



## Urohaustoriidae\*

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### Abstract

The family Urohaustoriidae Barnard & Drummond, from the Great Barrier Reef was examined. Two species in separate genera were recorded. Both species, *Tottungus solivagus* and *Urohaustorius drummondiae* are new to science.

**Key words:** Amphipoda, Urohaustoriidae, Great Barrier Reef, Australia, taxonomy, new species, *Tottungus solivagus*, *Urohaustorius drummondiae*.

### Introduction

The Urohaustoriidae Barnard & Drummond, 1982, are fossorial amphipods, which, although they live in shallow water, are generally blind, or nearly so (Barnard & Clark 1982). They are an important group because of their abundance and obscure taxonomy (Barnard & Drummond 1982), and are often sampled during ecological impact surveys and population ecology studies. They are confined to Australian waters, except for one, *Huarpe escofeti* Barnard & Clark, 1982, found in Argentina and Chile.

The Urohaustoriidae of Australia were reviewed by Barnard & Drummond (1982), with subsequent additions to the family made by Barnard & Clark (1982), Berents (1985), and Barnard & Drummond (1991). Currently, the family contains 21 described species, divided between 8 genera, the vast majority of which belong to the genus *Urohaustorius* Sheard, 1936. The present study recorded just two species, both of which are new to science.

### Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the urohaustoriid world genera and species. All material is lodged in the Australian Museum, Sydney (AM). A set of colour plates, 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.

## Urohaustoriidae Barnard & Drummond, 1982

### *Tottungus* Barnard & Drummond, 1982

#### *Tottungus solivagus* sp. nov.

(Figs 1, 2)

**Type material.** Holotype, female (immature), 3 mm, AM P76891, beyond reef flat at North-east point, Orpheus Island, Queensland, Australia (~18°37'S 146°30'E), sand, 8 m, J.D. Thomas, 15 February 1989 (JDT/OPH 13).

**Additional material examined.** 1 specimen, AM P76890 (JDT/OPH 9); 1 specimen, AM P76892 (JDT/OPH 13).

**Type locality.** Beyond reef flat at North-east point, Orpheus Island, Queensland, Australia (~18°37'S 146°30'E).

**Etymology.** Named 'solivagus' from the latin meaning 'wandering alone', so called because all of the material examined for this species were single specimens sampled from different locations.

**Description.** Based on the holotype female, 3 mm, AM P76891.

**Head.** *Antenna 1* accessory flagellum 3–4 articulate; primary flagellum 5–6 articulate. *Antenna 2* peduncular article 4 main setal row with robust and slender setae, proximal part of row evenly angled. *Mandible* incisors almost simple, or with 2 weak teeth. *Maxilla 1* palp with apical setae only. *Maxilliped* palp article 2 inflated distally; article 4 blunt.

