RESEARCH/REVIEW ARTICLE

Three artotrogids (Crustacea: Copepoda: Siphonostomatoida) from the Ross Sea, Antarctica

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Keywords
Antarctica; Artotrogidae; redescription; *Neobradypontius*; *Sestropontius*; *Cryptopontius*.

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Abstract

The Artotrogidae, one of the most primitive of siphonostomatoid families, consists currently of 117 species in 21 genera. Most of these species (65%) are poorly or incompletely described since they have been rarely recorded in recent decades and, when encountered, have been found in very low numbers. During the 19th Italian Antarctic Expedition, with the RV *Italica*, to the Ross Sea in austral summer 2004, some artotrogid copepods were collected. This paper redescribes two species of artotrogid copepods, which are known only from the Southern Ocean, *Neobradypontius neglectus* and *Cryptopontius latus*, and describes for the first time a male of the genus *Neobradypontius*. Furthermore, a new species is described and added to *Sestropontius*, increasing the number of known species of this genus to three. The main discrepancies between the original descriptions and the specimens of the two species collected from the Ross Sea redescribed here were on the armature of the antennary exopod and leg 5. The new species, *Sestropontius italicae*, shares with its most similar congener, *S. mckinnoni*, the armature of the third endopodal segment of leg 1 and leg 2 and that of the third exopodal segment of leg 4. However, the segmentation of the antennae and the armature on the antennary exopod are different.

To access larger versions of Figs. 2–12 please see the supplementary file under Article Tools online.

The Artotrogidae is among the most primitive of siphonostomatoid families. This family currently consists of 117 species in 21 genera. Most of these species (65%) were poorly or incompletely described and have not been recorded since their original descriptions. Furthermore, the majority of the artrotogid genera have a maximum of 10 species, many are monotypic and only three of them—*Artotrogus* Boeck, 1859, *Bradypontius* Giesbrecht, 1895 and *Cryptopontius* Giesbrecht, 1899—account for 60% of the total number of species.

Rarely recorded in recent decades (Kim 1996), the artotrogid copepods are typically found in very low numbers (Johnsson & Neves 2005). During the last 40 years, 37 species have been described and only one previous known species has been redescribed. Although the majority of these new species were collected from the Sea of Japan (Ho 1984; Kim 1996, 1998), four of them were recorded from the Antarctic (Johnsson & Rocha 2002). During the 19th Italian Antarctic Expedition to the Ross Sea in austral summer 2004, some artotrogid copepods were collected. This paper redescribes two species of artotrogid copepods, *Neobradypontius neglectus* Eiselt, 1961 and *Cryptopontius latus* (Brady, 1910), and describes for the first time a male of the genus *Neobradypontius* Eiselt, 1961. Furthermore, a new species is described and added to *Sestropontius* Giesbrecht, 1899, increasing the number of known species of this genus to three.

Material and methods

Copepods were collected from samples taken in the area of Cape Hallett (Fig. 1) during the Victoria-Land Transect carried out onboard the RV *Italica* on the 19th Italian Antarctic Expedition during the austral summer of 2004

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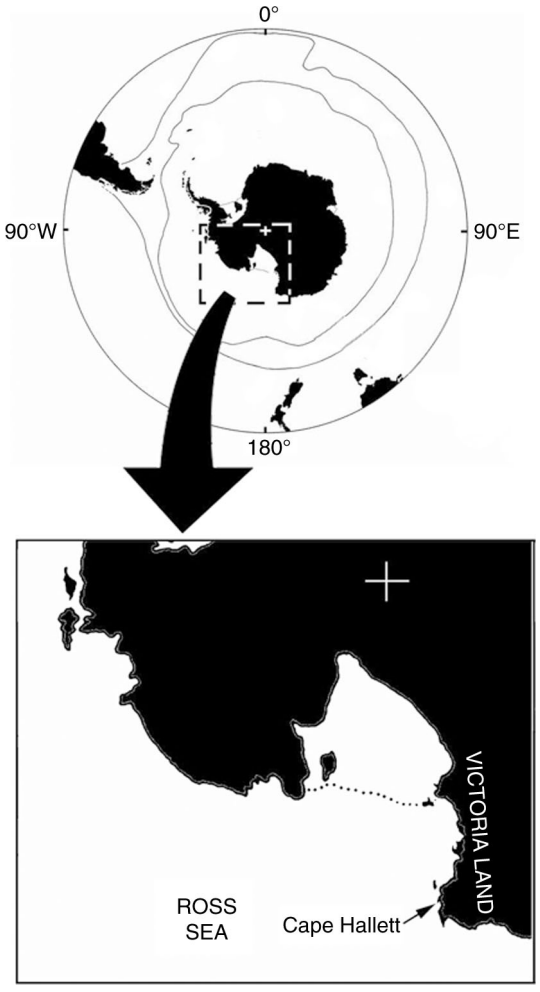

Fig. 1 Sampled area where the copepods were collected during the Victoria-Land Transect onboard the Italian RV *Italica* during the 19th Italian Antarctic Expedition.

(3 February to 4 March 2004). Samples from Cape Hallett were obtained from two depth transects inside and outside this bay. At each transect a slightly modified Rauschert dredge (see Lörz et al. 1999) with a mesh size of 500 μm and an opening of 0.5 m was used to take samples from water depth between 84 and 515 m. As this type of dredge was specially designed to obtain small macrobenthic animals like peracarid crustaceans, an inner net with a mesh size of 1 cm was used to hold back larger objects to prevent the small dredge from being blocked too quickly (Rehm et al. 2006). The dredge was trawled over the ground at a mean velocity of 1 knot. Haul lengths varied from 59 to 575 m. Copepods were found in washings of invertebrates from the outside of Cape Hallett Bay (72°15.7′ S, 170°24.8′ W) at 410–460 m depth and preserved in 70% ethanol. The most abundant taxa of the sampled area were Arthropoda (76, 23%), mainly Amphipoda (50, 19%) and Isopoda (16, 77%), and Annelida (14, 58%), heavily dominated by Polychaeta (Rehm et al. 2006).

