



## Maxillipiidae\*

CHARLES OLIVER COLEMAN

Humboldt-University, Museum für Naturkunde Berlin, Abteilung Sammlungen, D-10099 Berlin, Germany.  
(oliver.coleman@mfn-berlin.de)

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

### Abstract

*Maxillipius rectitelson* Ledoyer, 1973 is redescribed. It was found for the first time in Australia close to Lizard Island. It differs from *Maxillipius commensalis* Lowry, 1984 by the unproduced anterior margin of coxa 1 and the bulky carpus and propodus of gnathopod 1.

**Key words:** Crustacea, Amphipoda, Maxillipiidae, Great Barrier Reef, Australia, taxonomy, *Maxillipius rectitelson*

### Introduction

The Maxillipiidae are an interesting amphipod family consisting of only 2 genera, *Maxillipius* Ledoyer, 1973 and *Maxillipides* Ledoyer, 1984, with in total 3 species (*Maxillipides laticarpus* Ledoyer, 1984, *Maxillipius commensalis* Lowry, 1984 and *Maxillipius rectitelson* Ledoyer, 1973). They are confined to tropical oceans and at least one species, *Maxillipius commensalis*, is associated with gorgonians (Lowry 1984; Thomas 1996). This species lives in dense assemblages on the host gorgonian and they use their enormously elongated pereopods 6 to keep contact with each other. They are sensitive to movements in the environment and the entire aggregation of amphipods might move to the other side of the gorgonian when approached. Lowry (1984) described specimens from Bootless Bay, in southern Papua New Guinea, with a camouflage red body colour making it difficult to see the animals on the gorgonian surface. The specimens observed by Thomas (1996) in Madang Lagoon on the north coast, however, were creamy white and well visible against the gorgonian host. Details on the biology of *Maxillipius rectitelson* Ledoyer, 1973, redescribed herein for the first time from Lizard Island, are not known.

### Materials and methods

The description was generated from a DELTA database (Dallwitz 2005). Material was hand-collected on scuba and 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). 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.

## Maxillipiidae Ledoyer, 1973

### *Maxillipius* Ledoyer, 1973

#### *Maxillipius rectitelson* Ledoyer, 1973

(Figs 1, 2)

*Maxillipius rectitelson* Ledoyer, 1973, 32, figs 4–5. —Ledoyer, 1986: 819, fig. 320. —Ren, 1998: 245, figs 1, 2.

**Material examined.** Female with oostegites, 1.9 mm, AM P71147 (QLD 1707); 1 female with oostegites AM P 75545 (QLD 1980); 5 females AM P75546 (QLD 1939).

**Type locality.** East of Nosy-Bé, north-west of Madagascar (~23°36'S 47°36'E).

**Description.** Based on female, 1.9 mm, AM P71147.

**Head.** *Head* bulky, anterior margin weakly sinuous; rostrum short, blunt. *Eyes* large, irregularly shaped. *Upper lip* entire. *Mandible* multidentate, molar triturative; palp not developed. *Lower lip* with inner lobes. *Maxilla 1* inner plate without any setae; medial robust seta of outer plate stouter and longer than remaining setae, directed medially; palp uniarticulate, distally expanded, with 4 apical robust setae, separated by 3 teeth. *Maxilla 2* inner lobe less than half width of outer lobe. *Maxilliped* palp article 2 medially strongly expanded and almost reaching distal margin of article 3, which is folded against the distal margin of article 2.

