



Platyischnopidae*

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Abstract

Two genera and two species of Platyischnopidae are recorded from the Great Barrier Reef: *Platyischnopus mam* Barnard & Drummond and a new species *Tomituka eumilli* **sp. nov.**

Key words: Crustacea, Amphipoda, Platyischnopidae, Great Barrier Reef, Australia, taxonomy, new species, *Platyischnopus mam*, *Tomituka eumilli*

Introduction

Platyischnopidae are fossorial amphipods readily identifiable by the cone-shaped rostrum covered with apical sensory pits. When present in samples, platyischnopids may number in the 10's to 100's of individuals (pers. obs.). *Platyischnopus mam* Barnard & Drummond, 1979, was originally described from New South Wales. This new record extends this species distribution further north from temperate to tropical waters. *Tomituka eumilli* **sp. nov.** is the second species described in this Australian endemic genus.

Material and methods

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

Platyischnopidae Barnard & Drummond, 1979

Platyischnopus Stebbing, 1888

Platyischnopus mam Barnard & Drummond, 1979

(Figs 1, 2, Pl. 6A)

?*Platyischnopus mirabilis*. —Chilton, 1922: 4, fig. 1 (not Stebbing, 1888).

Platyischnopus mam Barnard & Drummond, 1979: 11, figs 6–8. —Barnard & Karaman, 1991: 642. —Lowry & Stoddart, 2003: 242.

Material examined. 27 unsexed AM P75486 (JDT/OPH 6); 1 male AM P75487 (JDT/OPH 7); 4 unsexed AM P75488 (JDT/OPH 11); 1 male, 8.5 mm, AM P75482 (JDT/OPH 13); 2 unsexed AM P75489 (JDT/OPH 13); 1 unsexed AM P75490 (JDT/OPH 13); 1 male dissected, 5.7 mm, 3 slides, AM P75481 (JML Plankton tow night Oct 1979); 4 unsexed AM P75483 (JML Plankton tow night Oct 1979); 9 unsexed, AM P75484 (JML 16.10.9); 4 unsexed, AM P75845 (JML 20.10.2); 1 unsexed AM P70692 (QLD 1640); 2 unsexed, photo 1, AM P70811 (QLD 1654); 1 unsexed, AM P70868 (QLD 1654); 1 male, 7.0 mm, whole animal drawing, AM P70838 (QLD 1666); 2 unsexed, AM P70839 (QLD 1666); 1 female dissected, 6.5 mm, 3 slides, AM P75480 (QLD 1672); 3 unsexed, AM P70909 (QLD 1672); 1 unsexed, AM P75491 (QLD 1999).

Type locality. Jibbon point, off Cronulla, New South Wales, Australia (34°05'S 151°13'E).

Description. Based on female, 6.5 mm, AM P75480.

Head. *Head* with lateral keel; rostrum with apical constriction, or with weak apical constriction. *Eyes* present. *Antennae 1* article 2 elongate, greater than 1.1 times article 1; flagellum 6 articles; accessory flagellum 3-articulate. *Antennae 2* brush setae present (in male); flagellum with 4 articles. *Upper lip* subovoid, apically rounded. *Mandible* accessory setal row absent; mandibular molar subovoid, mandibular molar large, (covering more than 1/2 of medial surface); mandibular palp article 2 subequal to article 3, article 2 without setae, article 3 with apical setae. *Lower lip* mandibular lobes weakly produced, apically rounded, with lobes directed laterally. *Maxilla 1* palp short, extending to end of outer plate, with 3 apical setae; inner plate with 1 seta. *Maxilla 2* outer plate with many apical setae; inner plate with many apical setae. *Maxilliped* dactylus unguis well developed, articulate.