Copepods were dissected in lactic acid, prior to staining them with Chlorazol black E (Sigma® C-1144). They were then examined as temporary mounts in lactophenol and later on, sealed with Entellan as permanent mounts. All figures were drawn with the aid of a camera lucida on a Leica DM LB differential interference microscope (Leica, Wetzlar, Germany). All appendage segments and setation elements were named and numbered using the system established by Huys & Boxshall (1991).

The type material is deposited in the National Museum of Natural Sciences in Madrid (MNCN) and in the collection of the Marine Biology Laboratory research group of the University of Seville.

Results

***Neobradypontius* Eiselt, 1961**
***Neobradypontius neglectus* Eiselt, 1961**
***Bradypontius uncinatus* Brady, 1910 part 63B**

Figures 2–5

Material examined. One female and two males from Cape Hallett, 410–460 m depth, 9 February 2004, Antarctica.

Description. Adult female: body cyclopiform, dorsoventrally flattened with very enlarged prosome and cylindrical urosome (Fig. 2a). Body length 2.3 mm, greatest body width 2.1 mm. Pedigerous somite 1 totally fused with cephalosome. Epimeral areas of cephalothorax and pedigerous somites 2–3 with lateral margins projected. Epimera of pedigerous somite 3 projected beyond posterior margin of genital double-somite reaching anal somite. Length:width ratio of prosome 0.8:1. Ratio of length of prosome:urosome 3.5:1.

Urosome 5-segmented (Fig. 2b), comprising pedigerous somite 5, genital double-somite and three free abdominal somites. Dorsal surface of genital double-somite and free abdominal somites with epicuticular scales. Pedigerous somite 5 trapezoidal and small. Genital double-somite wider than long, 250 × 391.6 μm, slightly rounded laterally and bearing genital apertures, paired gonopores located dorsolaterally, posterior margins posterolaterally projected into pair of smooth lamella, reaching first postgenital somite. Each genital area (Fig. 2d) with three smooth setae: two small and one longer. Three postgenital somites 75 × 250 μm, 58.3 × 250 μm and 192 × 291.6 μm, length:width ratios 0.3:1, 0.23:1 and 1.52:1, respectively (Fig. 2b). Caudal rami nearly as long as wide with six setae (seta I absent). Lengths of setae II–VII, 83, 333, 388, 416, 222 and 55 μm, respectively. Setae III–VI plumose, setae II and VII plumose near tip.

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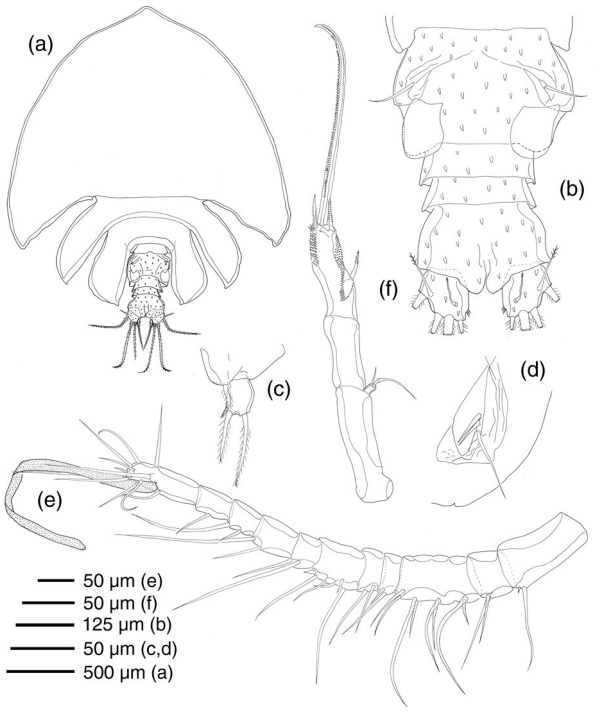

Fig. 2 *Neobradypontius neglectus* Eiselt, 1961 (female): (a) habitus, dorsal; (b) urosome, dorsal; (c) leg 5; (d) genital area; (e) antennule; (f) antenna.

Antennule (Fig. 2e) 571 µm long, not including setae, 11-segmented. Lengths of segments measured along posterior margins 104 µm (91 µm along anterior margin), 36, 77, 23, 27, 50, 27, 50, 41, 45 and 91, respectively. Setation as follows: 2; 2; 8; 2; 2; 5 + spine; 2; 2; 2; 1; 11 + ae. All setae smooth.

Antenna (Fig. 2f) 261 µm long (excluding distal claw), with basis 111 µm long. Endopod two-segmented; first segment 65 µm long, unarmed; second segment 85 µm long, ornamented with patches of spinules on both margins and armed with 1 spinulose seta proximally and three terminal elements: one setulose distal seta, one spinulose seta near insertion claw, and claw, 192 µm long. Exopod one-segmented, 11.5 µm long with two smooth terminal setae, one long.

Mandible (Fig. 3a) comprising stylet bearing distally six teeth (Fig. 3b), palp absent. Maxillule bilobed (Fig. 3c); praecoxal endite (inner lobe) 180 µm long, proximal part enlarged, ornamented with setules on lateral margin and few spinules medially; armed with three distal setae, the inner with spinules on second half. Palp (outer lobe) 140 µm long, armed with two setae, the shorter with spinules on inner margin, longer with few spinules along outer margin and with setules at end and ornamented with setules at end of inner margin.

