

identical with that of a simple Medusa; the central union of the former is connected by a pedicular canal with the gastral cavity of the gonostyle. (8) The system of the tentacular canals or the simple peripheral vessels which arise from the periphery of the subumbrellar system and pass into the tentacles.

Besides these eight parts of the canal system there occurs often (9) a coronal canal, or a horizontal circular ring-canal placed in the coronal groove of the umbrella, between the margin of the pneumatocyst and the centradenia. It represents an inner annular vessel which carries on the circulation in the canals of the centradenia and the subumbrella. The entodermal epithelium exhibits a very different and remarkable shape in these different systems of gastro-canals. The most important seems to be the rich production of black or dark brown bilious granules in the hepatic vessels, and of green guanin crystals in the renal vessels.

Regarding the morphological value of these different parts of the gastro-canal system of the Disconnectæ, and comparing them with the corresponding parts of a simple octo-radial Medusa (Trachynemida), we may arrive at the following important conclusions:—(1) The eight primary perradial canals, which arise from the base of the stomach (of the central siphon) and run in the subumbrella towards the margin, are homologous with the eight subumbrellar centrifugal radial canals of a simple Trachynemid (*e.g.*, *Pectanthis*). (2) The marginal ring-canal, which connects the former and runs along the limb of the umbrella inside the series of marginal glands, is homologous with the usual marginal canal of a simple Medusa. (3) The tentacular canals, which arise from the subumbrellar canals and pass into the tentacles, are comparable to the tentacular canals of those Medusæ which possess submarginal tentacles (*e.g.*, *Drymonema*). (4) The gonostylar canals, which arise from the subumbrellar canals and pass into the cavity of the gonostyles, are homologous with the cavities of the eight genital sacs of a Trachynemid. (5) The eight centripetal radial canals, which arise from the coronal canal, run in the upper face of the centradenia to its centre and there unite into a "liver star," may be compared to the centripetal canals of the subumbrella of *Carmarina*, *Pectyllis*, and other Trachymedusæ. (6) The coronal canal, or the inner ring-canal, which runs in the coronal groove on the margin of the pneumatocyst, may be compared to the inner ring-canal which develops by anastomoses of the radial canals in some Medusæ.

Whilst these parts of the canal system of the Disconnectæ may be compared to corresponding parts of simple Trachymedusæ, there are other parts which are quite peculiar to the former. These secondary productions are:—(1) The pallial system or the anastomosing radial canals of the exumbrella, which form a network on the upper face of the pneumatophore. (2) The internal reticular canal system of the centradenia, forming a hepatic plexus in its upper and a renal plexus in its lower half. The development of the superficial pallial system of canals is a consequence of the invagination of the apical part of the exoderm which produces the pneumatosaccus. The development of the internal