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Eusiridae*

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

Abstract

An eusirid amphipod was found around Lizard Island on the Great Barrier Reef. It is described as *Tethygeneia* aff. *pacifica*. It has large eyes. Gnathopods 1 and 2 are subequal, their carpal lobes are only weakly produced, and carpus and propodus are subequal in length on both appendages. The telson is only weakly tapering distally and has wide rounded apices.

Key words: Crustacea, Amphipoda, Eusiridae, Great Barrier Reef, Australia, taxonomy, *Tethygeneia* aff. *pacifica*

Introduction

Tethygeneia pacifica was originally described from Hawaii by Schellenberg (1938) and later reported from other widely separated localities of the Indo-Pacific region (Madagascar, Society Islands, Red Sea and now the Great Barrier Reef). Specimens found in these locations slightly differ from each other and it is not clear if all these populations represent one single species.

Materials and methods

The description was generated from a DELTA database (Dallwitz 2005). 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). Illustrations were made using the methods described in Coleman (2003, 2006). 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.

Eusiridae Stebbing, 1888

Tethygeneia J.L. Barnard, 1972

Tethygeneia aff. *pacifica* (Schellenberg, 1938)

(Figs 1, 2, Pl. 3D)

Pontogeneia pacifica Schellenberg, 1938: 35–37, fig. 17. —Ruffo, 1938: 158–159. —J.L. Barnard, 1955: 5. —J.L. Barnard, 1970: 110, figs 62-64. —J.L. Barnard, 1971: 6, figs 29–30. —Ledoyer, 1967: 127, fig. 6. —Ledoyer, 1979:

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160. —Ruffo, 1969: 14–15.

Tethygeneia pacifica —J.L. Barnard, 1972: 198. —Ledoyer, 1983: 415, fig. 157. —Ledoyer, 1984: 59, fig. 28. —Myers, 1989: 69, fig. 2.

Tethygeneia ?pacifica. —Lyons & Myers, 1991: 600, fig. 2.

Material examined. 1 male, 4 mm, AM P71126 (QLD 1730); 9 unsexed, AM P78874 (SEL/LZI-1-1); 1 male, AM P78875 (SEL/LZI-2-2); 1 juvenile, AM P78876 (SEL/LZI-2-3); 4 females (ovigerous), 4 ?males, AM P78877 (SEL/LZI-2-3); 1 female (ovigerous), AM P78878 (SEL/LZI-2-6); 9 unsexed, AM P78879 (SEL/LZI-2-7); 7 unsexed, AM P78880 (SEL/LZI-3-2); 1 female (ovigerous), AM P78881 (SEL/LZI-5-1).

Type locality. Waikiki, Honolulu, Hawaii, North Pacific Ocean (~21°16'N 157° 49'W).

Description. Based on male, 4 mm, AM P71126.

Head. *Rostrum* present, short, pointed and dorsoventrally wide, half the length of first peduncular article of antenna 1. *Eyes* present, very large, subrectangular, dark pigmented in ethanol. *Antenna 1 and 2* calceoli present on peduncle and on flagellum. *Antenna 1* accessory flagellum absent (?); callynophore absent; flagellum with long aesthetascs. *Upper lip* entire. *Mandible* molar columnar, triturative, accessory setal row consisting of 4 plumose setae; incisor and lacinia mobilis multidentate; palp 3 articulate, article 1 shortest, article 2 weakly expanded distally, apically about 2 x as wide as article 3. *Lower lip* inner lobes absent; outer lobes contiguous. *Maxilla 1* inner plate setose along medial margin, with 4 plumose setae, outer plate with 11 serrate robust setae distally (serration of medial robust setae much finer than on outer robust setae); palp article 1 not expanded or drawn out into a tooth distally; article 2 only weakly expanded distally, 1.6 x as long as wide (not totally flat on the slide, slightly twisted, thus appears more slender in Fig. 1). *Maxilla 2* inner plate subequal with or slightly broader than outer; inner plate with slender medial setae and 2 stout, plumose setae, without oblique setal row.

Pereon. *Pereonites* smooth. *Gnathopod 1* subchelate; subequal to gnathopod 2; coxa weakly produced anteroventrally; carpus not cantilevered, shorter than propodus, without a lobe; propodus without robust setae along posterior margin (adults); dactylus narrowing distally, apically acute or subacute. *Gnathopod 2* subchelate; carpus not cantilevered, posterodistally lobed, shorter than propodus; propodus without robust setae along posterior margin (adults); dactylus narrowing distally, apically acute or subacute. *Pereopods 3–4* propodus simple, with slender setae posterodistally. *Pereopods 5–7* dactyli inner margins smooth.

Pleon. *Pleonites* smooth. *Epimeron 1* rounded posteroventrally, with inconspicuous notch; *epimeron 2* with sinuous posterior margin and pointed posteroventral angle; *epimeron 3* posteroventral margin smooth, corner subacutely produced. *Uropod 1* outer ramus shorter than inner. *Uropod 3* peduncle without dorsal robust setae; rami subequal in length. *Telson* as long as broad, cleft, with wide rounded lobes distally.

