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Abstract

A new species ascribed to a new genus of Eusiridae, *Dorotea papuana* **gen. nov.**, **sp. nov.** is described from bathyal bottoms of the Solomon Sea (Papua New Guinea). Closely related to the genus *Cleonardo*, this new genus can be distinguished from most other known eusirid genera by the presence of a telson distally cleft and distinctly bilobate, of a distal spiniform process on uropods 1 peduncle and of a simple, stout and medium length dactylus on pereopods 5–7. The combination of all these characters can be considered relevant for the affiliation of this species to a new genus within Eusiridae. Due to its very close morphological affinity to *Dorotea* **gen. nov.**, the bathyal sub-Antarctic species *Eusiroides aberrantis* Bellan-Santini & Ledoyer, 1987 cannot be maintained in the family Pontogeneiidae and it should be transferred to the family Eusiridae.

Key words: Amphipoda, Eusiridae, *Dorotea*, new species, deep-sea, benthos, Papua New Guinea

Introduction

Papua New Guinea (PNG) is a privileged place in the heart of biologists. In that tropical area, terrestrial biodiversity studies have helped shape some of the pillars of evolutionary biology and ecological theory (Wallace 1869, 1876; Mayr 1942). Contrasting with our knowledge on these terrestrial ecosystems is the lack of information on adjacent deep-sea ecosystems. The pioneering and historical expeditions of *Challenger* and *Siboga* devoted little attention to the area. Later on, only the *Galathea* and *Vityaz* expeditions carried out some benthic samplings in PNG waters (Pante *et al.* 2012). Only few data on amphipods from the PNG are available, most of them concerning shallow water species, mainly collected within the framework of the Madang lagoon project (Thomas & Barnard 1991; Thomas 1996; Lowry & Stoddart 1995; Myers 1995; Taylor & Poore 2001; Guerra-García 2003; Lowry & Myers 2003; Lowry & Berents 2005). Through literature (Schellenberg 1938; Lowry & Stoddart 1995; Lowry & Kilgallen 2014; Corbari & Sorbe 2015), 9 species have been previously recorded in PNG waters below 100 m depth, all of them from the Bismarck Sea. They belong to the following families: Maeridae (*Papuadocus blodiwai* Corbari & Sorbe, 2015; 500–580 m depth), Stegocephalidae (*Andaniotes bagabag* Lowry & Stoddart, 1995; ca. 385 m depth), Synopiidae (*Syrrhoe semiserrata* Stebbing, 1888; 160–180 m depth), Tryphosidae (*Paralysianopsis jebbi* (Lowry & Stoddart, 1995); 500 m depth); *Paralysianopsis paeowai* (Lowry & Stoddart, 1995); 340–390 m depth); *Tryphosella astrolabensis* Lowry & Stoddart, 1995, 90–500 m depth) and Uristidae (*Nagada garagassi* Lowry & Stoddart, 1995, 500 m depth; *Nagada papua* Lowry & Stoddart, 1995, 50–290 m depth; *Nagada uwedoae* Lowry & Stoddart, 1995, 15–1000 m depth). An undescribed new *Adeliella* species (family Adeliellidae) was also mentioned by Corbari *et al*. (2017) from bathyal bottoms of the Bismarck (460–865 m) and Solomon (260–614 m) seas, some of these specimens considered as endobionts of benthic holothurians.

Launched by the Muséum National d'Histoire Naturelle (MNHN) and the Institut de Recherche pour le Développement (IRD), the Tropical Deep-Sea Benthos (TDSB) program is devoted to fill in the gap in our knowledge of deep-sea tropical biodiversity (Bouchet *et al.* 2008; Pante *et al.* 2012; Richer de Forges *et al.* 2013). Exploring PNG waters has represented a challenge for the TDSB program and since 2010, four deep-sea surveys (BIOPAPUA 2010, PAPUA NIUGINI 2012, MADEEP and KAVIENG 2014) were performed in the Exclusive Economy Zone of PNG, more specifically in Bismarck and Solomon seas. During these surveys (dredge and trawl samplings), a large collection of benthic amphipods have been collected between 120 and 1252 m depth (a total of 1872 specimens over 160 sampling stations; Fig. 1).

Eusirids represented a small component of this collection with 20 specimens belonging to the genera *Rhachotropis* S.I. Smith, 1883 and *Eusirus* Krøyer, 1845 (ongoing study). Beside the maerid *Papuadocus* Corbari & Sorbe, 2015, the eusirid specimen herein described is the second new genus found in this collection that comprises more than 50% of species new for science.