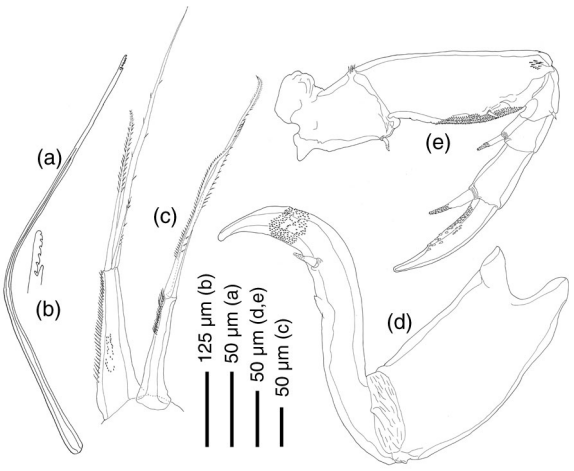

Fig. 3 *Neobradypontius neglectus* Eiselt, 1961 (female): (a) mandible; (b) distal part of mandible; (c) maxillule; (d) maxilla; (e) maxilliped.

Maxilla (Fig. 3d) with stout syncoxa 161 µm long; claw strong, longer than syncoxa and curved distally, with one lateral spiniform process and stout spiniform lateral seta. Claw surface with fine spinules subdistally.

Maxilliped (Fig. 3e) five-segmented; syncoxa 89 µm long, with short seta on inner margin; basis 146 µm long, with small spiniform seta medially on inner margin and ornamented with spines on this margin. Endopod three-segmented, segments 1–3 measuring 36, 36 and 53 µm long, respectively. First endopodal segment with small seta on outer margin. Second and third endopodal segments with strong spiniform seta. Third segment with claw 103 µm long, curved distally and ornamented with fine spinules on inner margin.

Swimming legs 1–4 (Fig. 4a–d) biramous, with two-segmented protopods and three-segmented rami. Intercoxal sclerite present in legs 1–4. Inner coxal seta plumose in legs 1–3 and reduced and naked in leg 4. Lateral margins of exopodal segments in legs 2–4 with minute serrations; lateral margins of endopodal segments in legs 1–4 with rows of setules. Second and third endopodal segments in legs 2–4 with beaklike spiniform process distally. Outer lateral spines of exopodal segments in legs 1–4 reduced. Third endopodal segment of leg 4 with two terminal setae reduced. Table 1 shows the spine and seta formula of all legs.

Leg 5 (Fig. 2c) with protopodal segment incorporated into somite, outer basal seta plumose, displaced to laterodorsal surface. Free segment (exopod) small with two plumose terminal setae.

Adult male: body cyclopiform, dorsoventrally flattened with oval cephalothorax and cylindrical urosome (Fig. 5a). Body length 1.7 mm, greatest body width 1.3 mm. Cephalothorax and pedigerous somites 2–3 with lateral

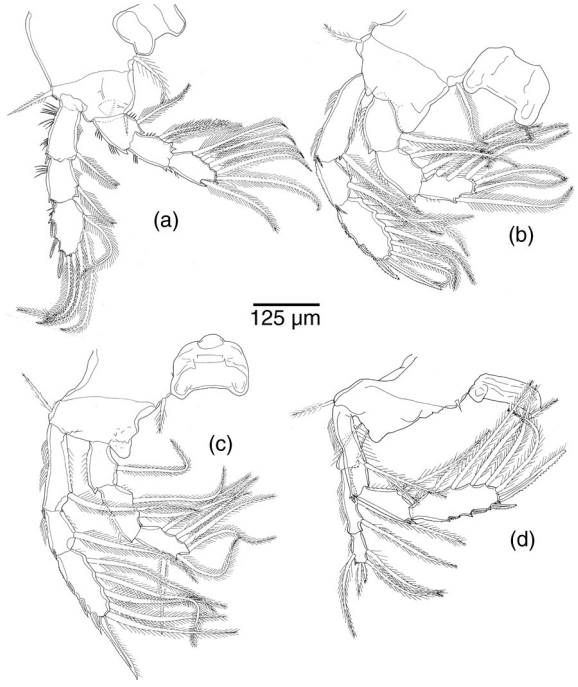

Fig. 4 *Neobradypontius neglectus* Eiselt, 1961 (female): (a) leg 1; (b) leg 2; (c) leg 3; (d) leg 4.

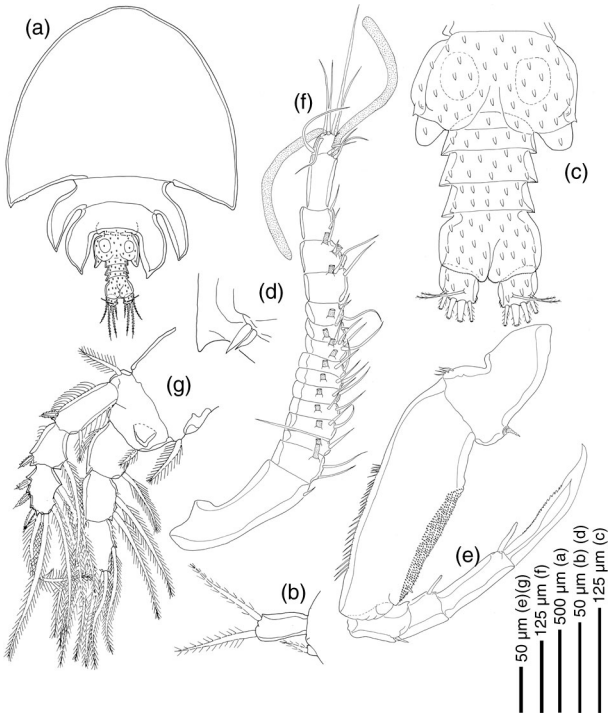

Fig. 5 *Neobradypontius neglectus* Eiselt, 1961 (male): (a) habitus, dorsal; (b) leg 5; (c) urosome, dorsal; (d) leg 6; (e) maxilliped; (f) antennule; (g) leg 1.

margins projected. Pedigerous somite 3 projected beyond posterior margin of genital somite reaching anal somite. Length:width ratio of prosome 1:1. Ratio of length of prosome:urosome 3:1.

