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ORIGINAL ARTICLE

Mysidopsis gemina n. sp. (Crustacea: Mysida: Mysidae) from the northern Pacific coast of Costa Rica

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ABSTRACT

Mysidopsis gemina n. sp. is described from protected and exposed beach habitats in the provinces of Puntarenas and Guanacaste on the northern Pacific coast of Costa Rica. Morphologically, *M. gemina* most closely resembles *M. furca* Bowman, 1957 known from the Atlantic and Gulf Coasts of North America. Both these species are unique within the genus by their distinctively sexually dimorphic telsons. The new Costa Rican species can be distinguished from *M. furca* and other species of *Mysidopsis* by a combination of having a male with biarticulated endopods on the first pleopods and pleopods 2–5 with large plate-like pseudopodia (exites). The occurrence of these characters and morphological features within the subfamily Leptomysinae is discussed.

KEYWORDS

Mysid, eastern Pacific, Central America, taxonomy, new species, Peracarida.

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Introduction

To date, only four species of mysids belonging to the family Mysidae have been documented from the Pacific coastal waters of Costa Rica (Price, 2004; Price *et al.*, 2009). Tattersall (1951) described *Antromysis anophelinae* W. Tattersall, 1951 from burrows of the land crab *Cardisoma crassum* Smith, 1870 in the province of Puntarenas. *Heteromysis panamaensis* O. Tattersall, 1967 was described from the coast of Guanacaste in depths of 5–18 m from sandy/shelly substrates and found on occasion in gastropod shells harboring hermit crabs. Neither of these species has been reported since their original descriptions. *Chlamydopleon* (=*Bowmaniella*) *banneri* (Băcescu, 1968) was reported from sandy beaches of Puntarenas by Dexter (1974) and from Puntarenas and Guanacaste by Heard and Price (2006) (see Wittmann, 2009). In the same study of sandy beach fauna of Costa Rica and Colombia, Dexter (1974) recorded *Metamysidopsis* sp. from Guanacaste.

During collections of malacostracan crustaceans and other invertebrates from the beaches and shallow bays of the provinces of Puntarenas and Guanacaste on the Pacific coast of northern Costa Rica, an undescribed species of the mysid belonging to the genus *Mysidopsis* G.O. Sars, 1864 was discovered. The description of this new species is presented herein.

Material and Methods

Mysids were sampled from exposed and protected beaches of Puntarenas and Guanacaste in September 2010, April 2012, and March 2014. Specimens of the new species were collected at a depth of 0.5 to 1.0 m using a hand-held 0.9 mm mesh bottom "kicknet", preserved in a 3% formalin-seawater solution, and later transferred to 70% ethanol for examination. Body length was determined as being the distance from the anterior margin of the carapace to the posterior margin of the telson, excluding setae. Type material and additional specimens are deposited in the University of Costa Rica, School of Biology, Zoology Museum (MZUCR) and the Gulf Coast Research Laboratory (GCRL).

Systematics

Order Mysida Boas, 1883

Family Mysidae Haworth, 1825

Subfamily Leptomysinae Czerniavsky, 1882

Tribe Mysidopsini Wittmann, Ariana and Lagardère, 2014

Genus *Mysidopsis* G.O. Sars, 1864

***Mysidopsis gemina* n. sp.**

(Figs. 1–3)

Type material. Holotype: adult male (length [L] 6.4 mm), Costa Rica, Puntarenas, Playa Caldera, 09°92'75"N 84°71'64"W, grey sand beach, kicknet, intertidal zone, depth 1.0 m, R. Heard, O. Breedy and R. Vargas coll., 15 Sep 2010, MZUCR 2843-02. — Paratypes: 1 adult male (L 5.1 mm), 4 ovigerous females (L 5.0, 5.1, 5.5, 5.4 mm), same collection data as holotype, MZUCR 2843-03; 2 adult males (L 6.2, 5.9 mm), Costa Rica, Puntarenas, Playa Caldera, 09°92'75"N 84°71'64"W, grey sand beach, kicknet, intertidal zone, depth 0.5 m, R. Heard and R. Vargas coll., 12 Sep 2010, MZUCR 2817-02; 2 adult males (L 5.4, 5.1 mm), 2 ovigerous females (L 5.4, 5.5 mm), same collection data as holotype, GCRL 6601.