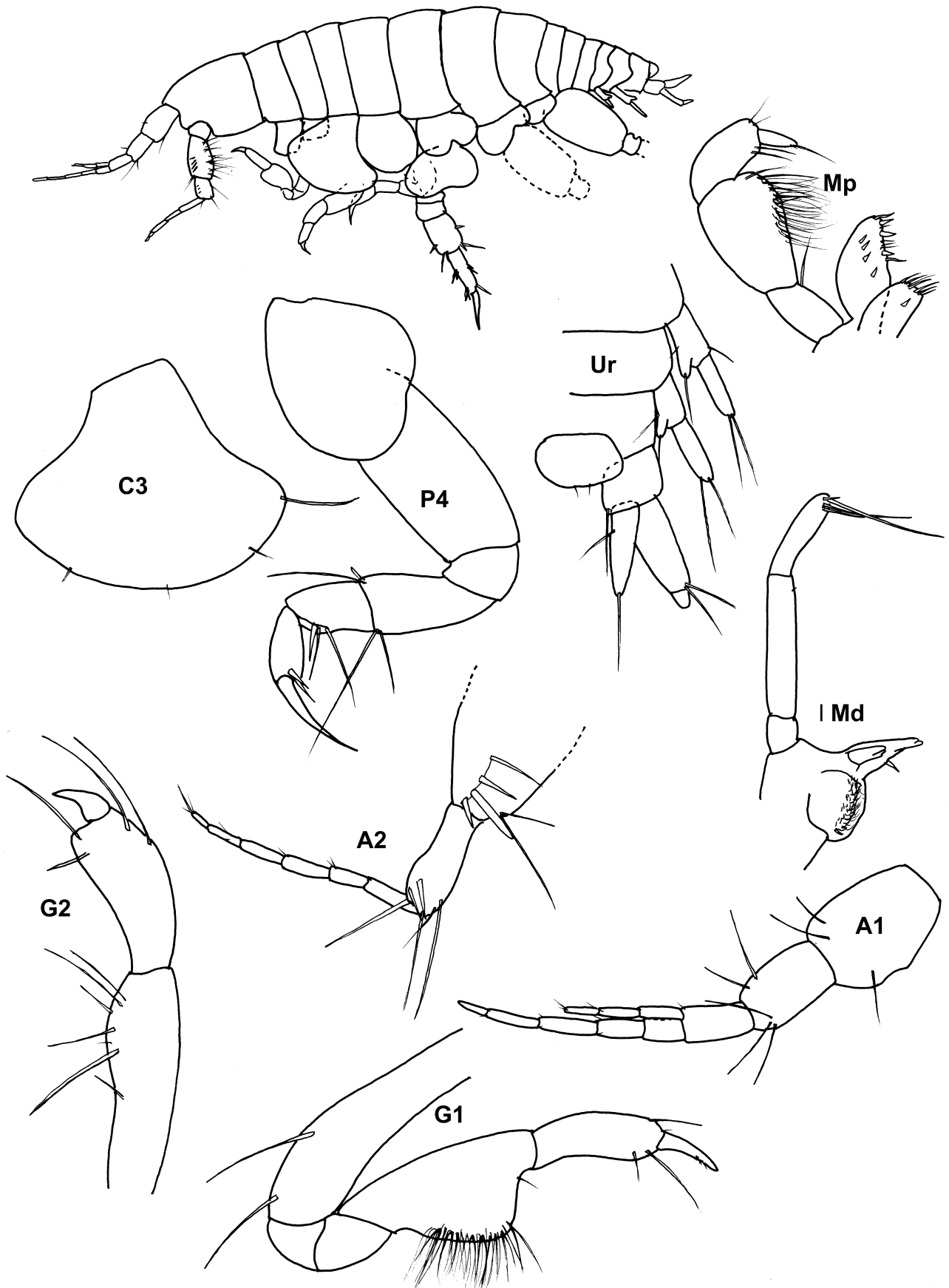
**Pereon.** *Gnathopod 1* simple; coxa small, anteroventrally curved, slightly larger than coxa 2; carpus with rounded posterior lobe. *Gnathopod 2* minutely subchelate, propodus palm slightly acute to transverse. *Pereopod 3* coxa large, larger than coxa 4. *Pereopod 4* coxa large, posteroventral lobe absent. *Pereopod 5* basis much broader than long, without mediofacial brush of setae; dactylus robust, as long as propodus, lacking robust setae. *Pereopod 6* basis moderately expanded, margins parallel; merus with few or no slender setae on posterior margin; dactylus well developed. *Pereopod 7* coxa without long posterior spine; basis fully expanded, with only slender setae along posteroproximal margin; dactylus well developed, without robust setae.

**Pleon.** *Epimeron 2* subequal in size to epimeron 3, posteroventral corner subquadrate or with small spine, more setose than epimeron 3. *Epimeron 3* posteroventral corner narrowly rounded. *Uropod 1* inner ramus shorter than outer ramus, fused to peduncle. *Uropod 2* inner ramus shorter than outer ramus, fused to peduncle. *Uropod 3* outer ramus 2-articulate, inner ramus slightly shorter than article 1 of outer ramus. *Telson* broader than long, slightly emarginate to entire.