Pereon. *Gnathopod 1* chelate; coxa large, similar in size to coxa 2, broader than long, anterior margin produced, apically rounded; carpus longer than propodus, around five times as long as broad; propodus about twice as long as broad, chela short, obtuse projection as broad as long. *Gnathopod 2* chelate; carpus longer than propodus, twelve times as long as broad; propodus about four times as long as broad, chela long, obtuse projection twice as broad as long. *Pereopods 3–4* articles rectilinear; dactylus simple, about 1/3 length of the propodus. *Pereopod 3* coxa tapering distally. *Pereopod 4* coxa anteriodistal margin not produced, posteroventral lobe absent. *Pereopod 5* coxa posterior lobe anterior margin straight or weakly so; basis about twice as long as broad, posterodistal lobe well developed. *Pereopod 6* coxa posterior lobe short, extending less than half the length of the basis, with robust setae; basis subovoid; merus broader than long. *Pereopod 7* basis posterior margin acutely produced; carpus as long as broad; propodus 5 x as long as broad; dactylus short, half the length of the propodus.

Pleon. *Pleonites 1–3* without dorsal teeth. *Epimeron 1* posterodistal corner rounded. *Epimera 2–3* posterodistal corner subquadrate. *Uropod 1* peduncle with 7 robust setae. *Uropod 2* peduncle with 4 robust setae; inner ramus shorter than outer ramus. *Uropod 3* outer ramus well developed, article 2 with 3 sets of lateral robust setae. *Telson* notched, without dorsofacial robust setae, lateral robust setae present, with a pair of apices.

Habitat. Sublittoral sandy bottoms.

Remarks. The specimens from Lizard and Orpheus Island, Queensland agree with the original material described from Jibbon point, in New South Wales. The only difference is the presence of two robust setae on the peduncle of uropod 1 in the Queensland material while the New South Wales material has one robust setae.

Adult males specimens, recorded here for the first time, have an elongate antennae 2 which may be two thirds to longer than the length of the body and an anterodorsal notch on urosomite 1. In the larger adult specimens (7.0 mm) the pereopod 7 basis develops a more acute posterior attenuation (Fig. 1, P7).

There also appears to be some variation in the apical constriction of the rostrum, with a few of specimens with a weak and others a strong constrictions. This may however be an artefact of shrivelling upon preservation, as the majority of specimens examined are without a constricted rostrum. The aberrant constricted material shows no other morphological variation from the type form.

Distribution. *Australia.* Queensland: Lizard Island; Fantome Island; Orpheus Island; One Tree Island (current study). New South Wales: Cronulla (Barnard & Drummond 1979).

