

parts of the colony (Pl. I. figs. 1, 2) the systems are large, irregular, and ramifying, as is usually the case in *Botrylloides*. The elongated shape of the Ascidiozoid (Pl. II. fig. 7), so characteristic of *Botrylloides*, places the matter beyond all doubt.

The terminal knobs of the vessels in the test, which sometimes form so conspicuous a feature in the external appearance of the colony in the Botryllidæ, are in the present species small and only visible on close inspection. They are of a dark purple colour, and only show clearly on the thin expanded edges of the colony, where the test is transparent. In such places they are fairly numerous (Pl. I. figs. 1, 2). The common cloacal apertures, which are widely open, are of irregularly elliptical shape, and of a very dark purple colour. The common test attains no great thickness in any part of the colony. At its thickest place it is scarcely 4 mm., twice the ordinary thickness of the colony. In some places the colony is much thinner than 2 mm., and on certain parts of the edges becomes merely a delicate expanded membrane formed entirely by the test.

In its minute structure this is simply a typical Botryllid test. The soft homogeneous matrix is seen in sections (Pl. II. fig. 1) to contain numbers of small dots, which under a higher power (see Pl. II. fig. 2, *t.c.*) are seen to be cells, all much of the same size but varying considerably in shape, the commonest forms being circular, ovate, fusiform, and triangular. Vessels are abundant, but of rather small size. They branch and anastomose freely, and frequently present dilatations upon their course or expand into terminal knobs often of irregular shape (Pl. II. fig. 1, *t.k.*), though usually more or less ovate. These knobs invariably contain blood-corpuscles, which are also commonly found in the vessels (Pl. II. fig. 2).

The piece of mantle which is figured (Pl. II. fig. 3) shows the mainly transverse direction in which the thin muscle bands run, and their characteristic method of dividing and joining with branches from adjacent bands. Each band is composed of at most a very few muscle fibres, frequently of one only, and these fibres show very clearly their origin from fusiform cells, which have become greatly elongated. The nucleus of the cell is in most cases still visible in a spindle-shaped swelling near the middle of the fibre. The rest of the mantle is formed of connective tissue, a clear homogeneous matrix, containing numerous scattered corpuscles of various shapes, and penetrated by lacunæ in which blood-corpuscles lie. In the figure (Pl. II. fig. 3) the fusiform nucleated swellings on the muscle fibres, the connective tissue cells, and the blood-corpuscles are represented.

The body of the Ascidiozoid (see Pl. II. fig. 7) is considerably elongated even for a *Botrylloides*. It is about two and a half times as long as it is broad. The mantle is slightly six-lobed at the branchial aperture, and is sufficiently transparent to show clearly the endostyle (Pl. II. fig. 7 *en*), the entire alimentary canal (*æ*, *st*, *i*, and *r*), the reproductive organs (*g*), and in some places the stigmata of the branchial sac.

The branchial sphincter is feebly developed. In the branchial sac a notable feature is the slight calibre of the transverse vessels (Pl. II. figs. 4 and 5, *tr*). In most places they