Urosome five-segmented, comprising pedigerous somite 5, genital somite and three free abdominal somites. Dorsal surface of genital and free abdominal somites with epicuticular scales (Fig. 5c). Genital somite wider than long. Caudal rami about as long as wide; with six setae as in female. Appendages as in female except for antennules, maxillipeds and fifth and sixth legs.

Antennule 514 µm long, not including setae, 16-segmented (Fig. 5f), setation as follows: 1, 2+ae; 2+ae, 2+ae, 2+ae, 2+ae, 2+ae, 2+ae, 2+ae, 4+2ae, 2+ae, 2+ae, 2+ae, 2+2ae; 2, 2+ae, 8+ae. All setae smooth.

Maxilliped five-segmented (Fig. 5e), similar to that of female but second segment with setules on outer margin and claw inflated at end and serrulated on inner margin.

Table 1 *Neobradypontius negelectus* Eiselt 1961, female, formula for armature of legs 1–4.

	Coxa	Basis	Exopodal segments	Endopodal segments
Leg 1	0–1	1–1	I-1; I-1; III,5	0–1; 0–2; 1,2,3
Leg 2	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,2,3
Leg 3	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,2,3
Leg 4	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,2,2

Swimming legs as in female but beaklike spiniform distal processes of endopodal segments longer and outer lateral spines of exopodal segments more developed (Fig. 5g).

Leg 5 with protopodal segment incorporated into somite (Fig. 5b), with plumose seta. Free segment more slender than that of female with two equal plumose setae.

Leg 6 with two small naked setae (Fig. 5d).

Remarks. *Neobradypontius* was erected by Eiselt (1961) to accommodate a group of species which were previously placed in other artotrogid genera since they have pleura of the third pedigerous somite extending backwards at least to the front edge of the first postgenital somite. In 1910, Brady mixed six different species under the name of *Dystrogus uncinatus* Brady 1910. One of these species belonged to the genus *Bradypontius* Giesbrecht 1895 and was considered as undetermined by Eiselt (1961). The remaining five species were included into two new genera described by this author: *Pseudotrogus* Eiselt 1961 and *Neobradypontius*. Among the three *Neobradypontius* species, Eiselt poorly described *N. neglectus* since a single female was available from Brady's collection deposited in Hancock Museum, Newcastle, UK. Therefore, he drew the urosome, the first and second antenna, the maxillule and the fourth and fifth legs

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although without their complete ornamentation and/or armature. The remaining appendages are here described for the first time since this is the second record for this species.

There are two discrepancies between Brady's and Eiselt's descriptions and the specimens collected from the Ross Sea, Antarctica: (1) the antennary exopod has not one but two elements; Eiselt missed one small terminal seta; and (2) the two terminal setae of the third endopodal segment of leg 4 are much shorter than those drawn by Eiselt.

With regards to the antennule, the species of genus *Neobradypontius* fall into two groups: females with less than 10 segments and females with 10 or more segments on this appendage. The latter group contains five species of which only two, *N. gigas* (Brady 1910) and *N. neglectus*, have 11-segmented antennules. Nevertheless these two species can easily distinguished by their total length, the length of the caudal ramus and the armature of leg 5.

This is the first time that a male of this genus has been described. Its 16-segmented antennule with 14 aesthetascs has a conservative pattern since a maximum of 19 segments is expressed in male siphonostomatoids and 17 segments in artotrogid males.

Distribution. Known only from the Southern Ocean: "GauB-station" (66° S, 90° E) at 380 m depth during the German South Polar Expedition (1901–03) onboard the sailing vessel *Gauss* (Brady 1910) and Cape Hallett Bay (72°15.7″ S, 170°24.8′ W) at 410–160 m depth during the present expedition.

***Cryptopontius* Giesbrecht, 1899**

***Cryptopontius latus* (Brady, 1910)**

***Dyspontius latus* Brady, 1910**

Figures 6–9

Material examined. Two females and one male from Cape Hallett, 410–460 m depth, 9 February 2004, Antarctica.

Description. Adult female: body cyclopiform, dorsoventrally flattened with moderately enlarged prosome and cylindrical urosome (Fig. 6a). Mean body length 1.5 mm, greatest body width 937 μm. Pedigerous somite 1 totally fused with cephalosome. Epimeral areas of cephalothorax and pedigerous somites 2–4 with angular posterolateral corners. Epimera of pedigerous somite 3 reaching nearly anterior expansion of genital double-somite. Length:width ratio of prosome 1:1.2. Ratio of length of prosome:urosome 3:1.

Urosome 5-segmented (Fig. 6b), comprising pedigerous somite 5, genital double-somite and three free abdominal somites. Fifth pedigerous somite 242 μm wide, with pointed posterolateral corners. Genital double-somite 164 μm long, length:width ratio 2:1, with well developed, lateral anterior expansion (328 μm wide) and narrower

