Zootaxa 2260: 908–918 (2009)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Uristidae*

J.K. LOWRY & H.E. STODDART
Crustacea Section, Australian Museum, 6 College Street, Sydney, New South Wales, 2010, Australia.
(jim.lowry@austmus.gov.au; helen.stoddart@austmus.gov.au)

* In: Lowry, J.K. & Myers, A.A. (Eds) (2009) Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef, Australia. Zootaxa, 2260, 1–930.

Abstract

Two genera and three species of uristid amphipods are reported from the Great Barrier Reef, Queensland, Australia. All are considered to be scavengers which can be common in areas where they occur.

Key words: Crustacea, Amphipoda, Uristidae, Great Barrier Reef, Australia, taxonomy, *Ichnopus capricornus*, *Ichnopus tenuicornis*, *Nagada uwedoae*

Introduction

Members of the Uristidae occur in all world oceans from shallow water to the deep sea. With bodies adapted to swimming, callynophores in males and females for detecting the most minuscule scents and mouthparts adapted for cutting and slicing, uristids are highly specialized for scavenging on carrion and for predation. Although best known in cold temperate and polar seas they also occur in tropical environments.

In this paper we report two genera and three species of uristid amphipods from the Great Barrier Reef. Two of these species, *Ichnopus capricornus* Lowry & Stoddart, 1992 and *I. tenuicornis* (Haswell, 1879a), appear to be endemic to tropical Australia (Lowry & Stoddart 1992, 2003). The third species, *Nagada uwedoae* Lowry & Stoddart, 1995, is known also from northern Papua New Guinea.

All of these species have been taken regularly in baited traps and are considered to be scavengers. Keable (1995), in his study of the shallow marine invertebrate scavengers of Lizard Island, reported *Ichnopus capricornus* as "both abundant and regularly obtained, accounting for 90% of the lysianassoid amphipods collected". Lowry & Stoddart (1995) found *Nagada uwedoae* to be a common scavenger below 40 m depth on the slopes of the barrier reef outside Madang Lagoon in Astrolabe Bay, northern Papua New Guinea.

Materials and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the lysianassid and uristid species. Material was collected in baited traps and by epibenthic sleds. All material is lodged in the Australian Museum, Sydney (AM). A list of standard abbreviations and detailed station data is available in Lowry & Myers (2009). A CD (*Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef: Interactive Keys*) is available with the book or the keys can be accessed at the crustacea.net website.

 Accepted by A.A. Myers: 15 Jun. 2009; published: 8 Oct. 2009

Uristidae Hurley, 1963

***Ichnopus* Costa 1853**

***Ichnopus capricornus* Lowry & Stoddart, 1992**
(Figs 1, 2)

Ichnopus capricornus Lowry & Stoddart, 1992: 198, figs 6–8. —Springthorpe & Lowry, 1994: 12. —Keable, 1995: 33, 42. —Lowry & Stoddart, 2003: 281 (catalogue).

Type locality. Boulder ridge on north side of Heron Island, Great Barrier Reef, Queensland, Australia (23°26'S 151°55'E).

Material examined. That of Lowry & Stoddart (1992) and 2 specimens, AM P80139 (QLD311); 4 specimens, AM P80140 (QLD 325); many specimens, AM P80141 (QLD 342); 1 specimen, AM P80142 (QLD 374); 11 specimens, AM P80143 (QLD 379); 3 specimens, AM P80144 (QLD 396); many specimens, AM P80145 (QLD 401); many specimens, AM P80146 (QLD 427); many specimens, AM P80147 (QLD 429); many specimens, AM P80148 (QLD 454); many specimens, AM P80149 (QLD 455); 1 specimen, AM P80150 (QLD 481); 1 specimen, AM P80151 (QLD 547); 4 specimens, AM P80152 and many specimens, AM P80153 (QLD 548); many specimens, AM P80154 (QLD 574); several specimens, AM P80155 (QLD 575); many specimens, AM P80156 (QLD 577); 3 specimens, AM P78946 (QLD 635); several specimens, AM P78947 (QLD 652); several specimens, AM P78948 (QLD 653); several specimens, AM P78949 (QLD 654); several specimens, AM P78950 (QLD 655); many specimens, AM P78951 (QLD 656); several specimens, AM P78952 (QLD 670); 4 specimens, AM P78953 (QLD 671); many specimens, AM P78954 (QLD 673);

Description. Based on holotype female, 10 mm, AM P39644.

Head. *Head* lateral cephalic lobes rounded, with apically rounded margins; eyes reniform. *Antenna 1* shorter than antenna 2; peduncle article 1 with short posterodistal spine; articles 2 and 3 short; flagellum with strong 2-field callynophore, robust setae absent from proximal articles, calceoli absent; accessory flagellum with 6 articles. *Antenna 2* less than 40% of body length; peduncle with strong brush setae; calceoli absent. *Epistome*/*upper lip* separate; upper lip produced, rounded apically. *Mandible* molar setose tongue with conate setae; palp attached midway, article 3 without A3-setae. *Maxilla 1* outer plate with setal-teeth in 7/4 crown arrangement; setal-tooth 7, left and right symmetrical, cuspidate distally; palp distal margin with apical robust setae and serrations. *Maxilliped* inner plates poorly developed, not reaching half the length of the outer plate; outer plates without apical robust setae; palp 4-articulate, article 4 well developed.

