

Illustrated type catalogue of marine Isopoda (Crustacea: Peracarida) from the Museu Nacional/UFRJ, Brazil

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ABSTRACT

The Crustacea Collection of the Museu Nacional/UFRJ is one of the most relevant and representative of the Brazilian crustacean fauna. Currently, it comprises around 31,000 registered lots, of which 5,435 lots belong to the order Isopoda. This paper provides an illustrated catalog of two topotype species and 34 type species of marine isopods deposited at the Crustacea Collection of Museu Nacional/UFRJ, distributed in 22 genera, 12 families and six suborders. This collection is represented by 27 lots of holotypes, 81 lots of paratypes (15 named as allotypes), and two topotypes, published mainly by authors such as Alceu Lemos de Castro and Idalina Brasil-Lima, former researchers of Museu Nacional in the 20th century. The two topotypes species were included in the catalog as they came from the same collection event as the holotype and have been historically kept as type material within the museum collection. In general, the type materials are in good condition, however, the holotype of *Robustura parvula* (Albuquerque, 1978) and all type material of *Pseudione serejoae* Brito, Cardoso and Boyko, 2018 have been lost and await the designation of neotypes. Furthermore, this catalog is part of a larger project, in an effort to improve the curation and digitization of the museum's type collection data. By photographing the specimens and digitizing the collection specimens' labels, we expect to improve internal management and offer free access to the data, so as to preserve and promote the museum's collections, which guard important and unique information on world biodiversity.

KEYWORDS

Brazil, collection, Crustacea, digitization, type material



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INTRODUCTION

The Museu Nacional was founded in 1818 by D. João VI, as a sign of the Portuguese Crown, installed in Rio de Janeiro since 1808, as an institution committed to scientific development and promoting the nation's progress. Founded in colonial Brazil, it is the oldest scientific institution in the country. In 1946, the Museu Nacional became part of the Federal University of Rio de Janeiro (UFRJ), acting directly on the university's three pillars: research, education and extension activities. Furthermore, as a Natural History Museum, development and maintenance of collections are central activities of the museum staff and intrinsic to the museum's mission (Duarte, 2019; Serejo, 2020).

In 2015, the Museu Nacional joined the Brazilian Biodiversity Information System (SiBBR) where part of the biological collection data was made freely available for general consultation (SiBBR, 2023). The Crustacea Collection can be accessed through this system, with nearly 24,000 records available online. Efforts to optimize the data flow of the Museu Nacional collections to the SiBBR platform is in progress, together with implementation of the Specify collection manager program (Specify, 2023) that will permit the exportation of data automatically in the "Darwin core" format (C.S. Serejo, pers. observation).

Unfortunately, in the year of its 200th birthday (2018) the Museum suffered a huge and tragic fire. Nearly 80% of its collections were either affected or destroyed (Zamudio et al. 2018; Serejo, 2020). In this disaster, the Carcinology Sector (administration and offices) was also destroyed, together with all the literature and part of the collection that was in the São Cristóvão palace for active studies. On the other hand, entire invertebrate collections that were housed in a different building were saved, as was the case for most of the Crustacea Collection.

The Crustacea Collection of the Museu Nacional, Rio de Janeiro (MNRJ) is one of the most relevant and representative of the Brazilian crustacean fauna. To date, it comprises around 31,000 registered lots, of which 5,435 lots belong to the order Isopoda, surpassed only by the order Amphipoda, with 8,317 lots and Decapoda, with 8,703 lots.

The first Crustacea lots registered in the Museu Nacional were the ones collected in the beginning

of the 20th century by Carlos Moreira (Fig. 1A), a researcher from the former Zoology Section (Moreira, 1901). Only in 1945, with the addition of Alceu Lemos de Castro (Fig. 1B) to the museum staff, was the Carcinology Section formally established. Alceu Lemos de Castro (1920–1988) was an isopod specialist and a prominent researcher in the museum with wide influence in the national and international scientific community (Gomes Corrêa et al., 1988). During his time at the museum, Alceu guided several students and was also mentor of the other three researchers who joined the Carcinology Sector in subsequent years: Idalina Maria Brasil-Lima, who was an Isopoda specialist and collaborated directly with Lemos de Castro in describing most of the species treated in the present catalog (Fig. 1C); Ivanilce da Silva Brum, who was a Tanaidacea and Cumacea specialist; and Maria Margarida Corrêa, who worked mainly with Decapoda. In 1998, Paulo Secchin Young (1960–2004) joined the staff of Museu Nacional and took over the curatorship of the Crustacea Collection (Fig. 1D). Paulo was a specialist in the subclass Cirripedia, but was also interested in collecting and promoting taxonomic studies of non-decapod groups, which included the description of *Bathynomus obtusus* Magalhães and Young, 2003. As a very influential and active researcher, Paulo invested heavily in the growth, modernization, and first actions to the digitization of the Crustacea Collection. By that time (1995–2003), the collection was databased in the Program Harpia, developed through a partnership of the museum and the Núcleo de Computação Eletrônica da Universidade Federal do Rio de Janeiro (NCE/UFRJ). Unfortunately, Professor Paulo Young died on the 31st of May, 2004 in a tragic car accident (Serejo and Paiva, 2006), leaving a huge legacy for the Brazilian carcinology.

Presently, the Crustacea collection of the Museu Nacional has two active curators: Cristiana S. Serejo (Crustacea, except Decapoda), and Irene A. Cardoso (Decapoda).

The Order Isopoda encompasses around 10,500 species across the planet and can be found in all ecosystems, from the deepest oceans to montane terrestrial habitats, as well as deep underground in caves or aquifers (Boyko et al., 2023). Isopods play an important role in the decomposition of organic



Figure 1. Former carcinologists from Museu Nacional/UFRJ. **A**, Prof. Carlos Moreira (1869–1946); **B**, Prof. Alceu Lemos de Castro (1920–1988); **C**, Prof. Idalina Maria Brasil-Lima; **D**, Prof. Paulo Secchin Young (1960–2004). Photos scanned by Jorge Dias da Silva Jr. (SEMEAR).

matter and therefore make a significant contribution to nutrient cycling, and benthos and soil ecosystem services. Many species parasitize fishes of economic value and can be pests for the fishery industry. In Brazil, there are 423 isopod species, distributed in 6 suborders, registered in the Taxonomic Catalog of the Brazilian Fauna (CTFB) (Araújo and Campos-Filho, 2024; Bezerra, 2024; Fernandes, 2024).

This paper provides an illustrated catalog of two topotypes and 32 type species of marine isopods deposited in the Crustacea Collection of Museu Nacional/UFRJ and fulfills ICZN Recommendation 72F, which states that all museums holding type specimens have the responsibility of preserving and making type information accessible for study (ICZN, 1999).

Furthermore, this catalog is part of a wider project that is digitizing the types of all biological collections of the Museu Nacional, together with the implementation of the Specify collection management program (Specify, 2023). Most Natural History Museums are digitizing their collections as a strategic step in the democratization of collections-based research, and it is essential to establishing and evaluating biological baselines in order to assess the impacts of climate change, land-use changes, species invasions, and the current mass extinction (Hedrick et al., 2020).

The two species of topotypes and 34 species bearing type material deposited in the Crustacea collection of Museu Nacional/UFRJ are presented following the classification of suborders in alphabetical order with their original names. Current classification and state of conservation of the specimens are also provided.

MATERIALS AND METHODS

The type collection of the Museu Nacional/UFRJ is lodged on separate shelves, organized in alphabetic order

by genus and marked with red tape. All specimens are stored in jars filled with 70% alcohol and separated into vials to preserve and prevent losing the specimens (Fig. 2A). Considering that it is an old collection, labels can be handwritten with nankin pen or printed on an inkjet printer (Fig. 2B, C). The collection acronym is MNRJ. The type specimens were inventoried and checked using the Crustacea Collection database, which is in Excel® format. Some storage and labeling issues were detected and corrected by exchanging vials and labels. In addition, poorly preserved labels were replaced, and empty vials got alcohol replacement. Photographs were taken by the junior author with a Zeiss® Discovery V20 and Zeiss Smartzoom 5 stereoscope microscope for smaller specimens. For larger material (*Bathynomus* A. Milne-Edwards, 1879 and *Dolichiscus* Richardson, 1913), a camera Canon 6D Mark II with support of Helicon remote and Helicon focus software was used, and photos were post-produced with Adobe Photoshop CS6 program.

The most up to date classification was checked in the World Marine, Freshwater and Terrestrial Isopod Crustaceans database (Boyko et al., 2023).

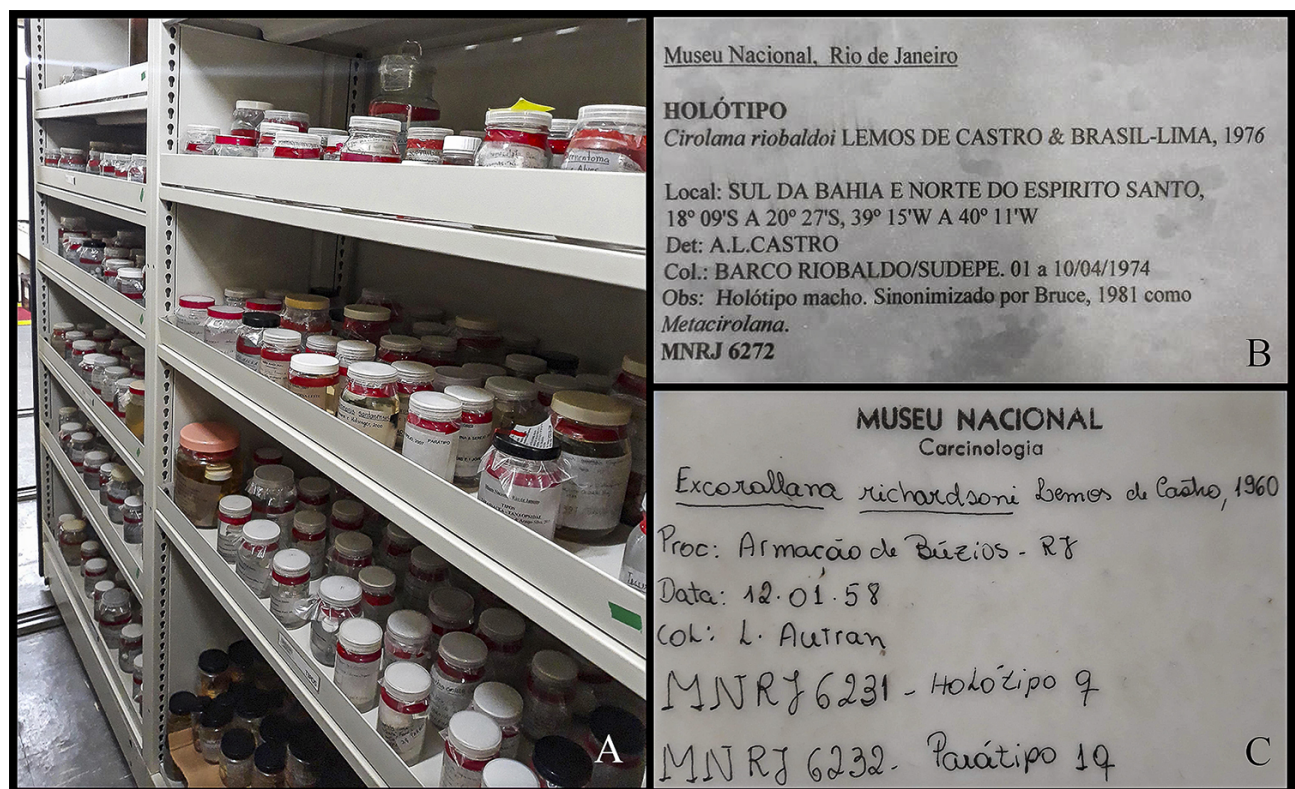


Figure 2. A, Museu Nacional, Crustacea Collection: type material in jars marked with red tape; B, inkjet printed label; C, nankin hand-written label.

The acronyms of scientific institutions and collections other than the MNRJ can be found in Tab. 1, and the abbreviation of Brazilian states can be found in

Tab. 2. Table 3 has a compilation of all Isopoda type material of the MNRJ, including information on their condition and additional collection data.

Table 1. Acronyms of scientific institutions and collections.

Collections and Institutions	Acronyms
Instituto Oceanográfico, Universidade de São Paulo	IOUSP
Museu Nacional, Universidade Federal do Rio de Janeiro	MNRJ
Museu de Zoologia, Universidade de São Paulo	MZUSP
Museu de Oceanografia Prof. Petrônio Alves Coelho, Universidade Federal de Pernambuco	MOUFPE
National Museum of Natural History, Smithsonian Institution, USA	USNM
Swedish Museum of Natural History, Sweden	SMNH
Universidade Santa Úrsula	USU

Table 2. Abbreviations of Brazilian states.

Brazilian States	Abbreviations
Alagoas	AL
Amapá	AP
Bahia	BA
Ceará	CE
Espírito Santo	ES
Maranhão	MA
Pará	PA
Paraíba	PB
Pernambuco	PE
Piauí	PI
Rio de Janeiro	RJ
Rio Grande do Norte	RN
Rio Grande do Sul	RS
São Paulo	SP

Table 3. List of 36 marine isopod species (current classification) with topotype or type material deposited in the Crustacea Collection of Museu Nacional, Universidade Federal do Rio de Janeiro (UFRJ). Type status and condition, information on project, vessel, collectors, and date of collection are given when available. Type status: A, allotype; H, holotype; P, paratype; T, topotype.

Taxon	Type status	Type condition	Project/Vessel/Collector/Dates
Suborder Asellota Latreille, 1802			
Superfamily Janiroidea G. O. Sars, 1897			
Family Ischnomesidae Hansen, 1916			
<i>Gracilimesus campensis</i> Santos-Silva and Souza-Filho, 2019	H, P	good	OCEANPROF I and II/N/RB “AstroGaroupa” coll., 2002–2003; Espírito Santos Basin/R/V “Gyre” coll., 2006–2007; Alagoas-Sergipe -Marseal/R/V “Seward Johnson” coll., 2013
<i>Ischnomesus wilsoni</i> Santos-Silva and Souza-Filho, 2017a	P	good	OCEANPROF I/RB “AstroGaroupa” coll. 2002; Espírito Santos Basin/R/V “Gyre” coll., 2006–2007
Family Janiridae G. O. Sars, 1897			
<i>Carpas nereus</i> (Pires, 1982)	P	good	A.M. Pires and S.A. Vanin coll., April 1975
<i>Janaira gracilis</i> Moreira and Pires, 1977	T	good	From experiments/1972
Suborder Cymothoida Wagele, 1989			
Superfamily Anthuroidea Leach, 1814			
Family Paranthuridae Menzies and Glynn, 1968			

Table 3. Cont.

