

long and 3 mm. broad. The youngest specimen (Pl. XV. fig. 2) consists of a stalk about 2 cm. in length, bearing at its upper end an elongated thickening in which there are some young Ascidiozooids, especially at the top, where a fairly complete ring is formed by six or seven of them. This colony has scarcely any colour, the entire peduncle and the greater part of the young head being of a pale grey. The Ascidiozooids show as small dull red spots. The next youngest colony has an ovate head with the narrower end downwards. It is 5 mm. long and 3 mm. broad at the widest part, the peduncle is about 2 cm. in length. The head is not of such a dark red colour as in the other specimens, and the Ascidiozooids are smaller.

The other colonies seem mature, and have all much the same appearance (Pl. XV. fig. 1). The head is always much longer than broad, and is not compressed laterally. The top is wide, and has in some cases a truncated appearance. The lower end is narrow, and tapers to the top of the peduncle. The general red colour of the head is seen on a close examination to be due mainly to the bodies of the Ascidiozooids, which are seen plainly as little rounded spots about 0.5 mm. in greatest diameter. They are placed closely side by side in vertical rows (Pl. XV. fig. 1), of which there are usually ten to twelve in a head. Towards the lower end of the rows they become gradually smaller and smaller, while at the top they are full size. Each Ascidiozoid has upon its anterior end a minute white speck of pigment just visible to the eye, and here and there, between the rows of Ascidiozooids, larger masses of white pigment are to be seen.

Under a low power of the microscope (40 diameters) it is clearly seen that the test is of a greyish colour, while the Ascidiozooids are red. The branchial apertures are distinctly visible, and around each may be traced the elliptical peripharyngeal band (Pl. XV. fig. 6, *br.*). The mass of white pigment is now seen to be placed on the anterior extremity of the endostyle, and the rows are clearly seen to be placed in pairs, the Ascidiozooids in each pair having their endostyles turned towards one another, while their dorsal edges are next the space between that row and the adjacent one (Pl. XV. fig. 6). In each row also the Ascidiozooids are placed semi-alternately and lie obliquely, so that their ventral edges are nearest to the base of the colony.

The peduncle is clearly seen to be formed by a central axis of a dull red colour enclosed by an outer layer of transparent grey test (Pl. XV. fig. 9). Here and there the red axis seems broken up into pieces, and, in some places, minute rounded spots of a darker red are present. In sections (Pl. XV. fig. 11) it is seen that the peduncle consists of a continuation of the test, and it has a thin external layer which is homogeneous and firm. Inside this comes a broad zone containing very many bladder cells, while the central region is more solid again, but has numbers of large pigment cells of various sizes and shapes, and here and there a young embryo (Pl. XV. fig. 11, *em.*). It is this central zone which appears red from the exterior, and its colour is due to the numerous pigment cells scattered through it (see Pl. XV. figs. 9, 10, 11). The embryos, either singly or in