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Four new valviferan isopods from diverse tropical Australian habitats (Crustacea: Isopoda: Hologнathidae and Idoteidae)

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Abstract

Poore, G.C.B. 2012. Four new valviferan isopods from diverse tropical Australian habitats (Crustacea: Isopoda: Hologнathidae and Idoteidae). *Memoirs of Museum Victoria* 69: 327–340.

Two new isopods of the family Hologнathidae are described from tropical Australia: *Cleantioides carpentaria* sp. nov. from shallow seagrass sediments in the Gulf of Carpentaria and an eastern Queensland port; and *Zenobianopsis cidaris* sp. nov. from 500 m depth in the Coral Sea. The latter is the third in its genus. Two new species of *Synidotea* (Idoteidae), *S. innatans* sp. nov. and *S. karumba* sp. nov. are described. Both are distinguished from others of the *S. hirtipes*-group of species, on the basis of subtle differences in colour and proportions of the body and limbs. The material of *S. innatans* was taken from flotsam in the Timor Sea and is potentially an obligate rafting species. *Synidotea karumba* is from shallow sedimentary environments in the Gulf of Carpentaria.

Keywords

Crustacea, Isopoda, Valvifera, Hologнathidae, Idoteidae, *Cleantioides*, *Zenobianopsis*, *Synidotea*, new species, Australia

Introduction

Two valviferan families of isopods are characterised by having more or less flattened body shape and slight differentiation of body segments, Hologнathidae Thomson, 1904 and Idoteidae Samouelle, 1819. The Hologнathidae comprise 21 species in five genera, four reviewed by Poore and Lew Ton (1990) and a fifth added by Liu et al. (2010). Three genera inhabit temperate shallow sediments in both hemispheres and two occur only in the deep South Pacific and Southern oceans. Three species occur in shallow temperate southern Australia (Poore and Lew Ton, 1993). The Idoteidae on the other hand are found circum-globally in shallow algal and seagrass habitats, mainly at temperate latitudes. The family comprises 23 species in Australia confined, with one exception, to temperate coasts (Poore and Lew Ton, 1993). No new species have been reported since the date of their review.

The only tropical species in Australia is the doubtful *Idotea brevicorna* Milne Edwards, 1840. Poore and Lew Ton (1993) debated the possible synonymy of this species, and its probable synonym *I. duplicata* Nierstrasz, 1941 from Indonesia, with the European species *I. balthica* (Pallas, 1772). *Idotea balthica* is a facultative drifter on a variety of floating material in the North Atlantic (Thiel and Gutow, 2005; Thiel and Haye, 2006) and the probability of this species occurring naturally in tropical Australian waters seems low. Neither *I. brevicorna* nor *I. duplicata* has been reported since from the region and the possibility remains that the records, based on collections in the 19th century, are of translocated specimens from ships' hulls.

In this contribution, new species are described from tropical northern Australia, one hologнathid from a shallow environment and another from bathyal depths, plus two new species of Idoteidae, one from shallow sedimentary habitat and another from flotsam.

Abbreviations in figures are: a1(f), antenna 1 (flagellum); a2(p), antenna 2 (peduncle); md, right mandible; mp, maxilliped; mx2, maxilla 2; p, penial plate; p1–p7, pereopods 1–7; pl2, pleopod 2; u, uropod. Material is lodged in Museum Victoria, Melbourne (NMV), Queensland Museum, Brisbane (QM) and the Museum of Tropical Queensland, Townsville (MTQ).

Hologнathidae Thomson, 1904

Cleantioides Kensley and Kaufman, 1978

Cleantioides Kensley and Kaufman, 1978: 658. – Poore and Lew Ton, 1990: 59.

Remarks. The genus contains 12 species, four in Central America (Kensley and Kaufman, 1978; Brusca and Wallerstein, 1979; Kensley, 1987), five in the north-western Pacific (Richardson, 1912; Kussakin, 1982; Kwon and Kim, 1992), one in South Africa (Barnard, 1925), and two in southern Australia (Poore and Lew Ton, 1990). Poore and Lew Ton (1990) diagnosed the genus and discussed its synonymy. *Cleantis annadalei* Tattersall, 1921, previously included in this genus, has been removed to its own genus, *Chongxidotea* Liu, Poore and Lu, 2010.

Cleantioides carpentaria sp. nov.

Figures 1–2

Material examined. Holotype. Queensland, Karumba, Norman River mouth (17°28'S, 140°49'E), sandy sediment with seagrasses *Halodule uninervis* and *H. pinifolia*, 1 m, K. Neil, 2001, NMV J62815 (ovigerous female, length 13.5 mm).

Other material. Queensland, Lucinda, Sugar Loading Jetty Outer (18°31.3'S, 146°19.9'E), sediments, 5 m, K. Neil, CRC Reef Research, 01 Jun 1999, QM 462915 (juvenile, 7.6 mm).

Description. *Ovigerous female*. Body approximately 6 times as long as wide. Dorsal surface largely smooth, without setae. Head 1.4 times as wide as long, excavate and depressed anteriorly at midpoint, with small medial pseudorostrum; posterior margin convex; transverse maxillipedal segmental groove obvious. Pleotelson 0.32 whole length, twice as long as wide; pleonite 1 free and articulating, barely visible under pereonite 7; pleonites 2 and 3 well defined but not articulating, pleonite 3 fused medially, lateral margin hidden under pleonite 2; remaining pleotelson parallel-sided and with semicircular apex; dorsum of distal half with oblique (c. 30° from horizontal) circular plane occupying 0.4 of pleotelson length, well-defined by a sharp ridge extending three-quarters around, with obscurely rugose surface.

Antenna 1 reaching to end of article 2 of antenna 2 peduncle; peduncle article 1 as long as wide; flagellum about third length of last article of peduncle, with 4 apical aesthetascs. Antenna 2 0.3 length of body, article 2 with narrow ventromesial projection with bilobed apex; flagellum of 1 article, 0.25 total antenna length, with fine setae all over and a dense clump at apex.

Maxillipedal endite with 2 plumose setae mesially and 8 on transverse apex, palp width 0.45 length, 5 articles visible but suture between 2 and 3 not articulating; articles 2–5 mesially setose; article 3 mesiodistally lobed; article 5 wider than long, 0.2 length of article 4; epipod tapering and obliquely truncate.

Pereopod 1 with dense robust setation on margins of merus, carpus and propodus; propodus 1.8 times as long as wide, with 13 robust setae on mesial face. Pereopods 2 and 3 similar, anterodistal setae on merus and carpus, and margins of propodus; propodus 2.4 times as long as wide. Pereopod 4 0.4 length of pereopod 3, ischium without setae; merus, carpus and propodus with posterodistal U-shaped rows of 11, 18 and 12 robust setae respectively; dactylus reduced to a compact unguis only. Pereopod 5 longer than 4, posteriorly with few spines; dactylus slightly hooked. Pereopods 6 and 7 more elongate than 5, propodus of pereopod 7 4.6 times as long as wide. Oostegites on pereopods 1–5.

Uropodal endopod as wide as long, distally truncate at right-angles to mesial margin over about 0.4 width.