Pereon. *Gnathopod 1* simple; coxa large, about as long as coxa 2, subrectangular with concave anterior margin; basis slightly expanded proximally, sparsely setose along anterior margin; ischium elongate, more than twice as long as broad; carpus very long (length 4 x breadth), distinctly longer than propodus, without posterior lobe; propodus margins subparallel, sparsely setose along posterior margin; dactylus complex, with large subapical spine, row of medial robust setae and row of long cuticular spines along posterior margin. *Gnathopod 2* minutely subchelate; carpus 2.3 x as long as propodus; palm transverse, slightly concave; dactylus minute. *Pereopod 4* coxa with well developed posteroventral lobe. *Pereopod 5* coxa equilobate; basis about as long as broad, posterior margin strongly serrated.

Pleon. *Epimeron 3* posterior margin smooth, posterodistal corner acutely produced with tiny basal notch. *Urosomite 1* with shallow dorsal depression, dorsally straight. *Uropod 1* rami subequal. *Uropod 2* rami subequal, inner ramus with weak marginal constriction. *Uropod 3* stout; peduncle without dorsolateral flange; rami subequal, with long fine setae on each ramus; plumose setae absent; outer ramus 2-articulate, article 2 short, inner ramus extending beyond article 1 of outer ramus. *Telson* distinctly longer than broad, deeply cleft, without dorsal robust setae, with 1 apical robust seta per lobe.

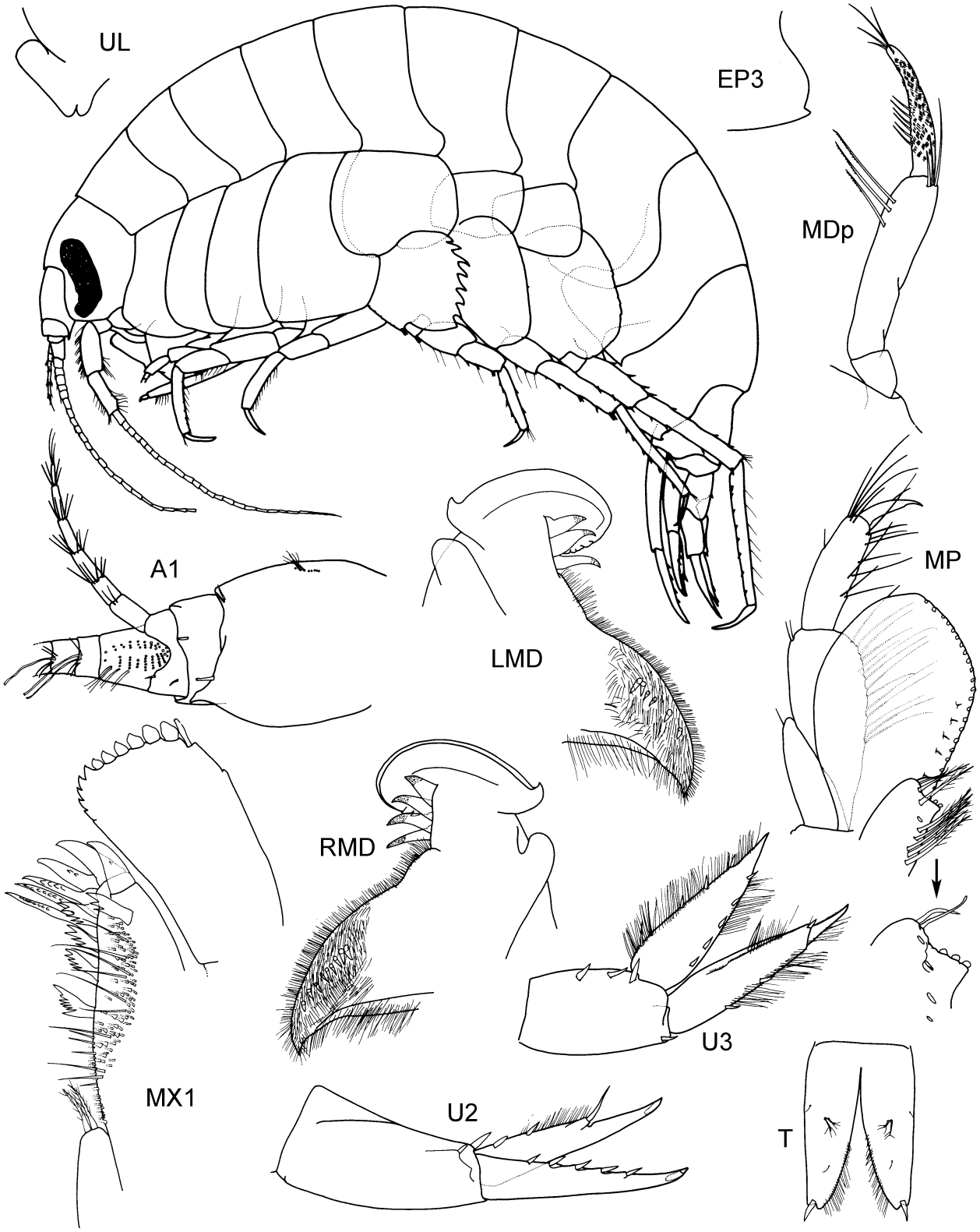

FIGURE 1. *Ichnopus capricornus* Lowry & Stoddart, 1992, holotype, female, 10 mm, AM P39644, Heron Island, Great Barrier Reef (after Lowry & Stoddart, 1992).

