

the latter for further details. The young medusoid buds of the genus *Hydractinia* always arise singly, and directly from the upright stem of the parent (Pl. XVI. *Figs.* 1, A, e, B, e, F, e, 2, A, e, B, e, C, e, 3, 4, a b, 4^a, a b c d e f g h i, and 4^b), in the form of a double-walled, lateral protrusion (*Fig.* 7). The growth of these medusoids may be traced on the same parent stem, inasmuch as all stages of growth are to be oftentimes seen at one time (*Fig.* 4^a, a-i). At a very early age the female medusoid contains eggs (*Fig.* 3, e), which always lie loose in its cavity around the proboscis (*p*). We have never seen any thing but eggs in the female medusoids, even at the time the male medusoids were discharging their spermatic particles, and, on this account, cannot doubt that the segmentation of the yolk and the subsequent growth of the hydroid take place outside of the medusoid, in the open sea. The male medusoid (*Figs.* 4, a b, 4^a, a-i, 4^b, 8, and 9) does not retain the universally rounded form of the female, but varies from an elongate cylindrical (*Fig.* 14^a, a) to a perfectly globular form (*Figs.* 4^a, e, and 9). As fast as the spermatic particles are discharged, the walls of the medusoid shrink and become wrinkled (*Fig.* 4, a b), and at the same time the proboscis shrivels also, and the peduncular attachment constricts, till eventually the whole medusoid becomes a shapeless mass, with a very slight hold on the parent stem.

In this half-resolved state they fall from the parent hydroid and die. Till within a short time before the spermatic particles are discharged, their whole mass has a yellow tinge, but when they are fully developed, they have, altogether, a dead-white color. Neither the male nor female medusoids have any tentacles. The number of eggs which a medusoid may contain amounts to at least a dozen, and, perhaps, to sixteen or eighteen, since, sometimes, as many as eight or nine may be counted in one half of the parent, as it stands out in profile (*Fig.* 1, C). Oftentimes we have seen a young medusoid (*Fig.* 8) pretty thickly covered by lasso-cells (*l*), which gave it a bristling appearance, while at other times there are very few of these cells present (*Fig.* 3).

SECTION III.

HISTOLOGY OF HYDRACTINIA.

The Hydroid.—The outer wall of the young hydroid (Pl. 16, *Fig.* 5^b, a¹) is composed of very irregularly columnar, transparent cells, each one of which occupies its whole thickness. These cells are identical with those which enter into the composition of the outer wall (*a*) of the stolonial part of the colony. In the latter, they are not so conspicuous, but stand out isolately, as if they were imbedded in a homo-