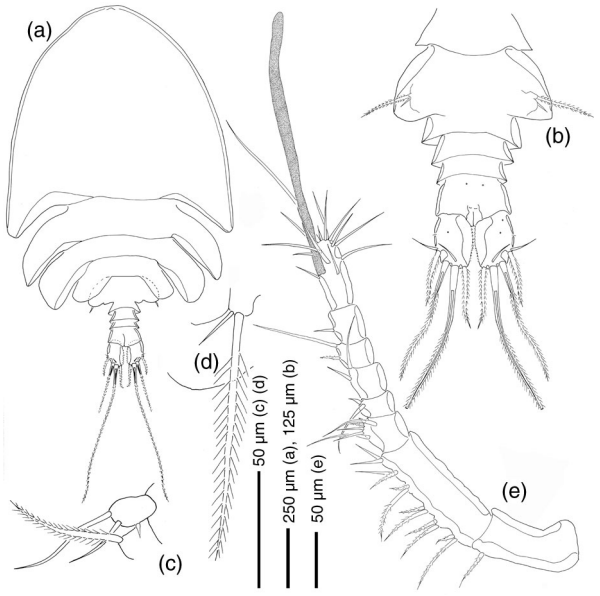

Fig. 6 *Cryptopontius latus* (Brady 1910) (female): (a) habitus, dorsal; (b) urosome dorsal; (c) leg 5; (d) genital area; (e) antennule.

posterior part (195 μm wide). Each genital area (Fig. 6d) with two setae: one short and naked and one long (five times longer than short seta) and plumose. Three postgenital somites wider than long (47 × 164 μm, 39 × 148 μm, 109 × 164 μm, respectively). Caudal rami elongate, 109 × 86 μm, with seven setae (seta I reduced to a setule). Lengths of setae II–VII: 55, 125, 281, 578, 133 and 55 μm, respectively; setae III–VI plumose, setae II and VII naked.

Antennule (Fig. 6e) slender, 437 μm long (not including setae), eight-segmented. Lengths of segments measured along posterior margins 90 μm (50 μm along anterior margin) 117, 50, 20, 33, 27, 33 and 67 μm respectively. Setation as follows: 1, 12, 6, 2, 2, 2, 1, 14 + ae.

Antenna (Fig. 7a) 176 μm long (excluding distal claw-like seta); coxa 40 μm long, unarmed; basis 47 μm long with setules on outer corner, and knob at mid-length of inner margin. Exopod one-segmented, small, with one long smooth seta as long as first endopodal segment. Endopod two-segmented; both segments with same length, 43 μm, first segment unarmed and ornamented with setules subapically, second segment armed with one lateral plumose seta proximally, three apical elements (innermost plumose, median long, 76 μm and spiniform; outermost short and naked), and two knobs on inner margin and ornamented with strong setules at end.

Oral cone (Fig. 7c) 380 μm long. Mandibular stylet (Fig. 7b) with distal teeth; mandibular palp absent. Maxillule (Fig. 7d) bilobed; lobes similar in length and both relatively stout. Inner lobe, tapering, 102 μm long, with two large naked setae nearly equal in length. Outer

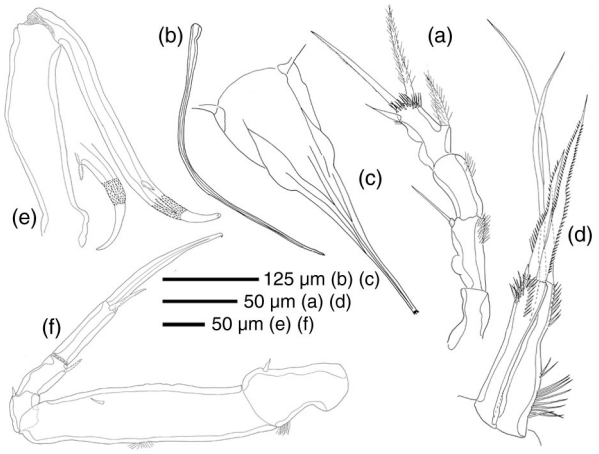

Fig. 7 *Cryptopontius latus* (Brady 1910) (female): (a) antenna; (b) mandible; (c) siphon, (d) maxillule; (e) maxilla; (f) maxilliped.

lobe 100 µm long, with three unequal setae, two stout and spinulose and outermost shorter and plumose at base. Outer corner of outer lobe and inner margin of inner lobe with patch of setules.

Maxilla (Fig. 7e) with 245 µm long, unarmed syncoxa and 320 µm long, distally curved claw with small plumose seta and ornamented with spinules near tip as figured. Maxilliped (Fig. 7f) five-segmented; syncoxa 110 µm long with short seta on inner margin and setules at outer corner; basis 285 µm long, with small spiniform seta medially on inner margin and patch of setules at middle length of outer margin. Endopod three-segmented, segments 1–3 measuring 45, 50 and 55 µm long, respectively. First endopodal segment with small seta on outer margin. Second and third endopodal segments with one plumose seta. Third endopodal segment with claw longer than entire segment (150 µm long), curved distally and unarmed.

Swimming legs 1–3 (Fig. 8a–c) biramous, with two-segmented protopods and three-segmented rami. Leg 4 (Fig. 8d) with reduced endopod. Intercoxal sclerite present in legs 1–4. Inner coxal seta plumose in legs 1–4. Outer basal seta plumose in leg 1, naked in remaining legs. Lateral margins of exopodal segments with minute serrations; lateral margins of endopodal segments in legs 1–3 with rows of setules. Table 2 shows the spine and seta formula of all legs.

Leg 5 (Fig. 6c) composed of protopodal segment fused to somite and free exopodal segment. Protopod with lateral plumose seta. Exopod small, 18 µm long, with two distal naked setae and one small lateral seta.

Leg 6 with two unequal setae, inner small and naked and outer very long and plumose (Fig. 6b, d).