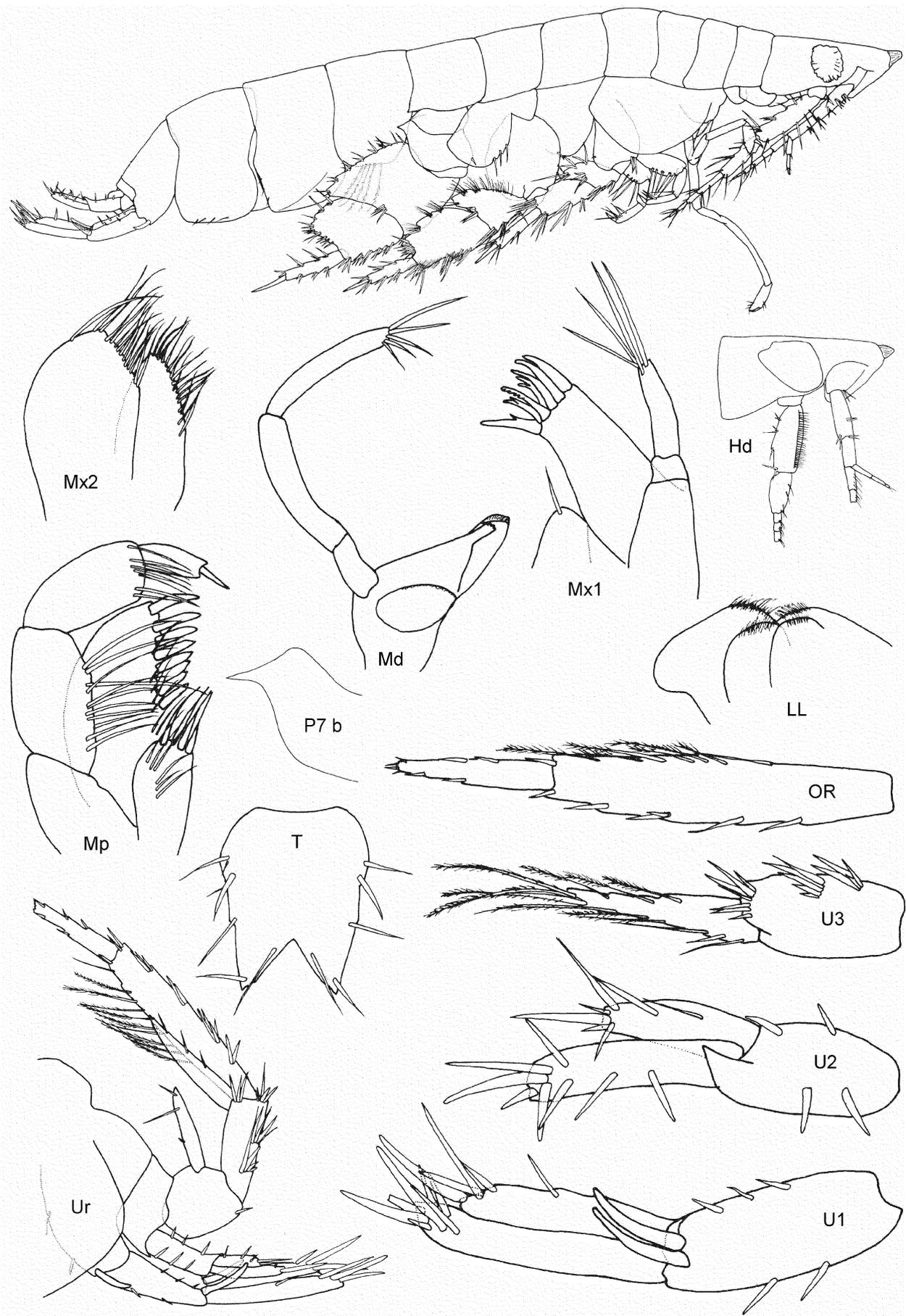


FIGURE 1. *Platyischnopus mam* Barnard & Drummond, 1979, female, 6.5 mm, AM P75480, Head, P7 and Ur male 7.0 mm, AM P70838, Lizard Island, Great Barrier Reef.

