



Paracalliopiidae*

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Abstract

Two described species of paracalliopiid are recorded from the Great Barrier Reef. *Doowia dexterae* Barnard & Drummond is known from southern and northern Queensland. *Yhi yindi* Barnard & Thomas is known only from the type locality, Orpheus Island, Great Barrier Reef, Queensland, Australia.

Key words: Crustacea, Amphipoda, Paracalliopiidae, Great Barrier Reef, Australia, taxonomy, *Doowia dexterae*, *Yhi yindi*

Introduction

The Paracalliopiidae are fossorial amphipods with a post Gondwanan distribution. This paper reports on two described species, *Doowia dexterae* Barnard & Drummond, 1987 and *Yhi yindi* Barnard & Thomas, 1991. Recent collections of *Doowia dexterae* from Lizard Island extend the distribution of this species from the southern to northern Queensland. *Yhi yindi* Barnard & Thomas, 1991 is known only from the type locality, Orpheus Island.

Materials and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the paracalliopiid genera and species of the world. Material was hand-collected on scuba and is lodged in the Australian Museum, Sydney (AM), Museum Victoria, Melbourne (NMV) and the National Museum of Natural History, Washington, DC (USNM). A set of colour pictures, 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.

Paracalliopiidae Barnard & Karaman, 1982

Doowia Barnard & Drummond, 1987

Doowia dexterae Barnard & Drummond, 1987

(Figs 1, 2)

Doowia dexterae Barnard & Drummond, 1987:123, figs 5–6. —Lowry & Stoddart, 2003: 205 (catalogue).