Taxon	Type status	Type condition	Project/Vessel/Collector/Dates
<i>Paranthura urochroma</i> Pires, 1981	T	good	A.M. Pires and S.A. Vanin coll., April 1975
Superfamily Cymothooidea Leach, 1814			
Family Aegidae White, 1850			
<i>Rocinela patriciae</i> Brasi1-Lima, 1986	A, H, P	good	GEDIP/R/V “Prof. W. Besnard” coll. 1968–1974 and GEOMAR (UFRJ)
<i>Rocinela tropica</i> Brasi1-Lima, 1986	H, P	good	GEDIP/R/V “Prof. W. Besnard” coll. 1968–1974 and GEOMAR (UFRJ)
Family Cirolanidae Dana, 1852			
<i>Bathynomus miyarei</i> Lemos de Castro, 1978	H, P	good	Boat “Jerônimo”/Programa de Pesquisas em Desenvolvimento Pesqueiro do Brasil (SUDEPE) coll.
<i>Bathynomus obtusus</i> Magalhães and Young, 2003	H, P	good	REVIZEE Central/traps/2000
<i>Cirolana lemoscastroi</i> Paiva and Souza-Filho 2014	P	good	SUDEPE #52, 18°24’S – 39°12’W, Vessel Riobaldo col., 10 April 1974; Santa Cruz, Espírito Santo, 22/07/1979; REVIZEE Central/Benthos, N/RB. Astro Garoupa col. 07/07/2021;
<i>Dolicholana ivanyae</i> Paiva and Souza-Filho, 2023	H, P	good	REVIZEE Sul (23°55’40”S, 42°47’60”W), 508 m, 15/02/1998; REVIZEE Central (15°49’58.8”S 38°35’27.6”W), 250 m, 16/02/1998
<i>Metacirolana riobaldoi</i> (Lemos de Castro and Brasil-Lima, 1976a)	H	bad	Boat “Riobaldo”/Programa de Pesquisas em Desenvolvimento Pesqueiro do Brasil (SUDEPE) coll.
Family Corallanidae Hansen, 1890			
<i>Excorallana angusta</i> Lemos de Castro 1960	H	good	Paulo de Miranda Ribeiro coll., January 1944
<i>Excorallana bicornis</i> Lemos de Castro and Brasil-Lima, 1971	A, H, P	good	N/Oc. “Almirante Saldanha” coll.
<i>Excorallana costata</i> Lemos de Castro, 1960	A, H, P	good	Leo Soares coll., September 1952
<i>Excorallana longicornis</i> Lemos de Castro, 1960	A, H, P	good	Lemos de Castro, Arnaldo Coelho and Francisco Sampaio coll., January 1959
<i>Excorallana richardsoni</i> Lemos de Castro, 1960	H, P	good	Eny Autran col., January 1958
<i>Excorallana stebbingi</i> Lemos de Castro and Brasil-Lima, 1976	H, P	good	C.S. Ferreira and O. Fontoura coll., 1958
Family Gnathiidae Leach, 1814			
<i>Gnathia andrei</i> Pires, 1996	P	good	R/V “Prof. W. Besnard” coll., July 1987
<i>Gnathia ricardoi</i> Pires, 1996	P	good	R/V “Prof. W. Besnard” coll., December 1988
<i>Gnathia ubatuba</i> Pires, 1996	P	good	R/V “Prof. W. Besnard” coll., December 1985
Suborder Microcerberidea Lang, 1961			
Family Microcerberidae Karaman, 1933			
<i>Robustura brasiliensis</i> (Albuquerque, 1978)	H	good	Elaine Albuquerque coll., 1976–1977
<i>Robustura magnus</i> (Albuquerque, 1978)	H	good	Elaine Albuquerque coll., 1976–1977
<i>Robustura parvula</i> (Albuquerque, 1978)	H	holotype lost	Elaine Albuquerque coll., 1976–1977
<i>Robustura ramosae</i> (Albuquerque, 1978)	H	good	Elaine Albuquerque coll., 1976–1977
Suborder Epicaridea Latreille, 1825			
Superfamily Bopyroidea Rafinesque, 1815			
Family Bopyridae Rafinesque, 1815			
Subfamily Athelginae Codreanu and Codreanu, 1956			
<i>Pseudostegias atlantica</i> Lemos de Castro, 1965	A, H	allotype lost	Antenor Leitão de Carvalho coll., 1948; Margarida Ferrari coll., 1959
Subfamily Bopyrinae Rafinesque, 1815			
<i>Probopyrus palaemoni</i> Lemos de Castro and Brasil-Lima, 1974	A, H, P	good	MZUSP leg.

Table 3. Cont.

Taxon	Type status	Type condition	Project/Vessel/Collector/Dates
Subfamily Keponinae Boyko, Moss, Williams and Shields, 2013			
<i>Castrione longicaudata</i> Brasil-Lima, 1980	A, H, P	good	Sergio Rodrigues and Petrónio Coelho leg., November 1967
<i>Hemicepon muelleri</i> Lemos de Castro and Brasil-Lima, 1980	A, H	good	Lemos de Castro coll., February 1959
Subfamily Pseudioninae Codreanu, 1967			
<i>Pleurocrypta meridionalis</i> Lemos de Castro and Brasil-Lima, 1975	A, H	holotype bad condition	Zoology Department/UFRJ leg., January 1966
<i>Pseudione serejoae</i> Brito, Cardoso and Boyko, 2018	A, H, P	lost (all type material)	OCEANPROF I and II/R/V "AstroGaroupa" coll. 2002–2003; HABITATS/R/V Gyre coll., 2008–2009
<i>Upogebione tropica</i> (Lemos de Castro and Brasil-Lima, 1975)	A, H, P	good	Lemos de Castro coll., February 1964
Superfamily Cryptoniscoidea Kossmann, 1880			
Family Cabiropidae Giard and Bonnier, 1887			
<i>Cabirops lobiformis</i> Lemos de Castro, 1970	A, H, P	allotype lost	Gustavo Melo leg.
<i>Cabirops pseudioni</i> Lemos de Castro, 1970	A, H, P	allotype lost	Lemos de Castro, José Fausto Filho and Clementino Câmara Neto coll., January 1964
Suborder Sphaeromatidea Wägele, 1989			
Superfamily Sphaeromatoidea Latreille, 1825			
Family Ancinidae Dana, 1852			
<i>Ancinus brasiliensis</i> Lemos de Castro, 1959	A, H	good	Lemos de Castro coll., January 1959
Suborder Valvifera Sars, 1883			
Family Austrarcturellidae Poore and Bardsley, 1992			
<i>Dolichiscus ferrazi</i> Pires and Sumida, 1997	P	good	PROANTAR IV/ R/V "Prof. W. Besnard" coll., January 1983

RESULTS

Represented by 100 lots, the marine isopod type collection at Museu Nacional includes 36 species distributed in 22 genera, 12 families, and six suborders (Tab. 3). This collection is represented by two lots of topotypes, 27 lots of holotypes, and 81 of paratypes (15 named as allotypes), published mainly by Alceu Lemos de Castro and Idalina Brasil-Lima (Fig. 1B, C). Together they described 19 of the 36 species cataloged herein. In general, the type materials are in good condition; however, the holotype of *Robustura parvula* (Albuquerque, 1978) and all type material of *Pseudione serejoae* Brito, Cardoso and Boyko, 2018 have been lost (Tab. 3) and need the designation of neotypes. The families with major representation described by Lemos de Castro and Brasil-Lima are Bopyridae and Corallanidae, both represented by six species. Other important collaborators were Ana Maria Pires (Instituto Oceanográfico-USP), who

described species of Gnathiidae (3 spp.), Janiridae (2 spp.) and Paranthuridae (1 sp.) (Pires 1982; 1996; Moreira and Pires, 1977), Elaine Albuquerque (Universidade Santa Úrsula), who described four species of Microcerberidae (Albuquerque, 1978). Lemos de Castro passed away in 1988 (Gômes-Correa et al., 1988) and since the retirement of Brasil-Lima in 1997, another seven species have been deposited as marine isopod types in the Crustacea Collection of Museu Nacional: *Dolichiscus ferrazi* Pires and Sumida, 1997; *Bathynomus obtusus* Magalhães and Young, 2003; *Cirolana lemoscastroi* Paiva and Souza-Filho, 2014; *Ischnomesus wilsoni* Santos-Silva and Souza-Filho, 2017a; *Pseudione serejoae* Brito, Cardoso and Boyko, 2018; *Gracilimesus campensis* Santos-Silva and Souza-Filho, 2019 and *Dolicholana ivanyae* Paiva and Souza-Filho, 2023.

During the handling of the collection, we noticed four empty vials and three damaged specimens (Tab. 3). It is important to emphasize that we are

establishing best practice curatorial procedures in the collection to prevent future specimen damage.

TYPE CATALOGUE

Order Isopoda Latreille, 1816

Suborder Asellota Latreille, 1802

Superfamily Janiroidea G. O. Sars, 1897

Family Ischnomesidae Hansen, 1916

Genus *Gracilimesus* Kavanagh and Wilson, 2007

Gracilimesus campensis Santos-Silva
and Souza-Filho, 2019
(Fig. 3A)

Gracilimesus campensis Santos-Silva and Souza-Filho, 2019: 131, figs. 2–8.

Type material. Holotype: adult male, 3 mm, MNRJ 20960. Paratypes: adult female, 3.3 mm, MNRJ 20945; adult male, MOUFPE 16076; 2 manca, 2 adult females, MNRJ 18727; 1 manca, MNRJ 20955; 1 male, MNRJ 20953; 1 female, MNRJ 20959; 1 female, MNRJ 20956; 1 female, MNRJ 20947; 1 female, MNRJ 20949; 1 female, MNRJ 20944; 1 female, MNRJ 20958; 1 manca, MNRJ 20950; 1 male, 1 female, 1 manca, MNRJ 20954; 1 female, MNRJ 20952; 1 female, MNRJ 20961; 1 female, MNRJ 20951; 1 female, MNRJ 18697; 1 female, MNRJ 20943; 2 manca, MNRJ 20946; 1 male, 1 manca, MNRJ 20957; 1 female, MNRJ 18956; 1 manca, MNRJ 18961; 1 manca, MNRJ 18722;

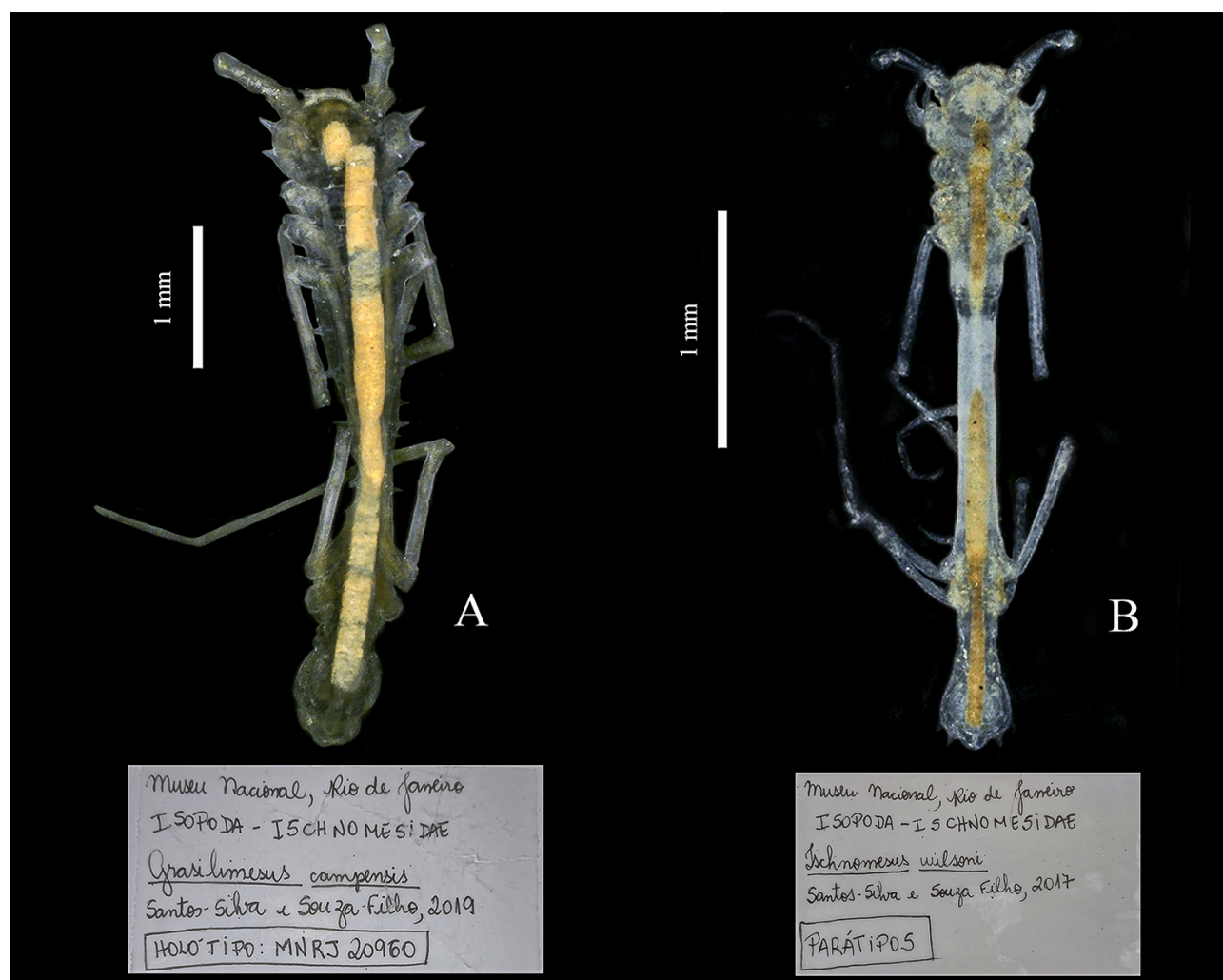


Figure 3. *Gracilimesus campensis* Santos-Silva and Souza-Filho, 2019: **A**, holotype, male, 3 mm, MNRJ 20960. *Ischnomesus wilsoni* Santos-Silva and Souza-Filho, 2017a: **B**, paratype, manca, 2.2 mm, MNRJ 20856.

1 female, MOUFPE 16073; 1 female, MOUFPE 16074; 1 female, MOUFPE 16075; 1 fragment, MOUFPE 16077.

Type locality. Oceanprof II – BC Sul, OPII #84 (22°26'28.8"S 39°58'53.3"W), off RJ, Campos Basin, Brazil.

Geographic distribution. Brazil, Alagoas-Sergipe Basin (AL-SE) (12°21'24"S 35°53'37.7"W – 11°42'50.5"S 37°07'07.5"W), Espírito Santo Basin, ES (19°32'38.7"S 37°07'07.5"W – 19°54'31"S 39°36'56.8"W), Campos Basin, RJ (22°11'00"S 39°52'00"W – 22°33'00"S 39°54'00"W).

Habitat. Marine, deep-sea benthic, found between 400–1,950 m depth.

Current systematic position. *Gracilimesus campensis* Santos-Silva and Souza-Filho, 2019.

Genus *Ischnomesus* Richardson, 1908

***Ischnomesus wilsoni* Santos-Silva and Souza-Filho, 2017a** (Fig. 3B)

Ischnomesus wilsoni Santos-Silva and Souza-Filho, 2017a: 270, figs. 12–15.

Type material. Holotype: adult female, 15 mm, MOUFPE 15535. Paratypes: 1 adult female, MOUFPE 15536; 1 manca, MOUFPE 15540; 1 adult female, MOUFPE 15541; 1 manca, MNRJ 20854; 1 manca, MNRJ 20856.

Type locality. Station Ext3 Lead2 #1 (19°54'31.1"S 39°36'56.8"W), Espírito Santo Basin, ES, Brazil, 750 m.

Geographic distribution. Brazil, off ES, Espírito Santo Basin, (19°54'36.98"S 39°36'54.8"W – 19°54'41.8"S 39°36'75.62"W); Campos Basin, off RJ, (22°03'69.4"S 39°52'40.2"W – 22°20'67.1"S 40°00'58.5"W) (Santos-Silva and Souza-Filho, 2017a).

Habitat. Benthic, upper slope between 750–1,050 m depth (Santos-Silva and Souza-Filho, 2017a).

Current systematic position. *Ischnomesus wilsoni* Santos-Silva and Souza-Filho, 2017a.

Remarks. This species was named in honor of Dr. George (Buz) Wilson (Saugatuck Natural History Laboratory), a great friend and world-recognized isopod specialist who came to Brazil in 2006 to study the project OCEANPROF Asellota collection. At the time, Dr. Wilson analyzed the material and indicated the presence of several putative new species.

Family Janiridae G. O. Sars, 1897

Genus *Bagatus* Nobili, 1906

***Bagatus nereus* Pires, 1982** (Fig. 4A)

Bagatus nereus Pires, 1982: 254, figs. 85–105.

Carpas nereus — Bowman and Morris, 1979: 650.
— Pires-Vanin, 1998: 607.

Type material. Holotype: male, 2.5 mm, MZUSP 4561. Paratypes: 2 males, 1 female, 1 juvenile, MNRJ 6277; 6 male, 5 female, 11 juveniles, MZUSP; 2 males, 1 female, USNM; 3 males, 1 female, IOUSP (Pires, 1982).

