

The genus *Valettiopsis* (Crustacea, Gammaridea, Lysianassoidea) from the southwestern Atlantic, collected by the RV *Marion Dufresne*

Cristiana S. SEREJO

Museu Nacional/UFRJ, Departamento de Invertebrados,
Quinta da Boa Vista, Rio de Janeiro, RJ-20940-040 (Brazil)
csserejo@acd.ufrj.br

Yoko WAKABARA

Universidade Santa Úrsula, Instituto de Ciências Biológicas e Ambientais,
Rua Fernando Ferrari, 75, Rio de Janeiro, RJ-22231-040 (Brazil)
ywakabar@usp.br

Serejo C. S. & Wakabara Y. 2003. — The genus *Valettiopsis* (Crustacea, Gammaridea, Lysianassoidea) from the southwestern Atlantic, collected by the RV *Marion Dufresne*. *Zoosystema* 25 (2) : 187-196.

ABSTRACT

Deep sea samples obtained during the 1987 cruise of the RV *Marion Dufresne* along the southeastern Brazilian coast provided material of two species of *Valettiopsis* Holmes, 1908 (Crustacea, Amphipoda). *Valettiopsis macrodactyla* Chevreux, 1909 is redescribed and has its distribution extended to the southwestern Atlantic. *Valettiopsis ruffoi* n. sp. is described and can be distinguished from other *Valettiopsis* species by the slender gnathopods 1 and 2, coxa 4 deeply excavate posteriorly, and outer ramus of uropod 3 with distal article about 1/13 of proximal article. Notes on the geographical distribution of the genus and a key for the *Valettiopsis* species are provided.

KEY WORDS

Crustacea,
Amphipoda,
Lysianassoidea,
Valettiopsis,
Brazil,
southwestern Atlantic,
new species.

RÉSUMÉ

Le genre Valettiopsis (Crustacea, Gammaridea, Lysianassoidea) de l'Atlantique Sud-Ouest, récolté par le NO Marion Dufresne.

Des échantillons de grande profondeur obtenus pendant la croisière de 1987 du NO *Marion Dufresne* le long de la côte sud-est du Brésil ont fourni du matériel de deux espèces de *Valettiopsis* Holmes, 1908 (Crustacea, Amphipoda). *Valettiopsis macrodactyla* Chevreux, 1909 est redécrite et sa distribution est étendue pour inclure l'Atlantique Sud-Ouest. *Valettiopsis ruffoi* n. sp. est décrite, elle peut être distinguée des autres espèces du genre par les gnathopodes 1 et 2 minces, la coxa 4 profondément excavée à la partie postérieure, et les rameaux externes de l'uropode 3 avec l'article distal approximativement 1/13 de l'article proximal. Des commentaires sur la distribution géographique ainsi qu'une clé pour les espèces de *Valettiopsis* sont fournis.

MOTS CLÉS

Crustacea,
Amphipoda,
Lysianassoidea,
Valettiopsis,
Brésil,
Atlantique Sud-Ouest,
nouvelle espèce.

INTRODUCTION

Prior to the present study, the genus *Valettiopsis* Holmes, 1908 comprised three species: *V. dentata* Holmes, 1908, *V. macrodactyla* Chevreux, 1909 and *V. multidentata* Barnard, 1961. *Valettietta anacantha* (Birstein & Vinogradov, 1963) was removed from *Valettiopsis* based on characters of the coxae, pereopodal bases and mandibular palp armature (Lincoln & Thurston 1983). The presence of a toothed incisor process on mandibles led Thurston (1989) to suggest that the *Valettiopsis/Valettietta* complex should be removed from the Lysianassoidea Dana, 1849. However, no formal modification within this complex was proposed lately, which leads us to maintain *Valettiopsis* as a Lysianassoidea Dana, 1849. Knowledge of Brazilian deep water amphipods is sparse. During 1987, the RV *Marion Dufresne* dredged along the Brazilian southeastern coast (18°49'S to 25°25'S), collecting a total of 67 benthic samples, 32% of which came from depths ranging from 100 to 5155 m. The deep sea Amathillopsidae Pirlot, 1934 and Epimeriidae Boeck, 1871 from the *Marion Dufresne* cruise were described recently by Wakabara & Serejo (1999). As an extension of that work, two species of the lysianassoid genus *Valettiopsis* are studied herein: *V. macrodactyla* and a new species *V. ruffoi* n. sp. The former has been reported from the Azores (38°17'40"N) (Chevreux 1909, 1935) and from Bay of Biscay (Lincoln & Thurston 1983). Notes on the geographical distribution of the genus and a key for the *Valettiopsis* species are provided. The material is lodged in the Museu Nacional, Rio de Janeiro (MNRJ). For a map showing locations of the oceanographic stations conducted by the RV *Marion Dufresne*, see Tavares (1999). Abbreviations in the text are as follows: stn, station; CB, Blake trawl.

