

Volcanic eruptions are generally preceded by earthquake, and the phenomena which are known to attend that terrible disturbance of the earth's stability. Loud rumbling sounds are heard, the air has a mournful stillness, as though conscious of the coming darkness, the electric fluid bursts in broad flashes over the smoking summit of the mountain, and nature itself seems to be dressed in mourning habiliments. These appearances may last for hours or for days, and sometimes the fears which they excite are not realized, but after a brief convulsion natural objects resume their accustomed appearance. It must not then be supposed that earthquake is always followed by volcanic eruption, for there are some countries so insecurely based, that the inhabitants might live in the momentary expectation of being covered by the ground on which they tread, though a volcano does not actually exist within hundreds of miles. Captain Bagnold states that in twelve months, during his residence at Coquimbo, on the coast of Chili, he felt no less than sixty-one shocks of earthquake, not calculating the slighter movements to which the surface is still more frequently subject.

PHENOMENA RESULTING FROM VOLCANIC ACTIVITY.

The period and intensity of volcanic eruptions are in nearly all cases irregular, and we have consequently no means of arranging the several mountains in classes, for the sake of a more accurate comparison of their effects. Sometimes a mountain will be in a state of violent paroxysmal eruption; and when this has passed away, it may be for years agitated with partial throes of but little intensity, or fall at once into a state of prolonged slumber. These variations are common to nearly all volcanic mountains; and consequently we cannot arrange them permanently by the character of their activity, though we may, in considering the phenomena they produce, form a general division, founded on the period and intensity of eruption, that will considerably guide us in the study of the phenomena. There are, in fact, three classes of volcanic activity—permanent eruption, moderate activity, and prolonged intermittences.

VOLCANOES IN PERMANENT ERUPTION.

It is said that there are not more than three volcanoes which are in a state of permanent activity: that of Stromboli, one
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