

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/236994332>

A new species of *Orecturus* Humes, 1992, Siphonostomatoida (Crustacea, Copepoda) associated with *Echinaster* sp. and sponges in Bahia (Brazil)

Article · March 1998

CITATIONS

9

READS

54

1 author:



R. Johnsson

Universidade Federal da Bahia

94 PUBLICATIONS 683 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Avaliação e pesquisa do Coral Sol na Baía de Todos os Santos [View project](#)



Phylogeny of the family Artotrogidae (Copepoda: Siphonostomatoida) [View project](#)

BOLETIM DO MUSEU NACIONAL

NOVA SÉRIE
RIO DE JANEIRO - BRASIL

ISSN 0080-312X

ZOOLOGIA

Nº 395

25 DE NOVEMBRO DE 1998

A NEW SPECIES OF *ORECTURUS* HUMES 1992, SIPHONOSTOMATOIDA
(CRUSTACEA, COPEPODA)
ASSOCIATED WITH *ECHINASTER* SP. AND SPONGES IN BAHIA (BRAZIL)¹

(With 3 figures)

RODRIGO JOHNSON
Museu Nacional
Universidade Federal do Rio de Janeiro

The genus *Orecturus* was established by HUMES (1992) to accommodate *O. grandisetiger* Humes, 1992, a new species from the Indo-Pacific, as well as two species previously placed in *Acontiophorus*: *O. excavatus* (Humes, 1989), also collected in the Indo-Pacific and *O. braccatus* (Stock & Kleeton, 1963) from Roussillon, Mediterranean coast of France.

Since then, four new species belonging to the genus, all from the Indo-Pacific region and always associated with corals have been described by HUMES (1993, 1994, 1996).

The purpose of this work is to emend the diagnosis of the genus and describe a new species found associated with the starfishes identified as *Echinaster* sp. and with sponges. The species was collected along the coast of the State of Bahia, Brazil; therefore this is the first record of this genus in the South Atlantic Ocean.

Orecturus Humes, 1992

Emended diagnosis – Prosome dorsoventrally flattened, laterally expanded. Anal somite elongate, longer than preceding somite. Antennule 16 to 17-segmented in female, 12-segmented in male. Antenna with 1-segmented exopod bearing 1 or 2 setae terminally and 1 seta laterally. Oral cone long, reaching level of third pair of legs. Mandible with slender setiform masticatory blade and 1-segmented palp bearing terminal setulose seta. Maxilliped sexually dimorphic. Spine and seta formula setae (setae and spines represented by Romans and Arabian numerals respectively) for third endopodal segments of legs 1 - 4 as 1-2-3; 1-1+I-3; 1-I-3; 1-I-2. Leg 5 ventral, free segment bearing 5.

¹ Entregue em 03/09/1998. Aceito em 20/11/1998.

Remarks

The new species of *Orecturus* has a 16-segmented antennule, instead of a 17-segmented as in the remaining species of the genus. Its basal part is composed of 4 segments, instead of 5 as in the other species (HUMES, 1989, 1992, 1993, 1994, 1996; STOCK & KLEETON, 1963).

In addition, HUMES (1992) included in the diagnosis of *Orecturus* the presence of a setule on the exopod of the antenna, together with a long seta as in *O. grandisetiger*. However, these characteristics appear to be restricted to this species and to the new species, and do not occur in any other species.

Order Siphonostomatoida Thorell, 1859

Family Asterocheridae Giesbrecht, 1899

Genus *Orecturus* Humes, 1992

Orecturus bahiensis n.sp.

Material examined – Holotype, 1♀ (MNRJ 7814) from Coroa Vermelha Reefs (17°50'S, 39°10'W), Nova Viçosa, BAHIA, BRAZIL; P.S.Young, R.Johnsson and A.O.Bustamante coll., 27/Jan./1995, associated with *Echinaster* sp. Paratypes, 1♀ (MNRJ 7815) from the same locality and host. Allotype, 1♂ (MNRJ 12181); paratypes, 11♀ (MNRJ 12180); 3♀ from Paredes Reefs (17°40'S, 39°00'W), Nova Viçosa, BAHIA, BRAZIL, P.S.Young and R.Johnsson coll. 19/Mar/1995, in sponges will be deposited in the USNM; 1♀ (MNRJ 12182) from Coroa Vermelha Reefs, Nova Viçosa, BAHIA, BRAZIL, P.S.Young and R.Johnsson coll. 27/Jan/1995, in algae.