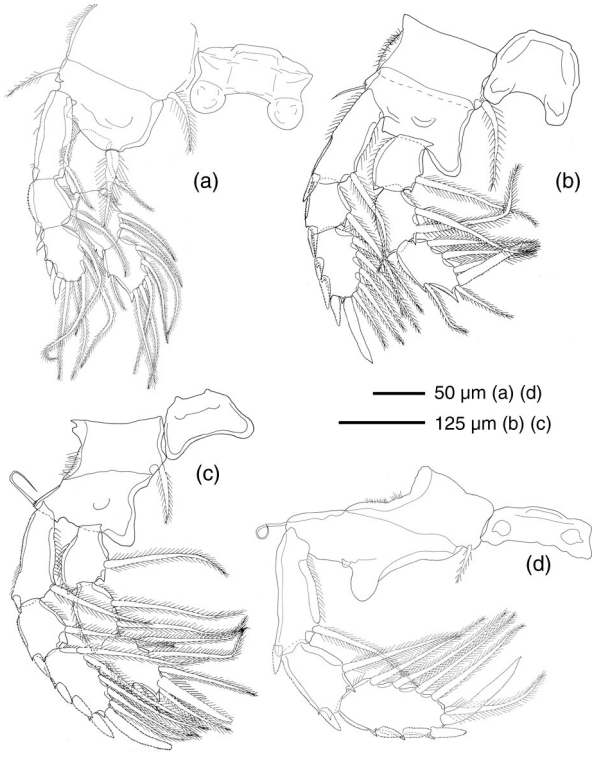

Fig. 8 *Cryptopontius latus* (Brady 1910) (female): (a) leg 1; (b) leg 2; (c) leg 3; (d) leg 4.

Adult male: body similar to female, but much smaller (Fig. 9a). Body length (excluding caudal setae) 648 µm long, greatest body width 357 µm, 1.8 times longer than wide. Ratio of length to width of prosome 1.2:1. Ratio of length of prosome to urosome 2.1:1. Epimeral areas of cephalothorax and pedigerous somites 2–4 with angular posterolateral corners. Epimera of third pedigerous somite reaching nearly anterior expansion of genital somite. Urosome (Fig. 9b) 5-segmented. Genital somite 185 µm long, length:width ratio 0.7:1. Three postgenital somites wider than long and caudal rami longer than wide; with seven setae as in female. Appendages as in female except for antennules and sixth legs.

Antennule (Fig. 9c) slender, 437 µm long (not including setae), 10-segmented. Lengths of segments measured along posterior margins 90 µm (50 µm along anterior margin) 74, 16, 20, 8, 8, 24, 21, 26, 47 and 32 µm,

Table 2 *Cryptopontius latus* (Brady 1910), female, formula for armature of legs 1–4.

	Coxa	Basis	Exopodal segments	Endopodal segments
Leg 1	0–1	1–1	I-1; I-1; III,5	0–1; 0–2; 1,2,3
Leg 2	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,1 + I,3
Leg 3	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,1 + I,3
Leg 4	0–1	1–0	I-1; I-1; III,I,5	Absent

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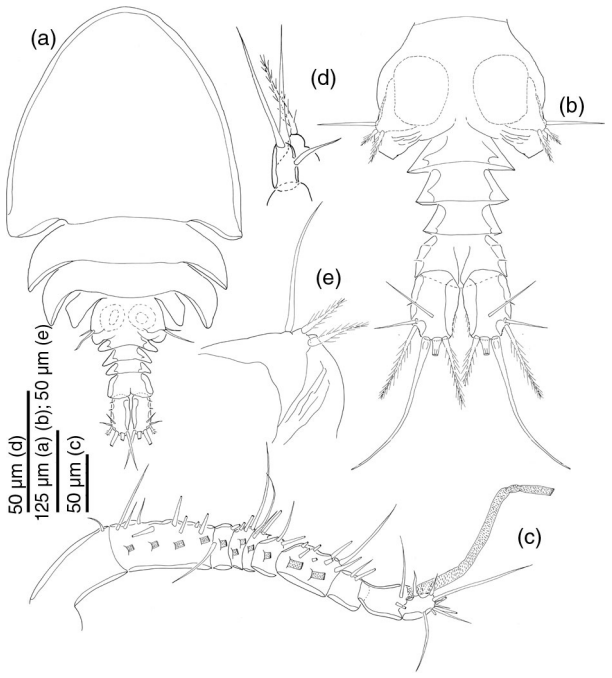

Fig. 9 *Cryptopontius latus* (Brady 1910) (male): (a) habitus, dorsal; (b) urosome, dorsal; (c) antennule; (d) leg 5; (e) leg 6.

respectively. Setation as follows: 1, 8 + 4ae, 2 + ae, 4 + 2ae, 2 + ae, 2 + ae, 8 + 2ae, 2, 2 + ae, 10.

Swimming legs as in female but outer lateral spines of exopodal segments more developed and second endopodal segment of leg 3 with enlarged bicuspid process on outer distal corner.

Leg 6 represented by three setae (Fig. 9e), two innermost equal in length and plumose, and outermost, long and naked.

Remarks. *Cryptopontius latus* was poorly described as *Dyspontius latus* by Brady, 1910 and moved to the genus *Cryptopontius* by Eiselt (1961) who found the name *Cryptopontius latus* preoccupied by a species described by Nicholls in 1944. Nevertheless, and following Nicholls' suggestion, Eiselt renamed Nicholls' species as *C. paracapitalis* Nicholls, 1944 in order to preserve the priority of the specific name of Brady's species. This is the second time that *C. latus* has been collected and it is the first time that the complete armature and ornamentation of the antennule, the mandible and leg 2 are given. It is also the first time that the male of this species is recorded. There are some discrepancies between Brady's and Eiselt's descriptions and the specimens collected from the Ross Sea, Antarctica: (1) the last segment of the antennary endopod has not three but four elements; both authors missed one terminal small seta; (2) the first segment of the maxilliped has one setule which was missed before; (3) the second endopodal segment of leg 1 has not one but two setae on its inner margin; (4) the last exopodal segment of leg 1 has not three but five setae on its inner margin; and (5) the fifth leg has not two but three elements: Eiselt missed one element.

