

Passing upward through the mouth of a *Gorgonocephalus*, and getting above the mouth papillæ (*d*) (Pl. XLV. fig. 2) and tentacles (*r*), we come to the usual contractile aperture, which may well be called the stomach sphincter (*du*). It is considerably wrinkled or even a little papillose on its border, and opens into a flattened digestive cavity (*St*). Thus far the structure is normal, but beyond this point all is novel. Instead of remaining simple, the digestive cavity passes outwards and upwards into a number of membranous pouches, which, in profile, present a fluted aspect (*St'*, *St''*). Their outer ends are attached in three ways; first (*St''*), they stretch upwards and are strongly fixed to the roof of the disk wall; secondly, they reach horizontally and grow to the inner points of the egg-bearing lobes ( $\delta, \delta$ ); thirdly, they incline downwards, and are powerfully attached at ten points encircling the mouth. Of these points five are brachial (*St'*) (fig. 4) and five interbrachial (*St*). It is to the outer open angle of the mouth frames that the latter are attached, by a part of the floor of the digestive cavity, which is there much thickened ( $\delta f$ ) (fig. 2). Immediately above this attachment opens out the much folded and fluted interbrachial pouch (*St''*) (fig. 4), which, at its outer end, adheres to the inner points of the corresponding genital lobes; and, above, grows fast to the roof of the disk. In like manner there is a brachial attachment to the upper side of each arm (*St'*); and above it opens a brachial pouch which has a similar shape, and is made fast at corresponding places. From these ten points the attachment of the floor of the digestive cavity is continued outward over radiating lines, respectively across the interbrachial spaces and along the tops of the arms quite to the body wall. This structure would divide the body cavity in ten radiating compartments completely separated from each other, were it not that an open space exists ( $\delta f$ ) between the inner point of each attachment and the stomach sphincter (fig. 2). This open space corresponds to the ring canal surrounding the entrance to the stomach of *Ophiurans* (inner perihæmal canal, Ludwig), but differs in being a mere continuation of the body cavity and not a closed annular tube. It may be seen in wider section in fig. 4. The main digestive cavity directly above its own centre passes upwards to the roof of the disk as a simple cone, round which appear the folds of the radiating pouches (fig. 2). To give a general notion of this complex organ, we may suppose a large loose bag, having a hole at the bottom (mouth), and whose periphery is gathered in numerous radiating folds, leaving within a central flask-shaped open space communicating directly with these folds; and, further, that the folds are divided into ten lobes, and each lobe is attached at the bottom by a radiating adhesion.

The central portion of the digestive cavity was empty, but its lobes were stuffed with a coagulated, yellowish, pasty substance, which, either simple or with reagents, presented no special structure under the microscope, and which contained no organic remains. It might well be the decomposition of a thick layer, which had an hepatic character, or was simply epithelium.