Female – Body (Fig.1a) with broad prosome. Total length 1.16mm (1.10-1.22mm) and greatest width 0.69mm (0.65-0.72mm), based on 16 specimens. Leg 1 somite fused with cephalosome and with acute epimera. Pedigerous somites 2 and 3 also with almost same length and pointed epimera. Pedigerous somite 4 totally covered by preceding somite and rounded laterally. Ratio of length to width of prosome 1.4:1. Ratio of length of prosome to that of urosome 2.6:1.

Somite bearing leg 5 (Fig.1b, 1c) 81 x 172µm, partly covered by fourth somite. Genital double-somite wider than long (109 x 166µm), ratio of length to width 0.7:1. Genital areas located dorsolaterally and each bearing a seta. Postgenital somite wider than long (28 x 112µm), ratio of length to width 0.2:1, anal somite slightly longer than wide, 112 x 106µm. Anal somite 4 times longer than preceding somite.

Caudal rami slightly wider than long, (41 x 50µm) armed with 6 setae. Seta I absent, setae II to VII 175, 216, 297, 316, 234 and 78µm respectively, all setae plumose. Inner margin with row of setules.

Antennule (Fig.1d), 388µm long, excluding setae, and 16-segmented. Basal portion 4-segmented, rather broad; distal part (segments 5-16) slender. Lengths of segments, measured along posterior margins: 56 (30µm along anterior margin), 17, 61, 22, 6, 13, 20, 22, 20, 26, 22, 26, 24, 13, 22 and 18µm respectively. Setal formula and homologies as follows: I-2; II-2; III-VIII-11; IX-XII-7; XIII-1; XIV-1; XV-1; XVI-1; XVII-2; XVIII-1; XIX-1; XX-1; XXI-1+ae; XXII-XXIII-1; XXIV-XXV-3; XXVI-XXVIII-7. Aesthetasc on segment XXI 170µm long.

Antenna (Fig.1e) 244µm long (including terminal claw), with elongate basis (78µm long); plumose along inner margin. Exopod 1-segmented, slender, 41µm long, with one long and one short setae around apex, plus lateral seta. Endopod 2-segmented; first segment unarmed, 56µm long; second endopodal segment 30µm long, with

one medial and one apical seta; terminal claw, 80µm long, approximately as long as basis, curved distally.

Oral cone (Fig.1a) produced into long siphon-like distal part, 573µm long, nearly reaching intercoxal plate of P3. Mandible (Fig.2a) with stylet and slender 1-segmented palp. Stylet 144µm long and mandibular palp 41µm long, with smooth lateral seta almost reaching tip of stylet, and long plumose terminal seta. Maxillule (Fig.2b) bilobed; inner lobe 65µm, more than twice length of outer lobe, armed apically with 2 plumose and 2 smooth setae; outer lobe 25µm long and armed with 3 smooth apical setae. Maxilla (Fig.2c) with syncoxa, 117µm long, and curved terminal claw, 177µm long.

Maxilliped (Fig.2d) with syncoxa 80µm long. Basis 142µm long, with short distal seta. Endopod 3-segmented, increasing in size. First segment 15µm long and bearing short seta; second segment 40µm long, with 2 setae, and third segment 45µm long, with 1 seta and curved terminal claw 80µm long.

Swimming legs 1 to 4 (Figs.2e-g; 3a) biramous, with 3-segmented rami throughout. Each coxa with medial plumose seta; each basis with lateral seta. Setal formula as follows:

	coxa	basis	exopod	endopod
P1	0-1	1-0	I-1;I-1;III-5	0-1;0-2;1-2-3
P2	0-1	1-0	I-1;I-1;IV-4	0-1;0-2;1-1+I-3
P3	0-1	1-0	I-1;I-1;IV-3	0-1;0-2;1-1-3
P4	0-1	1-0	I-1;I-1;IV-4	0-1;0-2;1-1-2

P5 (Figs.1b, 1c) with oval free segment 59 x 37µm long, with seta on outer margin, 2 setae distally, and 2 setae on inner margin. Two triangular lobes formed by protopod and armed with a seta each.

Male – Body (Fig.3b) similar to female. Length (excluding caudal setae) 0.89mm; greatest body width 0.47mm, thus almost twice longer than wide (based on 1 specimen). Fifth pedigerous somite (Fig.3c) produced into triangular lobes, each armed with seta and partly recovering genital somite.

