

round exhalent orifice of the efferent canal system which lies underneath every outwardly arched elevation of the walls of the tube (Pl. V. fig. 12; Pl. VI. fig. 3). On the projecting ledges there are also numerous smaller furrows, and the orifices of shorter efferent canals. Although the preservation of the soft parts of the specimens handed over to me for examination is not so good as that of many specimens of *Euplectella aspergillum*, I have still succeeded in definitely determining the essential structural relations.

The much folded layer of saccular chambers is, as in *Euplectella aspergillum*, united with the external skin by means of the outer trabecular framework, and with the gastral membrane by means of the similar internal trabeculae. In this also, the latter is continued into the terminal diverticula of the efferent passages, forming a continuous internal lining (Pl. VI. fig. 3).

The thickness of the tube-wall amounts, in the arched portions, to about 3 mm., and through the inwardly projecting ledges to between 3.5 and 4 mm.

The chief skeletal framework is formed of strong pentacts, in which the four cruciately disposed rays, which vary from 1 to 3 cm. in length, are arranged longitudinally and circularly so that they are closely apposed to each other longitudinally, or even cross one another transversely, and so that the longitudinal rays always lie externally to the circular. The breadth of the quadrate meshes thus formed amounts to 3 or 4 mm. The radial unpaired ray, which projects freely outwards in a straight or slightly curved course, attains a length of 1.5 to 2 cm., and, like the four other rays, runs out to a simple point. A radial ray does not, however, arise from every point of intersection of the longitudinal and circular fibrous strands; on the contrary, both in the longitudinal and transverse directions, a simple point of intersection without an independent pentact always alternates with one which is occupied by the intersecting nodes and the radial rays of a pentact (Pl. V. fig. 15).

The intersections of these longitudinal and transverse fibres correspond, not to the middle of an elevation lying between four parietal apertures, but to those external furrows which unite the parietal apertures in spiral lines (Pl. V. figs. 1, 12).

The longitudinal, as well as the circular rays of the large pentacts, are closely surrounded by a mantle of delicate comitalia, whose greatly prolonged rays apply themselves either parallel to, or in gentle windings round the thick round pentact-rays. As a rule the comitalia consist of triacts, whose unpaired ray stands at right angles to the two long rays which lie in one line, and serves for the support of the adjacent soft parenchyma. Long diacts with central intersecting nodes are also frequent (Pl. V. fig. 14). The extreme ends of these comitalia form blunt points, and exhibit a slight roughness, while the rest of the ray is smooth. With the comitalia are associated those numerous parenchymalia, with from two to six slightly bent or straight rays (Pl. V. figs. 16-20), which serve for the support of the parenchyma of the soft parts between the principal strands of fibres. They are somewhat thicker than the comitalia, and their