Colour. Holotype unpigmented. Juvenile brown, darkest across front of head, antenna 1 peduncle, articles 1, 2 and 5 of antenna 2, laterally on body segments and coxa.

Etymology. From the type locality, Gulf of Carpentaria (noun in apposition).

Distribution. Australia, Queensland, east and west coasts of Cape York at c. 18°S; to 5 m depth.

Remarks. *Cleantioides carpentaria* is similar to the southern Australian species *C. albaniensis* Poore and Lew Ton, 1990. It differs in being narrower (6 times vs 5 times as long as wide) and having slightly narrower limbs. It differs from all other species in the obscurely rugose surface of the pleotelsonic plane. The other Australian species, *C. striata* Poore and Lew Ton, 1990, from NSW, is longitudinally striped, as are several species in this genus, and has a steeper pleotelsonic plane. The Asian species differ as follows: *C. emarginata* Kwon and Kim, 1992 has an emarginate telsonic apex, *C. poorei* Kwon and Kim, 1992 is more compact, *C. japonica* Richardson, 1912 has a median tubercle on the pleotelsonic plane, and *C. rotundata* Kussakin, 1982 has a more acute pleotelson. *Cleantioides natalensis* (Barnard, 1925) is more elongate (Kensley, 1978).

Zenobianopsis Hale, 1946

Zenobianopsis Hale, 1946: 164–165. – Poore and Lew Ton, 1990: 74.

Remarks. Poore and Lew Ton (1990) rediagnosed the genus and redescribed the type species, *Z. caeca* Hale, 1946. This species and the second, *Z. rotundicauda* Kussakin, 1967 are both from the Southern Ocean. Here, a third is described from deep water at a more tropical latitude.

The head of this species and of *Z. caeca* (confirmed on NMV material) possesses an obvious horizontal groove at the base of antenna 2 reaching back about one third of the head length. The groove is not seen in species of any of the other genera, *Cleantis*, *Cleantioides* or *Hologna thus*.

Zenobianopsis cidaris sp. nov.

Figures 3, 4

Material examined. Holotype. Coral Sea, 17°34.58'S, 146°53.21'E, 458–500 m, M. Pichon et al., 15 May 1986, sledge (CIDARIS I stn 43.2), MTQ W34049 (ovigerous female, 14.2 mm).

Description. *Ovigerous female*. Body 5.6 times as long as greatest width at pereonite 3, pereonites 5–7 noticeably narrower than 1–4, dorsal surface smooth, with fur of fine setae on pleotelson. Head 1.1 times as wide as long, front with broad obtuse pseudorostrum as long as lateral margins; lateral margin with horizontal groove at base of antenna 2. Pleotelson 0.25 total length, 1.8 times as long as greatest width; pleonites 1 and 2 freely articulating; pleonite 3 indicated by lateral suture barely visibly in dorsal view; pleonite 4 very short, with short suture; remaining pleotelson parallel-sided, with semicircular apex, dorsally evenly domed curving posteriorly to oblique profile in lateral view, posterodistal margin not elevated.

Antenna 1 reaching to distal margin of second article of antenna 2; flagellum of major article plus 2 minute articles. Antenna 2 0.25 body length; flagellum broken.

Mandible (right) molar truncate, with acute toothed accessory blade, with 20 molar setae; spine row of 9 spines, lacinia mobilis bifid; incisor with 3 blunt teeth.

Coxa 2 subrectangular; coxa 3 tapering posteriorly, 0.9 pereonite dorsal length; coxa 4 smaller than 3; coxae 5–7 overlapping, ventrally concave, projecting acutely

Figure 1. *Cleantioides carpentaria* sp. nov. Holotype.

posteroventrally; coxa 7 reaching back to mid-pleonite 2. Pereopod 1 ischium with prominent proximal facial robust seta; merus with 2 robust setae on flexor margin, complex seta distally on extensor margin; propodus 2.5 times as long as greatest depth, palm with 5 strong setae and comb of fine short setae, mesial face with 10 pectinate setae; dactylus almost linear except for curved unguis, reaching back to mid-carpus. Pereopod 2 1.3 times as long as pereopod 1; propodus 4.6 times as long as wide; dactylus as long as propodus. Pereopod 3 1.1 times as long as pereopod 2; propodus 6.4 times as long as wide; dactylus almost as long as propodus. Pereopods 4, 5 missing. Pereopod 6 0.4 times length of pereopod 3; propodus extensor margin projected beyond articulation with merus; merus–dactylus 1.5 times length of propodus; dactylus twisted, compact. Pereopod 7 as long as pereopod 6; propodus extensor margin scarcely projected beyond articulation with merus; merus–dactylus 3.7 times length of propodus; dactylus twisted, damaged.

Uropod 2.5 times as long as greatest width; endopod about 0.4 length of total uropod, triangular with rounded apex, suture at 75° to long axis; with 1 seta.

Etymology. *Cidaris*, from the name of the cruise during which the specimen was taken; noun in apposition.

Distribution. Australia, Coral Sea, eastern continental slope of Queensland, c. 17°S; 458–500 m depth.

Remarks. The single specimen has been partially dissected by a previous investigator and most mouthparts, all pereopods of the left side and pereopods 4 and 5 of the right are missing. Nevertheless, the species is undoubtedly of this genus. The new species differs from the two others in the absence of a median carina on the anterior part of the pleotelson, absence of upcurved lateral pleotelson margins and more elongate anterior pereopods. *Zenobianopsis cidaris* has a more rounded uropodal endopod than *Z. rotundicauda*. In *Z. caeca*, the pleotelson is decidedly truncate.

Idoteidae Samouelle, 1819

***Synidotea* Harger, 1878**

Synidotea Harger, 1878: 374. – Poore and Lew Ton, 1993: 261–262.

Remarks. The valviferan idoteid genus *Synidotea* occurs worldwide and is represented by 59 species, most highly endemic (Schotte et al., 2008 onwards). Chapman and Carlton (1991, 1994) suggested that some described species are in fact a single one, the Japanese *Synidotea laevidorsalis* Miers, 1881 translocated elsewhere, especially to ports. This assertion was disputed by Poore (1996) who showed that morphological and ecological differences could be shown between several examples. Nevertheless, one other species does appear to be translocated. *Synidotea laticauda* Benedict, 1897, first described from the estuarine parts of San Francisco Bay, is now known, though wrongly identified, from the Gironde Estuary, France (Mees and Fockedey, 1993), the Guadalquivir River estuary, Spain (Cuesta et al., 1996) and Delaware Bay, USA (Buschek and Boyd, 2006).

