

of ancient subaqueous volcanic eruptions have been preserved among the sedimentary strata that overlie the granite of Auvergne. A year or two later, Dolomieu pointed out the evidence for the contemporaneous interstratification of volcanic sheets among ordinary marine deposits. He first directed attention to the subject in 1776, and brought forward still more clearly in 1784 proofs of ancient eruptions preserved in a series of marine limestones.¹ He showed that in the Val di Noto in Sicily such limestones, abounding in large corals and shells, attain a considerable thickness and lie in horizontal beds of white rock, alternating with numerous intercalations of dark volcanic material. He found in one section eleven such prominent alternations, though if he had included the layers not more than an inch thick, this number would have been doubled. The volcanic material varied from band to band, two-thirds consisting of fragmental detritus, and the remainder of sheets of basalt, sometimes regularly columnar. The most abundant constituent was a black sand or tuff, which had been laid down in thin layers, with the coarsest particles at the bottom. Some of the bands consisted of a conglomerate made up of blocks of different lavas cemented together in a calcareous or argillaceous matrix. In all the limestones Dolomieu found volcanic fragments to be generally present. He observed that the basalt-sheets sometimes lie directly on a floor of limestone, sometimes on a layer of aggregated cinders, and that in the former case the two rocks are inter-

¹ "Sur les Volcans éteints du Val di Noto en Sicile," *Journ. de Physique*, xxv., Sept. 1784, p. 191.