SYSTEMATICS

Superfamily LYSIANASSOIDEA Dana, 1849

Genus *Valettiopsis* Holmes, 1908

TYPE SPECIES. — *Valettiopsis dentata* Holmes, 1908, by original designation.

DIAGNOSIS (modified from Lincoln & Thurston 1983; Barnard & Karaman 1991). — Antennae 1 and 2 elongate, slender; antenna 1, flagellum with article 1 conjoint; accessory flagellum well developed. Mandible, incisor widely toothed; molar triturative; palp attached distal to molar. Maxilla 1, inner plate strongly setose medially; palp large and 2-articulate. Maxilliped with inner and outer plates well developed; palp strongly exceeding outer plate; dactylus well developed. Coxa 1 shortened and partly covered by coxa 2. Gnathopods 1 and 2 elongate and subchelate. Urosomite 1 with a dorsal tooth. Outer ramus of uropod 3, 2-articulate. Telson elongate, deeply cleft.

Valettiopsis macrodactyla Chevreux, 1909
(Fig. 1)

Valettiopsis macrodactyla Chevreux, 1909: 1, figs 1, 2; 1935: 8-10, pl. 2, fig. 1. — Lincoln & Thurston 1983: 86-89, figs 1-3.

MATERIAL EXAMINED. — TAAF MD55/Brazil, 1987, *Marion Dufresne*, stn 59 CB 99, 21°36'S, 39°58'W, 1190-1295 m, 31.V.1987, 1 ♀ 19.8 mm (MNRJ 15696).

DISTRIBUTION. — Type locality: Azores, 1992 m, 38°17'40"N, 28°15'10"W (Chevreux 1909); other localities: Bay of Biscay, 4300 m (Lincoln & Thurston 1983); Brazil, off Espírito Santo coast, 21°36'S, 39°58'W, 1190-1295 m (Fig. 5).

DIAGNOSIS. — Cephalic lobe triangular. Pereon segments 5-7 and pleon segments 1-3 smooth. Urosomite 1 with well developed dorsal tooth. Gnathopod 1, carpus slightly longer than propodus; palm transverse. Gnathopod 2, carpus subequal in length to propodus; propodus robust; palm oblique. Coxa 4 shallowly excavate posteriorly. Basis of pereopod 7 narrowing on postero-distal margin. Outer ramus of uropod 3 with proximal article a little longer than twice the length of distal article. Telson cleft to about 5/6 of its length.

DESCRIPTION

Lateral cephalic lobe triangular; eyes absent (Fig. 1A). Antenna 1, peduncle robust; flagellum with 35+ articles, first article conjoint (Fig. 1A, B); accessory flagellum 10-articulate. Antenna 2 longer than antenna 1, flagellum with 46 articles. Mandible with incisor dentate; molar strongly triturative; palp 3-articulate, article 2 the longest with setae on inner margin. Lower lip, inner lobe absent; outer lobe marginally setose; mandibular lobe blunt and well developed. Maxilla 1, inner plate with a row of plumose setae on inner margin; outer plate with 11 denticulate spines distally; palp

