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The family Aristiidae (Crustacea: Amphipoda: Lysianassoidea) in Australian waters

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Abstract

The lysianassoid amphipod family Aristiidae is reported from Australian waters for the first time. Two new genera and seven new species are described: *Aristias eden* **sp. nov.**; *A. gomoni* **sp. nov.**; *A. nowra* **sp. nov.**; *A. otway* **sp. nov.**; *A. poorei* **sp. nov.**; *Memana sarda* **gen. nov.**, **sp. nov.**; and *Pratinas ludmilla* **gen. nov. sp. nov.**

Key words: Crustacea, Amphipoda, Aristiidae, Australia, new genus, new species, taxonomy, *Aristias*, *Memana*, *Pratinas*

Introduction

The lysianassoid amphipod family Aristiidae is a world-wide group of about 30 species not previously reported from Australian waters. The geographically closest records are those of *Aristias tropicus* Schellenberg, 1938 from Papua New Guinea, *A. thio* Lowry & Stoddart, 1994 and *A. uokonia* Lowry & Stoddart, 1994 both from New Caledonia and an unnamed species of *Aristias* from New Zealand (Rainer 1981). In this paper we describe seven new species in the genera *Aristias* Boeck, 1871, *Memana* **gen. nov.** and *Pratinas* **gen. nov.** All but one of the new taxa come from south-eastern Australia.

Aristiids are often reported as associates of other marine invertebrates such as anemones, ascidians, brachiopods and sponges (see Lowry & Stoddart 1997: 13 and references cited therein). The material studied in the present report was collected mainly by epibenthic sleds, trawls and a box corer and evidence of associations was usually lost in the collecting process. However *A. gomoni* **sp. nov.** was considered by the collector to be associated with anemones. *Aristias eden* **sp. nov.** has been collected in a sample with many sponges. *Pratinas ludmilla* **sp. nov.** was considered by the original collector to be possibly associated with the encrusting ascidian *Didemnum psammatode*. It has also been found in association with individually-collected gorgonaceans, *Echinogorgia* spp. and *Rumphella aggregata*.

Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the aristiid species of the world. Material is lodged in the Australian Museum, Sydney (AM); Museum Victoria, Melbourne (MV) and Museum and Art Gallery of the Northern Territory, Darwin (NTMAG). The maxilla 1 setal-tooth arrangements follow the standard arrangement set out in Lowry & Stoddart (1995: fig. 25) and used subsequently by Lowry & Stoddart (1997). The bold parts of the descriptions are diagnostic characters which distinguish each taxon in at least two respects from every other taxon. Standard abbreviations on the plates are: A, antenna; C, coxa; E, epistome; EP, epimeron; G, gnathopod; H, head; MD, mandible; MP, maxilliped; MX, maxilla; P, pereopod; T, telson; U, uropod.

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Aristiidae Lowry & Stoddart, 1997

Diagnosis. Head deeper than long. Epistome and upper lip fused, usually with a central notch. Mandible incisors usually asymmetrical, left straight, minutely serrate, right straight or slightly convex, smooth; molar if present a smooth, weakly setose flap. Maxilla 1 inner plate with more than 2 pappose setae; outer plate setal-teeth in a modified 7/4 arrangement. Gnathopod 1 simple, subchelate or parachelate. Coxa 1 vestigial; coxa 2 small or large; coxa 3 large. Pereopods 3–7 simple; propodus with distal spur (rarely absent).

Key to the genera of Aristiidae

1. Telson entire 2
- Telson cleft 3
2. Maxilliped palp 1-articulate ..... *Memana* **gen. nov.**
- Maxilliped palp 3-articulate ..... *Perrierella* Chevreux & Bouvier, 1892
- Maxilliped palp 4-articulate ..... *Pratinas* **gen. nov.**
3. Maxilliped palp 2-articulate ..... *Boca* Lowry & Stoddart, 1997
- Maxilliped palp 4-articulate ..... *Aristias* Boeck, 1871

***Aristias* Boeck, 1871**

Diagnosis. Maxilliped palp 4-articulate. Telson cleft.

Type species. ***Anonyx*** *tumidus* Krøyer, 1846, monotypy.

Species composition. The genus now contains 33 species: *Aristias adrogans* J.L. Barnard, 1964; *A. antarcticus* Walker, 1906; *A. bicornuta* Ortiz, Lalana & Varela, 2007; *A. captiva* Lowry & Stoddart, 1997; *A. collinus* K.H. Barnard, 1932; *A. commensalis* Bonnier, 1896; *A. coriolis* Lowry & Stoddart, 1993; *A. curtipes* Gurjanova, 1962; *A. eden* **sp. nov.**; *A. excavatus* Kilgallen, 2010; *A. expers* J.L. Barnard, 1967; *A. gomoni* **sp. nov.**; *A. falcatus* Stephensen, 1923; *A. japonicus* Gurjanova, 1962; *A. madagascarensis* Ledoyer, 1972; *A. megalops* Sars, 1895; *A. microps* Sars, 1895; *A. neglectus* Hansen, 1887; *A. nonspinus* Hirayama, 1985; *A. nowra* **sp. nov**.; *A. otway* **sp. nov.**; *A. pacificus* Schellenberg, 1936; *A. poorei* **sp. nov.**; *A. spinipes* Gurjanova, 1962; *A. stenopodus* Ledoyer, 1986; *A. symbiotica* K.H. Barnard, 1916; *A. thio* Lowry & Stoddart, 1994; *A. topsenti* Chevreux, 1900; *A. tropicus* Schellenberg, 1938; *A. tumidus* (Krøyer, 1846); *A. uokonia* Lowry & Stoddart, 1994; *A. veleronis* Hurley, 1963; *A. verdensis* Lowry & Stoddart, 1993.

There are possibly several more undescribed species already recorded in the literature, as misidentifications of other species. See for example some records of *A. symbiotica* and Kilgallen's (2010) assessment of *A. antarcticus* records.

***Aristias eden* sp. nov.**
(Figs 1–3)

Type material. HOLOTYPE, female with nonsetose oostegites, 4.5 mm, AM P.71815, south-east of Eden, New South Wales, Australia, 37°22'S 150°18'E to 37°14'S 150°19'E, 157 m, 29 October 1979, FRV *Kapala*, stn K79-17-17. PARATYPES: male, AM P.71818, same data as holotype; 5 specimens, MV J59366, south of Point Hicks, Victoria, Australia, 38°21.90'S 149°20.00'E, 1000 m, WHOI epibenthic sled, 23 July 1986, G.C.B. Poore *et al*., RV *Franklin*, stn SLOPE 32; 3 specimens, MV J59367 and 1 female, 3.0 mm, AM P.81158, south of Point Hicks, Victoria, Australia, 38°19.60'S 149°24.30'E, 930 m, rock, rubble, clay, sand, biogenic sediment, WHOI epibenthic sled, 23 July 1986, M.F. Gomon *et al*., RV *Franklin*, stn SLOPE 33; 1 female, MV J59368, off Freycinet Peninsula, Tasmania, Australia, 41°58.60'S 148°38.80'E, 500 m, coarse shell, WHOI epibenthic sled, 27 July 1986, M.F. Gomon *et al*., RV *Franklin*, stn SLOPE 47; 2 specimens, MV J59369, off Freycinet Peninsula, Tasmania, Australia, 41°57.50'S 148°37.90'E, 400 m, coarse shell, WHOI epibenthic sled, 27 July 1986, M.F. Gomon *et al*., RV *Franklin*, stn SLOPE 48.

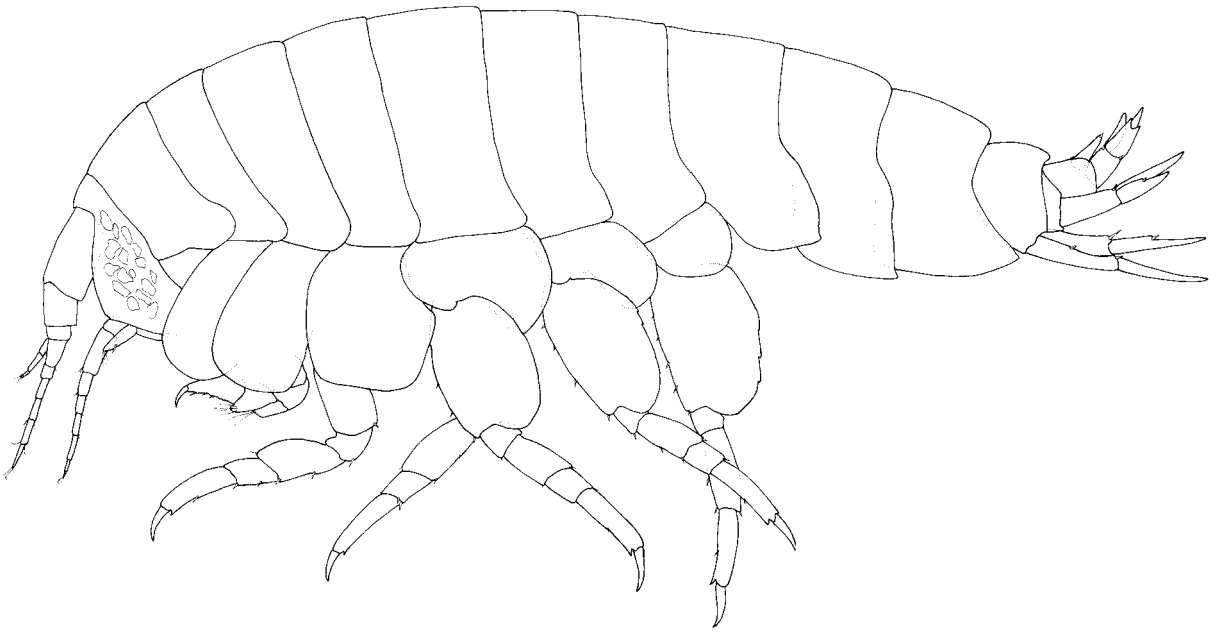

FIGURE 1. *Aristias eden* **sp. nov.** Paratype, female, 3.0 mm, AM P.81158.

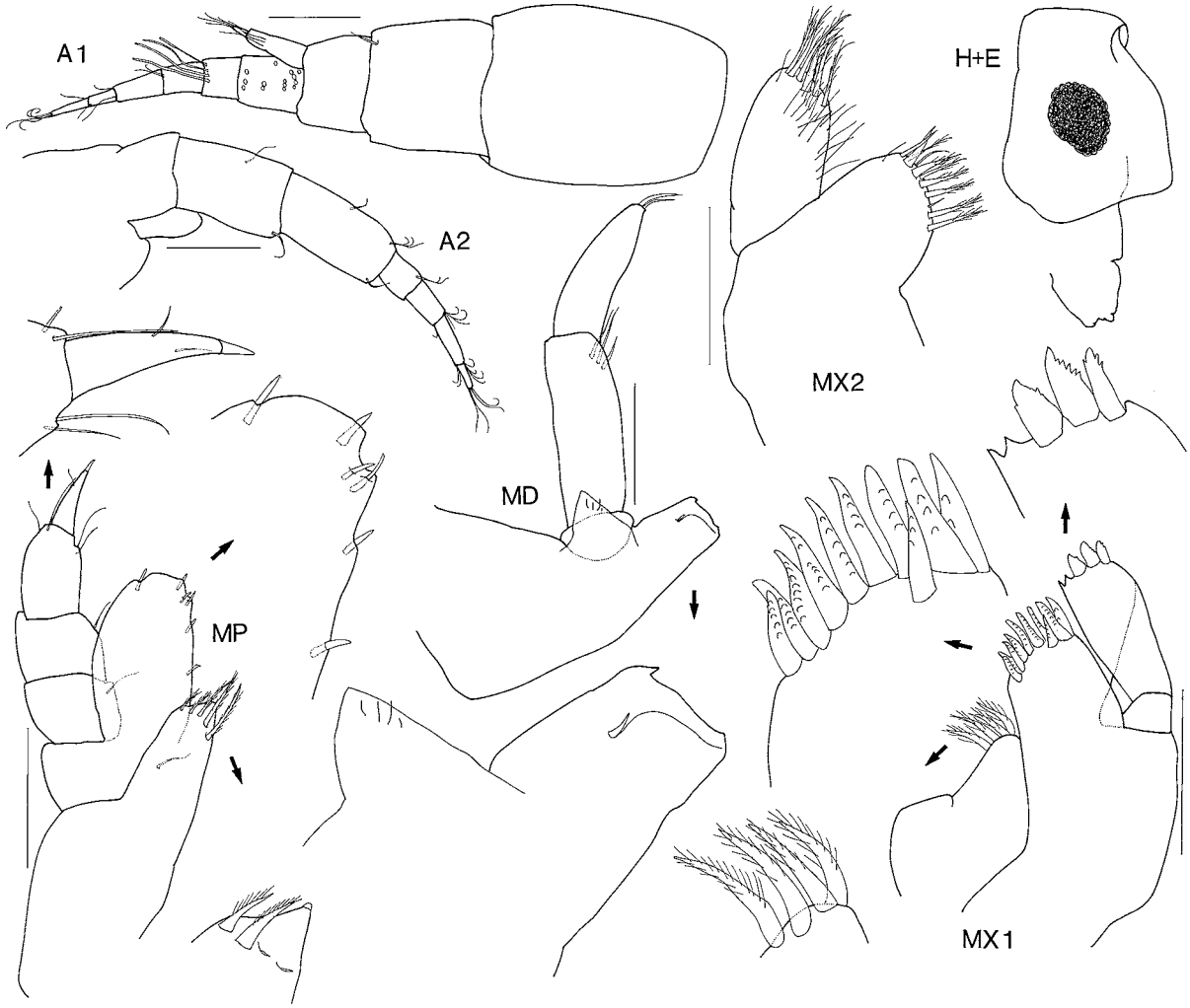

FIGURE 2. *Aristias eden* **sp. nov.** Holotype, female, 4.5 mm, AM P.71815. Scales represent 0.1 mm.

