

No phenomena of eruption proceed from them; no volcanic event connects them with the earth's interior; and only seldom is there any evidence of continued volcanic activity within such craters, or in their neighbourhood."

The chief argument insisted upon by Buch was the high inclination of the lava flows, which he thought proved that they had been uplifted after their emission. He never accepted Scrope's explanation that the streams of red-hot magma could solidify in this position. Elie de Beaumont examined Etna, and, after accurate measurements of the angle of inclination, likewise refuted the possibility of solidification *in situ*. He allowed rather more significance than Von Buch to the accumulation of ejected scoriæ and *débris*, but held upheaval for the most important factor in the formation of a volcanic cone. Wilhelm Abich and Sainte-Claire Deville were amongst the more able supporters of the Elevation-Crater theory; Abich in his illustrative work on Vesuvius and Etna (1836), and Deville in his description of the Eruption of Vesuvius in 1855.

Von Buch's theory was now thought to have been successfully defended, and was accepted in the standard text-books, in the monographs of Daubeny and Landgrebe, and above all in the *Cosmos* of Humboldt. But the three chief antagonists of the theory, Constant Prévost, Lyell, and Poulett-Scrope, continued to publish their own views, and in two masterly polemical papers in the *Quarterly Journal of the Geological Society of London* (1856 and 1859), Scrope was able to endorse the opinions he had formed thirty years earlier, and to demonstrate the origin of volcanic cones from ejected material in a manner absolutely convincing.

During the following decade, corroborative evidence in the same direction rapidly gathered in geological literature. Dr. George Hartung, who had been with Sir Charles Lyell in the Canary Islands, and had also made a number of observations in Madeira and the Azores Islands, openly disputed Von Buch's views in Germany, and said that the present shape of the large "cauldrons" in Palma and Gran Canaria had been produced by erosion. Dana's investigations in the Sandwich Isles and Junghuhn's excellent descriptions of the volcanoes in Java added further records of volcanic cones built up by ejected material; and Fouqué in 1866 arrived at the conclusion that in the case of the Santorin Islands Buch's theory could not be applied. Thus the