

the coast off St. Michael's in the Azores (Fig. 64). Consisting, like the Mediterranean example, of loose cinders, it rose to a height of about 300 feet, with a circumference of about a mile, but subsequently disappeared.¹²⁵ In the year 1796 the island of Johanna Bogoslawa, in Alaska, appeared above the water, and in four years had grown into a large volcanic cone, the summit of which was 3,000 feet above sea-level.¹²⁶

Unfortunately, the phenomena of recent volcanic eruptions under the sea are for the most part inaccessible. Here and there, as in the Bay of Naples, at Etna, among the islands of the Greek Archipelago, and at Tahiti, elevation of the sea-bed has taken place, and brought to the surface beds of tuff or of lava, which have consolidated under water. Both Vesuvius and Etna began their career as submarine volcanoes.¹²⁷ It will be seen from the accompanying chart (Fig. 65), that the Islands of Santorin and Therasia form the unsubmerged portions of a great crater-rim rising round a crater which descends 1278 feet below sea-level. The materials of these islands consist of a nucleus of marbles and schists nearly buried under a pile of tuffs (trass), scorix, and sheets of lava, the bedded character of which is well shown in the accompanying sketch by Admiral Spratt (Fig. 66), who, with the late Prof. Edward Forbes, examined the geology of this interesting district in 1841. They found some of the tuffs to contain marine shells, and thus to bear witness to an elevation of the sea-floor since volcanic action began. More recently the islands have been carefully studied by various observers. K. von Fritsch has

¹²⁵ De la Beche, "Geological Observer," p. 70.

¹²⁶ D. Forbes, *Geol. Mag.* vii. p. 323.

¹²⁷ See, as regards Etna, "Der Aetna," ii. p. 327.