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A new species of *Catapagurus* A. Milne-Edwards (Crustacea: Decapoda: Anomura: Paguridae) from Brazil, with a key to the western Atlantic species

PAULO RICARDO NUCCI¹ & GUSTAVO AUGUSTO SCHMIDT DE MELO²

^{1,2}Museu de Zoologia, Universidade de São Paulo. Av. Nazareth, 481, 04263-000 São Paulo, SP, Brazil.

E-mail: ¹nuccipr@yahoo.com.br; ²gasmelo@usp.br

Abstract

We describe herein a new species of *Catapagurus*, the twenty-second species of the genus. This is the third species of *Catapagurus* recorded from the western Atlantic and the second from Brazil; the remaining 19 species occur in the Indo-Pacific region.

Key words: Crustacea, Paguridae, *Catapagurus*, new species, Brazil

Introduction

The pagurid genus *Catapagurus* includes 21 species, of which only two are known to occur in the Atlantic Ocean, and the remainder in the Indo-Pacific (see revisions by Asakura 2001; McLaughlin 2004). In addition to *C. sharreri* and *C. gracilis*, the new species described herein is the third member of this genus from the western Atlantic.

The measurements (in millimeters) provided for the material examined correspond to the shield length, measured from the midpoint of the rostral lobe to the midpoint of the posterior margin of the shield. Corneal diameter is measured as the maximum width of the cornea on the dorsal surface. The abbreviations ovig. and MZUSP refer to ovigerous female and Museu de Zoologia da Universidade de São Paulo (Zoology Museum of the University of São Paulo), respectively.

Taxonomy

Family Paguridae Latreille, 1802

Genus *Catapagurus* A. Milne-Edwards, 1880

Type species. *Catapagurus sharreri* A. Milne-Edwards, 1880.

Key to species of *Catapagurus* from the western Atlantic

- 1. Coxa of right cheliped unarmed *C. gracilis*
- Coxa of right cheliped with spine at ventromesial distal angle. 2
- 2. Lateral margins of telson each with two articulated spines *C. sharreri*
- Lateral margins of telson without articulated spines *C. cunhai* n. sp.

