

clusters of gonophores); the second zone is marked by the corona of tentacles, divided into sixteen bunches; and the third, outermost, zone is formed by the inferior face of the free peripheral limb.

*Pneumatocyst* (fig. 4, superior or apical view; fig. 5, inferior or basal view; figs. 3, 6, 7, *p*, meridional sections).—The float, filled with gas, is a circular disc, the horizontal diameter of which (9 to 12 mm.) is ten to twelve times as great as its vertical diameter (1 to 1.2 mm.). Its thickness is nearly equal throughout, or increases a little towards the margin. The superior or exumbrellar face (fig. 4) is slightly convex, and exhibits numerous denticulate radial ribs, sixteen of which are more prominent (fig. 1). Numerous stigmata (*pe*) open by the conical papillæ of the radial ribs. The inferior or subumbrellar face (fig. 5) is slightly concave and radially folded, numerous radial furrows (sixteen of which are deeper) corresponding to the ribs of the upper face. Numerous articulate tracheæ (figs. 5, 6, *pt*; fig. 8) arise from conical protuberances of the inferior ribs, which are prominent between every two radial sulci.

The central chamber of the pneumatocyst (figs. 3, 6, *ph*) opens above by a central apical stigma (*po*), and is surrounded by a regular corona of eight triangular radial chambers; each of these bears a circular stigma (fig. 4, *pe*) on its upper face (placed in variable points), whilst from its lower face arise one or two short tracheæ. The corona of concentric ring-chambers, which surround the girdle of eight radial chambers, is composed of nine to twelve rings. The height (or vertical diameter) of these rings increases from the centre towards the periphery, whilst the breadth (or horizontal diameter) decreases (figs. 3, 7, *pk*). The inner or proximal wall of each ring is concave, the outer or distal wall convex. The concentric rings communicate one with another by eight radial rows of apertures (figs. 3, 4, *pg*), which are placed interradially between the perradial sulci. The innermost or first ring embraces the octoradial chamber-girdle not only from the distal, but also completely from the basal side (figs. 3, 6, *pk*); the other concentric rings embrace one another only from the distal side.

*Centradenia* (figs. 3, 6, 7, *uc*).—The large central gland (or the so-called liver) is a circular biconvex lens, the horizontal diameter of which (6 to 8 mm.) is three to four times as great as the vertical axis (2 mm.). Its upper surface is in close contact with the concave lower surface of the pneumatophore, its lower surface with the subumbrella. Numerous radial ribs of the upper surface fill up the radial sulci of the lower surface of the pneumatophore. The brown liver vessels are very densely crowded in the upper half, loosely scattered in the lower half of the pneumatophore. All these hepatic canals unite on the lower surface of the centradenia into descending canals, which pierce the fulcrum of the subumbrella; eight of these (forming an inner girdle of openings) open into the peripheral part of the base of the central siphon; sixteen others (forming an outer girdle) open into the sexual siphons (*sx*). The majority of the canals of the central gland contains in their epithelium that black pigment which is regarded as "hepatic