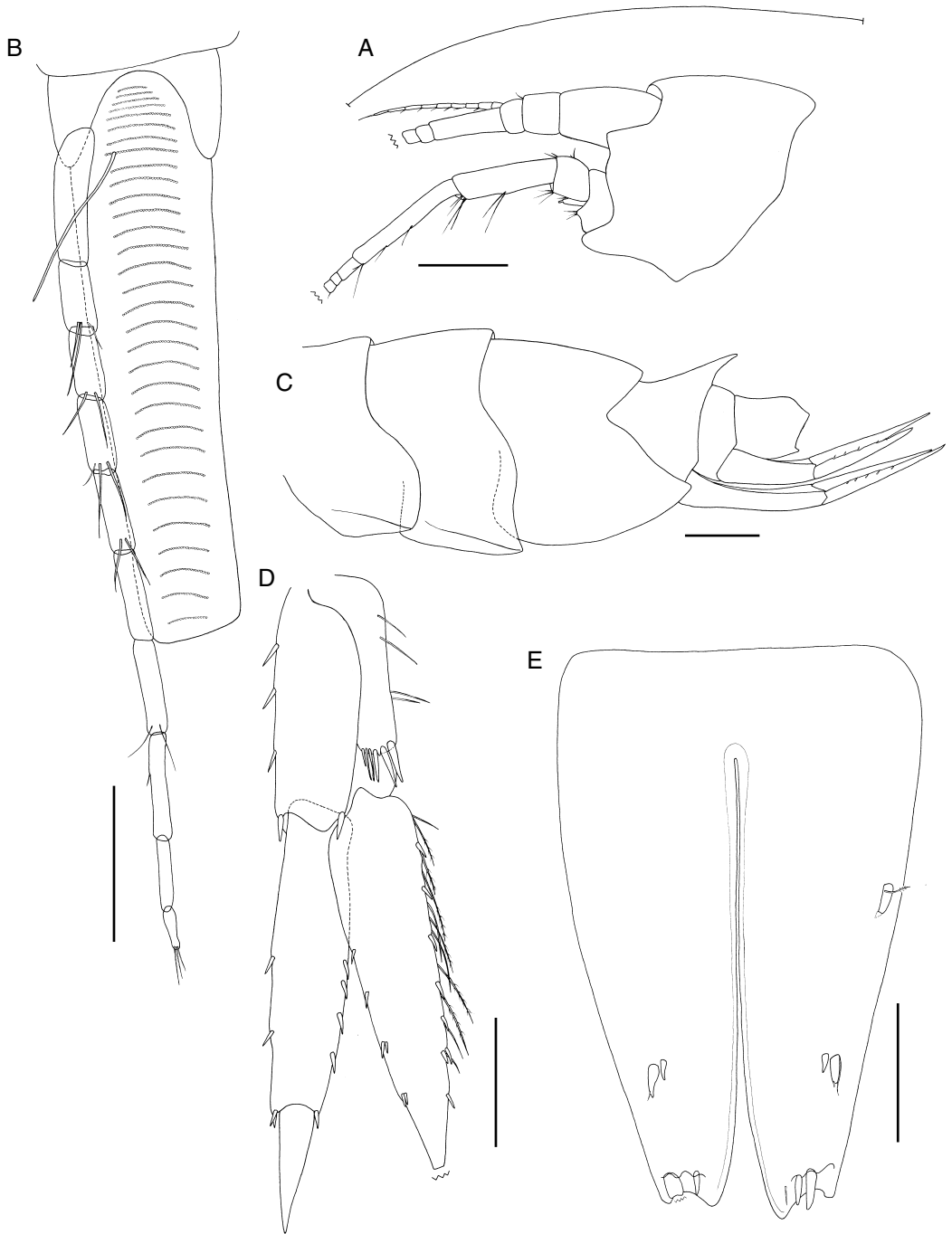


FIG. 1. — *Valettiopsis macrodactyla* Chevreux, 1909, ♀ 19.8 mm (MNRJ 15696); **A**, head with peduncles of antennae 1-2, above the length of antenna 1; **B**, callynophores of antenna 1 and flagellum accessory; **C**, pleon and urosome; **D**, uropod 3; **E**, telson. Scale bars: A, C, 1.0 mm; B, E, 0.3 mm; D, 0.5 mm.

robust, 2-articulate. Maxilla 2, inner and outer plates densely setose; inner plate with a row of facial setae. Inner plate of maxilliped with 3 short apical spines. Coxa 1 subtriangular and shorter than the others; coxae 2-4 rectangular; coxa 4 weakly excavate posteriorly. Gnathopod 1, carpus slightly longer than propodus; carpus and propodus anterior margin sparsely setose, posterior margin densely setose; palm transverse; dactylus fitting palm. Gnathopod 2, carpus and propodus subequal in length; propodus robust, setose and distinctly wider than carpus; palm oblique; dactylus slightly shorter than palm. Basis of pereopod 5 oval. Pereopods 6-7, basis tapering distally, lacking postero-distal lobe, posterior margin weakly serrate. Epimera 2-3 acutely produced. Urosomite 1 with a well developed dorsal tooth (Fig. 1C). Uropod 1, peduncle with a strong disto-lateral spine; rami subequal in length, spinose. Uropod 2 with outer ramus shorter than inner ramus. Outer ramus of uropod 3 slightly longer than inner ramus and about 1.7 times the length of peduncle, proximal article a little longer than twice the length of distal article (Fig. 1D). Telson deeply cleft, each lobe with a distal notch and 2 apical spines (Fig. 1E).

REMARKS

Lincoln & Thurston (1983) provided an extensive redescription of *V. macrodactyla* so only a few diagnostic features of this taxon have been figured here. Our material is in close agreement with the descriptions of Chevreux (1909, 1935) and Lincoln & Thurston (1983). The callynophore is the fused proximal articles of the primary flagellum of antenna 1, which bear transverse rows of aesthetascs, present also in females, and herein illustrated (Fig. 1B). The body length varies, reaching 4 mm (female) in Chevreux's (1909, 1935) material, 17 mm (male) in Lincoln & Thurston's (1983) specimen, and 19.8 mm (female) in the material herein examined.

Valettipsis ruffoi n. sp. (Figs 2-4)

TYPE MATERIAL. — Holotype: TAAF MD55/Brazil 1987, *Marion Dufresne*, stn 45 CB 79, 19°01'S,

37°47'W, 1500-1575 m, 28.V.1987, ♀ 25 mm (MNRJ 15697); paratype: stn 45 CB 79, 1 ♂ 25.3 mm (MNRJ 15698).

ETYMOLOGY. — This species is dedicated to the Italian amphipodologist Sandro Ruffo, for his friendship and tireless work on amphipods.

