in opposite directions, two main stems of the chymiferous tubes. Each of these divides into two forks, which in their turn are subdivided again, so that each stem ends in four branches opening into four vertical tubes, extending without farther ramifications to the lower margin of the animal; and all this with only such differences in the number of branches as occur between different genera among genuine Medusæ. We have even in Idyia, in the two simple tubes that follow the flattened sides, a close resemblance to the arrangement prevailing in Aurelia, where straight, simple tubes alternate with those that are subdivided.

These facts may be sufficient to show that the Ctenophoræ cannot be separated from the ordinary bell-shaped Medusæ; yet when we come to examine the characteristics of the orders in the class of Acalephs, we shall trace those homologies farther, and also show how the structure of all the Ctenophoræ, even of those differing most from the type of Idyia, such as Cestum, Lesueuria, Bolina, and Pleurobrachia, is strictly homologous to that of Idyia in all their peculiarities.

Among the Discophoræ there exists also a great diversity; and I shall compare closely all their different types, when examining the natural limits of that order. Suffice it to say here, that the Rhizostomes, which have been represented as widely differing from the others in the structure of their mouth, differ only in so far that the edges of the four pendent branches of the central peduncle — which are free for their whole length in Aurelia, Chrysaora, Pelagia, and Cyanea, and form four channels leading to a central opening, the so-called mouth, that opens into the main cavity — are soldered together for their whole length in Rhizostoma, Cephea, and Cassiopeia, leaving only here and there small openings between their folds, through which a less bulky food passes in the same way as in the common Medusæ, along the channels thus formed, into the main cavity of the body. The homology is perfect, the only difference being that the edges of these four appendages coalesce, instead of remaining open. (See Pl. XIII. and XIV.)

Before the mode of reproduction of the so called naked-eyed Medusæ was known as it now is, no question could be raised as to their affinity; and they were simply referred to the order of Discophoræ. But since many of them have been ascertained to arise from buds formed upon the stem, or between the tentacles, of the crown of the so-called Hydroid Polyps, the question now is, whether their association with the ordinary Discophoræ in one and the same order is true to nature or not; and further, what should be the position in a natural system of the Hydroids themselves, which, before these discoveries, were unhesitatingly associated with the ordinary Polyps. Does this show that genuine Polyps produce genuine Medusæ, to be considered as distinct animals; or that the Hydroids, with their respective Medusæ, are only alternate modes of existence of the same being? Or does it follow