

First record of *Parapontophilus longirostris* Komai, 2008 (Caridea, Crangonidae) on Brazilian waters

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Abstract

The Brazilian expeditions REVIZEE Central (Fishery) and Campos Basin Deep Sea Environmental Project collected 23 specimens of the benthic shrimp *Parapontophilus longirostris* Komai, 2008, between depths of 200 and 2200 m. This capture means the first record of family Crangonidae and *Parapontophilus* genus for Brazilian continental slope.

Key words: *Parapontophilus longirostris*, Caridea, Crangonidae, first record, Brazilian waters.

Introduction

The Campos Basin Deep Sea Environmental Project collected 14 caridean species, representing six caridean families (Cardoso & Serejo, 2007). The REVIZEE Central (Fishery) collected 38 species, also distributed in six caridean families (Serejo *et al.*, 2008). Both expeditions collected the benthic shrimp *Parapontophilus longirostris* (Komai, 2008), that is included on family Crangonidae. There is no previous record of this family on Brazilian waters, so, the 23 specimens identified as *Parapontophilus longirostris* are the first record of this family and genus to that area.

The carapace length was measured from rostrum base to the carapace end. The nomenclature of the mouth parts is that cited by McLaughlin (1980) and setae nomenclature is that proposed by Watling (1989) and Garm (2004).

Material and Methods

The samples analyzed herein were collected by two projects, REVIZEE Central (Fishery) and Campos Basin Deep Sea Environmental Project. The first one occurred between June and July of 2000 when N.O. Thalassa collected samples from the continental shelf and slope of the Central Brazilian coast (from 11°S – Real estuary, Bahia to 22°S – Cabo de São Tomé, Rio de Janeiro) in depths ranging from 200 to 2000 m. These dredges were made with two net types: ARROW (47.4 m X 26.8 m)

and GOV (Great Opening Vertical). A total of 58 tows were done. The Campos Basin Deep Sea Environmental Project coordinated by CENPES/PETROBRAS intends to characterize the oceanic region of Campos Basin (Rio de Janeiro), at depths between 700 and 2000 m, according to physical, chemical and biological properties of the water and the bottom. Two campaigns, Oceanprof I and II were performed. Samples were collected using N/RB Astrogaroupa with nets in the continental slope of Campos Basin, RJ (21°48'S to 22°48'S). Oceanprof I campaign occurred in February, 2003 and collected 18 samples at depths between 1074 and 1649 m. Oceanprof II occurred in August, 2003 and collected 22 samples at depths between 1059 and 1640 m.

The material collected was preserved in ethanol 70% and is stored in the collections of Museu Nacional, Rio de Janeiro, Brasil (MNRJ), and Chiba Museum, Japan (CBM).

Systematics

Family Crangonidae Haworth, 1825

Parapontophilus Christoffersen, 1988

Pontophilus – Crosnier & Forest, 1973: 239 (*in part*); Chace, 1984: 45 (*in part*).

Parapontophilus Christoffersen, 1988: 46.

Parapontophilus – Holthuis, 1993: 295; Komai, 2008: 264.

Diagnosis: Carapace dorsally carinate, subcylindrical or slightly depressed dorsoventrally, with one to three dorsal teeth, longitudinal suture extending from antennal tooth to midlength; rostrum with 1 or 2 pairs of lateral teeth; with hepatic spine, with or without epibranchial tooth; cornea not reduced. Maxilliped 2 with podobranch. Maxilliped 3 with one artrobranch. Pereopods 1-5 with pleurobranchs directed backwards. Pereopod 1 with rudimentary exopod. Pereopod 2 chelate. Male pleopods 2 with appendix masculine shorter than appendix interna (modified from Komai, 2008).

Remarks: Based on a phylogenetic classification of Crangonidae, Christoffersen (1988) created the genus *Parapontophilus* assigning to it three species from genus *Pontophilus*: *P. gracilis* (Smith, 1882), *P. modumanuensis* (Rathbun, 1906) and *P. demani* (Chace, 1984). Chace (1984) recognized five subspecies of *P. gracilis*: *P. abyssi* (Smith, 1884), *P. occidentalis* (Faxon, 1893), *P. junceus* (Bate, 1888), *P. profundus* (Bate, 1888) and *P. talismani* (Crosnier & Forest, 1973). Recently these subspecies were elevated to species level (Udekem d'Acoz, 1999; Komai, 2008) for the existence of morphological differences and the partial overlap of geographical or bathymetrical ranges.