Urosome (Figs.3c, 3d) 4-segmented. Genital somite 35 x 113µm wider than long; ratio of length to width 0.3:1. Genital somite bearing seta posteriorly. First and second postgenital somites 15 x 98µm and 15 x 102µm, respectively. Anal somite 73 x 103µm long, i.e. nearly 5 times longer than preceding somite. Caudal rami wider than long, (37 x 45µm), with 6 plumose setae. Antennules broken. All other characteristics as in female.

Etymology – The specific name “*bahiensis*” refers to the State of Bahia, where the species was collected.

Remarks

Orecturus bahiensis n.sp. has four major characteristics distinguishing it from all other species of the genus. The antennule is 16-segmented, instead of 17-segmented as in all other species. The endopod has the setal formula of 0; 2 while all the other species have 0; 3. The exopod has 3 setae, 2 of them terminal and 1 lateral, exactly as in *O. grandisetiger* (HUMES, 1992), while the remaining species have only 1 long terminal and 1 lateral seta (HUMES, 1993, 1996; STOCK & KLEETON, 1963).

Finally, the pedigerous somite 5 of *Orecturus bahiensis* n.sp. has 2 triangular lobes formed by the protopod and armed with a seta. Of the other species, only *O. grandisetiger* Humes, 1992 (p.727, fig.10g) and *O. finitimus* Humes, 1993 (p.1091, fig.7j) have such lobes, which are unarmed in these species.

ACKNOWLEDGEMENTS

I wish to thank Dr.G.A.Boxshall (The Natural History Museum, London) for his assistance throughout the course of this study, Dr.J.Reid (Smithsonian Institution-National Museum of Natural History, Washington) for the revision of the manuscript and Dr.P.S.Young (Museu Nacional - Rio de Janeiro) for the revision of the manuscript and several useful comments. I also thank the Fundação Universitária José Bonifácio (FUJB) and FAPERJ (Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro) for financial support.

ABSTRACT

Orecturus bahiensis n.sp. was discovered in the State of Bahia, Brazil, associated with sponges and starfishes ascribed to *Echinaster* sp. This is the first record of the genus in the South Atlantic. The diagnosis of the genus has been emended because of presence of 3 setae on the exopod of the antenna and antennule of 16 segments in the species here described. In addition, *O. bahiensis* n.sp. has the endopod of the antenna possessing 0; 2 setae, and the pedigerous somite 5 with 2 triangular lobes ventro-laterally; innermost lobe corresponding to the inner part of the protopod armed with a seta.

Key words: *Orecturus* n.sp., Copepoda, Siphonostomatoida, Asterocheridae, sponges, *Echinaster* sp., Brazil

RESUMO

NOVA ESPÉCIE DE *ORECTURUS* HUMES, 1992 SIPHONOSTOMATOIDA (CRUSTACEA: COPEPODA) ASSOCIADA COM *ECHINASTER* SP. E ESPONJAS NA BAHIA (BRASIL)

Orecturus bahiensis n.sp. foi encontrado na Bahia, Brasil, associado com esponjas e com a estrela do mar *Echinaster* sp. Esta é a primeira vez que o gênero é registrado no Atlântico Sul. A diagnose do gênero foi emendada devido à existência de 3 cerdas no exópodo da antena e porque a antenula possui 16 segmentos nesta espécie e não 17 como nas demais. Além, *O. bahiensis* n.sp. tem o endópodo da antena armado com 0; 2 cerdas e o quinto somito pedígero com 2 lobos triangulares formados pelo prótopodo e armados com uma cerda.

Palavras-chave: *Orecturus* sp.n., Copepoda, Siphonostomatoida, Asterocheridae, esponjas, *Echinaster* sp., Brasil

LITERATURE CITED

- HUMES, A.G., 1989 - *Acontiphorus excavatus*, a new species (Copepoda Siphonostomatoida) associated with the soft coral *Dendronephthya* (Alcyonacea) in the Indo-Pacific. **Proc. Biol. Soc. Washington**, Washington, **102**(4):916-923.
- HUMES, A.G., 1992 - Copepoda associated with thorny coral *Antipathes* (Antipatharia) in the Indo-Pacific. **J. nat. Hist.**, London, **26**:709-744.
- HUMES, A.G., 1993 - Copepoda associated with gorgonaceans (Cnidaria) in the Indo-Pacific. **Bull. mar. Science**, Coral Gables, **53**(3):1078-1098.