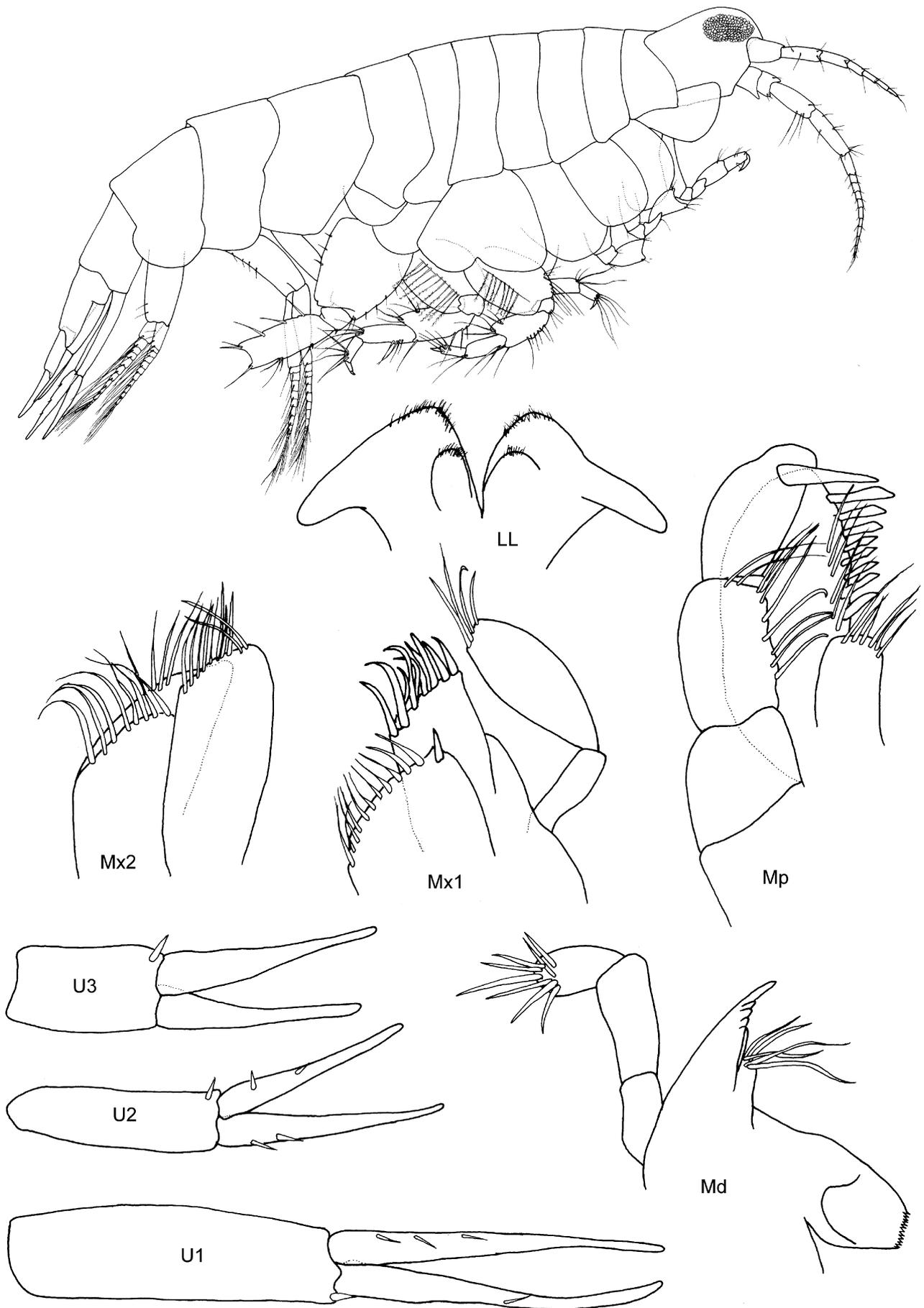


FIGURE 1. *Doowia dexterae* Barnard & Drummond 1987, male, 3.4 mm, AM P7783, Lizard Island Great Barrier Reef.