Additional material. Female with nonsetose oostegites, 4.5 mm, MV J59370, south of Point Hicks, Victoria, Australia, 38°17.70'S 149°11.30'E, 400 m, coarse sand, gravel, mud, many sponges, WHOI epibenthic sled, 24 July 1986, M.F. Gomon *et al*., RV *Franklin*, stn SLOPE 40; 4 specimens, MV J59371, and 5 specimens, AM P.71820, 44 km east of Nowra, New South Wales, Australia, 34°55.79'S 151°08.06'E, 429 m, muddy coarse shell, WHOI epibenthic sled, 22 October 1988, G.C.B. Poore *et al*., RV *Franklin*, stn SLOPE 56; 1 male, 3.4 mm, MV J11251, 51 km south-south-west of Cape Otway, Victoria, western Bass Strait, Australia, 39°16'S 143°17'E, 90 m, medium sand, 10 October 1980, G.C.B. Poore, HMAS *Kimbla*, stn BSS-73.

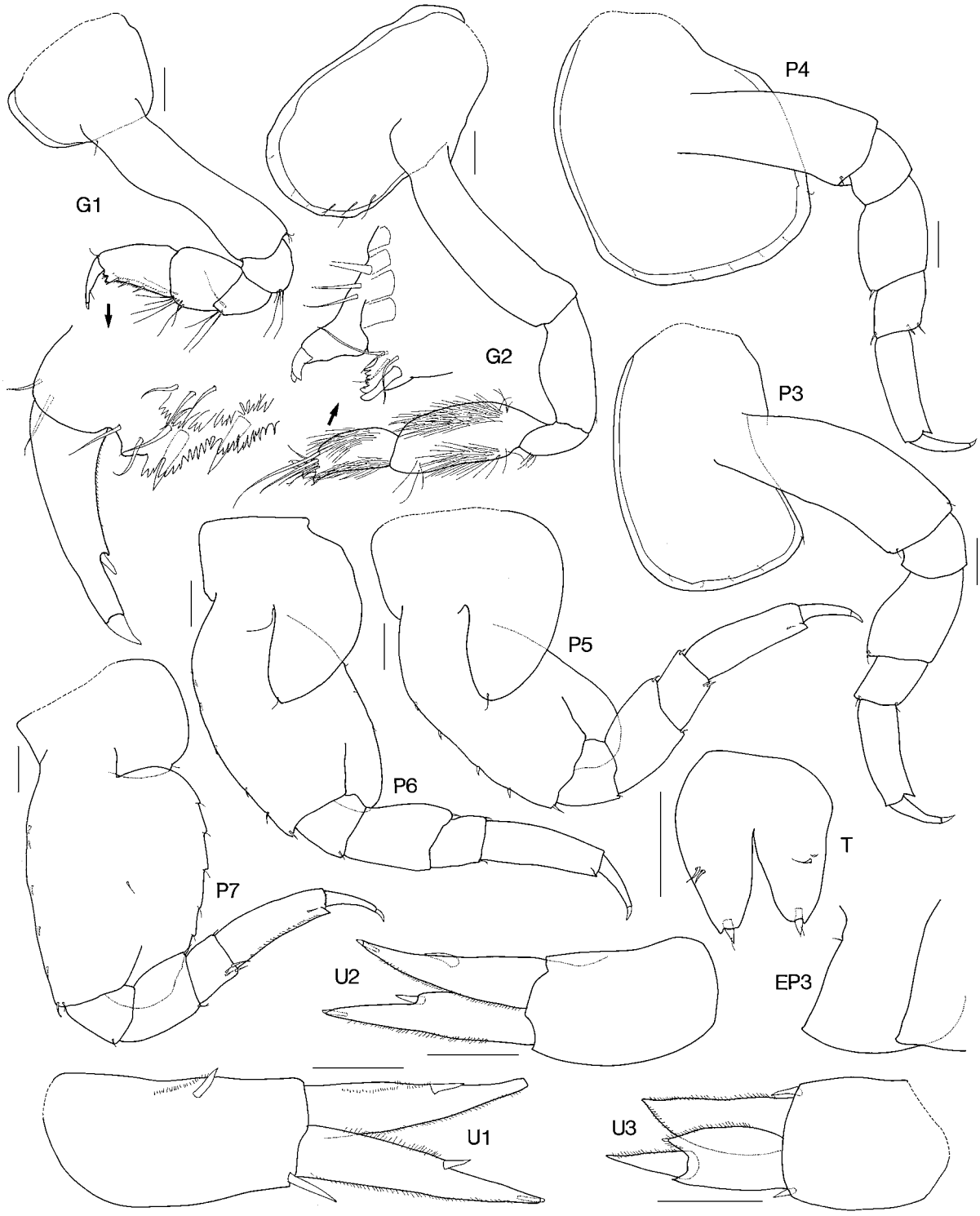

FIGURE 3. *Aristias eden* **sp. nov.** Holotype, female, 4.5 mm, AM P.71815. Scales represent 0.1 mm.

Type locality. South-east of Eden, New South Wales, Australia, 37°22'S 150°18'E to 37°14'S 150°19'E, 157 m depth.

Etymology. The species is named for its type locality.

Diagnostic description. *Head* lateral cephalic lobe broadly triangular, apically blunt; eyes well developed, oval to round. *Antenna 1* accessory flagellum 2-articulate. *Antenna 2* calceoli not present in male. ***Epistome and upper lip*** **with central notch**. *Mandible* lacinia mobilis present on left mandible; molar a weakly setose flap. ***Maxilla 1*** inner plate with 4 pappose setae along inner margin; **outer plate with 10 setal-teeth** in an 8/2 arrangement, most with moderate number of cusps. *Maxilliped* palp 4-articulate, palp article 1 with lateral and medial margins about same length.

Gnathopod 1 parachelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 3 robust setae along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, long, triangular; basis moderately expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, long, triangular; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis greatly expanded posteriorly, posterior margin evenly curved, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 posterior margin smooth, **posteroventral corner subacute**. *Urosomite 1* smooth dorsally, without a dorsodistal boss. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami with robust setae only on apices of outer ramus article 1; inner ramus longer than article 1 of outer ramus. ***Telson*** longer than broad, **moderately cleft**, without mid-dorsal robust setae, lateral margins curved, uniformly tapering distally, without robust setae on lateral margins, with 1 apical robust seta on each lobe.

Remarks. *Aristias eden* is very similar to *A. tumidus* from the boreal North Atlantic and North Pacific Oceans. Both species have cusps on the maxilla 1 setal-teeth and very similar arrangement of the 9 to 10 setal teeth; pereopods 5–7 with a spur on the propodus; pereopod 7 with the posterior margin of the basis evenly rounded; and a moderately cleft telson. *Aristias uokonia* from New Caledonia shares most of these characters, but has 13 setal-teeth on maxilla 1. *Aristias eden* can be distinguished from *A. tumidus* by: lateral cephalic lobe broadly triangular (rounded in *A. tumidus*); gnathopod 1 carpus shorter than propodus (longer than propodus in *A. tumidus*) and uropod 3 inner ramus longer than article 1 of outer ramus (shorter in *A. tumidus*)

The specimens from stations BSS-73, SLOPE 40 and SLOPE 48 have a rounder, more distinct and darker eye than the other material but are otherwise indistinguishable.

Distribution. South-eastern Australia in 157–1000 m depth.

Aristias gomoni **sp. nov.**
(Figs 4–6)

Type material. HOLOTYPE, female, 7.5 mm, MV J59372, south of Point Hicks, Victoria, Australia, 38°17.70'S 149°11.30'E, 400 m, coarse sand, gravel, mud, many sponges, WHOI epibenthic sled, 24 July 1986, M.F. Gomon *et al.*, RV *Franklin*, stn SLOPE 40. PARATYPES: 5 females, MV J59373, and 1 female, 6.5 mm, AM P.81145, same data as holotype; 2 specimens, female, 5.5 mm and immature, 3.5 mm, AM P68502, Ling Hole, off west coast of Tasmania, Australia, 41°23'29"S 144°21'24"E to 41°24'18"S 144°19'15"E, 330 m, Sherman sled, associated with anemones, 20 April 2004, CSIRO party, RV *Southern Surveyor*, stn SS 04/04/51.

Type locality. South of Point Hicks, Victoria, Australia, 38°17.70'S 149°11.30'E, 400 m depth.

Etymology. The species is named for Martin Gomon who collected the type specimen.

Diagnostic description. *Head* lateral cephalic lobe broadly triangular, apically subacute; eyes well developed, reniform. *Antenna 1* accessory flagellum 4-articulate. ***Epistome and upper lip*** **with central notch**. *Mandible* lacinia mobilis present on left mandible; molar a weakly setose flap. ***Maxilla 1*** inner plate with 8 pappose setae along inner margin; **outer plate with 14 setal-teeth** in a 12/2 arrangement, most with many cusps. *Maxilliped* palp 4-articulate, palp article 1 with lateral margin much longer than medial margin.

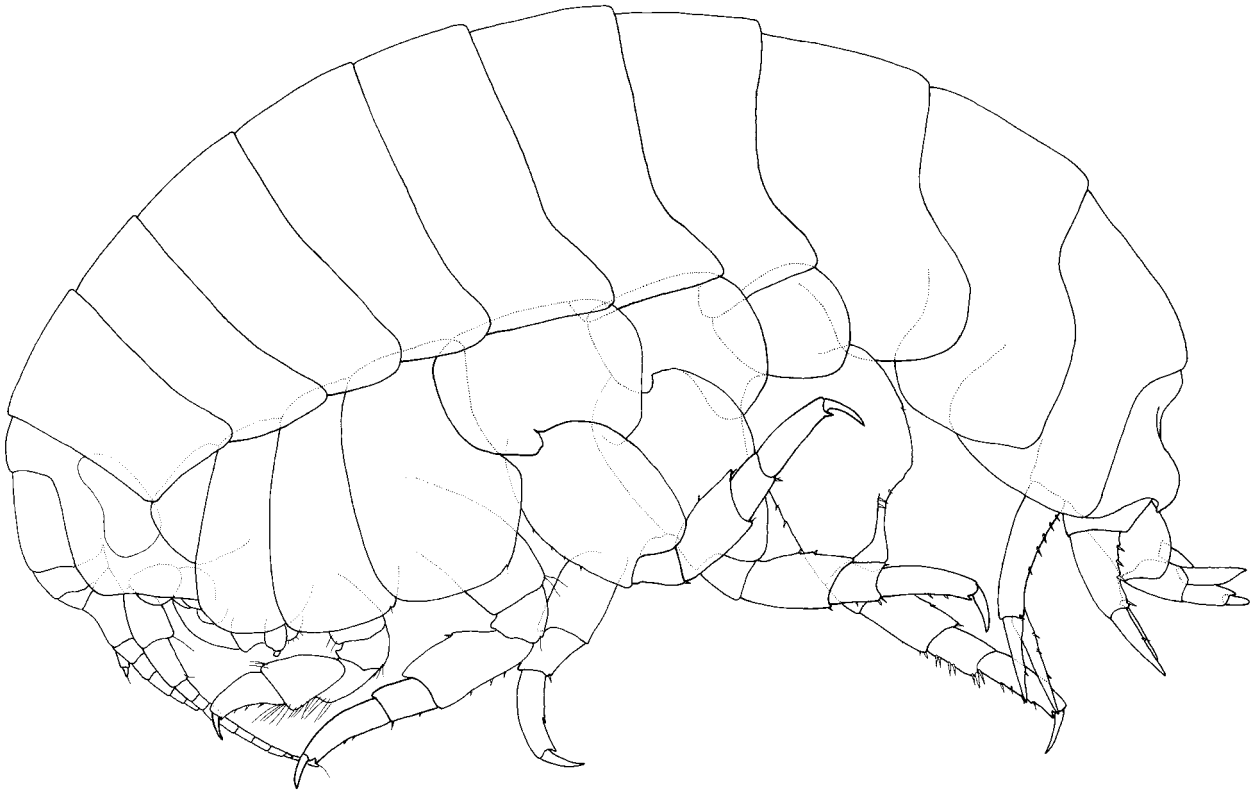

FIGURE 4. *Aristias gomoni* **sp. nov.** Paratype, female, 6.5 mm, AM P.81145.

