

five openings to the interambulacral spaces; this pouch confines the alimentary canal within a proportionally small area of the test, no single fold of the alimentary canal extending beyond half-way from the actinostome to the edge of the test (Pl. XIV. fig. 2).

The alimentary canal coming out from the jaws into the left anterior interambulacral area (seen from the inside) runs just inside of the auricles, along the edge of the principal plates to the right ambulacral space, where it turns back again, runs outside the auricles completely round the actinostome to the right interambulacral space where it makes another turn, and then, forming great loops in extending outwards in the interambulacral spaces and shorter loops turned towards the actinostome in the ambulacral spaces, it passes to the anal opening in the right anterior interambulacral space (Pl. XIV. fig. 2).

Plate XII. fig. 2, shows for *Phormosoma hoplacantha* the position of the alimentary canal as it starts from the jaws and runs just inside of the auricles; it also shows the mode of attachment of the mesenteries of the horse-shoe pouch to the abactinal system, and the complete separation by this returning fold of the space in which the ovaries are placed from the poriferous zone, as is seen in Pl. XIV. fig. 2 on the actinal side.

In this species of *Phormosoma*, as in the genus so far as has been observed, the plates overlap in the opposite direction in the ambulacral and interambulacral spaces.

In the interior view of the test of *Phormosoma tenue* (Pls. XIV., XVIII.^a figs. 1-13) the lapping of the whole edge of the plate, so characteristic of *Phormosoma*, is well seen, the double line round each coronal plate showing the extent of the overlapping, and the double line along the outer edge of the ambulacral zone shows the extent of the lateral covering of the edge of the ambulacral area. In *Asthenosoma* it is only the extremities of the ambulacral and interambulacral plates which lap along the median line and along the line of junction of the two areas, while in *Phormosoma* this lapping extends along the whole horizontal edge of the plate in both areas. In *Asthenosoma*, viewed from the outside, the outer and inner lower edges of the coronal plates pass under the upper edges of the preceding plate in the interambulacral areas, while in the ambulacral area it is the upper edges of the plates which pass under the lower edges of the succeeding plates counting from the actinostome.

In the actinal system seen from the interior (Pl. XVIII.^b fig. 6) the ambulacral tubes pass under the auricles to plates immediately adjoining the teeth, where they are connected by a circular tube (Pl. XVIII.^b fig. 4). The ampullæ are large, and the tubes leading to them distinct. A series of mesenteries separating the ambulacral from the interambulacral system, extend from the base of the auricles to the actinal edge of the actinal system.

The structure of the actinal and abactinal systems in this family shows most satisfactorily the embryonic characters of the family and the intimate connection the plates composing these two systems have, the one with the base of the actinal extremity of the ambulacral system and the other with the abactinal plates of the interambulacral system.