dicular plate-like form (*Chonelasma*, Pls. LXXXVII.–XCI.). The wall of the cup may be complicated by thimble-like sacculations, as in *Aphrocallistes bocagei* (Pl. LXXXIII. fig. 1), and, in such cases, the gastral cavity may be separated by several transverse net-like diaphragms into a series of partitions. If the outer margin of a stalked, originally cup-shaped sponge, becomes folded outwards and downwards through great development of the median portion, a fungoid form arises which, in the genus *Caulophacus* (Pls. XXIV.–XXVI.), exhibits several varieties of outline. In this way then, as the gastral cavity and osculum have thus been lost, what was originally the internal gastral has become the upper and outer surface, so that the water enters the body from below, and escapes again from the upper outer wall. In *Aulochone* (Pls. LXVI., LXVIII.) the originally upper portion of the gastral membrane has, on account of the folding of the oscular wall, been turned towards the outside, and thus forms the outer wall of the cylindrical or approximately hemispherical body, while the under portion of the gastral cavity along with the lumen of the tube-like stalk connected with it, has remained unchanged.

In many Dictyonina the elongation of the sac-like body, without any marked thickening of the wall, results in the formation of more or less thin-walled tubes in which the lumen remains approximately the same. These tubes often branch in a tree-like fashion, frequently dichotomously (*Aphrocallistes ramosus*, Pl. LXXXVI. fig. 1), while the multiplication and union of branches may form an anastomosing network of tubes, from which numerous terminal branches arise, each provided with an osculum. The latter is the state of the case, *e.g.*, in the genera *Farrea* (Pls. LXXI., LXXII.) and *Eurete* (Pls. LXXVII.–LXXIX.). In *Farrea* the young tube-wall begins on the outermost terminal branches as a very thin plate with a simply folded chamber layer, and the whole wall is gradually somewhat thickened, with the increasing folding of the chamber layer; while in *Eurete* the ends of the tubes are continuous outgrowths of the entire thickness of the wall.

The main tubes in expanding into a funnel-shape sometimes give off lateral branch-tubes, which have a tendency to branch and anastomose, as in *Periphragella* (Pl. LXXX.) and *Aulocalyx* (Pl. LX.). In some species, which consist, for the most part, of a net-like system of anastomosing tubes, with terminal and lateral oscular openings, a special covering layer may occur which envelops the whole body, and which, as an independent plate, not only spreads out laterally from the oscular walls as a fine porous skin or net-like sieve for the inflowing water, but also extends over the oscula as a sieve plate, with wider apertures. This remarkable structure, which may be termed a cover, is seen in *Aulocystis* (Pl. CIV.), and also, though in quite different form, in *Semperella* (Pls. LI., LII.), where the oscula appear, not so much as round apertures, but rather as irregular longitudinal clefts on the sides of the body. The covers of these genera differ also in this: in *Aulocystis* the cover appears as a direct continuation of the entire wall