Variation. Some specimens from stations SEL/LZI-2-3 and SEL/LZI-3-2 have unpigmented eyes or pigments are washed out in ethanol. They agree in all other details with the remaining material.

Female (sexually dimorphic characters). None.

Habitat. Protected beaches, coral rubble with sand patches, encrusting algae. 0.3–3 m.

Remarks. The examined material is close to *Tethygeneia pacifica* (Schellenberg, 1938), described from Hawaii. Apart from Schellenberg's original descriptions, it also meets many details of the description given by J.L. Barnard (1970). For example the morphology of gnathopods 1 and 2 is similar in both article relations and setation, however, the eyes of Schellenberg's material are much smaller compared to the material studied herein. Myers (1989) described *T. pacifica* from the Society Islands. It differs in the following small details from the animals examined herein: the rather rounded shaped telson and the uropod 3 that bears long slender setae on only one ramus (vs both rami). Ledoyer described the species from Madagascar (1982) and New Caledonia (1984). Also in Ledoyer's material, although agreeing quite well with the Great Barrier Reef material, the long slender setulated setae on the uropod 3 rami are missing or are less developed (perhaps broken off?). Lyons & Myers (1991) described *Tethygenia* material from the Gulf of Aqaba (Red Sea) which they identified as *pacifica*, but with a question mark, as their material shows some differences: the first article of the maxilla 1 palp has a lateral projection; the telson lobes are tapering into rather narrow rounded lobes;

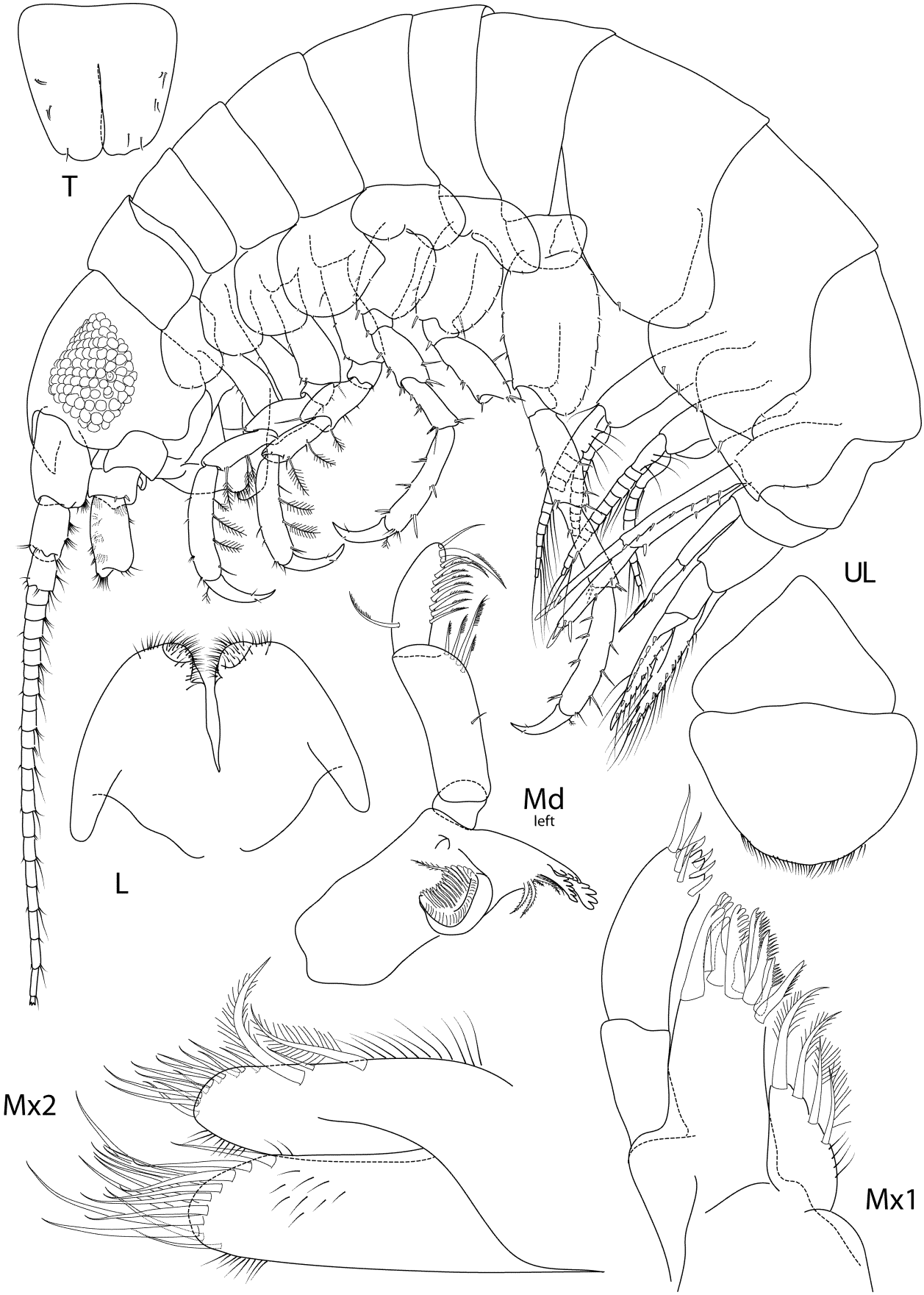

FIGURE 1. *Tethygeneia* aff. *pacifica* (Schellenberg, 1938), male, 4 mm, AM P71126, Mermaid Cove, Lizard Island, Great Barrier Reef.

