

MEIOBENTHIC TEGASTIDAE FROM SALOMON ATOLL  
(CHAGOS ISLANDS): *ARAWELLA ALEXANDRI* N. GEN. N. SP.  
(Crustacea, Copepoda, Harpacticoida)

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During an expedition to Salomon Atoll (Chagos Islands, Indian Ocean) in 1985, many littoral and sub-littoral meiobenthos samples, yielding a rich Copepod's Fauna, were collected. The interesting material contained, together with some species of the genera *Tegastes* and *Syngastes*, now under study, a new Tegastidae, namely *Arawella alexandri* n. gen. n. sp.

Description of the new Tegastidae and comments on the systematics of the family are given here.

**TEGASTIDAE** Sars 1904

**Arawella** n. gen.

**DIAGNOSIS.** Characterized by a two-segmented endopodites P2-P4, two-segmented exopodites P2-P3 and three-segmented exopodite P4; first article of A1 very long, nearly half of the total antennal length; shape of genital somites peculiar; last three abdominal somites not fused and large.

This diagnosis is valid both for male and female.

**ETYMOLOGY.** The generic name *Arawella* refers to "Arawa", the name of the schooner used in the expedition to Chagos Islands.

**REMARKS.** In tab. 1 some generic morphological characteristics of Tegastidae are summarized. On one hand, *Arawella* n. gen. and *Syngastes* have some resemblance, showing reduction of the P2-P4 articles and the presence of one modified seta on the third article of the P4 exopodite, though among the five known genera of Tegastidae Sars, *Arawella* n. gen. is the only one with two-segmented endopodites P2-P4. The reduction of leg articles, as well as the small size and

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Tab. 1 — Generic morphological characteristics of Tegastidae.

	A1	A2	P2		P3		P4	
			Exop	Endp	Exop	Endp	Exop	Endp
<i>Tegastes</i> Norman, 1903	7-8	1-2	3	3	3	3	3	3
<i>Parategastes</i> Sars, 1904	6-7	1	2	3	2	3	3	3
<i>Syngastes</i> Monard, 1924	5-8	1	2	3	2	3	3	2
<i>Feregastes</i> Fiers, 1986	7	2	3	3	3	3	3	2
<i>Arawella</i> n. gen.	7	2	2	2	2	2	3	2

the poor number (3-4) of eggs, seems to confirm that the new genus is well adapted to the interstitial habitat. On the other hand, some "primitive" characters, such as the morphology of P5 and the two-segmented exopodite of A2, make *Arawella* n. gen. also closely related to some species of *Tegastes* and to *Feregastes*.

Due to the discovery of the new genus, the key for the identification of the genera of Tegastidae proposed by Lang (1948) is modified as follows:

- 1) Three-segmented endopodite P4 ..... 2  
Two-segmented endopodite P4 ..... 3
- 2) Three-segmented exopodites P2-P3 ..... *Tegastes*  
Two-segmented exopodites P2-P3 ..... *Parategastes*
- 3) Two-segmented endopodites P2-P3 ..... *Arawella* n. gen.  
Three-segmented endopodites P2-P3 ..... 4
- 4) Two-segmented exopodites P2-P3 ..... *Syngastes*  
Three-segmented exopodites P2-P3 ..... *Feregastes*