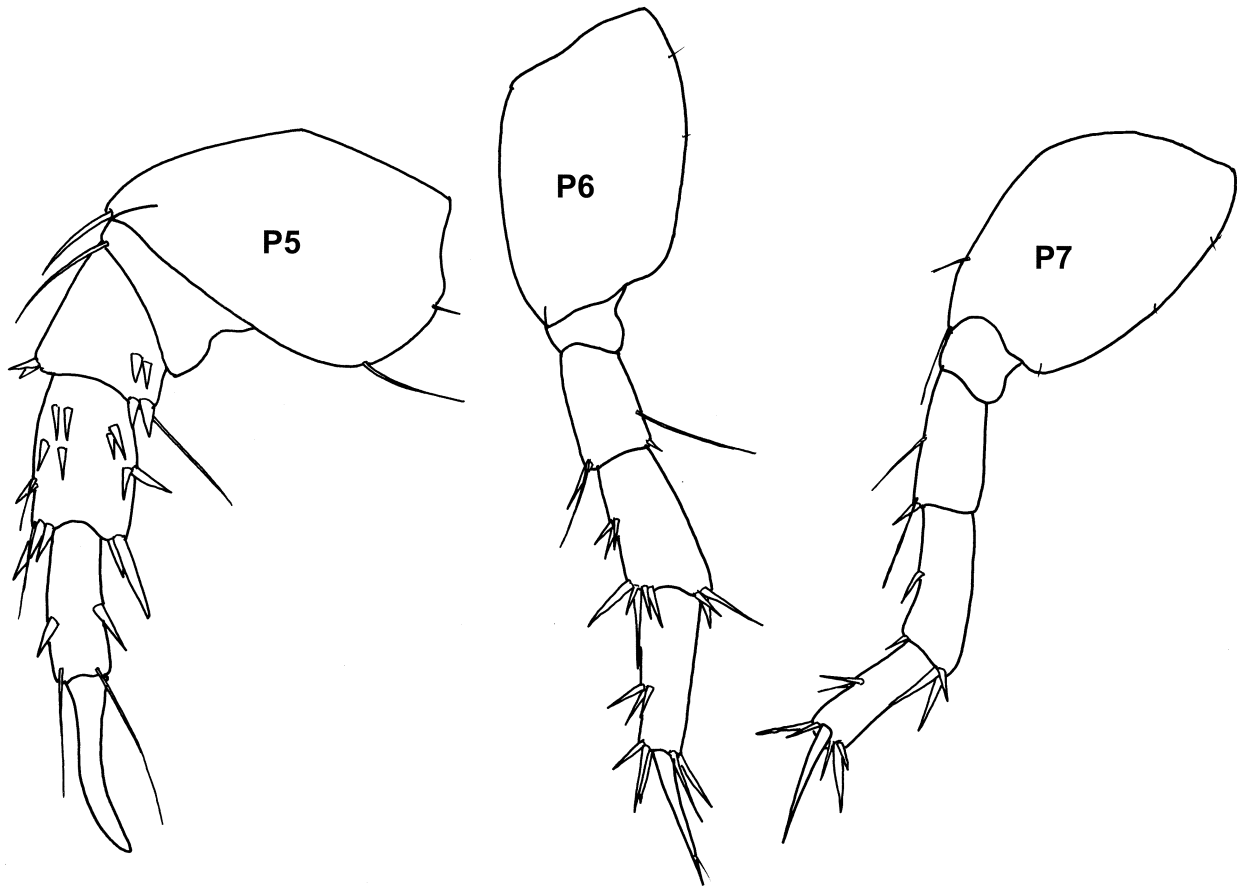
**Habitat.** Fossorial, in shallow-water marine sand and rubble.

**Remarks.** This new species is quite similar to its congener, *Tottungus tungus*. It may be distinguished by the shape of pereopods 5–7. In *Tottungus solivagus* the basis of pereopod 5 is much broader than long, while being as long as broad in *T. tungus*. The remaining articles of pereopod 5 are, by contrast, slightly broader in *T. tungus* than in the present species. The posterior margin of the basis of pereopods 6 and 7 are not as rounded, while the remaining articles appear more slender in the *T. solivagus* than in *T. tungus*. The new species also displays fewer robust setae on pereopods 5–7 than *T. tungus*.

**Distribution.** *Australia:* Queensland: Orpheus Island (current study).



**FIGURE 1.** *Tottungus solivagus* sp. nov., holotype female (immature), 3 mm, AM P76891, North-east Point, Orpheus Island, Great Barrier Reef.