Type locality. Flamengo Inlet (23°30'46.8"S 45°06'36.6"W), Ubatuba, SP, Brazil.

Geographic distribution. Brazil (RJ, SP) (Pires, 1982; Pires-Vanin, 1998).

Habitat. Found in shallow water among algae, mussel beds and under stones (Pires, 1982; Pires-Vanin, 1998).

Current systematic position. *Carpas nereus* (Pires, 1982).

Remarks. Currently, the genus *Bagatus* is considered a junior synonym of *Carpas* Richardson, 1902 (Bowman and Morris, 1979; Boyko et al., 2023). The paratypes deposited at Museu Nacional from Praia do Forte, Cabo Frio, RJ, are registered as the voucher number MNRJ 6277. Pires (1982) included

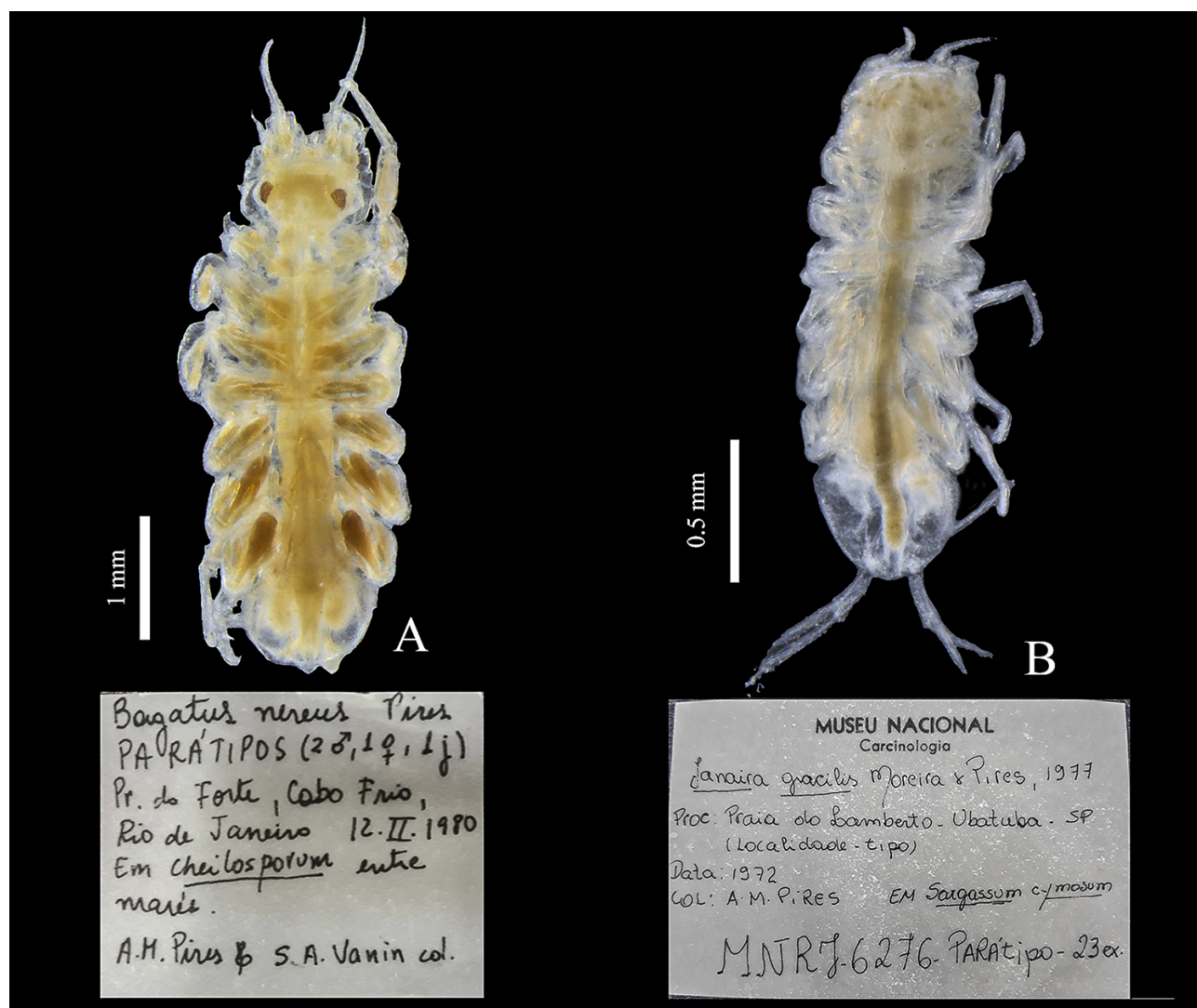


Figure 4. *Carpias nereus* (Pires, 1982): A, paratype, male, 2.5 mm, MNRJ 6277. *Janaira gracilis* Moreira and Pires, 1977: B, paratype, male, 2.8 mm, MNRJ 6276.

this material as a paratype but did not give a voucher number.

Genus *Janaira* Moreira and Pires, 1977

Janaira gracilis Moreira and Pires, 1977 (Fig. 4B)

Janaira gracilis Moreira and Pires, 1977: 25, figs. 1–19.
— Pires, 1995: 305. — Pires-Vanin, 1998: 607.

Type material. Holotype: male, 2.6 mm, IOUSP. Paratypes, 8 males, 8 females, IOUSP; 3 males and 3 females deposited in the Zoological Museum, University of Copenhagen, Denmark.

Topotype material: 23 specimens, Lamberto Beach (23°29'45.8"S 45°06'41.5"W), Ubatuba, SP, Brazil, AM Pires col. January, 1972, MNRJ 6276.

Type locality. Lamberto Beach (23°29'45.8"S 45°06'41.5"W), Ubatuba, SP, Brazil. Shallow sublittoral, 0.5–1 m depth, in large growth of the algae *Sargassum cymosum* C. Agardh alongside the pier of the North Base, Instituto Oceanográfico, USP.

Geographic distribution. Caribbean Sea (Colombia); Brazil (PE, SP) (Moreira and Pires, 1977; Pires-Vanin, 1998; Craveiro and Alves, 2021).

Habitat. Found in shallow water on sandy bottoms, among algae, and on the sea star *Echinaster brasiliensis* Müller and Troschel, 1842 (Pires, 1995; Pires-Vanin, 1998).

Current systematic position. *Janaira gracilis* Moreira and Pires, 1977.

Remarks. The material of *J. gracilis* deposited at Museu Nacional as voucher number MNRJ 6276 is actually a topotype. It came from the same collection event as the holotype in Lamberto Beach, Ubatuba, SP, collected by Pires in January 1972. At some point in the past, Pires sent this material to be deposited at the MNRJ as a paratype; unfortunately, she did not include this information within the article (Moreira and Pires, 1977), so this material remains a topotype.

Suborder Cymothoida Wagele, 1989

Superfamily Anthuroidea Leach, 1814

Family Paranthuridae Menzies and Glynn, 1968

Genus *Paranthura* Bate and Westwood, 1866

Paranthura urochroma Pires, 1981 (Fig. 5)

Paranthura urochroma Pires, 1981: 213, figs. 1–15.
— Pires-Vanin, 1998: 606. — Serejo et al., 2022: 96, fig. 1.

Type material. Holotype: male, 7.2 mm, MZUSP. Paratypes: 4 specimens, MZUSP; 4 specimens, SMNH; 4 specimens, USNM.

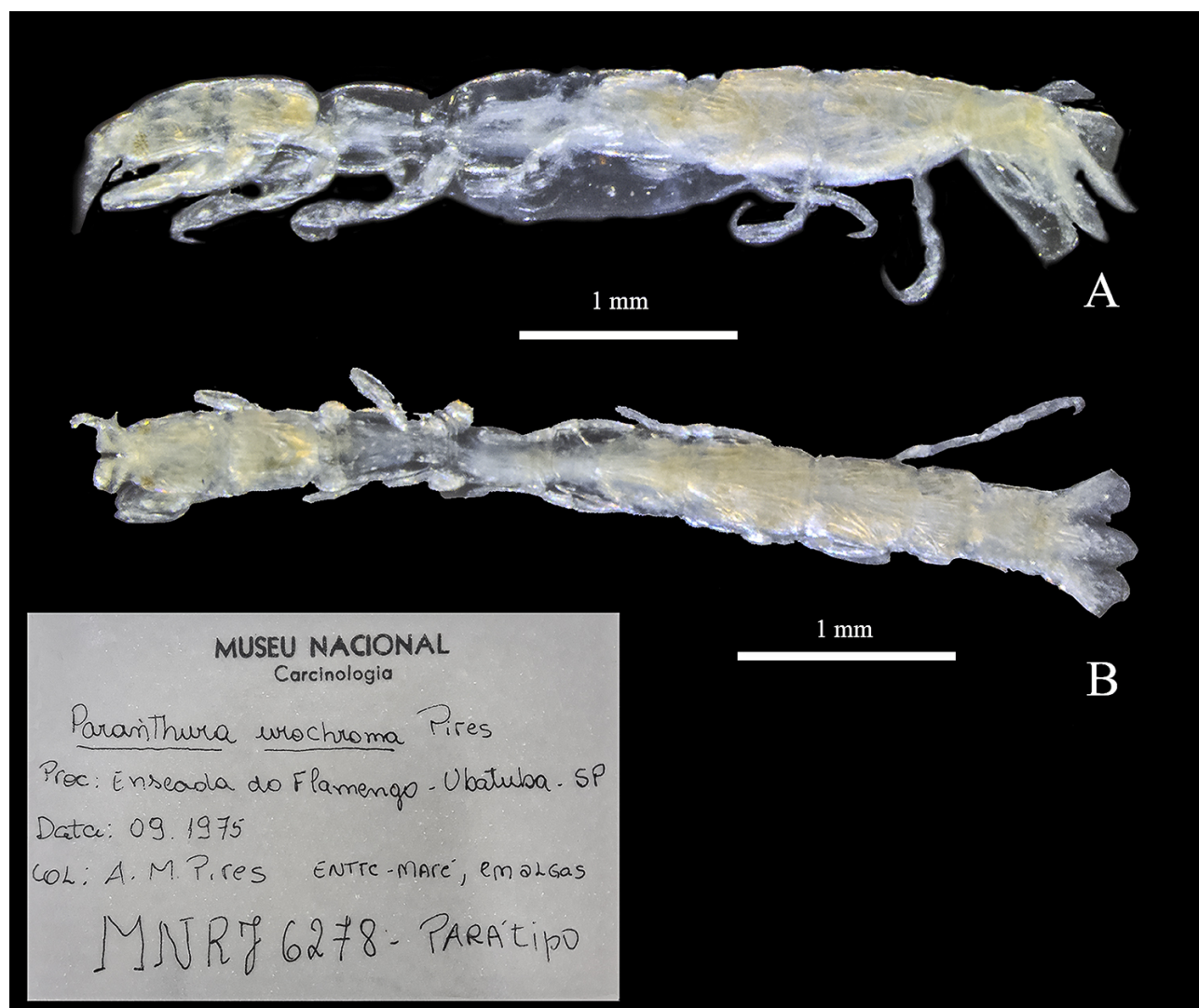


Figure 5. *Paranthura urochroma* Pires, 1981, paratype, female, 6.9 mm, MNRJ 6278: **A**, lateral view; **B**, dorsal view.

Topotype material: 1 specimen, Enseada do Flamengo, Ubatuba, SP, collected by AM Pires, September 1975, MNRJ 6278.

Type locality. Enseada do Flamengo, Ubatuba, SP, Brazil.

Geographic distribution. Brazil: Ubatuba, Santos, Itanhaém (SP), Arraial do Cabo (RJ) (Pires, 1981) and Macaé (RJ) (Serejo et al., 2022).

Habitat. Intertidal and shallow sublittoral. Found among macroalgae (Pires, 1981; Pires-Vanin, 1998; Serejo et al., 2022).

Current systematic position. *Paranthura urochroma* Pires, 1981.

Remarks. The material of *Paranthura urochroma* deposited at Museu Nacional as voucher number MNRJ 6278 is actually a topotype. It came from the same collection event as the holotype at Enseada do Flamengo, Ubatuba, SP collected by Pires in September 1975. At some point in the past, Pires sent this material to be deposited at the MNRJ as a paratype; unfortunately she did not include this information within the article (Pires, 1981), so this material remains a topotype.

Superfamily Cymothooidea Leach, 1814

Family Aegidae White, 1850

Genus *Rocinela* Leach, 1818

***Rocinela patriciae* Brasil-Lima, 1986**

(Fig. 6)

Rocinela patriciae Brasil-Lima, 1986: 11, figs. 1–10.
— Brasil-Lima, 1998: 633.

Type material. Holotype: female, 18 mm, MNRJ 6282. Allotype: male, MNRJ 6283. Paratypes: 1 female, 2 juvenile, MNRJ 6284.

Type locality. GEDIP Expedition, Est. 1758, RS, Brazil.

Geographic distribution. Brazil (RS) (Brasil-Lima, 1986; 1998).

Habitat. According to Bruce (2009), *Rocinela* species should be considered micro-predators rather than parasites. Parasites are widely regarded as having some manner of perceived deleterious or harmful effect on the host. Aegids do not fulfill these criteria, and while attacking and feeding on their prey they rarely form a permanent association with their 'host', but instead detach following their feed.

Current systematic position. *Rocinela patriciae* Brasil-Lima, 1986

Remarks. Holotype (MNRJ 6282), in poor condition.

***Rocinela tropica* Brasil-Lima, 1986**

(Fig. 7)

Rocinela tropica Brasil-Lima, 1986: 12, figs. 11–23.
— Brasil-Lima, 1998: 633.

Type material. Holotype: female, 9 mm, MNRJ 6280. Paratype: 1 female, MNRJ 6281.

Type locality. GEOMAR X Expedition, Vitória (18°38'S 39°34'W), ES, Brazil.

Geographic distribution. Brazil (BA, ES) (Brasil-Lima, 1986; 1998).

Habitat. As for *Rocinela patriciae*.

Current systematic position. *Rocinela tropica* Brasil-Lima, 1986.

Remarks. Male unknown.

Family Cirolanidae Dana, 1852

Genus *Bathynomus* A. Milne-Edwards, 1879

***Bathynomus miyarei* Lemos de Castro, 1978**

(Fig. 8)

Bathynomus miyarei Lemos de Castro, 1978: 37, figs. 1–19. — Pires-Vanin, 1998: 608. — Loyola e Silva, 1999: 204, 209–211, fig. 3. — Magalhães and Young, 2003: 329, figs. 6–10.