Komai (2008) made a world-wide review of genus *Parapontophilus*, describing ten new species and dividing the eighteen species in two informal groups: *P. gracilis* (Smith, 1882) group, with ten species and *P. modumanuensis* (Rathbun, 1906) group, with eight species. In his work, Komai (2008) presents a key to all *Parapontophilus* species.

***Parapontophilus longirostris* Komai, 2008**
(Figures 1-4)

Parapontophilus longirostris Komai, 2008: 305, fig. 18.

Material examined: Oceanprof I: A-4, 22°23'S-39°54'W, 1150 m: 1 ovigerous female 9 mm (MNRJ 19225). A-5, 22°27'S-39°54'W, 1325 m: 1 male 9 mm (MNRJ 19227). Oceanprof I: A1, 22°41'S-40°07'W, 1318 m: 3 males 8.3 mm; 1 female 8.2 mm (CBM-ZC 9231). Oceanprof II: A-3, 22°32'59"S-39°56'00"W, 1600 m: 1 female 8 mm (MNRJ 19813). A-7, 22°45'S-40°19'W, 1124 m: 2 males 7, 9 mm (MNRJ 19814). A-9, 22°41'S-40°02'W, 1609 m: 1 female 10 mm (MNRJ 19815). A-12, 22°11'S-39°47'W, 1632 m:

1 female 8 mm (MNRJ 19816). A-15, 21°50'21"S-39°47'85"W, 1600 m: 2 ovigerous females 8.5, 9.5 mm (MNRJ 19811). A-18, 22°15'S-39°47'W, 1608 m: 3 females 8 to 9.5 mm (MNRJ 19812). REVIZEE-Fishery: E-0523, 19°42'S-38°32'W, 922 m: 1 ovigerous female 10 mm (MNRJ 14637). E-0527, 19°50'S-39°10'W, 1402 m: 2 females 9.1, 10.6 mm (CBM-ZC 9230). E-0540, 21°12'S-40°00'W, 1364 m: 2 females 10 mm (MNRJ 14638). E-0551, 21°07'S-39°49'W, 1642 m: 1 female 10 mm (MNRJ 14639). E-0526, 20°06'S-38°40'W, 1637 m: 1 ovigerous female 9 mm: 1 female 9 mm (MNRJ 14640).

Diagnosis: Rostrum short, distal third overreaching cornea, with two lateral teeth, dorsal and ventral margins unarmed. Carapace with three dorsal teeth, the first one minute; antennal, branchiostegal, hepatic and epibranchial spines present. Cornea faceted. Stylocerite with broad base that narrows gradually to an acute apex that reaches 1/2 of second antennular article. Scaphocerite elongate, with distal tooth. Telson sulcate, with two pairs of dorsolateral cuspidate setae, and a distal pair of slender simple setae. Uropod exopod, with small distolateral cuspidate seta.

Description: Carapace with rostrum short, distal third overreaching cornea, with two lateral teeth, dorsal and ventral margins unarmed; with antennal, branchiostegal, hepatic and epibranchial spines; with three dorsal teeth, the first one minute (Fig. 1A, B). Cornea faceted, 0.12 of carapace length; ocular peduncle with a tubercle. Stylocerite with broad base that narrows gradually to an acute apex that reaches 1/2 of second antennular article. (Fig. 1C). Scaphocerite with distal tooth and elongate blade (Fig. 1D). Mandible without palp and molar process; incisor process composed by two strong acute teeth with serrate inner margin (Fig. 2A). Maxilla 1 with elongate palp, with three simple setae on inner margin; distal endite with many cuspidate setae on inner margin; basal endite with pappose setae on inner margin (Fig. 2B). Maxilla 2 with elongate scaphognathite with densely plumose setae on all margins; endopod short, with simple setae on apex; reduced endite, with simple setae on inner margin (Fig. 2C). Maxilliped 1 with exopodal lobe slender, with densely plumose setae on outer margin; exopodal lash well developed long and slender, curved inwards; endopod one-third exopod length, with several pappose setae on inner margin; endite reduced, slen-