DIAGNOSIS. — Cephalic lobe rounded. Pereon segments 5-7 and pleon segments 1-3 smooth. Urosomite 1 with a small dorsal tooth. Gnathopods 1-2, carpus longer than propodus; palm strongly oblique and dentate; dactylus with a long antero-distal setae. Coxa 4 deeply excavate posteriorly. Outer ramus of uropod 3 with distal article about 1/13 of proximal article. Telson cleft to about 6/7 of its length.

DESCRIPTION

Female (25 mm). Lateral cephalic lobe rounded, eyes lacking (Fig. 2A, B). Antenna 1, with callynophore; flagellum with 30+ articles; accessory flagellum with 5 articles. Upper lip rounded and apically setose (Fig. 2C). Lower lip (Fig. 2D), outer lobe elongate, with facial and distal setae; mandibular lobe well developed. Mandible (Fig. 2E, F), incisor toothed; molar triturative; left lacinia mobilis large, with many teeth. Maxilla 1 (Fig. 2G, H), inner plate densely setose; outer plate with 11 spines at distal end; distal margin of palp article 2 with stout short spines and a row of submarginal setae. Maxilla 2, inner and outer plates densely setose; inner plate with row of facial setae. Maxilliped (Fig. 3A), inner plate with 3 short and stout apical spines; outer plate inner margin with a row of short and stout spines, longer spines apically; palp articles 2-3 with long facial and distal setae, article 4 with long distal setae.

Coxa 1 short and triangular, distal margin with small setae (Fig. 3B). Coxa 2 rectangular, postero-distal margin with 4 setae (Fig. 3D). Coxa 3 rectangular. Coxa 4 deeply excavate posteriorly (Fig. 2A). Gnathopod 1 (Fig. 3B, C), basis anterior margin with sparse setae, posterior margin with a group of medial setae; merus, carpus and propodus densely setose posteriorly; carpus 1/4 longer than propodus; palm strongly oblique and dentate; dactylus fitting palm, bearing a long antero-distal seta. Gnathopod 2 (Fig. 3D, E), basis with sparse setae; carpus 1/3 longer than

