centradenial system of canals, on the other hand, is the consequence of the centripetal immigration of exodermal parenchyma between pneumatosac and gastrobasal plate, producing the centradenia.

The innumerable ramifying and anastomosing branches of the above-mentioned vessels, which form a very complicated network in the majority of Disconectæ, are secondary productions. Their mutual relations are best understood when we compare them with the typical organisation of the simplest forms of that order, *Discalia* and *Disconalia* (Pls. XLIX., L.). The canal system exhibits here three typical octoradial horizontal stars :—(1) The pallial star above the pnoumatocyst; (2) the hepatic star on the upper face of the centradenia; (3) the gastral star below the gastrobasal plate. The eight peripheral main rays of these stars are united by the coronal ring vessel, which runs in the coronal groove around the equator of the umbrella (Pl. XLIX. fig. 4).

*Gonostyles.*—The sexual persons of the cormus, or the zooids which produce the medusiform gonophores of the Disconectæ, are arranged in a girdle around the base of the central siphon; they occupy a smaller or broader zone of the subumbrella between it and the corona of tentacles (gonostylar zone). These gonostyles or gonoblastidia are mouthless palpons in the Discalidæ, whilst they are either cystons or true siphons, provided with a terminal mouth, in the Porpitidæ and Velellidæ. They are originally nothing else than secondary manubria of a single Medusa person, budding from the radial canals of the subumbrella. They may consequently be regarded as secondary persons, comparable to the buds of the *Gastroblasta* (described by Keller and Lang), and of other Hydromedusæ budding from the subumbrella. On the other hand they may be compared also to the genital sacs which depend from the radial canals of the subumbrella in the Trachynemidæ, Aglauridæ, Pectyllidæ, and in other families of Hydromedusæ. If we imagine that these genital sacs, instead of themselves producing ova and spermatozoa in their exodermal wall, produce by budding Medusæ which afterwards become sexually mature, we shall understand how the Disconectæ have originated from Trachomedusæ.

The mouthless medusiferous palpons of the Discalidæ, and the similar secondary siphons of the Porpitidæ and Velellidæ (differing only in the possession of a mouth at the distal end), have the same structure as the large primary central siphon, but are always much smaller. Their number is originally eight, and they form a regular octoradial corona in some smaller and simpler genera (*Discalia*, Pl. XLIX. figs. 1–4; *Porpalia*, Pl. XLVIII.; *Rataria*, Pl. XLIV.). Sometimes there are sixteen, *e.g.*, in *Disconalia* (Pl. L.) and *Porpitella* (Pl. XLVI.). But usually their number is much increased, and amounts in the larger species to some hundreds. These cover the greatest part of the subumbrella, the large gonostylar zone between the central siphon and the corona of submarginal tentacles, often densely crowded without intervals. The form and size of the gonostyles are very variable, owing to their great contractility. Sometimes they are more spindle-shaped, at other times more cylindrical or pyriform, with a