it is incorrectly termed, "basaltic." Where this arrangement occurs, as it so commonly does in basalt, the mass is divided into tolerably regular pentagonal, hexagonal, or irregularly polygonal prisms or columns, set close together at a right angle to the main cooling surfaces (Fig. 230). These prisms vary from 1 inch or even less to 18 or more inches in diameter, and range up to 100 or even 150 feet in height. Many excellent and well-known examples of columnar structure are exhibited on the coast-cliffs of the Tertiary volcanic region of Antrim and the west of Scotland, as in the Giant's Causeway and Fingal's Cave. In many cases, no sharp line can be drawn between a columnar basalt and the beds above and below, which show no similar structure, but into which the prismatic mass seems to pass.

Considerable discussion has arisen as to the mode in which this columnar structure has been produced. That it is a species of jointing, due to contraction, was long ago pointed out by Scrope, and is now generally conceded, though the conditions under which it is produced are not quite clear.[9] Prof. James Thomson showed how the columnar structure might be explained as a phenomenon of contraction, and subsequently Mr. Mallet concluded that "all the salient phenomena of the prismatic and jointed structure of basalt can be accounted for upon the admitted laws of cooling, and contraction thereby, of melted rocks possessing the known properties of basalt, the essential conditions being a very general homogeneity in the mass cooling, and that

[9] G. P. Scrope, "Geology and Extinct Volcanoes of Central France," p. 92. J. Thomson, Brit. Assoc. 1863, sects. p. 95. R. Mallet, Proc. Roy. Soc. 1875; Phil. Mag. ser. 4, vol. i. pp. 122, 201. T. G. Bonney, Q. J. Geol. Soc. 1876, p. 140. J. Walther, Jahrb. Geol. Reichsanst. 1886, p. 295. J. P. Iddings, Amer. Journ. Sci. xxxi. 1886, p. 321.