Gnathopod 1 parachelate; carpus subequal in length to propodus, without posterodistal lobe; propodus posterior margin dentate, with 5 robust setae along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, short, triangular; basis moderately expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, short, triangular; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis greatly expanded posteriorly, posterior margin abruptly tapered distally, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 posterior margin smooth, **posteroventral corner narrowly rounded**. ***Urosomite 1* with** an anterodorsal depression and **a rounded dorsodistal boss**. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami with robust setae only on apices of outer ramus article 1; inner ramus about as long as article 1 of outer ramus. ***Telson* shorter than broad, moderately cleft**, without mid-dorsal robust setae, lateral margins curved, uniformly tapering distally, without robust setae on lateral margins, without apical robust setae.

Remarks. Based on pereopods 5–7 propodus each with a spur, pereopod 7 basis with a tapering posterior margin and epimeron 3 with a narrowly rounded posteroventral corner, *A. gomoni* is similar to *A. stenopodus* from just north of Madagascar and to *A. verdensis* from the Philippine Islands. *Aristias gomoni* is distinguished from these species by the large number of setal-teeth (14) on the outer plate of maxilla 1.

Distribution. South-eastern Australia in 330–429 m depth.

***Aristias nowra* sp. nov.**
(Figs 7–9)

Type material. HOLOTYPE, female, 3.6 mm, MV J17160, 52 km east of Nowra, New South Wales, Australia, 34°53.57'S 151°14.09'E, 1011 m, green-grey sandy mud, box corer, 23 October 1988, G.C.B. Poore *et al*., RV *Franklin*, stn SLOPE 62. PARATYPE, male, 3.2 mm, MV J59374, 48 km east-north-east of Cape

Tourville, Tasmania, Australia, 42°00.25'S 148°43.55'E, 1264 m, gravel with lumps of sandy mud aggregate, WHOI epibenthic sled, 30 October 1988, G.C.B. Poore *et al.*, RV *Franklin*, stn SLOPE 81.

Type locality. 52 km east of Nowra, New South Wales, Australia, 34°53.57'S 151°14.09'E, 1011 m depth.

Etymology. The species is named for its type locality.

Diagnostic description. *Head* lateral cephalic lobe rounded; eyes poorly developed, oval. *Antenna 1* accessory flagellum 2-articulate. *Antenna 2* calceoli not present in male. ***Epistome and upper lip*** **with central notch**. *Mandible* lacinia mobilis present on left mandible; molar a weakly setose flap. ***Maxilla 1*** inner plate with 5 pappose setae along inner margin; **outer plate with 8 setal-teeth** in a 6/2 arrangement, most with moderate number of cusps. *Maxilliped* palp 4-articulate, palp article 1 with lateral margin much longer than medial margin.

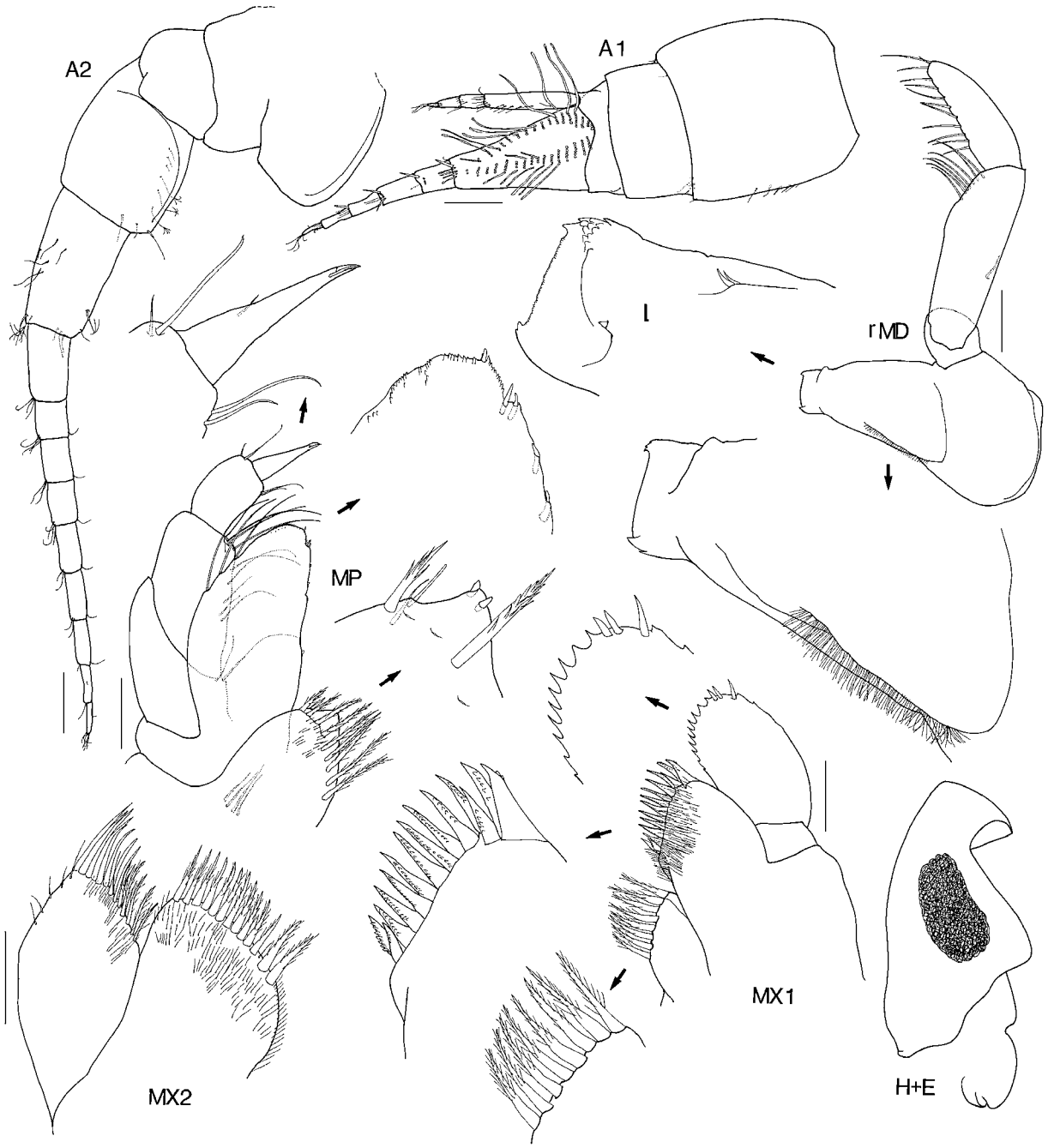

FIGURE 5. *Aristias gomoni* **sp. nov.** Holotype, female, 7.5 mm, MV J59372. Scales represent 0.1 mm.

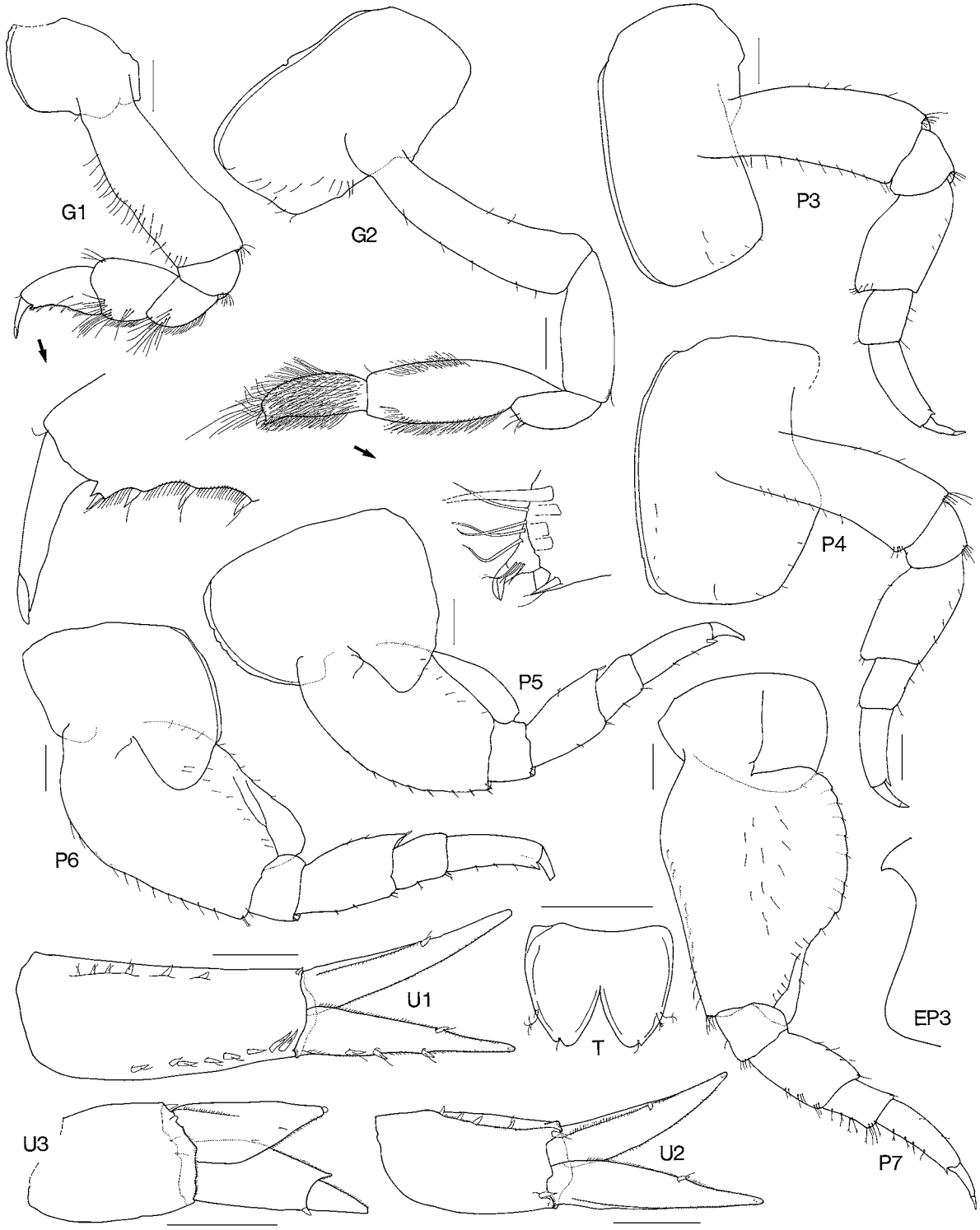

FIGURE 6. *Aristias gomoni* **sp. nov.** Holotype, female, 7.5 mm, MV J59372. Scales represent 0.1 mm.

Gnathopod 1 parachelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 2 robust setae along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, long, triangular; basis moderately expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, long, triangular; basis moderately expanded posteriorly, with posteroventral lobe. ***Pereopod 7*** basis moderately expanded posteriorly, **posterior margin abruptly tapered distally**, with posteroventral lobe, posteroventral corner rounded.