Most idoteid genera are restricted to temperate shores but *Synidotea* is not (Schotte et al., 1995 onwards). Northern Australia is within the broad Indo-West Pacific biogeographic region and species recorded there could potentially occur in the Australian tropics. Four species have been described from India: *S. variegata* Collinge, 1917, *S. fluviatilis* Pillai, 1954, *S. worliensis* Joshi and Bal, 1959 and *S. hanumantharaoi* Kumari and Shyamasundari, 1984. Two, *S. fecunda* Javed and Yasmeen, 1994 and *S. indica* Javed and Yasmeen, 1994 occur in Pakistan and *S. poorei* Cai and Teo, 2012 in Singapore. Further afield, *S. oahu* Moore, 2004 was described from Hawaii and *S. pacifica* Nobili, 1906 from Tuamoto. All of these belong to the so-called *S. hirtipes* Milne Edwards, 1840 group of species; *S. hirtipes* is from southern Africa. Both new species differ from the Indian Ocean species as follows: from *S. hirtipes* in the absence of

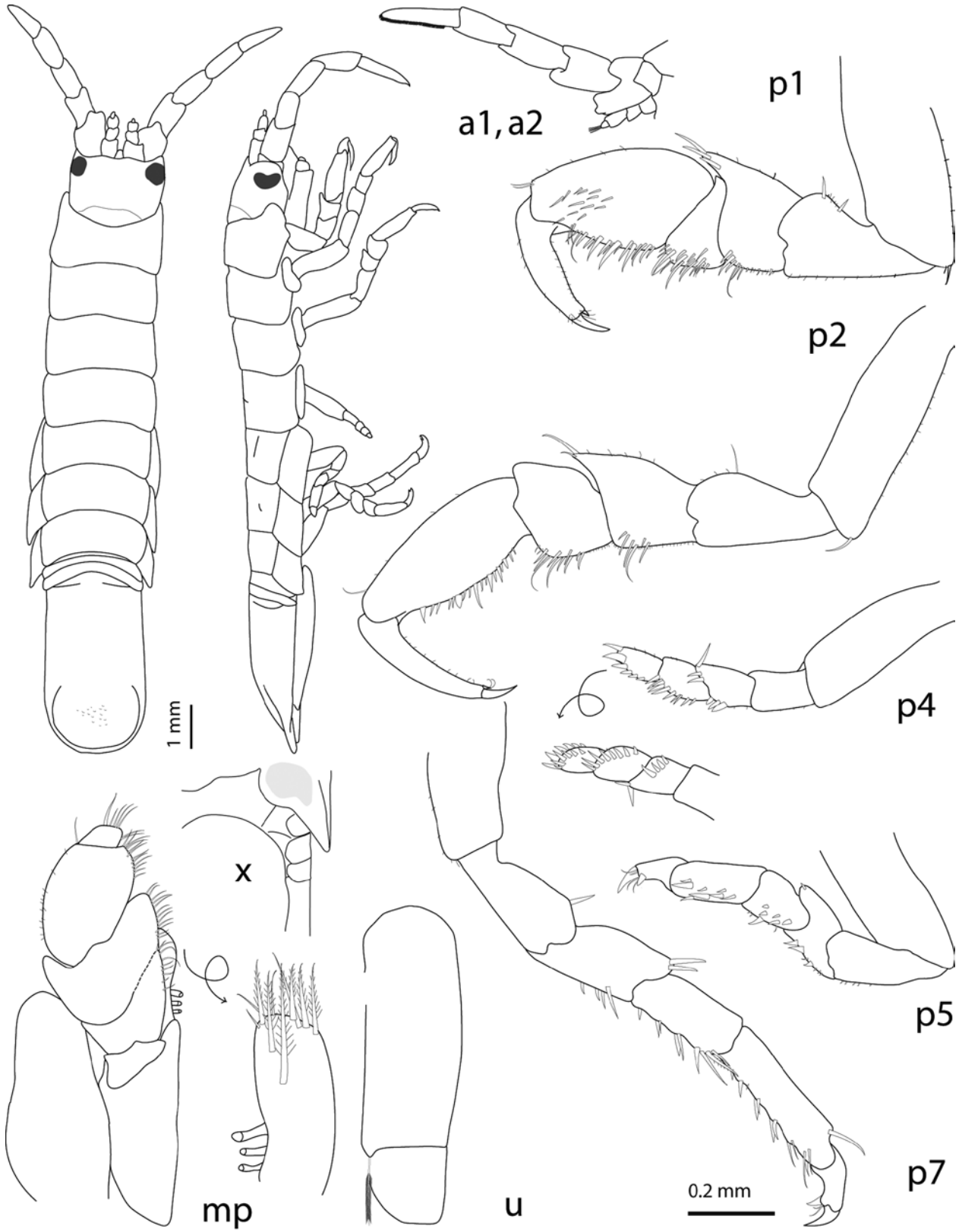

Figure 2. *Cleantioides carpentaria* sp. nov. Holotype. Left antennae 1 and 2 detail in ventral view. x = ventral view of left side of pereonite 7 and anterior pleotelson showing pleonal epimera 1–3. Scale bar = 1 mm (habitus only) and 0.2 mm (pereopods).

