

covering five (or more) narrow, smaller tooth-shaped ones; the anal plates are smaller than the surrounding plates and irregularly disposed, no distinct valves being visible. The largest plates between the mouth and anus measure 5 mm. in diameter. The perforated plates of the sole (Pl. VI. fig. 2) are more or less irregularly formed, in one specimen being almost smooth, in another provided with distinct not very numerous knobs. So far as I can discover, this form must be very nearly related to *Psolus operculatus*, of which species, however, I have not had the opportunity of seeing any types.

The specimens dredged at Station 311 are much smaller, the largest being 30 mm. long and the smallest 20 mm. The slightly elevated anal portion is devoid of valves, and often even at the mouth no larger scales are to be distinguished. The body is covered by a large number of scales. The granulation of the dorsal scales is very fine. The thin almost transparent sole has only few more or less incompletely developed \times - or plate-like deposits. These specimens must be closely allied to Bell's *Psolus peronii*, but differ from it by the form of the deposits in the sole.

Psolus ephippifer, Wyville Thomson, 1876 (Pl. XV. figs. 7-11; Pl. VI. fig. 3).

Body oval or almost cylindrical, not very depressed, about as high as broad. The oral aperture closed by five large triangular valves, and a less regular valvular arrangement covering the anal opening, which in some specimens seems to lie on the top of a small elevation. A double row of pedicels surrounding the sole, those in the outer row situated on the inner side of the margin. Anteriorly and posteriorly the odd ambulacrum is provided with a few pedicels. The irregular scales do not overlap each other very much, excepting round the margin, where they are of minute size. In some specimens the scales are almost smooth, in others, on the contrary, distinctly granulated. In the female, the dorsal surface has a well-defined saddle-like elevation formed of large tessellated plates of somewhat irregular form and with the surface smoothly granulated. Deposits in the sole—numerous more or less crowded, reticulate, knobbed, cup-like plates. Length about 40 mm.

Habitat.—Station 151, February 7, 1874; off Heard Islands; lat. 52° 49' 30" S., long. 73° 33' 30" E.; depth, 75 fathoms; volcanic mud; about forty specimens. Station 150, February 2, 1874; lat. 52° 4' S., long. 71° 22' E.; depth, 150 fathoms; bottom temperature, 35°·2; coarse gravel; two specimens. Royal Sound, Kerguelen; depth, 20 to 60 fathoms; one specimen. Marion Islands; numerous specimens. Station 145A, December 27, 1873; lat. 46° 41' S., long. 38° 10' E.; depth, 310 fathoms; volcanic sand; one individual.

Sir Wyville Thomson has already published the supposition that this species is nearly related to or possibly a variety of *Psolus operculatus*, and, indeed, they seem to present a great resemblance. It is almost impossible to point out any difference of importance