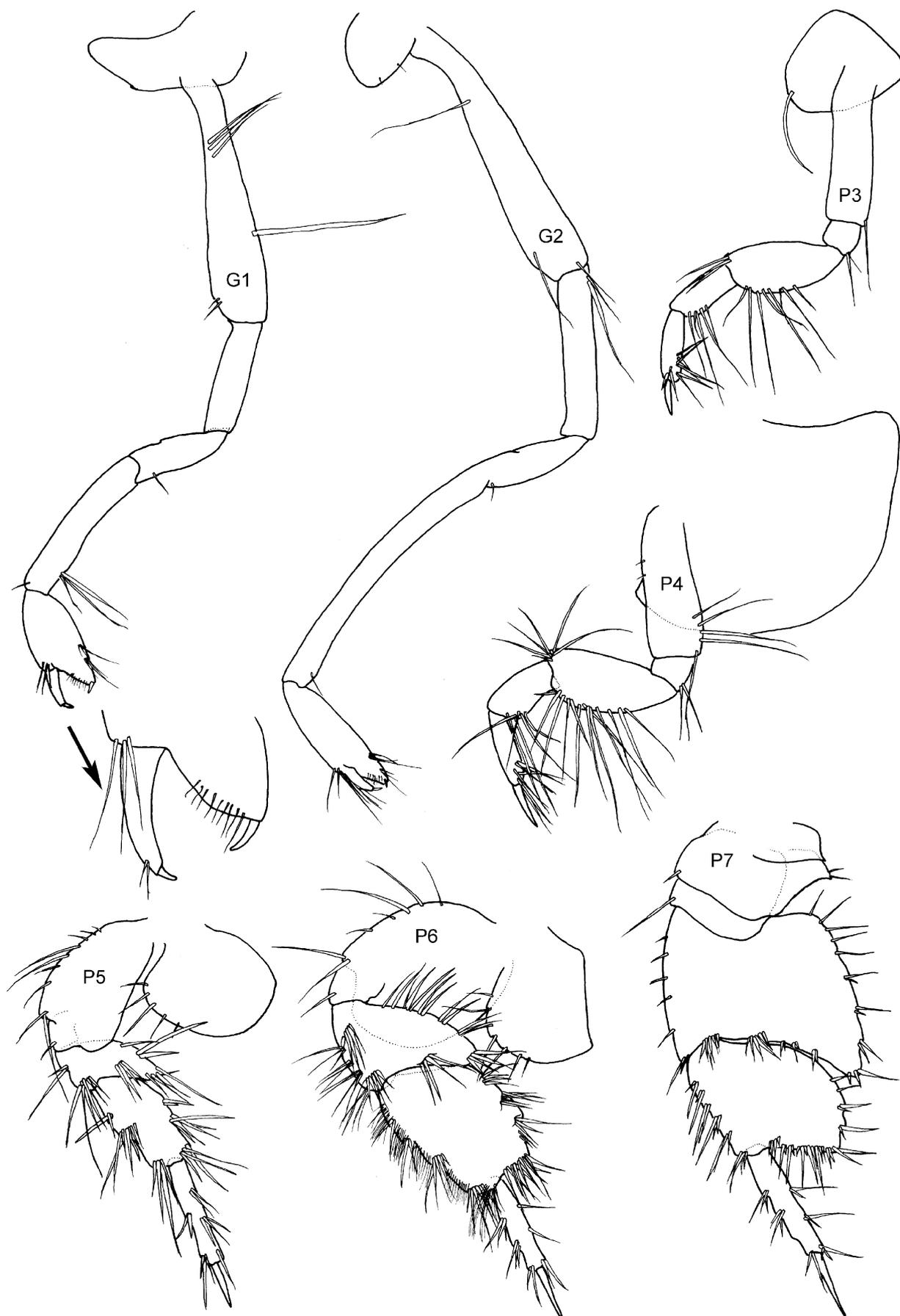


FIGURE 2. *Platyischnopus mam* Barnard & Drummond, 1979, female, 6.5 mm, AM P75480, Lizard Island, Great Barrier Reef.

Tomituka Barnard & Drummond, 1979

***Tomituka eumilli* sp. nov.**

(Figs 3, 4)

Type material. Holotype, male (dissected), 1A, 4.5 mm, 3 slides, AM P75492, reef front, northern-most bay, Fantome Island (~18°41'10"S 146°31'08"E), sand sample, 3 m, J.D. Thomas, 14 February 1989 (JDT/OPH 11). Paratypes: female, 1B, 5.6 mm, 3 slides, AM P75493, same station data; 14 specimens (4 males, 10 females), AM P75494, same station data.

Type locality. Reef front, northern-most bay, Fantome Island, Queensland, Australia (~18°41'10"S 146°31'08"E).

Etymology. Eumilli is the indigenous name for Fantome Island, the type locality.

Description. Based on holotype, male, 4.5 mm, AM P75492.

Head. *Head* with lateral keel; rostrum without apical constriction. *Eyes* present. *Antennae 1* article 2 elongate, greater than 1.1 times article 1; flagellum with 6 articles; accessory flagellum 2-articulate. *Antennae 2* brush setae present (in male); flagellum with 39 articles. *Upper lip* subovoid, apically rounded. *Mandible* accessory setal row absent; mandibular molar subovoid, large, (covering more than 1/2 of medial surface); mandibular palp article 2 subequal to article 3, article 2 with 1 seta, article 3 with apical and medial setae. *Lower lip* mandibular lobes weakly produced, apically rounded, with lobes directed posteriorly. *Maxilla 1* palp short, extending to end of outer plate, with 3 apical setae; inner plate setae absent. *Maxilla 2* outer plate with many apical setae; inner plate with many apical setae. *Maxilliped* dactylus well developed, articulate.