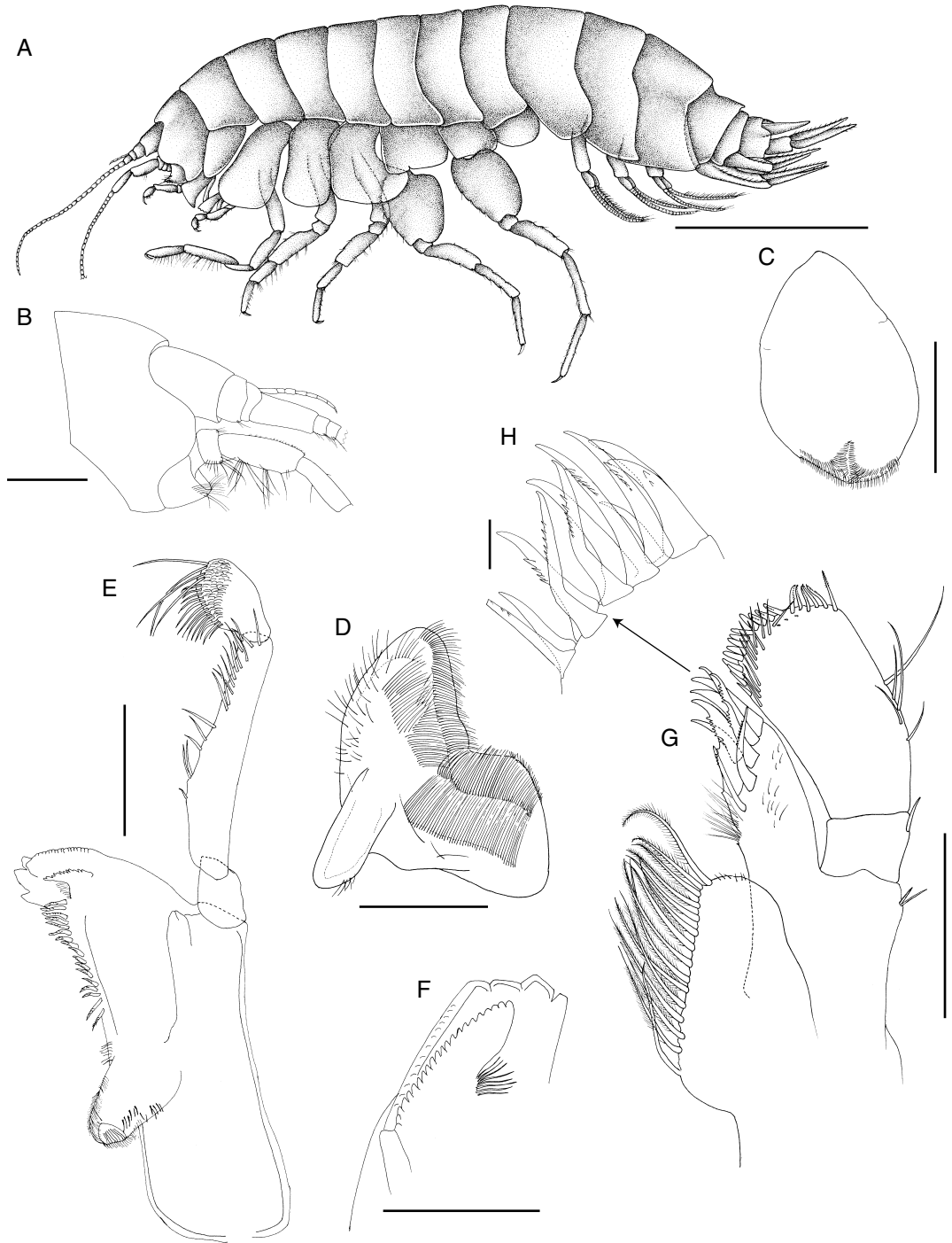


FIG. 2. — *Valettiopsis ruffoi* n. sp.; **A**, habitus; **B**, head with peduncles of antennae 1-2; **C**, upper lip; **D**, lower lip; **E**, right mandible; **F**, incisor and lacinia mobilis of left mandible; **G**, **H**, maxilla 1; **A**, **C**-**H**, holotype, ♀ 25 mm (MNRJ 15697); **B**, paratype, ♂ 25.3 mm (MNRJ 15698). Scale bars: A, C-E, G, 0.5 mm; B, 1.0 mm; F, 0.2 mm; H, 0.1 mm.