**FIGURE 2.** *Tottungus solivagus* sp. nov., holotype female (immature), 3 mm, AM P76891, North-east Point, Orpheus Island, Great Barrier Reef.

### *Urohaustorius* Sheard, 1936

#### *Urohaustorius drummondae* sp. nov.

(Figs 3–5)

**Type material.** Holotype, ovigerous female, 3.8 mm, AM P27186, in front of research station, Lizard Island, Queensland, Australia (14°41'S 145°27'E), medium-fine sand on vey low-intertidal sand flat, P.N. Slattery & J. Oliver, September 1977 (PS 1).

**Additional material examined.** 22 specimens, 1.3–5 mm, AM P27187 (PS 1); 8 specimens, 1.2–4 mm, AM P76888 (PS 1); 1 specimen AM P76889 (PS 1) 15 specimens, 1.8–6 mm, AM P25539 (PS 22.5-1).

**Type locality.** In front of the research station, Lizard Island, Queensland, Australia (14°41'S 145°27'E).

**Etymology.** Named for Margaret Drummond for her enormous contribution to urohaustoriid taxonomy.

**Description.** Based on holotype, ovigerous female, 3.8 mm, AM P27186.

**Head.** *Antenna 1* peduncular article 1 setal row with only slender setae, setal row proximal pair of setae plumose; accessory flagellum 6 -articulate; primary flagellum 7 -articulate. *Antenna 2* peduncular article 4 main setal row with only slender setae, proximal part of row evenly angled; peduncle article 5 not bulbous in male. *Mandible* incisors almost simple or with 2 weak teeth. *Maxilla 1* palp with some setae displaced subapically. *Maxilliped* palp article 2 inflated distally; article 4 blunt, slightly inflated distally.

**Pereon.** *Gnathopod 1* simple; coxa small, subrectangular or trapezoidal, subequal in size to coxa 2. *Gnathopod 2* minutely chelate, propodus palm obtuse. *Pereopod 3* coxa large, larger than coxa 4. *Pereopod 4* coxa with weak, acute posteroventral lobe. *Pereopod 5* basis without mediofacial brush of setae; dactylus with robust setae, arranged in a single row. *Pereopod 6* basis fully expanded; merus with slender setae on posterior margin not continuous to apex, a small gap occurs between distal most setae and robust seta at corner; dactylus vestigial, shrouded by robust setae. *Pereopod 7* coxa without long posterior spine; basis fully expanded, basis with only slender setae along posteroproximal margin; dactylus vestigial, shrouded by robust setae.

