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A new species of genus *Gastroptychus* Caullery, 1896 (Decapoda: Anomura: Chirostylidae) from the Brazilian coast

Melo-Filho, G. A. S.[1] and Melo, G. A. S.[2]

[1] Universidade Presbiteriana Mackenzie, Faculdade de Ciências Biológicas, Exatas e Experimentais, Rua da Consolação, nº 896, 01302-907, São Paulo, SP, Brasil. e-mail: gustavo@mackenzie.com.br

[2] Universidade de São Paulo, Museu de Zoologia, Laboratório de Carcinologia, Av. Nazareth, nº 481, Ipiranga, 04263-000, Cx Postal 42.594, São Paulo, SP, Brasil. e-mail: gasmelo@usp.br

Abstract

A new species of Chirostylidae, genus *Gastroptychus,* is described from southeastern Brazil. Most species of *Gastroptychus* occur in the Indian and Pacific oceans, with only four known previously from the Atlantic Ocean. The confusing taxonomic history of the genus is summarized. The new species, *Gastroptychus meridionalis*, is morphologically most similar to *G. spinifer*, and is the first reported from the South Atlantic.

Key words: Crustacea Decapoda, Chirostylidae, *Gastroptychus*, South Atlantic, Brazilian coast, new species.

Introduction

According to Pohle and Macpherson (1995), the family Chirostylidae includes about 130 species in six genera: *Chirostylus* Ortmann, 1892, *Eumunida* Smith, 1883, *Hapaloptyx* Stebbing, 1920, *Pseudomunida* Haig, 1979, *Uroptychus* Henderson, 1888, and *Gastroptychus* Caullery, 1896.

The genus *Gastroptychus* includes 20 species, the majority distributed in the Indian and Pacific oceans. Only four of these have been reported from the Atlantic: *Gastroptychus affinis* (Chace, 1942), in the Caribbean and Gulf of Mexico; *G. formosus* (Filhol, 1884), with an amphi-atlantic distribution in Ireland, Bay of Biscay, Canaries, and the coast of Canada; *G. salvadori* (Rice and Miller, 1991), in the Bahamas, and *G. spinifer* (A. Milne-Edwards, 1880), from Cuba (Chace, 1942), the Lesser Antilles (A. Milne-Edwards, 1880; A. Milne-Edwards and Bouvier, 1897) and Gulf of Mexico (Springer and Bullis, 1956).

The taxonomy of the genus is quite complex. A. Milne-Edwards (1880) briefly described the genus *Ptychogaster*; however, Caullery (1896), considered this name invalid because it has been previously used for a genus of marine turtles, and replaced it with *Gastroptychus* Caullery, 1896. In that same year, Bouvier (1896) apparently accepted the opinions of Caullery (1896), but placed *Gastroptychus* as a junior synonym of *Chirostylus* Ortmann, 1892. Surprisingly, in the following year A. Milne-Edwards and Bouvier (1897) considered *Chirostylus* and *Gastroptychus* as junior synonyms of *Ptychogaster*, and redescribed the later in detail. Later, Van Dam (1933), working with material from the Siboga Expedition, reinstated *Chirostylus*, and considered *Ptychogaster* as an invalid name. Chace (1942) corroborated the position of Van Dam, and was followed in this by Springer and Bullis (1956), and several other authors. More recently, Miyake and Baba (1968) considered that *Chirostylus* is composed only of species that lack a rostrum and antennal scale, and all other species (including the material described by A. Milne-Edwards, 1880) were removed from this genus. For the group of species possessing a rostrum and an antennal scale, Miyake and Baba (1968) resuscitated *Gastroptychus*. Subsequently, species were discovered that possess a rostrum but lack the antennal scale (Baba, 1977; 1991). The small rostral spine found in specimens of *Chirostylus* by Tirmizi and Khan (1979) was considered by Baba (1988) as equivalent to the spines of the carapace, rather than a true rostral spine. According to Pohle and Macpherson (1995), the rostrum characteristics appear to be the only distinguishing feature between *Chirostylus* and *Gastroptychus*.

The material of the new species was collected using trawl nets, by fishing vessels, off the coasts of the states of Rio de Janeiro and Paraná. Specimens remain deposited in the carcinological collection of the Museu de Zoologia da Universidade de São Paulo (MZUSP).

