

independent fauna, which owes its origin to a special act of creation, and is clearly distinguishable from the preceding and succeeding faunas. It happens in rare cases that species are continued into a higher complex of strata than that in which they took origin, but these cases occur only when the higher strata succeed conformably upon the lower, in other words, when no marked crust-disturbance has taken place between the two periods of deposition. Thus D'Orbigny thought it possible to base stratigraphy wholly upon palæontological features, more especially upon the occurrence of Mollusca, Echinodermata, and Cœlenterata.

He commenced a great palæontological work, which was intended to supply a description of all the fossil forms in France belonging to these three divisions of the animal kingdom. The gigantic scope of the work was too much even for such an enthusiastic worker as D'Orbigny. Between 1840-55 several volumes of D'Orbigny's *Paléontologie Française* appeared, comprising descriptions of the Jurassic and Cretaceous Cephalopods, part of the Gastropods from the same two systems, and the Cretaceous Brachiopods and Hippurites, Irregular Echinids, and Bryozoa. In two other works, the *Elementary Course of Palæontology* (1849-52) and the *Prodrome of Stratigraphical Palæontology* (1850-52), D'Orbigny elucidated his sub-division of stratified rocks and his views on stratigraphical geology.

He divided fossiliferous rocks into six periods or Terrains, and sub-divided the first five periods into twenty-seven groups (étages). He selected the names of characteristic localities for the designation of the groups of strata, and followed Thurmann's example in adding the affix "ien" to give uniformity to the series. D'Orbigny was thoroughly familiar with the Mesozoic faunas but knew less about those of other epochs, and he made the mistake of assigning to the Mesozoic faunas a much greater significance in his stratigraphical succession than to the Palæozoic or Cainozoic faunas. He discarded the terms Palæozoic, Mesozoic, and Cainozoic, and assumed an equal value for the twenty-seven successive groups which he distinguished. In accordance with his sub-division of the rock-succession, D'Orbigny supposed that organic creation had been completely renewed twenty-seven or twenty-eight times.

The chief merit of D'Orbigny's works is their remarkable