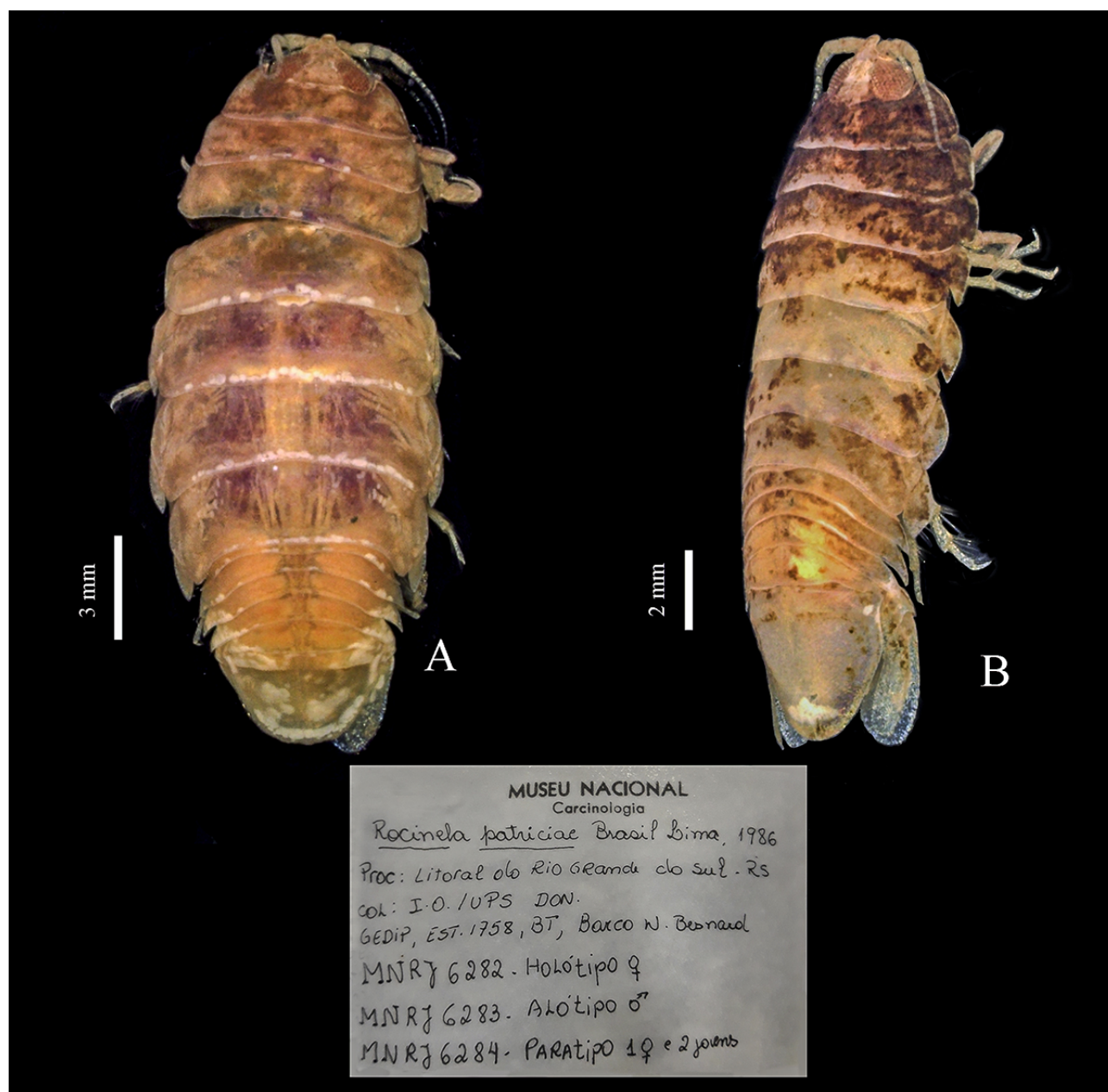


Figure 6. *Rocinela patriciae* Brasil-Lima, 1986: **A**, holotype, female, 20 mm, MNRJ 6282; **B**, allotype, male, 17 mm, MNRJ 6283.

Type material. Holotype: male, 23 cm, MNRJ 6444. Paratypes: MNRJ 6445; 1 specimen, MNRJ 13385; 1 specimen, MNRJ 13386.

Type locality. North coast of RS, Brazil, 280 m.

Geographic distribution. Brazil (PI, CE, RN, BA, ES, RJ, RS) (Lemos de Castro, 1978; Pires-Vanin, 1998; Magalhães and Young, 2003).

Habitat. Found between 22–800 m depth (Lemos de Castro, 1978; Pires-Vanin, 1998; Magalhães and Young, 2003).

Current systematic position. *Bathynomus miyarei* Lemos de Castro, 1978.

Remarks. Species was originally described based on material from RS (type locality), Acaraú, CE (80 m) and RN (22 m). The northeastern samples (from CE and RN) were collected from shallow water using lobster traps (Lemos de Castro, 1978). Magalhães and Young (2003) examined material from the REVIZEE Central project and extended the distribution of *B. miyarei* to the southeastern Brazilian coast, with a depth range from the outer continental shelf to the slope (230–800 m).

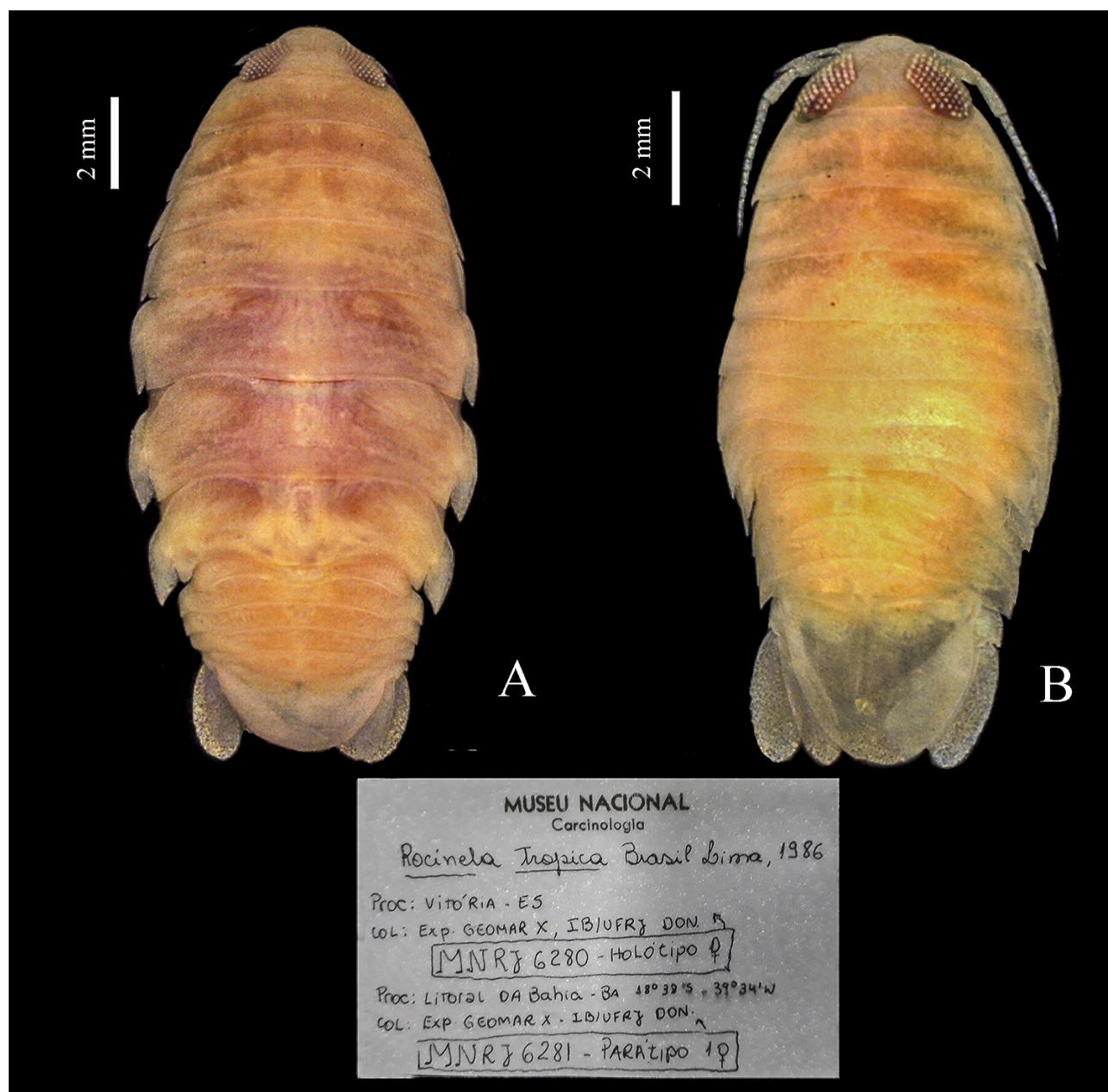


Figure 7. *Rocinela tropica* Brasil-Lima, 1986: **A**, holotype, female, 17 mm, MNRJ 6280; **B**, paratype, female, 14.5 mm, MNRJ 6281.

***Bathynomus obtusus* Magalhães and Young, 2003**
(Fig. 9)

Bathynomus obtusus Magalhães and Young, 2003:
234, figs. 11–14.

Type material. Holotype: male, 10 cm, MNRJ 15810. Paratypes: 1 male, MNRJ 15534; 1 male, MNRJ 15535; 1 manca, MNRJ 15536; 64 females, 73 males, 169 juveniles, MNRJ 16088; 2 females, 1 juvenile, MNRJ 16342.

Type locality. REVIZEE Central/Pesca Covos, #IV, ES, off Anchieta (20°57.5'S 40°07'8W).

Geographic distribution. Brazil: (BA, ES) (Magalhães and Young, 2003).

Habitat. Found between 232–840 m depth (Magalhães and Young, 2003).

Current systematic position. *Bathynomus obtusus* Magalhães and Young, 2003.

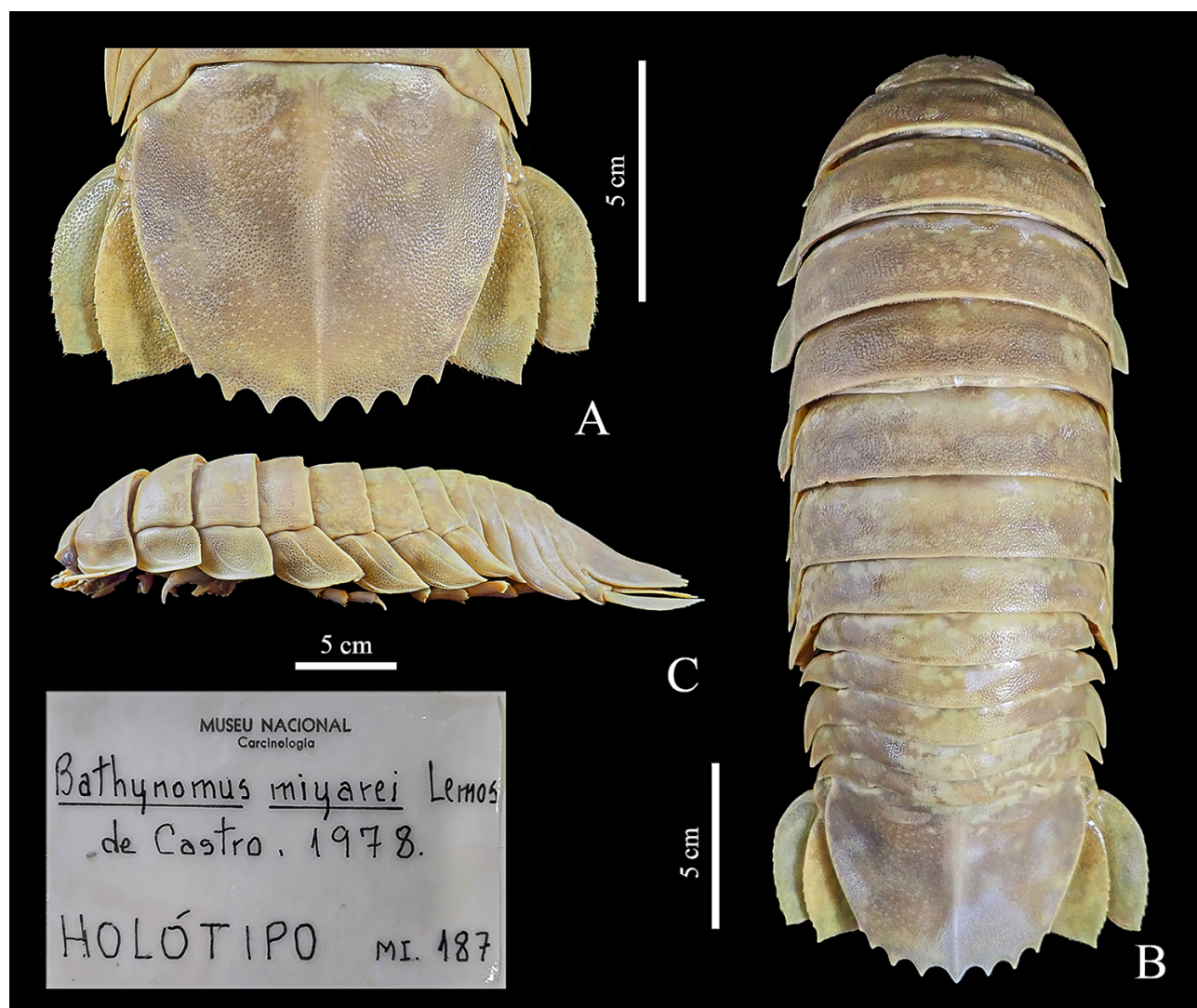


Figure 8. *Bathynomus miyarei* Lemos de Castro, 1978, holotype, male, 28 cm, MNRJ 6444: **A**, pleotelson, dorsal view; **B**, habitus, dorsal view; **C**, habitus, lateral view.

Genus *Cirolana* Leach, 1818

Cirolana lemoscastroi Paiva and Souza-Filho, 2014

Cirolana palifrons — Lemos de Castro and Brasil-Lima, 1976a: 77, figs. 1–14. — Pires-Vanin, 1998: 609 (not *Cirolana palifrons* Barnard, 1920).

Cirolana parva — Koenig, 1972: 240 (partim; not *Cirolana parva* Hansen, 1890)

Cirolana lemoscastroi Paiva and Souza-Filho, 2014: 92, figs. 1–5. — Paiva and Souza-Filho, 2015: 277 (table).

Type material. Holotype, female, 5.1 mm, MOUFPE 14956. 1 male, 6 mm, MNRJ 6439

(previously identified as *C. palifrons* by Lemos de Castro and Lima, 1976a). 7 males, 8 females and 5 manca, MNRJ 17456 and (previously identified as *Cirolana parva* by Koenig, 1972). 1 male and 1 female, MNRJ 3714 (previously identified as *Cirolana parva*).

Type locality. BPOT IV 37, dredge, 4°57'48"S – 36°44'15"W, off Potiguar Basin, Rio Grande do Norte.

Geographic distribution. Brazil (RN, Potiguar Basin, PB, PE, AL, SE, BA, ES) (Paiva and Souza-Filho, 2014; 2015).

Habitat. Found between 10 to 60 m depth (Paiva and Souza-Filho, 2014).



Figure 9. *Bathynomus obtusus* Magalhães and Young, 2003, male, holotype, 10 cm, MNRJ 15810: A, pleotelson, dorsal view; B, habitus, dorsal view; C, habitus, lateral view.

Current systematic position. *Cirolana lemoscastroi* Paiva and Souza-Filho, 2014

Remarks. Paiva and Souza-Filho (2014) reexamined material from Museu Nacional/UFRJ (MNRJ 6439) identified previously by Lemos de Castro and Brasil-Lima (1976a) as *C. palifrons* Barnard, 1920 and material identified as *C. parva* Hansen, 1890 (MNRJ 3714 and MNRJ 17456) and concluded that they are the Brazil endemic *C. lemoscastroi*.

***Cirolana riobaldoi* Lemos de Castro
and Brasil-Lima, 1976a
(Fig. 10A)**

Cirolana riobaldoi Lemos de Castro and Brasil-Lima, 1976a: 79, figs. 15–22. — Pires-Vanin, 1998: 609.

Metacirolana riobaldoi — Bruce, 1981: 154.

Type material. Holotype: male, 2.8 mm, MNRJ 6272.

Type locality. South of BA to North of ES, Brazil (18°09'S 39°15'W to 20°27'S 40°11'W).

Geographic distribution. Brazil (BA, ES) (Lemos de Castro and Brasil-Lima, 1976a; Pires-Vanin, 1998).

Current systematic position. *Metacirolana riobaldoi* (Lemos de Castro and Brasil-Lima, 1976a).



Figure 10. *Metacirolana riobaldoi* (Lemos de Castro and Brasil-Lima, 1976): **A**, holotype, male, 3 mm, MNRJ 6272. *Excorallana angusta* Lemos de Castro, 1960: **B**, holotype, male, 14.6 mm, MNRJ 6230.

Remarks. Description based solely on the holotype (MNRJ 6272), which is in very poor condition.

Genus *Dolicholana* Bruce, 1986

***Dolicholana ivanyae* Paiva and Souza-Filho, 2023**

Dolicholana ivanyae Paiva and Souza-Filho, 2023: 3, figs. 1–6.

Type material. Male, 15 mm, (dissected and drawn, 8 slides), MNRJ 20208.

Type locality. REVIZEE Sul, station # 6743, Box Corer, 23°55'40"S, 42°47'60"W, 508 m, 15 February 1998.