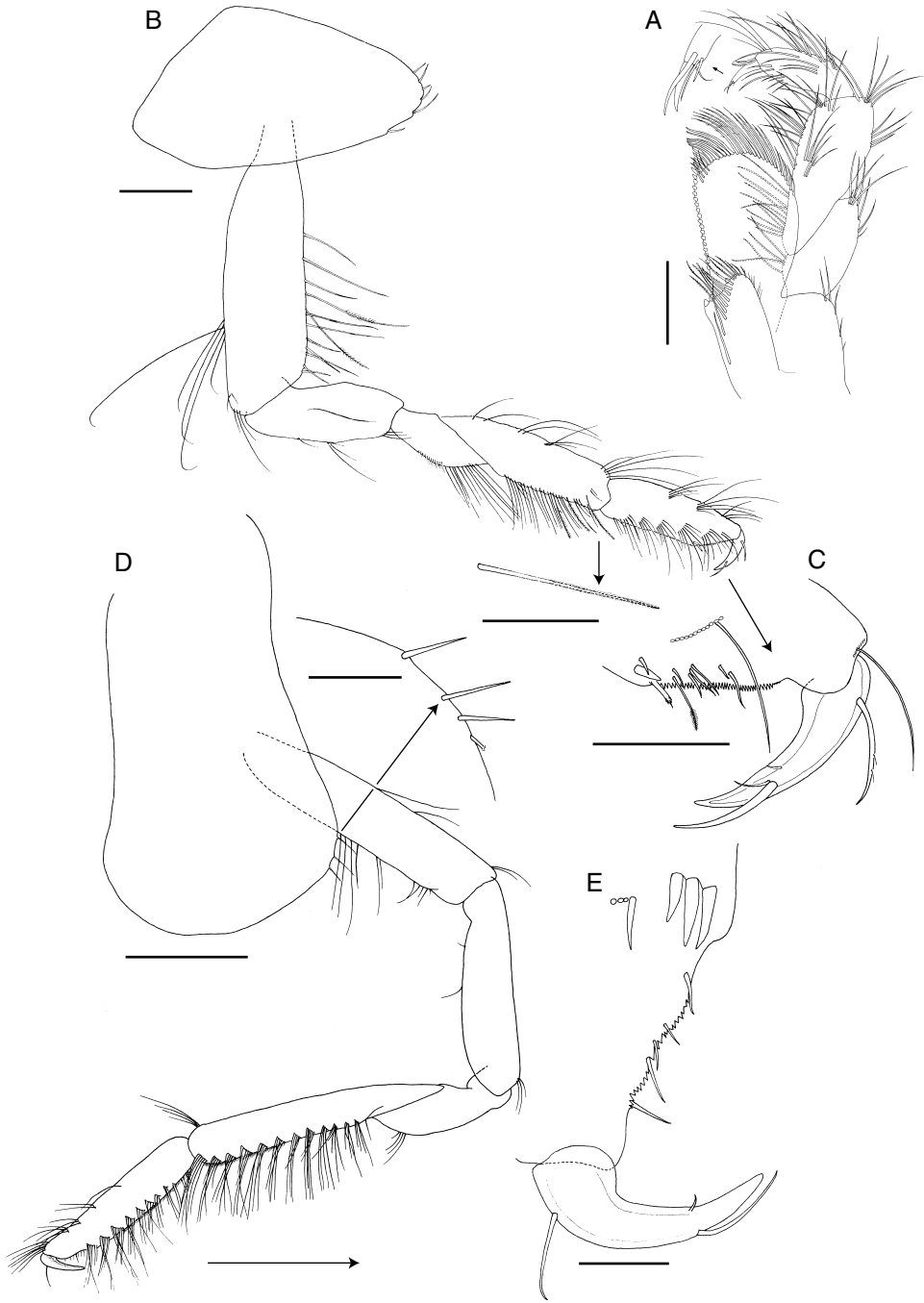


FIG. 3. — *Valettiopsis ruffoi* n. sp.; **A**, maxilliped; **B**, gnathopod 1; **C**, palm of gnathopod 1; **D**, gnathopod 2; **E**, palm of gnathopod 2; **A**, **D**, **E**, holotype, ♀ 25 mm (MNRJ 15697); **B**, **C**, paratype, ♂ 25.3 mm (MNRJ 15698). Scale bars: A, B, 0.5 mm; C, E, 0.2 mm; D, 1.0 mm.

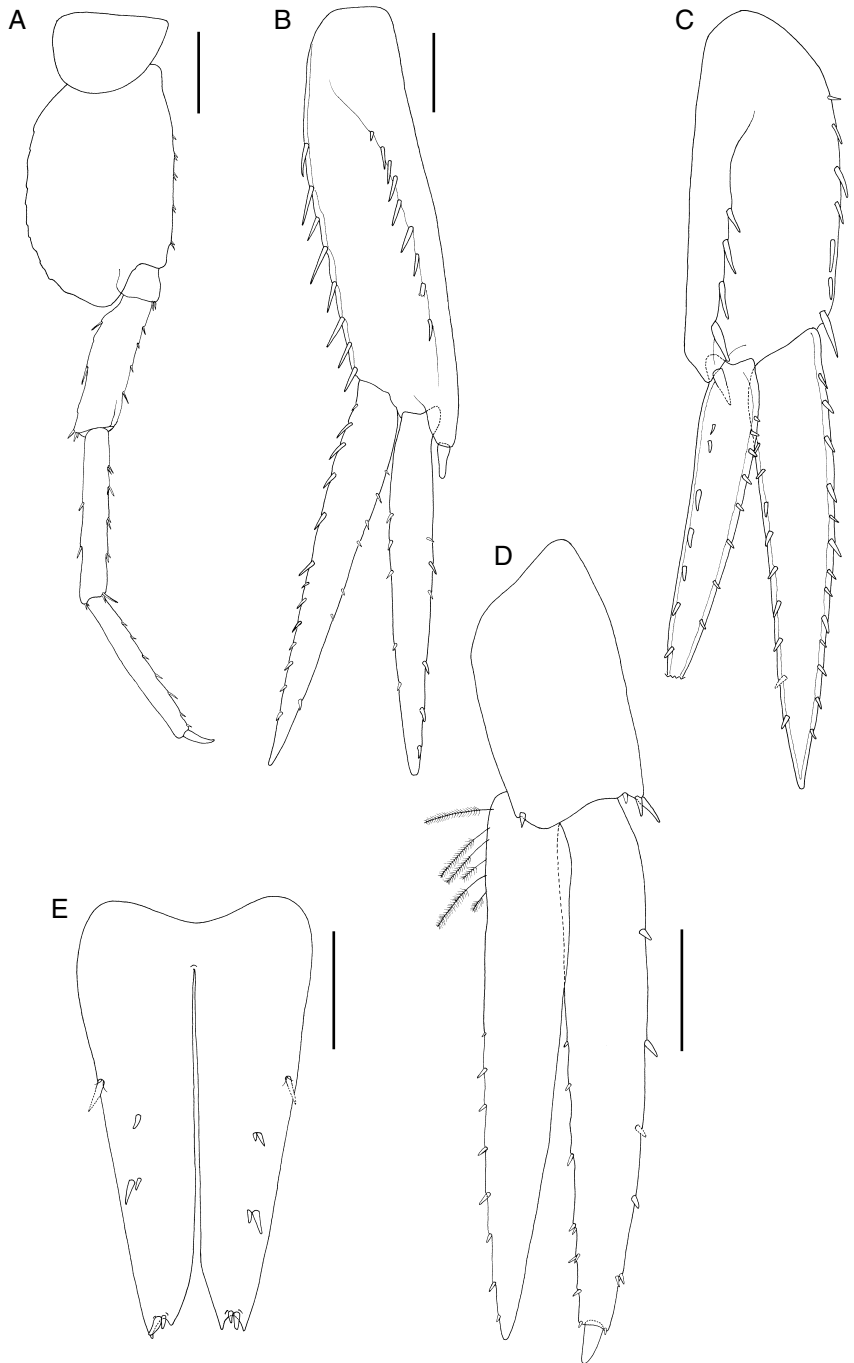


FIG. 4. — *Valettiopsis ruffoi* n. sp., holotype, ♀ 25 mm (MNRJ 15697); **A**, pereopod 7; **B**, uropod 1; **C**, uropod 2; **D**, uropod 3; **E**, telson. Scale bars: A, 1.0 mm; B-E, 0.5 mm.

