



## Iphimediidae\*

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### Abstract

The new species *Iphimedia schminkei* is described from Lizard Island, Great Barrier Reef, Australia. On pereonite 7 and pleonites 1-3 it has a keel-like elevation, short, paired dorsal processes and fringes of microtrichs on the posterior segmental margins. The maxilla 1 palp is longer than the outer plate and the pereopod 7 basis has 2 pointed processes on the posterior margin and an additional small tooth posteroventrally.

**Key words:** Crustacea, Amphipoda, Iphimediidae, Great Barrier Reef, Australia, taxonomy, new species, *Iphimedia schminkei*

### Introduction

There are several species of iphimediid amphipods known from Australia (Coleman & Lowry 2006), mainly from New South Wales and Western Australia, but none of these occurs in the Great Barrier Reef region. However, there are tropical species living north of the Great Barrier Reef. Seven iphimediid species from New Caledonia, Papua New Guinea and Thailand were described by Lowry & Myers (2003).

Not much is known on the biology of Iphimediidae. In the Antarctic where most of the iphimediid species live, some of them are associated with sponges, cnidarians and one species is adapted to feed on bryozoans (Coleman 1989a, 1989b, 1991).

### 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.

## Iphimediidae Boeck, 1871

### Iphimedia Rathke, 1843

#### *Iphimedia schminkei* sp. nov.

(Figs 1, 2)

**Type material.** Holotype, ? male, 2.4 mm, AM P71223, Horseshoe Reef, Lizard Island (14°41.21'S 145°26.49'E), coral rubble, large coral bommies surrounded by sand and rubble, 11 m, C. Serejo, 2 March 2005 (QLD 1768), Photo 42–45. Paratypes: 1 specimen, unknown sex, AM P71535 (QLD 1823); 1 specimen, unknown sex, AM P71482 (QLD 1823); 2 specimens, unknown sex, covered with crystals, AM P71410 (QLD 1808).

**Type locality.** Horseshoe Reef, Lizard Island, Queensland, Australia (14°41.21'S 145°26.49'E).

**Etymology.** This species is named for Professor Dr. Horst Kurt Schminke, the academic teacher of the author, to thank him for enlightening his enthusiasm for zoology.

