

papillosa of Delle Chiaje. The close connection which exists between the rows of locomotive flappers and the chymiferous tubes is so similar to the general organization of the ambulacral system of the Echinoderms, that I do not hesitate to consider these structures as homologous.<sup>1</sup>

The sexual organs of the Ctenophoræ are closely connected with the chymiferous tubes, as in all Acalephs, and, indeed, in all Radiates; for they bear the same homological relations to the radiating chambers of the Polyps, as they do to the ambulacral system of the Echinoderms. In Ctenophoræ the ovaries and spermaries occupy small pouches upon the sides of the ambulacral chymiferous tubes: spermaries and ovaries existing in all individuals, and alternating with one another in such a manner, that, while each chymiferous tube has spermaries on one side and ovaries on the other, the proximate sides of adjoining tubes have the same kind of sexual organs, that is, either spermaries or ovaries, and, alternate intervals between adjoining tubes, different kinds of organs. The mode of reproduction of the Ctenophoræ has been traced recently by Semper and McCrady; and fragments relating to the same subject have also been contributed by Vogt, Kölliker, J. Müller, and Gegenbaur. Since the publication of my paper upon Beroid Medusæ, I have had an opportunity myself of studying the entire development of Pleurobrachia, an account of which will be given in the sequel. They undergo a direct transformation, and the young very early acquire the characters of the adults.

From this general sketch of the Ctenophoræ, it may already be inferred that they constitute a very natural group among Acalephs, entirely distinct from the Discophoræ and from the Hydroids, and unquestionably occupying, as an order, the highest position in the class, if the degrees of complication of strictly homological structures are at all characteristic of orders and may determine their relative standing. Since Goldfuss first recognized the natural limits of this group of Acalephs, and Eschscholtz, with his usual precision and accuracy, characterized it as a distinct order, all naturalists have acknowledged the propriety of combining these animals into one and the same division; though some have considered them simply as a natural family, while others have raised them to the rank of a class. As I have already stated, I believe them to be an order of the class of Acalephs, and shall hold them to be nothing more and nothing less than an order, so long as there is a possibility of distinguishing families, orders, and classes upon definite

<sup>1</sup> Of course, in following up this homology it must be remembered that the ambulacral system of the Echinoderms is not so complicated in all of them, as it is, for instance, in the Spatangoids and Clypeastroids, or even in the Echinoids and

Asterioids; for it is very simple in the Synaptoids among the Holothurians, even more so than in some Ctenophoræ, as, for instance, in *Bolina*. But of this, and of the special homologies of the chymiferous tubes, more presently.