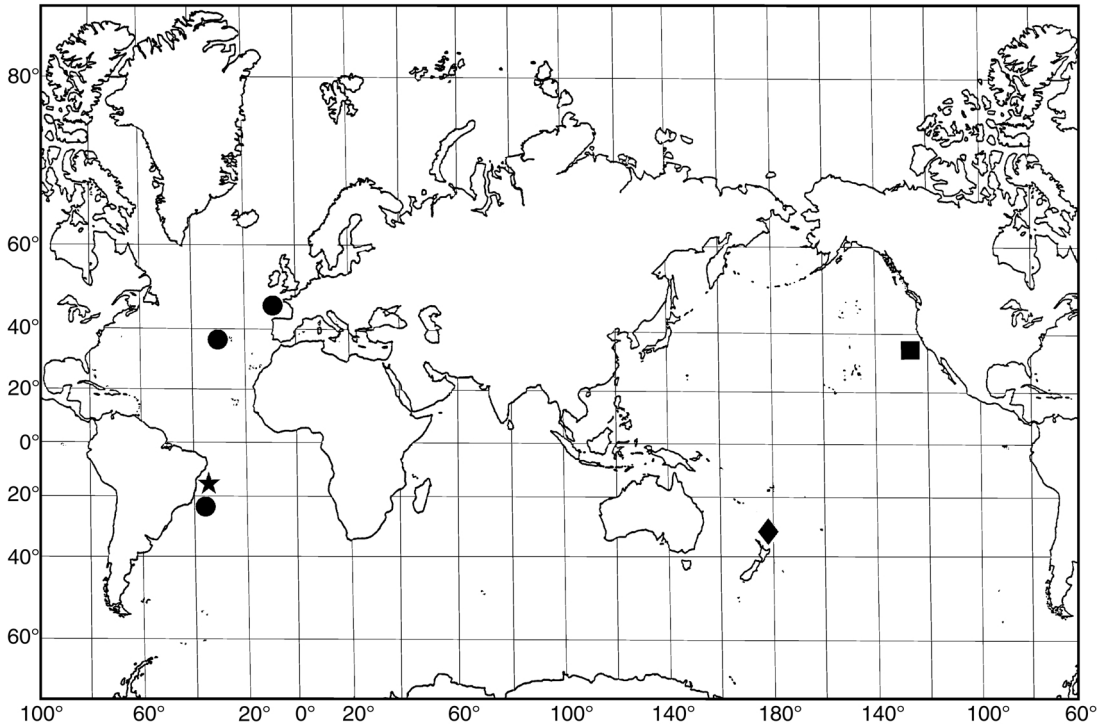


FIG. 5. — Distribution of the genus *Valettiopsis* Holmes, 1908; ■, *V. dentata* Holmes, 1908; ●, *V. macrodactyla* Chevreux, 1909; ◆, *V. multidentata* Barnard, 1961; ★, *V. ruffoi* n. sp.

propodus; carpus and propodus bearing several rows of long setae and two sequences of tiny setae posteriorly; palm strongly oblique, dentate; dactylus with a proximal and a long antero-distal seta, not fitting palm. Basis of pereopod 7 lobate posteriorly (Fig. 4A). Epimera 2-3 produced. Urosomite 1 with a small dorsal tooth (Fig. 2A). Uropod 1 (Fig. 4B), peduncle with a disto-lateral process tipped with a stout spine; rami as long as peduncle. Uropod 2 (Fig. 4C), inner ramus longer than peduncle; outer ramus broken. Uropod 3 (Fig. 4D), inner ramus slightly shorter than outer ramus, with 6 proximal plumose setae on proximal inner margin; outer ramus twice the length of peduncle, distal article about 1/13 of proximal article. Telson (Fig. 4E) deeply cleft to about 6/7 of its length.

Male (25.3 mm): antenna 1 with callynophores, longer than that of female; accessory flagellum with 7 articles (Fig. 2B).

REMARKS

Valettiopsis ruffoi n. sp. is similar to *V. dentata* in having slender gnathopods 1-2 with the carpus distinctly longer than propodus. However, *V. ruffoi* n. sp. can be distinguished from *V. dentata* and the other species of the genus, *V. macrodactyla* and *V. multidentata*, by the strongly oblique palm on gnathopods 1-2, which are nearly transverse in the other species; coxa 4 deeply excavated posteriorly; pereopod 7 basis lobate postero-distally, not tapering; reduced tooth on urosomite 1; and outer ramus of uropod 3 with distal article very short, about 1/13 of proximal article.

