

the other longitudinal or antero-posterior. This question can only be answered in connection with those features in the structure of certain Radiates which exhibit more distinct traces of bilateral symmetry than the Ctenophoræ, and in which right and left become unmistakable in consequence of the presence of an odd spherosome. Such combinations exist among the Echinoderms, in which, in addition to two or more pairs of spheromeres, there is an odd one, in the direction of a plane passing through the opposite ends of the alimentary canal. And now, when it is considered that the tendency of the digestive tube to open in an excentric position coincides with the elongation of the body of Echinoderms, and that the anus is farthest removed from the mouth in those Spatangoids in which bilateral symmetry is most strikingly blended with radiation; when it is further considered, that in these animals the odd ambulacral zone coincides with the diameter along which the mouth and anus are placed, at opposite ends of the body, and that the symmetrical pairs of ambulacral zones are placed on opposite sides of that longitudinal diameter,—the conclusion seems irresistible, that the flattening of the digestive cavity of the Ctenophoræ in the direction of the longer diameter of the actinostome is the first indication among Acalephs of a tendency to form an alimentary canal in the direction of the longitudinal diameter of their body, and that the additional radiating tubes must be lateral.

Another consideration seems to militate in favor of that view. Admitting the general homology of the radiating chymiferous tubes with the ambulacral system of the Echinoderms, and that there are as many spheromeres in the body of Radiates as there are main branches of these systems, it must be apparent, that while the majority of Echinoderms have five spheromeres, the Ctenophoræ have eight; that in Echinoderms there are two pairs and an odd one, and in Ctenophoræ four pairs; and that, therefore, the zones alternating with the ambulacra in Echinoderms form also two pairs, with an odd interambulacral zone opposite the odd ambulacral zone, while in Ctenophoræ there are four pairs of zones homologous to the ambulacra, and four pairs homologous to the interambulacral zones. If, therefore, the diameter passing through the intermediate chymiferous tubes were considered as the antero-posterior diameter, there would be identical zones, that is, interambulacral zones, at both ends of that diameter; while in Echinoderms, the zone at one end of the longitudinal diameter differs from that at the other end, one being ambulacral and the other interambulacral. Now it is true, as there is no odd zone in Ctenophoræ, it may seem indifferent to consider either of their interambulacral zones in the direction of the transverse diameters as the anterior and posterior or the lateral ones; but if there is no odd zone, there is at least a substantial reason for considering the diameter which coincides with the longer diameter of the actinostome as the antero-posterior diameter, namely, the fact that