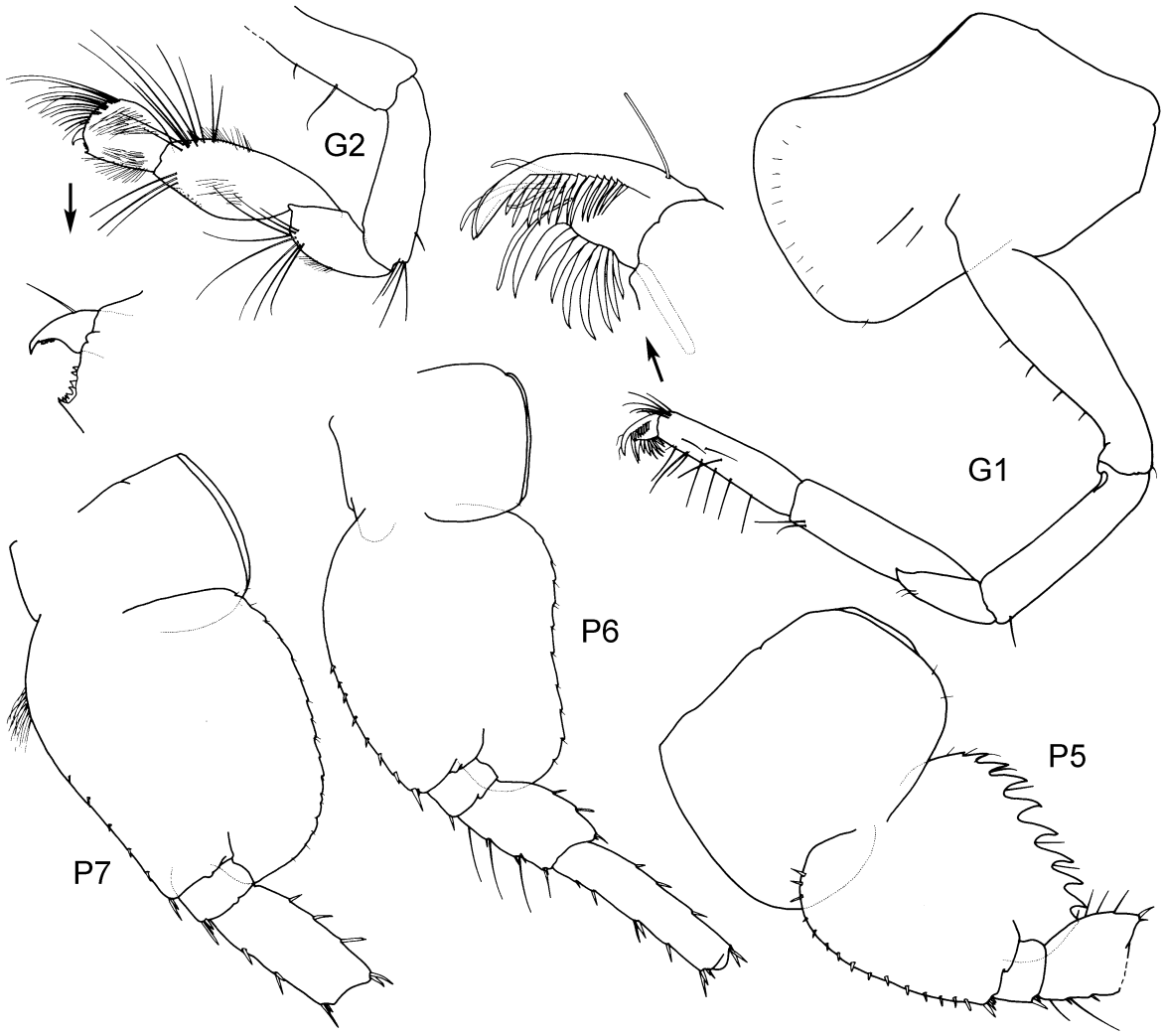

FIGURE 2. *Ichnopus capricornus* Lowry & Stoddart, 1992, holotype, female, 10 mm, AM P39644, Heron Island, Great Barrier Reef (after Lowry & Stoddart, 1992).

Male (sexually dimorphic characters). Based on paratype male, 9.8 mm, AM P39645. *Antennae 1 – 2* with calceoli.

Habitat. Scavenger living on coral and sandy patches between coral, from 0 to 30 m depth.

Remarks. *Ichnopus capricornus* apparently occurs throughout the GBR where it overlaps with *I. tenuicornis*. Both of these species can be separated from other lysianassoids on the GBR by the complex dactylus of gnathopod 1 and the strongly serrate posterior margin of pereopod 5 basis. They differ most noticeably from each other in the palm of the female second gnathopod, which is minute in *I. capricornus* and enlarged in *I. tenuicornis*, and in the proximal articles of antenna 1 which have large robust setae in *I. tenuicornis* (absent in *I. capricornus*).

Distribution. *Australia*. Queensland: Lizard Island (Lowry & Stoddart 1992; current study); Heron Island; (Lowry & Stoddart 1992); Flynn Reef (current study).

***Ichnopus tenuicornis* (Haswell, 1879)**
(Figs 3, 4)

Glycera tenuicornis Haswell, 1879a: 256, pl. 8, fig. 6. —Della Valle, 1893: 849. –Springthorpe & Lowry, 1994: 33.
Glycerina tenuicornis. —Haswell, 1882: 234, pl. 4, fig. 6. —Stebbing, 1906: 61. —Barnard & Karaman, 1991: 488.
Ichnopus tenuicornis. —Lowry & Stoddart, 1992: 230: figs 29–32. —Keable, 1995: 42. —Lowry & Stoddart, 2003: 282.
not *Glycera tenuicornis*. —Haswell, 1879b: 322.—Whitelegge, 1889: 55.
not *Glycerina tenuicornis*. —Pirlot, 1936: 271, figs 106, 107 (= *I. wardi* Lowry & Stoddart, 1992).—J.L. Barnard, 1974: 141.

