

of them containing more pigmented corpuscles than others. The common cloacal apertures are usually slightly stellate or lobed in form when not opened to the full extent. Their membranous edges are richly provided with purplish-brown pigment corpuscles (Pl. I. fig. 5).

The cells of the test are small and inconspicuous. The matrix though generally homogeneous is in some places finely fibrillated. The vessels form a very prominent feature (see Pl. III. figs. 9, 10) with their numerous branches and large globular terminal knobs. The pigment corpuscles are large, circular, ovate, or elliptical in shape, and contain (Pl. III. fig. 12) fine reddish-brown pigment particles which are frequently placed entirely, or almost entirely, in one half of the cell.

The mantle, although it appears very thin and slight, contains many muscle bands, but they are very fine. The large pigmented cells form almost a continuous layer in some parts of the mantle and agree exactly in structure with those found in the vessels of the test (Pl. III. fig. 12). They are particularly well seen in sections stained in aniline blue, where the red-brown cells stand out well against the blue ground formed by the remainder of the mantle.

The branchial sac (Pl. III. fig. 11) is long and narrow, and is of a brown colour, due to the pigmented corpuscles. The transverse vessels are considerably broader than in the last species (*Botrylloides purpureum*), and contain muscle fibres. In one young specimen examined there were three internal longitudinal bars on the one side of the sac and four on the other. This specimen had fourteen rows of stigmata on each side, that is, there were thirteen transverse vessels. Another specimen, fully developed, but young, showed thirteen rows of stigmata on a side. There are usually ten to twelve stigmata in a row about the middle of the sac.

The endostyle is narrow and not very prominent. Its groove is deep and the columnar cells are fairly long. As usual, a series of very long cilia projects from the centre of the groove (see Pl. III. fig. 13). The dorsal tubercle is placed rather further forward than is usual. Directly behind it lies a large elliptical opaque yellowish-brown mass, formed by the nerve ganglion and the neural gland. In some specimens the smaller tentacles are absent, so that the number is reduced to four; while in others, although eight are present, they are all very short.

The alimentary canal is confined to the posterior region of the Ascidiozoid. The œsophagus runs posteriorly and ventrally and is moderately long (Pl. III. fig. 14, *a*). It has no marked angle. The stomach is large and is strongly ribbed externally, especially at the œsophageal end, which is truncated and much wider than the opposite end where the stomach tapers somewhat suddenly into the intestine. There are usually five projecting folds on each side of the stomach. The intestine (Pl. III. fig. 14, *i*) curves anteriorly, and then dorsally, and a little posteriorly to touch the anterior edge of the stomach. It then turns dorsally and anteriorly to become the rectum, which, after