

which have been invaded by intrusive masses of igneous rock have been converted into marble, the gradations from the unaltered into the altered rock being distinctly traceable, as will be shown in subsequent pages (p. 998).

Production of prismatic structure.—The long continued high temperature of iron-furnaces has been observed to have superinduced a prismatic or columnar structure upon the hearth-stones, and on the sand in which these are bedded.⁹ This fact is of interest in geology, seeing that sandstones and other rocks in contact with eruptive masses of igneous matter have at various depths below the surface assumed a similar internal arrangement (p. 993).

Dry fusion.—In an interesting series of experiments, the illustrious De Saussure (1779) fused some of the rocks of Switzerland and France, and inferred from them, contrary to the opinion previously expressed by Desmarest,¹⁰ that basalt and lava have not been produced from granite, but from hornstone (*pierre de corne*), varieties of "schorl," calcareous clays, marls, and micaceous earths, and the cellular varieties from different kinds of slate.¹¹ He observed, however, that the artificial products obtained by fusion were glassy and enamel-like, and did not always recall volcanic rocks, though some exactly resembled porous lavas. Dolomieu (1788) also contended that as an artificially-fused lava becomes a glass, and not a crystalline mass with crystals of easily fusible minerals, there must be some flux present in the original lava, and he supposed that this might be sulphur.¹²

⁹ C. Cochrane, Proc. Dudley Geol. Soc. iii. p. 54.

¹⁰ Mem. Acad. Scien. 1771, p. 273.

¹¹ De Saussure, "Voyages dans les Alpes," edit. 1803, tome i. p. 178.

¹² "Iles Ponces," p. 8 *et seq.* At temperatures between 2000° and 3000° C. various metallic oxides are fused and crystallize. H. Moissan, Compt. Rend. cxv. (1892), p. 1034.