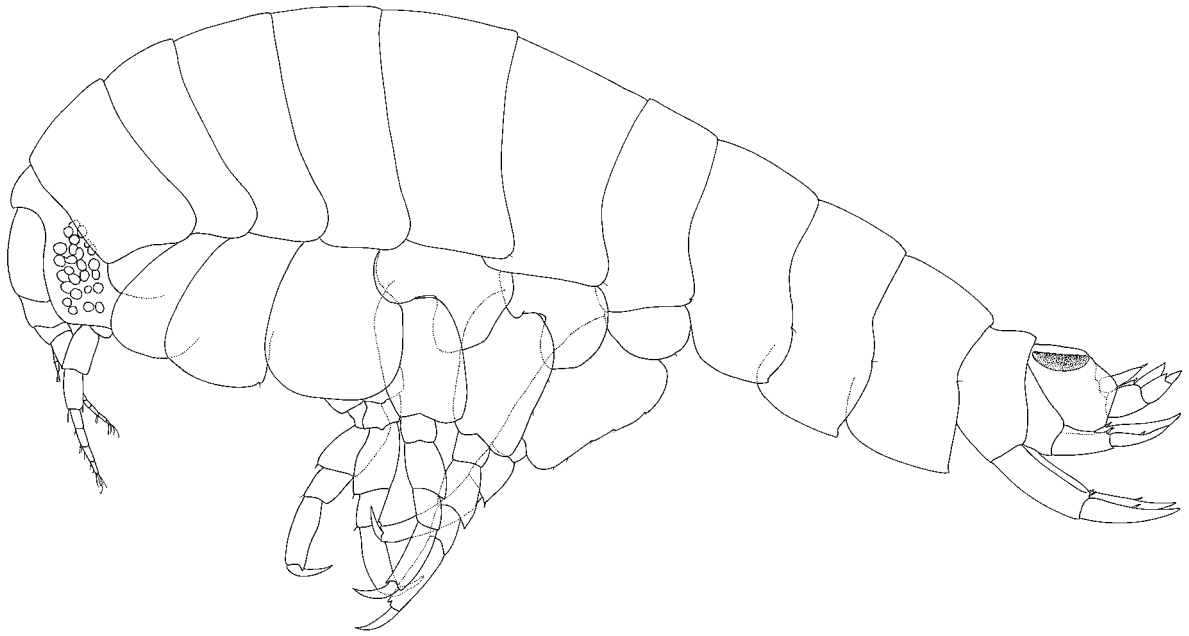

FIGURE 7. *Aristias nowra* **sp. nov.** Holotype, female, 3.6 mm, MV J17160.

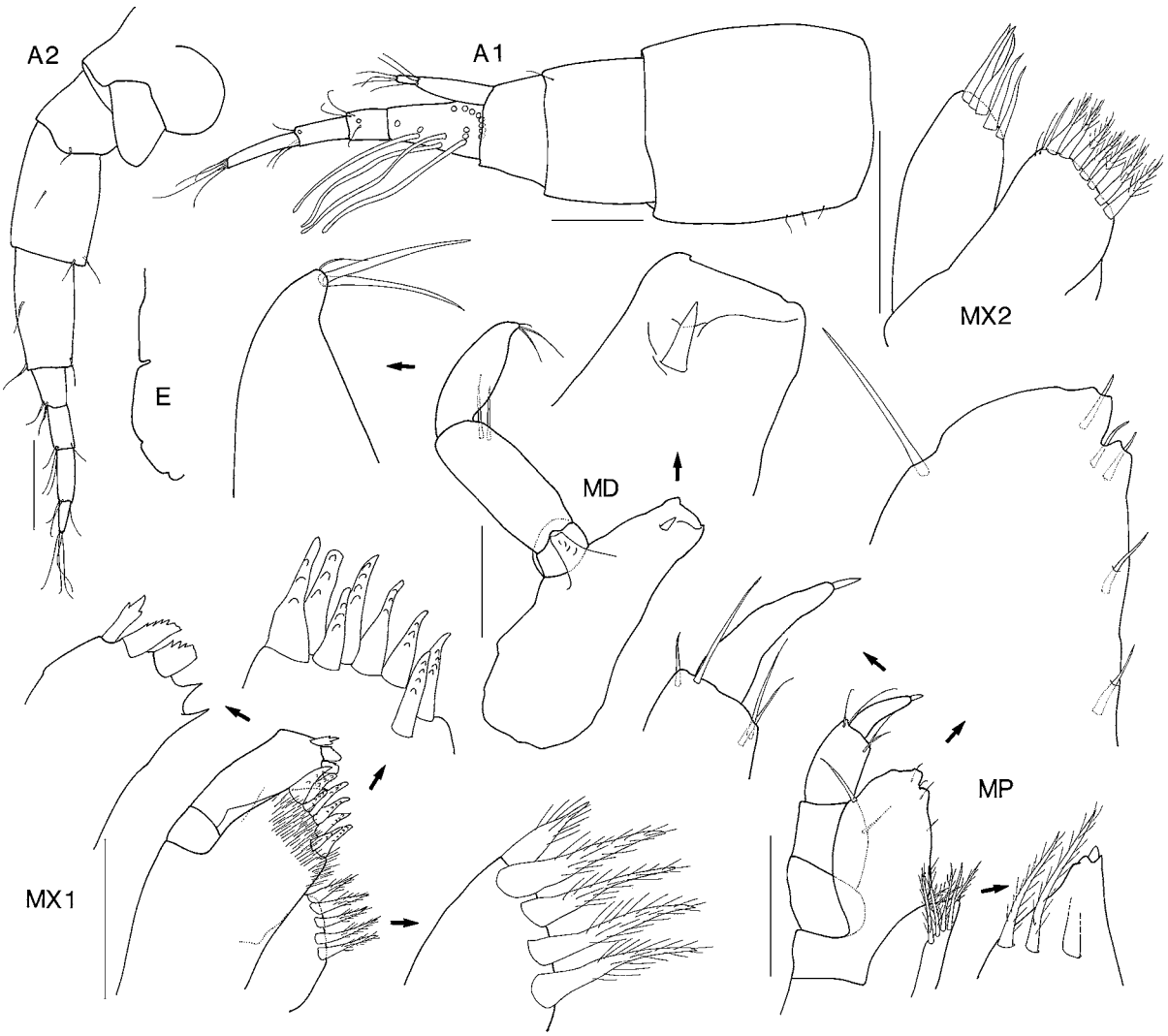

FIGURE 8. *Aristias nowra* **sp. nov.** Holotype, female, 3.6 mm, MV J17160. Scales represent 0.1 mm.

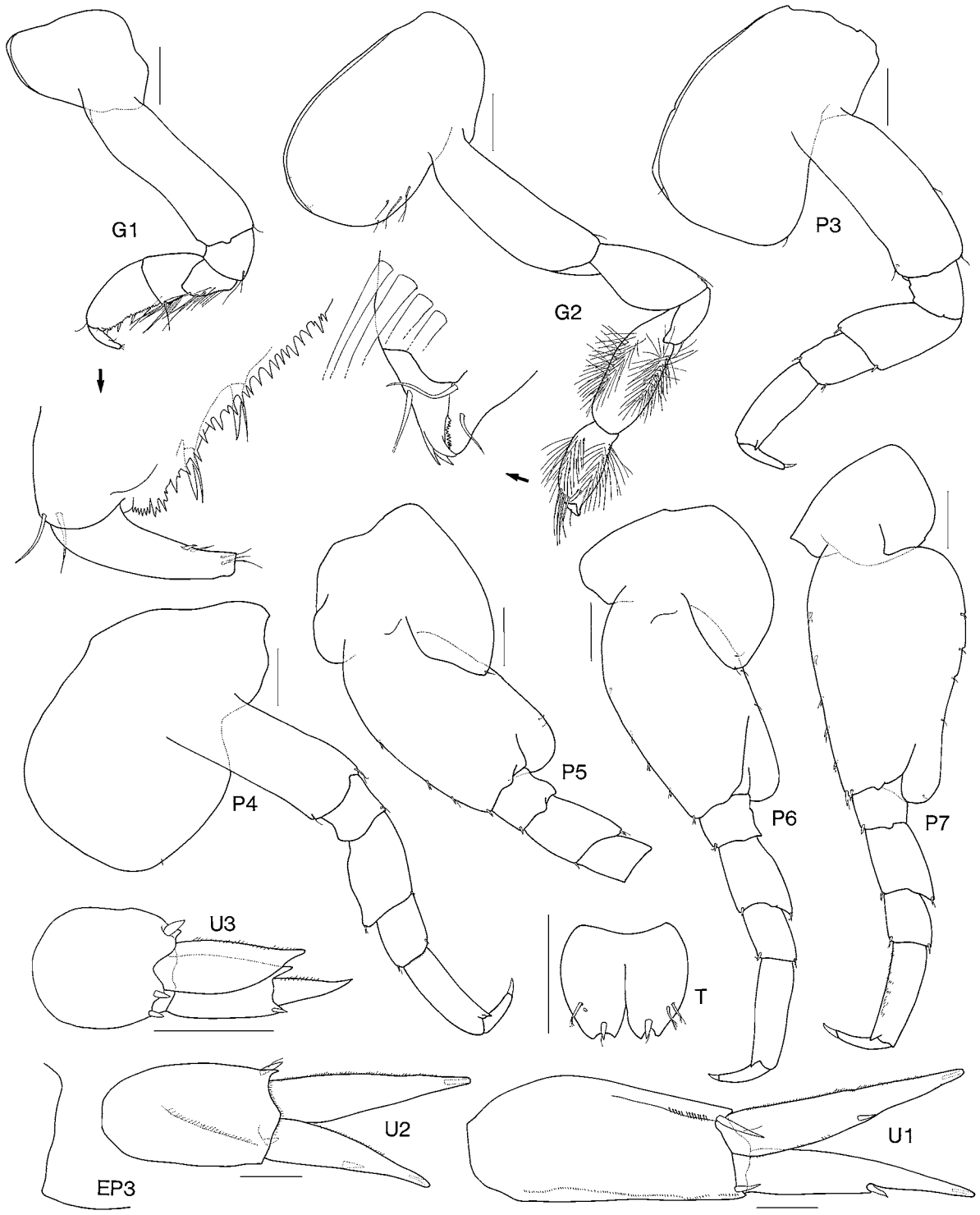

FIGURE 9. *Aristias nowra* **sp. nov.** Holotype, female, 3.6 mm, MV J17160. Scales represent 0.1 mm.

Epimeron 3 **posterior margin smooth, posteroventral corner subquadrate**. *Urosomite 1* smooth dorsally, without a dorsodistal boss. ***Urosomite 3*** **with dorsolateral flanges**. *Uropod 3* rami with robust setae only on apices of outer ramus article 1; inner ramus longer than article 1 of outer ramus. ***Telson*** shorter than broad, **deeply cleft**, without mid-dorsal robust setae, lateral margins curved, uniformly tapering distally, without robust setae on lateral margins, with 1 apical robust seta on each lobe.

Remarks. Based on maxilla 1 with 8 or 9 cuspidate setal-tooth arrangement, pereopods 5–7 each with a spur on the propodus, pereopod 7 with a cutaway basis and epimeron 3 with a subquadrate or acute

posteroventral corner, *A. nowra* appears to be most similar to *A. bicornuta* from the Caribbean Sea, *A. captiva* from the Gulf of Mexico and *A. topsenti* from Newfoundland. Only *A. nowra* and *A. topsenti* have a flange on urosomite 3, but the detailed structure of the flange appears to be different. *Aristias nowra* can be distinguished from *A. topsenti* by: the presence of a lacinia mobilis on the mandible, a triangular posterior lobe on coxae 5 and 6 and the shorter than broad telson.

Distribution. South-eastern Australia in 1011–1264 m depth.

***Aristias otway* sp. nov.**
(Figs 10–12)

Type material. HOLOTYPE, female with nonsetose oostegites, 2.8 mm, MV J61977, 25 km south of Cape Otway, Victoria, Australia, 39°07.6'S 143°25.0'E to 39°08.3'S 143°20.6'E, 55–84 m, fine sand, otter trawl, 31 January 1981, M. Gomon *et al.*, FRV *Hai Kung*, stn BSS 119. PARATYPES: 1 male, 2.8 mm, MV J59375 and 1 immature, MV J59376, same data as holotype; 1 female, AM P.81146, 44 km south-west of Cape Otway, Victoria, Australia, 39°06.3'S 142°55.6'E, 81 m, medium sand, 21 November 1981, R. Wilson, RV *Tangaroa*, stn BSS-192.