Additional material examined. 8 males, 15 ovigerous females, 7 non-ovigerous females, Costa Rica, Puntarenas, Playa Caldera, 09°92'75"N 84°71'64"W, grey sand beach, kicknet, intertidal zone, depth 0.5 m, R. Heard and R. Vargas coll., 12 Sep 2010, MZUCR 2817-01; 3 males, 1 non-ovigerous female, Costa Rica, Guanacaste, Bahía Culebra, Playa Panama, 10°35'27.6"N 85°39'32.4"W, grey sand beach, kicknet, intertidal zone, depth 1.0 m, R. Heard, O. Breedy and R. Vargas coll., 14 Sep 2010, MZUCR 2822-1; 5 males, 12 ovigerous females, 11 non-ovigerous females, Puntarenas, Costa Rica, Playa Caldera, 09°92'75"N 84°71'6"W, grey sand beach, kicknet, intertidal zone, depth 1.0 m, R. Heard, O. Breedy and R. Vargas coll., 15 Sep 2010, MZUCR 2843-01; 2 males, 3 ovigerous females, Costa Rica, Guanacaste, Playa Ocotal,

10°32'52.8"N 85°43'19.2"W, rocky area, intertidal, algal washings, Mar 2014, R. Heard, O. Breedy and R. Vargas coll., MZUCR 3122-02; 1 ovigerous female, Costa Rica, Puntarenas, Cabo Blanco, Poza San Miguel, 09°34'40.8"N, 85°8'16.8"W, tide pools at night with light, kicknet, R. Vargas and A. Carrillo, 21 Apr 2012, MZUCR 3240-01.

Diagnosis. Antennal scale lanceolate, apex rounded with indistinct suture; carapace with anterior margin produced into an acutely pointed triangular rostrum reaching mid-length to distal end of article 1 of antennular peduncle; carpopropodus of thoracic endopods 3–8 3-articulated; male pleopod 1 with 2-articulated linguiform endopod; male pleopods 2–5 with enlarged membraneous, transparent pseudobranchial lobes (exites) on basal article of endopods; telson entire, linguiform, with rounded to truncate apex; marked sexual dimorphism, female, lateral margins with 17–20 short spiniform setae, increasing in length posteriorly, apex with two pairs of subequal, long, stout spiniform setae, outer pair curved inward, inner pair straight to slightly curved, about 0.3 length of telson; outer-most apical setae 1.7–2.2 times length of most posterior lateral setae; male, lateral margins with 20–23 short spiniform setae, increasing in length posteriorly; apex with three pairs of fairly stout spiniform setae, inner-most pairs subequal in length; about 0.2 length of telson; outer-most apical pair 1.4–1.7 times length of most posterior lateral setae; uropodal endopod with 16–20 spiniform setae along inner median margin from region of statocyst to apex.

Description. General body form (Fig. 1A): moderately slender, adult males to 6.4 mm and females to 5.5 mm; carapace with anterior margin produced into an acutely pointed triangular rostrum extending mid-length to distal end of article 1 of the antennular peduncle; posterior dorsal margin broadly emarginate, partially exposing thoracic somite 8; antero-lateral corners rounded.

Eyes (Fig. 1A): cornea large, globular, broader than eyestalk, occupying distal 45% of eye, extending to article 2 of antennular peduncle.

Antennular peduncle (Fig. 1B): more robust in males than females, shorter than antennal scale; article 1 subequal in length with article 3, disto-lateral epiprocess with 3–5 plumose setae, apophysis near disto-medial margin with 5–9 plumose setae; article 2 short, with 8–9 slender simple (smooth) and plumose setae and 1 blade-like plumose seta on disto-medial margin; article 3 with one long simple seta and one short plumose seta mid-lateral; group of 4–5 long simple setae on disto-medial margin; distal border with dorso-medial lobe bearing two tooth-like processes and 3–5 plumose setae; male lobe (appendix masculina) large and densely setose with no indentation on medial margin; outer antennular flagellum slightly thicker than inner.

Antenna (Fig. 1C): scale lanceolate, extending well beyond peduncle, 5.5–7 times as long as maximum width; outer margin slightly concave to straight; inner margin slightly convex; apex with indistinct suture, tip about 0.15 scale length; all margins setose; peduncle 3-articulated; article 1 (not shown in Fig. 1C) slightly shorter than article 3 and about half as long as article 2; article 2 with 1 long and 2 short plumose setae on inner distal margin and 1 simple seta on outer distal margin; article 3 with 2 long simple setae and 3–4 shorter plumose setae on inner distal margin and 2 simple setae along outer distal margin; sympod with small tooth on distolateral corner.

Labrum (Fig. 1D): well rounded, wider than long, middle half of bilobed posterior margin with cluster of short fine setae on one side of emargination and short coarse setae on the other.

Mandibles (Fig. 1E): palp 3-articulated; article 1 small with no setae, article 2 with mostly simple setae on outer, inner, and distal margins; article 3 about 0.6 times as long as article 2, mostly with simple setae, but distal half with a long, curved spiniform seta armed bilaterally in mid-part with barbs, and 7–9 shorter spiniform setae with similar barbs along their entire lengths.

