

development or growth, and (b) through all the steps in the progress of growth, as well as (c) in the resulting structures.

The above general facts are at the foundation of all the methods of cephalization, or decephalization, pointed out in Article I. They receive further illustration in the pages beyond, and special explanations on pages 175 to 182.

This subject of cephalization throws new light, as has been shown, on the limits and gradal distinctions of groups. The characteristics which it affords, like all others appealed to in classification, cannot overrule affinities based on obvious resemblances in type of structure. Their object or use, on the contrary, is rather to exhibit the affiliations and distinctions of types by presenting new views of their relations and making manifest the true basis of all affinities. Between different types of structure there is generally a difference of grade, which is evinced in characters that indicate different degrees of cephalization.

It follows from the nature of the principle that both high and low cephalization, although *opposites*, should often lead to *similar* results; as, for example, to abbreviations anteriorly and posteriorly in animals generally—to memberless abdomens in Crustaceans—to small wings in Insects, etc. (Art. I, pp. 337, 440). This evolving of approximately like results from the opposite extremes of cephalization is one source of the difficulties in the subject of classification. But the law cannot, on account of the trouble it may give, be condemned; for, as I have before remarked, it is in accordance with universal truth that smallness, or circumferential contraction, should proceed both from concentration, and from lack of quantity, although these are opposite conditions. The difficulties in the way of a right use of the principle of cephalization are, therefore, in nature, and must be met by the only legitimate means—thorough study.

Many errors in the attempts to present to view the system of nature have arisen from confounding cases that, as above explained, are widely diverse. The writer would not claim to be always right in his own interpretations; for he is well aware that far profounder knowledge is requisite for unfailing accuracy. But he believes that the principle appealed to is right and fundamental; and if he ventures to present new classifications of departments in zoology in which adepts in these departments have made trials with different results, it is only to offer such illustrations of the principle in view as will serve to exhibit the methods of its application and its various bearings.

In the first article on this subject, after explanations of the general subject of cephalization, the higher subdivisions of the animal kingdom were considered. In the second, one of the *Orders* was reviewed and an arrangement given of its subdivisions, down to the grade of Tribes. In the present, the classification of a *Tribe* is followed out, down to the grade of Families.