

“Toward its anterior part in the middle line the upper surface is perforated by a transverse slit, the inhalent aperture (Pl. X. fig. 2, *br*). The exhalent aperture is situated in front of this, and at a lower level, proceeding from the wall of the body just above the base as a short cylindrical tubular process (Pl. X. figs. 1 and 2, *at*). The inhalent aperture is enclosed by a pair of simple rounded lips, and is without tentacles.

“The test forms a wide cavity, which extends freely into the capacious hollow conical processes. The two apertures, inhalent and exhalent, form the only communication between this cavity and the exterior.

“A flat horizontal membrane is stretched across the test cavity in such a manner as to separate off an upper chamber communicating with the inhalent aperture from a lower communicating with the exhalent. This membrane, in the central region of the body, is thick and of an opaque white colour (Fig. 10, *g*, on p. 93). This thickened central portion runs out peripherally into eight processes directed to the intervals between the long conical processes of the test. Opposite these intervals the processes become attached, or give origin to bands of muscular fibres, which bands after a short radial course, in which their fibres remain parallel, split into two halves (Pl. X. fig. 1, *m.b.*). The halves of the bands diverge at an angle from one another, and proceed to the tips of the long conical processes, where each is joined by the tip of a corresponding half-band from the next adjoining process. The half-bands, as they run towards the tips of the conical processes, give off a series of transverse muscular threads, which, passing from band to band, form a series of loops one beyond the other, continued almost to the tip of the conical processes. These radial muscles are apparently the homologues of the longitudinal muscles of ordinary Ascidians. They would become longitudinal were the upper part of the discoid body of the animal drawn upwards, so as to make the respiratory cavity tubular instead of saucer-shaped. A second series of muscular threads lies beneath the radiating bands just described, about their points of bifurcation, and extending thence almost to their points of origin. This second set of muscles takes a circular direction (Pl. X. fig. 1, *m.b.*), and is continued round the entire circuit of the animal, the several strands, of which there are about twelve, appearing to be continuous throughout their length. These circular muscles lie beneath the radial ones; and, were the respiratory cavity elongated into a cylinder, the radial or longitudinal muscles would thus be internal in position, the circular external. In order to prevent confusion, and because of the difficulty in drawing them clearly, not nearly the entire number of transverse and circular strands is inserted in the figures in the accompanying Plate (figs. 1 and 2). Their arrangement is shown in detail in fig. 5.

“Over the muscular meshwork thus formed, and extending from it to be continuous in all directions with its thickened central portion, the horizontal membrane is continued as a thin and transparent lamina. Opposite the indentations in the margin of the thickened central portion of the membrane, *i.e.* between the processes or thickened