Gnathobasic surfaces of both mandibles without molar process; left mandible, incisor process with 6–7 teeth, lacinia mobilis with 5–6 teeth, spine row with three teeth and series of smaller spine-like teeth and bristles; right mandible, incisor process with 5–6 teeth, lacinia mobilis spherical process with 4 teeth, spine

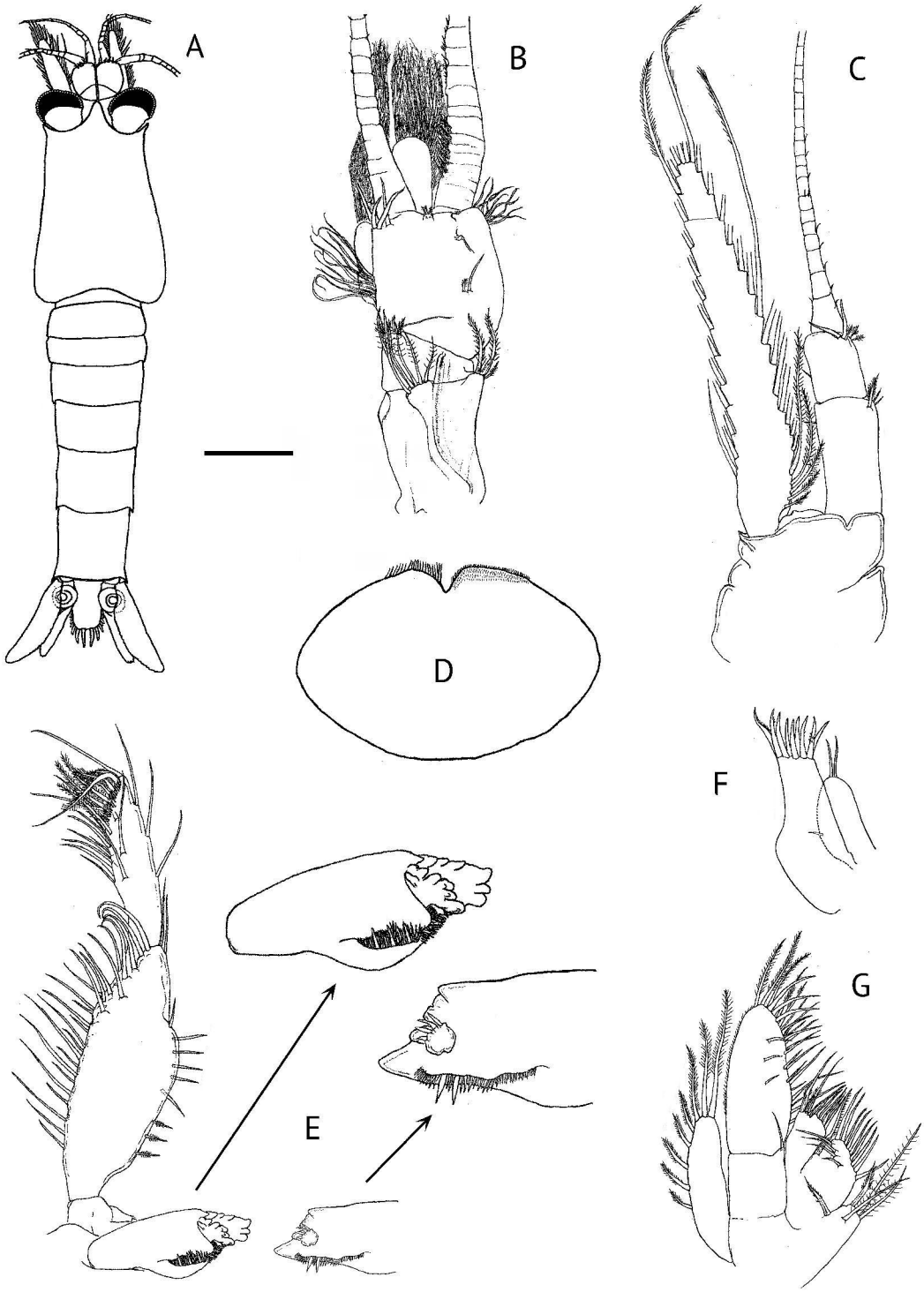

Figure 1. *Mysidopsis gemina* n. sp., adult female (A), male (B–G). A, Dorsal view; B, antennular peduncle; C, antennal peduncle and scale; D, labrum; E, mandibles, anterior (rostral) view, with enlargement of gnathobasic surfaces; F, maxillule; G, maxilla. Scale: A, 0.5 mm; B, C, 0.2 mm; E–G, 0.1 mm; D, 0.5 mm.

row with 2 large teeth and series of smaller teeth and bristles.

Maxillule (Fig. 1F): outer lobe apex with 9 strong serrate setae; inner lobe with two apical microserrated setae and one medial microserrated seta along outer margin.

Maxilla (Fig. 1G): exopod relatively narrow, with 7–9 plumose setae; endopod 2-articulated, distal article oval, about 2.4 times as long as wide, with 3 submarginal simple setae and series of simple and plumose setae along apex and inner margin; coxal endite with 2–3 plumose and 2 barbed setae; basal endite bilobed, with simple and plumose setae and 1 serrate seta on inner margins.