Geographic distribution. Brazil (BA, RJ, SP) (Paiva and Souza-Filho, 2023).

Habitat. Found between 250–508 m depth (Paiva and Souza-Filho, 2023).

Current systematic position. *Dolicholana ivanyae* Paiva and Souza-Filho, 2023

Family Corallananidae Hansen, 1890

Genus *Excorallana* Stebbing, 1904

***Excorallana angusta* Lemos de Castro, 1960 (Fig. 10B)**

Excorallana angusta Lemos de Castro, 1960: 63, figs. 11–18. — Pires-Vanin, 1998: 611.

Type material. Holotype: male, 6.4 mm, MNRJ 6230.

Type locality. Abrolhos Archipelago, BA, Brazil, on fish *Cephalopholis* sp.

Geographic distribution. Brazil (BA) (Lemos de Castro, 1960; Pires-Vanin, 1998).

Habitat. Benthic, found on fish *Cephalopholis* sp. (Lemos de Castro, 1960).

Current systematic position. *Excorallana angusta* Lemos de Castro, 1960.

Remarks. Description based solely on the holotype. The voucher number included in the original description (622) is not valid anymore.

***Excorallana bicornis* Lemos de Castro
and Brasil-Lima, 1971
(Fig. 11)**

Excorallana bicornis Lemos de Castro and Brasil-Lima, 1971: 136, figs. 1–14. — Pires-Vanin, 1998: 611. — Santos-Silva and Souza-Filho, 2017b: 3, fig. 1.

Type material. Holotype: male, 3.8 mm, MNRJ 6236. Allotype: female, 5 mm, MNRJ 6237. Paratypes: 3 males, 3 females, MNRJ 6238.

Type locality. AP, Brazil (02°57'N 49°04' W).

Geographic distribution. Brazil (AP, PA, CE, PB, PE) (Lemos de Castro and Brasil-Lima, 1971; Pires-Vanin, 1998; Santos-Silva and Souza-Filho, 2017b).

Habitat. Between 25–103 m depth (Santos-Silva and Souza-Filho, 2017b).

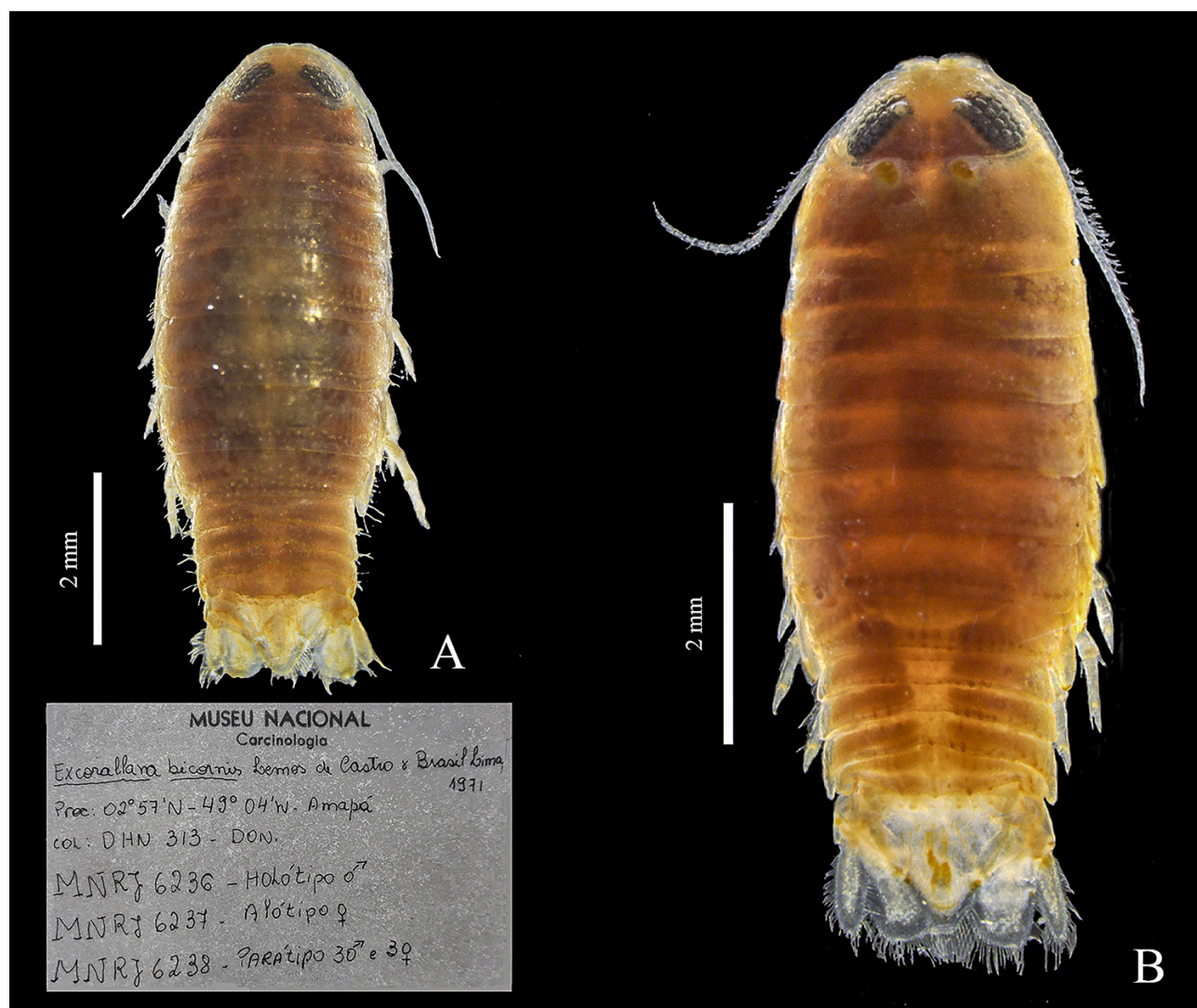


Figure 11. *Excorallana bicornis* Lemos de Castro and Brasil-Lima, 1971: **A**, allotype, female, 7.43 mm, MNRJ 6237; **B**, holotype, male, 7.26 mm, MNRJ 6236.

Current systematic position. *Excorallana bicornis* Lemos de Castro and Brasil-Lima, 1971.

***Excorallana costata* Lemos de Castro, 1960**
(Fig. 12)

Excorallana costata Lemos de Castro, 1960: 66, figs. 28–37. — Pires-Vanin, 1998: 611. — Santos-Silva and Souza-Filho, 2017b: 4, fig. 3.

Type material. Holotype: male, 15 mm, MNRJ 6233. Allotype: female, 11 mm, MNRJ 6234. Paratype: 1 male, MNRJ 6235.

Type locality. Manguinhos Beach, Cabo Frio, RJ, Brazil.

Geographic distribution. Brazil (AP, PA, MA, CE, RN, PE, ES, RJ, SP) (Lemos de Castro, 1960; Pires-Vanin, 1998; Santos-Silva and Souza-Filho, 2017b).

Habitat. Between 0.5–140 m depth (Santos-Silva and Souza-Filho, 2017b).

Current systematic position. *Excorallana costata* Lemos de Castro, 1960.

Remarks. Voucher numbers in the original description (1415–1417) are not valid anymore.

***Excorallana longicornis* Lemos de Castro, 1960**
(Fig. 13)



Figure 12. *Excorallana costata* Lemos de Castro, 1960, allotype, female, 11.3 mm, MNRJ 6234: A, dorsal view; B, lateral view; C, holotype, male, lateral view, 15 mm, MNRJ 6233.

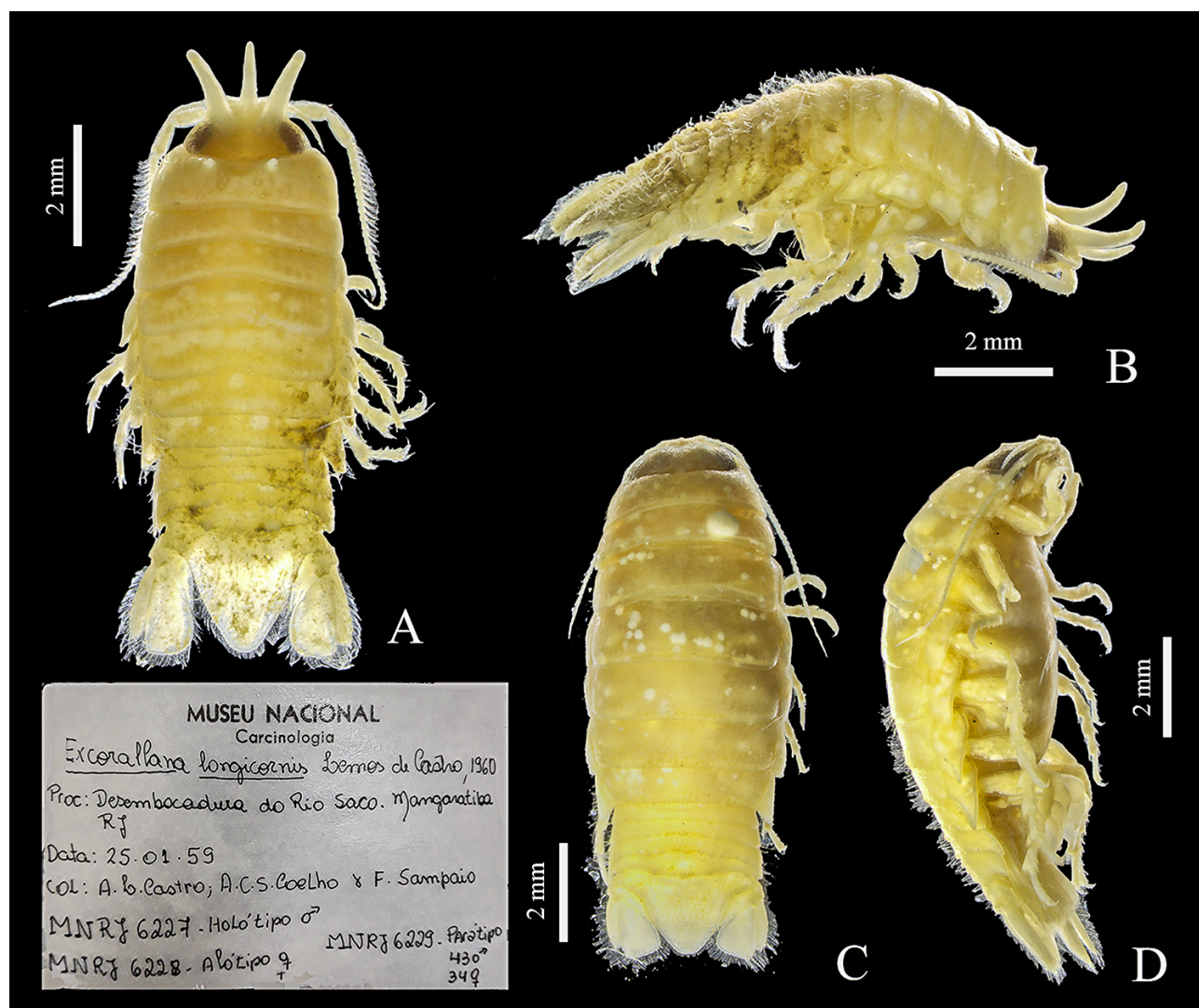


Figure 13. *Excorallana longicornis* Lemos de Castro, 1960, holotype, male, 8 mm, MNRJ 6227: **A**, dorsal view; **B**, lateral view; allotype, female, 8.2 mm, MNRJ 6228: **C**, dorsal view; **D**, lateral view.

Excorallana longicornis Lemos de Castro, 1960: 61, figs. 1–10. — Pires-Vanin, 1998: 611. — Esteves-Silva et al., 2020: 424.

Type material. Holotype: male, 6 mm, MNRJ 6227. Allotype: female, 6.5 mm, MNRJ 6228. Paratypes: 43 males, 34 females, MNRJ 6229.

Type locality. Among submerged tree trunks in the mouth of Rio do Saco, Mangaratiba Bay, RJ, Brazil.

Geographic distribution. Brazil (AP, RJ) (Lemos de Castro, 1960; Pires-Vanin, 1998; Esteves-Silva et al., 2020).

Habitat. Parasite of several fish species, infesting tegument, mouth and fins (Esteves-Silva et al., 2020).

Current systematic position. *Excorallana longicornis* Lemos de Castro, 1960.

Remarks. Voucher numbers in the original description (1410–1412) are not valid anymore.

***Excorallana richardsoni* Lemos de Castro, 1960**
(Fig. 14)

Excorallana richardsoni Lemos de Castro, 1960: 64, figs. 19–27. — Pires-Vanin, 1998: 611. — Santos-Silva and Souza-Filho, 2017b: 13, fig. 11.



Figure 14. *Excorallana richardsoni* Lemos de Castro, 1960, holotype male, 17.8 mm, MNRJ 6231: **A**, lateral view; **B**, dorsal view.

Type material. Holotype: female, 5.5 mm, MNRJ 6231. Paratypes: 1 female, MNRJ 6232.

Type locality. Armação de Búzios, Cabo Frio, RJ, Brazil.

Geographic distribution. Brazil (AP, PA, MA, CE, RN, PE, AL, ES, RJ) (Pires-Vanin, 1998; Santos-Silva and Souza-Filho, 2017b).

Habitat. Marine, shallow water between 0.65–94 m depth.

Current systematic position. *Excorallana richardsoni* Lemos de Castro, 1960.

Remarks. Paratype (MNRJ 6232) vials were empty. Voucher numbers in the original description (1413 and 1414) are not valid anymore.

***Excorallana stebbingi* Lemos de Castro and Brasil-Lima, 1976**
(Fig. 15)

Excorallana stebbingi Lemos de Castro and Brasil-Lima, 1976b: 75, figs. 1–14. — Pires-Vanin, 1998: 612.

Type material. Holotype: male, 4.5 mm, MNRJ 6239. Allotype: female, 3 mm, MNRJ 6240. Paratypes: 1 female, MNRJ 6241; 1 female MNRJ 6242.



Figure 15. *Excorallana stebbingi* Lemos de Castro and Brasil-Lima, 1976, holotype, male, 9.1 mm, MNRJ 6233: A, dorsal view; B, lateral view; allotype, female, 5 mm, MNRJ 6240: C, dorsal view; D, lateral view.

Type locality. Iracema Beach, Fortaleza, CE, Brazil.

Geographic distribution. Brazil (PA, CE) (Lemos de Castro and Brasil-Lima, 1976b; Pires-Vanin, 1998).

Current systematic position. *Excorallana stebbingi* Lemos de Castro and Brasil-Lima, 1976.

Family Gnathiidae Leach, 1814

Genus *Gnathia* Leach, 1814

Gnathia andrei Pires, 1996 (Fig. 16A)

Gnathia andrei Pires, 1996: 7, figs. 19–33. — Pires-Vanin, 1998: 617.

Type material. Holotype: male, 2.5 mm, MZUSP 11517. Paratypes: 5 females, MZUSP 11518; 3 males, MNRJ 3234; 3 males, 7 females, MNRJ 3235.

Type locality. Ubatuba continental slope, Sta. 5120 (24°19'6"S 44°40'46"W), 134 m depth, SP, Brazil.

Geographic distribution. Brazil (SP) (Pires, 1996; Pires-Vanin, 1998).

Habitat. Among dead corals and calcareous algae, restricted to the shelf break, between 134 and 180 m depth (Pires, 1996; Pires-Vanin, 1998).

Current systematic position. *Gnathia andrei* Pires, 1996.

***Gnathia ricardoi* Pires, 1996**

(Fig. 16B)

Gnathia ricardoi Pires, 1996: 11, figs. 34–47. — Pires-Vanin, 1998, 617.

Type material. Holotype: male, 5.5 mm, MZUSP 11513. Paratypes: 4 males, MNRJ 3232; 2 males, 2 females, MNRJ 3233; 1 male, MZUSP 11516.

Type locality. Ubatuba continental slope, Sta. 5365 (24°25'S 44°16.5'W), 320 m depth, SP, Brazil.

