



Allopontonia alastairi* sp. nov., a second species of the genus *Allopontonia* Bruce, 1972 (Crustacea: Decapoda: Pontoniinae), from the Australian Northwest Shelf

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Introduction

The pontoniine genus *Allopontonia* Bruce, 1972 has so far been represented by only a single species, *A. iaini* Bruce, 1972, a shallow water echinoderm associate (Bruce, 1972). First described from Zanzibar, it is one of the relatively few pontoniine species found in both the Indo-West Pacific and the Eastern Pacific regions (Wicksten 2000; Bruce 1987). The discovery of a second species is therefore of interest and an illustrated description is here provided. The single specimen was collected in the course of a CSIRO Marine and Atmospheric Research (CMAR) survey of the benthic fauna of the Australian Northwest Shelf region, Western Australia, by the fisheries research vessel *Southern Surveyor* and is held in the collection of the Museum Victoria. I am most grateful to Anna McCallum for the opportunity to study this specimen. Felicity McEnnulty provided the identification of the host echinoid.

Abbreviations used: CL post-orbital carapace length; NMV Museum Victoria, Melbourne.

Systematic account

Palaemonidae Rafinesque, 1815

Pontoniinae Kingsley, 1879

***Allopontonia* Bruce, 1972**

Allopontonia Bruce, 1972: 1–2; 1995: 19–20.

***Allopontonia alastairi* sp. nov.**

(Fig. 1)

Material examined. Holotype male, NMV J59419, North-western Australia, Imperieuse L23 transect, 18°25'31"S, 120°05'55"E to 18°26'12"S, 120°06'30"E, FRV *Southern Surveyor*, SS05/2007 085, 105–103 m, beam trawl, 19 June 2007, leg. M.F. Gomon.

Diagnosis. An *Allopontonia* with the mobile hepatic spine small, ambulatory pereopod dactyli simple, with bilateral distoventral fringe of divergent setae, ventral margin not serrate, propodus with single spine row, spines not distoventrally denticulate.

Description. Generally closely resembling *Allopontonia iaini*, the only other species of the genus.

Rostrum (Fig. 1A) damaged with distal portion missing, dorsal and ventral carinae well developed, dorsal carina with 7 similar small acute teeth, all pre-orbital, ventral border unarmed. Carapace (Fig. 1A) with orbit poorly defined, inferior orbital angle produced, antennal spine well developed, marginal, hepatic spine small,

mobile. Antennae as in *A. iaini*. Cornea well developed, well pigmented, diameter about 0.2 of CL, with small accessory ocellus.

Mandible, maxillula and maxilla not examined, maxillipeds as in *A. iaini*, exopod flagella slender with four terminal plumose setae.

