

mouth; but of this I cannot be absolutely certain. The surface now assumes a translucent appearance, and becomes deeply tinged with dark purple and greenish pigment; and almost immediately, without any definite intermediate steps, the outer wall is filled with calcified tissue, it becomes covered with fine spines and pedicellariæ, a row of tentacular feet come into action round the mouth, the vent appears at the posterior extremity of the body and the young assumes nearly the form of the adult. These later changes take place very quickly; but they are accompanied by the production of so much heavy purple and dark green pigment that it is difficult to follow them. The viscera are produced at the expense of the abundant yolk; and the animals at once take a great start in size by the imbibition of water into the previsceral cavity. The young urchins jostle one another on the floor of the breeding pouch, those below pushing the others up until the upper set are forced out between the rows of fringing spines of the pouch; but even before leaving the marsupium, on carefully opening the shell of the young, the intestine may be seen already full of dark sand, following much the same course which it follows in the adult. The size of the test of the young on leaving the marsupium is about 2.5 mm. in length by 2 mm. in width.

“ We took along with the last species in Stanley Harbour several specimens of a large species of *Asteracanthion* which formed a marsupium after the manner so well described by Sars in *Echinaster sarsii*, Müller, by drawing its arms inwards and forwards, and forming a brood-chamber over the mouth. In some samples of this species the young were so far advanced that when the mother was placed in a jar they crept out of the nursery and wandered over the glass wall of their prison; this brood had entirely lost the ‘pseud-embryonic appendages,’ but in their younger condition these are very apparent, though scarcely so well developed as in the young of *Asteracanthion violaceus* on our own coast.

“ On the 27th of January 1874, at Station 149, off Cape Maclear on the southeast coast of Kerguelen Island, we dredged a handsome starfish allied to *Luidia* or *Archaster*, which has since been described by Mr. Edgar Smith, from specimens brought home by the Rev. Mr. Eaton, under the name of *Leptychaster kerguelensis* (fig. 147).

“ A well-grown example is from 100 to 120 mm. in diameter from tip to tip of the arms; the length of the arm is about three times its width near the base, and three times the diameter of the disk. The marginal plates are long and narrow, running up with a slight curve outwards from the edge of the ambulacral groove until they meet the border of the dorsal perisome above; they are closely set with short blunt spines, which become gradually a little longer towards the radial groove; and at the edge of the groove each plate bears a tuft of about six rather long spines: these tufts in combination form a scalloped fringe spreading inwards on each side over the groove. The dorsal surface of the body is covered with a tessellated pavement composed of capitate paxilli. The heads of the paxilli in close apposition combine to form a mosaic with rudely hexagonal facets; and as they are raised upon somewhat slender shafts, whose bases, like the plinths of