**Description.** Based on holotype, ? male, 2.4 mm, AM P71223.

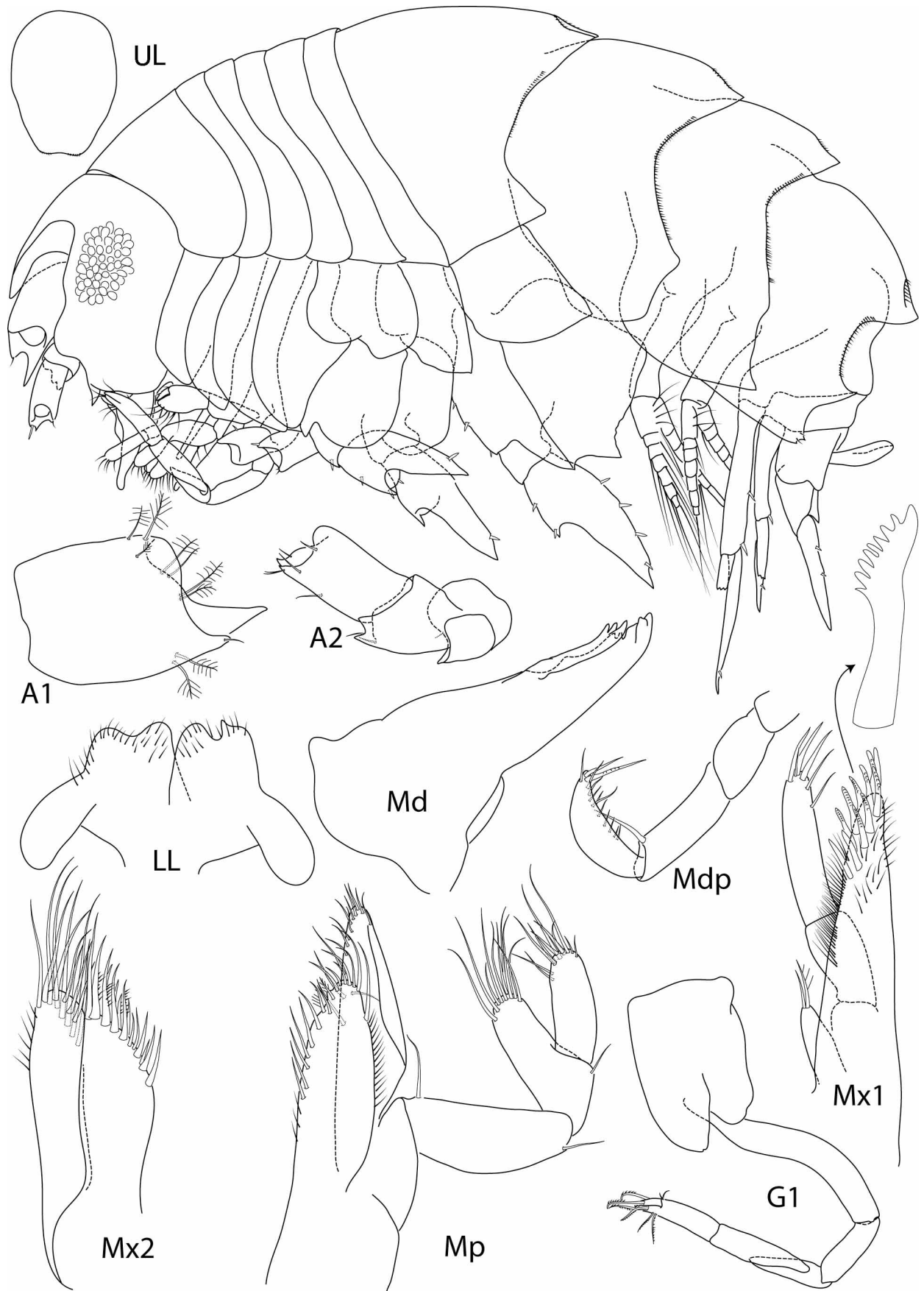
**Head.** Head anterior margin without spine (just a rounded protrusion), anteroventral corner with an acute spine. Eyes reniform. Antenna 1 peduncular article 1 with 1 posteromedial and 1 posterodistal spine. Lower lip inner lobes absent. Maxilla 1 palp 2-articulate, well developed, longer than outer plate.

**Pereon.** Pereonite 1 enlarged. Pereonite 7 with a dorsal keel only, no mid-dorsal tooth present, dorsodistal margin not produced, with 2 small, pointed spines, space between spines consisting of deep excavation, posteroventral angle produced; posterolateral margins with fringes of microtrichs. Gnathopod 1 coxa small, distally subacute, distal margins smooth. Gnathopod 2 coxa small, distal margin acute, smooth. Pereopod 3 coxa posterodistally subacute, distal margin smooth. Pereopod 4 coxa distal margin smooth. Pereopod 5 coxa posterodistal corner broadly rounded; basis posteroproximal corner with spine, posterior margin without spines, smooth, posterodistal corner rounded. Pereopod 6 coxa with posterodistal spine; basis posteroproximal corner rounded, posterior margin without spines, smooth, posterodistal corner without spines, rounded. Pereopod 7 coxa with posterodistal spine; basis posteroproximal corner rounded, posterior margin with 2 spines, weakly serrate, posterodistal corner with small spine.