The status of the superfamily Eusiroidea Stebbing, 1888 and the family Eusiridae Stebbing, 1888 has been debated through time. The genus composition of this family has regularly been submitted to changes, varying from 7 to 66 genera according to a fluctuant diagnosis (see Verheye *et al.* 2016 for review). The monophyly of the superfamily Eusiroidea has been recently tested by Verheye *et al.* 2016 and the phylogenetic analyses showed that several important morphological characteristics (*i.e.* telson shape or type of calceoli), traditionally used in eusiroid taxonomy, are homoplasious. According to the current classification by Lowry & Myers 2017, the family Eusiridae comprises 11 genera, including the genus *Sennaia* Bellan-Santini, 1997, transferred from Pontogeneiidae to its initial ranking in Eusiridae (Horton *et al.* 2018). All of them are included in the identification key to eusirid genera provided in this study.

Material and methods

The new species herein studied was collected by dredging (station code DW4290) during the MADEEP cruise in the Solomon Sea, north of the Laughlan Islands, on board RV *Alis* from 4 April to 5 May 2014 (see https://expeditions.mnhn.fr/campaign/madeep). After sorting of the whole sampled material on board, this unique specimen was preserved in 80% ethanol. Later on, at the laboratory, its body length (BL) was measured between the anterior margin of its head and its telson tip. Some of its pleopods were dissected and conserved separately in 90% ethanol for DNA extraction. Body parts and dissected appendices were permanently mounted on slides in dimethyl hydantoin formaldehyde medium for morphological descriptions. Drawings were realized with a *camera lucida* attached to a compound microscope Olympus SZ40. Pictures of the habitus and mounted appendages were taken with an Olympus digital camera.

DNA was extracted from the selected pleopods with Qiagen tissue extraction kit and the cytochrome oxydase I (COI) mitochondrial gene was barcoded using universal primers LCO1490 (Folmer *et al.* 1994) and LCOIv (Zuccon *et al.* 2012). All Polymerase Chain Reactions (PCR) were performed in 20 ml, containing 3 ng of DNA, 10× reaction buffer containing 15 mM$MgCl_2$, 0.26 mM dNTP, 0.3 mM of each primer, 5% DMSO, 1 mg/ml BSA, and 1 unit of QBiotaq (MPBiomedicals, Illkirch Graffenstaden, France). Amplification consisted of an initial denaturation step at 95°C for 5 min, followed by 40 cycles of denaturation

at 95°C for 1 min, annealing at 50°C for the COI gene, followed by extension at 72°C for 30 s. The final extension was at 72°C for 5 min. The PCR products were purified and sequenced by Eurofins sequencing facilities. Both directions were sequenced to confirm accuracy of each sequence.

Abbreviations used in figures: HD: head; A1–2: antennae 1–2; UL: upper lip; MD: mandible; MX1–2: maxillae 1–2; MXP: maxilliped; LL: lower lip; G1–2: gnathopods 1–2; P3–7: pereopods 3–7; U1–3: uropods 1–3; T: telson; M: male; F: female; L: left; R: right.

The holotype is deposited at the MNHN, Paris.

Systematics

Order Amphipoda Latreille, 1816

Suborder Amphilochidea Boeck, 1871

Parvorder Eusiridira Stebbing, 1888

Superfamily Eusiroidea Stebbing, 1888

Family Eusiridae Stebbing, 1888

Genus *Dorotea* **gen. nov.**

Diagnosis. Body not strongly compressed, dorsally smooth. Rostrum short. Head lateral lobe weakly produced. Eyes lacking. Antennae medium size and flagella calceolate in females. Antenna 1 probably slightly longer than antenna 2, peduncular article 1 subequal to article 2, accessory flagellum 1-articulated, linear. Antenna 2, peduncular article 4 thicker than 5, flagellum not shortened. Upper lip evenly rounded distally. Lower lip, inner lobes weak. Left mandible, incisor with long incurved cutting edge, poorly dentate (2+), ending in a strong blunt tooth; lacinia mobilis 5-dentate; setal row with 6 setae; palp, article 3 longer than article 2, slightly falciform, tapering distally; article 2 thicker than article 3. Right mandibule, incisor with at least a strong blunt tooth; molar triturative; setal row with 6 setae. Maxilla 1, inner plate with 3 subapical setae; outer plate with 10 apical stout setae; palp slender, distal article longest. Maxilla 2, inner plate broader and shorter than outer plate. Maxilliped palp, articles ordinary; outer plate large; inner plate with 3 apical teeth. Coxae 1–4 regular, medium; coxa 1 broadly rounding, not produced; coxa 4 slightly excavate posteriorly. Coxae 5–6 bilobate. Gnathopods 1–2 subsimilar, both strongly subchelate; carpal lobes broad; propodus large, posterior margin short, palm oblique, margin spinose. Pereopods 3–4 slender, merus slightly longer than carpus, dactylus simple, stout and medium length. Pereopods 5–7 homopodous, subequal in form and

size, not greatly elongate; bases broad, with small postero-distal lobe; dactylus simple, stout and medium length. Epimera 1–3, regular, not serrate on posterior margin. Uropods 1–2, rami lanceolate, outer ramus shorter than inner ramus. Uropod 3, rami broadly lanceolate, outer ramus shorter than inner ramus. Telson elongate, lobate, weakly cleft. Brood plates on pereopods 2–5. Coxal gills on pereopods 2–7.