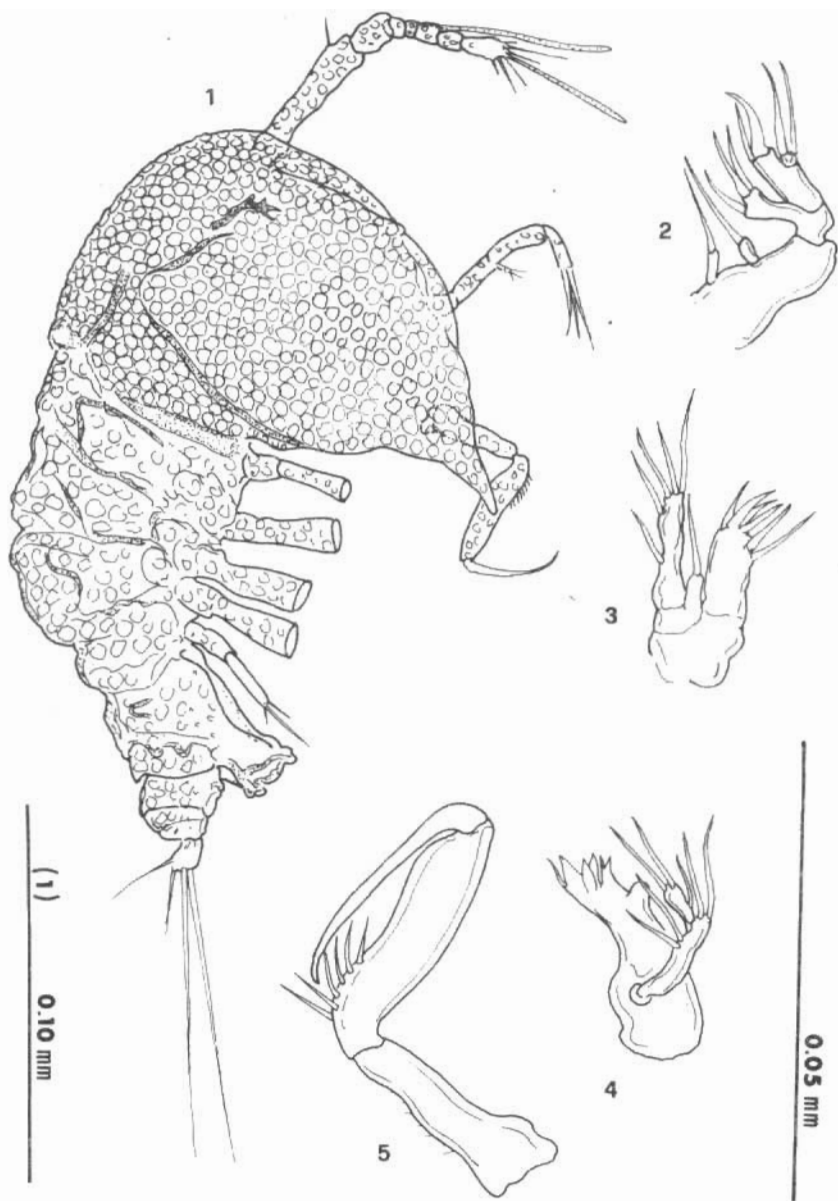
### *Arawella alexandri* n. sp.

**MATERIAL.** 4♀♀ (2♀♀ ovigerous) and 2♂♂ collected on the 14.VIII.1985 (V. Cottarelli leg). Boddam Island (Salomon Atoll, Chagos Islands), at about 3m depth, sand and coral detritus. Holotype: one dissected ovigerous female mounted in polyvinylactophenole, on a slide marked as *A. alexandri* ht. Paratypes: all remaining specimens, mounted in the same way, marked as *A. alexandri* pt. and numbered from 2 to 6.

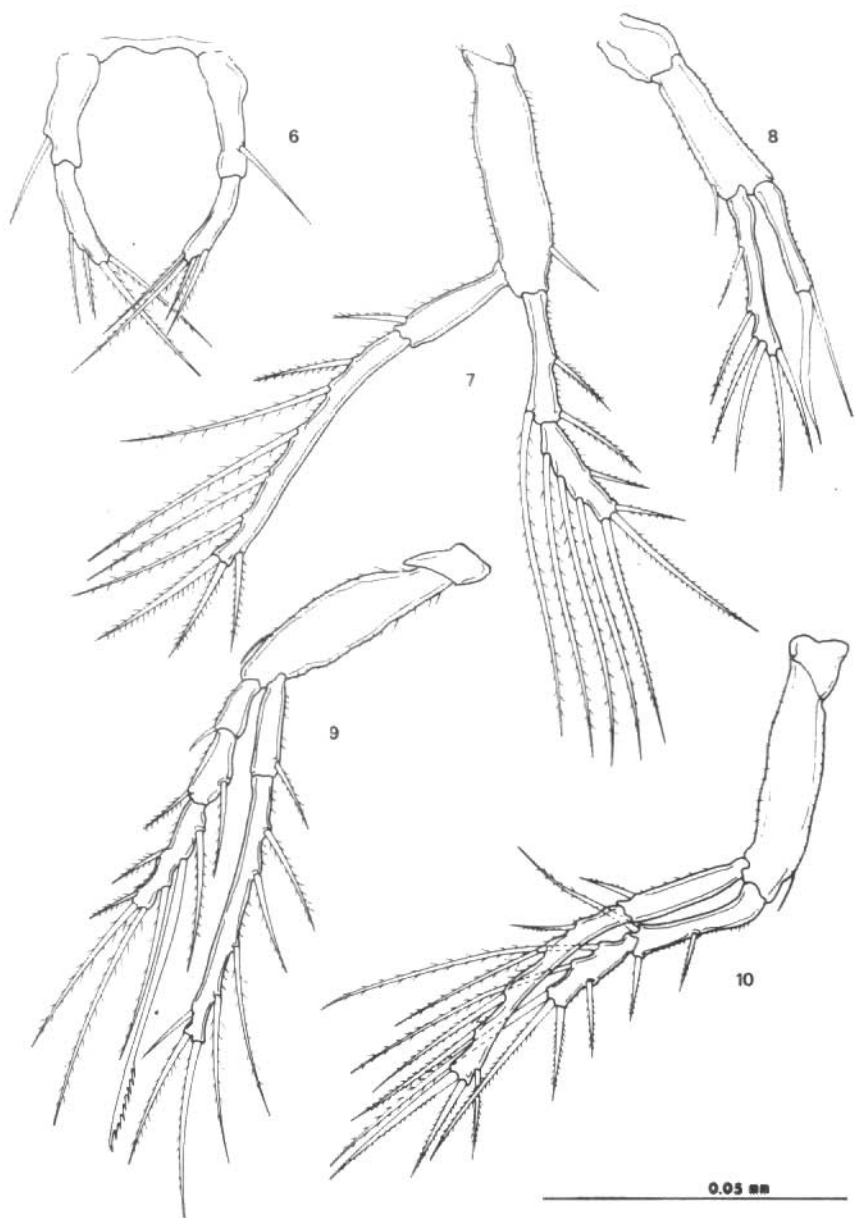
The type-series is part of the Authors' collection, in the Zoological Museum of the "La Sapienza" University, Rome.

