

toadstone. Still, if in any authenticated instances, the metallic veins be decidedly cut off by the toadstone, the argument of Mr. W. must, *pro tanto* be held good; and the excepted cases will only prove, that some of the metallic veins of this district are of later formation than others. The average thickness of the first or upper toadstone, is about 60 feet; of the two lower 75 ft. each. This however is subject to very great variations; but the statements of Mr. Whitehurst of the appearances in the mines on Tideswell Moor, whence he inferred the total irregularity or the occasional absence of these beds, are referred by Mr. Farey, to the having mistaken some of the occasional masses before mentioned for the regular beds.

In attempting to give a brief sketch of the course* of these toadstone strata, which range in nearly parallel irregular curves from its north-east to its south-east angle, sweeping round with outlines convex towards the west, through the limestone district of Derbyshire, it must be remembered that that district is described by Mr. Farey as being bounded on three sides (the south, west and north,) by an extensive fault; the effect of which is in these directions, to place the fourth or lowest bed of limestone on the same level with the shale, whose true place, as ascertained on the eastern side, is above the whole limestone series. Hence, while the three toadstone strata form nearly parallel bands along the eastern side, where the beds crop out in regular succession, we must not look for any repetition of them on the western side, where the lowest formation is thus brought abruptly into contact with the shale formation, to the necessary exclusion of the intervening beds.

The only exception to this arrangement, is on the north-western side of the district, where the line of this fault so ranges as to include in two parts of its course small portions of the third limestone, (the next above the lowest) and consequently allows the repetition of the third toadstone.

We shall begin by describing (still following Mr. Farey) the course of the third toadstone, and before we pursue its continuous basset, where it has an eastern or south-eastern dip, we may first notice its occurrence on the north-western border of the district, where it is repeated with an opposite, or north-western dip, underlying the insulated portions of the third limestone just mentioned. Of these portions, one extends from Dove hole, about a mile and a half to the eastward, to Sparrow pit near the celebrated ebbing and flowing rock. The other,

* It may be useful to desire the reader in following this sketch, to fix his attention particularly on the valley of the Wye, and the dales opening into it on the north; and in Bonsall Dale on the South. In these all the 3 strata are finely displayed. See Sections, plate 2.