

may be made of these Epochs in the Study of Volcanoes." This essay was laid before the Academy in the year 1775. An extract from it appeared after the lapse of four years,¹ but the full paper was not published until the year 1806²—no less than thirty-one years after its original preparation. During this long interval the controversy about the origin of basalt had extended over most of the countries of Europe, and had involved the very subjects of which Desmarest treated. He himself, keenly as the matters in dispute interested him, took no part in the warfare. In his memoir he ignores the combatants and their strife, but quietly repeats and strengthens statements which he had published a generation before, and which, had they been properly considered and verified, would have prevented any controversy from ever arising. This dispute will further occupy our attention in later pages of this volume. In the meantime let us consider the character of Desmarest's long-delayed contribution to the literature and theory of geology.

The progress of his investigations had led him to perceive the necessity of correlating the various phenomena connected with ancient volcanoes, and especially with reference to the questions of their relative age and of the alterations they have undergone from exposure to the elements. The facts known to him suggested an arrangement of them into three groups or epochs, which were not meant to imply definite periods of time or precise dates, but would express the idea of

¹ *Journal de Physique*, tome xiii. (1779), p. 115.

² *Mém. de l'Institut des Sciences Math. et Phys.* tome vi. (1806), p. 219.
It was read again on 1st Prairial, An XII (20th May, 1804).