der, with pappose setae on inner margin (Fig. 2D). Maxilliped 2 with merus and ischium fused; carpus short; propodus elongate, with simple setae on anterior margin, one cuspidate setae and some plumose setae on distal part of posterior margin; dactylus small, with simple setae on apex (Fig. 2E). Pereopod 1 robust, subchelate, with rudimentary exopod ischium short; merus elongate with a distal spine on outer margin; carpus short; propod 3.7 times longer than wide, with a strong teeth on inner margin; dactylus not overreaching tip of strong spine on propod inner margin (Fig. 3A). Pereopod 2 short and slender; ischium and merus elongate; carpus not subdivided, short; propod with a strong cuspidate setae on apex; dactyl forming a pseudochela with the propod cuspidate setae

(Fig. 3B). Female endopod of pleopod 1 slender and elongate, with plumose setae in all margins, two-thirds of exopod length (Fig. 4A) Male endopod of pleopod 1 short, with spiniform projections on outer margin, less than a half of exopod length (Fig. 4B). Male endopod of pleopod 2 with slender appendix interna, with many distal hook setae, appendix masculina, with several acute, distal simple setae; appendix masculine a half of appendix interna length (Fig. 4C). Telson sulcate, with two pairs of dorsolateral cuspidate setae, and a distal pair of slender simple setae. Uropod exopod, with small distolateral cuspidate seta (Fig. 4D).

Distribution: Indian and Pacific Oceans: Comoro and Reunion Islands, Taiwan, New Caledonia, Vanuatu, French Polynesia and mid Pa-