Thoracic endopods: endopod length increases in order of endopods 1, 2, (6, 7, 8 subequal), 5, (3, 4 subequal) (Figs. 2A–G, 3A); thoracic endopod 1 (Fig. 2A): short and robust, typical of genus; ischium and merus fused (merischium), two times carpus length, slightly shorter than combined propodus and dactylus lengths, smooth setae along medial margin; carpus with 2–5 simple setae on medial margin, three serrate setae along lateral margin; propodus bent inward, several simple setae and one serrate seta on distolateral margin, 2–4 simple setae on disto-medial corner; dactylus densely setose with simple setae, strong curved terminal seta; thoracic endopod 2 (Fig. 2B): ischium 0.7–0.8 length of merus; merus slightly shorter than carpopropodus, with one serrate and one simple seta on distolateral corner; carpopropodus with one strong pectinate and one plumose seta on disto-lateral corner; dactylus with three strong pectinate setae and two plumose setae on disto-lateral margin and inner face, strong curved terminal seta; thoracic endopods 3–8 (Figs. 2C–G, 3A): ischium length as compared to merus length decreases steadily from 1.4 (endopod 3) to 0.9 (endopod 8); merus 1.1–1.4 times as long as carpopropodus, one serrate seta on disto-lateral corner (Fig. 2C); carpopropodus 3-articulated; middle article 0.4–0.8 length of other two articles, one serrate seta on disto-lateral corner of proximal two articles except endopod 8; dactylus with undulating medial margin, armed with strong, curved terminal seta.

Penes: (not figured) length 0.8–1.1 basal plate length of exopod of thoracopod 8; well developed, cylindrical, each penis with two apical lobes, one with two large simple setae, outer face with series of 10 plumose setae.

Thoracic exopods: basal plates with small tooth on outer distal corner; exopod 1 with 8 articles, exopods 2–8 with 9 articles (Fig. 2B)

Pleopods: female, uniarticulate setose plates (Fig. 3B, C); pleopod 5 longest, reaching about 0.6 length of abdominal somite 5; male pleopods well developed; pleopod 1 (Fig. 3D, E), 2-articulated endopod linguiform with 1 distal simple seta; article 1 with pseudobranchial lobe (exite) normally developed with 4–5 setulose setae; anterior face with group of 7–10 simple setae; exopod 8-articulated, about three times length of endopod; pleopods 2–5 biramous, endopods and exopods 8-articulated; pseudobranchial lobes enlarged, membraneous and transparent with 5 setulose setae; pleopod 4 (Fig. 3F), exopod with terminal article having 1 simple subapical seta and one long barbed apical spiniform seta as long as the 4–5 distal articles combined.

Telson (Fig. 3G, H): entire, linguiform, 1.4–1.6 times as long as wide at base, about 0.8 length of last abdominal somite; lateral margins moderately concave, apex rounded to truncate; marked sexual dimorphism, female, lateral margins with 17–20 short spiniform setae, increasing in length posteriorly, apex with two pairs of subequal, long, stout spiniform setae, outer pair curved inward, inner pair straight to slightly curved, about 0.3 length of telson; outer-most apical setae 1.7–2.2 length of most posterior lateral setae; male, lateral margins with 20–23 short spiniform setae, increasing in length posteriorly; apex with three pairs of fairly stout spiniform setae, inner-most pairs subequal in length; about 0.2 length of telson; outer-most apical pair 1.4–1.7 length of most posterior lateral setae.

Uropod (Fig. 3I): exopod 1.2–1.3 times as long as endopod, 1.4–1.5 times as long as telson, outer margin straight to slightly concave, inner margin convex; endopod 1.1–1.3 times as long as telson, outer and inner margins slightly concave and setose, inner margin with 16–20 mostly subequal spiniform setae from region of statocyst to apex.

Colour (in preserved specimens): body uniformly brown to beige with diffuse brown pigmentation irregularly distributed on eyestalks, carapace, thorax, abdomen, telson, and appendages; heavy pigmentation near posterior ventral margins of abdominal somites,