**DESCRIPTION OF THE HOLOTYPE.** Habitus (Fig. 1): length, from the origin of the first antenna to the distal margin of the last abdominal somite, 0.19 mm. The whole integument is areolated. The formalin-preserved specimen is pale-yellow. Cephalotorax deep, with the postero-lateral corners slightly produced and pointed.

Genital somite (Figs. 19, 20) produced ventrally into a eaves-shaped projection; distal portion rectangular extended downwards, having thickened borders and one tubercle on each corner.



Figs. 1-5 — *Arawella alexandri* n. gen. n. sp. Holotype ♀. 1. Habitus; 2. Second maxilla; 3. First maxilla; 4. Mandible; 5. Maxilliped.



Figs. 6-10 — *Arawella alexandri* n. gen. n. sp. Holotype ♀. 6. P5; 7. P3; 8. P1; 9. P4; 10. P2.

Last three abdominal somites (Figs. 19, 20) large.

Furcal rami (Fig. 19) nearly trapezoid in lateral view, with four distal setae, one much longer than others.

First antenna (Fig. 15) seven-segmented. Proportional lengths as follows:

1	2	3	4	5	6	7	= 100%
47.0	13.1	7.7	4.6	6.9	6.1	14.6	

Fourth and seventh article with an aesthete. Remaining ornamentation as in figure.

Second antenna (Fig. 16): basis bare. Exopodite of two articles, each bearing two setae. Endopodite two-segmented; first article with one seta on the inner margin, second article with five distal addenda.

Mandible (Fig. 4): coxa-basis with two-distal setae. Exopodite (?) reduced to two setae. Endopodite one-segmented, with three setae.

