

very large, in the young, are a kind of flat tentacles, now hardly more projecting than the lobules between the adjoining tentacles.

In view of a proper appreciation of the morphology of the *Acalephs*, it is important to bear in mind that all the marginal appendages of these animals, whether solid or hollow, whether in the direct prolongation of the radiating tubes, or arising from the circular tube, bear the same relations to the aquiferous system. They are everywhere implanted upon its outer edge, and when hollow, are in direct communication with it. This is the case of the tentacles proper (Pl. IX. *Fig.* 3 *d' d'*), as it is, also, with the lappets of the eye (*e i i'*) and with the eye proper (*o*). Compare, also, Pl. VI. *Fig.* 4 and Pl. XI^b. *Fig.* 17 and XI. *Fig.* 11. And if we take into consideration the fact that there is no essential difference between the tentacles at the base of which there is no accumulation of pigment, and those in which pigment accumulates to such a degree as to assume the appearance of an eye-speck, and further that we have well-developed eye-specks at the base of equally well-developed tentacles, we shall not be inclined to consider as essentially different, these organs in which the tentacular element is reduced to a minimum, or entirely wanting, and the ocular element developed to a maximum degree of specialization, as is the case in the eye of *Aurelia* with its peduncle, hollow as a tentacle, and its lobules projecting like tentacles. But, however perfect and eye-like the visual apparatus of these animals may appear, it must be remembered that, in its morphological relations, it is a dependence of the system of radiating tubes, and can in no way be homologized with the eyes of animals belonging to other branches of the animal kingdom, in which the organs of sight are formed in a totally different way. I hold that in all Radiates, from the Echinoderms to the Polyps, the marginal pigmented appendages of the aquiferous system are homologous to one another, and that, by their function, they are visual organs, even though they are not eyes, as we find them in other types.

The gelatinous disk, at first regularly lenticular, with a uniformly convex outer surface and a uniformly concave inner surface, thickest in the centre and gradually thinning out to the margin, remains uniform on the outside, and the only change which its upper surface presents, consists in an increased unevenness, arising from the crowding of epithelial and lasso-cells, which form little inequalities on the surface, as represented Pl. VIII. *Fig.* 4. The inequalities which are gradually forming on the lower surface of the upper gelatinous floor, and which consist chiefly in the rising of a central eminence projecting into the main digestive cavity, and four radiating keels intercepting the four genital pouches, have already been described. But a profile view of our *Aurelia*, such as Pl. VIII. *Fig.* 1 represents, exhibits these inequalities most distinctly, and especially the encroachment of the sexual pouches into the substance of the disk, and shows further, very plainly, how the