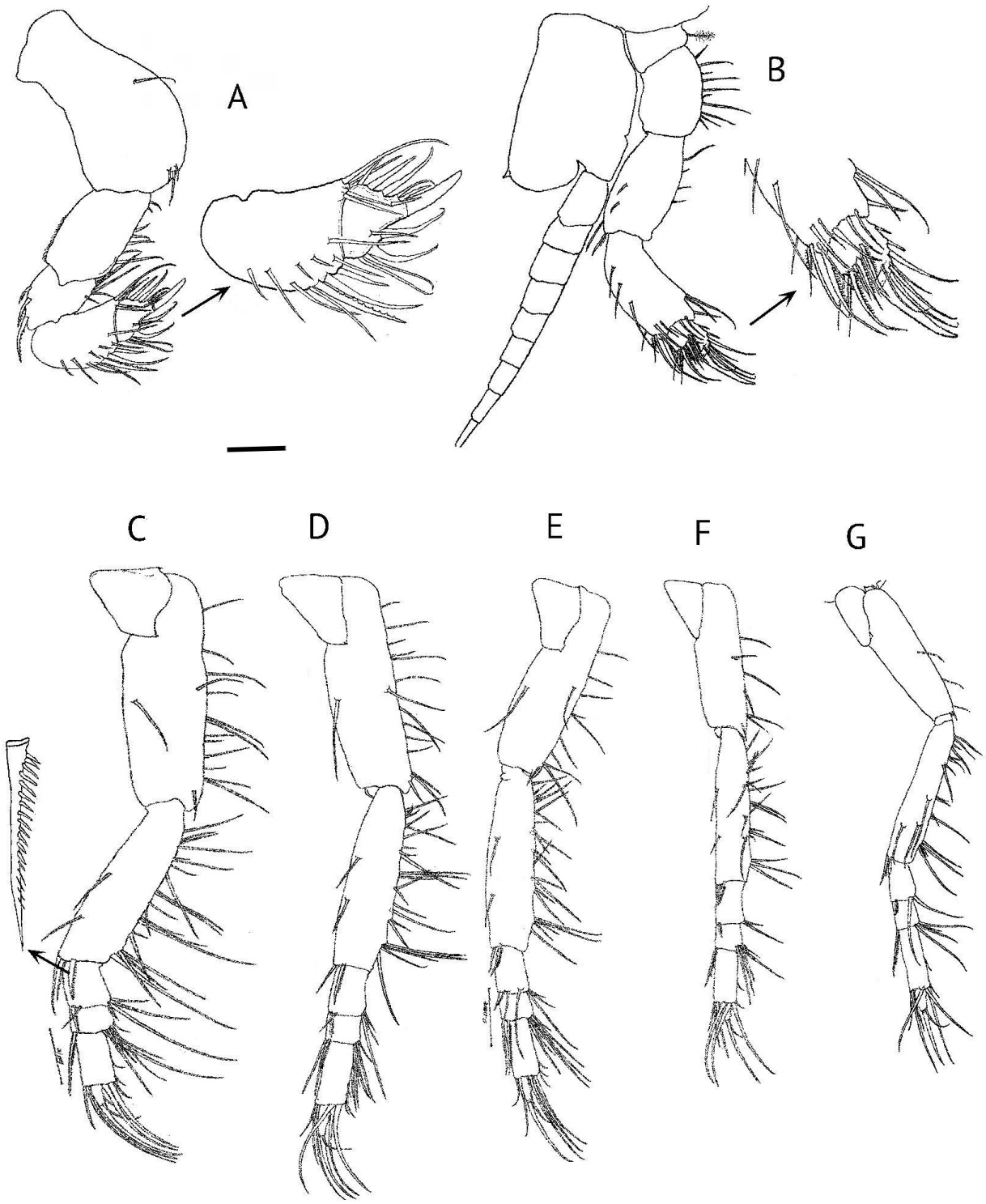

Figure 2. *Mysidopsis gemina* n. sp., adult female (D, F), male (A–C, E, G). A, thoracic endopod 1 with enlargement of distal end; B, thoracic endopod 2 with enlargement of distal end; C, thoracic endopod 3 with enlargement of serrate seta; D–G, thoracic endopods 4–7. Scale: A–G, 0.1 mm.

