

alongside the future nucleus, and probably belonging to the hypoblast, become filled up with oil globules to form a mass of nutrient material,—the “elæoblast,”—which is used up later on in the development. Many suggestions have been made by the various writers as to the homology of this elæoblast. The most probable is that it is the disappearing rudiment of the tail found in the larval condition of most Ascidians. The free-swimming tailed larval stage is not found in the life-history of *Salpa*—the development being direct.

The testis, which arrives at maturity in the aggregated *Salpa* only after the embryo has been got rid of, is a system of tubules ramifying on the outer surface of the visceral mass and opening into the peribranchial cavity.

The embryo produced sexually by the aggregated *Salpa* becomes a solitary *Salpa*, and this while still young develops a stolon as a projection on the right side of the body ventrally and close to the heart. This stolon is an outgrowth of the body-wall, containing prolongations of all the more important systems of the body—branchial sac,

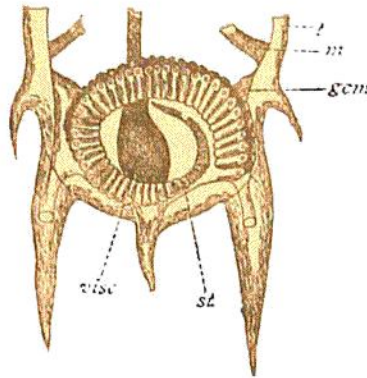


FIG. 8.—Posterior part of solitary form of *Salpa democratica-mucronata*, showing a well-developed chain.—(From the Encyclopædia Britannica, 9th ed.)

*gem.* young aggregated *Salpæ* forming the chain; *m.* muscle band of mantle; *st.* stolon; *t.* test; *visc.* visceral mass.

pericardium, blood-sinuses of mantle, elæoblast (hypoblast cells?), and probably nervous system. As the stolon elongates it becomes segmented into pieces, each of which develops eventually into the body of an aggregated *Salpa* (see Fig. 8). After the solitary *Salpa* has become fully developed, the chain produced by the stolon is set free in sections, each section being composed of a number of aggregated *Salpæ* at about the same stage of development. In most cases the *Salpæ* in a chain are placed in a double row, and alternate so that each one touches the bodies of four of its fellows. It is joined to each of these neighbours by processes of its body-wall composed of the mantle covered by a layer of ectoderm. When the chain is still young the test is thin, and these processes, which join the bodies of adjacent *Salpæ*, are relatively long, and keep the members of the chain far apart; but as they grow older, and their tests thicken, the *Salpæ* become pushed farther apart, and the joining processes are finally completely embedded in the tests, and the chains are then ready to break up on the slightest touch, and the *Salpæ* lead the rest of their existence in a separate condition.