

mation. Basaltic columns are frequently seen in countries that are the seat of volcanic fires, but they occur also in countries very remote from any known volcanoes. The theories respecting their formation will be subsequently adverted to.

Few countries in the world present more magnificent basaltic columnar ranges than the north part of Ireland, and some of the Hebrides: probably these are connected under the ocean, and have had the same origin.

The Giant's Causeway constitutes a small part of a vast basaltic range, along the north coast of Ireland, in the county of Antrim. The promontory of Fairhead and Borgue, in the same range, are situated eight miles from each other: these capes consist of various ranges of pillars and horizontal strata, which rise from the sea to the height of five hundred feet: from their abruptness they are very conspicuous, and form a pile of natural architecture, in which the regularity and symmetry of art are united with the wild grandeur and magnificence of nature. Many of the columns in the ranges at Fairhead are one hundred and fifty feet in height, and five feet in breadth. At the base along the shore is a wild waste of rocky fragments, which have fallen from the cliffs. Immense masses that have withstood the force of the shock lie in groups, resembling the ruins of enormous castles. At the Giant's Causeway, the columns rarely exceed one foot in breadth, and thirty feet in height: they are sharply defined, and the columns are divided into smaller blocks, or prisms of one foot or more in length, which fit neatly into each other, like a ball and socket. The basalt is close grained, but the upper joint is cellular. The columns are most frequently formed with five or six sides; but some have seven or eight, and others not more than three. Beds of basalt that are not columnar, in some situations lie over and also under the columns. The basalt in these beds is cellular, and contains zeolites in its cavities. The columns at Fairhead are not articulated like those at the Giant's Causeway; but the blocks which are of great length in each column, lie flat on each other. Basalt appears to extend on the coast and inland about forty miles in length and twenty in breadth.

A full and perspicuous account of the geology of this part of Ireland is given by Messrs. Buckland and Conybeare, in the fourth volume of the Geological Transactions. It appears that this basaltic range rests upon lias limestone containing marine shells and ammonites; the basalt also enters chalk-rocks, which are much broken by it and in one part a considerable mass of chalk is completely enveloped in basalt. The effect of a basaltic dyke, in crystallizing the chalk on each side of it, has already been mentioned. Former observers, unacquainted with the nature of the rock on which the basaltic ranges of the Giant's Causeway rest, have mistaken it for basalt; it is a dark coloured highly indurated limestone, and as it contains shells and other organic remains, these remains were erroneously supposed to prove the marine origin of basalt.