

A new species of *Paguristes* (Decapoda: Paguroidea: Diogenidae) from Brazil

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Abstract

In this paper we describe a new species of the genus *Paguristes* from Brazil, collected at depths of 350–400 meters off the coast of the State of São Paulo.

Key words: Paguroidea, *Paguristes*, new species, Brazil.

Introduction

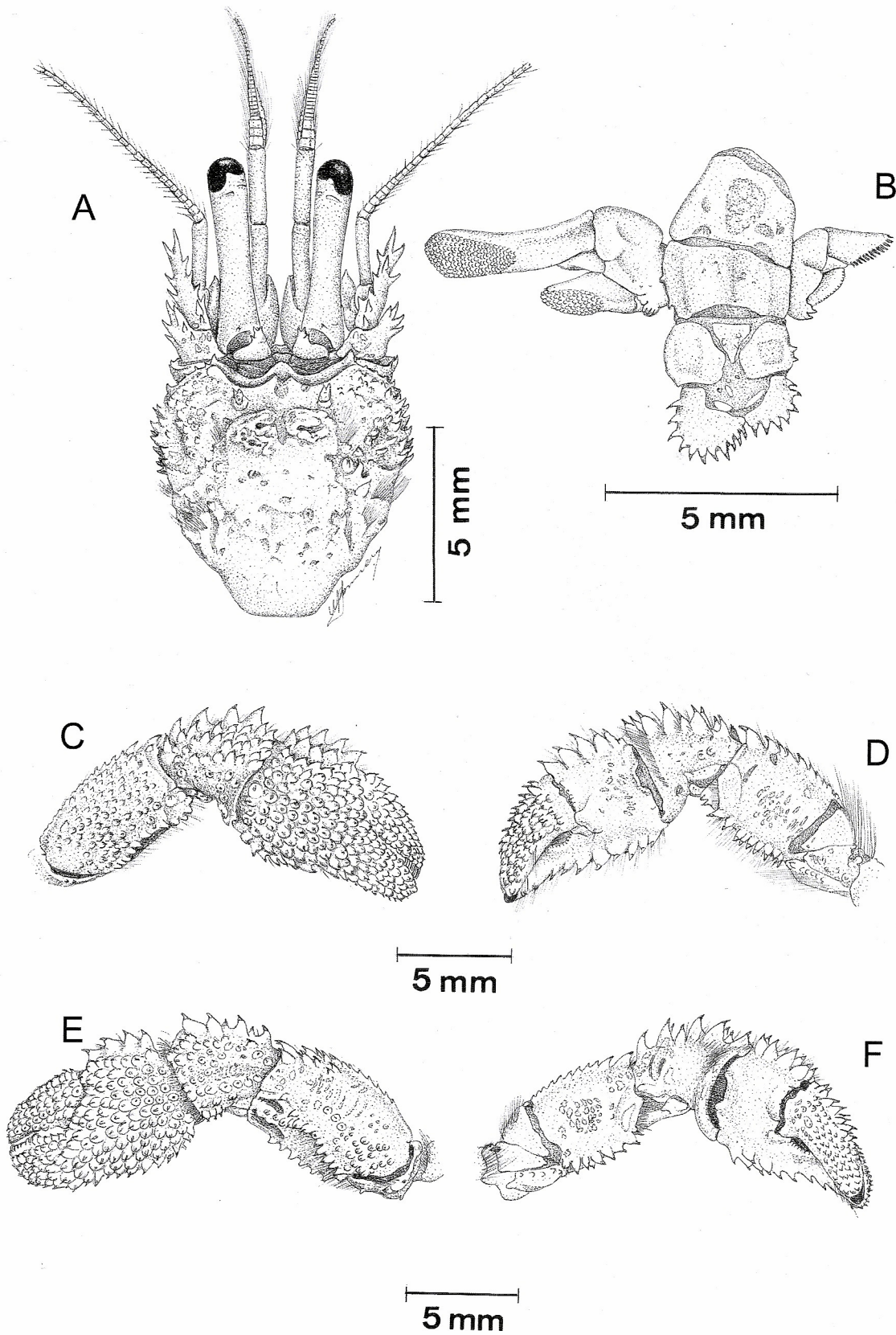
The genus *Paguristes* Dana, 1852 is one of the most numerous in terms of species and, in the western Atlantic is the most speciose genus of the family Diogenidae (McLaughlin and Provenzano, 1974a). The family Diogenidae Ortmann, 1892 is now treated within the superfamily Paguroidea Latreille, 1802 (Martin and Davis, 2001; McLaughlin, 2003). The species of the genus *Paguristes* are difficult to identify because of their considerable intraspecific morphological variation, which often results in overlapping diagnostic characters. The first subdivision of this genus was suggested by Forest (1954), based on the number of female gonopores; i.e., the genus was separated into species in which females have paired gonopores and species in which the females have a single gonopore. In the western Atlantic, only species of the first group occur (McLaughlin and Provenzano, 1974b). These authors proposed a new subdivision of the genus *Paguristes* based on the posterior lobes of the telson. They included in their group A, species in which the terminal margins of the lobes are armed with a series of spines, and in group B, species with the terminal margins of the lobes unarmed. The new species described herein belongs to group A, which according to McLaughlin and Provenzano (1974b) contains the largest number of species.