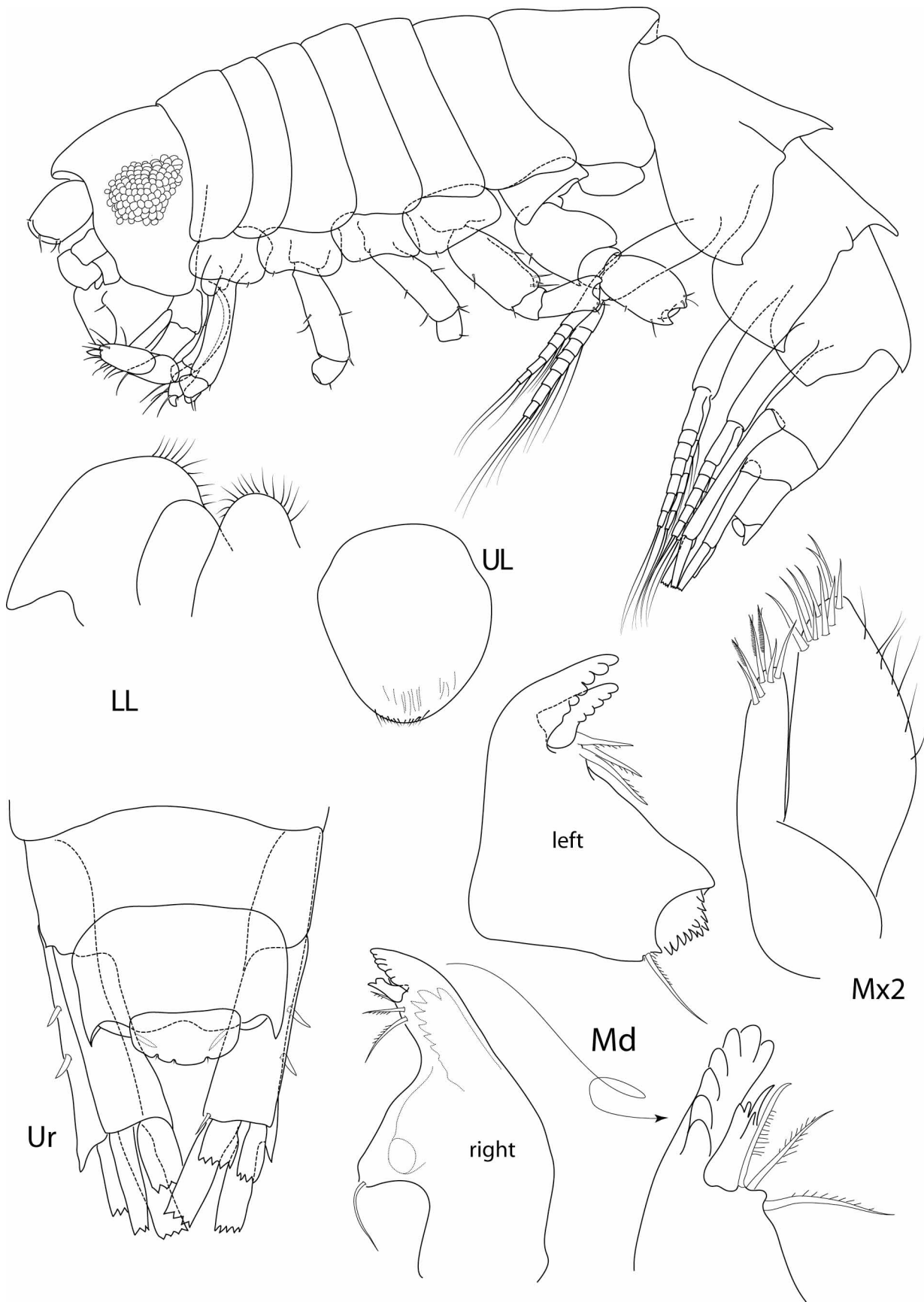
**Pereon.** *Pereonites* 1–6 short, 7 longest, mid-dorsally elevated over pleonite 1. *Coxa 1* not visible (vestigial?). *Coxae* 2–7 short, wider than long, ventrally weakly excavate (except for coxa 7, which is ventrally rounded). *Gnathopod 1* carpus distally expanded, not produced; dactylus slender. *Gnathopod 2* coxa anteriorly rounded, not produced, carpus not much wider than propodus; propodus slender with no palm. *Pereopods 3 and 4* similar. *Pereopod 6* apical articles extremely elongate.

