

thuridæ closely resemble what I have temporarily regarded as the young of *Micropyga tuberculata* (Pl. XVIII.^c figs. 10, 11; Pl. VI.^a figs. 6, 7). We find there the actinal membrane carrying ten buccal plates, with other plates in the extension of both the ambulacral and interambulacral areas (Pl. VI.^a fig. 7), but only the buccal plates and the two ambulacral plates adjoining the test are perforated for tentacles, while in the young of *Phormosoma*, with a corresponding stage of development of the actinal membrane, the ambulacral actinal plates are all perforated. In the young of *Micropyga* (Pl. VII.^a fig. 6) the apical system at an early stage shows the structure characteristic of the genus, while the anal system is left comparatively bare of plates. This is not the case with the apical system of the young of *Phormosoma* or of *Asthenosoma*. The anal system (Pl. XVIII.^c figs. 2, 5, 6; Pl. XII.^a figs. 2, 5, 7) is at an early stage covered by a large number of distinct plates, while the genital ring of corresponding stages is, on the contrary, often quite indistinct from the anal plates (see Pl. XVIII.^c fig. 6); while in other cases (Pl. XII.^a figs. 5, 7; Pl. XVIII.^c fig. 3) the genital and ocular plates are more distinct perhaps from the anal system than they are in older stages, especially in those species where the genital plates show a tendency to split up into distinct plates, the upper plates apparently belonging to the anal system, or where the genital plates encroach far into the median interambulacral space¹ at the abactinal extremity of the test, separating completely the adjoining interambulacral plates. So that, judging from the few young Echinothuridæ which have been examined, the new plates of the actinal membrane are primarily formed by becoming separated from the ambulacral plates of the test, while additional interambulacral plates seem to be formed at the abactinal pole from the pushing down of large marginal plates of the anal system on each side of the genital plate.

This whole development of the abactinal and actinal systems of the Echinothuridæ and Diadematidæ, plainly shows a far closer structural relationship between them and the coronal plates than is apparent when studying the regular *Desmosticha*, in which the contrast between the compact abactinal system, and the nearly bare actinal membrane with the coronal plates is most apparent. In fact, the structure of the apical and actinal systems of the Spatangoids and Clypeastroids shows the close connection existing between them and the coronal plates, and also plainly shows that both these systems are but modifications of the actinal and abactinal extremities of the coronal plates, as is more plainly seen to be the case in the Starfishes and Ophiurans and in the Holothurians, where the coronal plates are reduced to their simplest expression.

The coronal plates of the youngest specimens of *Phormosoma* (Pl. XVIII.^c figs.

¹ See the great extension of one of the genital plates in *Heterodiadema libycum* of Cotteau. This was supposed to have been the anal opening. In Cotteau's figure (pl. xv., 5 fasc., Echin. Algérie) it is clear that it enters, as in the Echinothuridæ, deeply into the interambulacral spaces, but not all, only into one on account of the inequality in size of the genital plates.