Since the publications of Forest and Saint Laurent (1968) and Fausto-Filho (1970), no new species of hermit crab was described from Brazilian waters until recently, when Nucci and Melo (2003) described a new species belonging to the genus *Pagurus*. After more than 30 years, this was only the second record of a new species of the superfamily Paguroidea from Brazil. Melo (1999) listed records of 10 species of the genus *Paguristes* from Brazil; however, we have doubts about the occurrence of *Paguristes puncticeps* Benedict, 1901. Nucci (2002) recorded nine species, excluding *P. puncticeps* from the Brazilian list.

Paguristes meloi new species

Figures 1 and 2

Material examined: Holotype, 1 male, 7.4 mm shield length (MZUSP 16246); off Santos, São Paulo; 350–400m; Carlo M. da Cunha coll. Paratypes, 2 males, 7.4 mm shield length (MZUSP 16247) and 5.2 mm shield length (MZUSP 16248); off Santos, São Paulo; 350–400m; Carlo M. da Cunha coll. April, 2002. The shield length is defined as the distance on the dorsal surface from the tip of the rostrum to the midpoint of the posterior margin of the shield. All specimens presented no traces of coloration.



Nauplius

Figure 1: *Paguristes meloi* new species. Holotype. A, shield and cephalic appendages; B, telson and uropods; C, right cheliped (lateral view); D, right cheliped (mesial view); E, left cheliped (lateral view); F, left cheliped (mesial view).

