

learned doctor's descriptions of the former eruptions as mere speculation of his own manufacture.

In taking leave of Guettard's scientific labours, I must refer to one further essay of his, on account of its connection with his work among the old volcanoes of Auvergne. Eighteen years after his memoir on these hills had been read to the Academy, he published a paper "On the Basalt of the Ancients and the Moderns."<sup>1</sup> The furious war over the origin of basalt, of which I shall give some account in a later chapter, had not yet definitely begun. Various writers had maintained that this rock is of volcanic origin, and we might have supposed that Guettard's experience in Auvergne would have led him to adopt this correct opinion. So far from doing so, however, he entered into an elaborate discussion to show that basalt could not be a volcanic rock. He admitted that it is found among volcanic masses, but he accounted for its presence there by supposing that in some cases it was already in that position before the eruptions, in others that it had been laid down upon the lavas after they had consolidated. "If a columnar basalt can be produced by a volcano," he asks, "why do we not find it among the recent eruptions of Vesuvius and other active volcanoes?" After reviewing all that had then been written on the subject, he concludes that "basalt is a species of vitrifiable rock, formed by crystallization in an aqueous fluid, and that there is no reason to regard it as due to igneous fusion."<sup>2</sup>

<sup>1</sup> *Mémoires sur différentes parties des Sciences et des Arts*, tome ii. p. 226 (1770).

<sup>2</sup> *Op. cit.* p. 268.