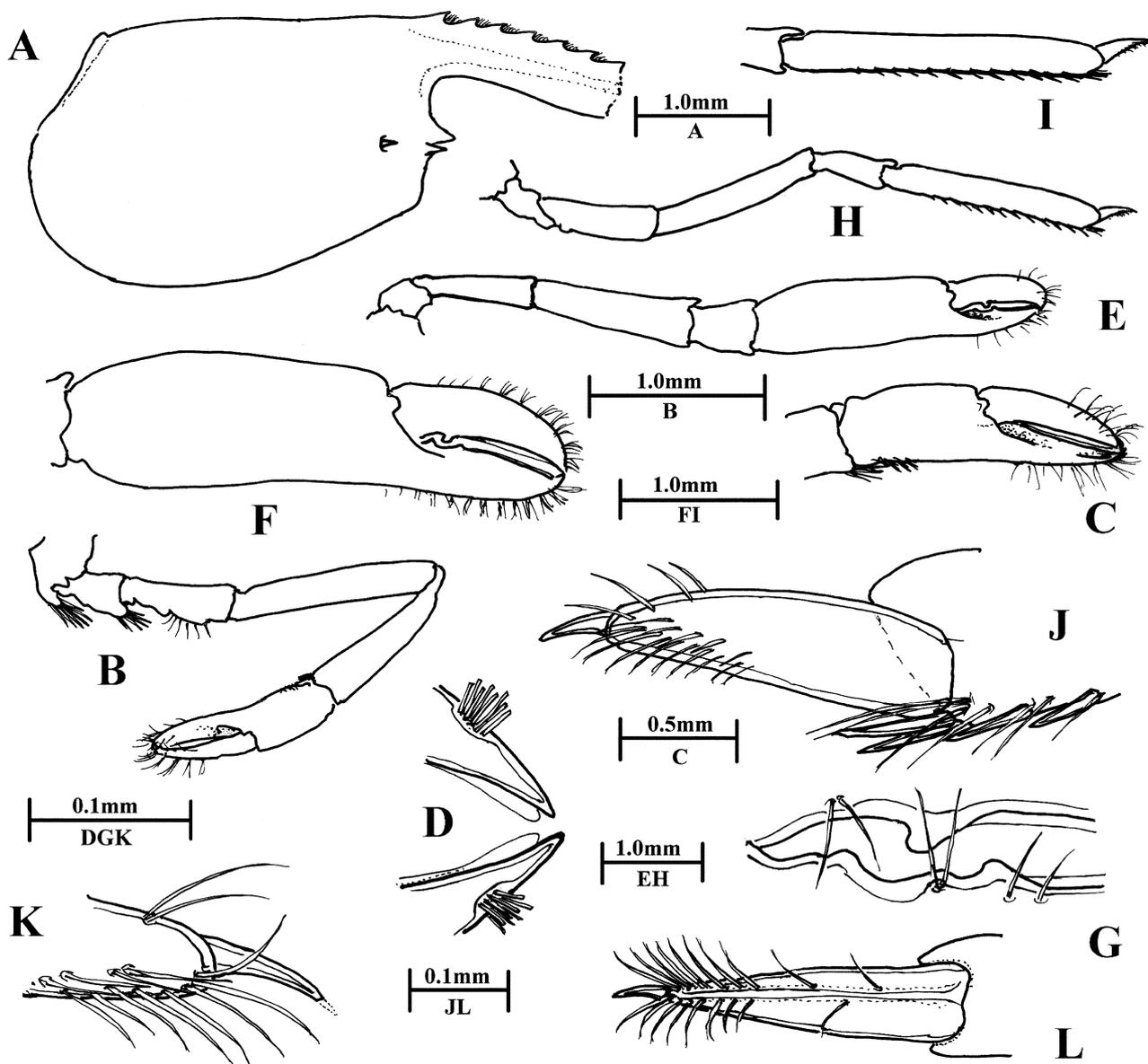


FIGURE 1. *Allopontonia alastairi* sp. nov., holotype male, Australian Northwest Shelf, NMV J59419: A, carapace and rostrum; B, first pereiopod; C, chela; D, same, finger tips; E, second pereiopod; F, same, chela; G, same, fingers, proximal cutting edges; H, third pereiopod; I, same, propodus; J, same, distal propodus and dactylus; K, same, distal dactylus; L, fourth pereiopod, dactylus, ventral.

First pereiopod (Fig. 1B) robust, chela (Fig. 1C) about 0.42 of CL, palm oval in section, about 1.9 times longer than deep, with transverse rows of short cleaning setae proximo-ventrally, fingers (Fig. 1D) subequal to palm length, dactylus scaphoid with medial cutting edge, about 4.0 times longer than proximal depth, cutting edge laminar, entire, tip acute with small rounded laminar flange medially, fixed finger similar; carpus about 0.95 of palm length, 4.0 times longer than distal width, tapering proximally, with distoventral cleaning setae; merus 1.1 times longer than chela, 6.5 times longer than wide, ischium about 0.6 of chela length, 3.0 times longer than distal width, tapering proximally, ventral margin centrally with slender spiniform setae; basis

about 0.25 of chela length, distoventrally produced with several simple spines; coxa with well developed distoventral process with several stouter spines.

Second pereopod (Fig. 1E) well developed, chela (Fig. 1F) about 1.08 of CL, palm smooth, oval in section, 2.4 times longer than deep, slightly swollen proximally, fingers about 0.6 of palm length, dactylus about 3.4 times longer than deep, with small hooked tip, cutting edge with stout blunt recurved tooth (Fig. 1G) proximally, distally laminar, entire, fixed finger similar with two small blunt teeth (Fig. 1G) proximally; carpus short, stout, unarmed, about 0.3 of palm length, tapering slightly proximally; merus 0.85 of palm length, 3.5 times longer than distal width, tapering slightly proximally, distolateral ventral angle slightly produced, ischium, basis and coxa without special features.

Third pereopod (Fig. 1H) moderately robust, dactylus (Fig. 1J) compressed, 4.0 times longer than deep, about 0.2 of propodus length, unguis (Fig. 1K) slender, curved, simple, obliquely articulated, 3.8 times longer than basal width, 0.25 of corpus length, corpus 3.5 times longer than deep, obliquely medially articulated with propodus, dorsal margin convex, ventral margin straight, simple, distoventral angle without accessory tooth, distal ventromedial and ventrolateral surfaces of corpus with numerous simple setae, most marked submarginally, forming fringe of divergent brush; propodus (Fig. 1I) about 0.75 of CL, 8.5 times longer than width, with pair of well developed simple distoventral spines, 13 similar ventral spines of decreasing size proximally, sparsely setose, carpus 0.33 of propodus length, merus 0.75, ischium 0.55.