Geographic distribution. Brazil (SP) (Pires, 1996; Pires-Vanin, 1998).

Habitat. Muddy and sand bottoms of upper and central slope, between 134–530 m depth, with increased abundance at 320 m (Pires, 1996; Pires-Vanin, 1998).

Current systematic position. *Gnathia ricardoi* Pires, 1996.

***Gnathia ubatuba* Pires, 1996**

(Fig. 16C)

Gnathia ubatuba Pires, 1996: 2, figs. 1–18. — Pires-Vanin, 1998: 617.

Type material. Holotype: male, 3.8 mm, MZUSP 11510. Paratypes: 18 specimens, MZUSP 11511; 16 specimens, MNRJ 3230; 3 specimens, MNRJ 3231.

Type locality. Ubatuba continental shelf, Sta. 4856 (24°13'S 44°45'W), 110 m depth, SP, Brazil.

Geographic distribution. Brazil (SP) (Pires, 1996; Pires-Vanin, 1998).

Habitat. Hard and sandy bottoms on continental shelf and upper slope, between 20–320 m depth (Pires, 1996; Pires-Vanin, 1998).

Current systematic position. *Gnathia ubatuba* Pires, 1996.

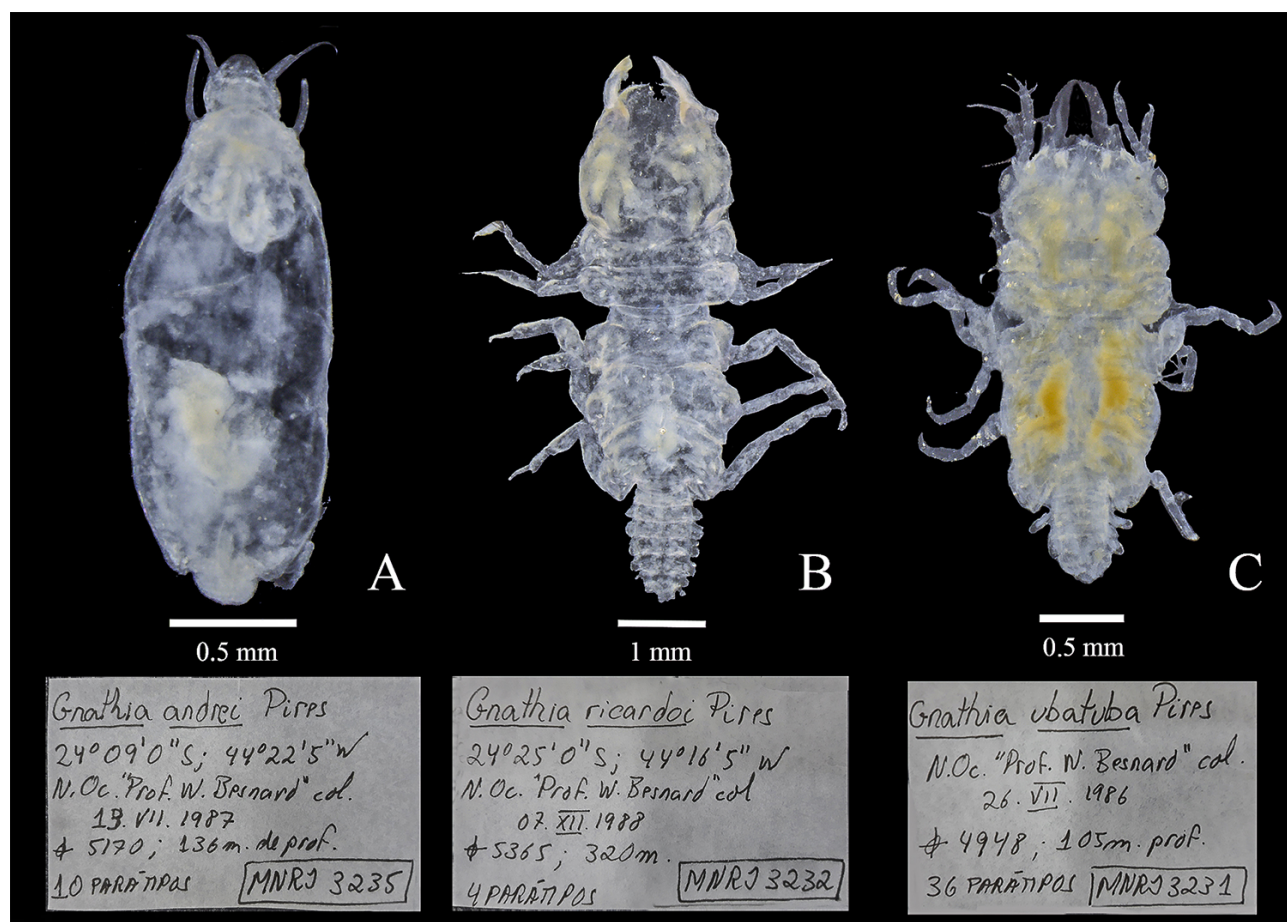


Figure 16. *Gnathia andrei* Pires, 1996: A, paratype, female, 2.4 mm, MNRJ 3235. *Gnathia ricardoi* Pires, 1996: B, paratype, male, 5.6 mm, MNRJ 3232. *Gnathia ubatuba* Pires, 1996: C, paratype, male, 3.7 mm, MNRJ 3231.

Remarks. Additional material can be found in the IOUSP collection.

Suborder Microcerberidea Lang, 1961

Family Microcerberidae Karaman, 1933

Genus *Microcerberus* Karaman, 1933

Microcerberus brasiliensis Albuquerque, 1978 (Fig. 17A)

Microcerberus brasiliensis Albuquerque, 1978: 213, figs. 17–20. — Albuquerque, 1998: 625.

Coxicerberus brasiliensis — Wägele et al., 1995: 743.

Type material. Holotype: male, 0.83 mm, MNRJ 6247. Paratypes: 1 male, 2 females; 1 male, 2 females, USU.

Type locality. Barra da Tijuca Beach, coarse sand, 100 cm depth, RJ, Brazil.

Geographic distribution. Brazil: Vermelha, Barra da Tijuca, Recreio dos Bandeirantes and Imbuí Beaches

(RJ) (Albuquerque, 1978; Albuquerque and Genofre, 1999).

Habitat. Interstitial, littoral in intertidal zone, on beaches with medium to coarse size sand (Albuquerque, 1998).

Current systematic position. *Robustura brasiliensis* (Albuquerque, 1978).

Remarks. Wägele et al. (1995) listed *Robustura* Gnanamuthu, 1954 as a junior subjective synonym of *Coxicerberus* Wägele, Voelz and McArthur, 1995 but that is incorrect, and the former is the senior subjective synonym following Article 23 of the principle of priority (ICZN, 1999). So, species previously included in *Coxicerberus* are now in *Robustura* (Boyko et al., 2023). Paratypes deposited at the Department of Animal Biology of Santa Úrsula University (USU) lack voucher numbers.

Microcerberus magnus Albuquerque, 1978 (Fig. 17B)

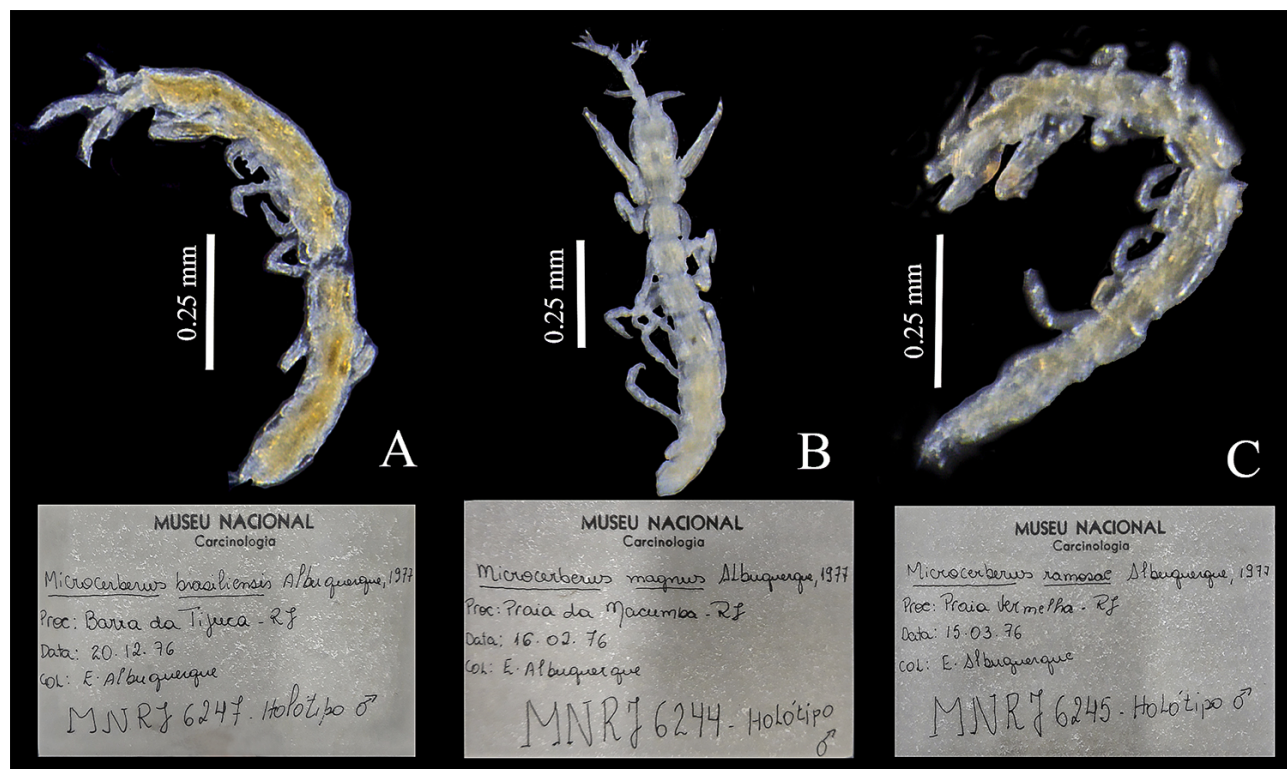


Figure 17. *Robustura brasiliensis* (Albuquerque, 1978): A, holotype, male, 0.9 mm, MNRJ 6247. *Robustura magnus* (Albuquerque, 1978): B, holotype, male, 0.8 mm, MNRJ 6244. *Robustura ramosae* (Albuquerque, 1978): C, holotype, male, 0.8 mm, MNRJ 6245.

Microcerberus magnus Albuquerque, 1978: 201, figs. 5–8. — Albuquerque, 1998: 625.

Coxicerberus magnus — Wägele et al., 1995: 743.

Type material. Holotype: male, 0.9 mm, MNRJ 6244. Paratypes: 5 males, 5 females; 1 male, USU.

Type locality. Macumba Beach, coarse sand, 50 cm depth, RJ, Brazil.

Geographic distribution. Brazil: Vermelha, Barra da Tijuca, Recreio dos Bandeirantes and Macumba beaches (RJ) (Albuquerque, 1978; Albuquerque and Genofre, 1999).

Habitat. Interstitial, littoral in intertidal zone, on beaches with medium to coarse size sand (Albuquerque, 1998).

Current systematic position. *Robustura magnus* (Albuquerque, 1978).

Remarks. See *Remarks* of *Microcerberus brasiliensis* for current generic status. Paratypes are deposited in the Department of Animal Biology of Santa Ursula University (USU), without voucher numbers.

***Microcerberus parvulus* Albuquerque, 1978**

Microcerberus parvulus Albuquerque, 1978: 210, figs. 13–16. — Albuquerque, 1998: 625.

Coxicerberus parvulus — Wägele et al., 1995: 743.

Type material. Holotype: male, 0.7 mm, MNRJ 6246 (lost). Paratypes: 1 male, 3 females; 1 male, 2 females, USU.

Type locality. Piratininga Beach, coarse sand, 70 cm depth, Niterói, RJ, Brazil.

Geographic distribution. Brazil: Vermelha, São Conrado, Barra da Tijuca, Prainha, Praia de Fora, Piratininga, Itaipú beaches (RJ) (Albuquerque, 1978; Albuquerque and Genofre, 1999).

Habitat. Interstitial, littoral in intertidal zone, on beaches with medium to coarse size sand (Albuquerque, 1998).

Current systematic position. *Robustura parvula* (Albuquerque, 1978).

Remarks. See *Remarks* of *Microcerberus brasiliensis* for current generic position. Holotype (MNRJ 6246) lost. Paratypes are deposited in the Department of Animal Biology of Santa Ursula University (USU), without voucher numbers.

***Microcerberus ramosae* Albuquerque, 1978** (Fig. 17C)

Microcerberus ramosae Albuquerque, 1978: 206, figs. 9–12. — Albuquerque, 1998: 626.

Coxicerberus ramosae — Wägele et al., 1995: 743.

Type material. Holotype: male, 0.8 mm, MNRJ 6245. Paratypes: 5 males, 5 females; 1 male, USU.

Type locality. Vermelha Beach, in coarse sand, 40 cm depth, RJ, Brazil.

Geographic distribution. Brazil: Vermelha, Barra da Tijuca, and Recreio dos Bandeirantes beaches (RJ) (Albuquerque, 1998).

Habitat. Interstitial, littoral in intertidal zone, on beaches with medium to coarse size sand (Albuquerque, 1998). Most abundant species at Vermelha Beach (Albuquerque and Genofre, 1999).

Current systematic position. *Robustura ramosae* (Albuquerque, 1998).

Remarks. See *Remarks* of *Microcerberus brasiliensis* for current generic position. Paratypes are deposited in the Department of Animal Biology of Santa Ursula University (USU), without voucher numbers.

Suborder Epicaridea Latreille, 1825

Superfamily Bopyroidea Rafinesque, 1815

Family Bopyridae Rafinesque, 1815

Subfamily Athelginae Codreanu and Codreanu, 1956

Genus *Pseudostegias* Shiino, 1933

***Pseudostegias atlantica* Lemos de Castro, 1965**

(Fig. 18)

Pseudostegias atlantica Lemos de Castro, 1965: 105, figs. 1–8. — Markham, 1978: 115. — Page, 1985: 203. — Brasil-Lima, 1998: 640. — Williams and

Boyko, 1999: 720 (key). — Markham, 2003: 72. — Boyko, 2004: 701. — McDermott et al., 2010: 11— Ribeiro et al. 2019a: 1, 2, 6, figs. 2–4. — Romero-Rodriguez and Álvarez, 2023: 135 (tab. 1), 139–141, figs. 1, 2B, 4. — Ribeiro and Horch, 2023: 154–155, 170 (key).



Figure 18. *Pseudostegias atlantica* Lemos de Castro, 1965, holotype, female, 5.5 mm, MNRJ 6100.

Type material. Holotype: female, 5.5 mm, MNRJ 6100. Allotype: male, 3 mm, MNRJ 6101.

Type locality. Mucuripe Beach (3°43'18"S 38°28'W), Fortaleza, CE, Brazil. Found as parasite of *Clibanarius* sp.

Geographic distribution. Venezuela. Gulf of Mexico (Ribeiro et al., 2019a; Romero-Rodriguez and Álvarez, 2023). Brazil (CE, AL) (Lemos de Castro, 1965; Brasil-Lima, 1998).

Habitat. Abdominal parasite of *Clibanarius antillensis* Stimpson, 1859, *Calcinus tibicen* Herbst, 1791, and *Paguristes tortugae* Schmitt, 1933 (Lemos de Castro, 1965; Ribeiro et al. 2019a; Romero-Rodriguez and Álvarez, 2023).

Current systematic position. *Pseudostegias atlantica* Lemos de Castro, 1965.

Remarks. Allotype (MNRJ 6101) vial was empty.

Subfamily Bopyrinae Rafinesque, 1815

Genus *Probopyrus* Giard and Bonnier, 1888

Probopyrus palaemoni Lemos de Castro and Brasil-Lima, 1974

(Fig. 19)

Probopyrus palaemoni Lemos de Castro and Brasil-Lima, 1974: 216, figs 20–26. — Brasil-Lima, 1998: 638. — Rocha and Bueno, 2000: 133. — Ribeiro et al., 2019b: 2444. — Ribeiro and Horch, 2023: 158.

