

upraised, together with the submarine lavas associated with them.¹²⁸ Fouqué concludes that the volcano formed at one time a large island with wooded slopes and a somewhat civilized human population, cultivating a fertile valley in the southwestern district, and that in prehistoric times the tremendous explosion occurred whereby the centre of the island was blown out.

The similarity of the structure of Santorin to that of Somma and Etna is obvious. Volcanic action still continues there, though on a diminished scale. In 1866-67 an eruption took place on Neo Kaimeni, one of the later-formed islets in the centre of the old crater, and greatly added to its area and height. The recent eruptions of Santorin, which have been studied in great detail, are specially interesting from the additional information they have supplied as to the nature of volcanic vapors and gases. Among these, as already stated (p. 334), free hydrogen plays an important part, constituting, at the focus of discharge, thirty per cent of the whole. By their eruption under water, the mingling of these gases with atmospheric air and the combustion of the inflammable compounds is there prevented, so that the gaseous discharges can be collected and analyzed. Probably were operations of this kind more practicable at terrestrial volcanoes, free hydrogen and its compounds would be more abundantly detected than has hitherto been possible.

The numerous volcanoes which dot the Pacific Ocean,

¹²⁸ See Fritsch, *Z. Deutsch. Geol. Ges.* xxiii. (1871), pp. 125-213. The most complete and elaborate work is Fouqué's monograph (already cited), "Santorin et ses Eruptions," Paris, 4to, 1880, where copious analyses of rocks, minerals and gaseous emanations, with maps and numerous admirable views and sections, are given. In this volume a bibliography of the locality will be found. Compare C. Doelter on the Ponza Islands, *Denksch. Akad. Wissensch. Vienna*, xxxvi. p. 141. *Sitz. Akad. Wissensch. Vienna*, lxxi. (1875), p. 49.