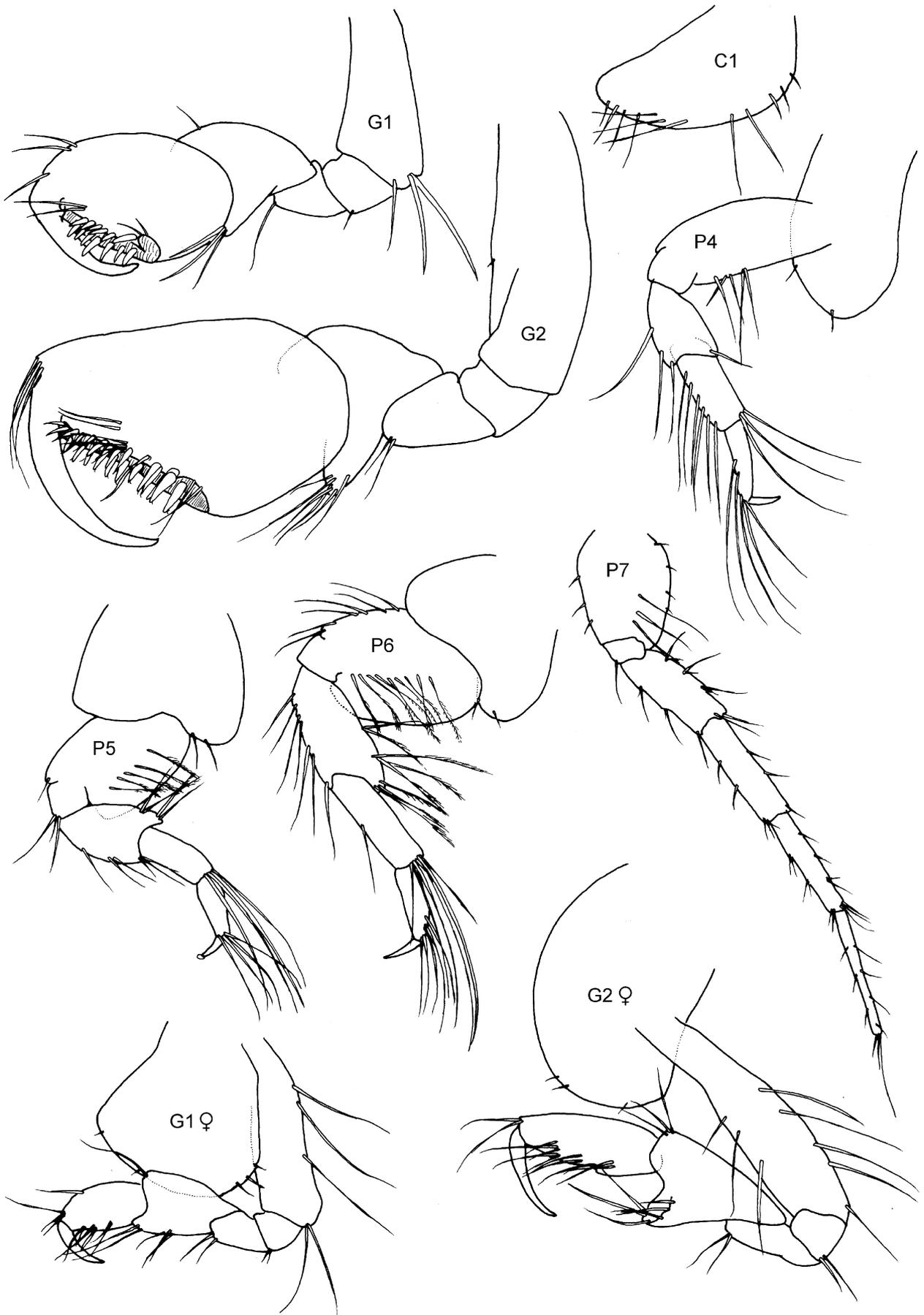


FIGURE 2. *Doowia dexterae* Barnard & Drummond 1987, male, 3.4 mm, AM P77831; female, 3.5 mm AM P77832, Lizard Island, Great Barrier Reef.

Material examined. Male, dissected, 3.4 mm, 3 slides, AM P77831 (QLD 36); female, dissected, 3.5 mm, 2 slides AM P77832 (QLD 36); 67 specimens, AM P27189 (PS 2-2); many specimens, AM P27188 (PS 2-2); many specimens, AM P28479 (QLD 36); 16 specimens, AM P25537 (PS 2-5); 15 specimens, AM P25538 (PS 22.5-1); 50 unsexed, AM P77833 (SEL/LZI 5-1).

Type locality. Redcliffe Beach, near Brisbane, Queensland, Australia (27°14'S 150°07'E).

Description. Based on male, 3.4 mm, AM P77831.

Head. Head lateral cephalic lobe absent. Eyes ovoid, adpressed at top of head. *Antenna 1* peduncle article 1 subequal to article 2, subequal to article 3; article 2 subequal to article 3; flagellum with 4 articles; accessory flagellum absent. *Antenna 2* flagellum with 12 articles. *Maxilla 1* inner plate with 1 apical seta, with row of medial setae. *Maxilla 2* inner plate with oblique setal row. *Mandible* palp present; article 1 shorter than article 2, subequal to article 3; article 2 longer than article 3; without basofacial setae; molar triturative; accessory setal row with 5 setae. *Lower lip* mandibular lobes apically rounded, with extensions directed axially. *Maxilliped* palp exceeding outer plate.

Pereon. *Coxae 1–7* subequal to depth of pereonites. *Gnathopod 1* coxa with rounded distal expansion; carpus shorter than propodus; propodus subchelate, not distally expanded; dactylus reaching length of palm. *Gnathopod 2* stout; carpus shorter than the propodus, cup-shaped, carpal lobe absent; propodus subchelate, palm subacute, entire, palm lined with robust setae, without robust setae defining posterodistal corner of palm; dactylus reaching length of the palm. *Pereopods 3–6* fossorial. *Pereopod 7* much longer than pereopods 5–6; basis posterior margin straight, smooth, posterodistal corner rounded, extending part way along ischium.

Pleon. *Epimera 2–3* posterodistal corners subquadrate. *Urosomites 2–3* fused. *Uropod 1* rami subequal in length; inner ramus with 3 robust setae, outer ramus with 1 robust seta. *Uropod 2* rami subequal in length; inner ramus with 1 robust seta; outer ramus with 1 robust seta. *Uropod 3* peduncle elongate, twice as long as broad; rami subequal in length; rami without robust setae. *Telson* subquadrate, with medial setae.