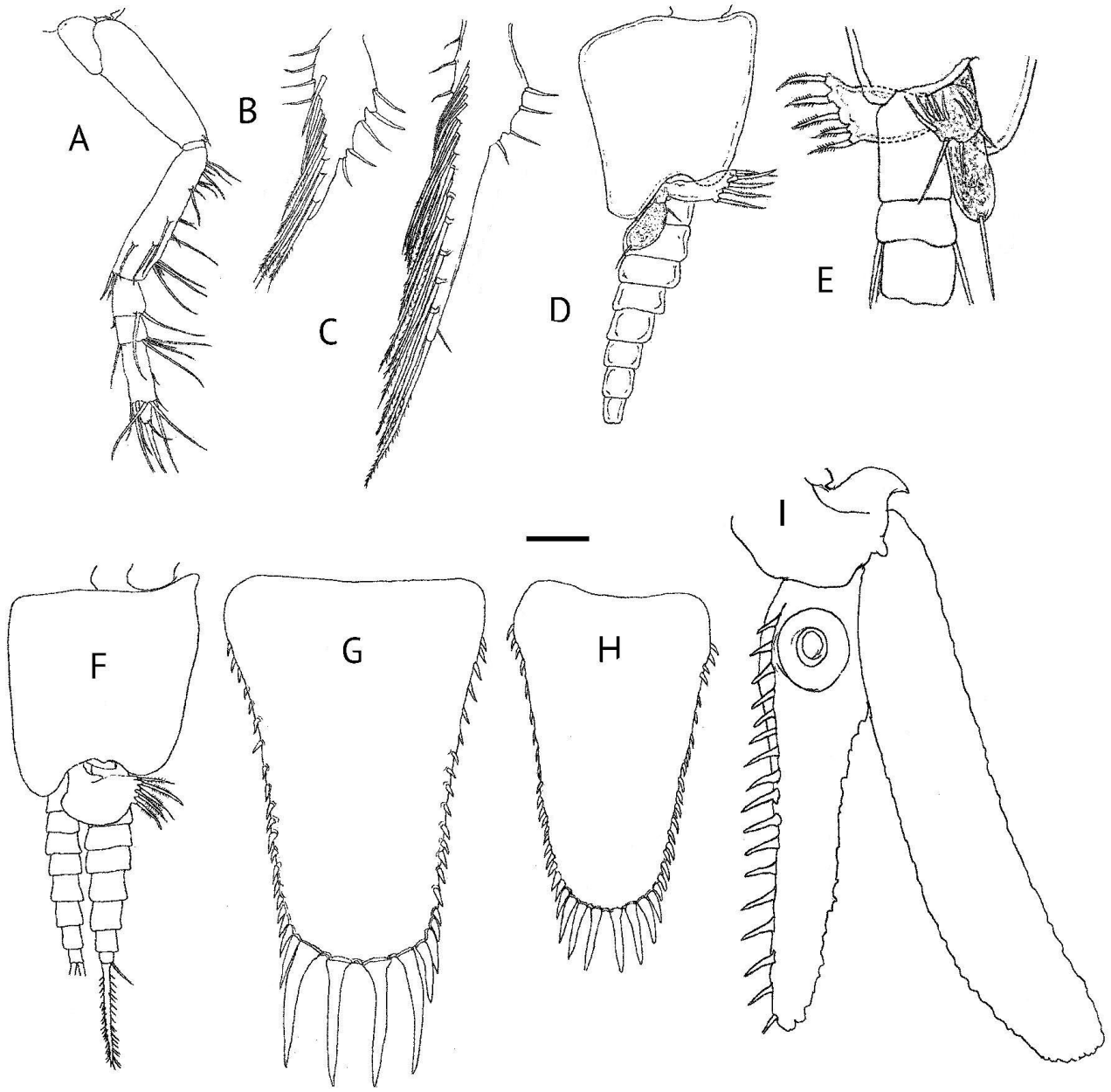

Figure 3. *Mysidopsis gemina* n. sp., adult female (B, C, G), male (A, D–F, H, I). A, thoracic endopod 8; B, pleopod 4, anterior view; C, pleopod 5, anterior view; D, pleopod 1, posterior view; E, pleopod 1, anterior view; F, pleopod 4, posterior view; G, telson; H, telson; I, uropod. Scale: A–D, F–I, 0.1 mm; E, 0.05 mm.

dorsal base of telson, and posterior-most pair of oostegites.

Etymology. The species name is a Latin adjective with female gender referring to the similarity of the new species to its Atlantic cognate, *M. furca* Bowman, 1957.

Habitat. Collected from sandy beaches in depths of 0.5 to 1.0 m.

Type locality. Costa Rica, Puntarenas, Playa Caldera (09°92'75"N 84°71'64"W), grey sand beach, depth 1 m.

Distribution. At present known only from the provinces of Guanacaste and Puntarenas along the Pacific coast of Costa Rica.

Remarks. *Mysidopsis gemina* n. sp. has its closest morphological affinities with *M. furca*. These two species, respectively, appear to represent Eastern Pacific and Western Atlantic cognate or sister species. Both differ from other known members of the genus *Mysidopsis* by the distinctive sexual dimorphism expressed by their telsons. The new Costa Rican species is distinguished from *M. furca* by a variety of characters, including the (1) acutely pointed triangular rostrum (blunt in *M. furca*), (2) male pleopods 2–5 with enlarged pseudopodal lobes on the endopods (lobes normally developed in M. *furca*), (3) male first pleopod having a biarticulated endopod (uniarticulate in *M. furca*), and (4) fewer number of spiniform setae (16–20) on the uropodal endopod (20–45 in *M. furca*). For additional morphological details for these and other characters for distinguishing the two sister species, see Tab. 1.

Table 1. Comparison of diagnostic characters of *Mysidopsis furca* Bowman, 1957 and *Mysidopsis gemina* n. sp.

Characters	*M. furca*	*M. gemina* n. sp.
Anterior dorsal margin of rostrum	bluntly triangular, barely reaching article 1 of antennular peduncle	acutely pointed triangular, reaching distal end of article 1 of antennular peduncle
Antennal scale, length: greatest width	4.0–4.2	5.5–7.0
Male pleopod 1	endopod 1-articulated	endopod 2-articulated
Male pleopod 4	exopod 7-articulated	exopod 8-articulated
Male pleopods 1–5, pseudobranchial lobe	lobes normally developed	pleopod 1 lobe normally developed; pleopods 2–5 lobes enlarged
Spiniform setae on uropodal endopod	20–45	16–20
Telson:		
– Length: greatest width	F: 1.1–1.2; M: 1.4	F: 1.4–1.6; M: 1.5–1.6
– Lateral margins	F: markedly concave; M: moderately concave	F: moderately concave; M: moderately concave
– Lateral setae (excluding apical setae)	F: 7–12; M- 10–14	F: 17–20; M: 20–23
– Emargination between apical inner setae	present	absent
– Pairs of apical spiniform setae	F: 2; M: 2	F: 2; M: 3
– Length of inner apical setae: telson length	F: 0.5; M: 0.2–0.25	F: 0.3; M: 0.2
– Length of inner apical setae: adjacent apical setal length	F: 1.0–1.2; M: 2.0–2.2	F: 1.0; M: 1.0
– Length of outer-most apical setae: most posterior lateral setal length	F: 3.0–8.5; M: 1.7–2.2	F: 1.7–2.2; M: 1.4–1.7
References	Bowman (1957); Brattegard (1969); Stuck *et al.* (1979a; 1979b); Heard *et al.* (2006)	

