vations of Professor Sedgwick and Mr. Murchison, have shown the propriety of separating the *old red sandstone* from the carboniferous system, and of classing it as a distinct formation, characterised by peculiar organic remains. Thus we have the new red, or saliferous formation, passing into the carboniferous, and the latter into the old red sandstone, or *Devonian*, as it is now proposed to designate this group of strata, for reasons subsequently to be noticed.

3. THE COAL MEASURES.—The bituminous substance termed coal is simply vegetable matter altered by a chemical process, which will hereafter be explained. It occurs in strata which vary from a few inches to a fathom in thickness, having interposed beds of shale, clay, micaceous sandstone, and ironstone in layers and nodules. Groups of alternations of this kind occupying circumscribed areas, are termed basins. Mr. Bakewell observes that the strata thus disposed may be explained by a series of muscle-shells, placed one within the other, and having layers of clay interposed. If one side of the shell be raised, to indicate the general rise of the strata in that direction, and the whole series be dislocated by partial cracks or fissures, the general arrangement of the beds and the displacements which they have undergone, will be represented; each shell being the type of a bed of coal, and the partitions of clay, of the earthy strata which separate the carboniferous layers.