Female (sexually dimorphic characters). Based on female, 3.5 mm, AM P77832. *Gnathopod 1* carpus longer than propodus, carpal lobe present; propodus twice as long as broad. *Gnathopod 2* slender; carpus longer than the propodus, carpus subtriangular, carpal lobe present, lobe about as long as broad; propodus twice as long as broad, palm acute.

Habitat. Sandy beaches, surf zone.

Remarks. Differences between *Doowia dexterae* and *Doowia cooma* Barnard & Drummond, 1987, the two species of *Doowia* described from Australia, are very slight. The GBR material described here is larger than original material of *D. dexterae* but has less robust setae on the uropods, a character identified as increasing in number with size. The reduced number of robust setae on the uropods in combination with the 8 oblique setae on the inner plate of maxilla 2 (3 oblique setae in *D. dexterae*) would appear to align the GBR material with *D. cooma* Barnard & Drummond, 1987. However, the female GBR material examined has well developed carpal lobes on gnathopods 1–2 as in *D. dexterae* (weakly developed in *D. cooma*). The male gnathopod 1 propodus palm in GBR material has a greater number of robust setae as in *D. dexterae*. I consider these later two characters to be more important for differentiating *D. dexterae* from *D. cooma*, and therefore assign the GBR species to *D. dexterae*.

Distribution. *Australia.* Queensland: Redcliffe Beach, near Brisbane (Barnard & Drummond 1987), South Bribie Island (Barnard & Drummond 1987), Lizard Island (current study).

***Yhi* Barnard & Thomas, 1991**

***Yhi yindi* Barnard & Thomas, 1991**

(Figs 3, 4)

Yhi yindi Barnard & Thomas, 1991: 288, figs 1–3. —Lowry & Stoddart, 2003: 206 (catalogue).

Material examined. Not collected in the current survey.