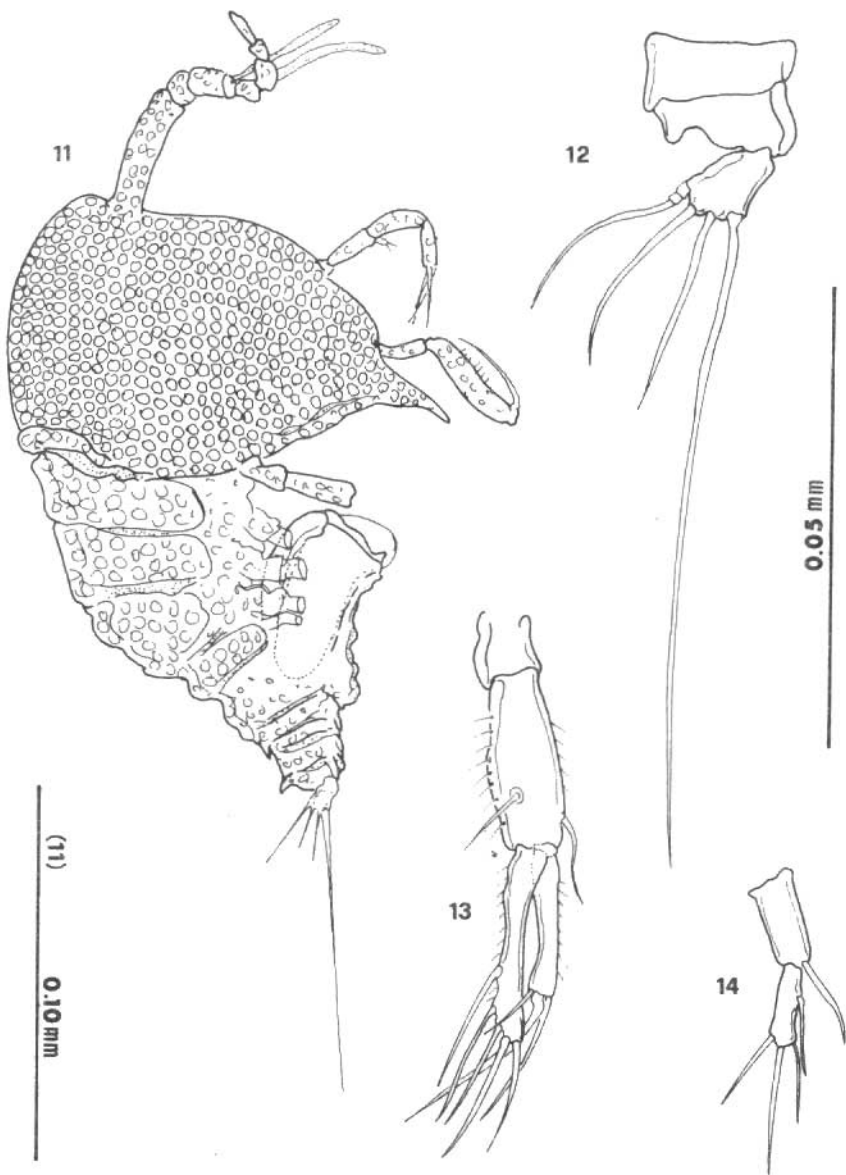
First maxilla (Fig. 3): arthrite of praecoxa distally with five spines and one long seta; coxa with one apical seta. Basis with three apical and one subapical setae. Endopodite (?) reduced to one seta. Exopodite lacking.

Second maxilla (fig. 2): syncoxa with three endites, proximal and middle endite with one apical seta, distal one with three terminal, setae. Basis distally with one claw and one seta. Endopodite represented by a small tubercle with two setae.

Maxilliped (Fig. 5): coxa-basis bare. First endopodite segment bearing a row of spines on the inner margin; second segment bare, with a strong claw.

P1 (Fig. 8): coxa bare; basis with one small seta on the inner distal corner. Endopodite narrow, much longer than exopodite, with two apical setae, two subapical setae and two anterior setae. Exopodite with two apical setae, the inner one strongest.

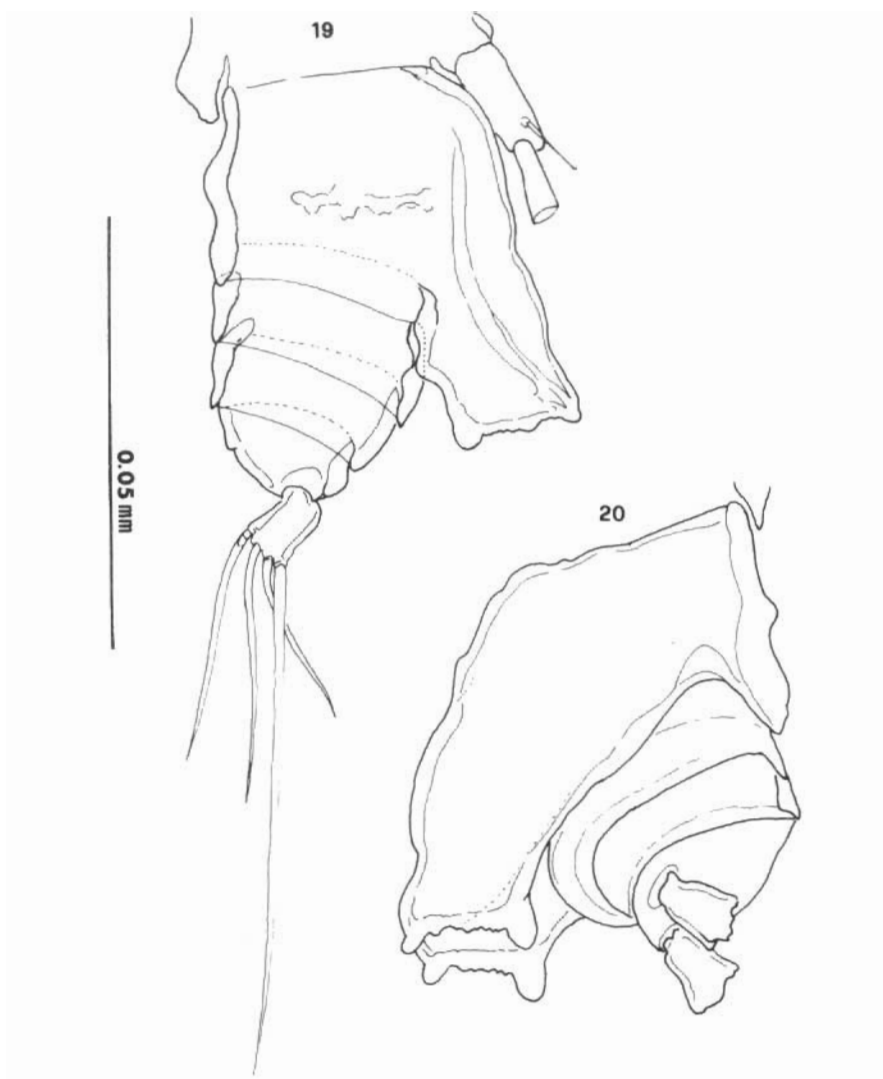
P2-P4 (Figs. 10, 7, 9): coxa small, triangular. Basis narrow and elongated. Endopodites two-segmented, much longer than the corresponding exopodites; first article elongated, outwards directed. Exopodites of P2 and P3 two-segmented. Exopodites of P4 three-segmented, third article with a middle strong inner seta distally notched.



