

between the respective males. Both of them have the characteristic oral and anal valves, and a double row of pedicels, the exterior of which is situated on the inner side of the margin. In these points the three species, *Psolus antarcticus*, *Psolus operculatus*, and *Psolus ephippifer* seem to agree and to be distinguishable from the northern forms *Psolus fabricii* and *Psolus squamatus*, which when fully developed have more rows of pedicels and are devoid of any valves.

No other species of *Psolus* exists, which presents such a marked difference between the males and females. The former have no marsupium in the dorsal body-wall, which is thick, leathery, with numerous irregularly formed imbedded scales; moreover, the scales are not of equal size, some of them in the middle of the back being considerably larger, and they seem to overlap each other but very slightly. The granulation is in these male specimens very fine. There also have been brought home from the same locality numerous specimens which have the scales more distinctly overlapping, of more equal size, and rough from the presence of granules; in some specimens the granules are so crowded that no scales are visible. The extremes look so very different that one may be tempted to regard them as distinct species. Among forty specimens dredged at Station 151, twenty-seven are males and the rest females.

The females are peculiar on account of their saddle-like elevation, which is well-defined in the middle of the back and formed of large tessellated scales with the surface smoothly granulated. These scales are not of the same simple conformation as the other scales, but they are supported by a central column raised up on an expanded irregular foot-like portion imbedded in the perisome (Pl. VI. fig. 3, *a*). Thus, each scale has the aspect of a card-table formed by two irregular parallel disks united by a central column. Consequently, when the disks are fitted together edge to edge, a cloister-like space is left between their supporting columns. In this space or marsupium the eggs are hatched. On removing some of the plates one finds young in their early stages enclosed within that cloister-like marsupium.

To judge from a young immature specimen, 17 mm. long, the lower part or foot of the scales, which constitutes the marsupium, is formed first, the column and the disk or upper part being developed later by a kind of budding; consequently, in young forms the marsupium does not form a closed space owing to the interstices between the disks or upper parts of the scales. As the animal grows larger, these interstices become smaller and smaller, so that finally the angular disks are accurately fitted to one another. I may be allowed to quote the following words from the description of Wyville Thomson:—"As the embryos increase in size, the marsupium projects more and more, and at length the joints between the plates begin to open, and finally they open sufficiently to allow the escape of the young. The young in one marsupium seem to be all nearly of the same age. In *Psolus ephippifer* the marsupium occupies the greater part of the dorsal surface, and its passages run close up to the edge of the mouth, so that the eggs pass into them at once from the