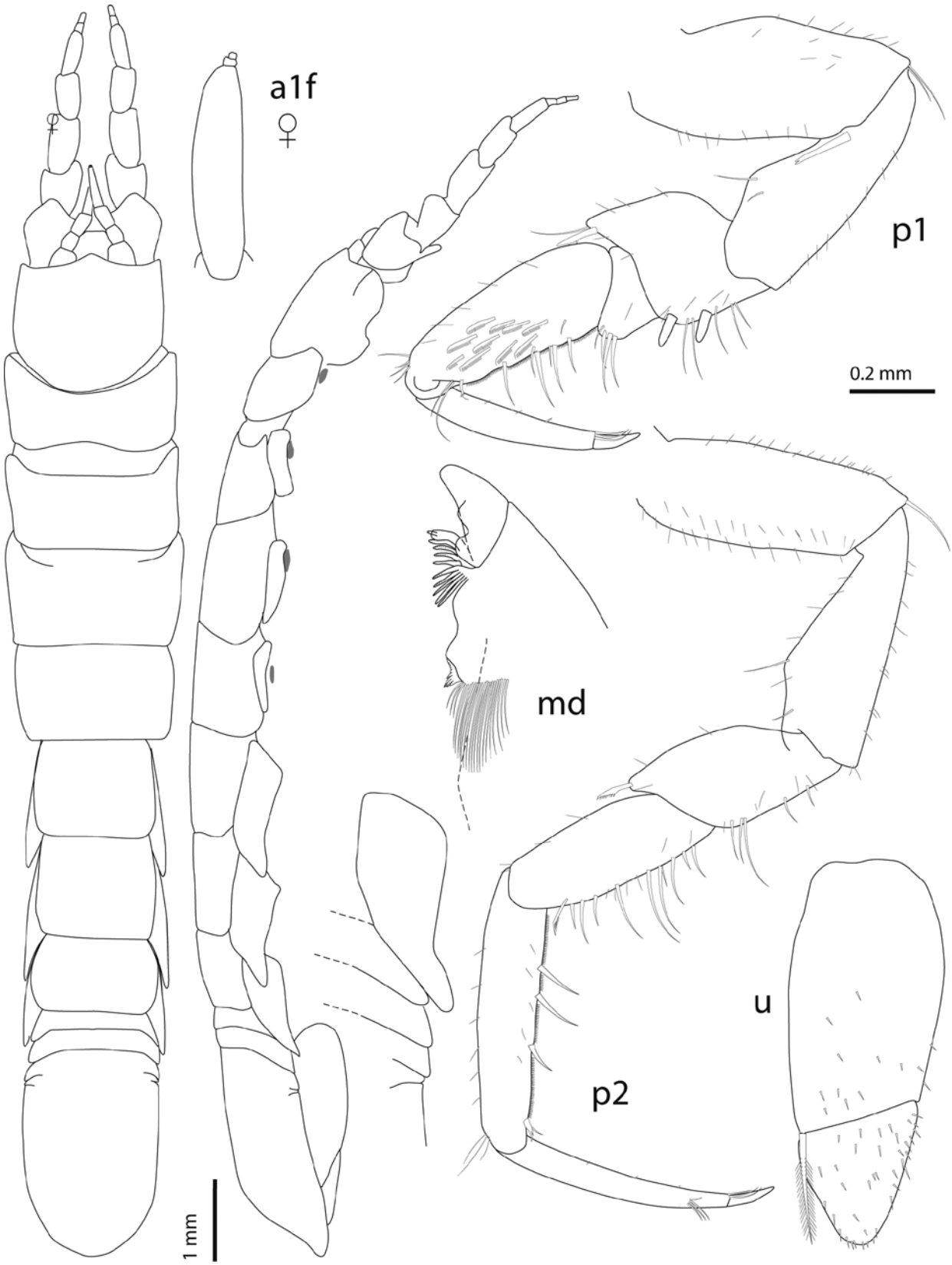

Figure 3. *Zenobianopsis cidaris* sp. nov. Right limbs from holotype. Scale bars = 1 mm (habitus only) and 0.2 mm (pereopods, uropod).

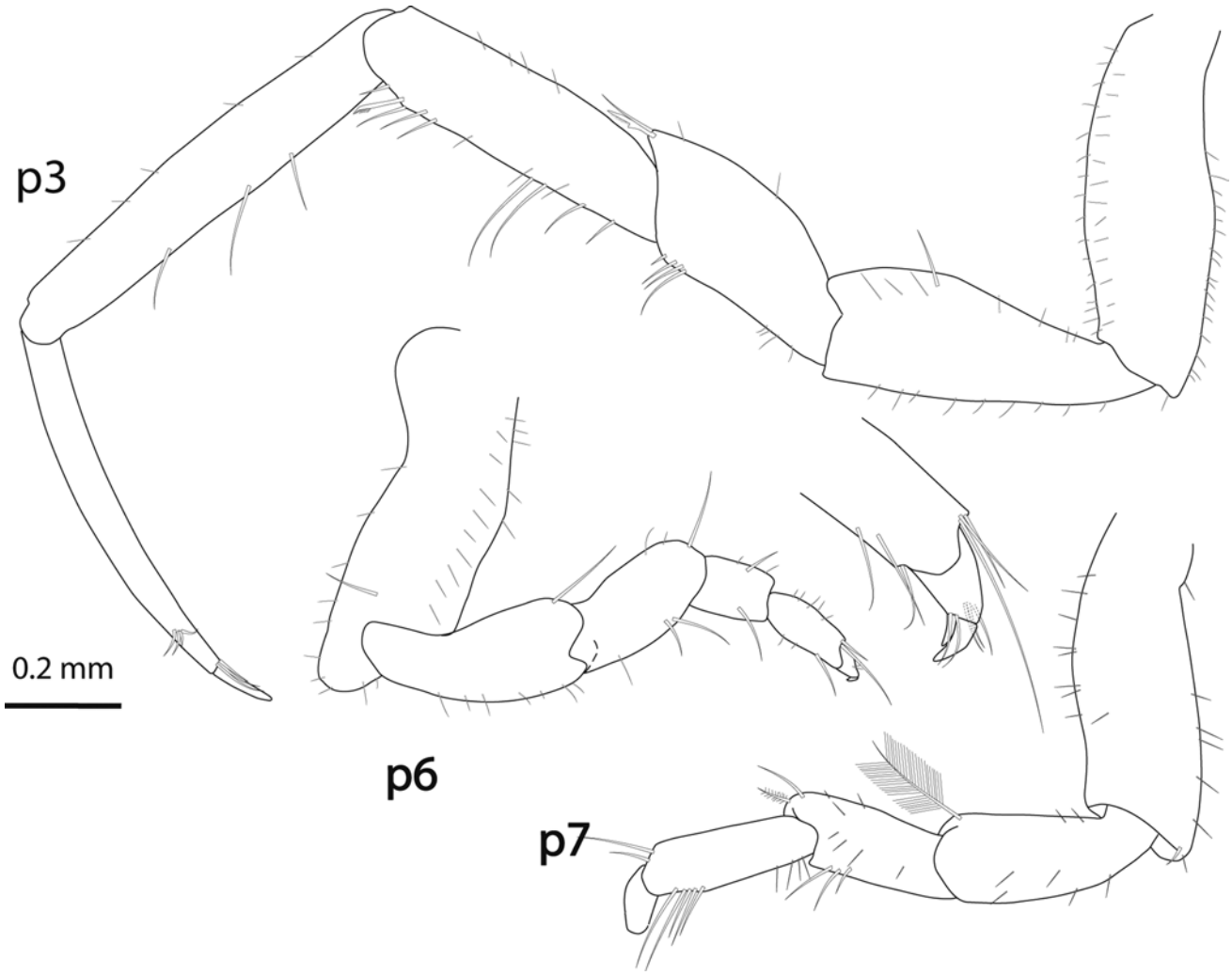

Figure 4. *Zenobianopsis cidaris* sp. nov. Right limbs from holotype; detail of p6 untwisted.

ridges on the uropod (Kensley, 1978), from *S. fecunda* in the absence of bosses on the head, from *S. indica* in the less angled pereonite margins, from *S. variegata* in the more robust antenna 2 and less obviously triangular uropodal endopod, and from *S. hanumantharaoi* and *S. worliensis* in the more elongate antenna 2. The new species differ from *S. poorei* in absence of or less dense persistent colour and more elongate antenna 2.

The four Australian species already described are temperate: *S. grisea* Poore and Lew Ton, 1993 and *S. keablei* Poore and Lew Ton, 1993 from southeastern states, *S. watsonae* Poore and Lew Ton, 1993 from southern WA and Vic., and an undescribed species from WA. Of these, the new species differ from *S. grisea* and *S. keablei* most obviously in the broader pleotelsonic apex, and from *S. watsonae* in the absence of sculpture. The two species differ from each other most obviously in colour, proportions of the articles of antenna 2, pereopods and uropodal endopod.

Synidotea innatans sp. nov.

Figures 5–7

Material examined. Holotype, Australia, Timor Sea, (11°42.4'S, 125°06'E), discarded fragment of fishing net floating on sea surface, G.C.B. Poore et al. (with Consulting Environmental Engineers), 26 Oct 2001, NMV J62816 (male, 11.3 mm). Paratypes, same locality NMV J62817 (ovigerous female, 7.1 mm), NMV J62818 (12 males, 6.6–10.8 mm, 17 ovigerous females, 6.6–7.3 mm, 15 juveniles, 4.4–7.5 mm). All specimens fixed in 70% alcohol.

