arranged radiatingly between the ambulacral rows, with which they alternate. This arrangement is strictly homologous to that of the sexual organs of the Polyps and Acalephs; for in Polyps the ovaries and spermaries hang from the edges of the radiating partitions, and in Acalephs they are placed upon the sides of the radiating tubes, or, what amounts to the same, they alternate with the radiating chambers in Polyps and with the radiating tubes in Acalephs, as they alternate with the ambulacral system in Echinoderms. That in Echinoderms the ambulacral system is more or less complicated, assuming now the appearance of gill-like tentacles around the oral aperture in Holothuriæ and Echini, and now that of simple tubes with external suckers, as in most members of this class, does in no way alter the primary organic relations of these parts. The homological identity of the ambulacra of the Echinoderms with the radiating tubes of the Acalephs is most easily ascertained by comparing that system in those Holothuriæ which have no external ambulacral appendages with the disposition of the radiating tubes in the Ctenophoræ. In Synapta, for instance, and in allied genera, the ambulacral system consists of tubes as simple as the radiating tubes of the naked-eyed Medusæ; while in some Beroid Medusæ, such as Bolina, Alcinoë, and Mnemia, the radiating tubes are really more complicated than the ambulacral tubes of Synapta. This apparatus is so strictly homologous in both families, that the Ctenophoræ may fairly be said to possess an ambulacral system identical in its general disposition with that of the lower Holothuriæ. Even the form of some of the Ctenophoræ, such as Beroe proper, Idyia, etc., recalls that of the Holothuriæ.

At the peripheric ends of the ambulacral system of a large number of Echinoderms there are ocelli, which deserve a special notice in this connection. Above each of these ocelli there is frequently an odd ambulacral tube, particularly prominent in some Star-fishes. This odd ambulacral tube bears the same relation to its ocellus as the hollow tentacle of a Sarsia bears to the ocellus at its base; and both have an homologous connection with their respective aquiferous systems. In Sarsia, each hollow tentacle with its ocellus communicates in the same manner with the corresponding radiating tube, as the odd ambulacral tube of a Star-fish with the whole ambulacral system of its ray. When I represent the ambulacral system of the Echinoderms as homologous to the radiating tubes of the Acalephs and to the radiating chambers of the Polyps, I do not overlook the difference there is between them in structure and in functions. But these differences consist in a more or less complicated structure and more or less specialized functions, as we frequently observe even between members of one and the same class and not in a typical modification. Similar differences exist among Echinoderms taken as a class, and even among different families of the same order of that class. In some Star-fishes the digestive cavity is a blind sac, while in others it is open at