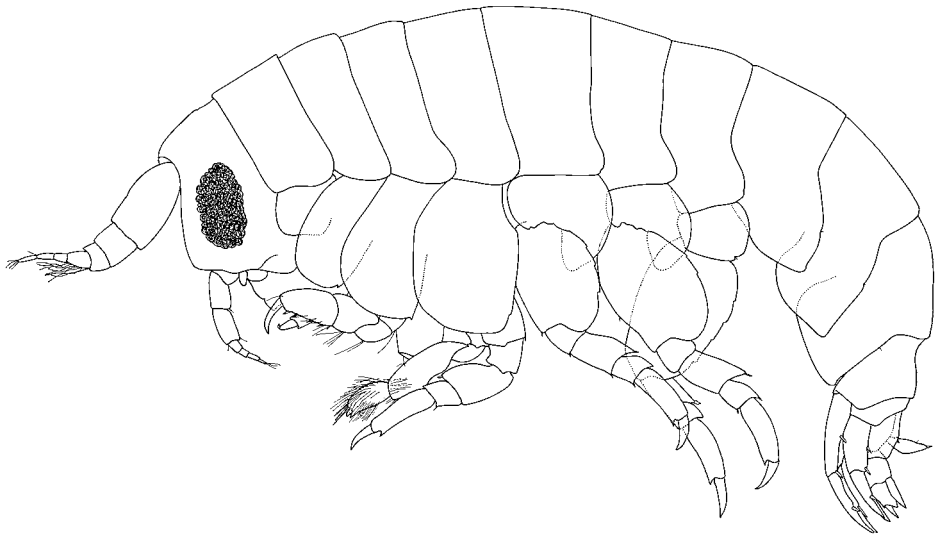

FIGURE 10. *Aristias otway* **sp. nov.** Paratype, male, 2.8 mm, MV J59375.

Type locality. 25 km south of Cape Otway, Victoria, Australia, 39°07.6'S 143°25.0'E to 39°08.3'S 143°20.6'E, 55–84 m depth.

Etymology. The species is named for its type locality.

Diagnostic description. *Head* lateral cephalic lobe broadly triangular, apically rounded; eyes well developed, oval. *Antenna 1* accessory flagellum 2-articulate. *Antenna 2* calceoli not present in male. ***Epistome and upper lip* with central notch**. *Mandible* lacinia mobilis present on left mandible; molar absent. ***Maxilla 1*** inner plate with 3 pappose setae along inner margin; **outer plate with 7 setal-teeth** in a 5/2 arrangement, **with no cusps**. *Maxilliped* palp 4-articulate, palp article 1 with lateral and medial margins about same length.

Gnathopod 1 parachelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 2 robust setae along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, long, triangular; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, long, triangular; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis moderately expanded posteriorly, posterior margin evenly curved, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 **posterior margin smooth**, **posteroventral corner subacute**. *Urosomite 1* with an anterodorsal depression, without a dorsodistal boss. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami without robust setae; inner ramus longer than article 1 of outer ramus. ***Telson*** as long as broad, **moderately cleft**, without mid-dorsal robust setae, lateral margins straight, uniformly tapering distally, without robust setae on lateral margins, with 1 apical robust seta on each lobe.

Remarks. *Aristias otway* is the only species known to have no sculpturing on the setal-teeth of maxilla 1. Based on the 5/2 setal-tooth arrangement of maxilla 1, the anterodistal spur on each of pereopods 5 to 7, the subacute posteroventral corner of epimeron 3 and the moderately cleft telson *A. otway* appears to be most similar to *A. madagascarensis*. The two species can be distinguished by the serrate posterior margin of epimera 2 and 3 and by the rounded telsonic lobes in *A. madagascarensis*.

Distribution. South-eastern Australia in 55–84 m depth.

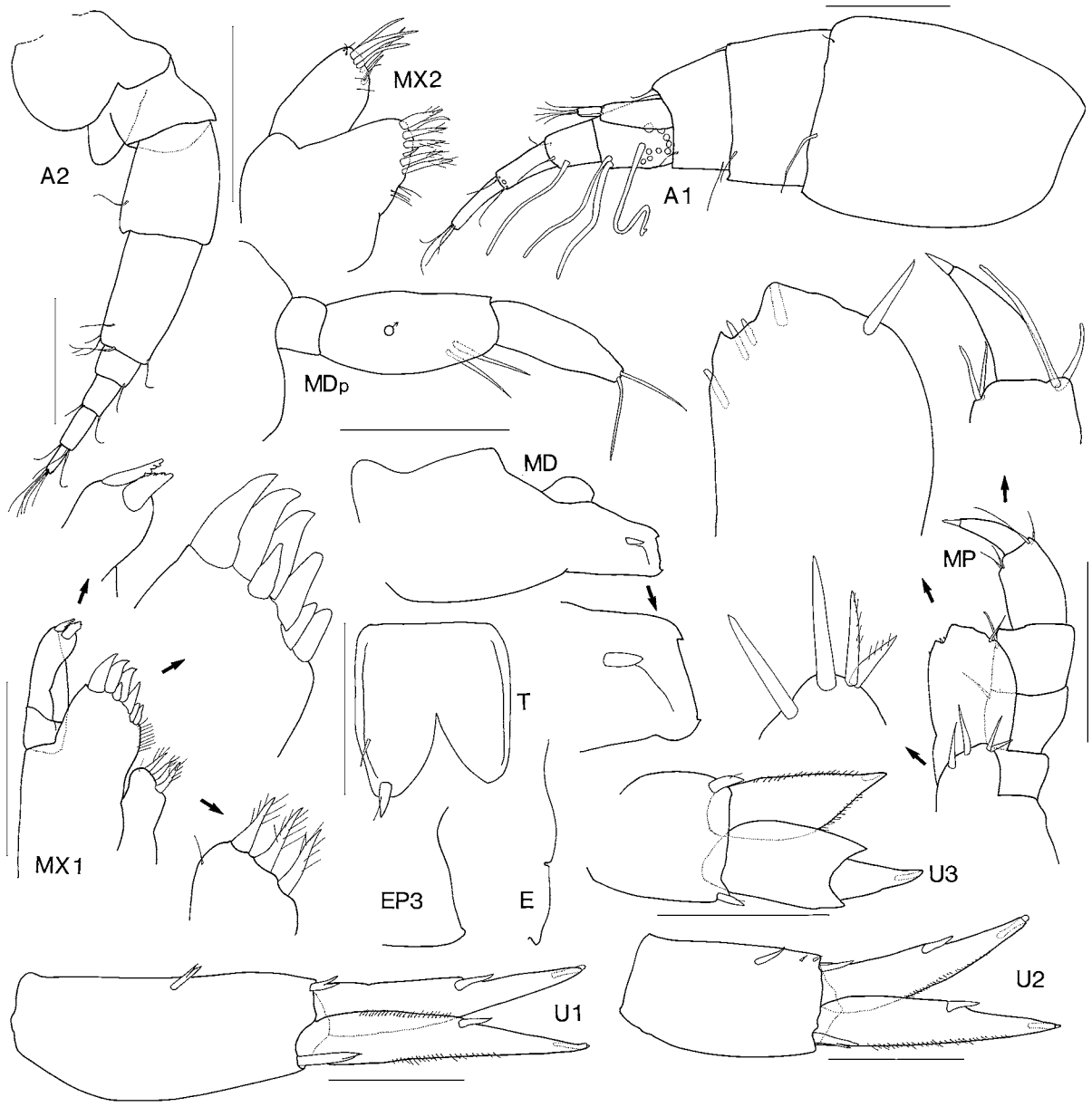

FIGURE 11. *Aristias otway* **sp. nov.** Holotype, female, 2.8 mm, MV J61977. Scales represent 0.1 mm.

FIGURE 12. *Aristias otway* **sp. nov.** Holotype, female, 2.8 mm, MV J61977. Scales represent 0.1 mm.

***Aristias poorei* sp. nov.**
(Figs 13–15)

Type material. HOLOTYPE, female, 4.4 mm, MV J59377, south of Point Hicks, Victoria, Australia, 38°21.90'S 149°20.00'E, 1000 m, WHOI epibenthic sled, 23 July 1986, G.C.B. Poore *et al*., RV *Franklin*, stn SLOPE 32. PARATYPES: male, 3.8 mm, MV J59378 and 1 female, 4.2 mm, MV J59379 and 3 specimens, AM P.71819, same data as holotype; 2 specimens, MV J39380, south of Point Hicks, Victoria, Australia, 38°19.60'S 149°24.30'E, 930 m, rock, rubble, clay, sand, biogenic sediment, WHOI epibenthic sled, 23 July 1986, M.F. Gomon *et al*., RV *Franklin*, stn SLOPE 33.

Type locality. South of Point Hicks, Victoria, Australia, 38°21.90'S 149°20.00'E, 1000 m depth.

Etymology. The species is named for Gary Poore who collected the type specimen and has made much lysianassoid material available for our studies.

Diagnostic description. *Head* lateral cephalic lobe rounded; eyes well developed, oval. *Antenna 1* accessory flagellum 2-articulate. *Antenna 2* calceoli not present in male. ***Epistome and upper lip*** **with central notch**. *Mandible* lacinia mobilis present on left mandible; molar a weakly setose flap. ***Maxilla 1*** inner plate with 5 pappose setae along inner margin; **outer plate with 7 setal-teeth** in a 5/2 arrangement, most with moderate number of cusps. *Maxilliped* palp 4-articulate, palp article 1 with lateral and medial margins about same length.

Gnathopod 1 subchelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 4 robust setae (in pairs) along posterior margin. *Gnathopod 2* carpus longer than propodus. ***Pereopods 5–7*** **propodus without anterodistal spur**. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, short, distally rounded; basis moderately expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, long, distally truncated; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis greatly expanded posteriorly, posterior margin evenly curved, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 posterior margin smooth, **posteroventral corner subacute**. ***Urosomite 1*** **with** an anterodorsal depression and **a rounded dorsodistal boss**. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami without robust setae; inner ramus longer than article 1 of outer ramus. ***Telson*** longer than broad, **moderately cleft**, without mid-dorsal robust setae, lateral margins curved, abruptly tapering distally, without robust setae on lateral margins, without apical robust setae.

Remarks. *Aristias poorei* has the same maxilla 1 setal-tooth arrangement as *A. thio* from New Caledonia. They are also among the few species of *Aristias* without a distal spur on the propodus of pereopods 5–7. They differ from each other in the posteroventral corner of epimeron 3 which is slightly produced and subacute in *A. poorei* and narrowly rounded in *A. thio*. Based on these characters *A. poorei* and *A. thio* are considered as sister-species.

Distribution. South-eastern Australia in 930–1000 m depth

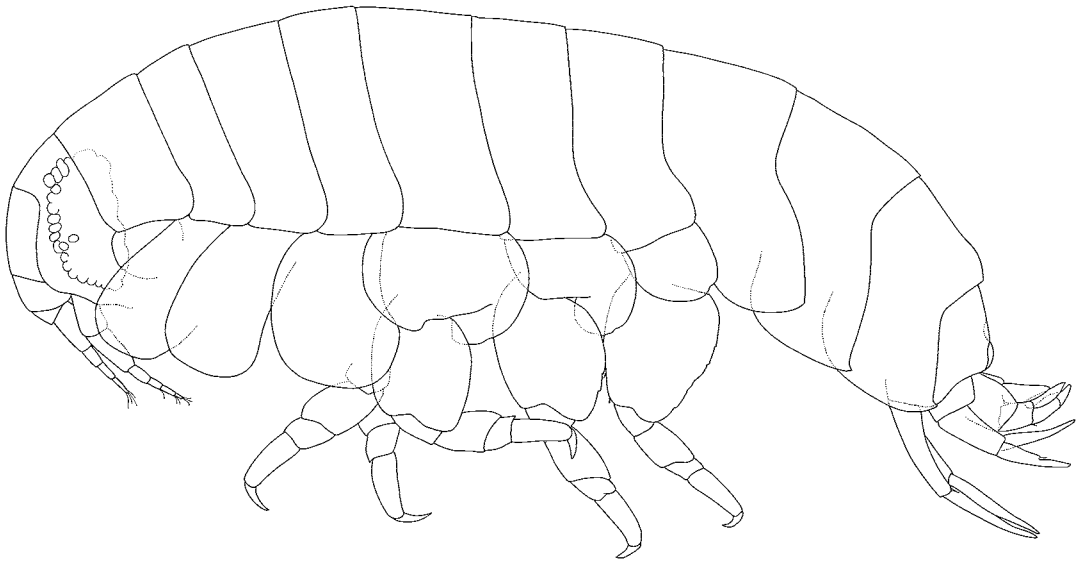

FIGURE 13. *Aristias poorei* **sp. nov.** Paratype, female, 4.2 mm, MV J59377.

Memana **gen. nov.**

Diagnosis. Maxilliped palp 1-articulate. Telson entire.

Type species. *Memana sarda* **sp. nov.**

Etymology. The genus is named for the town of Memana on Flinders Island in Bass Strait.

Species composition. *Memana* contains only one species, *Memana sarda* **sp. nov.**

Remarks. In *Memana* the flagellum of antenna 2 is very reduced and a similar reduction is seen in *Boca*, *Perrierella* and *Pratinas*, but it is difficult at this time to to properly assess the character state.

