

contains beds of what is termed white chert or china-stone, of which considerable quantities are used in the Staffordshire potteries.\* (F. 271 & seq.)

The impression of a crocodile was said to have been found in this stratum by Mr. H. Watson at Ashford (see Whitehurst); but we have been informed on enquiry, that an orthoceratite was mistaken for some part of this animal.

The description of the intervening strata of toadstone might here with propriety be introduced; but for the reasons before assigned, when mentioning the whin sill of Northumberland, it appears more convenient to refer them to the appendix on the occurrence of rocks of the trap formation among those associated in the coal districts: we shall here only remark, therefore, that the lowest is 66 feet in thickness; the middle 138 feet; and the upper 48. We have thus a total ascertained thickness of 1010 feet for the rocks constituting the calcareous tract of Derbyshire, of which 760 feet is limestone; and 252 feet, toadstone. This will serve as a point of comparison with the account already inserted of the beds of this formation in Northumberland. The thicknesses, however, of these beds, and especially of the toadstone, are very variable. We now pass to the consideration of the mines of Derbyshire, which are entirely situated in this tract.

The out-going of the strata just described, forms the great *Lead district* of Derbyshire; very numerous veins have been worked in it principally for lead, but the ores of zinc, manganese, copper, and iron, also occur in them; but they are more plentiful and productive when in the limestone, than when in the other strata. It has been supposed that lead ore has not been found in the toadstone, but nineteen instances of its discovery in that situation, in strings and short branches, are mentioned. A vein, somewhat approaching the *perpendicular*, is in Derbyshire termed a *rake vein*. Rake veins are from two or three, to thirty or forty feet wide. A large cavity, often nearly *horizontal*, between beds of limestone, and containing spars and ore, is termed a *pipe vein*. Veins (or rather beds) of this description are sometimes of considerable height, and from two to 500 feet wide, and are commonly connected with the surface

\* It is in a mountain composed of limestone, that the beautiful masses of various coloured fluor spar, termed Blue John, are found. The mountain has no appearance of regular stratification, and is full of fissures and caverns of immense depth: the fluor occurs in those nearly horizontal beds, or rather openings, which are termed *pipe veins*, and is found of a roundish form, in which it seems to have crystallized; but the centre is frequently hollow. It is from these masses that elegant vases, &c. are manufactured by Mawe & Co. (M. 69.)