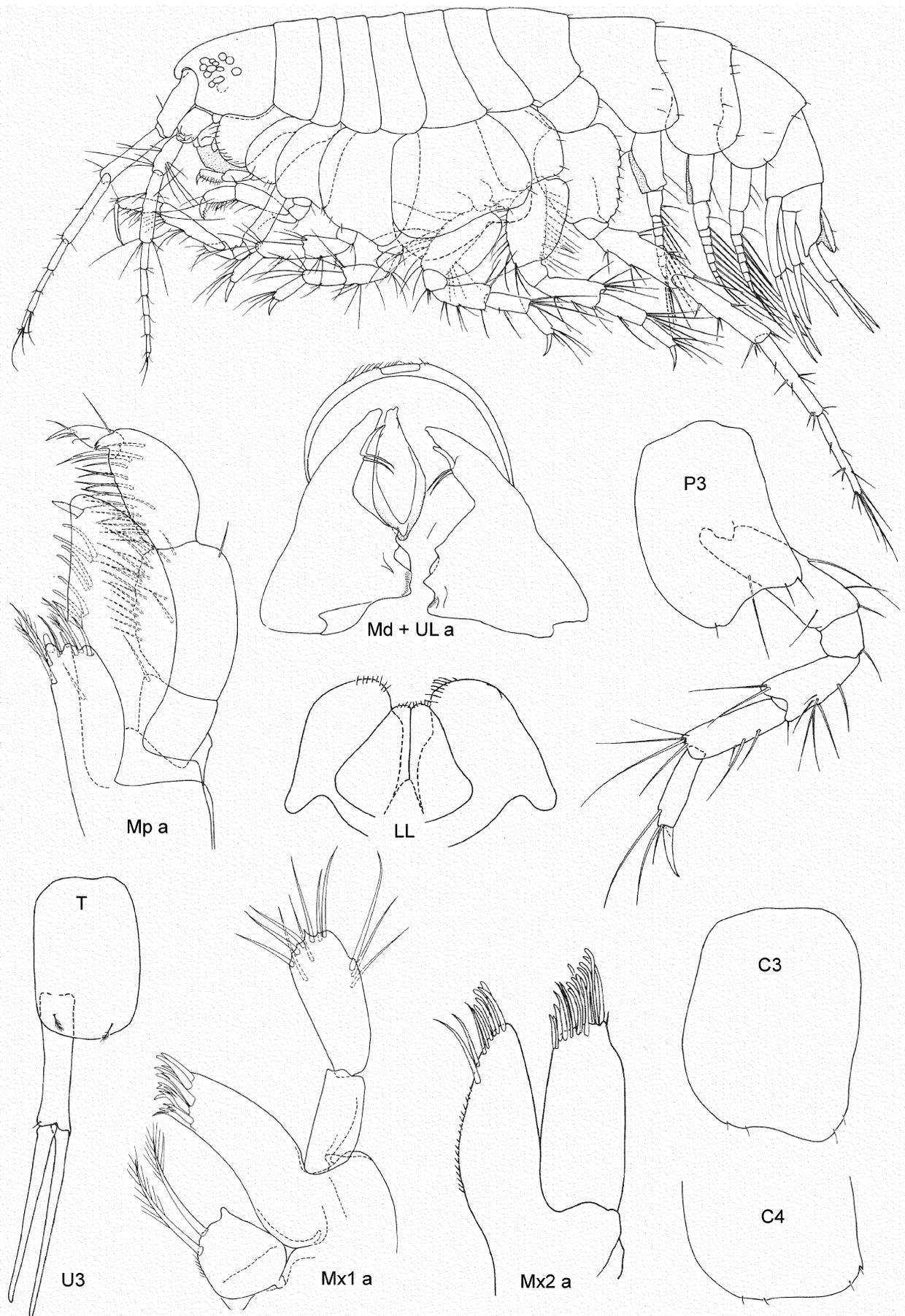


FIGURE 3. *Yhi yindi* Barnard & Thomas, 1991, holotype, female, 1.5 mm, NMV J20847; 'a' female, 1.61 mm, USNM 253539, Orpheus Island, Great Barrier Reef (after Barnard & Thomas 1991).