Taxonomic account

Family Chirostylidae Ortmann, 1892

Gastroptychus meridionalis n.sp.

(Figs.1, 2)

Diagnosis: Carapace almost as wide as long, covered with long spines, mainly in gastric, branchial and cardiac regions; rostrum slightly longer than 1/3 carapace length. Anterior sub-branchial region with long spines; posterior sub-branchial region smooth, weakly calcified. Chelipeds extremely long, nearly six times length of carapace. First abdominal somite with a row of six long spines and some smaller spines between them. Second to fifth somites covered with small spines. Telson and uropods weakly calcified. Sternite of cheliped with four stout spines.

Material examined

Holotype, ovig. female, southwest of Cabo Frio, Rio de Janeiro, Brazil, 22°53´S, 42°01´W, 700-800 m, C.M. Cunha coll. Carapace length 29.0, carapace length including rostrum 37.0, carapace width 27.0, length of right cheliped 171.0, length of left cheliped 170,0, total body length 78.0 (MZUSP-16231). Paratypes, 5 ovig. female, same locality and depth (MZUSP-16.230); 1 ovig. female, Paraná, Brazil, 24°16´S, 43°37´W, Vessel "Nuevo Apenino", tow 103, 358m, P. Pezzuto coll. (MZUSP-15.719).

Description : Carapace slightly longer than wide and covered with spines of various sizes. Cervical sulcus indistinct. Gastric and branchial regions together with 13 spines: 2 long spines behind rostrum; 5 long spines forming a transverse line behind the anterior spines, with smaller spines between them; slightly more posteriorly is another transverse line of spines, 2 in the mesogastric region and 2 in each branchial region. Cardiac region with 7 small spines forming a circle and 2 long spines in the center. Behind the cardiac region is a line of 6 long spines. Each branchial region with 3 parallel longitudinal lines of spines, spines of innermost line largest. Posterior margin of carapace with 4 long spines, with smaller spines between them. Hepatic regions each with one pair of spines, anterior spine much longer. Antero-lateral margin with line of 7 spines in anterior half, these spines diminishing in size antero-posteriorly. Sub-hepatic region with many medium-sized spines. Anterior sub-branchial region covered by long spines; posterior sub-branchial region smooth and decalcified. Eyes slightly dilated distally.

Third maxilliped with inner margin of ischiopodite serrated, with small sharp teeth; meropodite and carpopodite each with 2 strong spines; propodite with 3 spines on upper face, proximal spine much larger; dactylopodite smooth and unarmed; three last segments with large tuft of hairs.

Antennae long and thin, with stout spine on basal article. Antennules also long, with articles much thicker than those of antennae.

Cheliped extremely long, nearly 6 times length of carapace; merus twice as long as carpus, dorsal and ventral faces with long spines interspersed with other smaller spines, inner and outer face with smaller spines, distal extremity, next to articulation with carpus, with 5 long spines; carpus with 5 lines of spines; palm slightly larger than that of carpus and with 6 lines of spines: 3 on inner face and 3 on outer face; fingers slightly smaller than palm and with wide proximal hiatus covered with large tuft of hairs; cutting edge of fingers with 1 stout tooth and 4 smaller teeth.

First three ambulatory legs very long and spiny, reaching proximal margin of palm of cheliped; fourth ambulatory leg reduced, and with long tuft of hairs on last segment. Bases of ambulatory legs each, with 2 strong spines.

First abdominal somite with line of 6 long spines interspersed with several smaller spines; abdominal somites 2-6 with tergites and pleurites covered with small spines; pleurites 2-6 with stout subapical spine. Telson weakly calcified, with 2 lateral lobes, posterior lobe much larger. Uropods also weakly calcified, with exopods slightly longer than endopods and both provided with long hairs.

Thoracic sternite 4 (cheliped) with 4 spines in transverse line, 2 inner spines smaller; behind these are 4 spines forming a square, the posterior spines larger.

