

The œsophagus runs posteriorly and ventrally from the branchial sac, and after a short course opens into the small, ovate, and smooth-walled stomach (Pl. XXXVII. fig. 8, *st.*). The stomach lies with its long axis dorso-ventrally. The intestine arises from its ventral end and soon turns anteriorly. It then curves round dorsally, and runs nearly parallel to the stomach and œsophagus (Pl. XXXVII. fig. 8, *i.*) until it reaches the dorsal edge of the body, where it terminates. The anus (Pl. XXXVII. fig. 8, *a*) is nearer to the posterior than to the anterior end of the body, a point in which this species agrees with *Pyrosoma* and differs from all ordinary Compound Ascidiæ. It is obvious that very slight change would be required to convert this alimentary canal into one agreeing with that of *Pyrosoma*, both in structure and course.

The intestine is occupied throughout the greater part of its length by a series of large dark coloured faecal pellets, which are always a conspicuous feature (Pl. XXXVII. fig. 8). A system of branched tubules ramifies over the wall of the intestine in the middle part of its course. The various branches converge to a common duct, which leaves the wall of the intestine on its posterior edge opposite the stomach, and seems to open into the stomach, near its intestinal end.

The vas deferens is the most conspicuous part of the reproductive system. It consists of a coiled part, which forms several spiral turns, and a terminal straight portion. Several pyriform spermatic vesicles are united by very delicate ducts to the inner end of the spiral portion of the vas deferens. The ova are small and inconspicuous. They are absent in the younger Ascidiozooids, and seem to be formed late in life, and after the testes, so that there is here an approach to proterandry, a condition the reverse of that which I have found in most other Compound Ascidiæ. The ova form an elongated mass placed on the straight portion of the vas deferens.

No embryos were found in the Ascidiozooids examined, but some tailed larvæ of very large size are imbedded in the test near the closed end of the colony. They are of the ordinary shape, with an ellipsoidal body nearly 2 mm. in length, and a well-developed tail 4 mm. long. A single small pigmented sense-organ is present, and there are three large adhering papillæ at the anterior end of the body.

Family VII. POLYSTYELIDÆ, n. fam.

Colony massive or incrusting, sessile, rarely pedunculated, or formed of small masses connected by stolons. No common cloacal cavities present.

Ascidiozooids large, usually short-bodied, rarely with a distinct abdomen. Both apertures four-lobed, and opening directly to the exterior.

Test firm and cartilaginous. Matrix generally fibrillated, test cells small and inconspicuous, bladder cells rarely or never present. Vessels abundant, branched, and provided with distinct terminal bulbs.