both in the succession and thickness of each. Interruptions to the continuity of the strata, from cracks or fissures which have taken place since their original deposition, are very frequent. In this diagram (Pl. VII. 7), a fault of this kind (see page 192) is represented as having displaced three beds of coal. This is an example of a simple fissure and dislocation; but dikes, or intrusions of other mineral matter, also occur, separating the beds as it were by vertical walls, which are from a few inches to many yards in thickness. The dikes are sometimes composed of indurated clay, but more frequently of the ancient volcanic rock, called trap, or basalt. This diagram (Pl. VII. 15) represents a trap dike intruding through the carboniferous and other systems, and spreading over the chalk. The effect of these lava currents on the rocks they transverse, will be considered in the next lecture. The mottled rock in Derbyshire, called *toadstone*, is clearly a pyrogenous mass, that has been erupted in a melted state.

5. COALBROOK DALE.—In Shropshire, the carboniferous strata are disposed in several detached areas or coal-fields.* Around Shrewsbury the coal-beds are associated with "a limestone, of fresh-water or estuary origin, peculiar to the coal-fields of the central counties of England,"† and containing

* Silurian System, p. 83.

† Consult Mr. Murchison's admirable description of the Carboniferous System; Silurian System, chap. vi.