F: Female; M: Male

Discussion

With the inclusion of *Mysidopsis gemina* n. sp., 51 nominal species and one subspecies currently compose the genus *Mysidopsis* (see Mees and Meland, 2012; present study), which represents the largest and most diverse of the other 30 genera presently composing the subfamily Leptomysinae. Males for 43 of the nominal species of *Mysidopsis* have been described. Within this genus, as well as within the subfamily Leptomysinae, the simultaneous combination of the (1) telson exhibiting distinctive sexual dimorphism, (2) first pleopod of the male having biarticulated endopod, and (3) male pleopods 2–5 with endopods having large plate-like pseudopodia (exites) appears to be unique to *M. gemina*. Table 2 presents a synopsis of the geographical distribution of these characters among species in the three tribes (Afromysini, Leptomysini, and Mysidopsini) of the Leptomysinae.

Table 2. Geographic distribution of the species described with three distinctive characters (sexually dimorphic telson, male pleopod 1 with biarticulated endopod, male pleopodal endopod with enlarged pseudopodia) among the three tribes of the subfamily Leptomysinae (including new Costa Rican species).

Character	Distribution	Reference
Sexually dimorphic telson		
- Tribe Afromysini		
Doxomysis acanthina Talbot, 1997	Australia	Talbot, 1997
D. australiensis (W. Tattersall, 1940)	Australia; South Africa (?)	Băcescu and Udrescu, 1982; Talbot, 1997; Wooldridge and Mees, 2000
D. longiura Pillai, 1963	India; South China Sea	Pillai, 1963, 1964; Talbot, 1997
D. spinata Murano, 1990	Australia	Talbot, 1997
Neodoxomysis elongata Murano, 1999	Sahul Shelf	Murano, 1999
Pseudoxomysis caudaensis Nouvel, 1973	Vietnam, Java, Indonesia	Nouvel, 1973; Murano, 2001
Tenagomysis tasmaniae Fenton, 1991b	Tasmania; Bass Strait	Fenton, 1991b
- Tribe Leptomysini		
Paraleptomysis apiops (Sars, 1877)	Mediterranean Sea	Wittmann, 1986
P. banyulensis (Bačescu, 1966)	Mediterranean Sea	Wittmann, 1986
P. dimorpha Wittmann, 1986	Eastern Atlantic	Wittmann, 1986
P. sinensis Liu & Wang, 1983	South China Sea	Liu and Wang, 1983; Wittmann, 1986
P. xenops (W. Tattersall, 1922)	Indian Ocean; Indonesia; South China Sea	Wittmann, 1986
- Tribe Mysidopsini		
Mysidopsis gemina n. sp.	Eastern Pacific, Costa Rica	Present study
M. furca Bowman, 1957	U. S. Atlantic coast; Gulf of Mexico	Heard *et al.*, 2006
M. kenyana Băcescu and Vasilescu, 1973	Kenya	Băcescu and Vasilescu, 1973
M. onofrensis Băcescu and Gleye, 1979	Eastern Pacific, California	Băcescu and Gleye, 1979
Male pleopod 1- biarticulated endopod		
- Tribe Afromysini		
Doxomysis australiensis	Australia; South Africa (?)	Bačescu and Udrescu, 1982; Wooldridge and Mees, 2000
- Tribe Mysidopsini		
Mysidopsis gemina n. sp	Eastern Pacific, Costa Rica	Present study
M. abbreviata Wittmann and Griffiths, 2018	South Africa	Wittmann and Griffiths, 2018
M. buffaloensis Wooldridge, 1988	South Africa	Wooldridge, 1988; Wittmann and Griffiths, 2018
M. indica W. Tattersall, 1922	India	Wittmann and Griffiths, 2018
M. similis (Zimmer, 1912)	South Africa	Wittmann and Griffiths, 2018
M. zsilaveczi Wittmann and Griffiths, 2014	South Africa	Wittmann and Griffiths, 2018
Male pleopods- endopods with enlarged pseudopodia		
- Tribe Afromysini		
Iimysis orientalis (Ii, 1937)	Japan	Ii, 1937, 1964
Promysis orientalis Dana, 1852	South China Sea, western Pacific, Philippines, Australia	Tattersall, 1936; Ii, 1964
Pseudobranchiomysis arenae Carcedo, Fiori, and Hoffmeyer, 2013	Argentina	Carcedo *et al.*, 2013
- Tribe Leptomysini		
Antichthomysis notidana Fenton, 1991a	Tasmania	Fenton, 1991a
- Tribe Mysidopsini		
Mysidopsis gemina n. sp.	Eastern Pacific, Costa Rica	Present study
M. abbreviata	South Africa	Wittmann and Griffiths, 2018
M. cultrata Brattegard, 1973	Caribbean	Wittmann and Griffiths, 2014
M. indica	India	Wittmann and Griffiths, 2014
M. zsilaveczi	South Africa	Wittmann and Griffiths, 2014

