

by fresh showers of detritus, assume a curiously furrowed aspect, like a half-opened umbrella, the ridges being separated by furrows that narrow upward toward the summit of the cone. The outer declivities of Monte Somma afford an excellent illustration of this form of surface, the numerous ravines on that side of the mountain presenting instructive sections of the prehistoric lavas and tuffs of the earlier and more important period in the history of this volcano.<sup>122</sup> Similar trenches have been eroded on the southern or Vesuvian side of the original cone, but these have in great measure been filled up by the lavas of the younger mountain. The ravines, in fact, form natural channels for the lava, as may unfortunately be seen round the Vesuvian observatory. This building is placed on one of the ridges between two deep ravines; but the lava-streams of recent years have poured into these ravines on either side, and are rapidly filling them up.

**Submarine Volcanoes.**—It is not only on the surface of the land that volcanic action shows itself. It takes place likewise under the sea, and as the geological records of the earth's past history are chiefly marine formations, the characteristics of submarine volcanic action have no small interest for the geologist. In a few instances, the actual outbreak of a submarine eruption has been witnessed. Thus, in the early summer of 1783, a volcanic eruption took place about thirty miles from Cape Reykjanaes on the west coast of Iceland. An island was built up, from which fire and smoke continued to issue, but in less than a year the waves have washed the loose pumice away, leaving a submerged reef from five to thirty fathoms below sea-level. About a month after this eruption, the frightful outbreak of Skaptar Jökull, already referred to (p. 378), began, the distance of this mountain from the submarine vent being nearly 200 miles.<sup>123</sup> A century afterward, viz. in July, 1884, another

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<sup>122</sup> See H. J. Johnston-Lavis, *Q. J. Geol. Soc.* xl. p. 103.

<sup>123</sup> Lyell, "Principles," ii. p. 49.