

which the first two are of large size ; the appendages of the penultimate segment are large and symmetrical in both sexes, forming with the telson a powerful swimming fin.

The characters of this remarkable genus are extremely primitive, and it forms, as has been pointed out by Professor A. Milne-Edwards, a connecting link between the Thalassinids and the Pagurids ; at the same time there can be no doubt that its affinities justify its position in the latter group. In *Pylocheles* we have as it were one of the first downward steps in the series of degenerative changes which have transformed certain *Macrura* into soft-tailed Hermit Crabs. It is closely allied to *Pomatocheles*,<sup>1</sup> Miers, in which, however, the carapace is narrower and more elongated, the chelæ are operculiform, and the fingers move in a distinctly horizontal plane. The only previously known species is *Pylocheles agassizii*, A. Milne-Edwards, dredged by the "Blake" at a depth of 200 fathoms off Barbados, and found inhabiting an excavation in a piece of sandstone, the mouth of which was closed by its chelæ. It is doubtful whether the Challenger species possessed any such habitation.

*Pylocheles spinosus*, n. sp. (Pl. XI. fig. 1).

*Characters*.—The anterior portion of the carapace is broad and moderately convex, with a few slight inequalities towards the lateral surfaces and in front. The frontal margin is slightly raised, the median process projects but slightly and is broad and subacute, though tipped by a minute spinule ; the lateral processes are more prominent, and their apices are acute. A transverse depression exists on the carapace a slight distance behind the median part of the frontal margin, and a few hairs are scattered over the surface ; the posterior portion is less strongly calcified than the anterior, and the cardiac area is triangular in shape ; the cervical groove is moderately shallow.

The ocular peduncles are slightly compressed from above downwards, and extend for about one-third of their length beyond the apices of the antennal peduncles, the corneæ are slightly dilated, and semilunar in outline when viewed from above ; the ophthalmic scales are of small size and their apices are acute. The antennal acicle does not reach the middle of the last peduncular joint, and its apex is bidentate, a small spinule is present on its anterior surface and another on the outer margin ; the external prolongation of the second joint is short and its apex bidentate, while an acute spinule is present on the anterior surface of the same joint ; the terminal joint is slender and subcylindrical ; the flagellum is about equal in length to the carapace, and its segments are faintly pubescent. The terminal joint of the antennular peduncle extends slightly beyond the tip of the eye-stalk.

The chelipedes are of equal size and similar appearance, with their terminal joints

<sup>1</sup> I have provisionally included this genus in the section Laminibranchiata, but so far as I know its gills have not yet been examined.