

contact. In the Island of Rathlin, the walls of basalt traverse the chalk in three veins or dykes ; the central one a foot thick, that on the right twenty feet, and on the left thirty-three feet thick, and all, according to Buckland and Conybeare, within the breadth of ninety feet.

One of the most striking characteristics of basalt is the prismatic and columnar structure which it often assumes ; the lava being homogeneous and of very fine grain, the laws which determine the direction of the fissures or divisional planes consolidated from a molten to a solid state, become here very manifest—these are always at right angles to the surfaces of the rock through which the heat of the fused mass escaped. The basaltic rocks have been at all times remarkable for this picturesque arrangement of their parts. They usually present columns of regular prisms, having generally six, often five, and sometimes four, seven, or even three sides, whose disposition is always perpendicular to the cooling surfaces. These are often divided transversely, as in Fig. 6, at nearly equal distances, like the joints of a wall, composed of regularly arranged, equal-sided pieces adhering together, and frequently extending over a more or less considerable space. The name of Giant's Causeway has been given, from time immemorial, to these curious columnar structures of basalt. In France, in the Vivarais and in the Velay, there are many such basaltic causeways. That of which Fig. 7 is a sketch lies on the banks of the river Volant, where it flows into the Ardèche. Ireland has always been celebrated for its Giant's Causeway, which extends over the whole of the northern part of Antrim, covering all the pre-existing strata of Chalk, Greensand, and Permian formations ; the prismatic columns extend for miles along the cliffs, projecting into the sea at the point specially designated the Giant's Causeway.

These columnar formations vary considerably in length and diameter. McCulloch mentions some in Skye, which "are about four hundred feet high ; others in Morven not exceeding an inch (vol. ii. p. 137). In diameter those of Ailsa Craig measure nine feet, and those of Morven an inch or less." Fingal's Cave, in the Isle of Staffa, is renowned among basaltic rocks, although it was scarcely known on the mainland a century ago, when Sir Joseph Banks heard of it accidentally, and was the first to visit and describe it. Fingal's Cave has been hollowed out, by the sea, through a gallery of immense prismatic columns of trap, which are continually beaten by the waves. The columns are usually upright, but sometimes they are curved and slightly inclined. Fig. 8 is a view of the basaltic grotto of Staffa.