HUMES, A.G., 1994 - Copepoda associated with octocorals in Northwestern Madagascar, including *Orecturus sakalavicus* n.sp. from the teleostacean *Coelogorgia palmosa*. **Trans. Am. Mic. Soc.**, Lancaster, **113**(2):117-126.

HUMES, A.G., 1996 - *Orecturus amplus*, a new species (Copepoda: Siphonostomatoida: Asterocheridae) from an alcyonacean in New Caledonia. **Proc. Biol. Soc. Washington**, Washington, **109**(1):112-117.

STOCK, J.H. & KLEETON, G., 1963 - Copépodes associés aux invertébrés des côtes du Roussillon. 3 - *Acontiphorus braccatus* n.sp. un cyclopoïde siphonostome associé aux octocoralliaires. **Vie Milieu**, Banyuls-sur-mer, **14**(3):551-560.

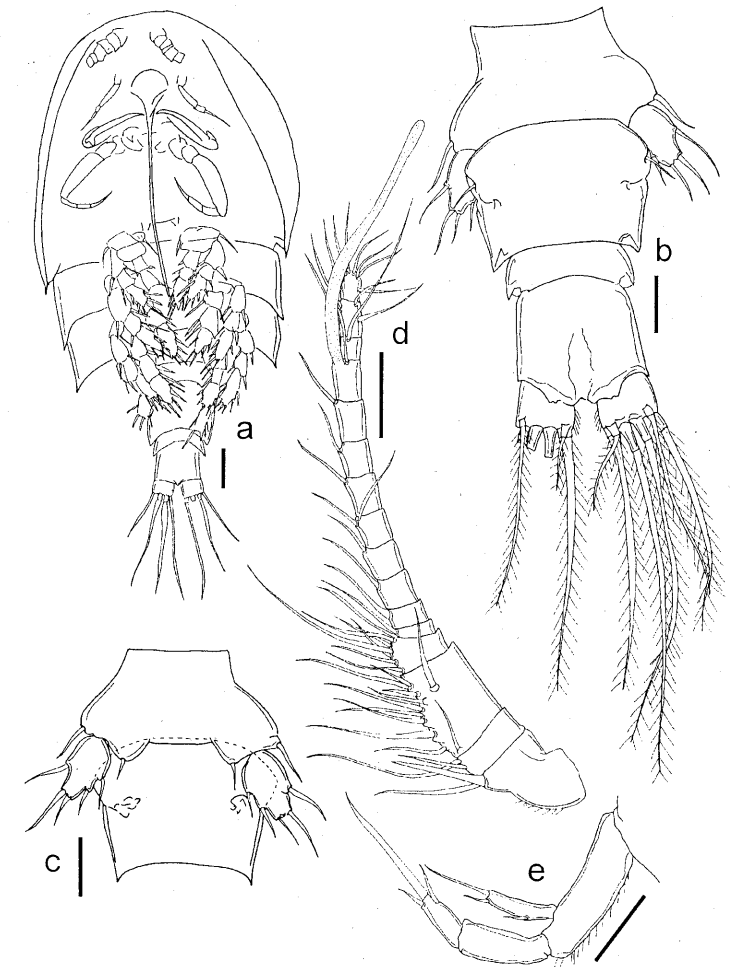


Fig.1- *Orecturus bahiensis* n.sp., ♀ holotype: a) ventral; b) urosome dorsal; c) urosome ventral; d) antennule; e) antenna. Scale bars equal 0.05mm, except a which equals 0.25mm.