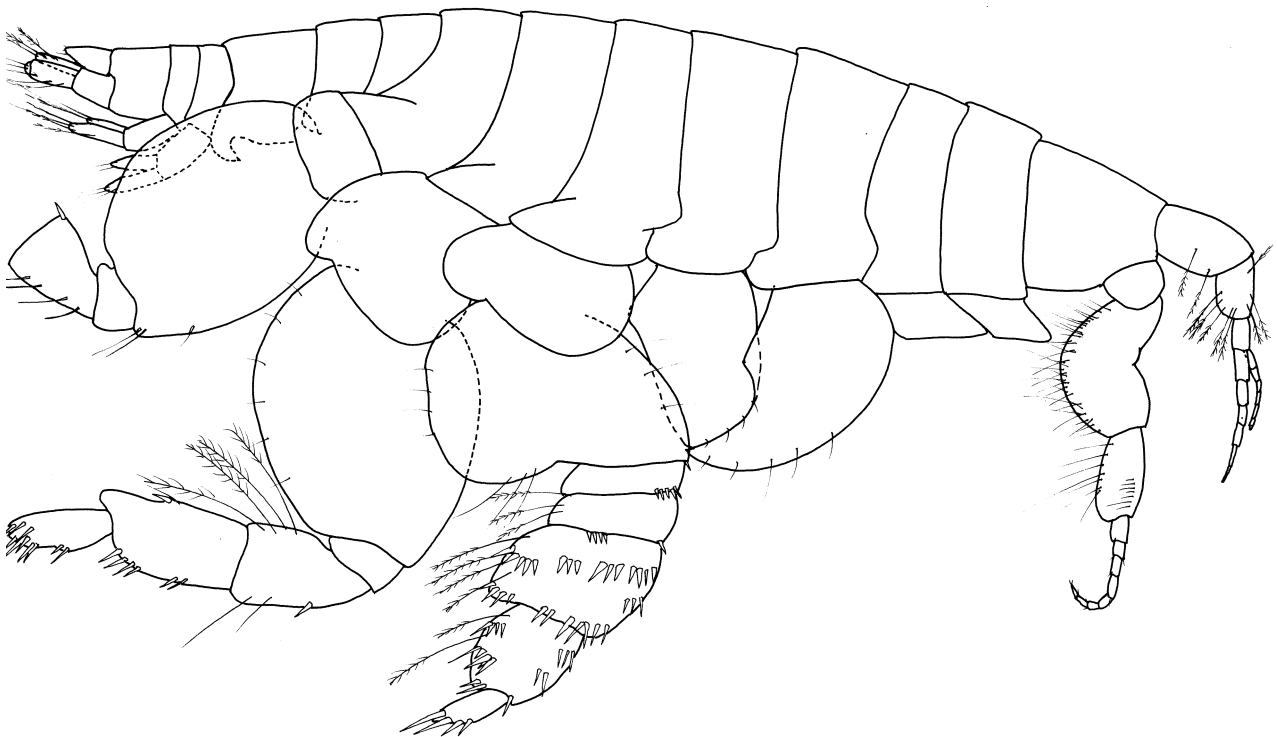
**Pleon.** *Epimeron 2* posteroventral corner broadly rounded, more setose than epimeron 3. *Epimeron 3* posteroventral corner with anteriorly curved hook. *Uropod 1* inner ramus shorter than outer ramus, not fused to peduncle. *Uropod 2* inner ramus shorter than outer ramus, not fused to peduncle. *Telson* subequal in length and breadth or broader than long, entire.

