

at right angles to this, so that the outline of a transverse section appears broadly ovate, with the broader end next the outer wall (*b*).

The cellular mass (*g*<sup>4</sup>) terminates at the base of the globular terminal expansion (Pl. XXIV. *Fig. 1*<sup>b</sup>, *b*) of the stem, and the channels here empty into the broad open space. Within these channels a more or less brisk circulation is constantly kept up, apparently by means of vibratile cilia, but these are so excessively fine that we have not been able to detect them. The outer wall (Pl. XXIII<sup>a</sup>. *Fig. 8*, *b*) is about as thick as one half the shorter diameter of the channels, has a smooth exterior surface, and is composed of numerous irregularly-disposed cells (*Fig. 9*, *b*), of moderate size. The horny sheath is variable in thickness, according to its height; at the top it thins out to a mere filmy, epidermoid covering, upon the globular expansion, and, passing downward, it gradually thickens, till, at the base, it is twice or thrice, and, in very old specimens, even four times as thick as the outer wall midway up the stem.<sup>1</sup>

*Proles medusoides*.—A full-grown medusoid has a diameter about double that of *Parypha* or *Thamnocnidia*, and possesses as complete a system of chymiferous circulation as that of *Coryne*; it also closely resembles the latter in the disposition of its circular and radiating (Pl. XXIV. *Figs. 18* and *19*, *c*; Pl. XXVI. *Fig. 3*, *c*) tubes (*c*), of which latter there are four, and sometimes five. Here, however, the resemblance ceases, for the medusoid of *Tubularia* has not the least trace of tentacles. There are the same double walls of the disk, and the single wall of the proboscis as in *Parypha* and *Thamnocnidia*; but, unlike the latter, the inner wall is channelled by the chymiferous system of tubes. As the medusoid never becomes a free animal, dependent upon its own exertions for subsistence, but, on the contrary, receives all its nourishment from the hydroid, it is not at all remarkable that the chymiferous system of tubes should be in some instances irregular in its persistence, as we have observed it to be. These tubes always develop completely, but here and there we find that the radiating tubes become obsolete, even before the medusoid has reached its maturity (*Figs. 15*, *16*, and *17*). Sometimes every trace of the chymiferous system has vanished long before the medusoid begins to wither (*Fig. 15*), or nothing but the areas of junction of the radiating and circular tubes are indicated by red spots, from one to five in number (*Figs. 16* and *17*, *c*), near the opening of the disk. By the time the hydroids are beginning to be set free, the proboscis (*Figs. 21* and *23*, *d*) becomes remarkably elongated; but instead of pushing itself out through the aperture of the disk, as does that of *Parypha*, it doubles upon itself. After all the young are developed and set free, the medusoids wither, and either drop off or are resorbed (Pl. XXVI. *Fig. 4*). When undergoing this process,

<sup>1</sup> For further details upon the structure of these walls, see the paragraph upon histology (p. 270).