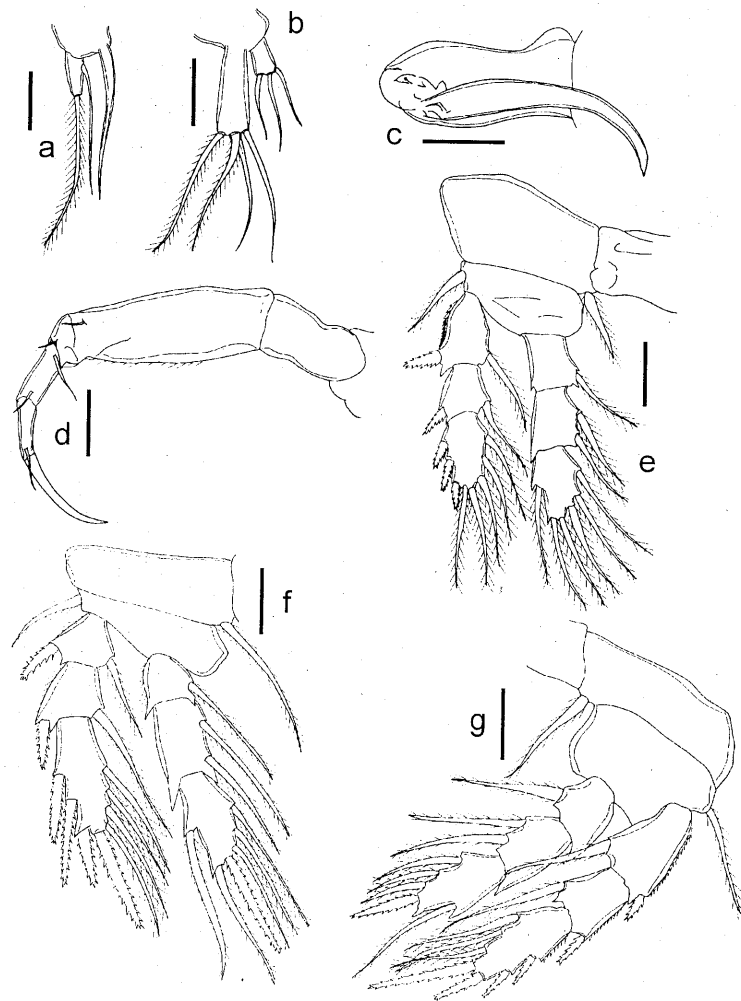


Fig.2- *Orecturus bahiensis* n.sp., ♀ holotype: a) mandible; b) maxillule; c) maxilla; d) maxilliped; e) P1; f) P2; g) P3. Scale bars equal 0.05mm.

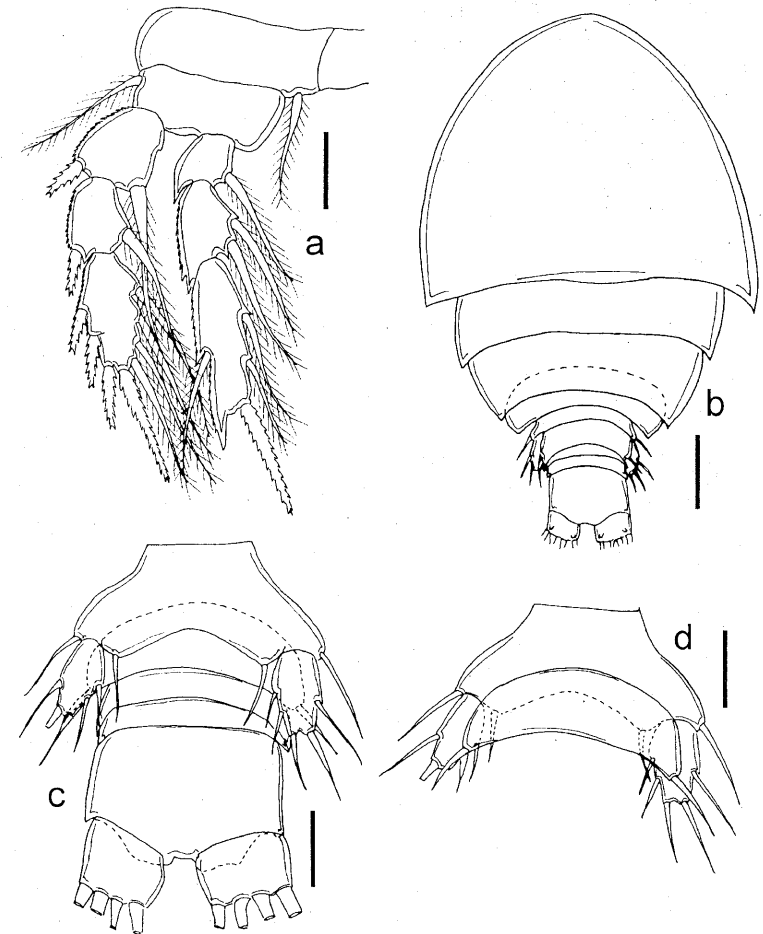


Fig.3- *Orecturus bahiensis* n.sp., ♀ holotype: a) P4; b-d) ♂ paratype: b) dorsal; c) urosome dorsal; d) urosome ventral. Scale bars equal 0.05mm, except a which equals 0.1mm.