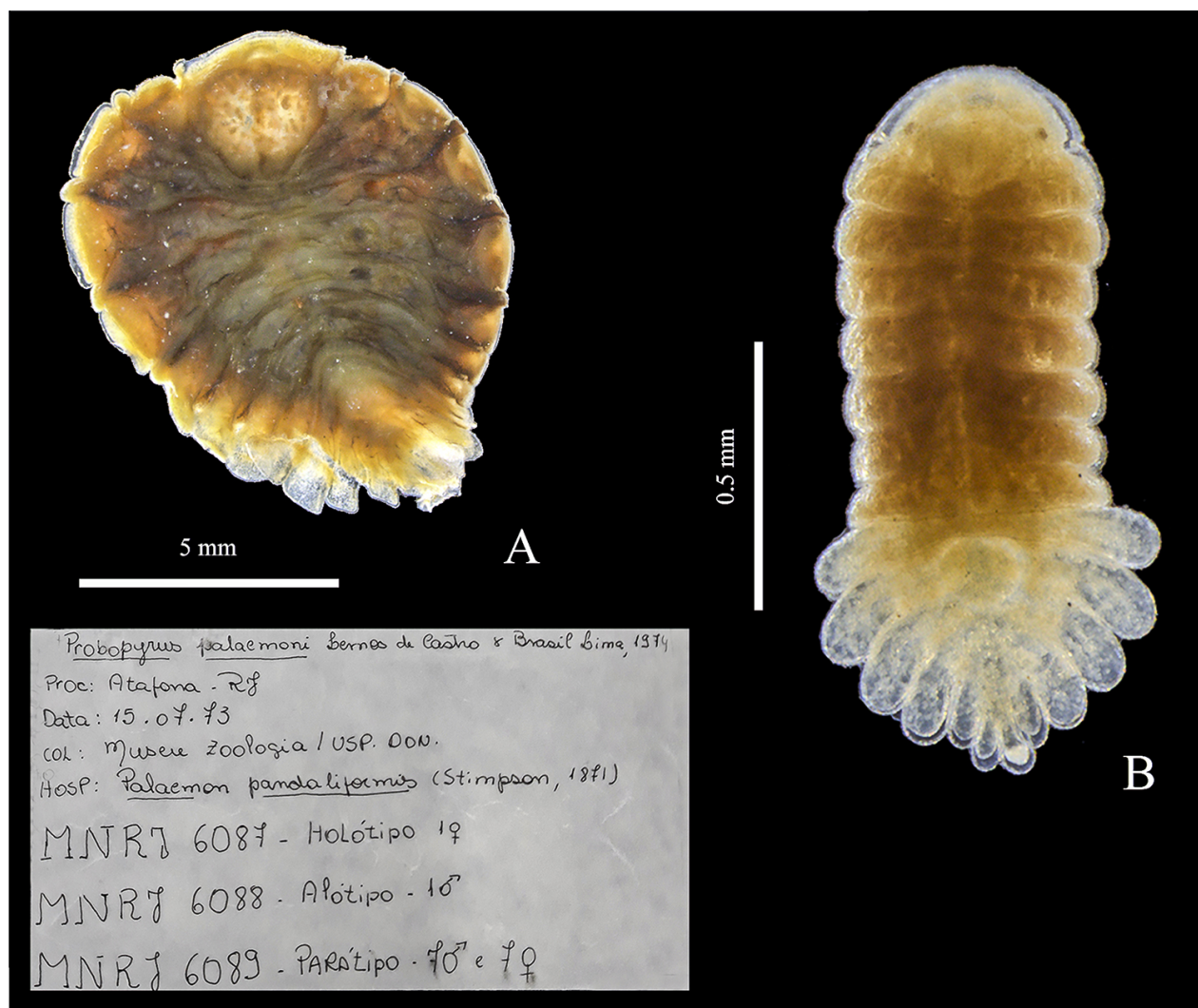


Figure 19. *Probopyrus palaemoni* Lemos de Castro and Brasil-Lima, 1974: A, holotype, female, 5.3 mm, MNRJ 6087; B, allotype, dwarf male, 1.2 mm, MNRJ 6088.

Type material. Holotype: female, MNRJ 6087. Allotype: male, MNRJ 6088. Paratypes: MNRJ 6089; MNRJ 6474.

Type locality. Atafona (21°37'19.4"S 41°00'43.7"W), RJ, Brazil.

Geographic distribution. Brazil (RJ) (Lemos de Castro and Brasil-Lima, 1974; Brasil-Lima, 1998).

Habitat. Parasite of *Palaemon pandaliformis* (Stimpson, 1871) and *P. paludosus* (Gibbes, 1850) (Lemos de Castro and Brasil-Lima, 1974; Brasil-Lima, 1998).

Current systematic position. *Probopyrus palaemoni* Lemos de Castro and Brasil-Lima, 1974.

Subfamily Keponinae Boyko, Moss, Williams and Shields, 2013

Genus *Castrione* Brasil-Lima, 1980

Castrione longicaudata Brasil-Lima, 1980

(Fig. 20)

Castrione longicaudata Brasil-Lima, 1980: 121, figs. 1–14. — Markham, 1988: 56, tab. 1. — Markham, 1995: 87. — Brasil-Lima, 1998: 636. — Ribeiro and Horch, 2023: 160, 171 (key).

Type material. Holotype: female, 5 mm, MNRJ 6095. Allotype; male, 4 mm, MNRJ 6096. Paratypes: 2 males, 2 females, MNRJ 6097.

Type locality. AP, Brazil.

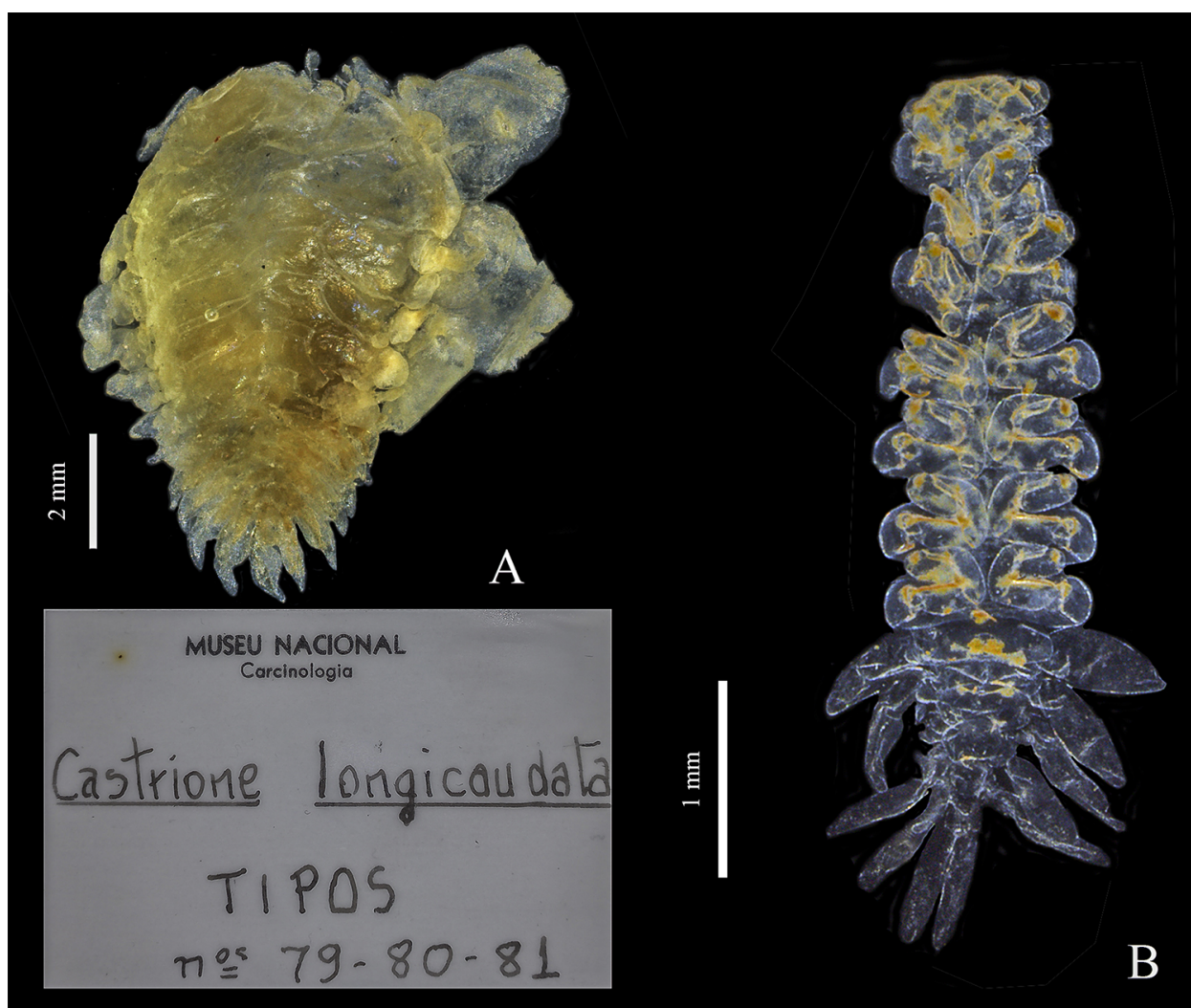


Figure 20. *Castrione longicaudata* Brasil-Lima, 1980: **A**, holotype, female, 5 mm, MNRJ 6095; **B**, allotype, dwarf male, 3.7 mm, MNRJ 6096.

Geographic distribution. Brazil (AP, PA) (Brasil-Lima, 1980; Brasil-Lima, 1998).

Habitat. Holotype and allotype are parasites in the branchial chamber of *Marcusiarius lemoscastroi* Rodrigues and de Carvalho, 1972 from Amapá. Other paratypes are parasites in the branchial chamber of *Meticonaxius* sp. from Pará (Brasil-Lima, 1980).

Current systematic position. *Castrione longicaudata* Brasil-Lima, 1980.

Genus *Hemicepon* Lemos de Castro and Brasil-Lima, 1980

***Hemicepon muelleri* Lemos de Castro and Brasil-Lima, 1980
(Fig. 21)**



Figure 21. *Hemicepon muelleri* Lemos de Castro and Brasil-Lima, 1980: **A**, holotype, female, 2.9 mm, MNRJ 6093; **B**, allotype, male 4.4 mm, MNRJ 6094.

Hemicepon mülleri Lemos de Castro and Brasil-Lima, 1980: 115, figs. 1–10. — Brasil-Lima, 1998: 637.

Hemicepon muelleri – Ribeiro and Horch, 2023: 161.

Type material. Holotype, female, 4 mm, MNRJ 6093. Allotype, male, MNRJ 6094.

Type locality. Ribeira Beach, Mangaratiba, RJ, Brazil.

Geographic distribution. Brazil (RJ) (Brasil-Lima, 1998).

Habitat. Parasite of *Upogebia brasiliensis* Holthuis (Lemos de Castro and Brasil-Lima, 1980).

Current systematic position. *Hemicepon muelleri* Lemos de Castro and Brasil-Lima, 1980.

Remarks. This species was named in honor of Fritz Müller, a German researcher who lived in Santa Catarina, Brazil, and worked from 1876 to 1891 as a traveling naturalist for the Museu Nacional/UFRJ. He wrote nearly 260 scientific articles, including some on Brazilian species of Crustacea, and was a strong defender of the natural selection ideas of Charles Darwin (Souza and Kamensky, 2016). The original spelling of the epithet name *mülleri* was changed to *muelleri* due to an improper use of diacritical mark (Boyko et al., 2023).

Subfamily Pseudioninae Codreanu, 1967

Genus *Parione* Richardson, 1910

Parione tropica Lemos de Castro and Brasil-Lima, 1975a
(Fig. 22)



Figure 22. *Upogebione tropica* (Lemos de Castro and Brasil-Lima, 1975): **A**, holotype, female, 5 mm, MNRJ 6090; **B**, allotype, dwarf male, 1.5 mm, MNRJ 6091.

Parione tropica Lemos de Castro and Brasil-Lima, 1975a: 101, figs. 1–11. — Brasil-Lima, 1998: 635.

Upogebione tropica – Markham, 1985: 37. — An et al., 2009: 240. – Ribeiro and Horch, 2023: 164.

Type material. Holotype: female, 5 mm, MNRJ 6090. Allotype: male, 1.5 mm, MNRJ 6091. Paratype: 1 female, MNRJ 6092.

Type locality. Cabo Branco, João Pessoa, PB, Brazil.

Geographic distribution. Brazil (PE, PB) (Lemos de Castro and Brasil-Lima, 1975b; Brasil-Lima, 1998).

Habitat. Parasite of *Upogebia omissa* Gomes Corrêa (Lemos de Castro and Brasil-Lima, 1975b).

Current systematic position. *Upogebione tropica* (Lemos de Castro and Brasil-Lima, 1975b).

Genus *Pleurocrypta* Hesse, 1865

***Pleurocrypta meridionalis* Lemos de Castro and Brasil-Lima, 1975b (Fig. 23)**

Pleurocrypta meridionalis Lemos de Castro and Brasil-Lima, 1975: 129, figs. 1–11. — Brasil-Lima, 1998: 635. — Ribeiro and Horch, 2023: 164.

Type material. Holotype: female, 4 mm, MNRJ 6098. Allotype: male, 0.85 mm, MNRJ 6099.

Type locality. SP (23°44'S 43°W), 133 m depth, Brazil.

Geographic distribution. Brazil (SP) (Lemos de Castro and Brasil-Lima, 1975b; Brasil-Lima, 1998).

Habitat. Parasite of *Munida* sp. (Lemos de Castro and Brasil-Lima, 1975a; Brasil-Lima, 1998).

Current systematic position. *Pleurocrypta meridionalis* Lemos de Castro and Brasil-Lima, 1975b.

Remarks. Holotype specimen (MNRJ 6098) is in a poor state of preservation.

Genus *Pseudione* Kossmann, 1881

***Pseudione serejoae* Brito, Cardoso and Boyko, 2018**

Pseudione serejoae Brito, Cardoso and Boyko, 2018: 445, figs. 1, 2. — Ribeiro and Horch, 2023: 165, 171 (key).

Type material. Holotype: female, 7.2 mm, MNRJ 28676. Allotype: male, 4.6 mm, MNRJ 28678. Paratypes: 2 males, 1 female, 1 cryptoniscus larvae MNRJ 28679; 2 males, 3 females, 1 cryptoniscus larvae, MNRJ 28680; 1 male, 1 female, MNRJ 28681; 1 male, 1 female, MNRJ 28682; 2 females, 1 cryptoniscus larvae, MNRJ 28683; 2 males, 3 females, 2 cryptoniscus larvae, MNRJ 28684; 2 males, 2 females, 2 cryptoniscus larvae, MNRJ 28685; 1 male, 1 female, MNRJ 28686; 1 male, 1 female, MNRJ 28687; 1 male, 1 female, MNRJ 28688.

Type locality. Oceanprof II, Sta. # 4-2, Campos Basin (22°24.419'S 39°55.556'W), 1,127 m depth, Brazil.

Geographic distribution. Campos Basin, Brazil (Brito et al., 2018).

Habitat. Parasite in the right branchial chamber of *Munida microphthalma* A. Milne-Edwards (Brito et al., 2018).

Current systematic position. *Pseudione serejoae* Brito, Cardoso and Boyko, 2018.

Remarks. Unfortunately, all the type material of *P. serejoae* (MNRJ 28676–28688) was lost due to the 2018 fire that destroyed the inner spaces of the São Cristóvão Palace, including the Carcinology Laboratory (Zamudio et al., 2018).

Superfamily Cryptoniscoidea Kossmann, 1880

Family Cabiropidae Giard and Bonnier, 1887

Genus *Cabirops* Kossmann, 1884

***Cabirops lobiformis* Lemos de Castro, 1970 (Fig. 24A)**



Figure 23. *Pleurocrypta meridionalis* Lemos de Castro and Brasil-Lima, 1975, allotype, dwarf male, 0.85 mm, MNRJ 6099.