Etymology. The new genus *Dorotea* is morphologically close to the eusirid *Cleonardo* Stebbing, 1888, a generic name taken by the author from a character of the famous Cervantes's novel Don Quijote de la Mancha. The name *Dorotea* is also taken from another character of this novel, the unfortunate daughter of Clenardo (true spelling in accordance to Cervantes's text). The genus is feminine.

Remarks on genus assignation to Eusiridae

According to the keys of Barnard & Karaman (1991) and Bousfield & Hendrycks (1995), the combination of several morphological diagnostic characters observed on our specimen confirms its position within the family Eusiridae: body large (BL > 10 mm); accessory flagellum small, 1-articulated; large, strongly subchelate gnathopods; pereopods 5–7 elongate, slender; antennae calceolate (eusirid-type); telson elongate, cleft distally and distinctly bilobate.

Identification key to Eusiridae genera

(modified from Bousfield & Hendrycks 1995)

1- Gnathopods 1–2 of strong eusirid form (carpus slender, elongate, without or with narrow hind lobe, attached antero-distally to propodus) 2

- Gnathopods 1–2 not eusirid-like (carpus short and deep or, if elongate, hind lobe broad, attached proximally to propodus) 6

2- Gnathopods 1–2, carpus without hind lobe.....*Triquetramana* Hendrycks & Conlan, 2003

- Gnathopods 1–2, carpus with narrow hind lobe.....3

3- Gnathopod 1, propodus distinctly larger than in gnathopod 2.....*Eusirogenes* Stebbing, 1904

- Gnathopod 1, propodus smaller than in gnathopod 2.....4

4- Coxae 1–4 deep. Accessory flagellum 1-articulated.....*Eusirus* Krøyer, 1845

- Coxae 1–4 shallow. Accessory flagellum scale-like or lacking.....5

5- Pereopods 3–7 distally plumose-setose. Pleon dorsally smooth. Mandibular molar reduced .....*Eusiropsis* Stebbing, 1897
- Pereopods 3–7 normally dactylate and spinose distally. Pleon weakly toothed mid-dorsally. Mandibular molar normal, triturative surface large……
…….....*Pareusirogenes* Birstein & M. Vinogradov, 1955

6- Pereopods 3–4, merus no longer (often distinctly shorter) than carpus. Coxa 1 usually produced anteriorly. Lateral lobes of head strongly produced. Pleon 1–3 usually dorsally toothed, mucronate.....*Rhachotropis* S.I. Smith, 1883
- Pereopods 3–4, merus longer than carpus. Coxa 1 little produced or rounded anteriorly. Lateral lobes of head normal. Pleon dorsal teeth usually lacking.....7

7- Gnathopods 1–2, propodus slender, carpus elongate. Maxilla 1, palp short, proximal article longer than distal one.....*Eusirella* Chevreux, 1908
- Gnathopods 1–2, propodus and carpus stout. Maxilla 1, palp normal, proximal article shorter or subequal to distal one…….....8

8- Eyes lacking. Accessory flagellum 1-articulated.....9
- Eyes present. Accessory flagellum lacking.....10

9- Telson tapering, ≥66% cleft, lobes not apically divergent. Peduncle of uropod 1 without distal spiniform process….....*Cleonardo* Stebbing, 1888
- Telson not tapering, 21% cleft, lobes apically divergent. Peduncle of uropod 1 with distal spiniform process.....*Dorotea* **gen. nov.**

10- Coxae 1–4 small, shallow……..*Harcledo* Barnard J.L., 1964
- Coxae 1–4 deep.....11

11- Pleonites 1–2 dorsally toothed…….……*Sennaia* Bellan-Santini, 1997
- All pleonites dorsally smooth…….....*Meteusiroides* Pirlot, 1934

Dorotea papuana **sp. nov.**

Figs 2–5

Type material. Holotype (MNHN-IU-2015-745), mature female, 14.8 mm BL; MADEEP cruise, RV *Alis*; station DW4290 (off Budibudi Island, north of Laughlan Archipelago, Solomon Sea), 30/04/2014, 09°13'S 153°54'E, 593 m; detritic sediment (coral rubbles) and rocky slab (https://expeditions.mnhn.fr/campaign/madeep/event/DW4290)

Type locality. Off Budibudi Island, north of Laughlan Archipelago, Solomon Sea, 30/04/2014, 09°13'S 153°54'E, 593 m.

Etymology. The species name refers to the geographical area in which the specimen was collected.

Diagnosis. Same as for new genus.

