

Bell has recently described a new species, *Psolus (Hypopsolus) ambulator*, which is distinguished by its scales being provided with pores, which are the orifices of small pits in the substance of the scales themselves. In the species examined by me, the pores evidently penetrate the scales (Pl. VI. fig. 5*a*, *x*). By a very careful examination, one finds these pores to be minute spots or rings scattered over the surface of the animal. Having had only three small individuals at my disposal, I have not been able to make any closer anatomical researches, although this would have been very desirable, in order to get an idea of the function of these pores. Possibly they are in connection with the ambulacral system. The tentacles are retracted and not visible externally. The outer row of pedicels is situated in the margin of the sole. The deposits of the sole are few, and present the form of small irregular plates with two to four holes (Pl. VI. fig. 5*b*); the larger specimens seem to be devoid of any deposits in the sole.

*Psolus operculatus*, Pourtalès, 1868.

*Habitat*.—Station 49, May 20, 1873; lat. 43° 3' N., long. 63° 39' W.; depth, 85 fathoms; bottom temperature, 35°·0; gravel, stones; numerous small specimens. Station 320, February 14, 1876; lat. 37° 17' S., long. 53° 52' W.; depth, 600 fathoms; bottom temperature, 37°·2; green sand; several specimens.

So far as I can see, the greatest similarity exists between the Challenger specimens and those described by Pourtalès. The largest specimens have a length of about 20 mm.; the smallest are 8 mm. long, thus being very young. The body is oval, rounded, or elongate, flattened, mostly decreasing in height posteriorly. The mouth is closed by five larger triangular valves, which often alternate with some smaller valves. The plates closing the anus are much less regularly arranged. In the smallest individuals the oral and anal scales are more irregular and inconstant. The scales are almost smooth in the larger forms, but finely granulated and comparatively larger in the young; they overlap a little. The largest scales measure 4 mm. in diameter, thus being rather large in comparison with the size of the animal. A double row of pedicels surrounds the thin, soft, transparent sole, those of the outer row being smaller and situated on the inner side of the margin. The deposits of the sole consist of closely crowded, more or less cup-shaped, concave plates, with as a rule four large perforations, and several rather long knobs, which occur especially on the uneven rim; moreover, numerous incompletely developed, ×-shaped deposits, with the arms dichotomously branched, are to be found among the former. Some of the plates are of a more solid structure than the rest.

The specimens brought home from Station 320 evidently form a transition between *Psolus operculatus* and *Psolus squamatus*; I cannot state that they belong either to the one or the other of these two species. The largest individuals are about 20 mm. long, the smallest 4 to 5 mm. The oral and anal scales are much more irregular than seems to be