

surface occupies less than half the area of the two opposite sagittal pairs (posterior and anterior); these form a much broader oblique triangle with a prominent convex base.

The superior or apical face of the disc is slightly convex, the inferior concave; the convexity is much stronger in younger specimens (fig. 4) than in older (fig. 3).

The central chamber of the pneumatocyst (fig. 6, *ph*) exhibits nearly the same form as that figured in *Rataria cristata* (Pl. XLIV. figs. 8, 9). It is elliptical and distinctly octolobate. The deep frontal furrow proceeds near to the central chamber, so that the octoradial ring is bisected by it; its ventral half is composed of two anterior and two left chambers; its dorsal half of two posterior and two right chambers. Each of the eight radial chambers possesses a branched trachea, arising from the periphery of its basal side. The apical side of the octolobate ring, however, exhibits three stigmata only, placed near the macrodiagonal, one subcentral, an anterior upon the left ventro-lateral, and a posterior upon the right dorso-lateral chamber.

The concentric elliptical ring-chambers, which surround the octolobate central part of the float, are sixty to eighty in number in the largest specimens; those of the central and those of the peripheral part are half as broad as the intermediate chambers placed between them. Each elliptical ring-chamber is deeply bisected by the frontal furrow of the brachy-diagonal. All elliptical ring-chambers communicate with one another by two opposite openings or pneumothyrae, which are placed one on each pole of the sagittal axis (fig. 5, *pg*).

The stigmata, or the external openings of the exumbrellar face of the float, are placed in one straight line, very near the base of the vertical crest, and this line bisects the latter at a very small angle (fig. 5, *pe*). There are in the largest specimen (besides the central stigmata) about thirty to forty stigmata opposite in pairs; these are situated, the half in the right ventral quadrant of the disc (to the right of the basis of the crest); the other half in the left dorsal quadrant (to the left of the basis of the crest).

The tracheæ, which arise from the inferior face of the disc, are not numerous. Besides the eight above-mentioned tracheæ, which usually arise from the octolobate ring (fig. 6, *pt*), there is in some specimens another corona of sixteen tracheæ, which arise from the sixth or ninth ring, or between these. But in other species there is no regular arrangement, a few scattered tracheæ arising here and there from one of the middle chamber-rings. In a few specimens I found an oblique double series of tracheæ arising along the frontal furrow, on both sides of it. The number, size, disposition, and branching of the tracheæ seem to be subject to many variations in this as well as in other species of the Velellidæ. Some tracheæ are very long (about equal to the diameter of the centradenia), and bear ten to twelve or more irregular and curved branches (fig. 10); others are much smaller, and bear only a few short branches. The majority of tracheæ run more horizontally beyond the pneumatocyst, and finish in the glandular tissue of the centradenia; but a few larger tracheæ pierce this latter, and enter partly into the exodermal wall of the central siphon, partly in that of the gonostyles, where they end in their proximal half.