Pereon. *Gnathopod 1* chelate; coxa large, similar in size to coxa 2, broader than long, anterior margin produced, apically rounded; carpus longer than propodus, around six times as long as broad; propodus about three times as long as broad, chela short, obtuse projection broader than long. *Gnathopod 2* chelate; carpus longer than propodus, six times as long as broad; propodus about three times as long as broad, chela short, obtuse projection broader than long. *Pereopods 3–4* articles rectilinear; dactylus simple, long, more than half the length of the propodus. *Pereopod 3* coxa expanded distally. *Pereopod 4* coxa anterodistal margin not produced, posteroventral lobe absent. *Pereopod 5* coxa posterior lobe anterior margin diagonal; basis slightly longer than broad, posterodistal lobe well developed. *Pereopod 6* coxa posterior lobe long, extending more than half the length of the basis, with robust setae; basis subovoid; merus about as broad as long. *Pereopod 7* basis posterior margin acutely produced; carpus 2 times as long as broad; propodus 5 times as long as broad; dactylus short, less than half the length of the propodus.

Pleon. *Pleonites 1–3* without dorsal teeth. *Epimeron 1* posterodistal corner rounded. *Epimeron 2* posterodistal corner with well developed tooth, posteroventral margin without notch. *Epimeron 3* posteroventral corner with well developed tooth; posteroventral margin with notch above distal tooth. *Uropod 1* peduncle with 7 robust setae. *Uropod 2* peduncle with 4 robust setae; inner ramus shorter than outer ramus. *Uropod 3* outer ramus article 2 slender, with 4 sets of lateral robust setae. *Telson* moderately cleft, with dorsofacial robust setae, lateral robust setae present, with 2 pairs of apices, apices subequal.

Habitat. Sublittoral sandy bottoms.

Remarks. *Tomituka eumilli* sp. nov. can be differentiated from *T. doowi* Barnard & Drummond, 1979 by the unstricted rostrum, which is strongly constricted in *T. doowi*. The accessory flagellum is 2-articulate in *T. eumilli* sp. nov. and 8-articulate in *T. doowi*. The maxilliped, mandibular palp article 2, maxilla 1 palp and maxilla 2 are less setose than those of *T. doowi*. In *T. eumilli*. there is no accessory setal row on the left or right mandible. In *Tomituka doowi* there are three setae in the accessory setal row and a large grinding surface on the adjacent to the incisor, which is not present on *T. eumilli* sp. nov.

In *Tomituka eumilli* the telson has less robust setae and is not as cleft as in *T. doowi*. The uropod 3 outer ramus article 2 in *Tomituka eumilli* is more robust and has lateral robust setae, than the article 2 of *T. doowi*, which is slender and without setae.