Description

Body (Fig. 2): laterally compressed, dorsally smooth.

Head (Fig. 3): slightly smaller than pereonites 1+2. Rostrum short. Lateral lobes weakly produced. Antero-ventral corner acute. Eyes absent.

Pleonites 1–3 (Fig. 2): posterodistal corner subquadrate in epimeron 1, rounded in epimeron 2, with tiny blunt cusp in epimeron 3. All epimera with convex posterior margin, epimera 2 and 3 with convex distal margin.

Antenna 1 (Fig. 3): larger than antenna 2. Peduncle shorter than main flagellum, articles without distal projections; article 1 sub-equal to article 2, with 2 short inferodistal stout setae; article 3 the smallest, 0.3x article 2 length. Main flagellum (probably broken) with 97 articles and many calceoli of type 5 [see Lincoln & Hurley (1981)], with cup-shaped proximal element well separated from the distal element; proximal article elongate. Accessory flagellum 1-articulate, shorter than flagellum article 1 and tapering distally, with 1 distal seta.

Antenna 2 (Fig. 3): peduncular article 3 with 2 short infero-distal stout setae; article 5 0.6x article 4 length. Flagellum (probably broken) with 68 articles and many calceoli (same type than antenna 1), first proximal article elongate.

Upper lip (Fig. 3): entire, distally rounded, crescent-shaped submarginal row of setules. Epistome bluntly pointed.

Mandibles (Fig. 3): right mandible broken (not figured). Left incisor with long incurved cutting edge, poorly dentate (2+), ending in a strong blunt tooth. Right incisor with at least a strong blunt tooth. Left lacinia mobilis 5-toothed (all apexes blunt), ending in a strong tooth, the

other ones much smaller. Left and right molars medium and triturative, grinding surface ringed by medium contiguous blades, higher than wide. Left and right setal rows with 6 setae. Left and right palp article 3 longer than article 2, slightly falciform, tapering distally; article 2 thicker than article 3.

Maxilla 1 (Fig. 3): inner plate with 3 subapical setae; outer plate with 10 apical stout setae (8 cuspidate and 2 simple); palp with distal article the longest, 2 rows of simple setae on distal half inner margin, 3 simple setae on distal half outer margin.

Maxilla 2 (Fig. 3): inner plate broader and shorter than outer plate, submarginal row of simple setae on distal half inner margin, bunch of setules on proximal inner margin; outer plate with apical simple setae.

Lower lip (Fig. 3): broad, inner lobes weak; mandibular lobe bluntly pointed.

Maxilliped (Fig. 3): heavily setose; palp, articles ordinary; inner plate with 3 short, blunt and stout setae and 2–3 simple setae on apical margin; outer plate large reaching less than half length of palp article 2, with 4 stout setae on mesial basal part, inner margin of article 4 with 4 stout setae.

Coxae (Figs. 2, 4): coxae 1–4 medium, about as deep as broad, broadly rounded, not produced; coxae 2–3 bearing one long stout seta on posterior margin; coxa 4 slightly excavate posteriorly; coxae 5–6 bilobate; coxa 7 the smallest, unilobate.

Gnathopods 1–2 (Fig. 4): similar and subequal, both strongly subchelate; merus strongly spinose; carpal lobes broad; palm strongly oblique, with 6–7 stout setae, proximally limited by 2 (G1) or 3 (G2) stout setae for dactylus insertion; dactylus curved, with one (G1) or 2 (G2) long subproximal setae on anterior margin, posterior margin sparsely setulated.

Pereopods 3–7 (Fig. 4): elongate, simple; dactylus simple, not styliform and slightly curved, 0.3x of propodus length. Pereopods 3–4 ordinary, merus slightly longer than carpus. Pereopods 5–7 homopodous, basis with posterodistal lobe. Pereopod 7, posterior margin of basis slightly denticulate.

Uropod 1 (Fig. 5): peduncle longer than rami, with a row of 6 short stout setae on left and right margins and a blunt distoventral process bearing a distal stout seta; apex of both rami broken; inner ramus longer than outer, bearing 2 proximal stout setae on outer margin and 2 ones on inner margin; outer ramus more spinose on both margins than inner one.

Uropod 2 (Fig. 5): peduncle with stout setae on distal outer and inner margins; inner ramus longer than outer; inner and outer margins of both rami with stout setae, except at apex.

Uropod 3 (Fig. 5): peduncle with stout setae on distal outer and inner margins; inner ramus longer than outer one; inner and outer margins of both rami with stout setae, except at apex.

Telson (Fig. 5): elongated (1.8x as long as broad), cleft 21.2%, lobes apically divergent with blunt apices, without distal armament.

Brood plates (Fig. 4): on coxae 2–5; coxa 3 oostegite shorter than basis, 3.7x as long as broad; coxa 4 oostegite slightly shorter than basis, 5.2x as long as broad; coxa 5 oostegite shorter than basis, 2.8x as long as broad; margins with long setae.

