

colony. It is traversed in all directions by the long narrow Ascidiozooids which run irregularly from the surface towards the centre. The test cells are exceedingly numerous and closely placed (Pl. XXX. fig. 15, *t.c.*), and are very diverse in shape and size. The opacity of the test is in all probability due to their abundance. In some places they occur in rounded masses in which the individual cells have become more or less polygonal from mutual pressure (Pl. XXX. fig. 15, *t.c'*). Although the body of the Ascidiozooid is opaque, the mantle is not thickened, and the musculature is not very strong. The branchial sphincter is feebly developed.

The branchial sac is usually much longer than it is broad (Pl. XXX. fig. 13), but it is small compared with the size of the body. In some cases the sac is about four times as long as it is broad, and there may be fourteen or fifteen rows of stigmata. The stigmata are distinct, but not large (Pl. XXX. fig. 14, *sg.*); they are closely placed and have well-developed ciliated cells. The endostyle is conspicuous. Its course is undulating (Pl. XXX. fig. 13, *en.*).

The alimentary canal is long and narrow. It is usually of about the same length as the branchial sac, consequently the thorax and abdomen are nearly equal in size (Pl. XXX. fig. 13). The œsophagus is a long narrow tube; it starts from the posterior end of the branchial sac, and runs directly backwards to the stomach, which is placed about the middle of the abdomen. The stomach is small and has a globular or a pyriform shape (Pl. XXX. fig. 13, *st.*). Its wall is thrown into from four to six well-marked longitudinal folds. The intestine is very long and is divided into several distinct regions. It leads backwards from the stomach as a narrow tube which runs nearly to the posterior end of the abdomen, and then opens into a short thick-walled pyriform cavity which bends ventrally and becomes continuous with a short and very narrow thin-walled tube which turns anteriorly and opens into the much wider rectum. This last region may be of great length (Pl. XXX. fig. 13, *r.*). It runs anteriorly in a slightly undulating course alongside the intestine, stomach, and œsophagus, and then courses along the dorsal edge of the branchial sac, so as to reach the atrial part of the peribranchial cavity. Consequently there may be as many as four distinct regions in the intestine:—(1) the narrow piece stretching backwards from the stomach, (2) the short wide region, (3) the thin connecting tube, and (4) the long and rather wide rectum. The third portion was not distinctly marked in the Ascidiozooid figured (Pl. XXX. fig. 13).

The post-abdomen is very long, sometimes several times as long as the rest of the body (Pl. XXX. fig. 13, *p.abd.*). It contains both male and female reproductive organs, and ends posteriorly in an irregularly rounded bulb.

In some respects the external appearance of this species suggests *Atopogaster elongata* (see Pl. XXIV. figs. 1–3), which was found in abundance at the same locality, Station 313, but the Ascidiozooids are much smaller and less conspicuous in the present species, besides which there are many of the internal details of structure in which the two forms differ.