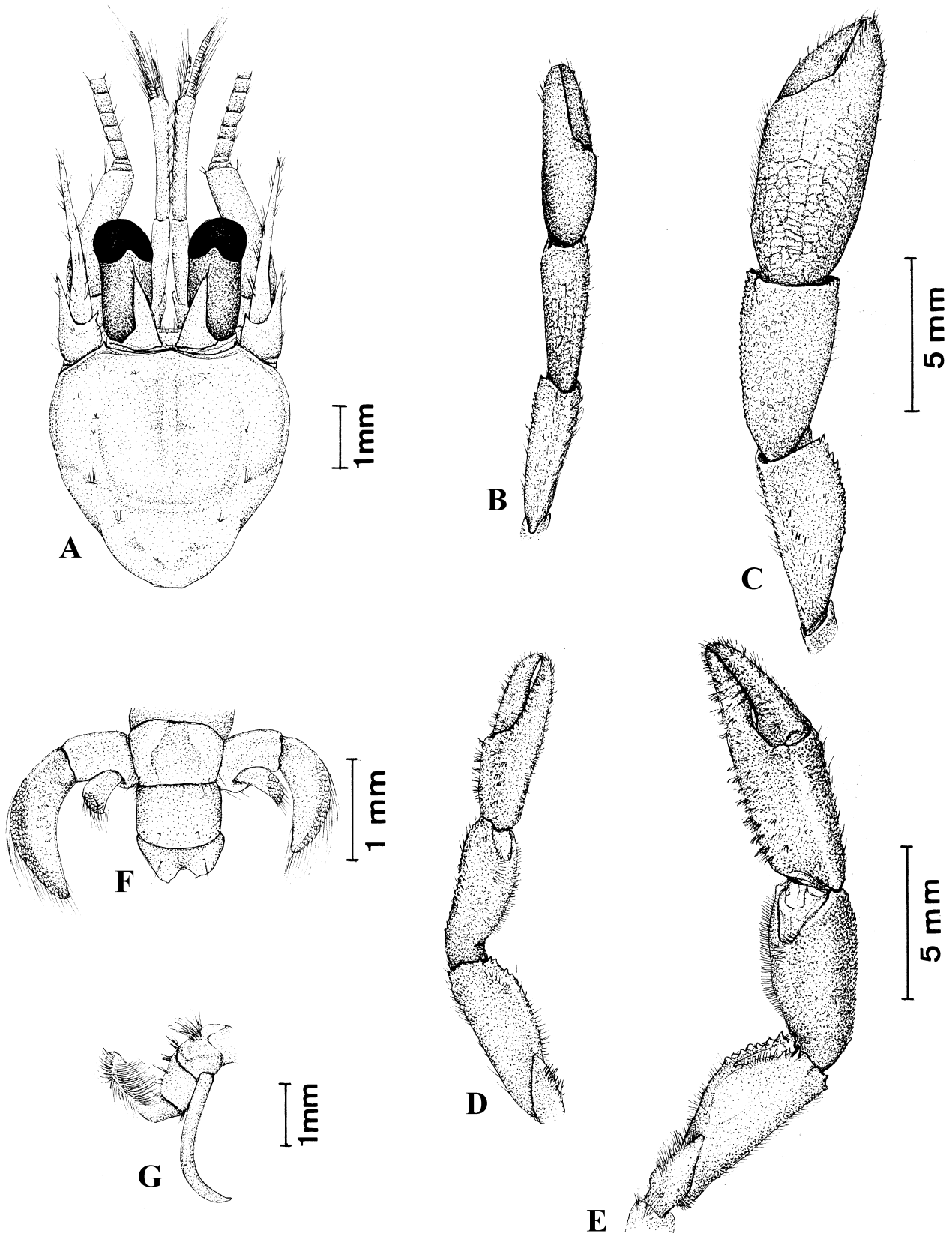


FIGURE 1. *Catapagurus cunhai* n. sp. A, shield and cephalic region; B, left cheliped; C, right cheliped; D, left cheliped (ventral view); E, right cheliped (ventral view); F, uropods and telson; G, right coxa of fifth pereopod with sexual tube.

