

ought to be characterized by some special complication of their structure which does not affect their whole organization; or, in other words, they are likely to be sub-orders. Now, such groups unquestionably exist; and if we compare the structural peculiarities which distinguish the numerous Discophoræ allied to Aurelia, Pelagia, and Cyanea on one side from those allied to Rhizostoma, Cephea, and Cassiopea on the other side, we cannot fail to perceive that these structural peculiarities do not embrace their whole organization, but only the appendages around the mouth and those of the margin of the disk. And while all the families allied to Aurelia have marginal tentacles and a mouth opening freely, though surrounded by more or less extensive appendages, all the families allied to Rhizostoma are deprived of marginal tentacles, and the appendages of the mouth are soldered along their margin so as to leave only at intervals narrow passages for the admission of the food. We have thus two distinct sub-orders among the Discophoræ, for which I would propose the names of DISCOPHORÆ SEMÆOSTOMEÆ and DISCOPHORÆ RHIZOSTOMEÆ; and to these a third sub-order must be added, which I would call DISCOPHORÆ HAPLOSTOMEÆ, including the Charybdeidæ and the Æginidæ. A comparison of the latter with the other naked-eyed Medusæ, with which they have generally been associated, will readily show how much they differ from them. Instead of simple radiating tubes communicating freely with a circular tube, they have wide radiating pouches so similar to those of the Ephyræ, about the time the tentacles are beginning to form, that the affinity is unmistakable. Moreover, as far as their mode of reproduction is known, the Æginidæ agree in their development with the Discophoræ Semæostomeæ which, like Pelagia, undergo a direct metamorphosis without intervening strobila-like segmentation. But they constitute a distinct sub-order inferior to the Rhizostomeæ and Semæostomeæ, inasmuch as the mouth is as simple as that of the naked-eyed Medusæ; and the marginal organs, the tentacles and the eye-specks, are also of an inferior character. If these views are correct, the Discophoræ should then be subdivided into the following natural sub-orders:—

- I. RHIZOSTOMEÆ.
- II. SEMÆOSTOMEÆ.
- III. HAPLOSTOMEÆ.

I shall hereafter, I think, succeed in showing that the minor subdivisions of the Discophoræ mentioned above are natural families founded upon such peculiarities of structure as determine the form only; while the three sub-orders just mentioned are founded upon complications of structure limited to some of their parts only.