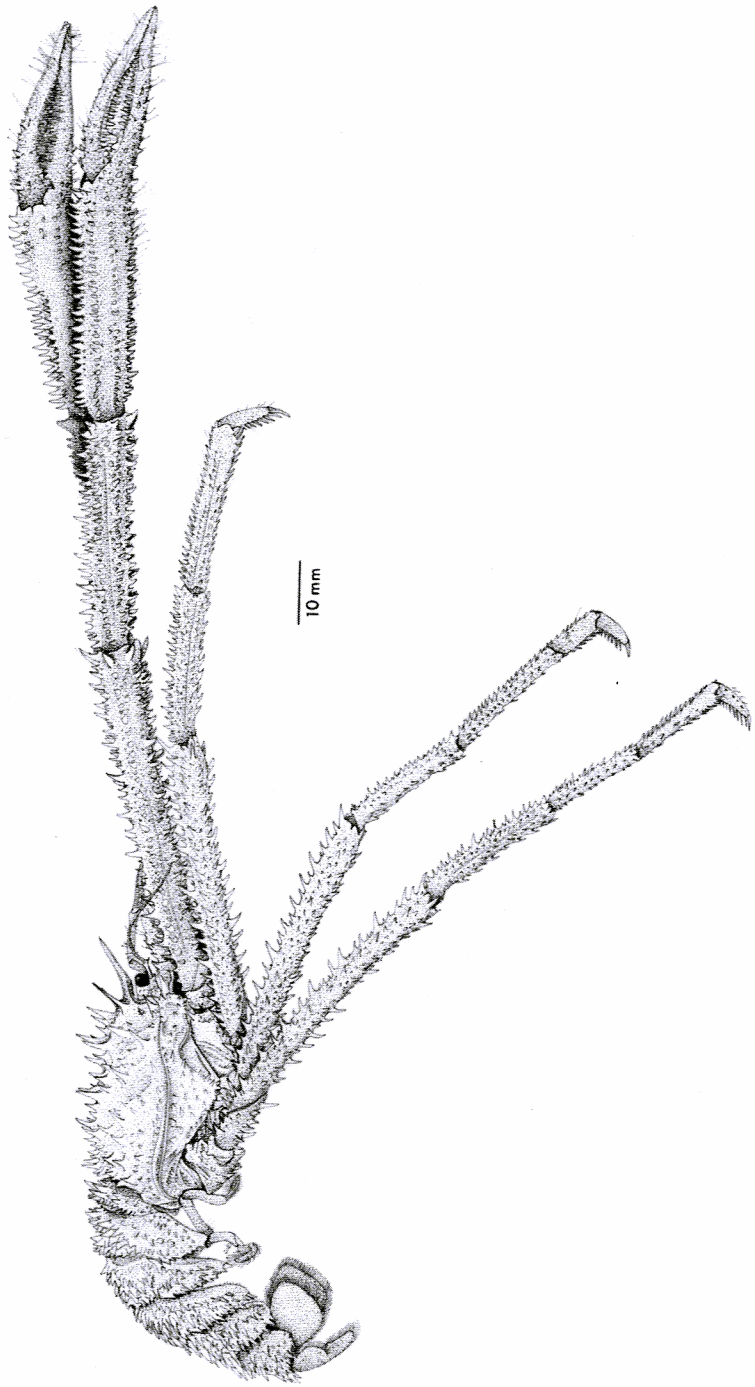

Figure 1: *Gastrptychus meridionalis* n.sp., holotype, female, southwest of Cabo Frio, RJ., Brazil, 29.0 x 27.0 mm (MZUSP-16231).

