

eight more or less distinct longitudinal furrows, which extend sometimes throughout the entire length, sometimes only along the upper portion. The body-wall projects in ridges between them. The mesoderm of the polyp is beset with spicules which are closely apposed to one another and so make the calyx into a rigid tube.

These spicules are for the most part thick spindles, covered all over with rough warts, and enlarging at one end into a club-like form. Rod-shaped curved spicules also occur, especially in the longitudinal grooves. The retractile portion of the polyps contains either no spicular elements, as in *Clavularia crassa*, or thin spindles and rods which may extend even into the tentacles. They are usually disposed in eight longitudinal strands, which are then continued into the tentacles.

Even the œsophageal tube may contain spicules, as for instance in *Clavularia frigida*, Danielssen. In the colonies united by stolons, the stolons arise from the bottom of the calyces, which become narrowed at their bases and give origin to one or more cylindrical or flat processes from which new polyps are budded off. This formation of stolons agrees exactly with that met with in *Cornularia*. In some species the base of the polyps broadens out into a membrane which unites the individuals together. In this case the base of the calyx gives origin to endodermal tubes, which anastomose on the basal membrane, and thus connect the alimentary cavities of the various polyps. The calyces are always seated upon the stolons or upon the basal membrane, and are never sunk into them as in *Anthelia* or *Sympodium*. The polyps usually arise at relatively great intervals from one another. It may happen, however, that two arise close together; or, as a rare case, one polyp arises at the base of the calyx of another, so as to produce the social condition so well seen in *Telesto*. But even then the alimentary cavity of the bud is not in direct connection with that of the polyp, being only united to it by fine nutritive canals which ramify from the wall of the calyx.

The species as yet known are not numerous; of those provided with stolons *Clavularia viridis*, Quoy and Gaim., from Vanikoro in the Pacific Ocean, was the first described. *Clavularia* (*Cornularia*, Milne-Edw.) *crassa*, M.-Edw., from the Mediterranean, was described in detail by Kowalevsky and Marion.<sup>1</sup> By the same authors a second Mediterranean species was distinguished as *Clavularia petricola*. The species in which the polyps are united by a basal membrane are *Clavularia violacea*, Quoy and Gaim., *Clavularia rosea*, Studer, and the northern forms *Clavularia borealis*, Koren and Danielss., *Clavularia arctica*, Koren and Danielss., and *Clavularia stormi*, Koren and Danielss. As not belonging to the genus *Clavularia* may be mentioned *Clavularia riisei*, Duch. et Mich., and *Clavularia prolifera*, v. Koch. Both these belong to the genus *Telesto*, Lamx.

The species of *Clavularia*, in which the individuals are united by stolons, are in habit very like those of *Cornularia*. On this account Milne-Edwards refers the

<sup>1</sup> Ann. Mus. Hist. Nat. de Marseille, p. 9.