

of the senses are prolongations of the lateral evolutions of the brain, combining with involutions from the surface, while in the latter they are modifications of the lateral appendages of the annular elements of the body of these animals. Whatever be the real functions of these controverted organs in the Radiates, one thing is certain,—they are all modifications of the ambulacral tubes connected with the ambulacral tentacles. This homology is readily ascertained by a careful comparison of the so-called eye-specks of the Discophoræ, especially those of *Aurelia* (Pl. IX. *Figs.* 3 and 4); and if the homology I have attempted to trace between them and the eye-specks of the Echinoderms and the single speck of the Ctenophoræ, in the centre of the circumscribed area, is correct, then all these organs,—whether eye-specks or auditory bags, whether simple pigment cells upon the surface of the tentacles, or vesicular cavities, including various concretions and apparently independent of the system of tentacles,—are homologous modifications of one and the same apparatus throughout the whole type of the Radiates, and constitute organs with more or less specified functions, possibly analogous to the functions of seeing and hearing in the other branches of the animal kingdom, but certainly built upon a different plan, congruent with the idea of radiation, which pervades them all. Gegenbaur states that he has looked in vain for the eye-speck in *Euramphæa*. Is it possible that this genus should present such a departure from the universal structure of its type? It does not appear probable to me.

Having thus far traced the special homologies of the sensitive organs connected with the chymiferous system, I would suggest, that, if the comparisons I have made are correct, it becomes probable that the circumscribed area of the abactinal pole of the Ctenophoræ corresponds to the line encircling the dorsal surface of the Star-fishes, or the narrow field included between the abactinal termination of the ambulacral zones in the Sea-urchins. Whether the fringes of the edge of the circumscribed area of *Beroë* correspond in any way to the marginal tentacles of the Discophoræ, as McCrady suggests, or not, I am not prepared to say. If the homology I assign to the area itself is correct, it would scarcely be possible to homologize its marginal fringes with the marginal tentacles of the Discophoræ, since these are themselves homologous to the ambulacral suckers.

Gegenbaur has correctly homologized the lateral auricles of the Mnemiidæ, in comparing them to the anterior and posterior lobes of that type, only he should have added that there is, however, this structural difference between them, that while two spheromeres, with their ambulacral tubes and rows of locomotive flappers, combine on the anterior and on the posterior side of the spherosome, to form one anterior and one posterior lobe, each lateral spheromere has its independent auricle, so situated that while those of one side are the mates of those on the other side, those of the same side stand also in antitropic relation to one another. Their