Telsonic sexual dimorphism within the subfamily Leptomysinae. Within the tribe Mysidopsini, *Mysidopsis* is the only genus to exhibit sexually dimorphic telsons. Besides the striking sexual dimorphism exhibited by *Mysidopsis gemina* and *M. furca*, less significant telsonic sexual differences are reported for *M. kenyana* Băcescu and Vasilescu, 1973 and *M. onofrensis* Băcescu and Gleye, 1979. In *M. onofrensis* adult males (5.5–6 mm) have 18–23 lateral spiniform setae on the telson margin; whereas, females (4.6–6.0 mm) with incipient marsupia bear 25–28 such marginal setae. For *M. kenyana*, adult females have slightly longer subapical spiniform setae than those of the males (see Băcescu and Vasilescu, 1973; Băcescu and Gleye, 1979).

Sexually dimorphic telsons occur in members of the other two tribes of the Leptomysinae, the Afromysini and Leptomysini. It is represented in four (*Doxomysis* Hansen, 1912, *Neodoxomysis* Murano, 1999, *Pseudoxomysis* Nouvel, 1973 and *Tenagomysis* Thomson, 1900) of the 19 genera composing the tribe Afromysini, and one (*Paraleptomysis* Liu and Wang, 1983) of the six genera within the tribe Leptomysini.

Presence of a biarticulated endopod on the first male pleopod. Apparently, only two genera of leptomysids have a first male pleopod with a biarticulated endopod. Within the tribe Mysidopsini, in addition to the new species, five species of *Mysidopsis* exhibit this character (*i.e.*, *M. abbreviata* Wittmann and Griffiths, 2018; *M. buffaloensis* Wooldridge, 1988 (see Wittmann and Griffiths, 2018); *M. indica* W. Tattersall, 1922; *M. similis* (Zimmer, 1912); and *M. zsilaveczi* Wittmann and Griffiths, 2014).

Besides the genus *Mysidopsis*, this male character has been documented for only one other leptomysid species, *Doxomysis australiensis* (W. Tattersall, 1940) belonging to the tribe Afromysini. In their illustration (Fig. 5E) of the first male pleopod of *D. australiensis*, Bačescu and Udrescu (1982) clearly show a biarticulated endopod; however, in their description of this structure they incorrectly designated it as a reduced "exopod." There is the caveat that this character may have been overlooked in earlier descriptions of *Mysidopsis* and the other members of the subfamily Leptomysinae.

Presence of enlarged pseudopodia (exites) on endopod of male pleopods. Within the tribe Mysidopsini, males of five species of *Mysidopsis* are reported as having some or all pleopodal endopods bearing expanded pseudopodia. As for *M. gemina*, males of *M. abbreviata* and *M. indica* have enlarged pseudopodia on pleopods 2–5, whereas these structures are found on pleopods 1–5 for *M. zsilaveczi* and *M. cultrata* Brattegard, 1973 (see Wittmann and Griffiths, 2014; 2018).

The occurrence of distinct, enlarged "plate-like" pseudopodia (exites) is shared by four other leptomysid taxa, each representing a different genus. Within the tribe Afromysini, *Iimysis orientalis* (Ii, 1937), *Promysis orientalis* Dana, 1852 and *Pseudobranchiomysis arenae* Carcedo, Fiori and Hoffmeyer, 2013 are characterized by having male pleopods 2–4, 2–5, and 1–5, respectively, with enlarged pseudopodia. Ii (1937) described the pseudopodia of the former species as "more or less swollen at the posterior margin"; however, they do not appear to be overly swollen in his illustrations (Ii, 1937: figs. 26, 27). The remaining species, *Antichthomysis notidana* Fenton, 1991a, belonging to the tribe Leptomysini, is described as having enlarged pseudopodia on pleopods 2–5.

Final remarks. Within the subfamily Leptomysinae, *Mysidopsis gemina* n. sp. appears to exhibit via its telson and male pleopods (*i.e.*, pleopod 1 having biarticulate endopod, plate-like pseudopodia on pleopods 2–5) the greatest diversity of sexually dimorphic characters. The specific combination of these characters is unique to *M. gemina*, but not individually, and one or two of these traits are shared by other *Mysidopsis* species and some of the other genera within its subfamily. These traits appear to occur in no particular systematic pattern, making it difficult to assess whether this is due to plesiomorphic or apomorphic expressions (*e.g.*, homoplasy/convergences).

As outlined in Tab. 2, the most common occurrences of these characters appear to be within the Indo-Pacific Region, but this incipient pattern may be due to an artifact of sampling, or by their being overlooked or undocumented in earlier species descriptions. Notwithstanding, their possible systematic importance may have to be resolved in future molecular phylogenetic and morphologic studies.

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