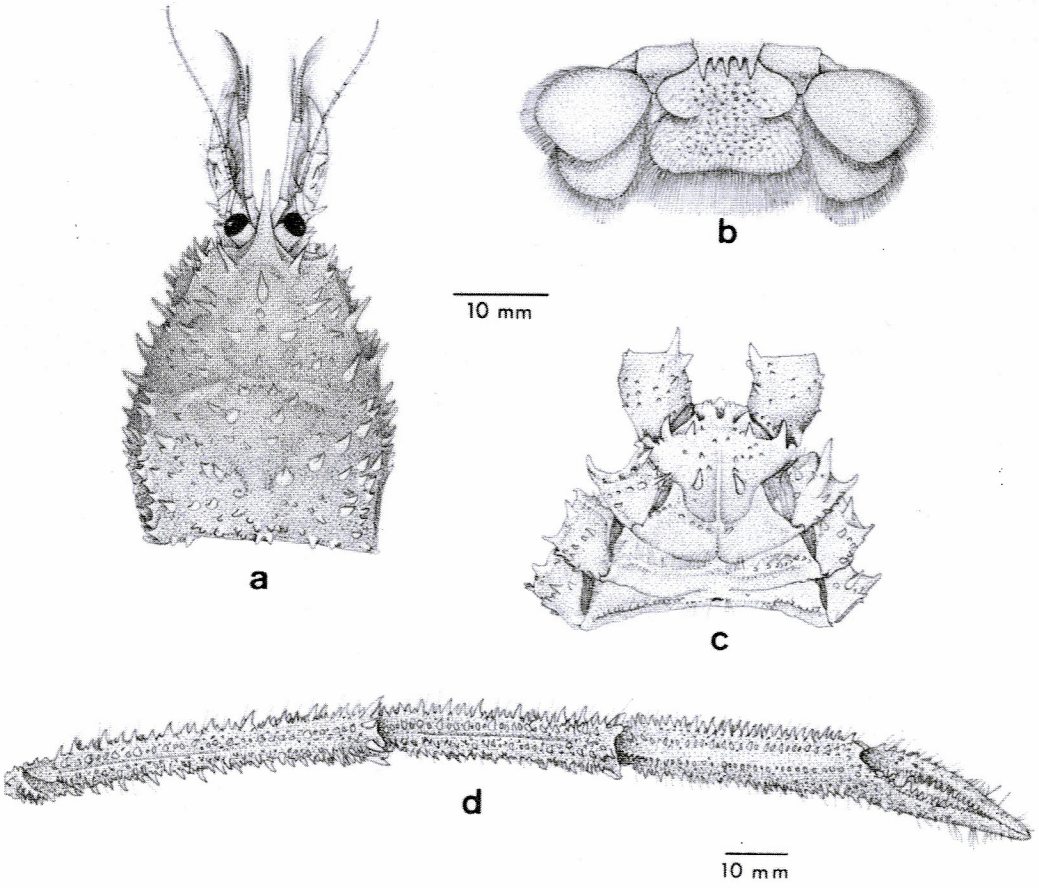

Figure 2: *Gastroptychus meridionalis* n.sp., holotype, female, southwest of Cabo Frio, RJ., Brazil (MZUSP 16231): a. carapace, dorsal view. b. uropods and telson, dorsal view. c. sternites, ventral view. d. left cheliped, mesial view.

Table I: Distinguishing characteristics of *Gastroptychus meridionalis* and *G. spinifer*.

	G. meridionalis	*G. spinifer*
Gastric region	9 spines	4 spines
Cardiac region	6 or 7 small spines forming a circle, with 1 or 2 long spines in the center	1 cardiac spine and 3 post-cardiac spines
Abdominal somites	First somite with 6 long spines in addition to sparse spinules. Remaining somites totally covered with spinules.	Completely smooth and unarmed.
Sternite 4 (chelipeds)	2 pairs of distinct spines, and 1 pair of smaller spines posteriorly	1 pair of distinct spines
Lines of spines on cheliped	Merus - 5 lines Carpus - 5 lines Palm - 6 lines	Merus - 6 lines Carpus - 7 lines Palm - 8 lines
Relationship between length and width of carapace	Carapace almost as long as wide	Carapace distinctly longer than wide

Coloration: Holotype and paratypes with carapace deep orange, abdominal somites lighter, pleurites nearly white; anterior and posterior sub-branchial regions also whitish, uropods pale yellow.

Remarks: *Gastroptychus meridionalis* is the first species of the genus reported from the South Atlantic. Comparison of specimens studied with that of other species of the genus (A. Milne-Edwards, 1880; A. Milne-Edwards and Bouvier, 1897; Chace, 1942; Pohle and Macpherson, 1995) indicate that this new species is related to *Gastroptychus spinifer*. Differences between the two species are listed in Table I. In general, specimens of *G. meridionalis* are relatively larger, more spinose than those of *G. spinifer* and also differing with spinulation of the carapace, abdomen and sternum. The relationship between carapace length and width also differs between these two species, with *G. meridionalis* having a subquadrate carapace and *G. spinifer* a more elongated one.

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