Type locality. Howick Group, Great Barrier Reef, Queensland, Australia (~14°30'S 144°58'E).

Material examined. That of Lowry & Stoddart (1992) and 1 specimen, AM P78957 (QLD 135); 2 specimens, AM P78958 (QLD 171); 3 specimens, AM P45406 (QLD 251); 2 specimens, AM P78959 (QLD 283); 1 specimen, AM P78960 (QLD 290); 8 specimens, AM P78963 (QLD 337); 1 specimen, AM P78965 (QLD 346); 1 specimen, AM P78969 (QLD 368); many specimens, AM P80129 (QLD 434); 3 specimens, AM P80130 (QLD 509); 4 specimens, AM P80132 (QLD 549); 6 specimens, AM P80134 (QLD 597); many specimens, AM P78955 (QLD 784); many specimens, AM P78956 (QLD 785); 2 specimens, AM P49504 (QLD 915); 27 specimens, AM P49507 (QLD 916); 13 specimens, AM P56936 (QLD 919); 304 specimens, AM P50205 (QLD 922); 633 specimens, AM P50216 (QLD 923); 4 specimens, AM P50250 (QLD 933); 7 specimens, AM P50254 (QLD 935); 1 specimen, AM P50372 (QLD 937); 7 specimens, AM P50376 (QLD 938); 295 specimens, AM P49511 and 14 specimens, AM P57608 (QLD 939); 560 specimens, AM P50271 (QLD 941); 25 specimens, AM P51115 (QLD 953); 1 specimen, AM P49528 (QLD 1033); 15 specimens, AM P49533 (QLD 1037); 175 specimens, AM P49534 (QLD 1039); 21 specimens, AM P50342 (QLD 1052); 52 specimens, AM P52251 (QLD 1054); 5 specimens, AM P49540 (QLD 1055); 60 specimens, AM P49543 (QLD 1059); 47 specimens, AM P49544 (QLD 1060); 50 specimens, AM P52265 (QLD 1195); 68 specimens, AM P52280 (QLD 1197); 84 specimens, AM P52434 (QLD 1213); 8 specimens, AM P57726 (QLD 1215).

Description. Based on lectotype female, 10.5 mm, AM P39547.

Head. *Head* lateral cephalic lobes subtriangular, with apically rounded margins; eyes reniform. *Antenna 1* shorter than antenna 2; peduncle article 1 with short posterodistal spine; articles 2 and 3 short; flagellum with strong 2-field callynophore, robust setae present on proximal articles; calceoli absent; accessory flagellum with 4+ articles. *Antenna 2* less than 40% of body length; peduncle with strong brush setae; calceoli absent. *Epistome*/*upper lip* separate; upper lip produced, rounded apically. *Mandible* molar a setose tongue with conate setae; palp attached midway, article 3 without A3-setae. *Maxilla 1* outer plate with setal-teeth in 7/4 crown arrangement; setal-tooth 7, left and right symmetrical, cuspidate distally; palp distal margin with apical robust setae. *Maxilliped* inner plates poorly developed, not reaching half the length of the outer plate; outer plates without apical robust setae; palp 4-articulate, article 4 well developed.

Pereon. *Gnathopod 1* simple; coxa large, about as long as coxa 2, subrectangular with concave anterior margin; basis slightly expanded proximally, without setae along anterior margin; ischium elongate, more than twice as long as broad; carpus very long (length 5.7 x breadth), distinctly longer than propodus, without posterior lobe; propodus margins subparallel, sparsely setose along posterior margin; dactylus complex, with large subapical spine, row of medial robust setae and row of long cuticular spines along posterior margin. *Gnathopod 2* subchelate; carpus twice as long as propodus; palm large, acute, concave; dactylus well developed. *Pereopod 4* coxa with well developed posteroventral lobe. *Pereopod 5* coxa equilobate; basis about as long as broad, posterior margin strongly serrated.

Pleon. *Epimeron 3* posterior margin smooth, posterodistal corner acutely produced with tiny basal notch above a small spine. *Urosomite 1* with shallow dorsal depression, dorsally straight. *Uropod 1* rami subequal. *Uropod 2* rami subequal, inner ramus with moderate marginal constriction. *Uropod 3* stout; peduncle without dorsolateral flange; rami subequal, with long fine setae on each ramus; plumose setae absent; outer ramus 2-articulate, article 2 short, inner ramus extending beyond article 1 of outer ramus. *Telson* distinctly longer than

broad, deeply cleft, without dorsal robust setae, with 1 apical robust seta per lobe.