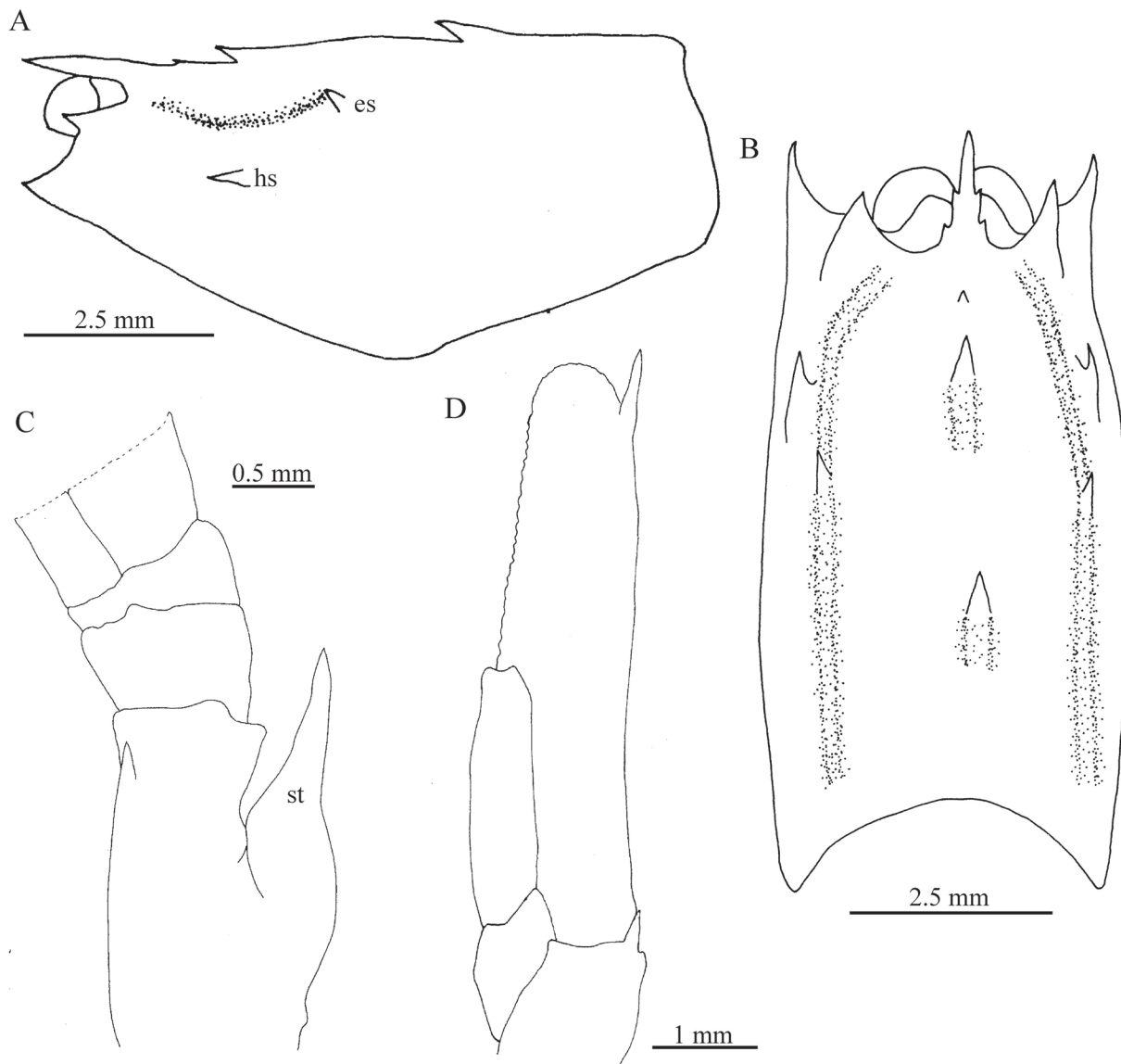


Figure 1. *Parapontophilus longirostris*: A, male 7 mm (MNRJ 19814); B-D, female 8 mm (MNRJ 19812). A, carapace lateral view. B, carapace dorsal view. C, stylocerite, dorsal view. D, scaphocerite, dorsal view (es – epibranchial spine; hs – hepatic spine; st – stylocerite).