Figs. 11-14 — *Arawella alexandri* n. gen. n. sp. Paratype ♂. 11. Habitus; 12. Furca; 13. P1; 14. P5.



Figs. 15-18 — *Arawella alexandri* n. gen. n. sp. Holotype ♀. 15. A1; 16. A2. Paratype ♂. 17. Genital somite; 18. A1.



Figs. 19-20 — *Arawella alexandri* n. gen. n. sp. Holotype ♀. Genital somite.

Spine and setal formula as following:

	1	Exp. 2	3	1	Endp. 2
P2	1	2.2.2	—	1	4.2.1
P3	1	3.2.2	—	1	5.2.1
P4	0	1	3.2.2	1	4.2.1



P5 (Fig. 6) narrow and elongated. Baseoendopodite with one lateral seta. Exopodite with two apical setae and two subapical setae.

DESCRIPTION OF MALE. Male (Fig. 11) smaller (0.16mm) than female. First antenna (Fig. 18) eight-segmented, with two aesthetes on fourth segment and one aesthete on eighth segment. Genital somite (Fig. 17) smaller than in female, presents a spermatophore reservoir slightly curved, forward-downwards directed. Shape nearly cylindrical.

VARIABILITY. All the above mentioned features are constant in the type-serie, apart from small variations in total length.

ETYMOLOGY. The new species is friendly dedicated to the marquis Alessandro Cavalletti, shipowner and skipper of the schooner "Arawa".

REMARKS. The new species seems to be localized in the zone of sand and coral detritus medium sized, at about 3m depth. In fact, the samples collected at 5 - 7 m depth on dead coral branches contained Tegastidae only of the genus *Syngastes* (four species), and *Tegastes* (three species). Furthermore, Tegastidae were not found on the beach during sampling with the method Karaman-Chappuis.

#### SUMMARY

A new Tegastidae, *Arawella alexandri* n. gen. n. sp., from Salomon Atoll (Chagos Islands, Indian Ocean) is described. The new genus, collected in interstitial habitat off the coast of Boddam Island, is mainly characterized by a two-segmented endopodites P2-P4, two-segmented exopodites P2-P3 and three-segmented exopodite P4. A key for the identification of the known genera of Tegastidae is also given.

#### RIASSUNTO

Viene descritto e discusso un nuovo genere e specie di Arpacticoidi della Famiglia Tegastidae: *Arawella alexandri* n. gen. n. sp. Il nuovo taxon è stato raccolto mediante il lavaggio di sabbia e detrito prelevati a tre metri di profondità di fronte all'arenile prospiciente l'isola Boddam, una delle isole che formano l'atollo Salomon, nelle isole Chagos (Oceano Indiano). *Arawella* n., gen. si distingue per gli endopoditi P2 - P4 bi-articolati, gli esopoditi P2 - P3 bi-articolati e l'esopodite P4 di tre articoli. Inoltre, il primo articolo di A1 è particolarmente lungo, la morfologia dei segmenti genitali è peculiare e gli ultimi tre somiti addominali non sono fusi. Nella nota vengono discusse le affinità e si presenta una chiave per l'identificazione dei generi della famiglia.

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