Gills: on pereopods 2–7, simple and subquadrate.

Molecular identification

A mtCOI sequence (a 657 base pair fragment) was obtained for the type of *D. papuana* **gen. nov., sp. nov.** examined in the present study. These sequences are available in GenBank under the following accession number: MK260193. Following the definition given by Pleijel *et al.* 2008, the holotype of this new species (MNHN-IU-2015-745) is designed as the hologenophore of this sequence.

Remarks

Within the family Eusiridae, our specimen shares strong morphological similarities with the genus *Cleonardo. Dorotea papuana* **gen. nov., sp. nov.** can be distinguished from the other known eusirid genera by the presence of a telson distally cleft and distinctly bilobate, of a distal spiniform process on uropods 1 and simple stout and medium length dactylus on pereopods 5–7. Eusirioid families were often defined by morphological characters presenting continuous variation so that their limits were highly debatable (Verheye *et al.* 2016). The shape of the telson could be considered as one of the most important state of characters defining the families within Eusiroidea (Bousfield & Hendrycks 1995). The cleft state could have a phylogenetic significance at some lower taxonomic levels, but as it is highly homoplasious, and it should be used with caution to characterize taxonomic groupings (Verheye *et al.* 2016). Considered as important functional traits in Eusiridae, carnivory and predation in deep-water Eusiridae are characterized by the presence of slender, long-dactylate pereopods allowing to stand on soft bottoms, awaiting prey (Bousfield & Hendrycks 1995). Such a character is not observed in our specimen whose pereopod dactylii are rather short by comparison with *Cleonardo* species, suggesting that its habitat is rather different of most eusirid species.

Bellan-Santini & Ledoyer (1987) described the new sub-Antarctic amphipod *Eusiroides aberrantis* from a male specimen (BL = 12 mm) collected near Marion and Prince Edward Islands. This bathyal species (180–500 m according to Bellan-Santini & Ledoyer, 1987 De

Broyer et al., 2007) was initially assigned to family Eusiridae *sensu lato* and to genus *Eusiroides*, due to a mix of morphological characters between *Eusiroides* and *Cleonardo* (its species name suggesting such an ambiguity). Later on, this genus has been transferred to Pontogeneiidae (Lowry & Myers, 2013). Based the original description, it is clear that *E. aberrantis* is quite different from all other known *Eusiroides* species (eyes absent, pereopods 3–7 relatively slender, telson 19.2% cleft with dehiscent lobes) as underlined by the authors and must therefore be excluded from Pontogeneiidae due to the absence of apical stout setae on uropod 1 rami (uropod 2 unknown). On the other hand, it shows very close morphological affinities with the new genus *Dorotea* (head and antennae, buccal appendages, ornamentation of coxae 1–2, shape of coxa 4, shape of pereopod 5–7 basis, postero-distal corner of epimeron 3, shape of telson cleft), suggesting its transfer to this genus. However, some distinctive morphological characters (Table 1) by comparison with *D. papuana* (Table 1) show show that it is a different species. In conclusion to this comparative morphological analysis, we consider that *E. aberrantis* should be transferred to genus *Dorotea* (Eusiridae) and we propose the following new nomenclatural combination: *Dorotea aberrantis* (Bellan-Santini & Ledoyer, 1987).

Dorotea **gen. nov.**

Type species: *Dorotea papuana* **sp. nov.**

Species included: *Dorotea aberrantis* (Bellan-Santini & Ledoyer, 1987), *Dorotea papuana* **sp. nov.**

Ecological data

Dorotea papuana **gen. nov., sp. nov.** was collected with a dredge on a rather detritical bottom with abundant fragments of dead-coral rubbles suggesting a hard-substrate environment (the log book mentions that the device griped on the bottom during the haul). According to the sample pictures taken just after recovery of the dredge on board (see https://expeditions.mnhn.fr/photo/association?tagId=14&focus=collecte&focusId=9904), the main benthic megafauna was represented by epilithic sponges and gorgonian octocorals, as well as some gastropods, decapods (chirostylids, pagurids, pylochelids), ophiurids and crinoids. Due to their smaller size and transparency, peracarids were not visible on these pictures. But after post-cruise sorting and preliminary identification, 41 amphipod specimens were registered in this sample, belonging to 10 families and at least 12 species (by order of decreasing individual and species abundance): Epimeriidae (22 ind.; 2 spp.), Stegocephalidae (8 ind.; 2 spp.), Oedicerotidae (2 ind.; 1 sp.), Kamakidae (2 ind.; 1 sp.), Lysianassidae (2 ind.; 1 sp.), Eusiridae

(1 ind.; 1 sp.), Pontogeneiidae (1 ind.; 1 sp.); Stenothoidae (1 ind.; 1 sp.), Synopiidae (1 ind.; 1 sp.), Uristidae (1 ind.; 1 sp.). Most of these bathyal species are new to science and will be described elsewhere. It is noteworthy that eusirids are poorly represented on this rocky bottom (only one individual of the new *Dorotea* species), known to usually show a clear preference to muddy sand and muddy habitats on deep bottoms, as observed by Frutos and Sorbe (2014, 2017); Sorbe and Elizalde (2014) on bathyal suprabenthic communities from the SE Bay of Biscay.