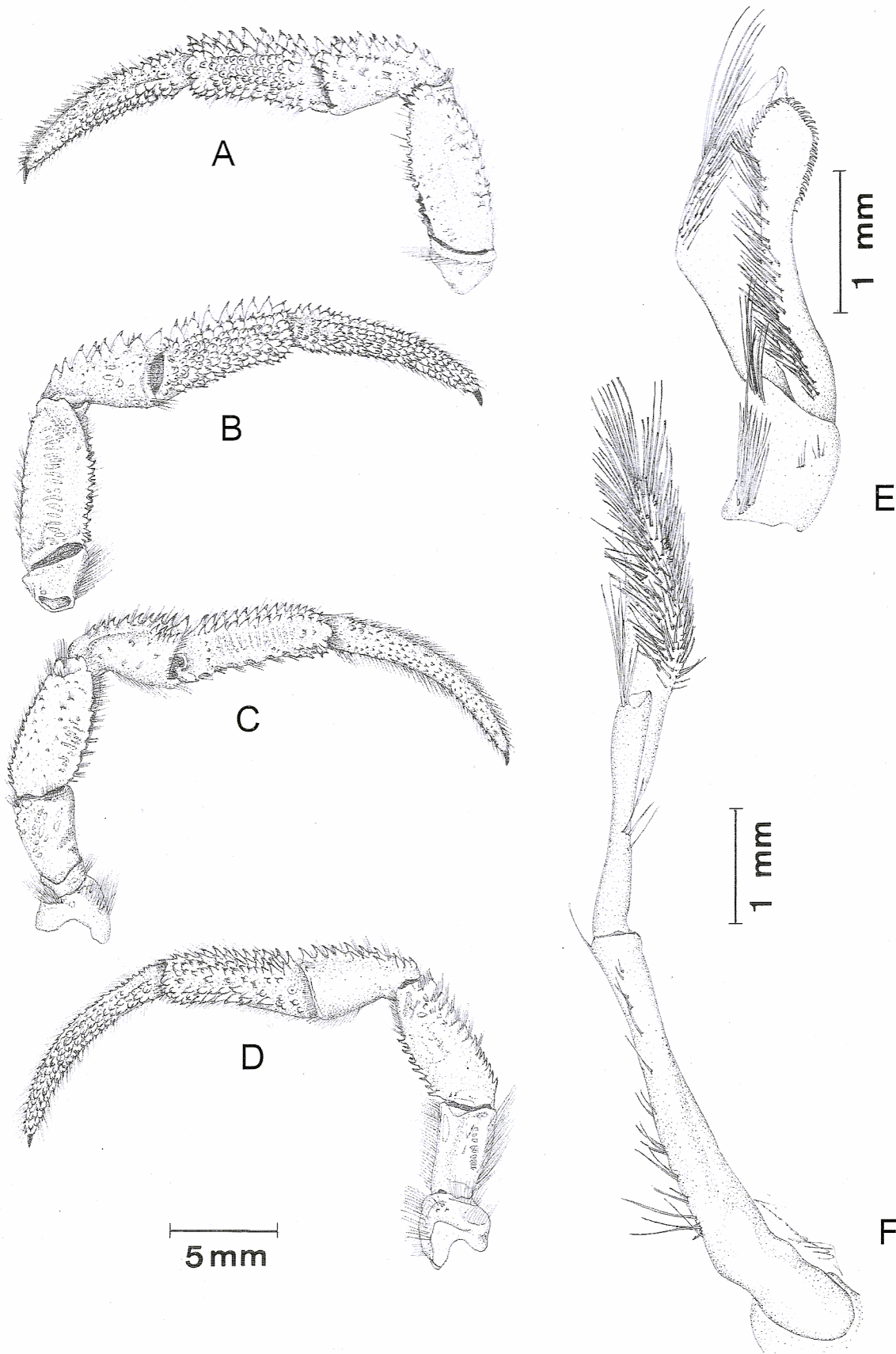


Figure 2: *Paguristes meloi* new species. Holotype. A, second left pereiopod (lateral view); B, second left pereiopod (mesial view); C, third right pereiopod (lateral view); D, third right pereiopod (mesial view); E, first pleopod; F, second pleopod.

Diagnosis: Rostrum short, triangular, with acute or rounded tip; reaching only to bases of ocular acicles. Ocular acicles broad basally, subtriangular, each terminating in bifid spine with 1 small accessory spine laterally. First paired male pleopods with distal margin of inferior lamella spatulate, and bordered by row of teeth reaching midlength of external margin. Telson with posterior lobes asymmetrical, terminal margin with several strong spines; one triangular calcified plate between anterior lobes.

Description: Shield (Fig. 1. A) about as long as broad; dorsal surface rugose in anteromedian region, delimited anteriorly by two deep semicircular grooves; dorsolateral region with several strong spines; strong tubercle just behind rostrum and two other tubercles near anterior margin, on each side of rostrum. Anterior margins concave between rostrum and lateral projections. Rostrum short, triangular, with acute or rounded tip, reaching only to bases of ocular acicles.

Ocular peduncles slender, basal region and corneae slightly dilated; approximately $\frac{3}{4}$ length of shield. Ocular acicles broad basally, subtriangular, terminating in bifid spine with 1 small accessory spine laterally.

Antennular peduncles, when extended, exceeding eyestalks by approximately $\frac{1}{3}$ length of ultimate segment.

Antennal peduncles slender, reaching distal third of ocular peduncles. First segment with small distal spine on lateral margin. Second segment with dorsolateral distal angle strongly produced, terminating in strong bifid spine, lateral margin with 2 or 3 spines; dorsomesial margin with strong tubercle and 1 distal spinose tooth; 1 small spine on mesial margin. Acicles strong, reaching end of ultimate peduncular segment and terminating in strong spine; with 2–4 spines on dorsolateral face and 6–9 well spaced spines on dorsomesial face.