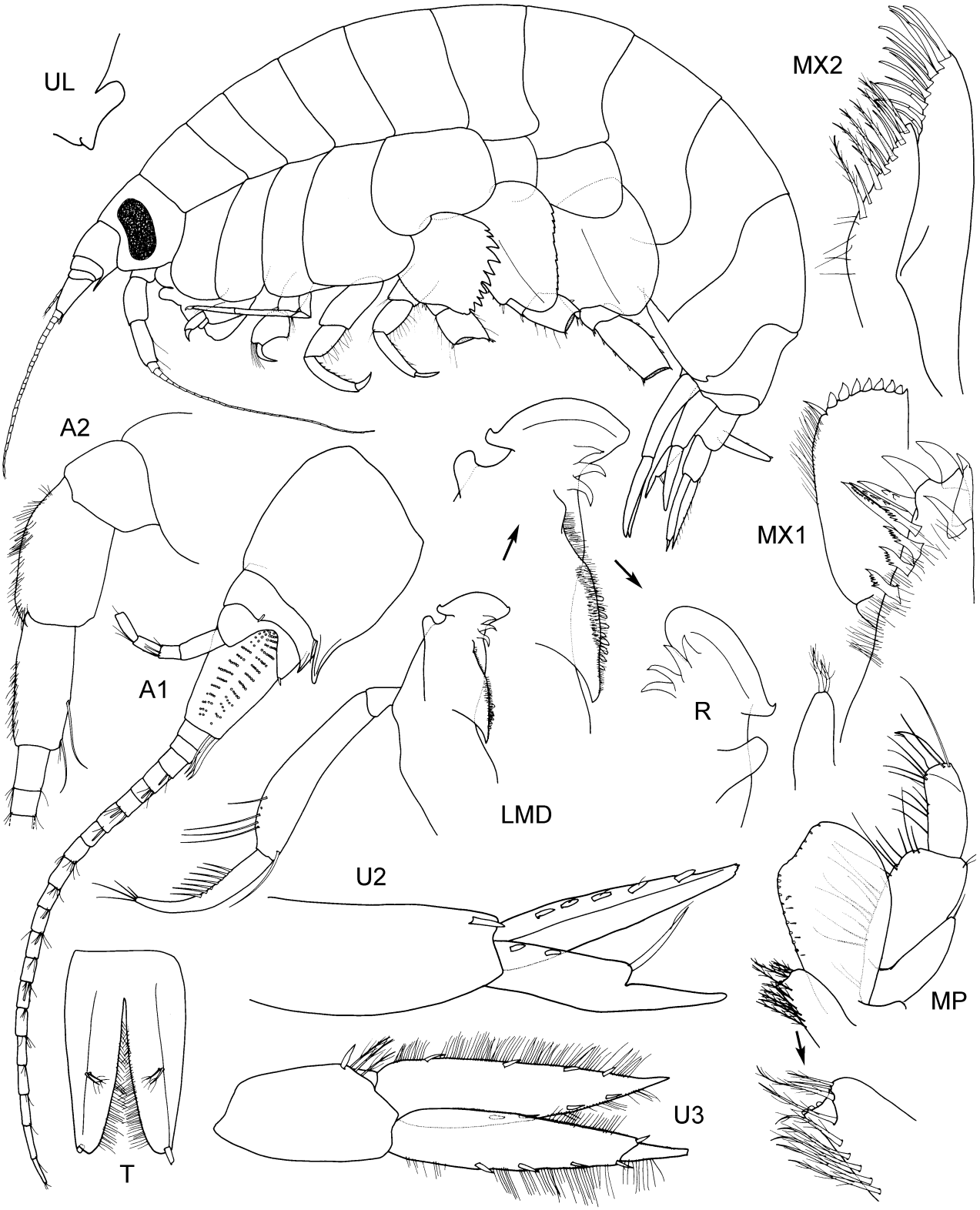

FIGURE 3. *Ichnopus tenuicornis* Haswell, 1879, lectotype, female, 10.5 mm, AM P39547, Howick Group, Great Barrier Reef (after Lowry & Stoddart, 1992).

