

a single, simple cavity, like that of the digestive cavity. At the neck of this expansion, where it joins the cylindrical portion of the stem, the chymiferous cavity loses its simplicity, and becomes complicated by the centripetal projection of several semi-partitions (Pl. XXIII^a. *Fig. 7, g³ g⁴*), varying in number from two or three to seven or eight, according to the age of the hydroid. These partitions arise from the inner wall (*Fig. 7, d d¹*); they are thicker than deep, and occupy more space, in a lateral direction, than the spaces (*j*) between them. They are most numerous at the top of the stem, and gradually decrease in number in a downward direction; at irregular intervals two of them anastomose, and continue as one, and so on, two more and two again, till at the base of the stem the last two run into a uniform, smooth, simple wall. They have a good deal of distensibility, and sometimes swell out so much as almost to meet in the centre of the stem. In this way they transform the interspaces into nearly closed tubes; but the centre never becomes permanently occupied by a solid cellular mass, connected with the inner wall by partitions, as occurs in *Tubularia Couthouyi*, and in *T. indivisa* of Europe. When seen from the outside, the stem appears striped longitudinally with alternately dark and light bands; the dark bands are the interspaces, and the light ones the semi-partitions. When light is transmitted through the stem, the reverse is the effect. The inner wall (Pl. XXIII^a. *Figs. 4, d, 5, d, and 7, d*) of the stem is quite thick, especially where it projects in the form of the semi-partitions (*Fig. 7, g³ g⁴*), and is lined by a loose layer of brownish-red, coarse and fine, granules (*Fig. 7, j*).

The outer wall (Pl. XXIII^a. *Figs. 4, b, 5, b, and 7, b*) is about two thirds as thick as the inner one; it is rendered papillate on the outer surface by the projecting rounded ends of the large cells, of which it is composed. At the lower part of the stem both these walls are much thinner; in fact, the base of the stem is hardly larger than at the time when the hydroid fixed itself, and the walls appear to have a corresponding thickness. The horny sheath (Pl. XXIII. *Fig. 1^a*; Pl. XXIII^a. *Figs. 4, a, 5, a a¹, and 7, a*) is not so tough as that of *Tubularia Couthouyi*, nor so thick, but is very flexible, and of a light yellow, or amber color. It embraces the outer wall of the hydroid, loosely, below; but above, it thins out and clings more closely, and even adheres to the globular expansion (Pl. XXIII. *Fig. 1^b, d¹*), in the guise of an excessively thin epidermis. There is no trace of this sheath on the head, as may be seen on that of *Coryne* and *Corymorpha*, but it terminates at the constriction where the latter joins the globose end of the stem. At this point it has all the appearances of an epidermic secretion, and may be seen to adhere closely to the curvature of the rounded ends of the cells of the outer wall.

Proles medusoidea.—There are neither radiating nor circular chymiferous tubes