

mottled with green and yellow. Three distinct beds of this ancient lava are interpolated in the mountain limestone of that district.* The toadstone is a compact mass, consisting of small nodules of white and yellow calcareous spar and green earth, imbedded in a dark greenish paste of basalt. Sometimes the nodules are decomposed, and the stone is then vesicular or cellular, resembling porous lava. This rock, in some instances, passes into common basalt, an ancient volcanic product, which I shall describe in the next discourse. The thickness of each of the beds of toadstone varies from sixty to eighty feet. In some instances, dikes of toadstone traverse the metalliferous veins, and a manifest alteration is then observable in the nature of the latter.

13. TRAP DIKES OF THE CARBONIFEROUS SYSTEM.—Trap dikes, which are intrusions of a hard, dark green, fine grained, volcanic stone, in fissures which intersect the stratified deposits, are common in the carboniferous system; and in Yorkshire there is one of prodigious extent and thickness, named the *whin sill*, which traverses the coal-measures, red sandstone, and lias, and passes from High Teesdale to the confines of the eastern coast, a distance of upwards of sixty miles.† The *faults*,

* Consult Mr. Bakewell's Geology; and Conybeare and Phillips's Geology of England and Wales.

† Professor Sedgwick. Mr. Bakewell's observations on the phenomena of trap dikes are highly interesting and philosophical.