**Pleon.** *Pleonites* 1–2 with mid-dorsal, narrow, posteriorly directed tooth and dorsolateral tooth on both sides. *Pleonite 3* with short mid-dorsal tooth only. *Epimera* 1–2 with acute posteroventral corner. *Epimeron 3* angular. *Telson* entire, 2 x wider than long, with a few small marginal notches with microtrichs.

**Habitat.** Found among *Halimeda* and other algae, sediment. Maxillipiids are known to be associates of Gorgonacea (Lowry 1984; Thomas 1996).

**Remarks.** There are two species of *Maxillipius*, *M. commensalis* Lowry, 1984 and *M. rectitelson* Ledoyer, 1973. *Maxillipius commensalis* differs from the latter by the anteriorly drawn out and pointed coxa 2 and the elongated carpus and propodus of gnathopod 1. *Maxillipius rectitelson* is known from Madagascar (Ledoyer 1973, 1986) and the South China Sea (Ren 1998) and despite the wide distribution the animals from Madagascar and China differ only very little from the Australian material. In Ledoyer's specimens from Madagascar, the dorsal processes differ from those of present material, in that the mid-dorsal posterior process is rather short, on pleonite 1, there are 2 dorsal processes and the dorsolateral teeth are absent. Also, on pleonite 2 only one mid-dorsal tooth is present. In addition, in the Madagascar material the maxilla 2 plates are subequal in width, whereas in present material the inner lobe is less than half the width of the outer lobe. The Chinese specimen, described by Ren (1998) has the carpus of gnathopod 1 slightly longer in relation to its width.

**Distribution.** *Australia.* Queensland: Lizard Island (current study). *Madagascar.* Nosy-Be (Ledoyer 1973, 1986). *South China Sea.* Hainan (Ren 1998).



**FIGURE 1.** *Maxillipius rectitelson* Ledoyer, 1973, female, 1.9 mm, AM P71147, North Point, Lizard Island, Great Barrier Reef. Oostegites on habitus drawing omitted.



**FIGURE 2.** *Maxillipus rectitelson* Ledoyer, 1973, female, 1.9 mm, AM P71147, North Point, Lizard Island, Great Barrier Reef.

## References

- Coleman, C.O. (2003) "Digital inking": How to make perfect line drawings on computers. *Organism, Diversity and Evolution, Electronic Supplement*, 14, 1–14, <http://senckenberg.de/odes/03-14.htm>
- Coleman, C.O. (2006) Substituting time-consuming pencil drawings in arthropod taxonomy using stacks of digital photographs. *Zootaxa*, 1360, 61–68.
- Dallwitz, M.J. (2005) Overview of the DELTA System. <http://delta-intkey.com>. Last accessed (8/9/2007).
- Ledoyer, M. (1973) Amphipodes gammariens de la frondaison des herbiers d'Enhalus de la région de Nosy-Bé (Madagascar) (systématique et écologie) comparaison avec la faune des herbiers de Tulear (*Cymodocea*, *Thalassia* etc.). *Tethys*, 5 (supplement), 25–36
- Ledoyer, M. (1986) Crustacés amphipodes gammariens. Familles des Haustoriidae à Vitjazianidae. *Faune de Madagascar*, 59, 599–1112.
- Lowry, J.K. (1984) *Maxillipius commensalis*, a second species in the family Maxillipiidae from Papua New Guinea (Amphipoda, Gammaridea). *Crustaceana*, 46, 195–201.
- 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.
- Ren, X. (1998) Supplemental description of *Maxillipius rectitelson* Ledoyer (Crustacea, Amphipoda, Maxillipiidae) from Hainan Island (South China Sea). (in Chinese). *Studia Marina Sinica*, 40, 245–248 [in Chinese, with English summary].
- Thomas, J.D. (1996) Ecology and behaviour of *Maxillipius commensalis*, a gorgonophile amphipod from Madang, Papua New Guinea (Crustacea: Amphipoda: Maxillipiidae). *Bulletin of Marine Science*, 58, 314–323.