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A new species of the hermit crab genus *Paguristes* Dana, 1851 (Crustacea: Decapoda: Anomura: Diogenidae) from southwestern India

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Abstract

A new species of the hermit crab genus *Paguristes* Dana, 1851 (Diogenidae), *P. luculentus*, is described and illustrated on the basis of three male specimens collected from off the Kerala State, southwestern India. It belongs to the species group characterized by the posterior lobes of the telson unarmed on the terminal margins, but the characteristic armature of the chelae and carpi of the chelipeds, consisting of a covering of numerous small corneous-tipped spines, and the presence of numerous small corneous-tipped or corneous spines on the mesial faces of the dactyli of the second pereopods immediately distinguish the new species from other congeneric species. The new species represents the ninth of the genus known from Indian waters.

Key words: *Paguristes luculentus*, taxonomy, Kerala State, Indian Ocean

Introduction

The hermit crab genus *Paguristes* Dana, 1851 is still most species-rich in the family Diogenidae, currently represented by 118 species worldwide (McLaughlin et al. 2010; Ayón-Parente & Hendrickx 2013), although several species previously assigned to the genus have been recently transferred to *Areopaguristes* Rahayu & McLaughlin, 2010 (replacement name for *Stratiotes* Thompson, 1899), *Pseudopaguristes* McLaughlin, 2002 or *Tetralobistes* Ayón-Parente & Henderickx, 2010 (Rahayu 2005; Komai 2009; Ayon-Parente & Hendrickx 2013). These four genera are typically characterized by having paired first and second pleopods, modified as gonopods, in the male, and paired first pleopods in the female. *Paguristes* is primarily differentiated from *Areopaguristes* and *Pseudopaguristes* by having 13 pairs of gills, in contrast to 12 pairs in *Areopaguristes* and reduced to eight pairs in *Pseudopaguristes*. *Tetralobistes* is differentiated from *Paguristes* by the four-lobed posterior lobes of the telson (Ayon-Parente & Hendrickx 2010, 2013). Taxonomic identities of species of these four genera have been substantially clarified by recent studies (Forest & McLaughlin 2000; Komai 2001, 2009, 2010; McLaughlin 2004, 2008; McLaughlin & Rahayu 2005; Rahayu 2005, 2006, 2007; Rahayu & McLaughlin 2006; Rahayu & Forest 2009; Ayón-Parente & Hendrickx 2013). From waters around India, the following eight species of *Paguristes* s.s. are known (Alcock 1905; Thomas 1989; McLaughlin & Dworschak 2001): *P. balanophilus* Alcock, 1905, *P. calvus* Alcock, 1905, *P. ciliatus* Heller, 1862, *P. incomitatus* Alcock, 1905, *P. mundus* Alcock, 1905, *P. longirostris* Dana, 1851, *P. pusillus* Henderson, 1896, and *P. puniceus* Henderson, 1896. Of these, *P. balanophilus*, *P. calvus*, *P. ciliatus*, *P. pusillus* and *P. puniceus* have been redescribed recently at modern standard (cf. McLaughlin & Dworschak 2001; McLaughlin 2004; McLaughlin & Rahayu 2005; Rahayu & McLaughlin 2006). McLaughlin (2002) presented a diagnosis for *P. longirostris* sufficient for species recognition, but without figures. Modern descriptions or diagnoses are not available yet for *P. mundus* and *P. incomitatus*.

In this article, we describe a new species of *Paguristes* s.s. on the basis of three male specimens collected from off the Kerala State, southwestern India, during the course of the faunal investigations conducted by the second and third authors. The new species, *P. luculentus*, is referred to one of the two informal species groups proposed by McLaughlin & Provenzano (1975) (group B) because of the unarmed terminal margins of the posterior lobes of the

Paguristes macrotrichus differs from *P. luculentus* n. sp. in the short rostrum only exceeding as far as the lateral projections and the dactylus of the second pereopod being devoid of small spines on the mesial face and bearing fewer (apparently less than 15) and longer corneous spines on the ventral margin (Forest 1954).

Paguristes mundus is superficially similar to *P. luculentus* n. sp. in the long antennal flagellum and the general armature of the chelipeds (cf. Alcock 1905: pl. III, fig. 5), but differs in the short, broadly triangular rostrum, multidenticulate ocular acicles, the left cheliped being smaller than the right cheliped, and the presence of a row of fine setae on the ventral margins of ambulatory dactyli.

The specific identity of *P. seminudus* is obscure. The type material of Stimpson's (1958) taxon is no longer extant (Evans 1967; Manning & Reed 2006), and it is difficult to establish its taxonomic identity without examination of topotypic specimens that match the descriptions by Stimpson (1858, 1907). Nevertheless, the description by Stimpson (1907) provides some characters that distinguish our new taxon from *P. seminudus*: "Eyes very stout for the genus, but long, considerably longer than the front is wide, and much overreaching the peduncle of the antennulae"; "Antennae shorter than carapax"; Cheliped "carpus and hand densely hairy and spinulose"; "Color olive or brownish; antennae annulated; maxillipeds spotted with white; tips of all the feet white". As discussed by McLaughlin (2008), identifications of *P. seminudus* by subsequent authors (Miyake 1978; Miyake & Imafuku 1980; Baba 1986; McLaughlin et al. 2007) are not correct. Specimens referred to *P. seminudus* by these authors most probably represent *P. zejiangensis* Wang & Tung, 1982 (Komai, unpublished data).

As mentioned above, eight species of *Paguristes* have been recorded from Indian waters, and thus the new species is the ninth of the genus to be recorded from the area.

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