**Habitat.** Fossorial, in shallow-water marine sand.

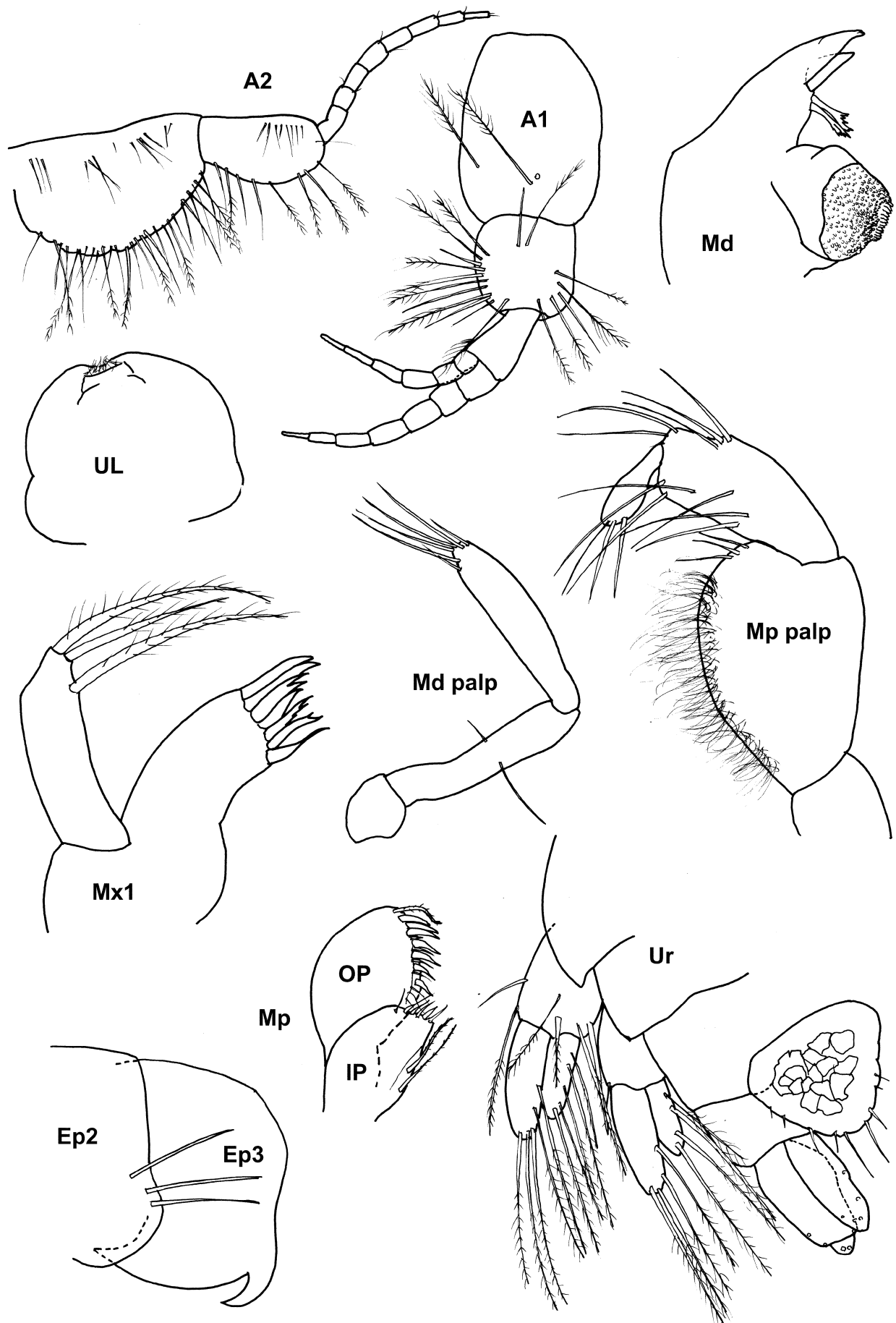
**Remarks.** There appears to be some variation in the arrangement of robust setae on the dactylus of pereopod 5 in this species. While these are usually arranged in a single row, a few specimens display a paired arrangement, nearly always with one seta smaller than the other.

