

Barwesford on the north, and at Wratchiff crag near Alwrick, basalt also occurs conformably *interstratified* with other rocks. At Dunstanborough, the cliffs consists of columnar basalt, 8 to 10 feet; sandstone, 2 feet; shale or slate-clay, 6 feet; basalt to below the water's edge.

At Gunwarden, strata of dark bluish crystalline limestone, from three to four feet thick, alternate twice with compact basalt. At Wratchiff crag, basalt alternates with limestone and slate clay.

In *overlying masses*, basalt occurs in the general form of a long range, crossing the country in the direction of north-east and south-west, on the north of the lead mines. Close to the edge of this range, the Romans constructed their wall, which is now standing four feet high in many places; this basalt is occasionally columnar. Higher north, other masses are also visible; and still higher, basaltic eminences form a striking feature in the country between Alwrick and Berwick. These eminences have frequently been chosen for the sites of castles, as at Dunstanborough, Bamborough, and Holy Island; some of the small islands near the coast are also composed of this rock. At Bamborough a well was sunk in the Castle hall to the depth of 150 feet, by which it was ascertained that the overlying rock of basalt is 75 feet thick, and rest upon a fine grained red and white sandstone.

Basaltic dykes traverse alike the subjacent formations of limestone and millstone grit, and the coal-measures; in one instance it will be seen even penetrating rocks of far later date; the phenomena accompanying those dykes are thus generally stated by Mr. Winch.

Limestone is often rendered highly crystalline and unfit for lime, when in the vicinity of this rock, as is the case with the two lowermost strata at Wratchiff crag, but not with the upper one. Slate-clay or shale is turned into a substance like *flinty-slate or porcelain Jasper*, as is the case with the stratum lying immediately beneath the upper bed of basalt at Wratchiff crag; and coal is *invariably charred* when in contact with it. The Sandstone on which it sometimes reposes, is changed for some depth to a brick-red colour.

Examples of such dykes traversing the carboniferous limestone may be seen in Aldstone moor, Allendale, and in Weardale. One is quoted as being 36 or 37 feet wide. In the crevices beside the dykes, strings of lead ore are frequently observed, but are never known to pass through the dykes.

In the 4th volume of the Geological Transactions, there is a short communication by the Hon. H. G. Bennet on a *Whin* dyke traversing the limestone and other strata in Beaduel bay