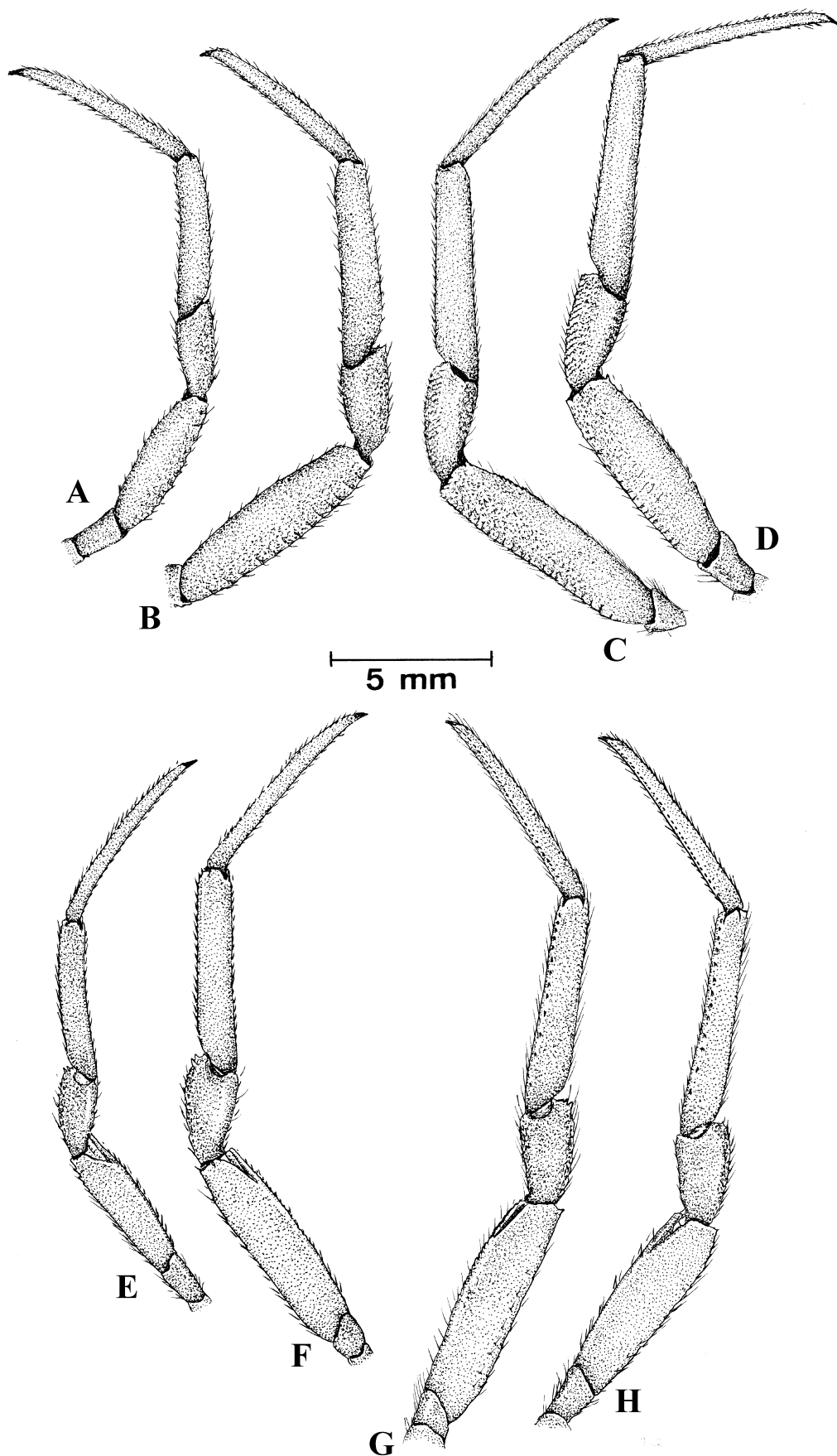


FIGURE 2. *Catapagurus cunhai* n. sp. A, third left pereopod (lateral view); B, second left pereopod (lateral view); C, second right pereopod (lateral view); D, third right pereopod (lateral view); E, third left pereopod (mesial view); F, second left pereopod (mesial view); G, second right pereopod (mesial view); H, third right pereopod (mesial view).

***Catapagurus cunhai* n. sp.**

(Figs. 1,2)

Material examined. Ceará, Brazil. Holotype: male 4.2 mm, Canopus Bank, off Fortaleza, Ceará (MZUSP 25095). Paratypes: 7 males (4.0 mm, 3.8 mm, 3.8 mm, 3.8 mm, 3.7 mm, 2.4 mm, 2.4 mm); 11 females (3.0 mm, 3.0 mm ovig., 2.9 mm ovig., 2.9 mm, 2.9 mm ovig., 2.9 mm, 2.8 mm, 2.8 mm ovig., 2.8 mm, 2.7 mm ovig., 2.7 mm ovig.), Canopus Bank, off Fortaleza, Ceará (MZUSP 25096).

Description. Shield slightly to distinctly broader than long; anterior margin between rostral lobe and lateral projections concave; anterolateral margins sloping; dorsal surface with few scattered fine setae. Rostral lobe broadly rounded, not reaching level of lateral projections. Lateral projections broadly triangular, each usually terminating in marginal spinule.

Ocular peduncles short, corneal diameter 0.4–0.5 peduncular length. Ocular acicles narrowly triangular, slender, reaching approximately bases of corneas, with acute tips; widely separated.

Antennular peduncles overreaching distal margins of corneas by 0.2 length of penultimate segments. Last segment with tuft of long fine setae at dorsodistal margin and several short setae on dorsal face.

Antennal peduncles overreaching distal margins of corneas by 0.3–0.6 length of last segments. Fourth and fifth segments with few scattered short setae. Third segment with few setae on base of small ventrodorsal spine. Second segment with produced dorsolateral distal angle, reaching approximately midlength of fourth peduncular segment; dorsomesial distal angle with prominent spine. First segment covered by anterolateral margin of shield in dorsal view, with small spine at dorsolateral distal angle. Antennal acicles overreaching corneal margins by 0.3–0.4 acicular length. Antennal flagella long, overreaching ambulatory legs and chelipeds.

Right cheliped long, moderately slender. Dactyl 0.6–0.8 length of palm; dorsal surface smooth; dorsomesial margin weakly delimited and with tufts of scattered irregular (in size) setae; cutting edge with 1 large tooth proximally and row of very small fused calcareous teeth from midlength to distal region; fixed finger with sparse tufts of setae, cutting edge with 1 large tooth and row of small calcareous teeth proximally. Palm 0.9 to approximately equaling length of carpus; dorsomesial margin not delimited, rounded surface with irregular row of minute spinules and tufts of setae. Carpus approximately equal to length of merus; dorsomesial margin with irregular row of small spines and sparse tufts of setae, dorsodistal margin unarmed, dorsal surface with small tubercles, dorsolateral margin indistinctly delimited, ventral surface with covering of setae. Merus with scattered bristles on dorsal and mesial surfaces; ventrolateral margin with row of spines increasing in size distally; ventral surface setose. Ischium unarmed. Coxae each with prominent spine at ventromesial distal angle.

