

zooids partly ejected from the test and in a decomposed condition, while large areas of test occur in which no Ascidiozooids are present. Hence it is probable that this is the oldest part of the colony, and that at the time when the specimen was collected many of the Ascidiozooids in this region had died and were being removed from the colony.

The branchial aperture is distinctly six-lobed, and the sphincter is well developed. Equidistant muscle bands are found running longitudinally in the mantle over the alimentary and reproductive viscera to the posterior end of the body.

The branchial sac is very long. It has in some cases at least fifteen rows of stigmata, with nearly twenty in each row. The stigmata are long and narrow (Pl. XXVII. fig. 5), and the stigmatic cells are convex on their free surfaces (Pl. XXVII. fig. 6) and richly ciliated. The transverse vessels (Pl. XXVII. fig. 5, *tr.*) are exceptionally wide for a Compound Ascidian.

The tentacles are large, and their bases, which are rather swollen, touch one another. The long tentacles are at least twice the size of the smaller intermediate ones (Pl. XXVII. fig. 8, *tn.*, *tn'*). The dorsal languets are large and numerous. They are of the usual shape (Pl. XXVII. fig. 7, *l.*). The median dorsal line between them is occupied by a strong band of muscle fibres.

The alimentary canal forms a narrow loop, the elongated stomach and intestine lying close together. The wall of the stomach is very much folded, the longitudinal ridges projecting into the interior. The rectum is large, and is always filled with dark coloured faecal matter.

The reproductive organs are of moderate size. They form a mass placed behind the intestinal loop, and continuing the abdomen posteriorly for a short distance, and then ending in a point. Thus no very distinct post-abdomen is formed. In most of the Ascidiozooids examined one or two large ova were found, more or less surrounded by a mass of small, ovate spermatic vesicles of an opaque dull yellow colour. The vas deferens is long and conspicuous. The spermatic vesicles and the vas deferens readily stain deep red with picro-carmin.

This species closely resembles *Polyclinum molle* in the external appearance (compare Pl. XXV. fig. 7, and Pl. XXVII. fig. 3), and also in the structure of the test, but they differ notably in the form of the Ascidiozooids and in the structure of the branchial sacs. In the condition of the post-abdomen the present species shows some resemblance to *Polyclinum fungosum*, but differs from it in the structure of the stomach.

*Aplidium fuscum*, n. sp. (Pl. XXVIII. figs. 8-10).

*The Colony* consists of a hemispherical mass, slightly compressed laterally, and attached by a small area in the middle of the lower surface. The upper end is broad