

the degree of complication of the proboscidal and of the genital apparatus. All these complications constitute only characteristic features of the subordinate divisions of the class, and in no way influence the homologies. The polymorphism of the Hydroids and Siphonophoræ, rightly considered, sets this question completely at rest.

The character which at first sight distinguishes the Echinoderms from the Acalephs and Polyps is the individualization of all their systems of organs, connected with a striking histological differentiation. This, in a measure, obliterates the impression of similarity which binds them closely together; in the same way as, for a time, the presence or absence of a shell among Mollusks prevented naturalists from perceiving their closer affinities. But as soon as we can free ourselves from the belief that histological complication and structural differentiation are positive tests of homological relationship, and as soon as we allow due weight to embryological evidence, the close affinities of the Echinoderms and the other classes of Radiates become self-evident. A comparison of a Synapta with a Beroid is most likely to remove at once the impression of a typical difference between these animals. Here we have, in both cases, a cylindrical body, with radiating tubes extending from pole to pole, connected by a circular tube, but without ambulacral suckers. In both, these ambulacral zones alternate with more or less developed interambulacra. In none of the members of these types is the body-wall remarkable for its solidity or rigidity. And if the Beroids do not afford direct means of extending the comparison to the tentacles, we need only recall some other Acalephs to show that their marginal tentacles are strictly homological to the feelers which in Holothurians surround the mouth, while some other Echinoderm may show us that, as in Radiates generally, the genital organs alternate with the ambulacral system, and occupy an interambulacral position. The only important differences between the Echinoderms and Acalephs consist in the isolation of the digestive apparatus from the main mass of the body, forming its outer wall, and the corresponding isolation of the ambulacral and genital systems; but these differences are only class characters; they have no reference to the plan of structure.

This once settled, the special homologies of the Echinoderms are easily traced. The chief difficulty rests with the ambulacral suckers and so-called gills and lantern of the Sea-urchins, and with the position of the eyes in Starfishes, when compared to Echini. These difficulties are, however, readily removed, when the differentiation of the body-wall is taken into consideration. In Crinoids and Starfishes, the abactinal area is very extensive and made up of solid plates, entirely different from those of the actinal area, which consists of the well-known ambulacral and interambulacral plates, occupying nearly the whole surface of the body in Echini, so that their abactinal area is very small, and limited to the narrow space intervening between the ocular and ovarian plates. The great extension of the