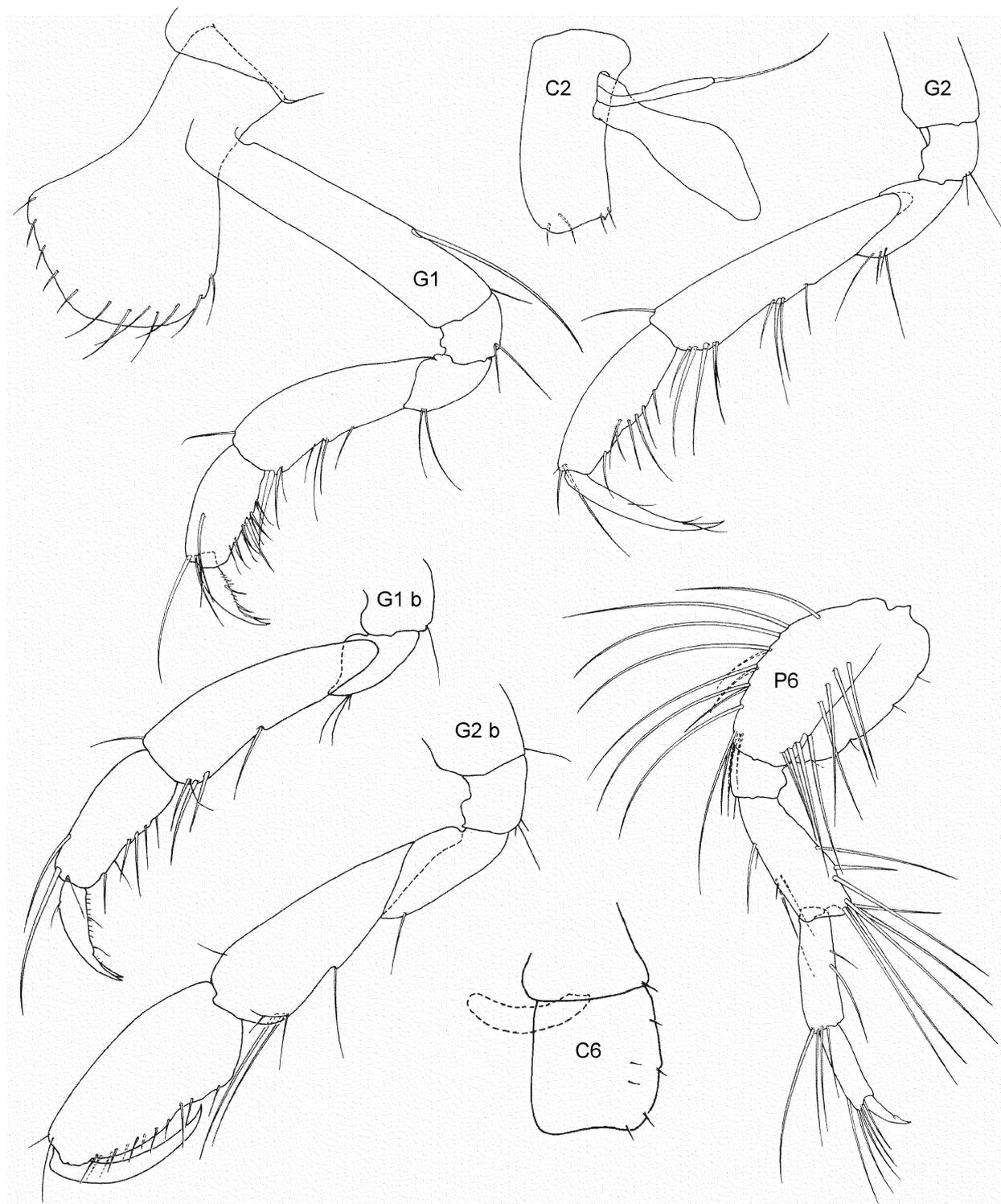


FIGURE 4. *Yhi yindi* Barnard & Thomas, 1991, holotype, female, 1.5 mm, NMV J20847; 'b' male, 1.52 mm, USNM 253538, Orpheus Island, Great Barrier Reef (after Barnard & Thomas 1991).

Type locality. Orpheus Island, Great Barrier Reef, Queensland, Australia.

Description. Based on holotype, female, 1.5 mm, NMV J20847, paratype, male, 1.5 mm, USNM 253538.

Head. Head lateral cephalic lobe not developed; eyes separated, positioned laterally, ommatidia scattered. *Antenna 1* peduncle article 1 subequal to article 2, subequal to article 3; article 2 subequal to article 3;

flagellum with 4 articles; accessory flagellum absent. *Antenna 2* flagellum with 6 articles. *Maxilla 1* inner plate without apical setae, with 2 large plumose medial setae. *Maxilla 2* inner plate without medial setae, without oblique setal row. *Mandible* palp absent; molar triturative; accessory setal row with 2 setae. *Lower lip* mandibular lobes apically rounded, with extensions directed facially. *Maxilliped* palp exceeding outer plate.

Pereon. *Coxae* 1–7 subequal to depth of pereonites. *Gnathopod 1* coxa with rounded distal expansion; carpus approximately 3 x longer than propodus; propodus weakly subchelate, not distally expanded; dactylus reaching length of palm. *Gnathopod 2* slender; carpus longer than the propodus, carpal lobe absent; propodus simple; dactylus reaching the length of the palm. *Pereopods 3–6* fossorial. *Pereopod 7* much longer than pereopods 5–6; basis posterior margin straight, dentate, basis posterodistal corner rounded, extending part way along ischium.

Pleon. *Epimera 1–2* posterodistal corners rounded. *Epimeron 3* posterodistal corner rounded, without ventral robust setae. *Urosomites 2–3* fused. *Uropod 1* rami subequal in length; outer ramus with 2 robust seta. *Uropod 2* rami subequal in length; rami without robust setae. *Uropod 3* peduncle elongate, twice as long as broad; rami subequal in length, or inner ramus longer than outer ramus; rami without robust setae. *Telson* subquadrate, with apical setae.

Habitat. Coral-algal sand, 4 m depth.

Remarks. This species, currently the only one in the genus, is distinguished from other Paracalliopiidae by the separated non-contiguous laterally positioned eyes, the absence of a mandibular palp and the anteriorly directed coxa 1.

Distribution. *Australia.* Queensland: Orpheus Island (Barnard & Thomas 1991).

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