

the *Lepidosteus*, the *Polypterus*, the *Amia*, and a host of extinct genera and families, not to speak of those families I had associated with them and which Prof. Müller would have removed, which, if included among Ganoids, would add still more heteromorphous elements to this order. Among Decapods, we need only remember the Lobsters and Crabs to be convinced that it is not similarity of form which holds them so closely together as a natural order. How heterogeneous Bryozoa, Brachiopods, and Tunicata are among themselves, as far as their form is concerned, everybody knows who has paid the least attention to these animals.

Unless, then, form be too vague an element to characterize any kind of natural groups in the animal kingdom, it must constitute a prominent feature of families. I have already remarked, that orders and families are the groups upon which zoölogists are least agreed, and to the study and characterizing of which they have paid least attention. Does this not arise simply from the fact, that, on the one hand, the difference between ordinal and class characters has not been understood, and only assumed to be a difference of degree; and, on the other hand, that the importance of the form, as the prominent character of families, has been entirely overlooked? For, though so few natural families of animals are well characterized, or characterized at all, we cannot open a modern treatise upon any class of animals without finding the genera more or less naturally grouped together, under the heading of a generic name with a termination in *idæ* or *inæ* indicating family and sub-family distinctions; and most of these groups, however unequal in absolute value, are really natural groups, though far from designating always natural families, being as often orders or sub-orders, as families or sub-families. Yet they indicate the facility there is, almost without study, to point out the intermediate natural groups between the classes and the genera. This arises, in my opinion, from the fact, that family resemblance in the animal kingdom is most strikingly expressed in the general form, and that form is an element which falls most easily under our perception, even when the observation is made superficially. But, at the same time, form is most difficult to describe accurately, and hence the imperfection of most of our family characteristics, and the constant substitution for such characters of features which are not essential to the family. To prove the correctness of this view, I would only appeal to the experience of every naturalist. When we see new animals, does not the first glance, that is, the first impression made upon us by their form, give us at once a very correct idea of their nearest relationship? We perceive, before examining any structural character, whether a Beetle is a Carabicine, a Longicorn, an Elaterid, a Curculionid, a Chrysomeline; whether a Moth is a Noctuelite, a Geometrid, a Pyralid, etc.; whether a bird is a Dove, a Swallow, a Humming-bird, a Woodpecker, a Snipe, a Heron, etc., etc. But before we can ascertain its genus, we have to study the structure of some characteristic