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Table 1. Morphological comparison between *Eusiroides aberrantis* (description in Bellan-Santini & Ledoyer, 1987) and *Dorotea papuana* (present study).

	Eusiroides aberrantis	***Dorotea papuana***
Distinctive characters		
Setal row of mandibule	7 setae	6 setae
Inner plate of maxilla 1	1 subapical setae	3 subapical setae
Inner plate of maxilla 2	1 mediofacial seta	no mediofacial seta
Outer plate of maxilliped	no facial stout seta	4 facial stout setae
Palmar margin of gnathopods 1-2		
shape	sligthly convex	straight
number of setae	4 stout setae	6 stout setae
Telson		
length/max. width ratio	1.96	1.76
dorso-lateral ornamentation	2 pairs of setae	no setae

FIGURE CAPTIONS

FIGURE 1: Tropical Deep Sea Benthos sampling in Papua New Guinea (BIOPAPUA, 2010; PAPUA NIUGINI, 2012; MADEEP and KAVIENG, 2014 cruises; depth range: 120–1252 m). Black circles: sampling stations, all cruises. Orange dots: sampling stations with amphipod occurrences. Yellow dot: type locality of the eusirid amphipod *Dorotea papuana* **gen. nov., sp. nov.**

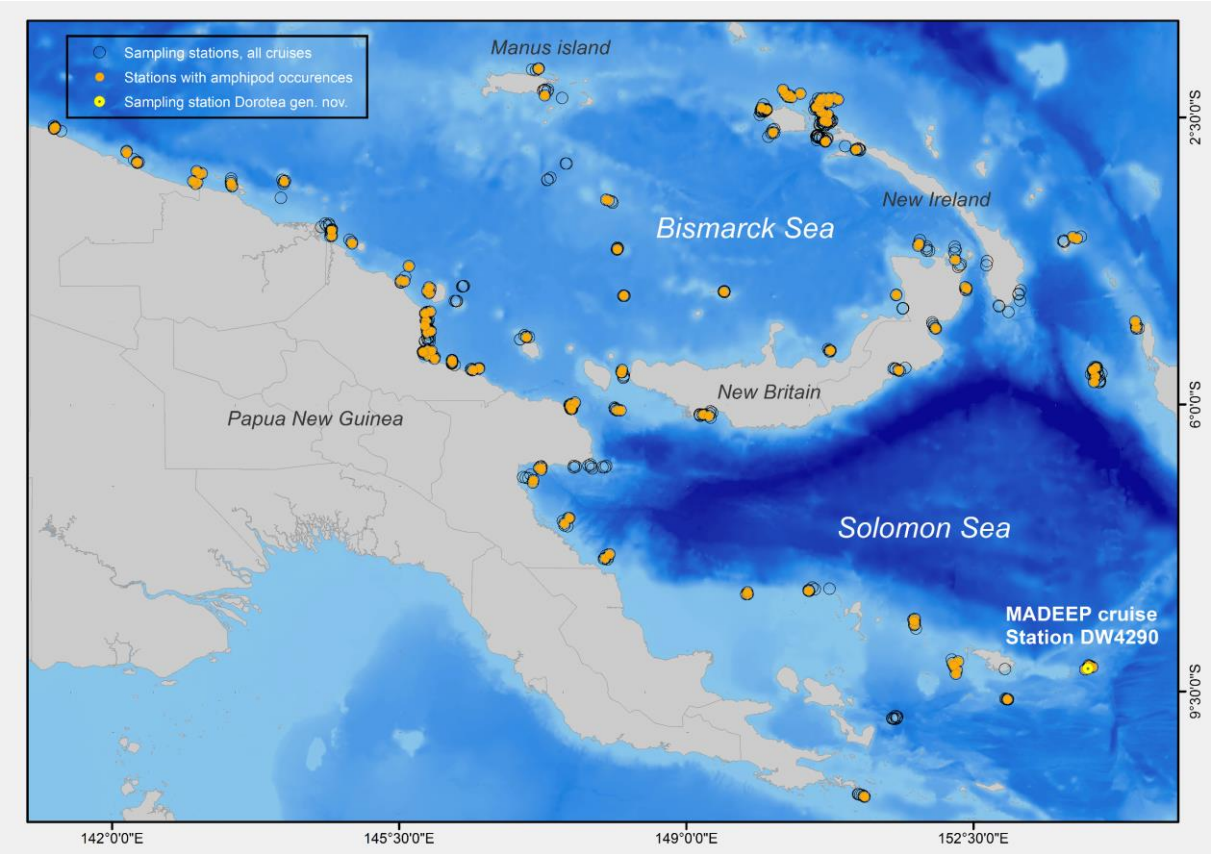

FIGURE 2: *Dorotea papuana* **gen. nov., sp. nov.** Picture of the female specimen (holotype, MNHN-IU-2015-745). Scale bar: 2 mm.

