

partite structure of the *Rugosa* is an acalephian feature, nowhere observed among true *Polyps*, but characteristic of *Lucernaria*, which is a genuine Hydroid Acaleph. I may also allude to a more remote argument for referring the *Rugosa* to the Acalephs. There are simple ones among them, and others forming rather loose communities, composed of comparatively few individuals; but, whether simple or combined, each individual of this type, with its successive floors, presents a striking resemblance to a *Strobila*. *Rugosa*, indeed, may be considered as a prototype of the Acalephs, combining the most characteristic embryonic features of the class with the simplicity and peculiarity of structure of its lowest type.

When considering the different orders of Acalephs singly, I shall show that their families are founded upon different patterns of form, their genera upon ultimate structural details, and their species upon the proportions of their parts, and the relations of individuals to one another and to the surrounding mediums. To introduce these topics here, would involve me in an amount of details, which are best referred to the special parts of this monograph.

Although an order in Zoölogy especially signifies the relative rank of the members of a class, as exhibited in the complication of their structure, it is not in the orders alone that we recognize different degrees and different kinds of superiority or inferiority. As I have already stated elsewhere (vol. 1, p. 152), groups of a more or less comprehensive value may exhibit a relative superiority or inferiority; nor is an order a natural group that has no other meaning but that which it derives from its higher or lower position. The primary branches of the animal kingdom do not all stand on a level: Radiates, as such, are unquestionably inferior to Mollusks or Articulates or Vertebrates, even though some Radiates may have a more highly complicated organization than some of the lowest Fishes. We assign to the Radiates a lower position than that of the other branches, because the elements of their plan of structure are of an inferior stamp; and we place the Vertebrates highest, because the plan of their structure is in itself the most complicated: but it would be difficult to weigh the different organic tendencies combined in either the Mollusks or Articulates so nicely as to prove that either of them is superior to the other, though, unquestionably, as primary divisions of the animal kingdom, they are superior to the Radiates and inferior to the Vertebrates. The idea of placing either the Mollusks or the Articulates immediately above the Radiates, so as to establish a gradual transition between them and the Vertebrates, seems entirely out of the question, since the most distinguished naturalists who have attempted to arrange the first primary divisions of the animal kingdom in a series have failed to produce convincing arguments in favor of the superiority of the Mollusks over the Articulates, or of the latter over the former. The fact is, there is quite as high authority for one as for the other position