Memana sarda is considered to have a 5/4 setal-tooth arrangement on the outer plate of maxilla 1. It is the only aristiid with four setal-teeth on the inner row; all other species appear to have only two. We consider this to be a derived condition of the 7/4 setal-tooth arrangement which is the basic arrangement in hirondelleids, pachynids and scopelocheirids and outside the lysianassoids in the stegocephalids.

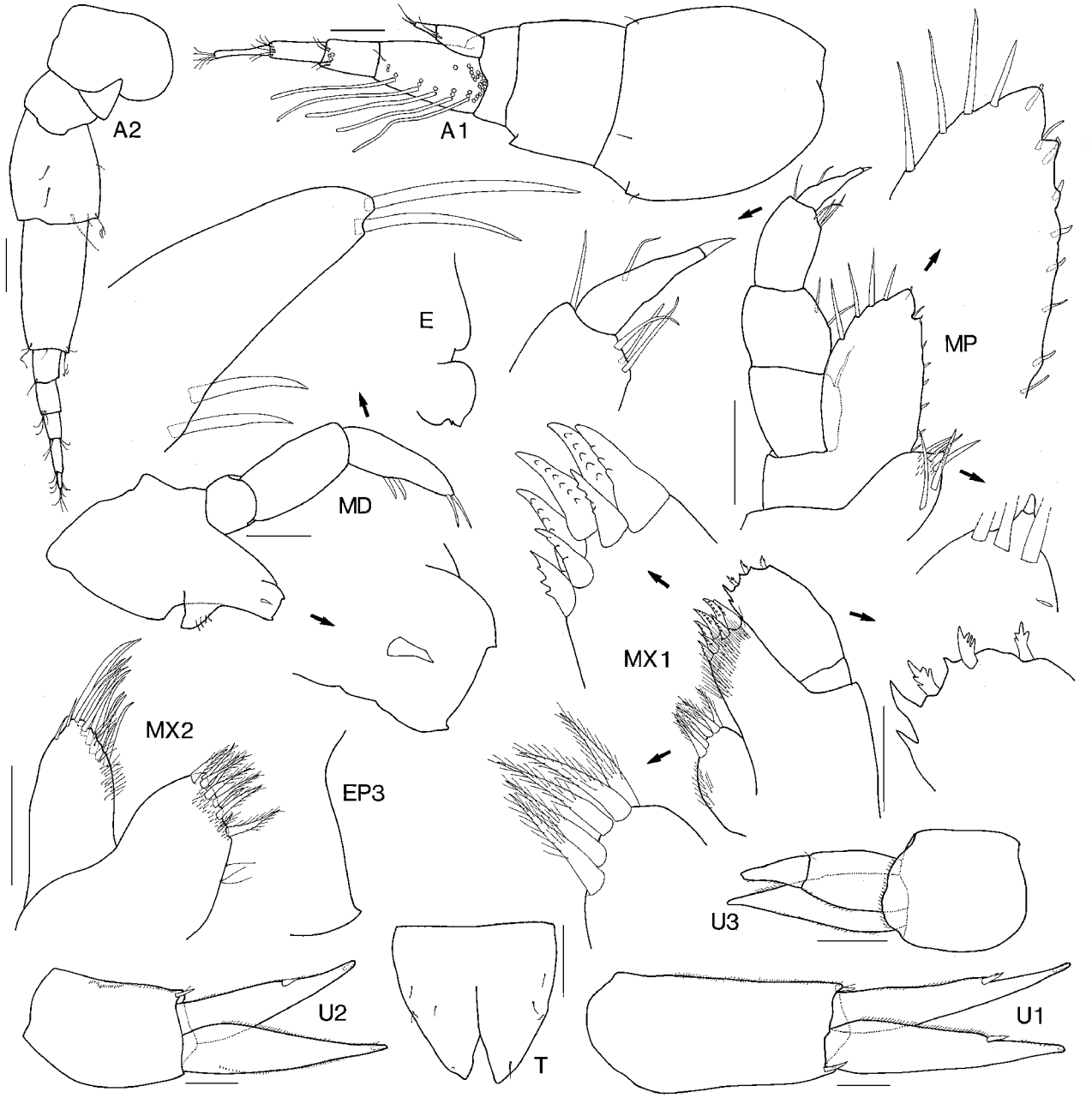

FIGURE 14. *Aristias poorei* **sp. nov.** Holotype, female, 4.4 mm, MV J59377. Scales represent 0.1 mm.

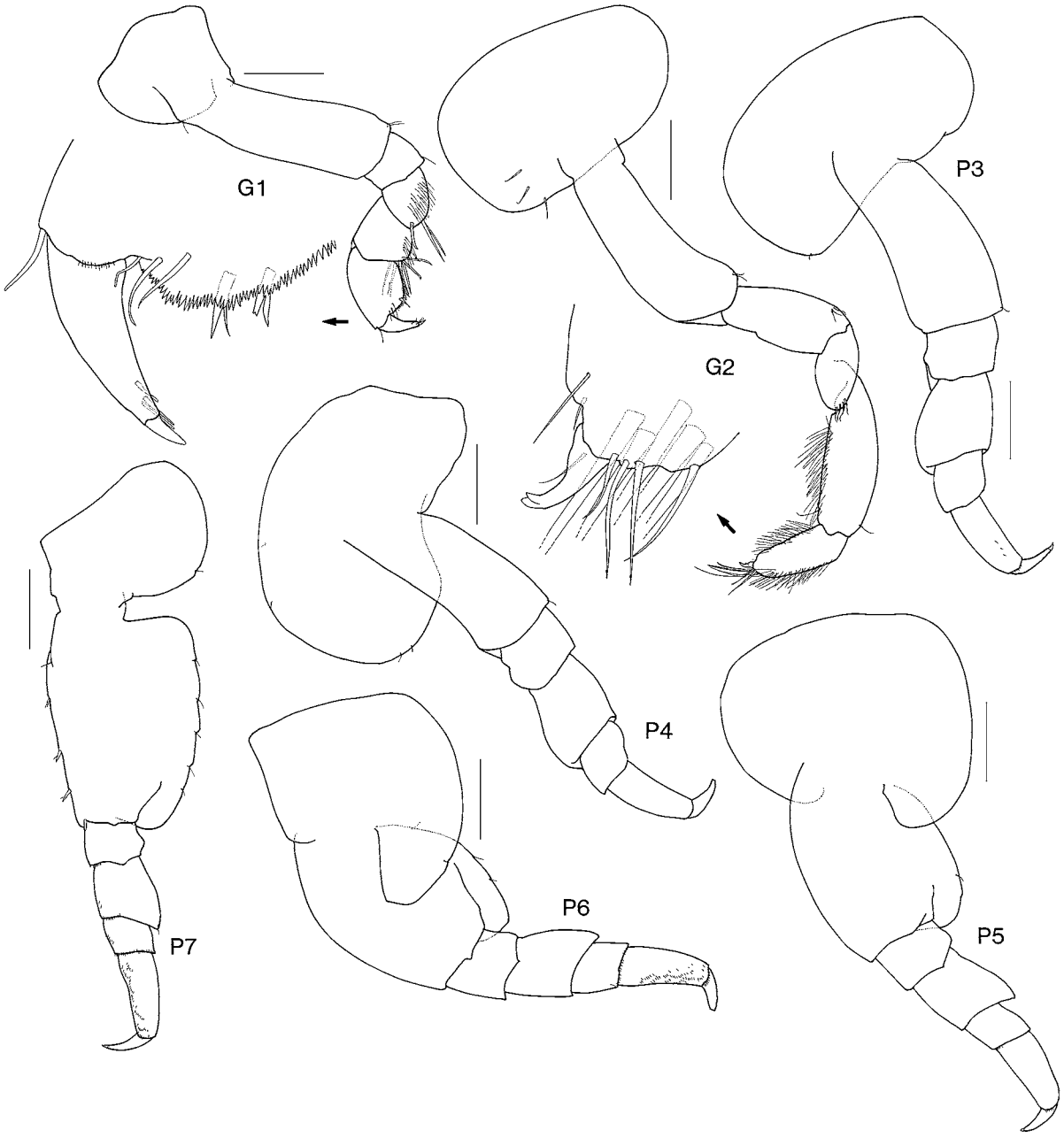

FIGURE 15. *Aristias poorei* **sp. nov.** Holotype, female, 4.4 mm, MV J59377. Scales represent 0.2 mm.

***Memana sarda* sp. nov.**
(Figs 16–18)

Type material. HOLOTYPE, female with nonsetose oostegites, 5.0 mm, MV J59381, 47 km east of Cape Rochon, Three Hummock Island, Tasmania, Central Bass Strait, Australia, 40°23.8'S 145°32'E, 65 m, muddy sand, epibenthic sled, 3 November 1980, M.F. Gomon & G.C.B. Poore, FRV *Sarda*, stn BSS-113S. PARATYPES, 1 male, 3.5 mm, MV J59382 and 3 specimens, MV J59383 and 1 female, 3.5 mm, AM P.81147 and 2 specimens, AM P.81148, 32 km north-west of Devonport, Tasmania, Central Bass Strait, Australia, 40°56.0'S 146°5.4'E to 40°46.0'S 146°8.1'E, 64–68 m, mud, otter trawl, 4 February 1981, M.F. Gomon & G.C.B. Poore, FRV *Hai Kung*, stn BSS-134; 1 specimen, MV J59384, 39 km north-north-east of Devonport, Tasmania, Central Bass Strait, Australia, 40°49.8'S 146°31.3'E to 40°48.2'S 146°33.7'E, 68–70 m, mud with bryozoans and sponges, otter trawl, 4 February 1981, M.F. Gomon, G.C.B. Poore & C.C. Lu, FRV *Hai Kung*,

stn BSS-135; 1 specimen, MV J59385, 5 km north-east of Mistaken Cape, Maria Island, Tasmania, Australia, 42°37'S 148°12.5'E, 100 m, fine muddy bryozoan, epibenthic sled, 23 April 1985, RV *Challenger*, stn MV TAS-31.

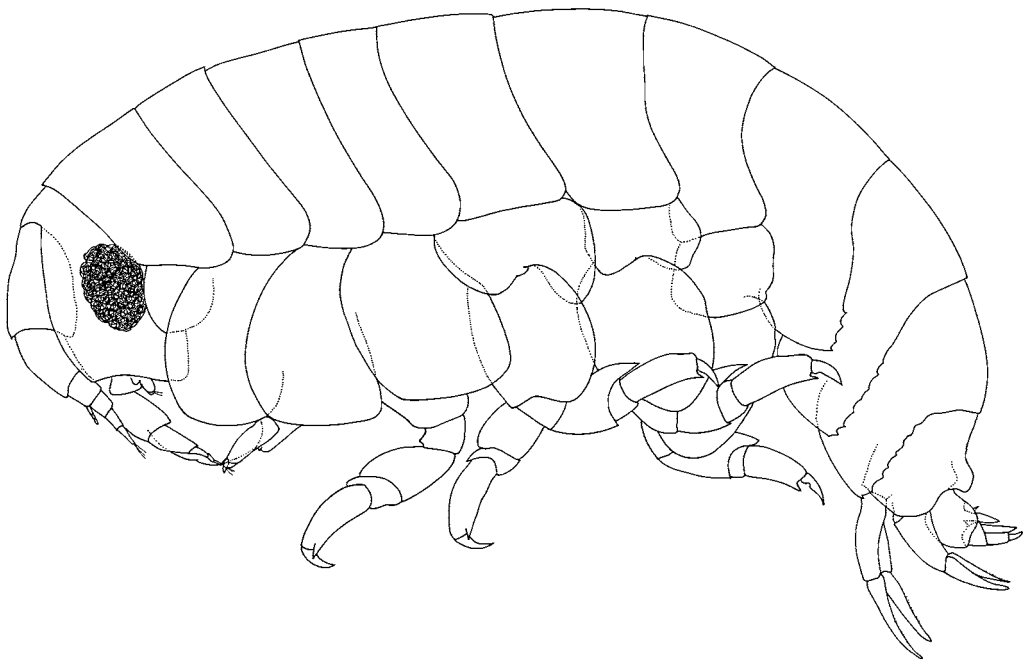

FIGURE 16. *Memana sarda* **gen. sp. nov.** Paratype, female, 3.5 mm, AM P.81147.

Type locality. 47 km east of Cape Rochon, Three Hummock Island, Tasmania, Central Bass Strait, Australia, 40°23.8'S 145°32'E, 65 m depth.

Etymology. The species is named for the Fisheries Research Vessel *Sarda* from which the type material was collected.