FIGURE 3: *Dorotea papuana* **gen. nov., sp. nov.** Holotype female (MNHN-IU-2015-745). HD: Head, left side; A1: antenna 1; A2: antenna 2 (pictures of accessory flagellum and calceoli). UL: upper lip, ventral face. MX1: right maxilla 1, posterior face. MX2: right maxilla 2, posterior face. MD: left mandible, anterior face. LL: lower lip, posterior face. MXP: maxilliped, posterior face.

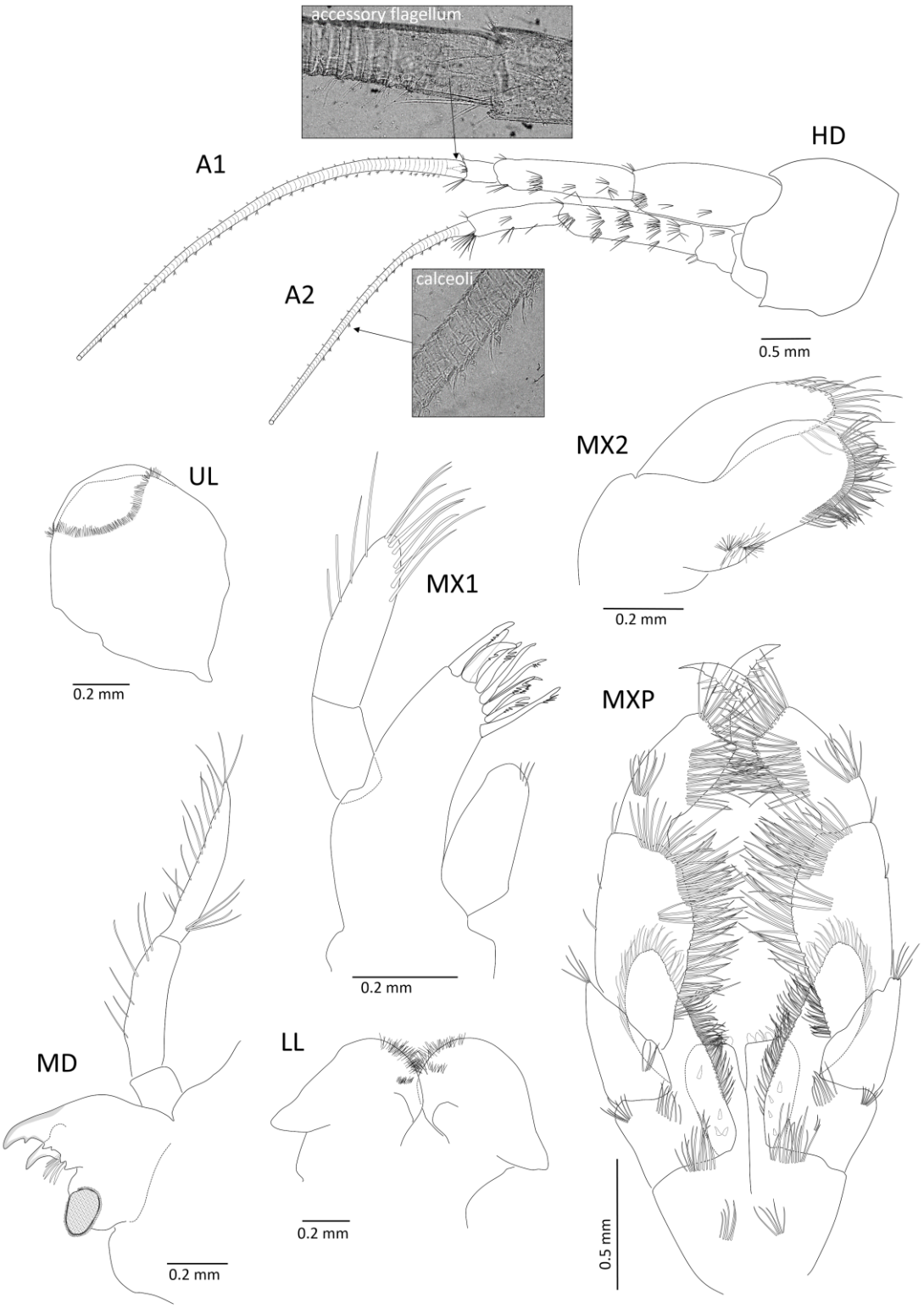

FIGURE 4: *Dorotea papuana* **gen. nov., sp. nov.** Holotype female (MNHN-IU-2015-745). G1: right gnathopod 1, outer face. G2: left gnathopod 2, outer face. P3: left pereopod 3, outer face. P4: left pereopod 4, outer face. P5: right pereopod 5, outer face. P6: right pereopod 6, outer face. P7: right pereopod 7 (broken), outer face.

