

spreading a little way along the arms and on the dorsal surface of the disk; the young escape from the marsupium chiefly in the neighbourhood of the angles between the rays."

"We took *Archaster excavatus* only on that one occasion; and the weather was so boisterous at the time that it was impossible to trace the early stages in the development of the embryo. It is evident that the process generally resembles that described by Professor Sars in *Pteraster militaris*; and it is quite possible that, while there is certainly not the least approach to the formation of a locomotive bipinnaria, as in that species some provisional organs may exist [at] an early period."

The specimen upon which these observations were made has been figured in Pl. XXXI., a number of young in different stages of development are admirably preserved *in situ*, and may be seen protruding from amongst the paxillæ in the interbrachial regions. As noticed by Sir Wyville Thomson, it is in all cases the actinal surface which is first presented, and even whilst the young starfish is still resting entirely within the arcade-like spaces amongst the paxillæ and before any protrusion of the rays takes place, this appears to be the normal posture, *i.e.*, the actinal surface uppermost.

From the remarks above quoted it would appear that Sir Wyville Thomson was under the impression that the young were even at this stage actually attached to the parent by the centre of the abactinal surface, although he was unable to satisfy himself by what means this was effected. Like him I have failed to detect any organic or membranous connection, and I am disposed to think that such did not exist. I make the remark, however, with all reserve and caution, for it would obviously be bold to dogmatise on the former existence of such a delicate connection, of which no trace remains after the specimen has been preserved in spirits for so long a time. I may further remark that not the slightest trace of any extension or projection of any of the larval tissues can be detected on the dorsum of a young individual of about 3 mm. in diameter, which I have reduced to serial sections. The paxillæ of the abactinal surface are fully formed, and the epidermal or dorsal membrane, which covers the plates from which the paxillæ spring, is continuous. The mouth also is fully formed, and the œsophageal portion of the alimentary tract is capable of considerable protrusion.

The form of the young individual is remarkable. The height is nearly as great as the total diameter; the abactinal surface forms a subplane area excepting the slight rounding or convexity along the median radial lines, whilst the actinal surface is prominently convex, with the mouth at the summit of the curvature, which slopes thence at a rapid angle of declivity to the extremity of the rays.

The largest young one carried by the starfish under notice measures about  $R = 3.5$  mm., and has ten or eleven pairs of tube-feet in each ray. There are four or five spinelets on each adambulacral plate, one prominent into the furrow, the others forming oblique pairs behind it, though some may stand singly. The transverse disposition of the groups