Description. *Male*. Body 3.0 times as long as greatest width at pereonite 3, dorsal surface smooth, pale, ornamented with numerous, small distinct chromatophores, arranged in a dense median stripe, densely on head, pleotelson and laterally, in oblique wavy bands midlaterally on pereonites, and with even single rows along posterior margins of pereonites; without dorsal sculpture. Head 2.0 times as wide as long, 0.7 times width of pereonite 3, front straight, strongly tapering in front of eyes, with shallow transverse depression; eye bulging, 0.40 times as long as

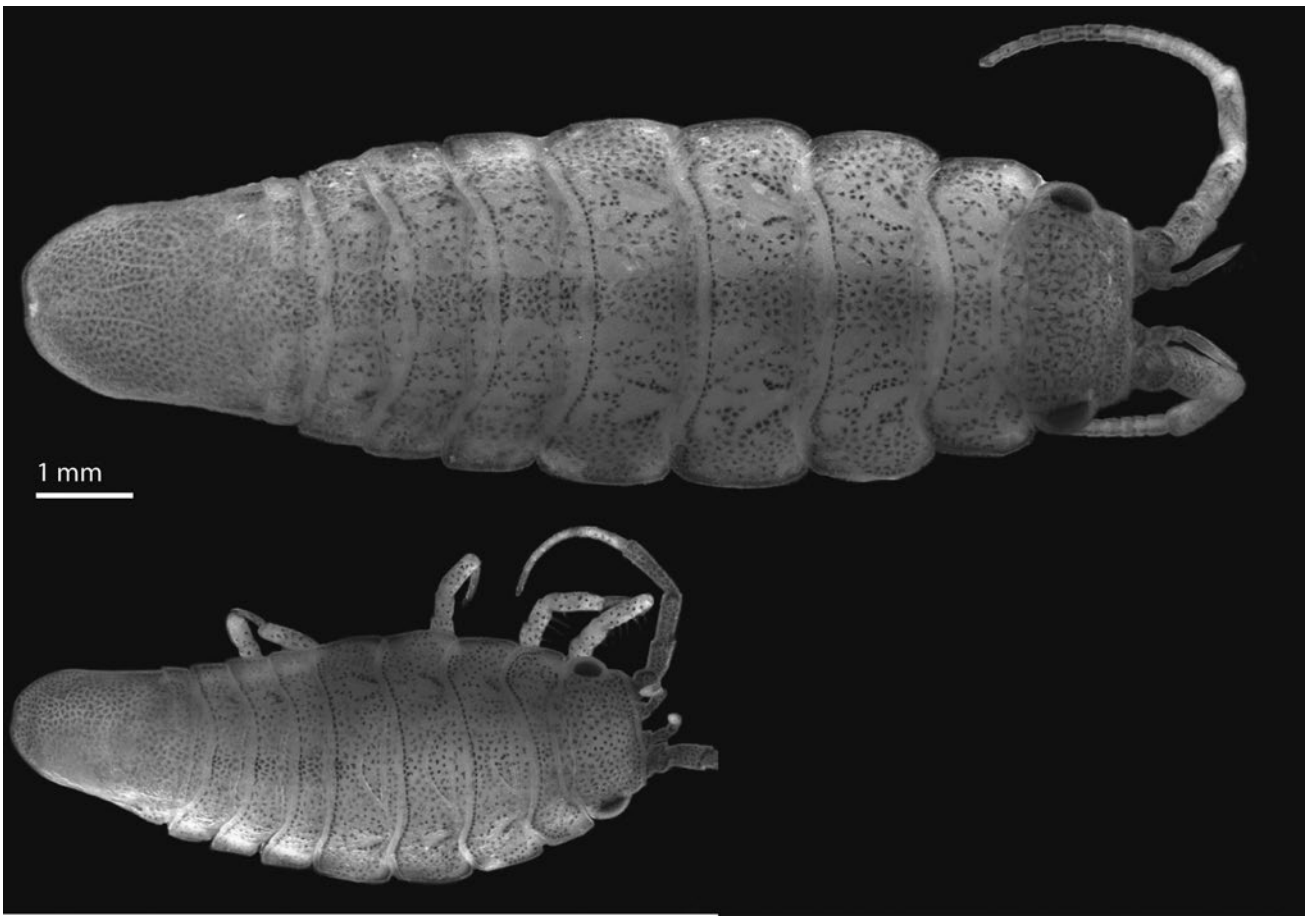

Figure 5. *Synidotea innatans* sp. nov. Holotype male top, paratype female below.

median head length. Pereonite 1 0.80 width of pereonite 3, margin with rounded obtuse angle one-quarter from anterior suture, posterior three-quarters with parallel margins. Pereonite 2 with rounded anterolateral margins, parallel-sided over posterior three-quarters. Pereonite 3 lateral margin broadly convex. Pereonite 4 lateral margin broadly convex. Pleotelson 1.33 times as long as greatest width; tapering beyond pleonite 1 suture to 0.85 of greatest width to an obtuse angle at 0.7 length, then more steeply to narrow, barely-excavate posterior margin.

Antenna 1 flagellum 0.9 length of peduncle, with 9 pairs of aesthetascs. Antenna 2 0.5 body length; article 4 2.5 times as long as wide; article 5 4.3 times as long as wide; flagellum with 12 articles, 0.8 length of peduncle.

Maxilla 2 outer lobe strongly produced laterally, with marginal row of 24 long plumose setae. Maxillipedal basal endite longer than wide, with 1 coupling hook, apex setose. Maxillipedal palp 1.6 times as long as greatest width; article 3 1.4 times as long as wide. Epipod 1.2 times as long as wide, with broad transverse apex.

Pereopods with dense mat of setation on flexor margins of merus–propodus. Pereopod 1 propodus 1.5 times as long as greatest depth, palm excavate, mesial face with about 90 plumose setae; dactylus almost linear except for curved unguis, reaching back to base of carpus. Pereopod 2 propodus 1.2 times as long as merus and carpus together, 3.0 times as wide as long. Pereopod 4 propodus 2.9 times as wide as long. Pereopod 7 propodus 3.2 times as wide as long.

Penial plate 1.6 times as long as wide, double-waisted, with excavate distal margin.

Pleopod 2 with appendix masculina 1.27 times as long as endopod, with rounded apex, distally with numerous superficial spines. Uropod 3.8 times as long as distal peduncle width; endopod about 0.25 length of peduncle, mesial length 0.7 proximal suture length, suture at 80° to long axis, distal margin convex-truncate, at 80° to long axis, lateral margin curved into distal margins; with 3 setae.

Ovigerous female. Body 2.5 times as long as greatest width at pereonite 3. Head 2.4 times as wide as long, 0.64 times width of pereonite 3; eye bulging, 0.55 times as long as median head length. Pereonite 1 0.80 width of pereonite 3, margin barely convex, oblique. Pereonite 2 margin barely convex, oblique. Pereonite 3 margin barely convex, parallel-sided. Pereonite 4 margin barely convex. Pleotelson 1.3 times as long as greatest width; tapering beyond pleonite 1 suture to 0.75 of greatest width to an obtuse angle at 0.7 length, then more steeply to narrow, barely-excavate posterior margin.