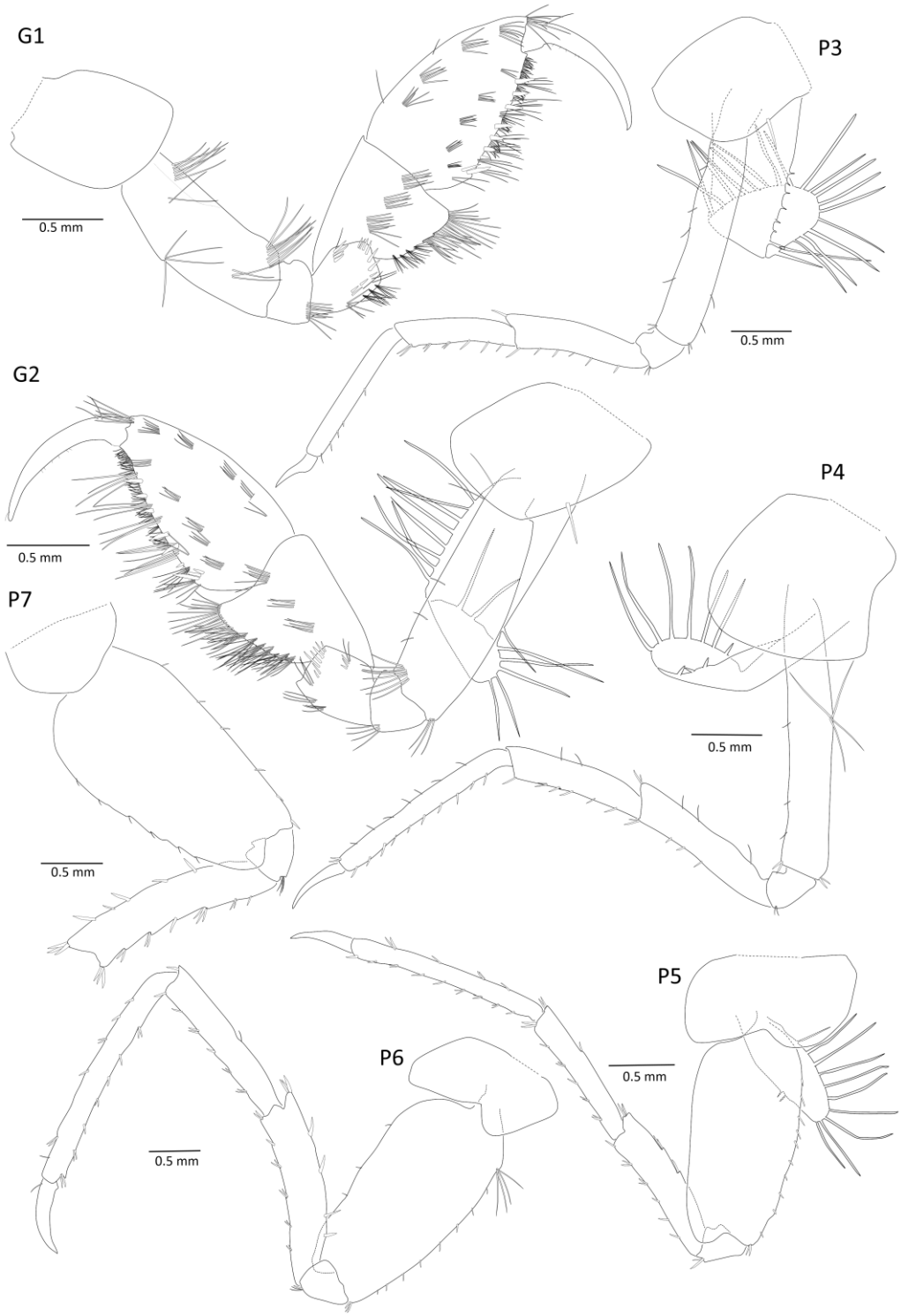

FIGURE 5: *Dorotea papuana* **gen. nov., sp. nov.** Holotype female (MNHN-IU-2015-745). U1: right uropod 1, dorsal view (picture of peduncle with ventrodistal spiniform process). U2: left uropod 2, dorsal view. U3: right uropod 3, dorsal view. T: telson, dorsal view.