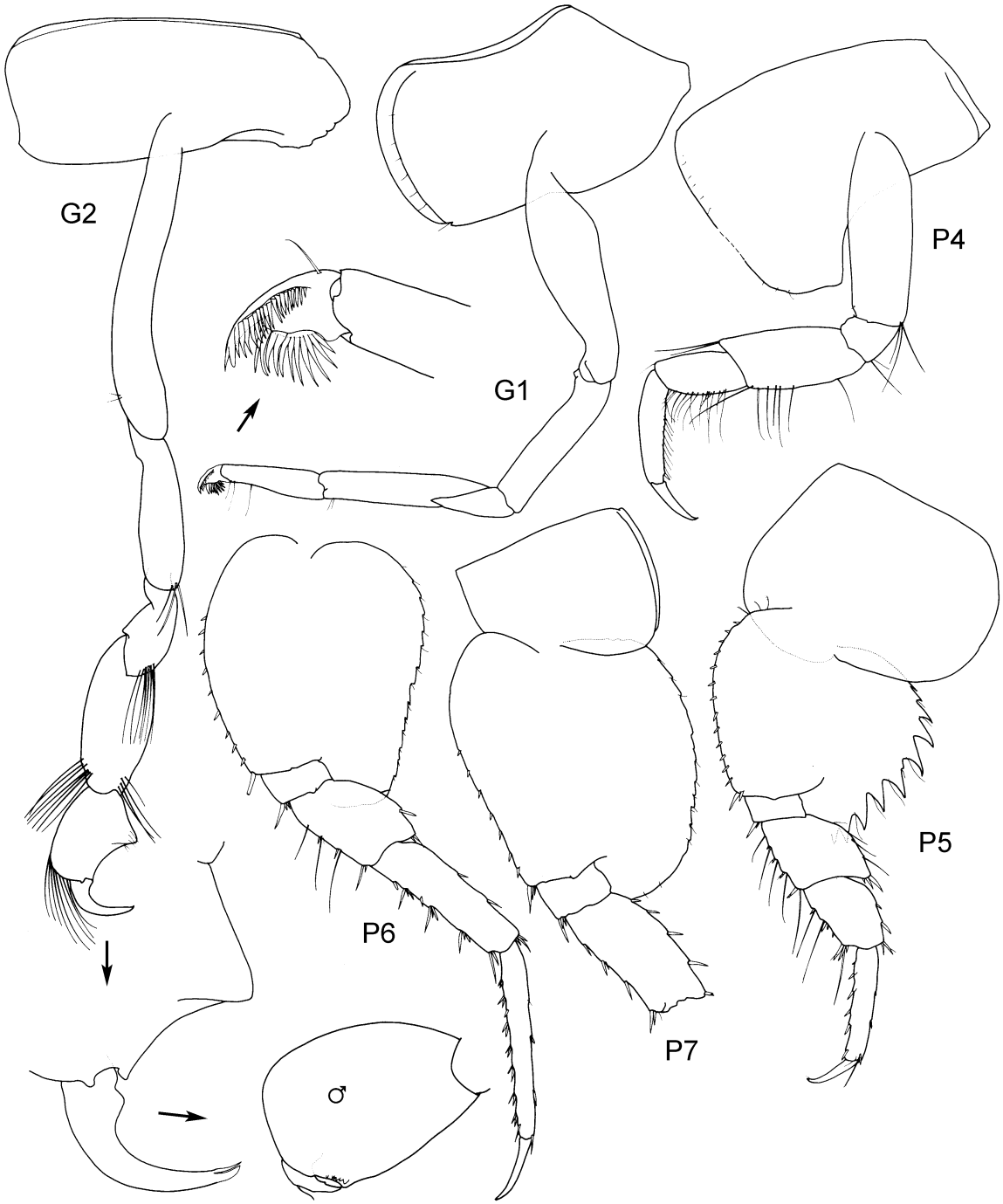

FIGURE 4. *Ichnopus tenuicornis* Haswell, 1879, lectotype, female, 10.5 mm, AM P39547, Howick Group, Great Barrier Reef (after Lowry & Stoddart, 1992).

Male (sexually dimorphic characters). Based on paralectotype, male, 9 mm, AM P39548. *Antennae 1–2* with calceoli. *Antenna 2* slightly more than half length of body. *Gnathopod 2* palm and dactylus minute.

Habitat. Scavenger living on coral and sandy patches between coral, 6 to 32 m depth.

Remarks. *Ichnopus tenuicornis* is a widespread scavenger in tropical Australia. It differs from other lysianassoids on the GBR as discussed in the remarks under *I. capricornus*.

Distribution. *Australia*. Queensland: Bet Reef (current study); Thursday Island (current study); Howick Group (Haswell 1879a); Lizard Island (Lowry & Stoddart 1992; current study); Flynn Reef (current study);

Fitzroy Reef (current study); Mooloolaba (current study). Western Australia: North West Shelf (Lowry & Stoddart 1992). Northern Territory: Oxley Island (Lowry & Stoddart 1992).

Nagada Lowry & Stoddart, 1995

Nagada uwedoae Lowry & Stoddart, 1995
(Figs 5, 6)

Nagada uwedoae Lowry & Stoddart, 1995: 154, figs 34–36. —Lowry & Stoddart, 2003: 282 (catalogue).

Type locality. Outer Barrier between Dam Awan (Rasch Passage) and Wongad Island, Astrolabe Bay, Papua New Guinea (5°08.59'S 145°49.65'E), 290 m depth.

Material examined. 1 ovigerous female, AM P69472 (JML 81/26-11-4); 48 specimens AM P69474 (QLD 630); 3 specimens AM P69475 (QLD 631); 1 specimen AM P69476 (QLD 671); 22 specimens AM P69477 (QLD 673); 16 specimens AM P69478 (QLD 748); many specimens AM P69480 and 1 female, AM P78943 (QLD 766); many specimens, AM P69479 (QLD 767); many specimens, AM P69481 (QLD 775); 5 specimens, AM P50744 (QLD 952); 11 specimens, AM P51116 and 2 specimens, AM P52655 (QLD 953); 127 specimens, AM P51120 and 8 specimens, AM P58342 (QLD 954); 285 specimens, AM P50746 (QLD 955/SEAS); 28 specimens, AM P57616 (QLD 1055); 11 specimens, AM P50754 (QLD 1073); 16 specimens, AM P51123 (QLD 1075); 105 specimens, AM P50757 (QLD 1076); 154 specimens, AM P51121 (QLD 1078); 8 specimens, AM P50760 (QLD 1093); 45 specimens, AM P50762 (QLD 1096).

Description. Based on ovigerous female (2 eggs), 2.5 mm, AM P69472 and female, 3.2 mm, AM P78943.

Head and body. *Body* without dorsal carina. *Head* lateral cephalic lobes rounded, with apically rounded margins; eyes ovate. *Antenna 1* subequal to antenna 2; peduncle article 1 not produced, peduncular article 1 without anterodistal lobe, without posterodistal spine; article 2 short, without anterodistal lobe or posterodistal spine; article 3 short; flagellum with weak 2-field callynophore, robust setae absent on proximal articles, calceoli absent; accessory flagellum with 3 articles. *Antenna 2* less than 40% of body length; peduncle without brush setae, calceoli absent. *Epistome/upper lip* fused, weakly sinuous. *Mandible* molar a setose tongue; palp attached midway, article 3 without A3-setae. *Maxilla 1* outer plate with setal-teeth in 7/4 crown arrangement (see Remarks); setal-tooth 7, left and right symmetrical, cuspidate distally; palp distal margin with apical robust setae and serrations. *Maxilliped* inner plates poorly developed, not reaching half the length of the outer plate; outer plates without apical robust setae; palp 4-articulate, article 4 well developed.

