

The mouth or the distal opening of the central siphon is either circular or octagonal, with eight short regular lips or radial mouth lobes (Pl. L. figs. 1, 3). Its edge is strongly armed with cnidocysts.

*Centradenia* (Pl. XLIX. figs. 4, 10, 11).—The large central gland, which is called the “liver” in the Porpitidæ and Velellidæ, does not exhibit in the Discalidæ the complicated structure seen in those two families, but merely a typical and most instructive simple shape. It is a biconvex lenticular disc of circular or octagonal outline, in *Discalia* (fig. 4) relatively thick and small, in *Disconalia* (fig. 10) broader and flatter. Its horizontal diameter is two to four times as great as its vertical main axis, and of the same length as that of the pneumatocyst above it. Its peripheral margin is surrounded by the corona of gonostyles, whilst its inferior face is in contact with the central siphon.

The entire mass of the lenticular centradenia is composed, in the Discalidæ, of numerous densely aggregated exodermal cells and cnidocysts, and many of these are (in the well-preserved spirit specimens of the Challenger collection) filled with an air-bubble; it is therefore very probable that these cells secrete the gas, which is taken up by the open distal ends of the tracheæ, and conducted by these into the chambers of the pneumatocyst. These gas-producing exodermal cells are probably derived from the basal part of the pneumatosaccus, or the invaginated lamella of the exoderm which includes the pneumatocyst. The thin structureless supporting plate, which separates the upper face of the centradenia from the overlying pneumatosaccus, is pierced by numerous pores which permit a direct connection between the two.

The solid exodermal parenchyma, in the Discalidæ, is only traversed by the tracheæ, and not by the so-called “liver-canals,” which form a complex network in the Porpitidæ and Velellidæ. These hepatic canals are here confined to an octoradial “liver-star,” which lies in the superior face of the centradenia. The eight main rays of it lie in the eight perradial grooves between the eight interradianal triangular air-chambers, and are united in the centre of the lower face of the central chamber. They arise from the basal part of the eight subumbrellar radial canals (near their opening into the base of the central siphon), and embrace the surface of the centradenia like eight equidistant meridional arches. They remain single in *Discalia* (fig. 4), whilst they are forked and branched dichotomously in *Disconalia* (fig. 10).

*Gonostyles*.—The polypites (or secondary manubria) which produce by budding the medusiform gonophores are in the Discalidæ mouthless palpons, and not siphons provided with a mouth, as is the case in the nearly allied Porpitidæ and the more divergent Velellidæ; but also in the latter two families the gonostyles arise from the subumbrella in the same mouthless form, and acquire their mouth opening later. Their structure is the same as in the palpons of the Discalidæ. These are spindle-shaped or pyriform, much smaller than the central siphon; they form a regular simple corona around the base of the latter. *Discalia* (Pl. XLIX. figs. 1, 3) possesses eight, and *Disconalia*