This genus has a total of 25 species which can be divided into three groups according to the number of segments on the female antennules (8, 9, or 10 segments). The eight-segmented female antennule of *C. latus* is a characteristic shared with *C. digitatus* Kim, 1996; *C. donghaensis* Kim, 1996; *C. expletus* Neves & Johnsson, 2008; *C. ignotus* (Brady, 1910); *C. minor* Stock, 1965; *C. quinquesetus* Kim, 1996; and *C. ricinius* Malt, 1991 (Brady 1910; Stock 1965; Malt 1991; Kim 1996; Neves & Johnsson 2008). Among these species, only two, *C. latus* and *C. digitatus* have a trace of leg 4 endopod but in the first species is mere a small knob not as distinct as in *C. digitatus* which has a leg 4 with a 1-segmented endopod bearing a plumose seta (Kim 1996). Furthermore, *C. latus* is the only species characterized by an antennary exopod with only one long seta and by maxillular lobes subequal in length bearing the inner lobe two subequal setae, and the outer lobe two strong nearly spiniform setae and a small seta. These two characteristics not only separate *C. latus* from the congeners having eight-segmented antennules in the female but also from the male of *C. aesthetascus* Neves & Johnsson 2008, the only sex known for this species. This male has an antennary exopod armed with two naked setae and the lobes of the maxillule, although subequal in length, have a different armature: the outer lobe with two subequal barbed setae and the inner lobe with two setae (one unipinnate, one naked) (Neves & Johnsson 2008).

Distribution. This species is known only from the Southern Ocean (Brady 1910; present record).

Sestropontius Giesbrecht, 1899

Sestropontius italicae n. sp.

Figures 10–12

Material examined. Holotype, female, (MNCN 20.04/8577) from Cape Hallet, 410–460 m depth, 9 February 2004, Antarctica.

Description. Adult female: body cyclopiform. Mean body length 1.5 mm, greatest body width 625 µm and 2.3 times as long as wide (Fig. 10a). Cephalothorax and pedigerous somites 2–4 with pointed epimera and covered with sensilla. Pedigerous somite 3 reaching genital double-somite. Length:width ratio of prosome 1.5. Ratio of length of prosome:urosome 1.7.

Urosome (Fig. 10b) five-segmented, comprising pedigerous somite 5, genital double-somite and three free abdominal somites. Pedigerous somite 5 twice wider than long. Genital double-somite 164 × 219 µm, length: width ratio 0.7:1, with well developed, lateral anterior

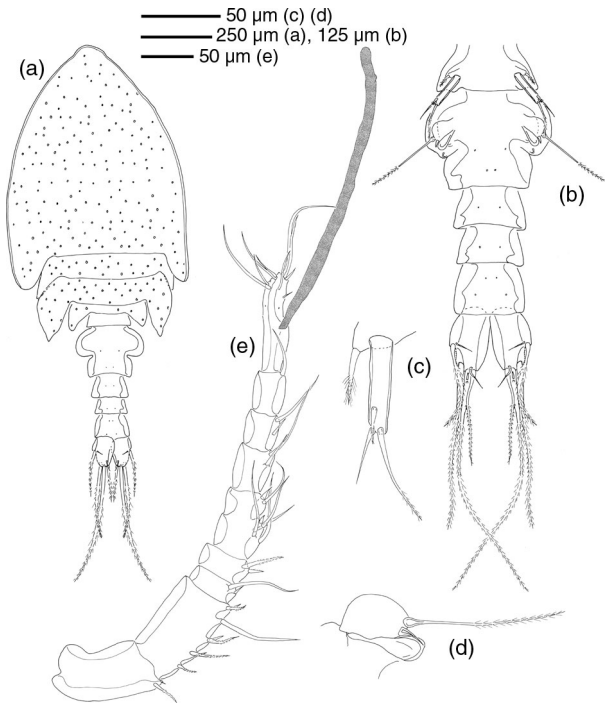

Fig. 10 *Sestropontius italicae* n. sp. (female): (a) habitus, dorsal; (b) urosome, dorsal; (c) leg 5; (d) leg 6; (e) antennule.

expansion (219 µm width) and narrower posterior part (156 µm width). Each genital area (Fig. 10d) with two unequal setae: one long and plumose and one short and naked.

Three postgenital somites wider than long (62 × 125 µm, 66 × 117 µm, 86 × 125 µm, respectively). Caudal rami, 94 × 70 µm, with six setae (seta I absent). Length of setae II–VII 31, 156, 297, 430, 164 and 39 µm, respectively; Setae II and VII naked, other plumose.

Antennule (Fig. 10e) 453 µm long, nine-segmented. Lengths of segments measured along posterior margins 71 µm (77 µm along anterior margin), 79, 15, 16, 59, 31, 32, 38 and 112 µm, respectively. Setation as follows: 1+1 setule, 8, 2, 2, 7, 2, 2, 1, 9+ ae.

Antenna (Fig. 11a) 232 µm long (including distal seta), coxa 37 µm long with knob on inner margin. Basis 83 µm long, with few setules on outer margin. Exopod 1-segmented, 12 µm long, bearing one small spiniform element and one long naked seta. Endopod two-segmented; first segment 55 µm long, unarmed, ornamented with setules; second segment 57 µm long with one plumose lateral seta, one lateral setule and three spinulose setae plus one setule terminally. Outermost terminal seta nearly as long as last endopodal segment, medial seta long (135 µm) and innermost seta short (25 µm). Mandible (Fig. 11c) comprising stylet with six small teeth distally, palp absent.

