

vidual strata naturally allied and associated together. To explain this by an example : if Derbyshire be the country under examination, he will find a series of twenty or more alternations of beds of coal, sandstone, and slaty clay, repeated over and over ; and beneath these beds a like alternation of limestone strata with beds of the rock called toadstone. Here, then, all the individual beds at once resolve themselves into two comprehensive series—the upper containing coal, the lower limestone ; each series being characterised by the repetition of its own peculiar members. Such series are called FORMATIONS ; and by the aid of these general relations, the unmanageable number of the individual strata is readily reduced within convenient limits ; and this division must appear perfectly natural, inasmuch as the beds composing each formation, being identical in character, must have resulted from the same order of causes.

Still further, by comparing several of those formations together, a resemblance of relations and an association in position will be observed between many of these also, which will lead to a still greater simplification by the introduction of a smaller number of yet more comprehensive classes.

Of these more comprehensive classes, five will perhaps be sufficient ; the first or upper series will comprehend the beds of sand and clay which repose upon, and partially cover the great and conspicuous formation of chalk. The second class is of a less uniform character, and comprehends many formations in some respects dissimilar, which yet possess many common relations, and which the fear of constituting too large a number of general classes forbids us to separate ; yet four subdivisions of it require enumeration ; 1st. the chalk formation ; 2nd. a series of sands and clays beneath the chalk ; 3rd. a series of calcareous freestones (such as the Portland and Bath stones) and clays ; 4th. beds of red marle and sandstone containing occasionally alabaster and rock salt. The third general class comprises the beds affording coal, and the limestones and sandstones on which these repose. The fifth class is characterised by the prevalence of common roofing and writing slates. The sixth, and lowest, by that of some finer varieties of slate and granite. These divisions are the same with those generally recognised by geological writers, excepting that the third is by some combined with the second, by others with the fourth ; but all geological analogies and relations are grossly violated by the former of these methods ; and though the latter is less open to objection, yet we shall best consult that convenience to the student which it is the great object of all such arrangements to promote, by assigning to so important a series a distinct place in the general system. Different writers have assigned different