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

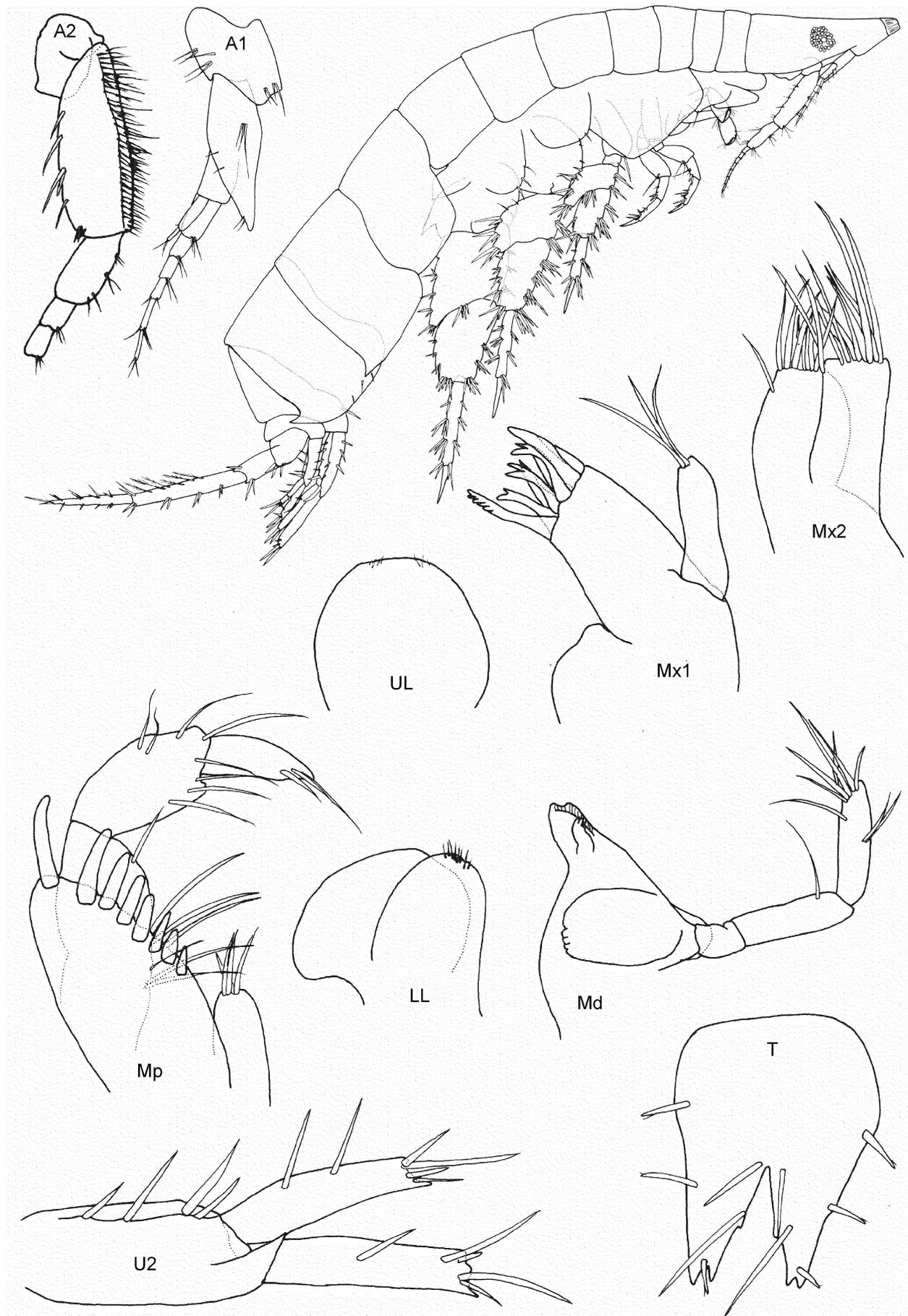


FIGURE 3. *Tomituka eumilli* sp. nov., holotype, male, 4.5 mm, AM P75492, Orpheus Island, Great Barrier Reef.