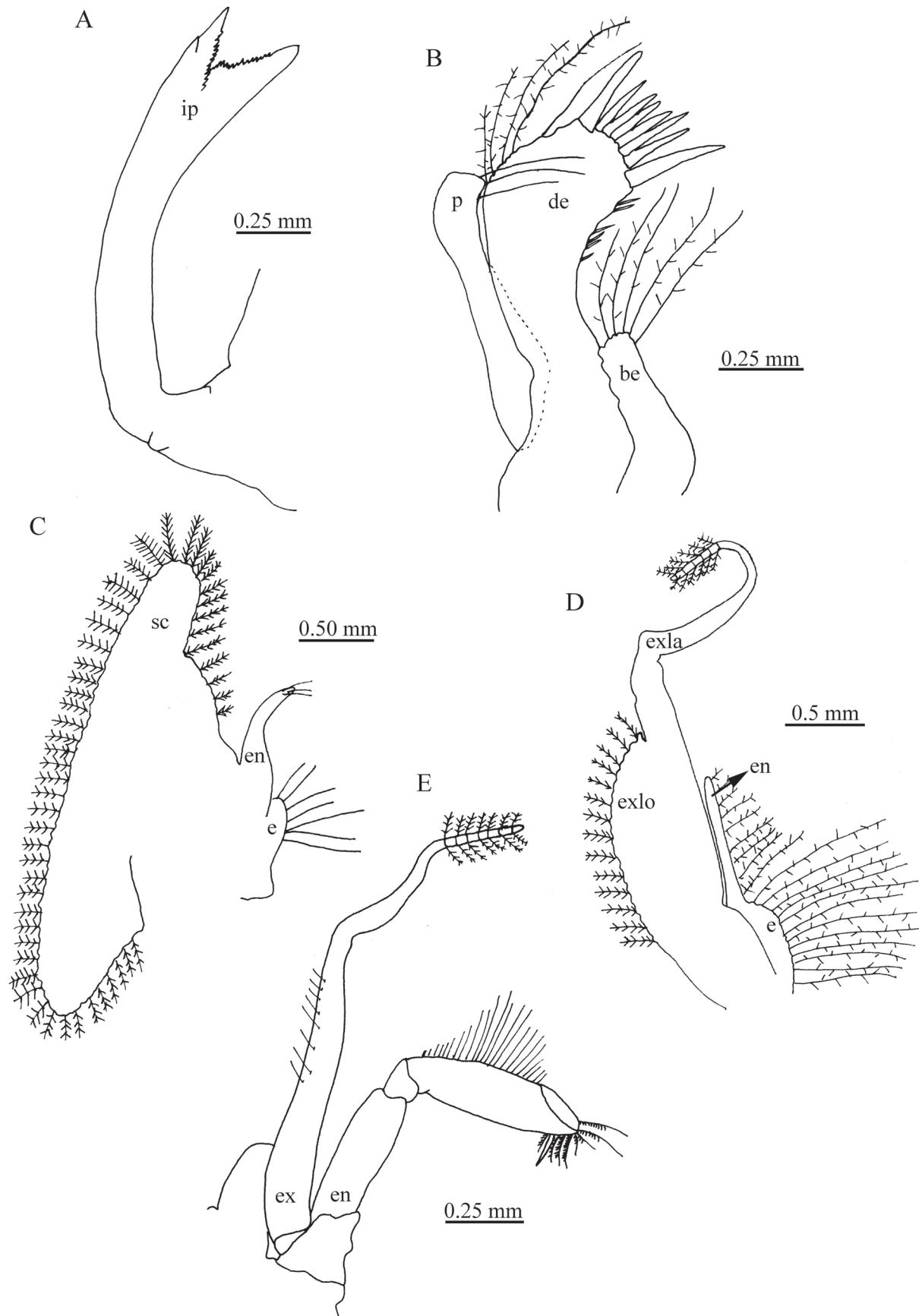


Figure 2. *Parapontophilus longirostris* female 8 mm (MNRJ 19812). A, right mandible. B, right maxilla 1. C, right maxilla 2. D, right maxilliped 1. E, right maxilliped 2 (be – basal endite; de – distal endite; e – endite; en – endópodo; ex – exópodo; exla – exopodal lash; exlo – exopodal lobe; ip – incisor process; p – palp; sc – scaphognatite).