Pereon. *Gnathopod 1* simple; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis without setae along anterior margin; ischium long (length 2.4 x breadth); carpus long (length 2.2 x breadth), distinctly longer than propodus, without posterior lobe; propodus margins tapering; dactylus complex, with 2 large subterminal spines and row of short spines along posterior margin. *Gnathopod 2* chelate; carpus longer than (1.7 x) propodus; palm obtuse; dactylus minute. *Pereopod 4* coxa with well developed posteroventral lobe. *Pereopod 5* coxa equilobate; basis distinctly longer than broad. *Pereopod 7* basis posterodistally produced.

Pleon. *Epimeron 3* posterodistal corner rounded. *Urosomite 1* with anterodorsal notch and slightly rounded boss. *Uropod 1* rami subequal. *Uropod 2* rami subequal, inner ramus with slight marginal constriction. *Uropod 3* without plumose setae on rami; outer ramus 2-articulate, article 2 long, inner ramus extending beyond article 1 of outer ramus. *Telson* subequal in length and breadth, entire, without dorsal robust setae, with 2 apical robust setae.

Male (sexually dimorphic characters). Based on paratype male, 2.1 mm, AM P41607. *Antennae 1–2* with calceoli. *Antenna 1* flagellum with strong 2-field callynophore.

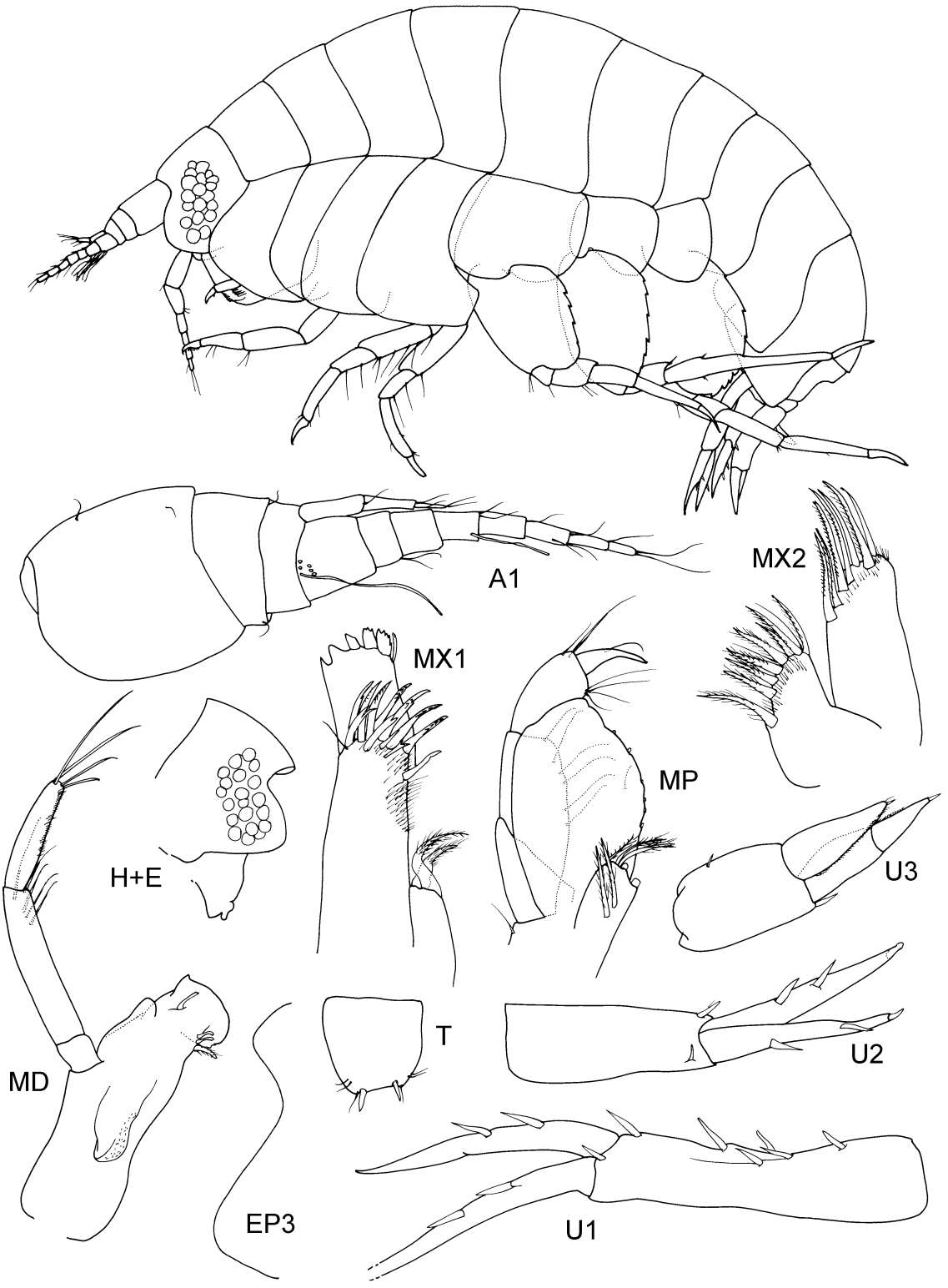

FIGURE 5. *Nagada uwedoae* Lowry & Stoddart, 1995, whole animal, female, 3.2 mm, AM P78943, Boot Reef, Queensland; remainder, female, 2.5 mm, AM P69472, Lizard Island, Great Barrier Reef.