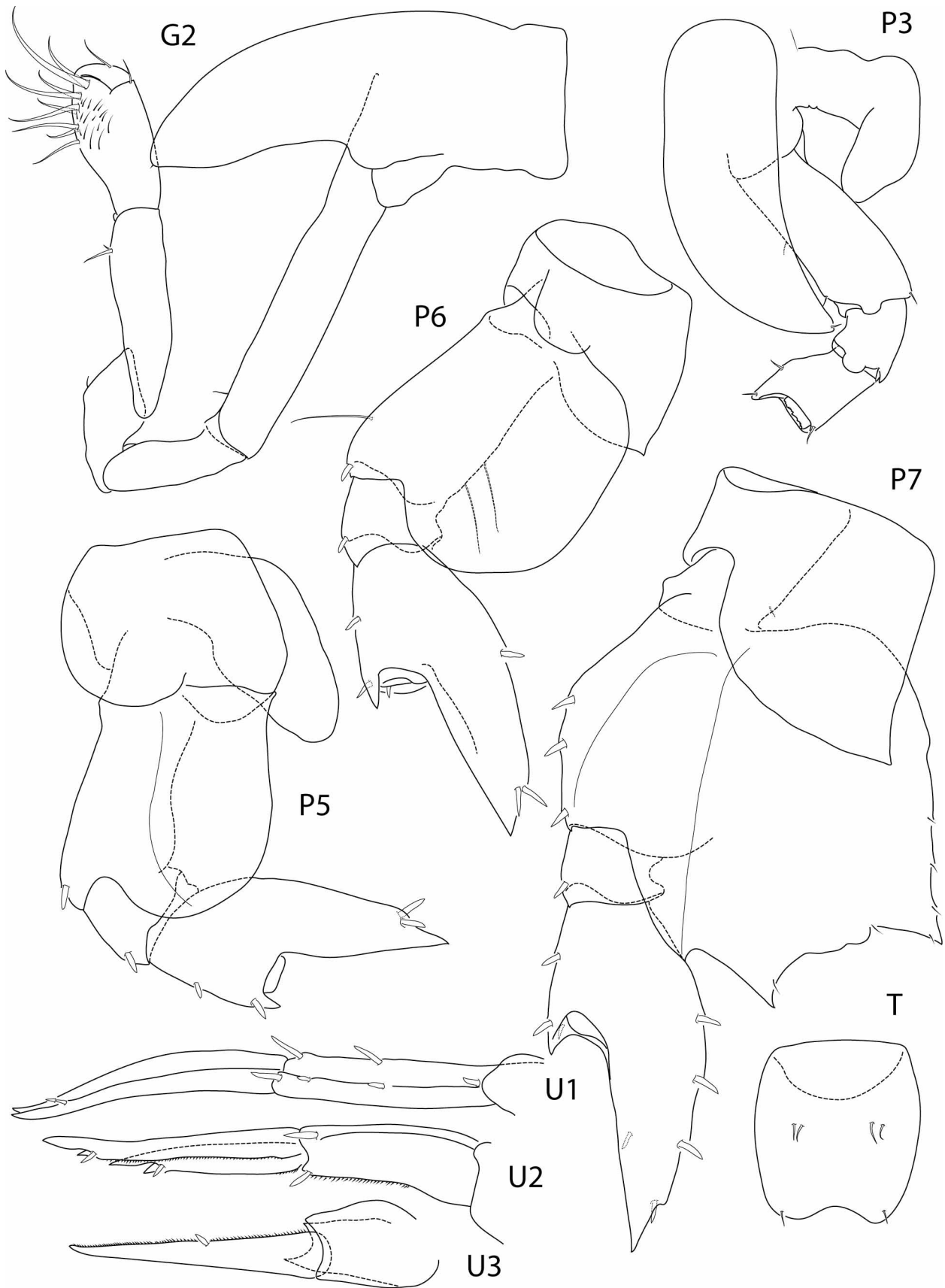
**Pleon.** Pleonites 1–2 with a dorsal keel only, no mid-dorsal tooth present, dorsodistal margin not shield-like produced, with 2 small, pointed spines, space between spines deeply excavate. Pleonites 1–3 fringes of microtrichs on posterolateral margins present. Pleonite 3 with a dorsal keel only, no mid-dorsal spine present, dorsodistal margin with 2, straight spines. Epimeron 1 posterior margin with 1 mid-lateral subacute spine, posteroventral corner subquadrate to rounded. Epimeron 2 posterior margin without mid-lateral spines (just with a short protrusion), posteroventral corner pointed. Epimeron 3 posterior margin with 1 well developed lateral, recurved, smooth spine, posteroventral corner weakly notched. Telson emarginate.

