

underlying granite by volcanic fire. De Saussure, when he began to study these questions, was astonished to discover how little had been done in the way of experimental research into the nature of rocks. He selected various Swiss granites, and found that in no instance could he reduce them by fusion into basalt. In case there might be any deficiency in the granites of his own country, he tried the effects of a high temperature on pieces of granite which he had himself collected in Auvergne, but equally without success. He then experimented on a granite containing abundant schorl, and obtained a black vesicular glass sprinkled with the white grains of infusible quartz. He next took specimens of different porphyries, and though he got a compact black enamel, nothing appeared in the least resembling basalt, whence he concluded that it could not be from the natural fusion of such rocks as these that basalt was derived.¹

These experiments are especially interesting, as they mark the earliest beginnings of experimental geology. The results obtained from them were negative, and De Saussure did not advance further along the path he had thus opened into a domain which was destined in future to become so fruitful. But his name must ever be had in honour for the share he took in establishing the use of direct experiment in the elucidation of geological problems. He did not live to put in practice the directions which he left for the further exploration of the Alps by those who should come after him. A disease, which perhaps took its rise from the fatigues and privations of his life among the

¹ Vol. i. p. 122-127.