DISTRIBUTIONAL NOTES

Knowledge of the geographical distribution of *Valettiopsis* (Fig. 5) is poor, because the species

are found mostly in moderate to great ocean depths and have been captured only rarely. Two species have been recorded in the Atlantic Ocean: *V. macrodactyla* and *V. ruffoi* n. sp. This paper represents the first record of the genus *Valettiopsis* for the South Atlantic. *Valettiopsis macrodactyla* was known previously from the Azores (38°17'40"N) (Chevreux 1909, 1935) and from the Bay of Biscay (about 47°20'N) (Lincoln & Thurston 1983) and has its distribu-

tion extended to the southwestern Atlantic. *Valettiopsis ruffoi* n. sp. is known only from the type locality (19°01'S, 37°47'W, 1500-1575 m). In the Pacific Ocean, *V. multidentata* has been recorded only from the type locality, Kermadec Trench (36°38'S, 178°21'E) (Barnard 1961). *Valettiopsis dentata* has been recorded from off southern California (Holmes 1908; Hurley 1963 [Coronado Canyon]; Barnard 1967).

KEY TO SPECIES OF *VALETTIOPSIS* HOLMES, 1908

Species dealt with in this paper are in bold.

- 1. Pereon segments 5-7 and pleonite segments 1-3 dentate dorsally *V. multidentata*
 — Pereon segments 5-7 and pleonite segments 1-3 smooth 2
- 2. Gnathopod 2 with propodus stout and carpus subequal to propodus in length
 *V. macrodactyla*
 — Gnathopod 2 with propodus slender and elongate, and carpus distinctly longer than propodus 3
- 3. Gnathopods 1-2 with palm nearly transverse; coxa 4 weakly excavated posteriorly; distal article of uropod 3 outer ramus 2/5 of proximal article; telson cleft about 3/4 of its length *V. dentata*
 — Gnathopods 1-2 with palm oblique; coxa 4 deeply excavated posteriorly; distal article of uropod 3 outer ramus 1/13 of proximal article; telson cleft about 6/7 of its length *V. ruffoi* n. sp.

Acknowledgements

The authors are grateful to Jeanete Maron Ramos (Universidade Santa Úrsula) and the late Alain Guille (Observatoire océanologique de Banyuls, Banyuls-sur-Mer) for making available the amphipod samples from the *Marion Dufresne* cruise. We also want to thank Clovis Barreiro e Castro (Museu Nacional/UFRJ) for comments on the manuscript; Guilherme Muricy (Museu Nacional/UFRJ) for translating the abstract and Maria Helena Pinheiro (Universidade Santa Úrsula) for inking the drawings.

REFERENCES

BARNARD J. L. 1961. — Gammaridean Amphipoda from depths of 400 to 600 meters. *Galathea Reports* 5: 23-128.
 BARNARD J. L. 1967. — Bathyal and abyssal gammaridean Amphipoda of Cedros Trench, Baja California. *Bulletin of the United States National Museum* 260: 1-205.
 BARNARD J. L. & KARAMAN G. S. 1991. — The families and genera of marine gammaridean Amphipoda (except marine gammaroids), Parts 1 and 2. *Records of the Australian Museum* suppl. 13: 1-866.
 CHEVREUX E. 1909. — Diagnoses d'amphipodes nouveaux provenant des campagnes de la Princesse-

- Alice dans l'Atlantique Nord. *Bulletin de l'Institut océanographique* 150: 1-7.
- CHEVREUX E. 1935. — Amphipodes provenant des campagnes du Prince Albert I^{er} de Monaco. *Résultats des Campagnes scientifiques accomplies par le Prince Albert I^{er}* 90: 1-214.
- HOLMES S. J. 1908. — The Amphipoda collected by the United States Bureau of Fisheries Steamer "Albatross", off the west coast of North America, in 1903 and 1904, with descriptions of a new family and several new genera and species. *Proceedings of the United States National Museum* 35: 489-543.
- HURLEY D. E. 1963. — Amphipoda of the family Lysianassidae from the west coast of North and Central America. *Allan Hancock Foundation Publications Occasional Papers* 25: 1-160.
- LINCOLN R. J. & THURSTON M. H. 1983. — *Valettietta*, a new genus of deep-sea amphipod (Gammaridea: Lysianassidae) with descriptions of two new species from the North Atlantic Ocean. *Bulletin of the British Museum of Natural History (Zoology)* 44: 85-101.
- TAVARES M. 1999. — The cruise of the *Marion Dufresne* off the Brazilian coast: Account of the scientific results and list of stations. *Zoosystema* 21 (4): 597-605.
- THURSTON M. H. 1989. — A new species of *Valettia* (Crustacea: Amphipoda) and the relationship of the Valettidae to the Lysianassoidea. *Journal of Natural History* 23: 1093-1107.
- WAKABARA Y. & SEREJO C. S. 1999. — Amathillopsidae and Epimeriidae (Crustacea, Amphipoda) from bathyal depths off the Brazilian coast. *Zoosystema* 21 (4): 625-645.

*Submitted on 5 February 2002;
accepted on 19 July 2002.*