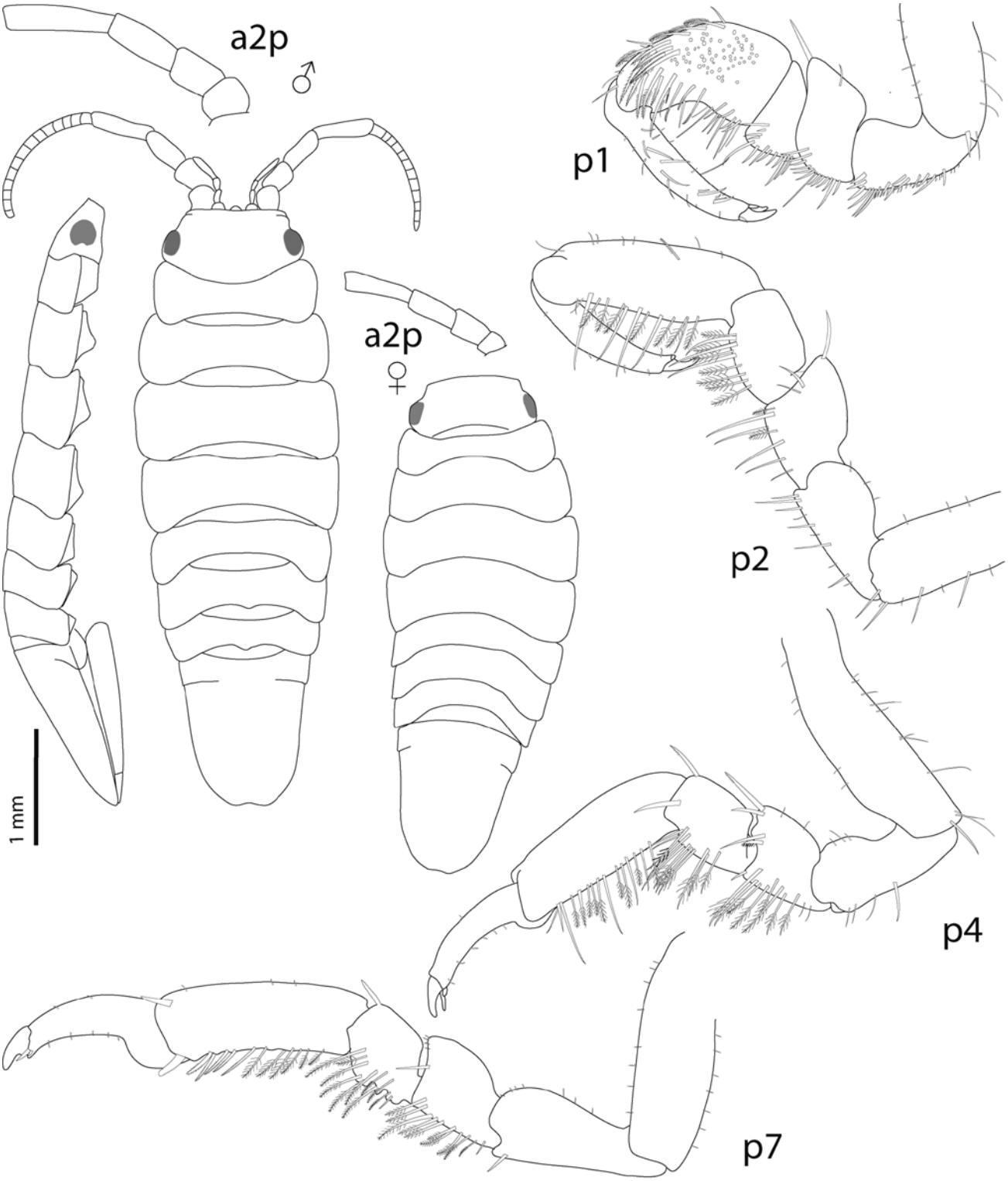

Figure 6. *Synidotea innatans* sp. nov. Holotype male left, paratype female right. Scale bar = 1 mm (habitus only).

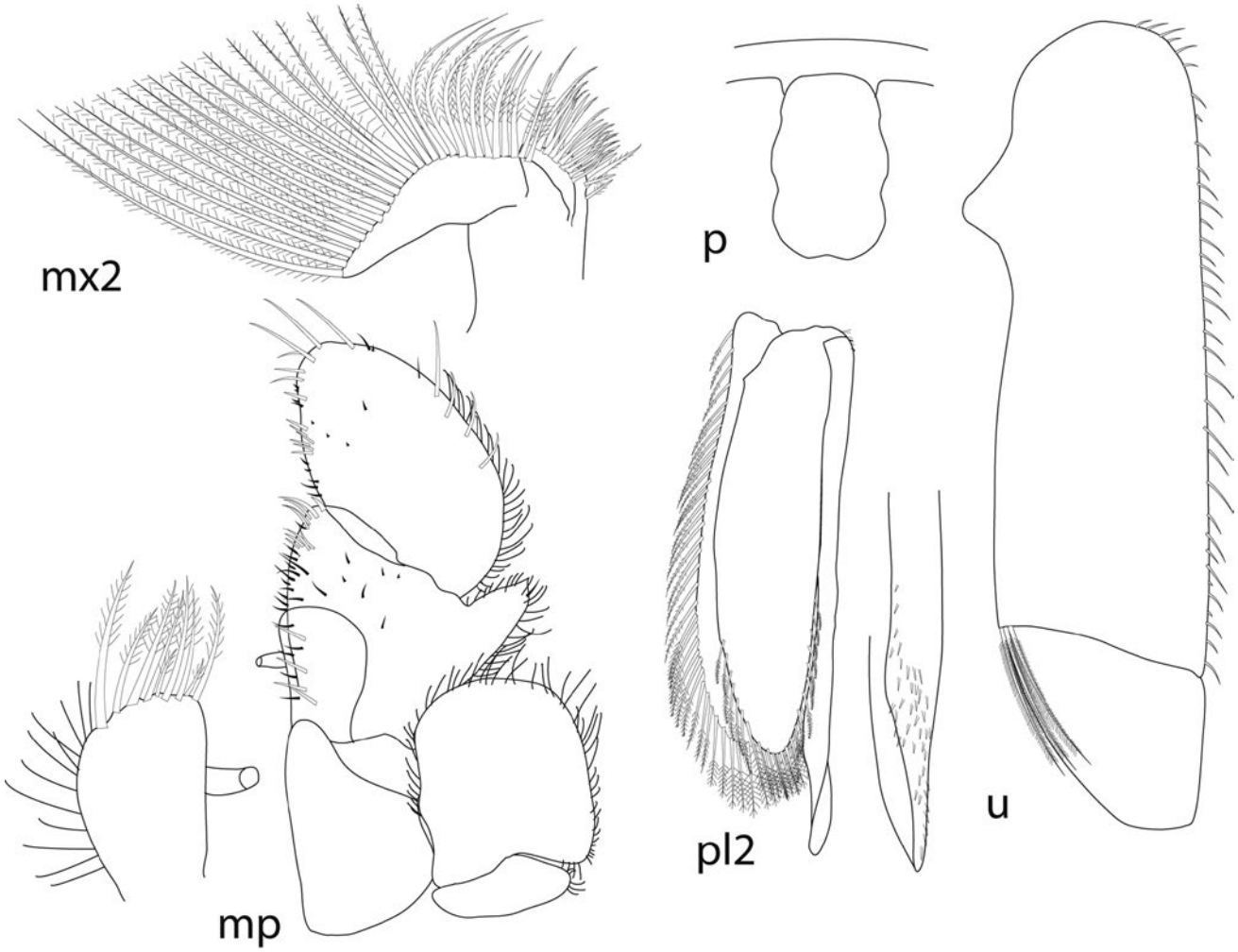

Figure 7. *Synidotea innatans* sp. nov. Limbs from holotype male.