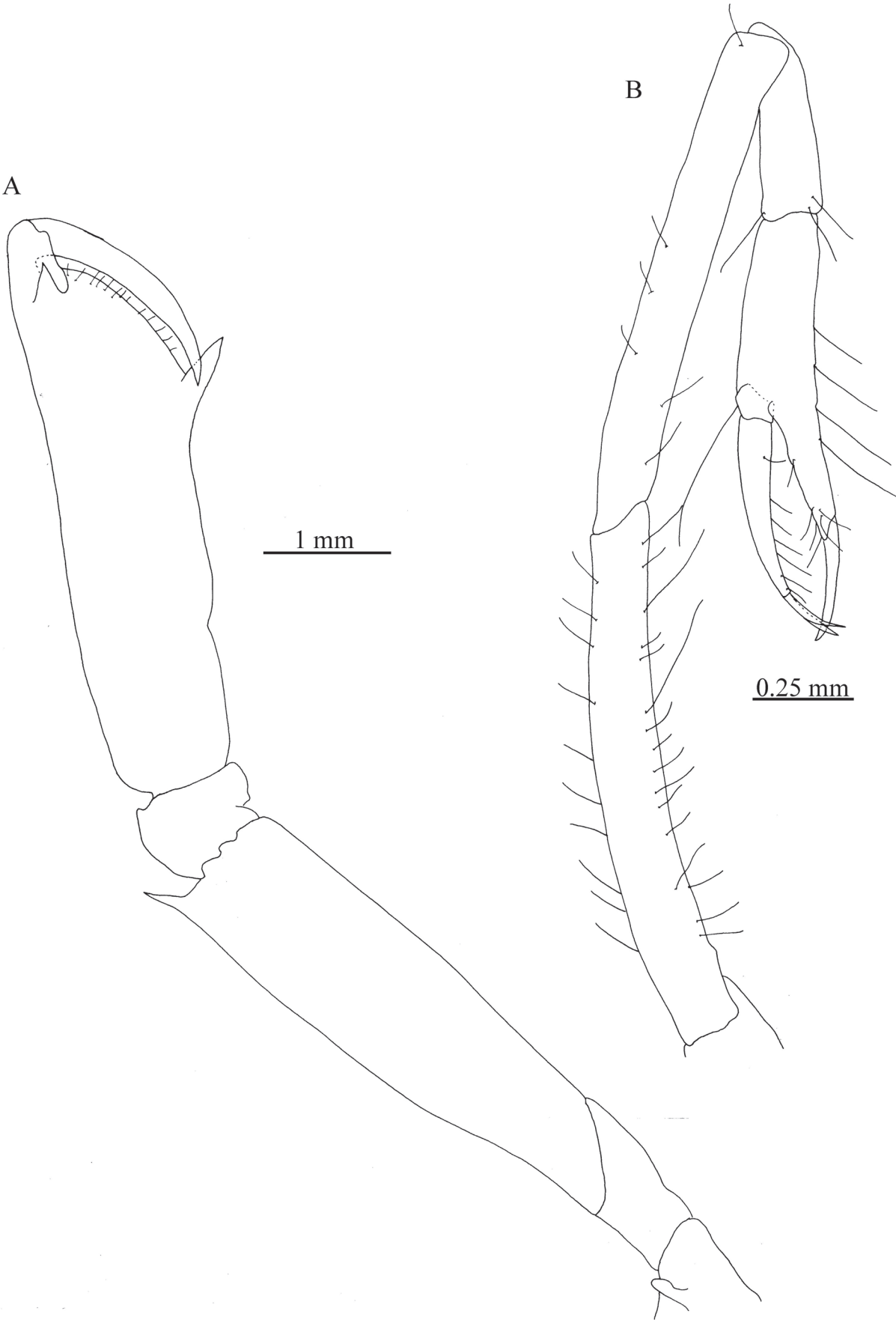


Figure 3. *Parapontophilus longirostris* male 7 mm (MNRJ 19814). A, left pereopod 1, dorsal view. B, left pereopod 2, dorsal view.