Chelipeds subequal, robust (Fig 1 C, D, E, F). Dactyl 1.5 times length of palm; cutting edge with row of small calcareous teeth proximally and row of small corneous teeth distally, terminating in small corneous claw; dorsal surface with several corneous spines, forming more or less regular rows on dorsomesial margin; fixed finger with corneous spines on dorsal face, and cutting edge with small calcareous teeth proximally and row of small corneous teeth distally, ending in small corneous claw; very small interdigital hiatus proximally. Palm with several corneous spines of different sizes distributed over entire dorsal face; dorsomesial margin with 4 strong conical spines each with corneous tip. Carpus smaller than merus, dorsal face with several conical spines each with corneous tip; dorsomesial margin with row of 4–6 strong spines; dorsolateral margin with row of 5–8 spines; dorsodistal margin with 2 conical spines, united basally; mesial face unarmed; lateral face with row of 3 or 4 small spines just below dorsolateral margin. Merus approximately triangular in transverse section; dorsal margin with row of tubercles increasing in size distally, and becoming forward-turned double spines; distal margin with 1–3 spines, generally with 2 spines of different sizes; ventromesial margin with row of irregular spines; ventrolateral margin with row of irregular spines extending over ventral face, with plumose setae accompanying row of spines.

Second and third pereopods strong (Fig. 2 A, B, C, D). Dactyl of second pereopod 1.3 times longer than propodus, terminating in strong corneous claw; dorsal margin with row of strong spines decreasing in size distally, and row of stiff yellowish bristles, inserted laterally; ventral margin with row of setae and several irregular spines scattered over ventromesial and mesial faces; ventrolateral and lateral faces with several small spines with tufts of setae inserted basally. Propodus with 8–10 strong spines with conical bases on dorsal margin, directed mesially; ventral and mesial faces with several scattered spines, smaller than those of dorsal margin, and with tufts of setae inserted basally; row of smaller spines, parallel to dorsal row of spines; lateral face with few small spines or tubercles with setae inserted basally. Carpus with several spines of irregular size and distribution over dorsal face; 1 large and relatively deep furrow in

dorsolateral region, separating dorsolateral region from lateral region, which is inflated and somewhat convex, bearing some small spines and tubercles with setae inserted basally; mesial and ventral faces unarmed and smooth, except for few setae on ventral face. Merus with row of tubercles and fringe of setae on dorsal and ventral margins; ventrolateral region with some tubercles with setae inserted basally; lateral face unarmed, flat; mesial face unarmed, with rugose row on median region.

Ornamentation, armature and proportion of third pereopods similar to second pereopods, but with weaker spines; propodus with row of larger spines on median region of mesial face.

First and second pleopods paired. First pleopods (Fig. 2. E) with distal margin of inferior lamella almost straight, bordered by teeth reaching midlength of external margin. Distal lobe overreaching inferior lamella, and separated from internal lobe by deep groove; ventral face of internal lobe with long setae, overreaching distal lobe.

Pleopods 3–5 unpaired, with exopodites well developed; endopodites absent.

Telson (Fig. 1. B) with posterior lobes asymmetrical, separated by narrow cleft; lateral and terminal margins bearing several strong spines; one calcified triangular plate between anterior lobes.

Etymology: With pleasure and gratitude this new species is named in honor of Dr Gustavo Augusto Schmidt de Melo, for his extraordinary dedication to the study of crustaceans, which has smoothed the way for several generations of carcinologists in Brazil.

Distribution: Known only from off the coast of the State of São Paulo, Brazil.

Remarks: Morphologically, *Paguristes meloi* n. sp. resembles no other known species of this genus occurring in Brazil. Distinguishing characteristics include the very short rostrum, reaching only to the base of the ocular acicles; the presence of three tubercles just behind the rostrum; the shape of the first paired pleopods; and the telson, with a triangular calcified plate between the anterior lobes. These characteristics are not observed in any other species of the genus *Paguristes* from Brazil. Six other species of this genus occur in the same area: *Paguristes calliopsis* Forest & Saint Laurent, 1968; *Paguristes erythrops* Holthuis, 1959; *Paguristes iris* Forest & Saint Laurent, 1968; *Paguristes pauciparus* Forest & Saint Laurent, 1968; *Paguristes robustus* Forest & Saint Laurent, 1968 and *Paguristes tortugae* Schmitt, 1933. Most of these species are found in shallow waters; except for *P. iris* and *P. pauciparus*, which occur at depths no greater than 100 meters. In contrast, *P. meloi* has been found in 350 to 400 meters in depth.

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