

noids among Acalephs; the Crinoids, Asterioids, Echinoids, and Holothuriæ among Echinoderms; the Bryozoa, Brachiopods, Tunicata, Lamellibranchiata among Acephala; the Branchifera and Pulmonata among Gasteropods; the Ophidians, the Saurians, and the Chelonians among Reptiles; the Ichthyoids and the Anoura among Amphibians; etc.

Having shown in the preceding paragraph that classes rank next to branches, it would be proper I should show here that orders are natural groups which stand above families in their respective classes; but for obvious reasons I have deferred this discussion to the following paragraph, which relates to families, as it will be easier for me to show what is the respective relation of these two kinds of groups after their special character has been duly considered.

From the preceding remarks respecting orders it might be inferred that I deny all gradation among all other groups, or that I assume that orders constitute necessarily one simple series in each class. Far from asserting any such thing, I hold on the contrary, that neither is necessarily the case. But to explain fully my views upon this point, I must introduce here some other considerations. It will be obvious, from what has already been said, (and the further illustration of this subject will only go to show to what extent this is true,) that there exists an unquestionable hierarchy between the different kinds of groups admitted in our systems, based upon the different kinds of relationship observed among animals, that branches are the most comprehensive divisions, including each several classes, that orders are subdivisions of the classes, families subdivisions of orders, genera subdivisions of families, and species subdivisions of the genera; but not in the sense that each type should necessarily include the same number of classes, nor even necessarily several classes, as this must depend upon the manner in which the type is carried out. A class, again, might contain no orders,¹ if its representatives presented no different degrees characterized by the greater or less complication of their structure; or it may contain many, or few, as these gradations are more or less numerous and well marked; but as the representatives of any and every class have of necessity a definite form, each class must contain at least one family, or many families, indeed, as many as there are systems of forms under which its representatives may be combined, if form can be shown to be characteristic of families. The same is the case with genera and species; and nothing is more remote from the truth than the idea that a genus is better defined in proportion as it contains a greater number of species, or that it may be necessary to know several species of a genus before its existence can be fully ascertained. A genus may be more satisfactorily characterized, its peculiarity more fully ascer-

¹ See Chap. I. Sect. 1.