

or less elliptical or ovate, and a little less than 1 mm. in its greatest extent. The light mark surrounding the branchial aperture is caused by a band of opaque white pigment in the part of the mantle forming the branchial siphon. The anterior extremity of the endostyle is occasionally visible in the external view of the animal.

The Ascidiozooids are not always placed with their long axis perpendicular to the surface of the colony. In fact, in the thinner parts they always lie more or less flat, and there is considerable irregularity in their arrangement, the systems being difficult to trace, and recalling somewhat the arrangement in some groups of the Didemnidæ. The variegated or speckled appearance of the marginal regions of the colony free from Ascidiozooids is due partly to the presence of large numbers of vessels with their terminal knobs filled with black pigment corpuscles, and partly to a certain amount of opaque white pigment, both colours showing clearly against the semi-transparent grey of the test. In the greater part of its extent the large colony is thin, but in two or three places it has become considerably thickened, up to 4 mm. The smaller colonies are thin throughout; one measures 2 cm. in its greatest extent, and the other 6 mm.

The test is very soft and gelatinous. The matrix is perfectly transparent. The cells though minute are very numerous, and the vessels are abundant. Their terminal knobs are large, and the pigmented corpuscles which they contain are also large. The latter are ovate in shape and have the black pigment usually in one half only of the cell. They are exactly like the pigment cells of *Botrylloides perspicuum* (see p. 47 and Pl. III. fig. 12), except that the pigment granules in that case are brown. Besides these dark pigmented cells there are also in the terminal knobs a number of yellowish and of transparent corpuscles which are rather smaller but otherwise similar to the pigmented cells.

The mantle, where free from pigment, is perfectly transparent; but in the greater part of most Ascidiozooids pigment cells like those of the vessels in the test are very abundant, scattered through the connective tissue. Transverse muscle bands are present, but they are very delicate and quite colourless. The body of the Ascidiozoid when removed from the test is long and narrow, and the part occupied by the branchial sac is usually somewhat curved, with the concavity on the dorsal surface.

The transverse vessels of the branchial sac are narrow but have each a few muscle fibres (Pl. III. fig. 20, *tr.*). There are usually ten or twelve rows of stigmata in the branchial sac, and two or three stigmata in each mesh (Pl. III. fig. 19). The area lying between the endostyle and the most ventrally placed of the internal longitudinal bars has four or five stigmata. In some sacs the stigmata are short and wide (as shown in Pl. III. fig. 20). The endostyle is long and rather narrow, and is perfectly straight.

The alimentary canal forms a more rounded mass than usual. The œsophagus is wide and very short (Pl. III. fig. 21, *œ.*), and runs almost directly ventrally to open into the wide dorsal end of the stomach. The stomach is large, and has nearly the form of an