Antenna 2 0.5 body length; article 4 2.2 times as long as wide; article 4 3.6 times as long as wide; flagellum with 13 articles, 1.3 times length of peduncle. Maxilla 2 outer lobe not expanded. Pereopods with mat of setae on flexor margins, less dense on pereopods 4 and 5 and sparse on 6 and 7.

Etymology. From *innatare*, Latin, to float, alluding to the discovery of this species on flotsam.

Distribution. Australia, Timor Sea, c. 11°S; on flotsam.

Remarks. The colour pattern of small chromatophores arranged in regular rows persists and is characteristic of *Synidotea innatans*. The new species differs in several respects from all other species in the region including *S. poorei* collected from buoys near Singapore (Cai and Teo, 2012) and from others as detailed above.

The discovery of numerous specimens of this species on flotsam (an abandoned fragment of a fishing net), in the company of numerous shrimps, crabs and fishes, 170 km from land (the island of Timor) raises questions about the distribution of this species. This is only the second record of a species of *Synidotea* from this habitat. Hobday (2000) reported the normally benthic *Synidotea harfordi* Benedict, 1897 from the kelp *Macrocystis pyrifera* off the Californian coast. The new species is less elongate than *S. harfordi* and differs from the only two others known from benthic habitats near to where it was taken, that from Singapore and *S. karumba*, as detailed above. Thiel and Gutow (2005) reviewed the distribution of 13 rafting species of *Idotea* worldwide. Only one, *I. metallica* (Bosc, 1802), would appear to be an obligate rafter and it is cosmopolitan in the world's oceans (Poore and Lew Ton, 1993 for numerous citations; Abelló and Frankland, 1997). There is no suggestion that the new species is similarly widespread. The ability of these species to raft can not be used to suggest that this is how *S. laticauda* became distributed between estuaries in San Francisco Bay, Delaware, France and Spain (Mees and Fockedey, 1993; Cuesta et al., 1996; Buschek and Boyd, 2006). Transportation by shipping seems more probable.

Synidotea karumba sp. nov.

Figures 8–10

Material examined. Holotype. Queensland, Karumba, Norman River mouth (17°28'S, 140°49'E), sandy sediment with seagrasses *Halodule uninervis* and *H. pinifolia*, 1 m, K. Neil, 2001 NMV J53202 (male, 9.1 mm). Paratypes, same locality, 5 m, NMV J53203 (2 females, 6.3, 7.1 mm).

Description. *Male*. Body 3.1 times as long as greatest width at pereonite 3, dorsal surface smooth, pale, ornamented with numerous, evenly spaced, small distinct chromatophores; without dorsal sculpture. Head 1.6 times as wide as long, 0.57 times width of pereonite 3, middorsum evenly domed, without ornamentation, with shallow transverse depression near anterior margin, front barely excavate, strongly tapering in front of eyes; eye bulging, 0.37 times as long as median head length. Pereonite 1 0.75 width of pereonite 3, lateral margin with definite rounded obtuse angle one-third from anterior suture, posterior two-thirds with parallel margins. Pereonite 2 with rounded anterolateral margins, narrower at posterior suture. Pereonite 3 lateral margin evenly convex. Pereonite 4 lateral margin broadly convex. Pleotelson 1.2 times as long as greatest width; tapering beyond pleonite 1 suture to 0.8 of greatest width to an obtuse angle at 0.75 length, then more steeply to excavate posterior margin.

Antenna 1 flagellum 0.9 length of peduncle, with 12 pairs of aesthetascs. Antenna 2 0.7 body length; article 4 3.6 times as long as wide; article 5 6.2 times as long as wide; flagellum with 21 articles, as long as peduncle.

Maxilla 2 outer lobe expanded, with 17 long plumose setae. Maxillipedal basal endite longer than wide, with 1 coupling hook, apex setose. Maxillipedal palp 2.0 times as long as greatest width; article 3 1.3 times as long as wide. Epipod 1.5 times as long as wide, with broad oblique apex.

Pereopods with dense mat of setation on flexor margins of merus–propodus. Pereopod 1 propodus 1.7 times as long as greatest depth, palm excavate, mesial face setose; dactylus almost linear except for curved unguis, reaching back to base of carpus. Pereopod 2 propodus as long as merus and carpus together, 2.9 times as wide as long. Pereopod 4 propodus 3.3 times as wide as long. Pereopod 7 propodus 3.8 times as wide as long.

Penial plate 1.6 times as long as wide, slightly waisted, with rounded apex.

Pleopod 2 with appendix masculina 1.25 times as long as endopod, with rounded apex, with few superficial spines. Uropod 3.9 times as long as distal peduncle width; endopod 0.28 length of peduncle, mesial length 0.8 proximal suture length, suture almost at right-angles to long axis, distal margin truncate, at 75° to long axis, lateral margin straight and with curve between lateral and distal margins; with 1 seta.

Female. Body 2.6 times as long as greatest width at pereonite 3. Head twice as wide as long. Pereonite 1 0.8 width of pereonite 3, lateral margin more evenly curved than in male. Pereonite 2 with rounded anterolateral margins, parallel-sided over posterior two-thirds. Pleotelson 1.1 times as long as greatest width; tapering to 0.7 of greatest width beyond pleonite 1 suture to an obtuse angle at 0.75 length, then more steeply to excavate posterior margin.

Antenna 2 0.7 body length; article 4 3.2 times as long as wide; article 4 6.9 times as long as wide; flagellum with 16 articles, 1.2 times length of peduncle. Maxilla 2 outer lobe not expanded. Pereopods without mat of setae on flexor margins.

Etymology. *Karumba*, from the town where the specimens were found, noun in apposition.

Distribution. Australia, Queensland, west coast of Cape York at c. 17°S; 1 m depth.

Remarks. *Synidotea karumba* was compared with others above.

Acknowledgements

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Figure 8. *Synidotea karumba* sp. nov. Holotype male top, paratype female below.