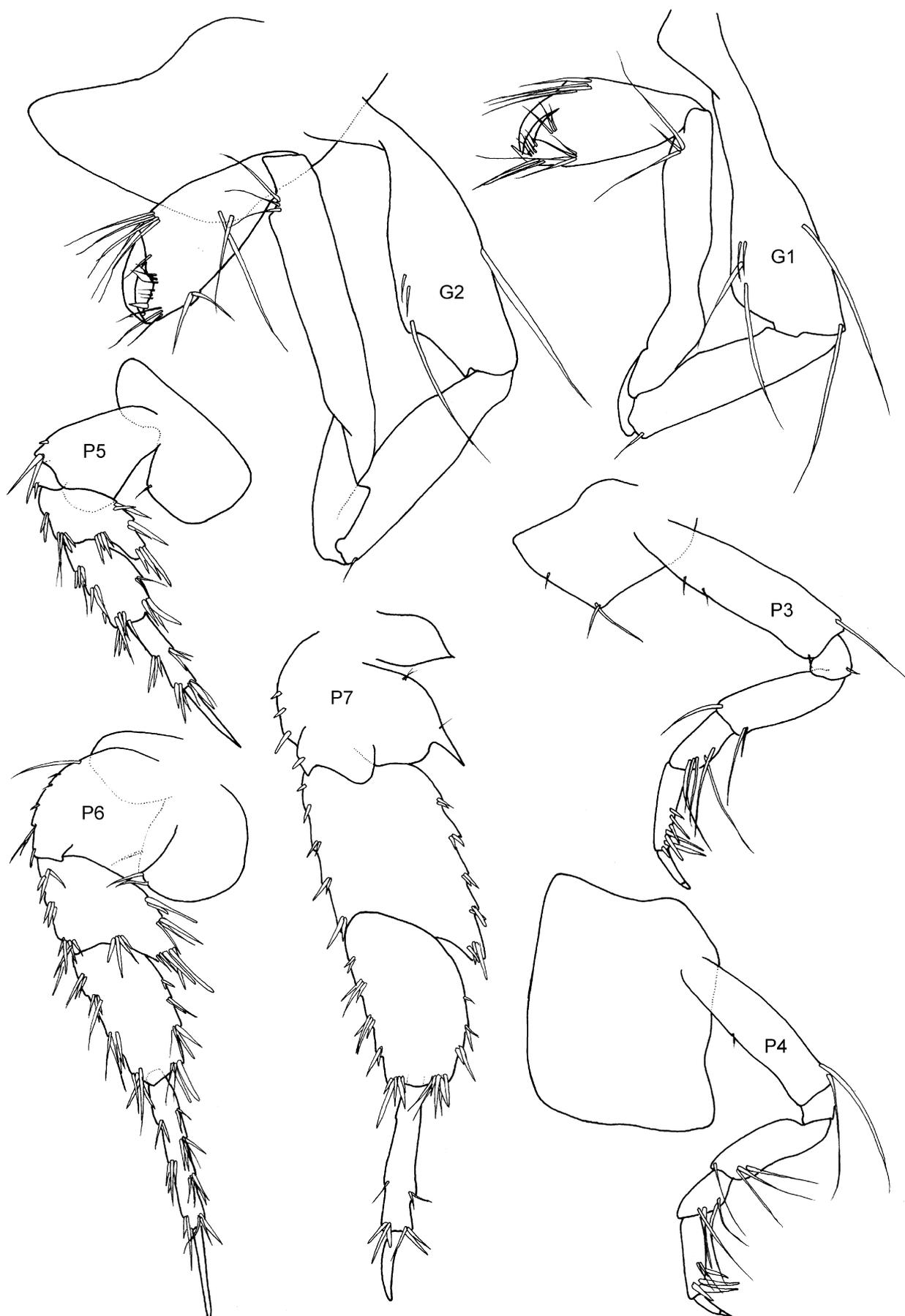


FIGURE 4. *Tomituka eumilli* **sp. nov.**, paratype, female, AM P75493, holotype, male, holotype, male 4.5 mm, AM P75492, Orpheus Island, Great Barrier Reef.

References

- Barnard, J.L. & Drummond, M.M. (1979) Gammaridean Amphipod of Australia, Part IV. *Smithsonian Contributions to Zoology*, 269, I–III, 1–69.
- Barnard, J.L. & Karaman, G.S. (1991) The families and genera of marine gammaridean Amphipoda (except marine gammaroids). *Records of the Australian Museum, Supplement*, 13, 1–866.
- Barnard, J.L. & Thomas, J.D. (1983) The Platyischnopidae of the Americas (Crustacea: Amphipod). *Smithsonian contributions to Zoology*, 375, 1–33.
- Chilton, C. (1922) Results of Dr. E. Mjobergs Swedish Scientific Expeditions to Australia 1910-13. XXXI. Amphipoda. *Kungliga Svenska Vetenskapsakademiens Handlingar*, 63, 1–11.
- Dallwitz, M.J. (2005) Overview of the DELTA System, <http://delta-intkey.com>, Last accessed (8/9/2007).
- 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.
- Lowry, J.K. & Stoddart, H.E. (2003) Crustacea: Malacostraca: Peracarida: Amphipoda, Cumacea, Mysidacea. *In* Beesley, P.L. & Houston, W.W.K. (Eds), *Zoological Catalogue of Australia*, Vol. 19.2B, 531 pp, Melbourne: CSIRO Publishing, Australia.
- Stebbing, T.R.R. (1888) Report on the Amphipoda collected by H.M.S. Challenger during the years 1873-1876. *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873-76, Zoology*, 29, 1–1737, pls 1–210.