Cabirops lobiformis Lemos de Castro, 1970: 4, pl. 1, fig. 7; pl. 2, figs. 13, 14. — Brasil-Lima, 1998: 641. — Boyko, 2013: 110 (tab. 1), fig. 6. — Van As, 2019: 364 (tab. 8.2). — Ribeiro and Horch, 2023: 168.

Type material. Holotype: female, 4.8 mm, MNRJ 6248. Allotype: male, 1.5 mm, MNRJ 6249. Paratype, female, MNRJ 6250.

Type locality. Atafona, RJ, Brazil (21°37'19.4"S 41°00'43.7"W).

Geographic distribution. Brazil (RJ) (Brasil-Lima, 1998).

Habitat. Hyperparasite on *Probopyrus* sp. (Lemos de Castro, 1970).

Current systematic position. *Cabirops lobiformis* Lemos de Castro, 1970.

Remarks. Allotype (MNRJ 6248) vial was empty.

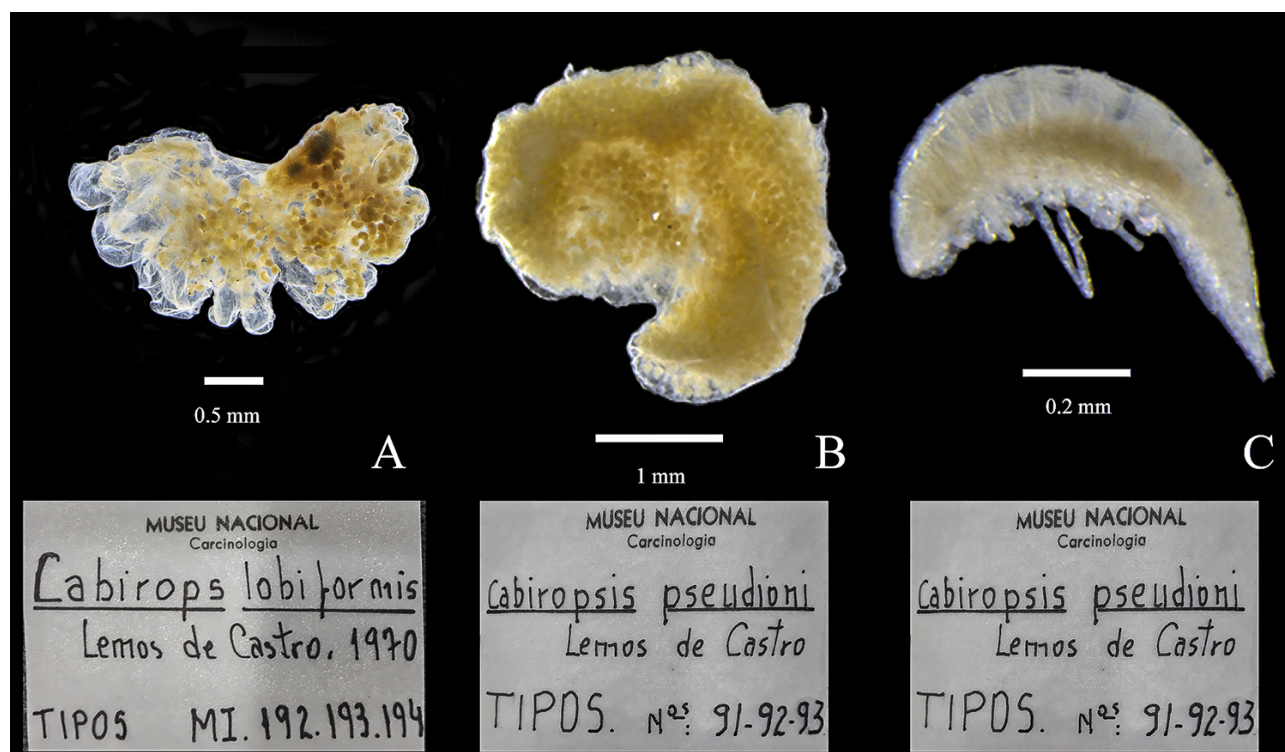


Figure 24. *Cabirops lobiformis* Lemos de Castro, 1970: A, holotype, female, 4.8 mm, MNRJ 6248. *Cabirops pseudioni* Lemos de Castro, 1970: B, holotype, female, 4.5 mm, MNRJ 6102; C, paratype, cryptoniscus larvae, 1.37 mm, MNRJ 6104.

***Cabirops pseudioni* Lemos de Castro, 1970**

(Fig. 24B, C)

Cabirops pseudioni Lemos de Castro, 1970: 3, pls. 1 (1–6, 8–10), 2 (11, 12). — Brasil-Lima, 1998: 641. — Boyko, 2013: 110 (tab. 1), fig. 11. — Van As, 2019: 364 (tab. 8.2). — Ribeiro and Horch, 2023: 168.

Type material. Holotype: female, 4.5 mm, MNRJ 6102. Allotype: male, 1.8 mm, MNRJ 6103. Paratypes: 19 males, 3 females, MNRJ 6104.

Type locality. Barra do Ceará, Fortaleza, CE, Brazil.

Geographic distribution. Brazil (CE) (Lemos de Castro, 1970; Brasil-Lima, 1998)

Habitat. Hyperparasite of *Progebiophilus upogebiae* (Hay, 1917), which is parasitic in the branchial chamber of *Upogebia omissa* Gomes-Corrêa, 1968 (Lemos de Castro, 1970).

Current systematic position. *Cabirops pseudioni* Lemos de Castro, 1970.

Remarks. Allotype (MNRJ 6103) vials were empty.

Suborder Sphaeromatidea Wägele, 1989

Superfamily Sphaeromatoidea Latreille, 1825

Family Ancinidae Dana, 1852

Genus *Ancinus* H. Milne-Edwards, 1840

***Ancinus brasiliensis* Lemos de Castro, 1959**
(Fig. 25)

Ancinus brasiliensis Lemos de Castro, 1959: 215, figs. 1–8. — Loyola and Silva, 1963: 3, figs. 1–5. — Glynn and Glynn, 1974: 408, figs. 7–10, 11A–C, 12. — Dexter, 1976: 481 (tab. 1). — Loyola and Silva, 1998: 630.

Ancinus depressus — Loyola and Silva, 1971: 212, fig. 1. [Not *A. depressus* (Say, 1818)].

Type material. Holotype: male, 6.79 mm, MNRJ 6225. Allotype: female, 5.77 mm, MNRJ 6226.

Type locality. Ribeira Beach, Mangaratiba Bay, RJ, Brazil.

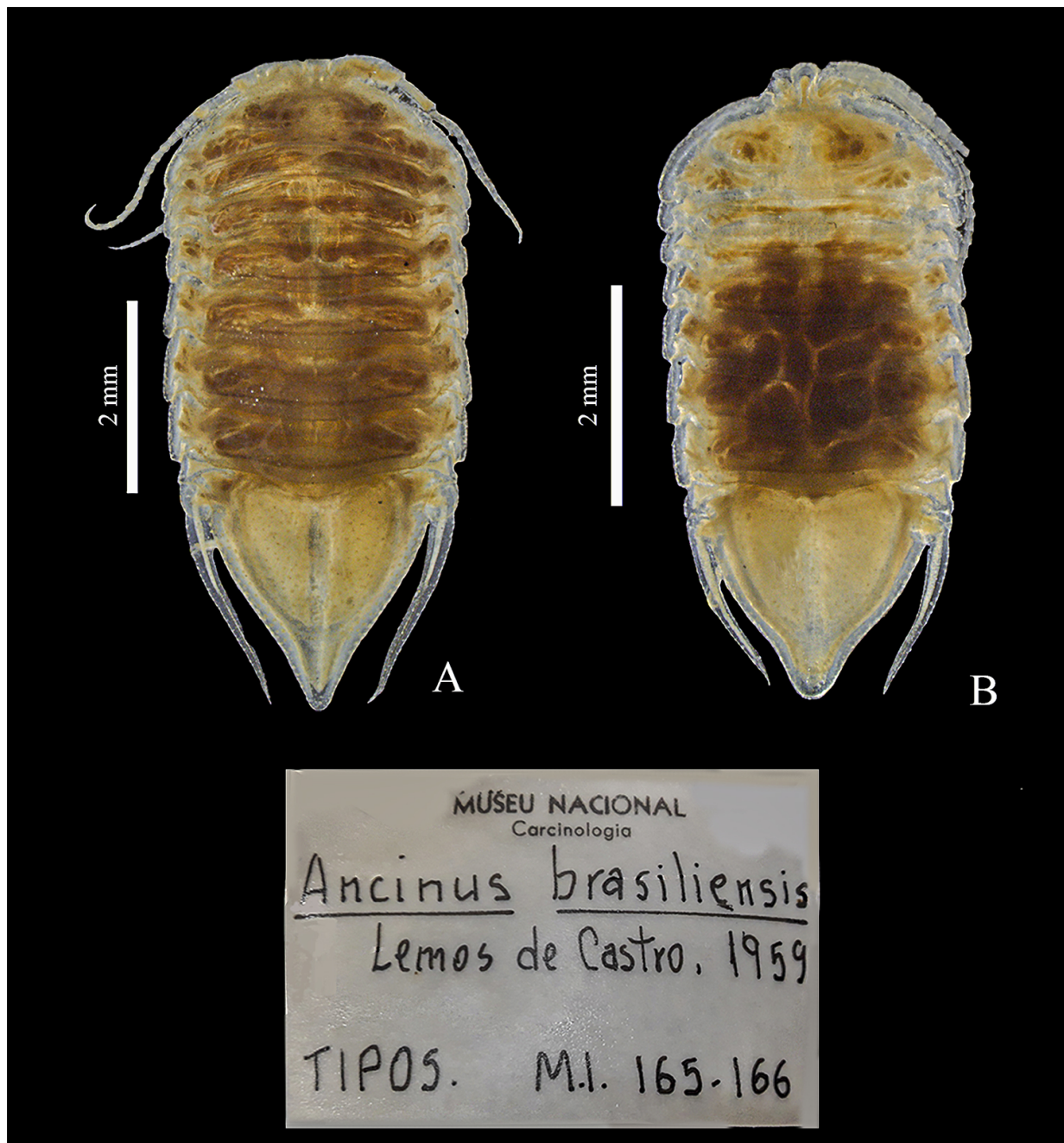


Figure 25. *Ancinus brasiliensis* Lemos de Castro, 1959: **A**, holotype, male, 6.79 mm, MNRJ 6225; **B**, allotype, female, 5.77 mm, MNRJ 6224.

Geographic distribution. Western Atlantic: Gulf of Mexico (Tampico), Panama (María Chiquita, Shimmey, Ft. San Lorenzo), Costa Rica (Puerto Viejo and Cahuita) and Brazil (PB, RJ, SP) (Lemos de Castro, 1959; Glynn and Glynn, 1974; Dexter, 1976; Loyola and Silva, 1998).

Habitat. Sandy bottom, 1.5 m depth (Lemos de Castro, 1959).

Current systematic position. *Ancinus brasiliensis* Lemos de Castro, 1959.

Remarks. The species *A. granulatus* and *A. brasiliensis* were considered junior synonyms of *Ancinus depressus* by Loyola and Silva (1971). Later, Glynn and Glynn (1974) revised the genus *Ancinus* and considered the three species as valid. *Ancinus brasiliensis* is currently a valid species and accepted in

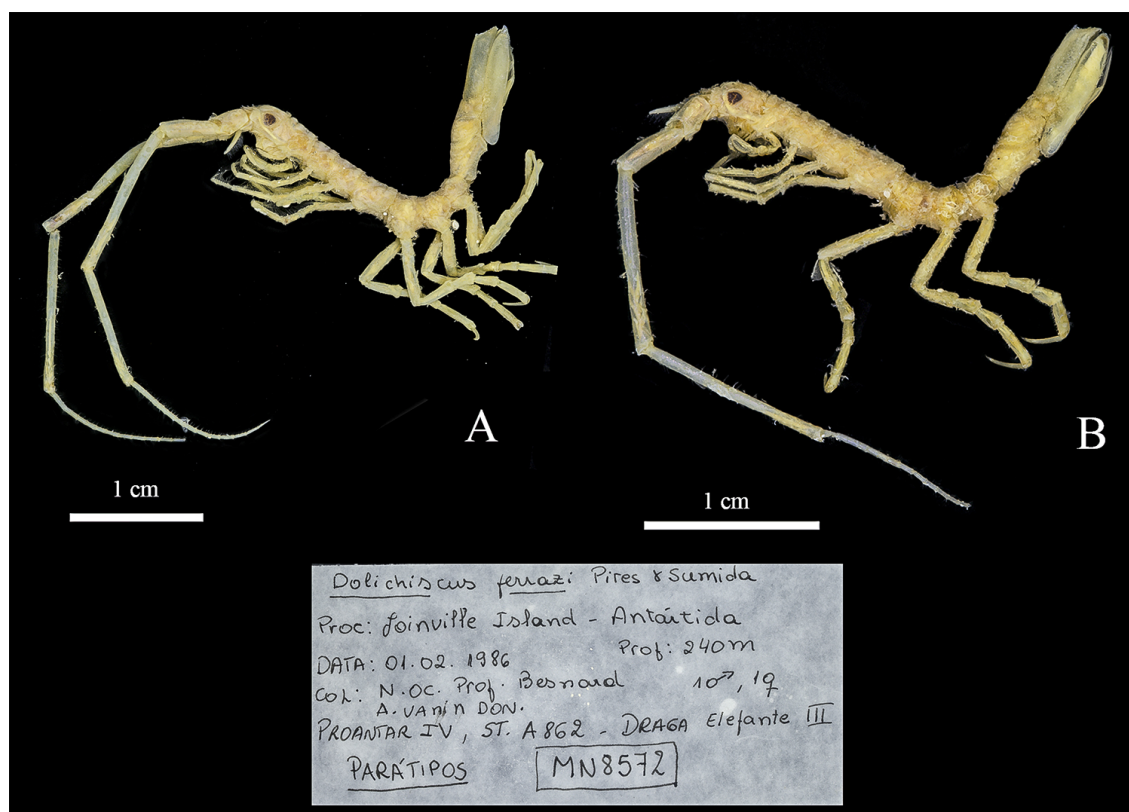


Figure 26. *Dolichiscus ferrazi* Pires and Sumida, 1997, paratypes, MNRJ 8572: **A**, female, 3.2 cm; **B**, male, 2.9 cm.

the World Marine, Freshwater and Terrestrial Isopod Crustaceans database (Boyko et al., 2023).

Suborder Valvifera Sars, 1883

Family Austrarcturellidae Poore and Bardsley, 1992

Genus *Dolichiscus* Richardson, 1913

Dolichiscus ferrazi Pires and Sumida, 1997 (Fig. 26)

Dolichiscus ferrazi Pires and Sumida, 1997: 12, figs. 1–22.

Type material. Holotype: male, MZUSP 12174. Paratypes: 1 male, 1 female, MZUSP 12175; 1 male, 1 female, MNRJ 8572; 1 male, 1 female, IOUSP 232.

Type locality. Antarctica, northeast of Joinville Island, St. 4381 (62°48'S 54°20'W), 280 m depth.

Geographic distribution. Bransfield Strait: northeast of Elephant, and Joinville Islands, and southwest of Smith Island, Antarctic Ocean (Pires and Sumida, 1997).

Habitat. Found between 168–362 m depth in water temperature from -2.07 to 1.28 °C (Pires and Sumida, 1997).

Current systematic position. *Dolichiscus ferrazi* Pires and Sumida, 1997.

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Author Contributions

Conceptualization and Design: CSS, ACSF. Performed research: CSS, ACSF. Acquisition of data: CSS, ACSF. Analysis and interpretation of data: CSS, ACSF. Preparation of figures/tables/maps: ACSF. Writing – original draft: ACSF, CSS. Writing – critical review and editing: CSS, ACSF.

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