

a manner as to close up the mouth, yet the fact, that in a more advanced stage of growth, specimens found together in the same shoal, and in no way differing from one another in other respects, have the margins of the arms and of the edges of the mouth so united, at intervals, that they cannot be spread out or easily opened without tearing, as well as the additional fact, that in still older specimens, not, however, exceeding one or two inches in diameter, the extent of the union of the edge of the mouth is so great, as to leave only comparatively few passages for a free communication of the surrounding medium, with the main cavity of the body, shows most unquestionably that the seeming absence of the mouth in Rhizostomeæ is only the result of a gradual closing up of the margins of the actinostome, which takes place, sooner or later, and to a greater or less extent, in different genera. In the adult *Aurelia* the margins of the arms are approximated together closely, and all but closed up in the latest period of their growth, though, when young, they form simply a wide funnel. In Rhizostomidæ, the edges of the actinostome, starting also from a wide funnel, are very early closed up, leaving only passages between their edges, in their peripheric prolongation; so that, through life, nutrition goes on through the narrow channels between the comparatively few open spaces in the peripheric portion of the arms, which are very early closed in its central portion. With such a tendency to the obliteration of the passage between the marginal prolongation of the actinostome, in the centre of the lower floor, it is not surprising that among the Rhizostomidæ the central part of that system should acquire the singular complications which we observe among the *Cassiopeæ* and in *Polyclonia*; but all these complications in no way conflict with the explanation I have here given of the polystomy of these *Acalephs*.

In order fully to appreciate the differences upon which genera, and perhaps families also, may be distinguished among the Rhizostomeæ, it is important to analyze the elements of structure of the lower surface of their umbrella, and especially that of its central part. The great cavity which hangs, like a sac, under the centre of the umbrella, has walls of very unequal thickness. Very thin where the ovaries are situated, this sac seems there to be perforated by holes, when, in reality, the wall is only extremely thin, movable, and capable of great expansion and contraction; but the bunches of ovaries and spermaries, which project from these holes, like a hernia, into the main cavity, are mostly so large as to increase the impression that there are real holes in those places. The spaces of the walls alternating with the ovaries are much thicker, and form, as it were, pillars, converging toward the central disk in the shape of a branching stem. Now, in this region, we must distinguish three parts: first, the pillars or arches arising between the ovaries and converging toward the centre. These arches may be compared to roots of the stem, which hangs down in the form of arms. They are longer or shorter in