This species is immediately recognisable by the hook on the ventral margin of epimeron 3. No other species of urohaustoriid exhibits this unusual feature, the purpose of which is unknown at this time. *Urohaustorius drummondiae* is otherwise very similar to both *Urohaustorius halei* Barnard & Drummond, 1982, and *U. metungi* Fearn-Wannan, 1968. It differs from *U. halei* in the relative lengths of the uropod 1 rami. It differs from *U. metungi* only in the presence of the posteroventral hook on epimeron 3.

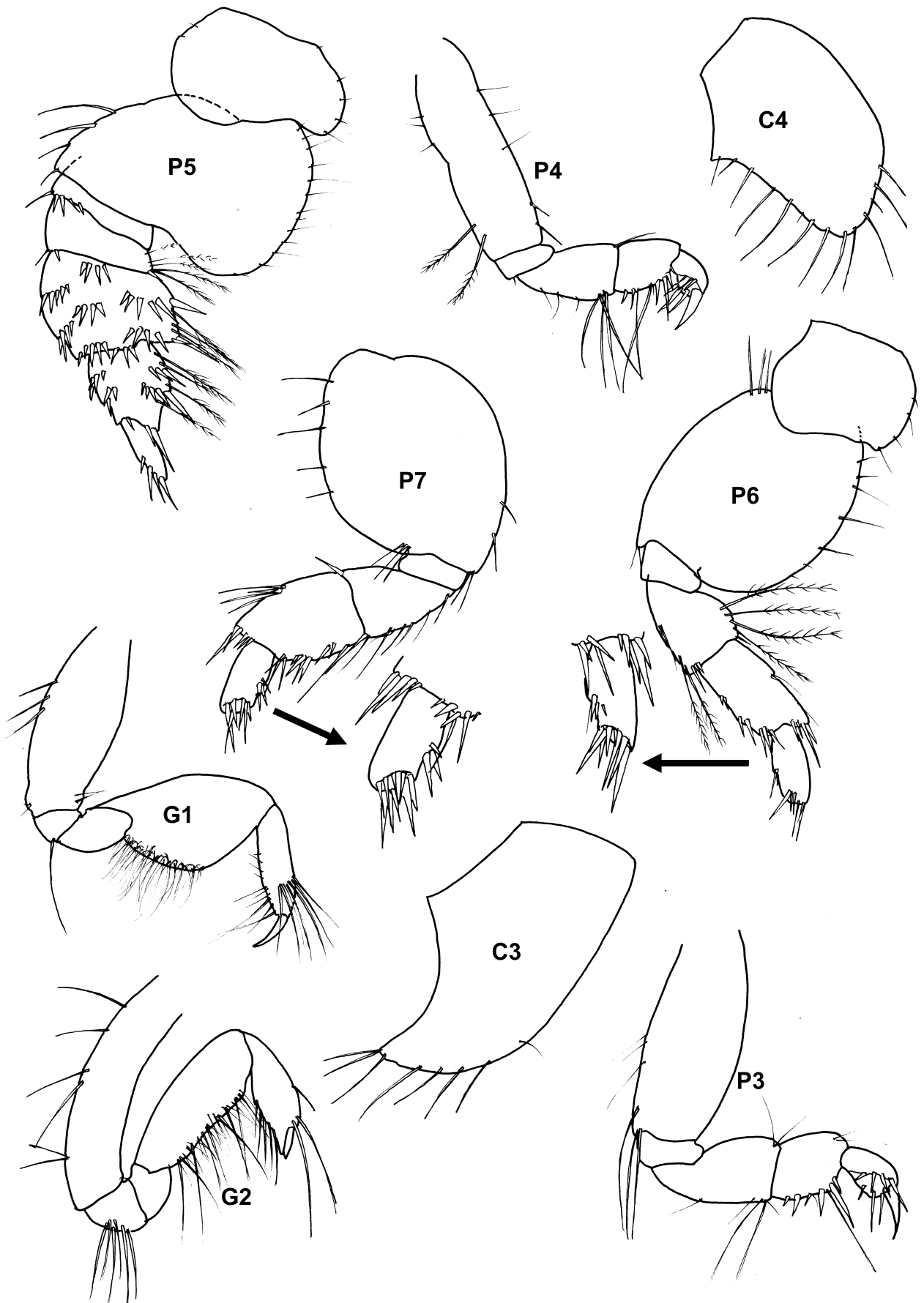
**Distribution.** *Australia:* Queensland: Lizard Island (current study).



**FIGURE 3.** *Urohaustorius drummondae* sp. nov., female (ovigerous), 3.8 mm, AM P27186, from Lizard Island, Great Barrier Reef.



**FIGURE 4.** *Urohaustorius drummondiae* sp. nov., female (ovigerous), 3.8 mm, AM P27186, from Lizard Island, Great Barrier Reef.



**FIGURE 5.** *Urohaustorius drummondiae* sp. nov., female (ovigerous), 3.8 mm, AM P27186, from Lizard Island, Great Barrier Reef.

## References

- Barnard, J.L. & Clark, J. (1982) *Huarpe escofeti*, new genus, new species, a burrowing marine amphipod from Argentina (Crustacea, Amphipoda, Urohaustoriidae). *Journal of Crustacean Biology*, 2, 281–295.
- Barnard, J.L. & Drummond, M.M. (1982) Gammaridean Amphipoda of Australia, Part V: Superfamily Haustorioidea. *Smithsonian Contributions to Zoology*, 360, i–iv, 1–148.
- Barnard, J.L. & Drummond, M.M. (1991) *Nepelle nelera*, a new genus and species of marine amphipod from Australia (Crustacea: Amphipoda: Urohaustoriidae). *Memoirs of the Museum of Victoria*, 52, 277–282.
- Berents, P.B. (1985) *Warragaia rintouli* n.gen. n.sp. (Amphipoda: Urohaustoriidae) from New South Wales, Australia. *Records of the Australian Museum*, 36, 253–258.
- Dallwitz, M.J. (2005) Overview of the DELTA System. <http://delta-intkey.com> Last accessed (8/9/2007).
- Fearn-Wannan, H.J. (1968) Littoral Amphipoda of Victoria. Part 1. *Proceedings of the Royal Society of Victoria*, 81, 31–58.
- Lowry, J.K. & Myers, A.A. (2009) Foreword. In: Lowry, J.K. & Myers, A.A. (Eds), Benthic Amphipoda of the Great Barrier Reef, Australia. *Zootaxa*, 2260, 17–108.
- Sheard, K. (1936) Amphipods from a South Australian reef. Part I. *Records of the South Australian Museum*, 5, 445–455.