Description. *Head* lateral cephalic lobe broadly triangular, apically rounded; eyes well developed, oval. *Antenna 1* accessory flagellum 2–3-articulate. *Antenna 2* calceoli not present in male. *Epistome and upper lip* with weak central slit. *Mandible* lacinia mobilis absent; molar absent. *Maxilla 1* inner plate with 3 apical pappose setae; outer plate with 9 setal-teeth in a 5/4 arrangement, with few or no cusps. *Maxilliped* palp 1-articulate.

Gnathopod 1 subchelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 2 robust setae along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe, long, triangular; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe subequal in length to anterior lobe, short, distally rounded; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis greatly expanded posteriorly, posterior margin evenly curved, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 posterior margin finely serrate, posteroventral corner subquadrate. *Urosomite 1* with an anterodorsal depression and a rounded dorsodistal boss. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami without robust setae; inner ramus longer than article 1 of outer ramus. *Telson* longer than broad, entire, emarginate, without mid-dorsal robust setae, lateral margins curved, uniformly tapering distally, without robust setae on lateral margins, without apical robust setae.

Distribution. South-eastern Australia in 64–100 m depth.

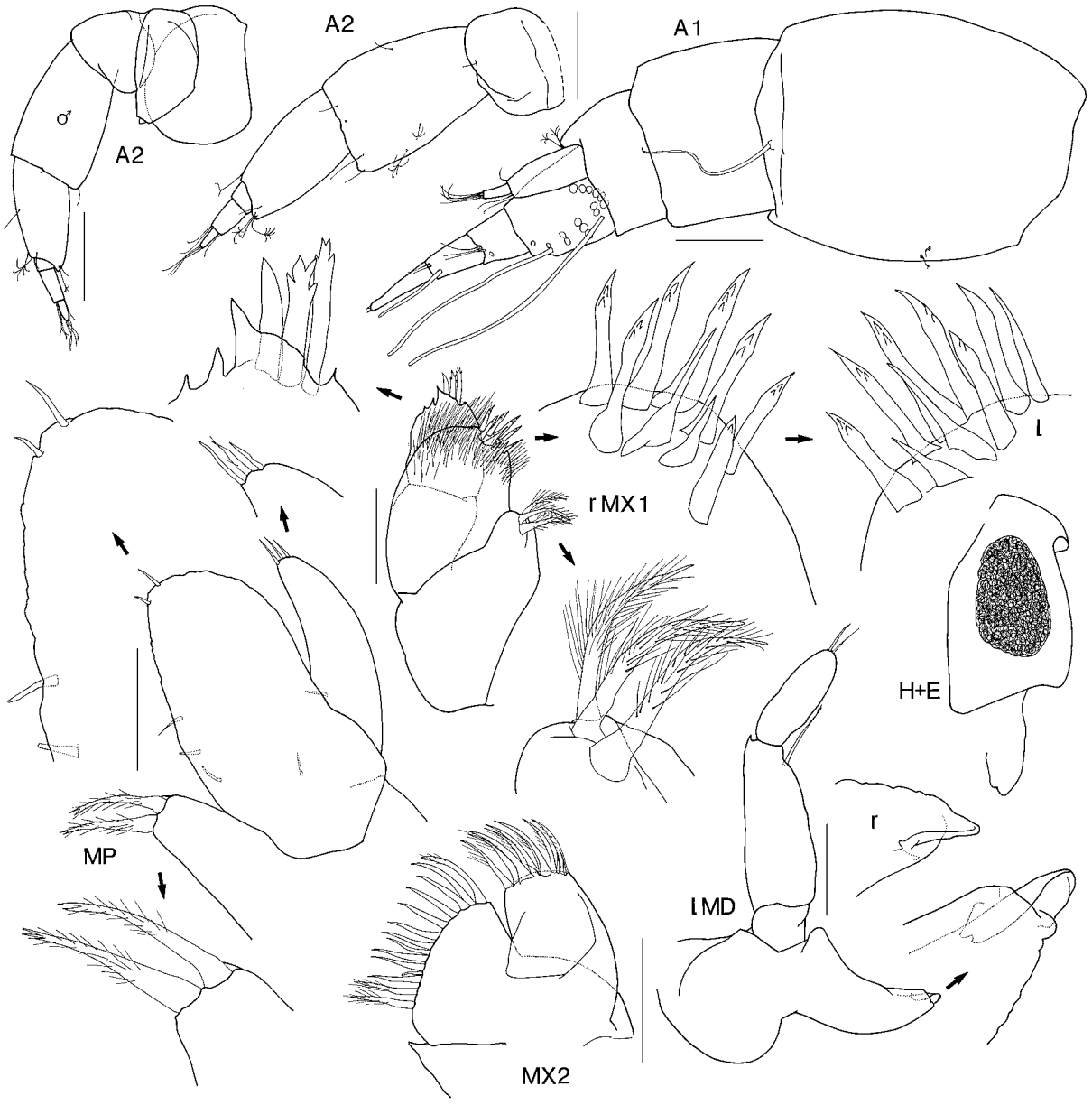

FIGURE 17. *Memana sarda* **gen. sp. nov.** Holotype, female, 5.0 mm, MV J59381; Paratype male, 3.5 mm, MV J59382. Scale for MP represents 0.05 mm; remainder represent 0.1 mm.

***Pratinas* gen. nov.**

Diagnosis. Maxilliped palp 4-articulate. Telson entire.

Type species. *Pratinas ludmilla* **sp. nov.**

Etymology. The genus is named for the early Greek poet Pratinas, father of Aristias.

Species composition. The genus contains only one species, *Pratinas ludmilla* **sp. nov.**

Remarks. Chevreux & Bouvier (1892) established the genus *Perrierella* for the species *P. crassipes* Chevreux & Bouvier, 1892 which they described as having a maxillipedal palp with a rudimentary fourth article represented by a very small rounded tubercule. Bonnier (1893) recorded material of *P. crassipes* which he described as having no trace of a dactylopodite [article 4] on the maxillipedal palp, while acknowledging that Chevreux & Bouvier (1892) had recorded a small tubercule. (Bonnier then synonymised *P. crassipes* with *Lysianassa audouiniana* Bate 1857.) We have examined material identified as *P. crassipes* by Chevreux.

There seems to be a very slight extension of the lateral face of article 3, but not of the medial face, on the palp of the left side of the animal but not on the right. This seems identical to the illustration given by Chevreux & Fage (1925: fig. 12). We cannot interpret this as a fourth article and so establish the new genus *Pratinas* for a species that has a well-developed article 4 on the maxillipedal palp and an entire telson.

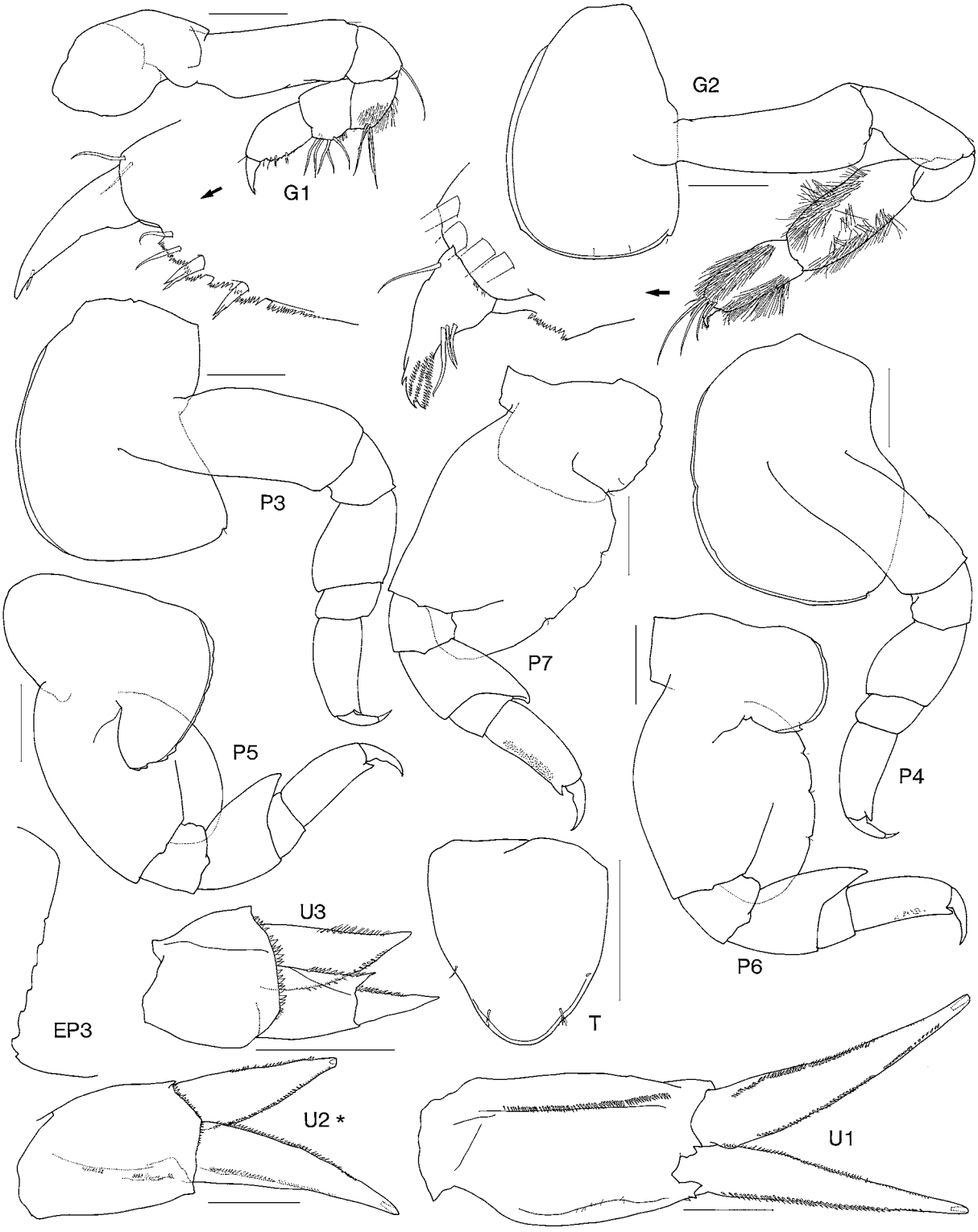

FIGURE 18. *Memana sarda* **gen. sp. nov.** Holotype, female, 3.5 mm, MV J59381. Scales for U1–3 and T represent 0.1 mm; remainder represent 0.2 mm. *The inner ramus of uropod 3 shown here is an incomplete regrowth; the rami are subequal in length.

***Pratinas ludmilla* sp. nov.**
(Figs 19–21)

Type material. HOLOTYPE, female, approx. 2.5 mm, AM P.81149, East Point, Darwin, Northern Territory, Australia, approx. 12°27'S 130°50'E, possibly on encrusting ascidian *Didemnum psammatode*, stn. EP/9 [AM stn NT-108]. PARATYPES: 1 ?male, 2.0 mm, AM P.81150 and 1 female, 2.6 mm, AM P.81151 and 100 specimens, AM P.81152 and 20 specimens, NTMAG, same data as holotype; 20 specimens, AM P.81153, west end of East Point, north end of Fannie Bay, Darwin, Northern Territory, Australia, 11°24.5'S 130°48.5'E, gorgonaceans *Echinogorgia* sp. 1 (red) and *Echinogorgia* sp. 2 (orange), 8–10 m, 26 October 1982, J.K. Lowry, stn NT-95; 3 specimens, AM P.81154, west end of East Point, north end of Fannie Bay, Darwin, Northern Territory, Australia, 11°24.5'S 130°48.5'E, 8–10 m, gorgonacean *Rumphella aggregata*, 26 October 1982, J.K. Lowry, stn NT-96.