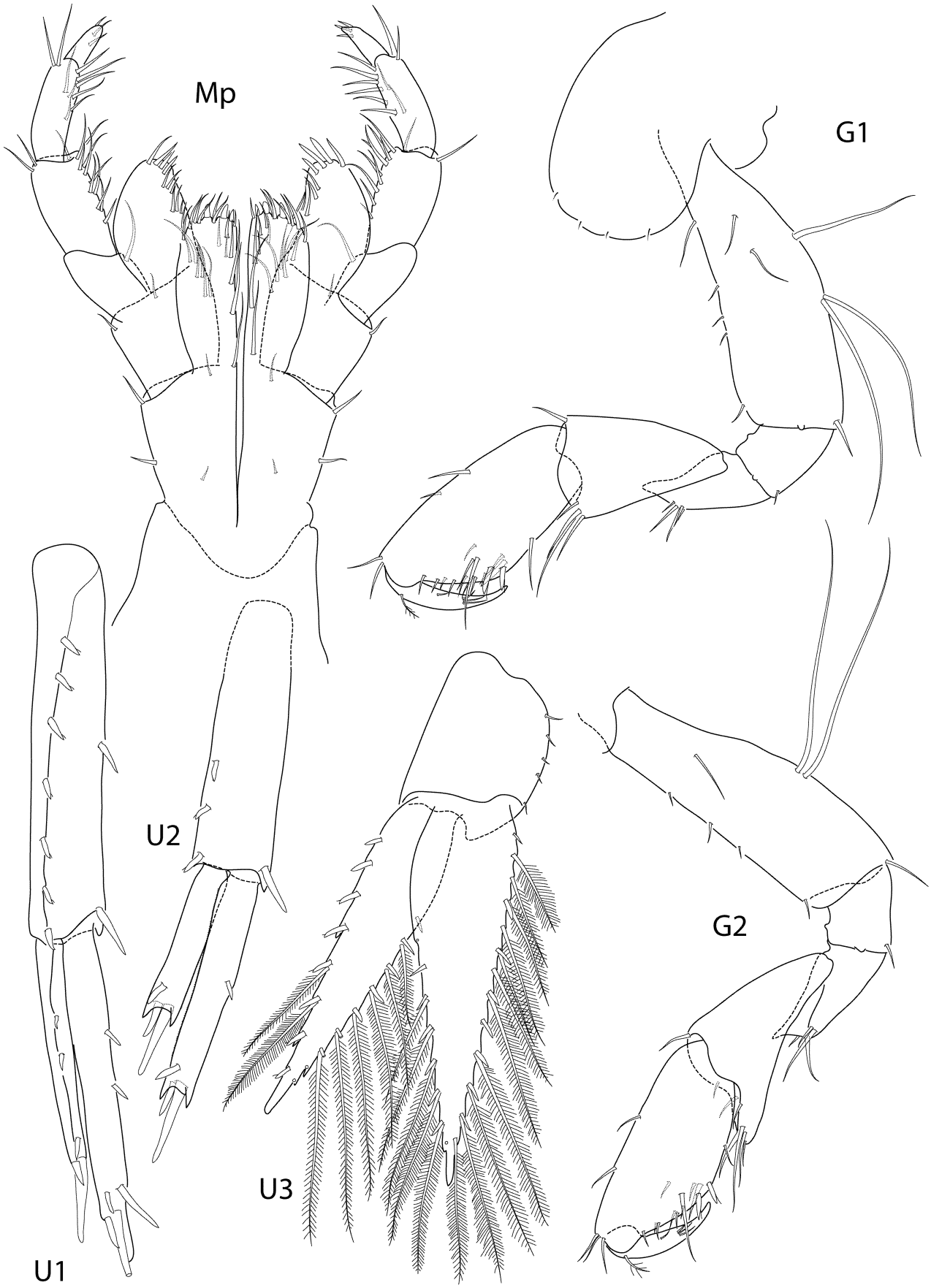

FIGURE 2. *Tethygeneia* aff. *pacifica* (Schellenberg, 1938), male, 4 mm, AM P71126, Mermaid Cove, Lizard Island, Great Barrier Reef.

epimeron 3 is not produced but has a notch on the posteroventral corner and the basis of pereopod 7 is wider and shorter. It is not clear yet if all these differences are just variability within one very widely distributed species or if there is a complex of very similar species.

Distribution. *Australia*. Queensland, Lizard Island (current survey). *New Caledonia* (Ledoyer 1984). *Madagascar* (Ledoyer 1983). *Red Sea*: Gulf of Aqaba (Lyons & Myers 1991). *Society Islands* (Myers 1989). *USA*. Hawaii: Waikiki, Honolulu (Schellenberg 1938).

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