Left cheliped slender, shorter than right. Dactyl approximately as long as palm; dorsal surface with scattered setae, terminating in corneous claw; entire cutting edge with tiny corneous teeth. Palm approximately 0.7 length of carpus; dorsomesial and dorsolateral margins not distinctly delimited, surfaces with scattered setae, longer on mesial face than on lateral face; fixed finger with scattered long setae; cutting edge with minute calcareous teeth, interspersed with tiny corneous teeth, terminating in corneous claw. Carpus as long as or slightly shorter than merus; dorsomesial and dorsolateral margins each with irregular row of spines, smaller on dorsolateral than on dorsomesial margin; dorsal surface with scattered small granules; mesial and ventral surfaces with scattered long setae, lateral surface with few small setae. Merus with scattered stiff setae on dorsal, mesial and lateral faces; ventromesial distal angle with strong spine; ventrolateral margin with irregular row of spines; ventral surface with covering of long setae.

Second and third pereopods similar in both size and shape (in the holotype the third left is slightly shorter than the second left, probably regenerating). Dactyls not blade-shaped, 0.1–0.2 longer than propodi, dorsal margins each with row of moderately long stiff setae or bristles; mesial and lateral faces with scattered moderately long setae; ventral margins each with row of bristles; mesial and lateral faces with few scattered setae; ventral margins each with row of stiff setae or bristles. Propodi approximately twice length of carpi; dorsal margins each with row of few bristles. Carpi approximately 0.4 length of meri; dorsal margins each with row of very small spines, with or without a few bristles; dorsodistal angle with 1–3 spines. Meri with few bristles on dorsal margins; large specimens with row of small spines on ventrolateral margin and 1 spine at ventrolateral distal angle of second pereopod. Fourth pereopods with preungual process not exceeding tip of claw. Fifth pereopods not chelate.

Males with right coxa of fifth pereopod bearing moderately long right sexual tube directed toward exterior but not curved dorsally over abdomen.

Sternite of third pereopods with very broad anterior lobe, semirectangular, with long setae on anterior margin. Telson with triangular posterior lobes separated by broad median cleft and with few stiff setae.

Etymology. This new species is named for Dr. Carlo Magenta da Cunha, an enthusiastic malacologist, who has provided excellent material for the study of hermit crabs from Brazil.

Distribution. Known only from the type locality, Canopus Bank, off Fortaleza, Ceará State, Brazil. The material was collected between 350 and 400 m.

Discussion

Following the revision of McLaughlin (2004) and with the addition of *C. cunhai* n. sp., the genus *Catapagurus* now comprises 22 species, of which 19 occur in the Indo-Pacific region and only three in the western Atlantic. The Atlantic species with the widest distribution is *C. sharreri*, which ranges from Virginia to Florida, West Indies, and Brazil (Rio de Janeiro and São Paulo) (Nucci & Melo 2011); *C. gracilis* is known only from the east coast of North America, from Massachusetts to Virginia; and *C. cunhai* is known only from the type locality. The three species can be distinguished by several morphological characters. The coxa of the right cheliped is unarmed in *C. gracilis*, but a spine at the ventromesial distal angle can be observed in both *C. sharreri* and *C. cunhai*. The sternite of the third pereopod of *C. sharreri* has the anterior lobe with the anterior margin concave and armed with tubercles or spines on the anterolateral angles; in *C. gracilis* the anterior lobe is broad and semitriangular, with setae anteriorly; and in *C. cunhai*, the anterior lobe is very broad, semirectangular, and narrower than in *C. gracilis* (see Asakura 2001: fig. 4Q), but also with long setae on the anterior margin. The male sexual tube of *C. cunhai* is shorter than in *C. gracilis* and *C. sharreri*, and although it is also turned outward, it is not curved over the dorsal surface of the abdomen as in *C. gracilis* and *C. sharreri*. The telson of *C. gracilis* has two spines on the terminal margins of the posterior lobes; in *C. sharreri* the lateral margins of the telson each bear two conspicuous articulated spines, but in *C. cunhai* the posterior lobes of the telson each bear only a bristle.

Asakura (2001) separated the genus *Hemipagurus* (*Catapagurus*) into two groups from the Indo-West Pacific, the “*ensifer*-group” and the “*japonicus*-group”. Species from the *ensifer*-group have the dactyls of the ambulatory legs blade-shaped, whereas species from the *japonicus*-group have the dactyls of the ambulatory legs shaped otherwise. The dactyls of *C. cunhai* n. sp. are not blade-shaped; however, the new species has no morphological similarity to any species of the *japonicus*-group. Most species in this group have dilated corneas, a character that is not present in *C. cunhai*. The only species of the *japonicus*-group with the corneas not dilated is *C. hirayamai*; however, the ocular acicles are short, unlike *C. cunhai* which has long ocular acicles. In addition, males of *C. hirayamai* have a very long sexual tube curved over the dorsal surface of the abdomen, whereas in *C. cunhai* the sexual tube is relatively short. Therefore, *C. cunhai* n. sp. is not morphologically close to any of the species that occur in the Indo-Pacific.

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