

be fully understood without a thorough acquaintance with the fossils and their distribution in the successive geological formations, and that this case exhibits one of the most striking examples of the influence classification may have upon our appreciation of the gradation of organized beings in the course of time. As long as Gymnosperms stand among Dicotyledones, no relation can be traced between the relative standing of living plants and the order of succession of their representatives in past ages. On the contrary, let the true affinity of Gymnosperms with Ferns, Equisetaceæ, and especially with Lycopodiaceæ be fully appreciated, and at once we see how the vegetable kingdom has been successively introduced upon earth, in an order which coincides with the relative position its primary divisions bear to one another, in respect to their rank, as determined by the complication of their structure. Truly, the Gymnosperms, with their imperfect flower, their open carpels, supporting their polyembryonic seeds in their axis, are more nearly allied to the anathic Acrophytes, with their innumerable spores, than to either the Monocotyledones or Dicotyledones; and, if the vegetable kingdom constitutes a graduated series beginning with Cryptogams, followed by Gymnosperms, and ending with Monocotyledones and Dicotyledones, have we not in that series the most striking coincidence with the order of succession of Cryptogams in the oldest geological formations, especially with the Ferns, Equisetaceæ, and Lycopodiaceæ of the Carboniferous period, followed by the Gymnosperms of the Trias and Jura and the Monocotyledones of the same formation and the late development of Dicotyledones? Here, as everywhere, there is but one order, one plan in nature.

## SECTION XXV.

### PARALLELISM BETWEEN THE GEOLOGICAL SUCCESSION OF ANIMALS AND THE EMBRYONIC GROWTH OF THEIR LIVING REPRESENTATIVES.

Several authors have already alluded to the resemblance which exists between the young of some of the animals now living, and the fossil representatives of the same families in earlier periods.<sup>1</sup> But these comparisons have, thus far, been traced only in isolated cases, and have not yet led to a conviction, that the character of the succession of organized beings in past ages, is such, in general, as to show

<sup>1</sup> AGASSIZ, (L.) Poiss. foss., q. n., p. 54. — Embryonic Types, q. n., p. 11. — Twelve Lect., etc., p. 8. — EDWARDS, (H. MILNE,) Considérations sur quel-

ques principes relatifs à la Classification naturelle des animaux, An. Sc. Nat., 3e sér., 1844, 1 vol. p. 65.