

and large numbers of delicate muscle bands radiate from the two siphons (Pl. XLIII. fig. 10, *m.*).

The branchial sac is thin-walled. The stigmata are short, and in some places, especially near the dorsal edge (see Pl. XLIII. fig. 4), are reduced almost to rounded openings. The folds are narrow, but well marked (Pl. XLIII. fig. 4, *br.f.*). They are exactly like those of many species of the Styelinae amongst Simple Ascidians. The internal longitudinal bars are regular, but have no papillae. The transverse vessels vary somewhat in width, but the sizes are not arranged with regularity. In some places slight horizontal membranes are present for short distances. They are best seen alongside the dorsal lamina (Pl. XLIII. fig. 4, *tr.*).

There is a good deal of irregularity in some of the branchial sacs. In some places several small stigmata occur between two adjacent transverse vessels, and occasionally monstrous stigmata are seen which have been formed by the junction of several ordinary stigmata (Pl. XLIII. fig. 4). The meshes are fairly regular in size, and there are three rows in each of the ordinary interspaces. Between the first fold on each side and the dorsal lamina there are only two rows of meshes, one of the usual size, and the other, next the dorsal lamina, twice the ordinary size and containing about six stigmata (Pl. XLIII. fig. 4). Next to the endostyle a row of meshes of the usual size occurs.

The dorsal lamina (Pl. XLIII. fig. 4, *d.l.*) is narrow and has a smooth edge. The ribs on its sides are continuous with the horizontal membranes of the transverse vessels.

The tentacles alternate in size with regularity. They are so closely placed that their bases touch (Pl. XLIII. fig. 10, *tn, tn'*). At the base of the atrial siphon, where the invaginated layer of test ends, there is a slight ridge which bears a series of small tentacles projecting freely into the peribranchial cavity (Pl. XLIII. fig. 10, *at.tn.*). These atrial tentacles are much smaller than the ordinary or branchial tentacles, and there are only twelve of them. The position of the atrial tentacles in relation to the atrial siphon corresponds exactly to the position of the branchial tentacles at the base of the branchial siphon, but their use at the entrance to the peribranchial cavity is not obvious. It has been observed in some Simple Ascidians that the current of water which usually flows in at the branchial aperture and out at the atrial is occasionally reversed for a short period, the atrial aperture becoming inhalent. Possibly in the present species this habit may have become so marked as to have favoured the development of a circle of atrial tentacles which would act as tactile organs waving in the current of water entering the animal. In one of the new Simple Ascidians (*Bathyoncus mirabilis*) obtained during the Challenger Expedition, there are two circles of small atrial tentacles developed.¹ These resemble the atrial tentacles of the present species in size and shape.

The nerve ganglion and neural gland together form an elongated ellipsoidal mass,

¹ See this Report, Part I. (in vol. vi., 1882), p. 167, pl. xxiv. fig. 12.