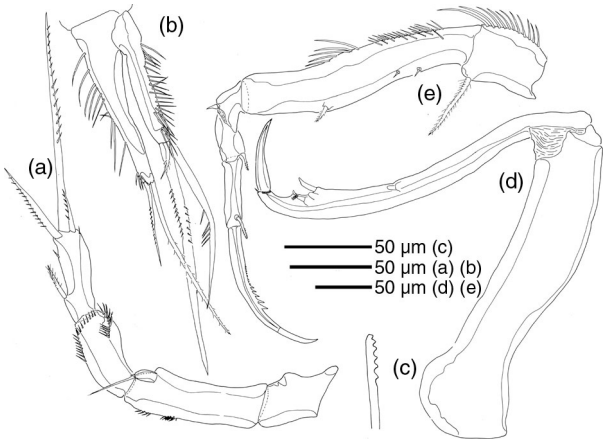

Fig. 11 *Sestropontius italicae* n. sp. (female): (a) antenna; (b) maxillule; (c) distal part of mandible, (d) maxilla; (e) maxilliped.

Maxillule (Fig. 11b) bilobed, inner lobe 85 µm long, with long plumose seta and unilateral spinulose seta, inner lateral margin with setules. Outer lobe 61 µm long, with stout pinnate seta, one seta with patch of setules at mid-length and short plumose seta, outer lateral margin with setules.

Maxilla (Fig. 11d) syncoxa as long as claw, 290 µm long; claw curved distally, with strong terminal spine (60 µm long) plus small distal setule and patch of spines at base, three spines and notch subdistally and another spine at half length of outer margin.

Maxilliped (Fig. 11e) five-segmented; syncoxa 63 µm long with long plumose seta on inner margin and long setules on outer margin; basis 203 µm long, with two tiny setules on proximal half and plumose small seta subdistally on inner margin. Endopod three-segmented, segments 1–3 measuring 33, 37 and 60 µm long, respectively. First endopodal segment with one seta; second and third segments with spinulose seta distally; third segment with claw (140 µm long) and inner margin serrate.

Swimming legs 1–4 (Fig. 12a–f) biramous, with three-segmented rami. Intercoxal sclerite present in legs 1–4. Inner coxal seta plumose in all legs, long in leg 1 and 3, longer in leg 2 and short in leg 4. Outer basal seta plumose in all legs, small in legs 1, 2 and 4, and long in leg 3. Table 3 shows the spine and seta formula of all legs.

Fifth leg (Fig. 10c) with plumose seta near insertion of free segment, free segment with two distal and one subdistal setae.

Adult male: unknown.

Etymology. The specific name *italicae* refers to the Italian RV *Italica* on which the Victoria-Land Transect was carried out.

Remarks. Hitherto the genus *Sestropontius* had two species: *Sestropontius bullifer* Giesbrecht 1899, originally described from males (Giesbrecht 1899) and later on

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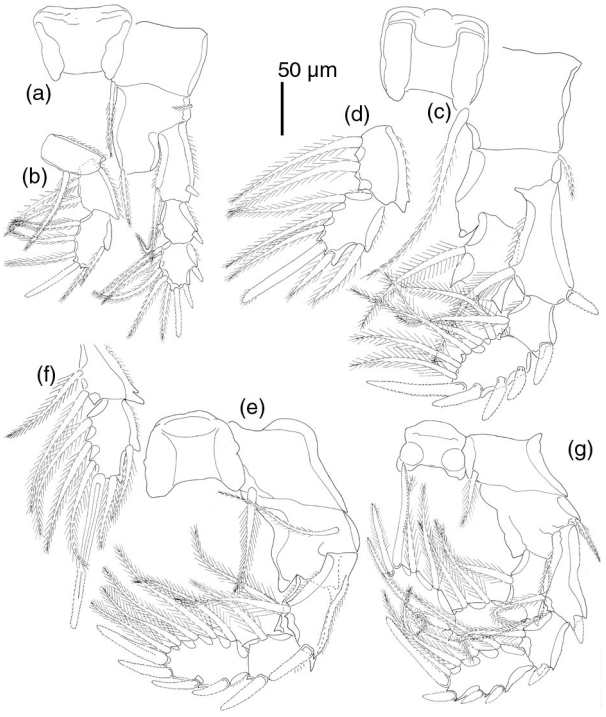

Fig. 12 *Sestropontius italicae* n. sp. (female): (a) leg 1; (b) endopod of leg 1; (c) leg 2; (d) two last endopodal segments of leg 2; (e) leg 3; (f) two last endopodal segments of leg 3; (g) leg 4.

from the only female found in association with the sponge *Crambe crambe* (Schmidt, 1862) by Stock (1965), and *S. mckinnoni* Johnsson & Rocha, 2002, described from one female. The first species was found in the Mediterranean Sea and the second one in the Southern Ocean (65°56.40S, 50°52.10E). The new species is different from these two species not only in the segmentation of the antennules (*S. bullifer* with eight and *S. mckinnoni* with 13 segments) but also in the armature and position of the aesthetasc (Stock 1965; Johnsson & Rocha 2002).

The new species shares with *S. mckinnoni* the armature of the third endopodal segment of leg 1 and leg 2 (1, 1+I, 3) (the new species has also this armature on the third endopodal segment of leg 3; see Table 1) and that of the third exopodal segment of leg 4 (eight elements) (Johnsson & Rocha 2002). In contrast, *S. bullifer* shows an armature of 1, 2, 3 on the third endopodal segment of leg 1 and leg 2, and has nine elements on the third exopodal segment of leg 4 (Giesbrecht 1899). However, *S. mckinnoni* has three elements on the antennary exopod instead of two elements present in *S. bullifer* and the new species, *S. italicae*.

Table 3 *Sestropontis italicae* n. sp., female, formula for armature of legs 1–4.

	Coxa	Basis	Exopodal segments	Endopodal segments
Leg 1	0–1	1–1	I-1; I-1; III,5	0–1; 0–2; 1,1 + I,3
Leg 2	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,1 + I,3
Leg 3	0–1	1–0	I-1; I-1; III,I,5	0–1; 0–2; 1,1 + I,3
Leg 4	0–1	1–0	I-1; I-1; III,I,4	0–1; 0–2; 1,1 + I,2

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