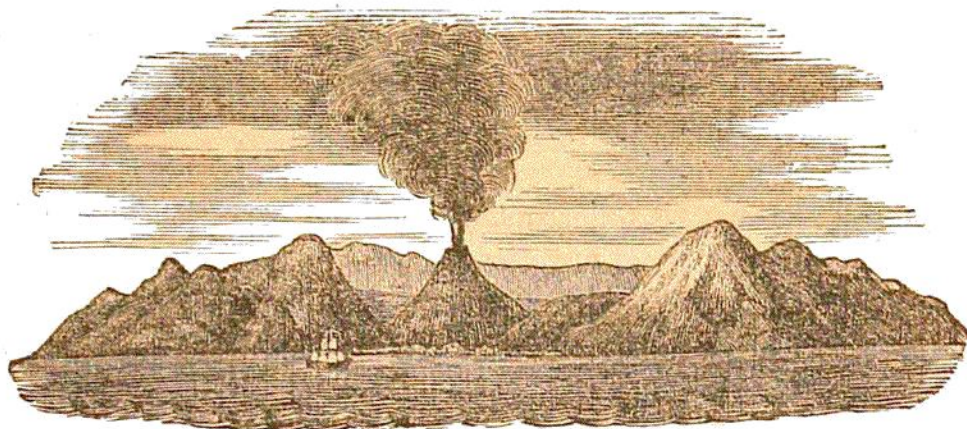


eight months. But after flowing for a distance of twenty miles the supply was exhausted, and the stream was stayed.

These eruptions, although so vast, commenced with no earthquake, no internal thunderings, or any premonitions discernible at the base of the mountains. The eruptions themselves were comparatively quiet and noiseless; the mountains opened, the lavas flowed out. This stands out in distinct contrast with the bellowing explosive eruptions of Vesuvius and Etna. Hence there are two types of volcanic action,—the one exemplified by Mauna Loa and the other by Vesuvius.

*Barren Island.*—Fig. 118 is a view of Barren Island, in the Bay of Bengal, which is volcanic.

Fig. 118.



*Barren Island, Bay of Bengal.*

Fig. 119 shows the summit of Cotopaxi, in South America, emitting smoke. It is nearly 19,000 feet high.

#### DYNAMICS OF VOLCANIC AGENCY.

We can form an estimate of the power exerted by volcanic agency from three circumstances: first, the amount of lava protruded; secondly, from the distance to which masses of rock have been projected; and thirdly, by calculating the force requisite to raise lava to the tops of existing craters from their base.

Vesuvius, more than 3,000 feet high, has launched scoria 4,000 feet above the summit. Cotopaxi, nearly 19,000 feet high, has projected matter 6,000 feet above its summit; and once it threw a stone of 109 cubic yards in volume, to the distance of nine miles.