

Ascidiozoid is female and the older one male, and the ova and spermatozoa develop from mesodermal cells in the same reproductive tubules, which, however, become more numerous and change their shape somewhat when being converted into spermatoc vesicles. The vas deferens is very long and convoluted, and is conspicuous from near the top of the post-abdomen onwards. It adheres to the rectum along its entire length, and terminates a short distance in front of the anus.

This species is particularly interesting on account of the resemblances it shows to some of the *Ascidia* Simplicis. From its general anatomy, and especially from the relations of the intestine to the branchial sac and the reproductive organs, it is clearly a member of the family Polyclinidæ, but the musculature of the mantle is quite unlike that of most Compound Ascidiæ. The muscle bands in the thoracic region, while branching and anastomosing irregularly, have their main lines more or less antero-posterior (Pl. XXII. fig. 4), while the general rule amongst Compound Ascidiæ is that the chief muscle bands should run transversely. Then the branchial sac shows resemblances to the Clavelinidæ in the large number of stigmata, in the presence of the rudimentary connecting ducts on the transverse vessels, and in the long, narrow languets. Lastly, the tentacles are numerous and closely placed at their bases (Pl. XXII. fig. 13), just as in many *Ascidia* Simplicis, while in Compound Ascidiæ, as a rule, the tentacles are few in number (usually eight or sixteen), and are arranged regularly at equal distances apart.

Atopogaster,¹ n. gen.

Colony massive, and usually of large size.

Systems simple or inconspicuous.

Ascidiozooids large or small, always much elongated antero-posteriorly. Branchial aperture six-lobed.

Test thick, and usually cartilaginous and tough; not incrustated with sand.

Branchial Sac usually well developed.

Alimentary Canal large. Stomach-wall folded transversely.

Post-Abdomen long.

I have separated this little group of species from the other Polyclinidæ on account of their possessing a large stomach, the wall of which is thrown into transverse folds. It is very convenient to make use of the characters of the stomach-wall in dividing up this family into sections, a course pursued first by Giard; but I am doubtful whether the groups so produced are in all cases natural. In the present genus the mere presence of folds distinguishes from *Synoicum*, *Morchellium*, *Morchellioides*, and *Sidnyum*, while

¹ From *ἀτοπος* and *γαστήρ*.