observed