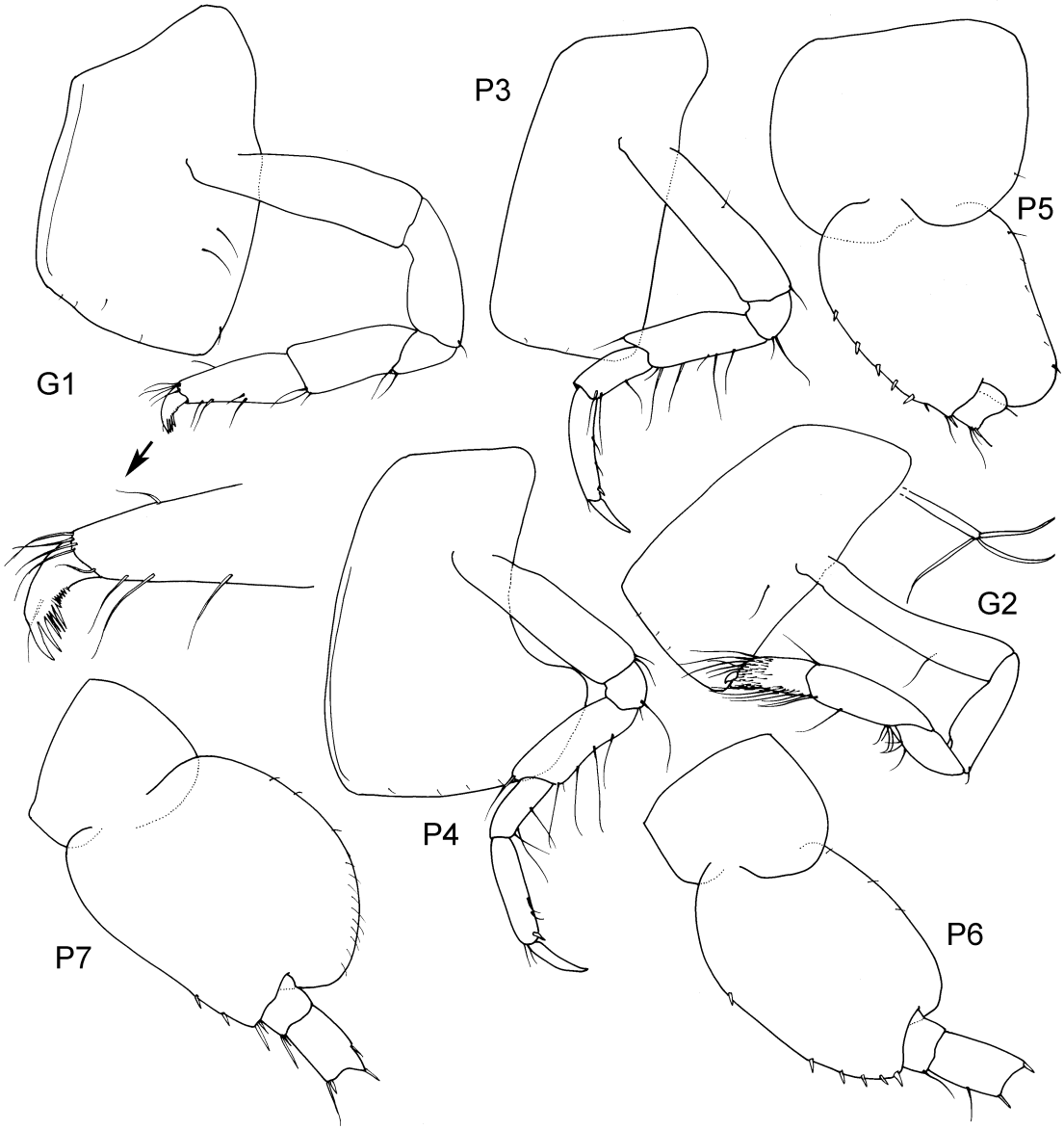

FIGURE 6. *Nagada uwedoae* Lowry & Stoddart, 1995, female, 2.5 mm, AM P69472, Lizard Island, Great Barrier Reef.

Habitat. Scavenger living on muddy bottoms from the littoral to the continental slope, in 15 to 500 m depth.

Remarks. The illustrated specimen has the uropod 3 inner ramus slightly shorter than the outer ramus; in the holotype the rami are subequal. We have seen some variation in the relative lengths of these rami but the inner ramus is always longer than article 1 of the outer ramus and always shorter than the entire outer ramus. The presence of 12 setal-teeth on the maxilla 1 outer plate of the illustrated specimen seems to be an individual aberration. Other Australian specimens have the normal 11 setal-teeth in a 7/4 crown arrangement. *Nagada uwedoae* occurs from northern Papua New Guinea along the east coast of Australia from the northern Great Barrier Reef to Tasmania (Lowry & Stoddart 1995, 2003). It can be separated from other lysianassoid species on the GBR by the combination of head and body without scattered setae, gnathopod 1 simple and the posteroventral corner of the third epimeron broadly rounded.

Distribution. *Australia*. Queensland: Ashmore Reef, Boot Reef, Great Detached Reef, Portlock Reef (current study); Lizard Island (current study). New South Wales (Lowry & Stoddart 2003). Tasmania (Lowry & Stoddart 2003). *Papua New Guinea*. Astrolabe Bay (Lowry & Stoddart 1995).

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