**Habitat.** In *Halimeda opuntia* (green coralline algae) and coral rubble, 10–16 m.

**Remarks.** There are a few species which are similar to *Iphimedia schminkei* sp. nov.: *Iphimedia orchestimana* Ruffo, 1969 (in the description of Lyons & Myers 1990) from the Red Sea has similarly shaped gnathopods 2 with the expanded propodus and epimera 1–3 with fringes of microtrichs on their posterior margins. However, the pereopod 7 basis of *I. orchestimana* is subquadrate posterodistally (vs strongly drawn out into 2 spines). There is another species bearing fringes of microtrichs on the posterior margins of pleonites 1–3, *Iphimedia mala* (Hirayama, 1983), and also the propodus of gnathopod 2 is distally expanded in this species, but the pereopod 7 basis is evenly rounded and strongly serrate (vs with stout spines and weak serration). Lowry & Myers (2003) described *Iphimedia mizegwadan*, found in Papua New Guinea, which has similar coxae 5–7 and the dorsal spine arrangement as the new species. However, coxae 1–3 are more pointed in *I. schminkei* and the pereopod 7 basis has 2 more small spines on the posterior margin in *I. mizegwadan*. The most similar species to *I. schminkei* is *Iphimedia compacta* Ledoyer, 1978 from Mauritius. Both species share the following characters: expanded first pereonite, followed by very narrow pereonites 2–6; long



**FIGURE 1.** *Iphimedia schminkei* sp. nov., male (?) holotype, 2.4 mm, AM P71223, Horseshoe Reef, Lizard Island, Great Barrier Reef.



**FIGURE 2.** *Iphimedia schminkei* sp. nov., male (?) holotype, 2.4 mm, AM P71223, Horseshoe Reef, Lizard Island, Great Barrier Reef.

pereonite 7; shape of dorsal teeth; similar arrangement of posterolateral and posteroventral pleon processes; coxae 5–7 and pereopod 7 basis very similar, expanded gnathopod 2 propodus. However, in *I. compacta* the anterior head margin is straight (vs roundly produced); the maxilla 2 palp is shorter than the outer plate (vs longer); the basis of pereopod 6 has a proximal pointed process (vs rounded).

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

## References

- Boeck, A. (1871) Crustacea Amphipoda Borealia et Arctica. *Forhandlinger i Videnskabs-Selskabet i Christiania*, 1870, 3–280.
- Coleman, C.O. (1989a) *Gnathiphimedia mandibularis* K.H. Barnard 1930, an Antarctic amphipod (Acanthonotozomatidae, Crustacea) feeding on Bryozoa. *Antarctic Science*, 1, 343–344.
- Coleman, C.O. (1989b) On the nutrition of two Antarctic Acanthonotozomatidae (Crustacea: Amphipoda). Gut contents and functional morphology of mouthparts. *Polar Biology*, 9, 287–294.
- Coleman, C.O. (1991) Redescription of *Anchiphimedia dorsalis* (Crustacea, Amphipoda, Iphimediidae) from the Antarctic, and functional morphology of mouthparts. *Zoologica Scripta*, 20, 367–374.
- 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.
- Coleman, C.O. & Lowry, J.K. (2006) Australian Iphimediidae (Crustacea: Amphipoda). *Organisms Diversity and Evolution*, 6, Electronic Supplement 9, 1–44.
- Dallwitz, M.J. (2005) Overview of the DELTA System. <http://delta-intkey.com/www/overview.htm>
- Hirayama, A. (1983) Taxonomic studies on the shallow water gammaridean Amphipoda of West Kyushu, Japan. I. Acanthonotozomatidae, Ampeliscidae, Ampithoidae, Amphilochidae, Anamixidae, Argissidae, Atylidae and Colomastigidae. *Publications of the Seto Marine Biology Laboratory* 28: 75–150.
- Ledoyer, M. (1978) Amphipodes gammariens (Crustacea) des biotopes cavitaires organogènes récifaux de l'île Maurice (Océan Indien). *The Mauritius Institute Bulletin*, 8(3), 197–332.
- Lowry, J.K. & Myers, A.A. (2003) New amphipod crustaceans from the Indo-West Pacific (Amathillopsidae: Eusiridae: Iphimediidae). *The Raffles Bulletin of Zoology*, 51(2), 219–256.
- 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.
- Lyons, J. & Myers, A.A. (1990) Amphipoda Gammaridea from the coral rubble in the Gulf of Aqaba, Red Sea: families Acanthonotozomatidae, Ampeliscidae, Ampithoidae, Anamixidae, Aoridae, Colomastigidae. *Journal of Natural History*, 24, 1197–1225.
- Rathke, H. (1843) Beiträge zur Fauna Norwegens. Crustacea. *Verhandlungen der kaiserlichen Leopoldinischen-Carolinischen Akademie der Naturforscher*, 12, 35–40.