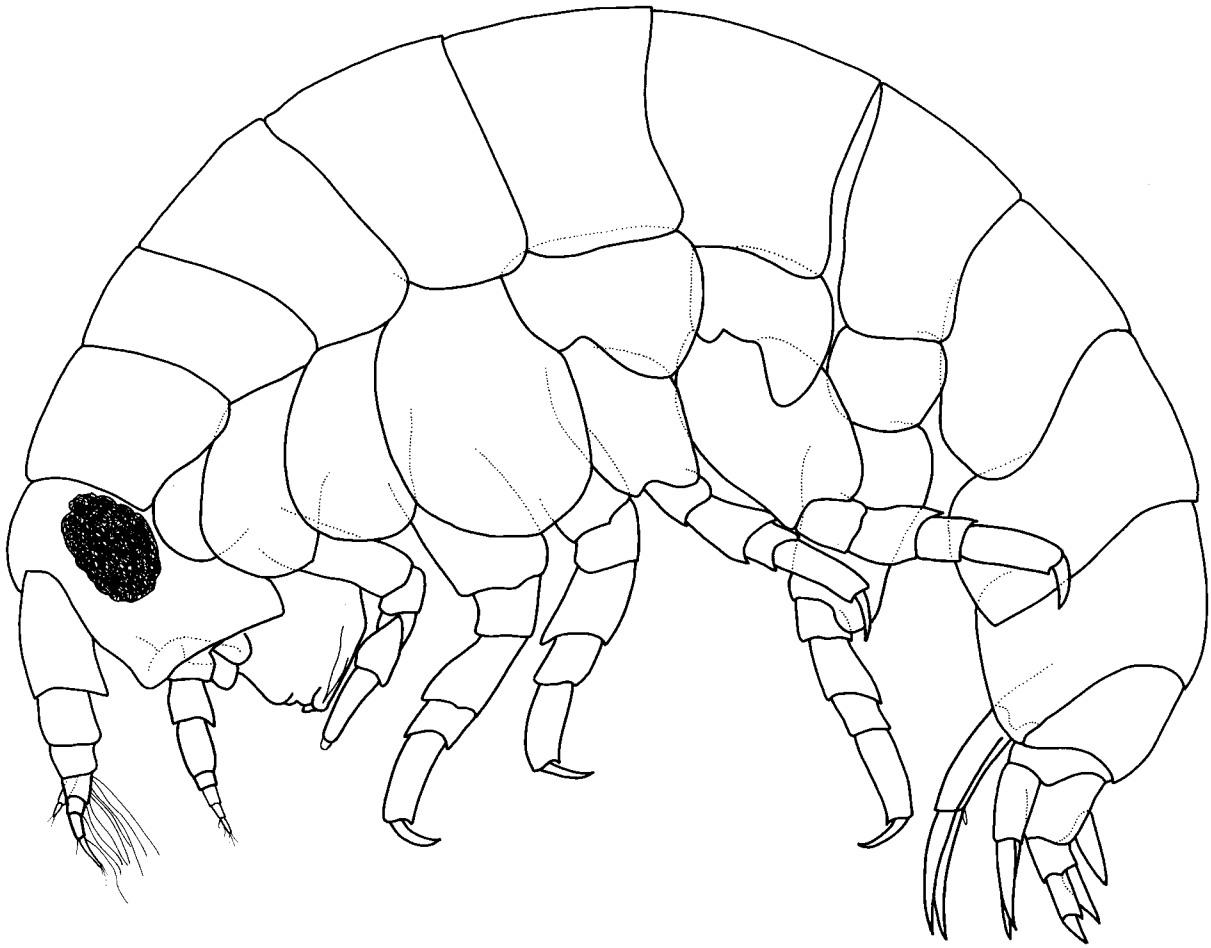

FIGURE 19. *Pratinas ludmilla* **gen. sp. nov.** Paratype, female, 2.6 mm, AM P.81151.

Type locality. East Point, Darwin, Northern Territory, Australia, approx. 12°27'S 130°50'E.

Etymology. The species is named for Ludmilla Creek in the East Point/Fannie Bay area.

Description. *Head* lateral cephalic lobe broadly triangular, apically subacute; eyes well developed, oval. *Antenna 1* accessory flagellum 2-articulate. *Epistome and upper lip* with small central notch. *Mandible* lacinia mobilis absent; molar absent. *Maxilla 1* inner plate with 3 apical pappose setae; outer plate with 7 setal-teeth in a 5/2 arrangement, most with moderate number of cusps. *Maxilliped* palp 4-articulate, palp article 1 with lateral and medial margins about same length.

Gnathopod 1 subchelate; carpus shorter than propodus, without posterodistal lobe; propodus posterior margin dentate, with 1 robust seta along posterior margin. *Gnathopod 2* carpus longer than propodus. *Pereopods 5–7* propodus with anterodistal spur. *Pereopod 5* coxa posterior lobe deeper than anterior lobe,

short, distally rounded; basis moderately expanded posteriorly, with posteroventral lobe. *Pereopod 6* coxa posterior lobe deeper than anterior lobe, short, distally rounded; basis greatly expanded posteriorly, with posteroventral lobe. *Pereopod 7* basis moderately expanded posteriorly, posterior margin evenly curved, with posteroventral lobe, posteroventral corner rounded.

Epimeron 3 **posterior margin smooth, posteroventral corner subacute**. *Urosomite 1* smooth dorsally, without a dorsodistal boss. *Urosomite 3* without dorsolateral flanges. *Uropod 3* rami without robust setae; inner ramus longer than article 1 of outer ramus. *Telson* longer than broad, entire, emarginate, without mid-dorsal robust setae, lateral margins straight, uniformly tapering distally, without robust setae on lateral margins, with 2 small apical robust setae along distal margin.

Distribution. Darwin, Northern Territory, Australia in 8–10 m depth.

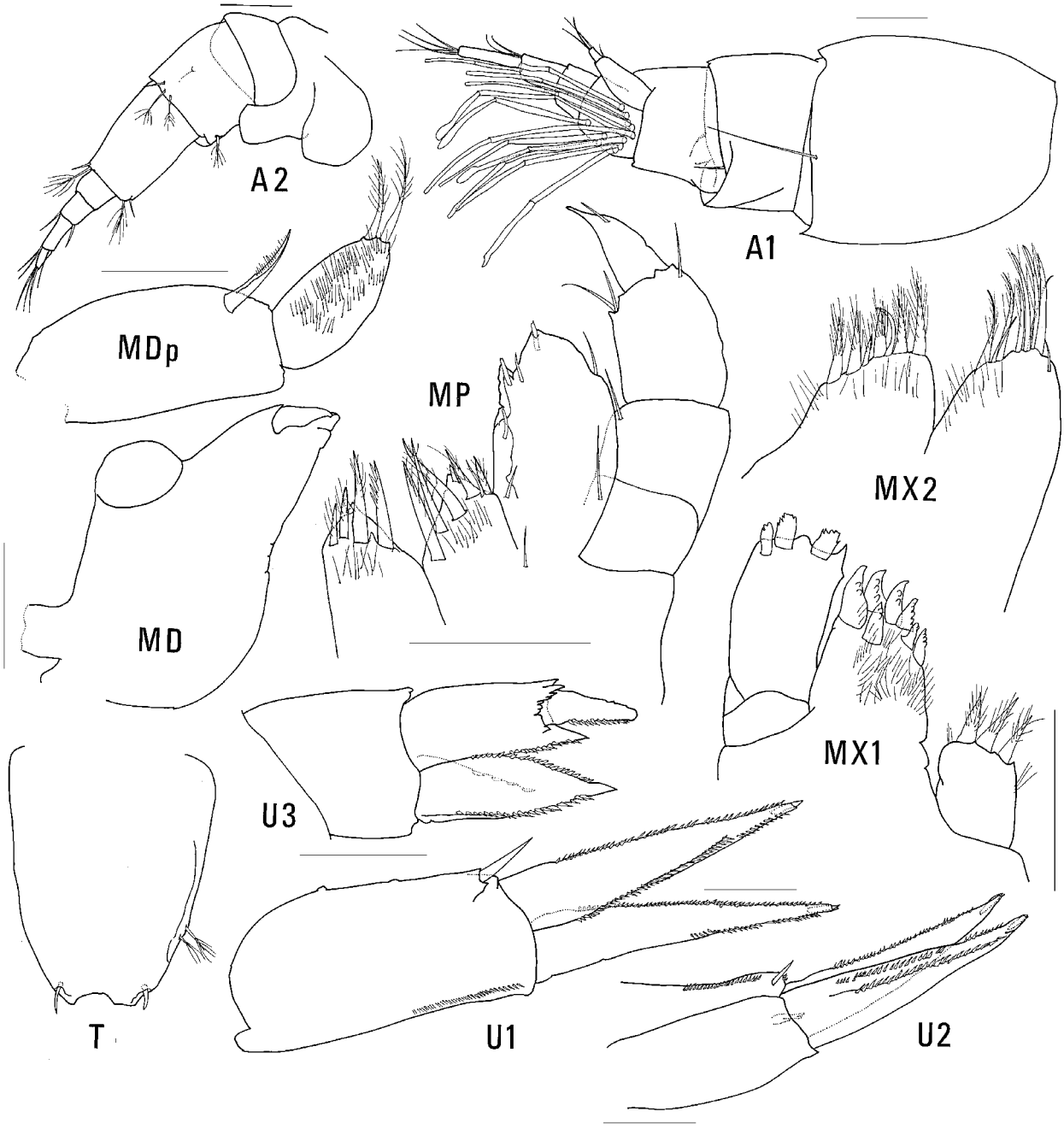

FIGURE 20. *Pratinas ludmilla* **gen. sp. nov.** Holotype, female, 2.5 mm, AM P.81149. Scales represent 0.1 mm.

Acknowledgements

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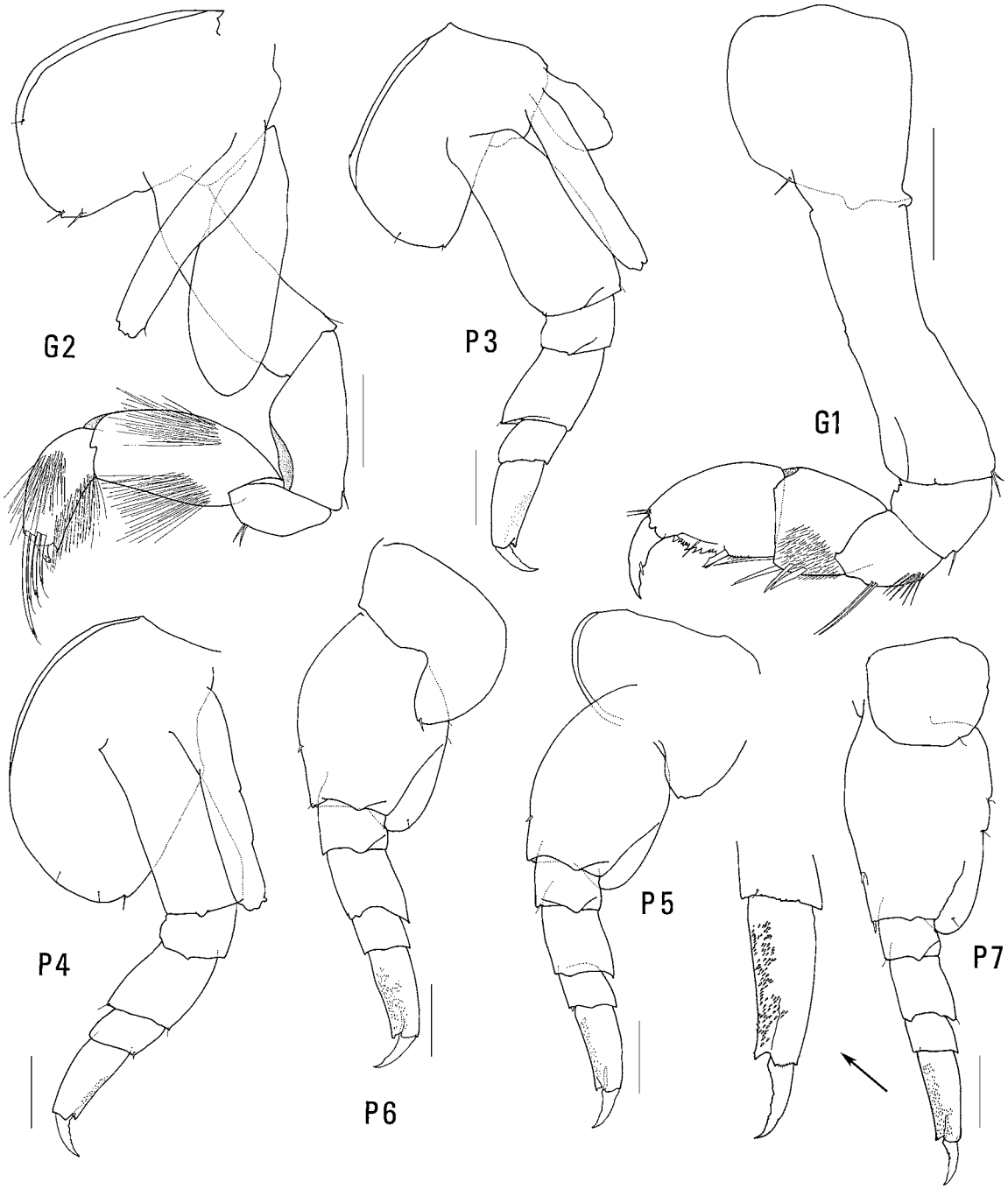

FIGURE 21. *Pratinas ludmilla* **gen. sp. nov.** Holotype, female, 2.5 mm, AM P.81149. Scales represent 0.1 mm.

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