

changes effected in sedimentary strata by the intrusion of basalt, and other volcanic rocks (page 275); but I have reserved for the present occasion a more particular exposition of the phenomenon. The chalk in the north of Ireland, constitutes a line of cliffs traversed by basalt, which sometimes forms vertical dikes, and at others extensive beds, which have a columnar structure. The chalk is about 270 feet thick, and rests on a green sandstone, called *mullattoe*, the equivalent of the *glauconite*, or firestone (page 291); it contains flint nodules, ammonites, belemnites, echinites, terebratulæ, and the usual fossils of the cretaceous formation. In the Isle of Rathlin, nearly vertical dikes of basalt are seen intersecting the chalk (as in this sketch, Pl. VIII. fig. vi.*), which at the line of contact, and to an extent of several feet from the wall of the dike, is completely changed. Those portions of the chalk which have been exposed to the extreme influence of the lava, are now a dark brown crystalline rock, the crystals running in flakes, like those of coarse primitive limestone; the next state is saccharine—then fine-grained and arenaceous; a compact variety with a porcellaneous aspect, and of a bluish-grey colour, succeeds; this gradually becomes of a yellowish-white, and passes insensibly into unaltered chalk. The flints in the indurated chalk are of a yellowish, or deep-red colour; the

* Geological Transactions, vol. iii.