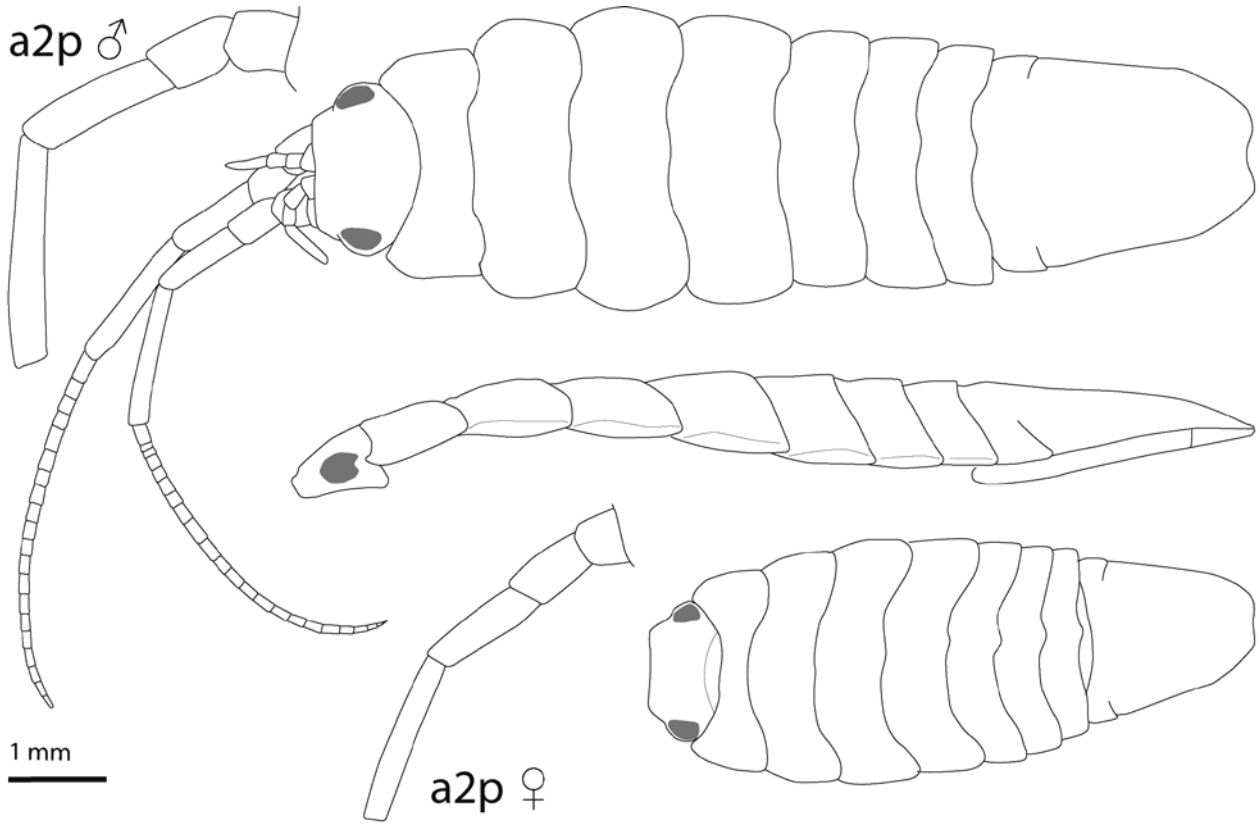

Figure 9. *Synidotea karumba* sp. nov. Holotype male top in dorsal and ventral view, paratype female below, with antennae 2 peduncles.

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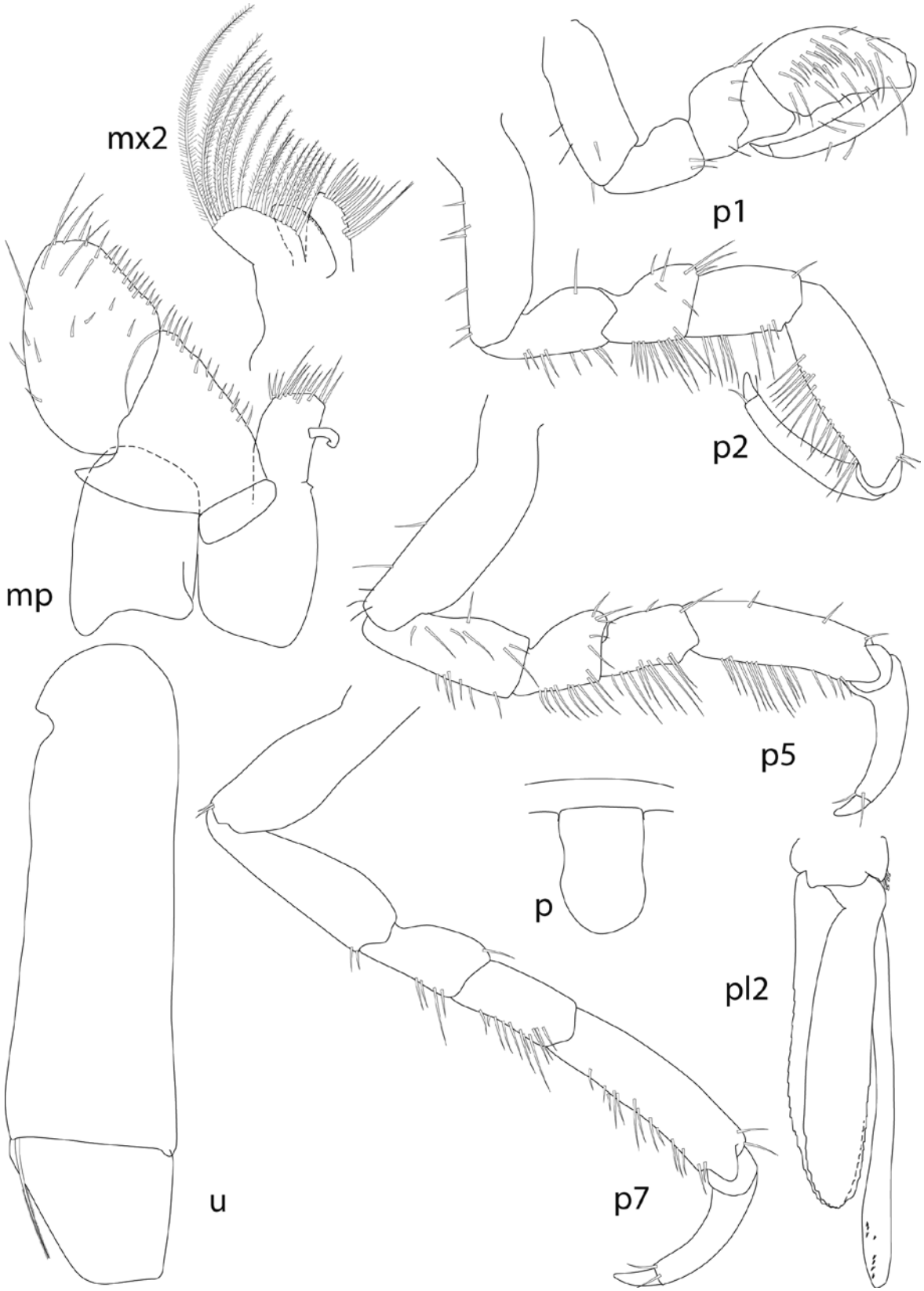

Figure 10. *Synidotea karumba* sp. nov. Limbs from holotype male.

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