

PART IV.

CHAPTER XXVII.

PERMIAN OR DYAS STRATA.

General Characters.—Throughout Europe many areas containing the Carboniferous rocks are also occupied by a peculiar group of strata, which are mostly, as a rule, unconformable to the underlying and older series. These strata are red sandstones, conglomerates, and breccias; in places, marls and limestones of a type essentially differing from other calcareous deposits. From their wide distribution and development in the Russian province of Perm, they were named "*Permian*" by Murchison, De Verneuil, and Keyserling. The name "*Poikilitic*" (variegated) was suggested by Conybeare, as an equivalent and comprehensive term for both series (Permian and Trias), which were originally included in the *New Red Sandstone*, the term used to distinguish all the divisions of the red rocks above the Carboniferous series, as contradistinguished from the *Old Red Sandstone* below. Palæontological evidence, however, is against this union, and more so in Germany than in Britain. The geological time represented by this great series of strata, intervening between the Carboniferous and the Jurassic systems, must have been enormous. In Germany they exhibit a well-marked grouping into two great series of deposits, and have hence received the name of "*Dyas*," or Twofold. On physical grounds Professor Sedgwick classed the Permian series with the Trias.

Permo-Carboniferous.—In North America the term "*Permo-Carboniferous*" has been adopted to denote the transitional beds at the top of the true Palæozoic series, *i.e.*, where no good line of subdivision can be drawn at the top of the Carboniferous system, or between that and the Permian. There are instances in Derbyshire, Lancashire, and Cheshire where an apparent gradation appears between the Coal-measures and the Permian sandstones.

Two distinct types of the Permian system have been determined in Europe—

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| A. | { | Dyas. | { | 1st. A <i>lower group</i> of Red Sandstones and conglomerates, and, |
| | | | | 2d. An <i>upper group</i> , consisting of limestones and dolomites. |
| B. | { | Russian | { | In the Russian or Permian the beds are of similar character, |
| | | or | | but occur so interstratified as to present no distinct twofold |
| | | Permian. | { | petrographical subdivision. |