

of the invertebrate sub-kingdoms; but among the orders of the several classes and the classes of the Vertebrates we find generally a progress from lower to higher in the order of introduction.

But there is another principle, complementary to this, which needs to be united to it in order to present us with a true view of Nature's method. There has generally been a downward as well as an upward unfolding of each type from the central forms in which it was first embodied. Trilobites, the first representatives of the Crustacean type, belong indeed to the lowest group, but do not lie at the bottom of the group—the lower members, as well as the higher groups, coming into being at subsequent periods. The earliest reptiles were not the lowest of the Amphibians, but Labyrinthodonts, the highest Amphibians; and from this starting-point the reptilian type expanded both upward and downward. Vertebrates began, not with the lowest fishes, but with a grade of fishes above the mean level of the type in the possession of several reptilian characteristics. From here the type rose still higher to the strongly sauroid forms, and descended to the Teliosts, or typical fishes, with their aberrant and degraded forms—the lamprey and the lancelet. We shall arrive, therefore, at the truest expression of the plan of Nature in reference to the succession of organic beings by saying that each type was first introduced at a nodal point, from which the stream of development proceeded in both directions—the lowest forms in many instances being reached only in the modern age; so that, in some cases, after the culmination of a type, it has suffered a degeneration into the lower grades already passed.

Another fact strikes us in a review of the succession of life in past time. Life has presented itself not so much in a series of sharply-restricted organic *forms*, rising or de-