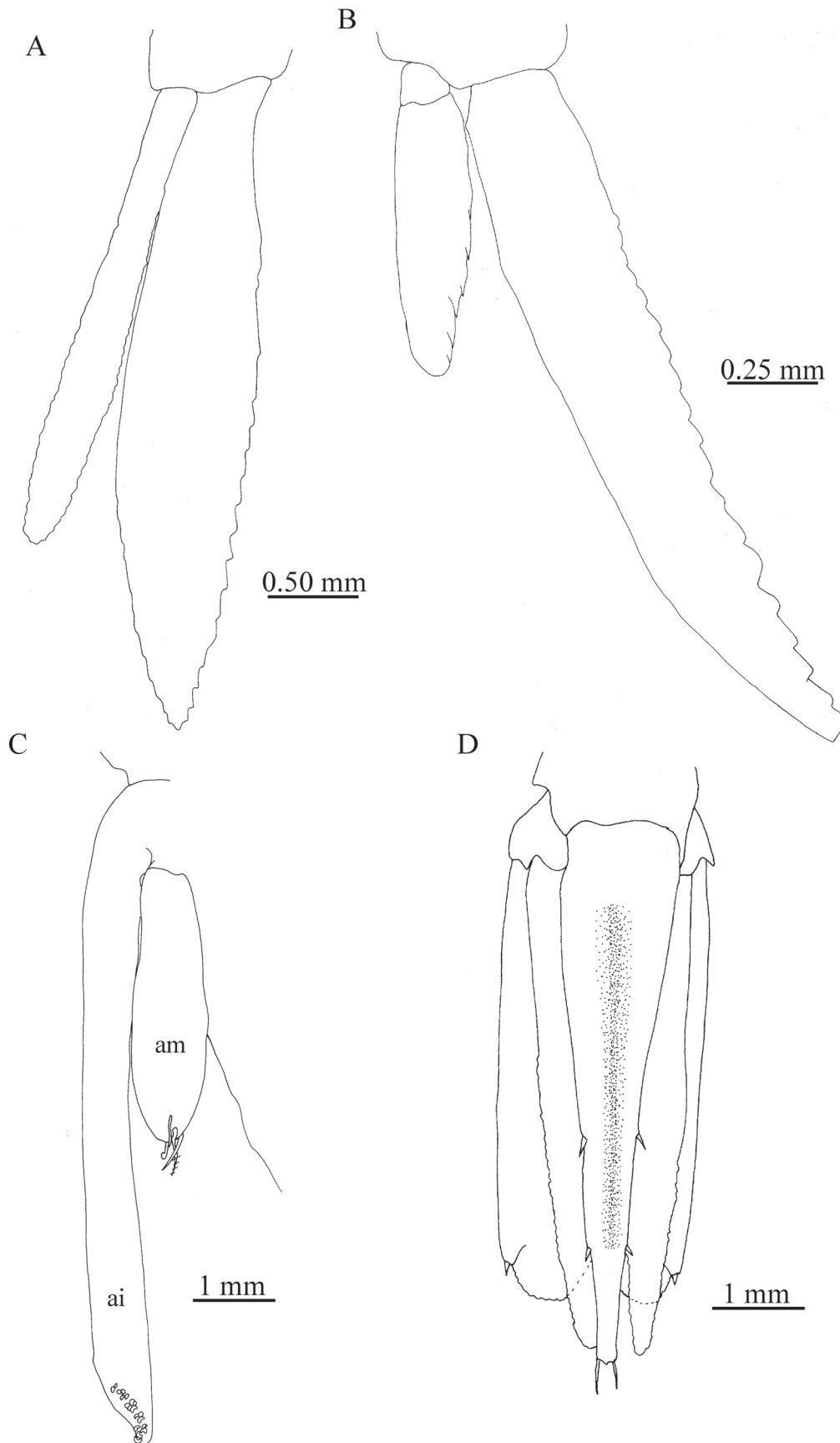


Figure 4. *Parapontophilus longirostris*. A. female 8 mm (MNRJ 19812). B-D, male 7 mm (MNRJ 19814). A, endopod and exopod of right pleopod 1. B, endopod and exopod of right pleopod 1. C, appendix interna and appendix masculina of right pleopod 2. D, telson and uropods, dorsal view (ai – appendix interna; am – appendix masculina).

Table I. Differences between *Parapontophilus longirostris*, *P. abyssi*, and *P. talismani*.

	<i>P. abyssi</i>	<i>P. talismani</i>	<i>P. longirostris</i> Brazilian material	<i>P. longirostris</i> (Komai, 2008)
Rostrum shape	2 pairs of lateral rostral teeth	one pair of lateral rostral teeth	2 pairs of lateral rostral teeth	2 pairs of lateral rostral teeth
Rostrum length	usually reaches the anterior margin of eyes	does not reach the anterior margin of eyes	overreaches anterior margin of eyes	overreaches anterior margin of eyes
Carapace size	1.6-1.7 times as long as wide	1.5-1.7 times as long as wide	about 1.8 times as long as wide	1.7-1.8 times as long as wide
Abdominal somite 6 length	2.6-2.8 times as long as deep	3-3.2 times as long as deep	2.8 times as long as deep	3-3.3 times as long as deep
Pereopod 1 palm	3.5-3.8 times longer than wide	3.2-3.5 times longer than wide	3.7 times longer than wide	4-4.8 times longer than wide
Cornea structure	not faceted	not faceted	faceted	faceted
Cornea length	0.15-0.17 of carapace length	0.17-0.20 of carapace length	0.12 of carapace length	0.12-0.13 of carapace length
Appendix masculina X	Am 0.6-0.7 length of Ai	—	Am 0.50 length of Ai	Am 0.6-0.7 length of Ai
Appendix interna				

cific mountains (Komai, 2008). Western Atlantic Ocean: off Brazilian coast (Rio de Janeiro).

Remarks: The Brazilian material was identified based mainly on Komai (2008) review of *Parapontophilus*. Besides that, some specimens were sent to Chiba Museum (Japan), examined and identified by Dr. Komai who confirmed the identification as *P. longirostris*. The specimens sent to Chiba Museum were deposited there.

All characters cited by Komai (2008) for *P. longirostris* were found in Brazilian material, except for some small differences in abdominal somite 6 and pereopod 1 palm measurements (Table I). Besides that, Table 1 summarizes some differences between *P. longirostris* and related species.

Acknowledgements

I would like to thank Dr. T. Komai for sharing unpublished data and helping with the identification of the specimens. Thanks also to Petrobras for support through a fellowship and for making the specimens available for study.

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Received: 01/09/2008

Accepted: 14/04/2009