Fourth pereopod (Fig. 1L) similar to third.

Appendix masculina with 4 strong simple spines, appendix interna slightly shorter than appendix masculina. Caudal fan as in *A. iaini*.

Etymology. The specific name is in memory of my son, Iain Alastair Bruce.

Measurements. Postorbital carapace length, 2.75 mm; total body length (approx.), 12.5 mm; major second pereopod chela, 3.0 mm.

Systematic position. Closely resembling *A. iaini* but readily distinguished by the characters provided in the diagnosis. Ambulatory pereopod dactyli simple (vs. biunguiculate), ventrally serrated in *A. iaini*, with bilateral distoventral fringe of divergent setae, ventral margin of corpus not serrate (vs. serrate), propodus with single ventral spine row (vs. paired spines in *A. iaini*).

Host. Probably *Salmacis belli* Döderlein, 1902 (Echinoidea: Temnopleuridae), which was collected in the same trawl haul.

Remarks. The single specimen is in good condition, with the mouthparts removed on the right side, mandible, maxillula and maxilla missing. Both first pereopods but only the left second pereopod are preserved, with the fourth left and third and part of fifth right ambulatory pereopods.

The discovery of *A. alastairi* indicates that the definition of the genus *Allopontonia* needs to be slightly revised so that species with simple ambulatory dactyli are not excluded.

The probable host of *A. alastairi*, *Salmacis belli*, is a temnopleurid echinoid and is closely related to some of the hosts recorded for *A. iaini*, like *Salmaciella* and *Salmacis*. Other hosts recorded for *A. iaini* are species of *Asthenosoma* (Echinothuriidae) and *Pseudoboletiana* (Toxopneustidae). *Allopontonia iaini* is one of the few pontoniine shrimps with a distribution that crosses the eastern Pacific filter bridge (De Grave 2001) and has been recorded from Kenya, Zanzibar, Indonesia, Papua New Guinea, Australia (Queensland), New Caledonia, Marianas Islands, and Mexico. At about 100 m, *A. alastairi* occurs in significantly deeper waters than *A. iaini*.

Only five pontoniine genera are known with an articulated mobile hepatic spine: *Allopontonia* Bruce; *Dasella* Lebour; *Paranchistus* Holthuis; *Patonia* Mitsuhashi & Chan and *Zenopontonia* Bruce. *Allopontonia* (2 species) is associated with echinoid echinoderms, *Dasella* (3 species) with ascidians, *Paranchistus* (7 species) with bivalve molluscs and *Zenopontonia* (1 species) with asteroid echinoderms. The host of *Patonia* is unknown. Except for *A. iaini*, all are found only in the Indo-West Pacific. These genera are unlikely to be phylogenetically related and may be separated by the following key:

1. Rostrum compressed, with numerous dorsal teeth 2
- Rostrum stout, with no or few dorsal teeth 4
2. First pereopod robust, chelae stout, fingers subspatulate, cutting edges pectinate *Zenopontonia*

- First pereopod slender, chelae fingers not subspatulate, cutting edges entire 3
- 3. Second pereopods similar, slender, rostral dentition 10/0, without ventral teeth, first four teeth articulated, ventral ambulatory propodi sparsely spinulate *Patonia*
- Second pereopods similar, robust, rostral dentition 7–10/1, with ventral teeth, posterior dorsal teeth not articulate, ventral ambulatory propodi densely spinulate *Allopontonia*
- 4. Ambulatory dactyli with large ventral process, without micro-spinulation; dorsal telson spines large *Dasella*
- Ambulatory dactyli without large blunt ventral process, simple, or biunguiculate with acute distoventral accessory tooth, often with dense micro-spinulation; dorsal telson spines small *Paranchistus*

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Addendum

A recent paper (Marin & Türkay 2009) has clearly shown that *Allopontonia iaini* Bruce is a junior synonym of *Anchistia brockii* De Man, 1888 and that the correct name for this species is now *Allopontonia brocki* (De Man, 1888). *Periclimenes priodactylus* Bruce, 1992 is also a synonym of *A. brocki*, as may be *Periclimenes signatus* Kemp, 1925.

Marin, I. & Türkay, M. (2009) Redescription of *Periclimenes brockii* (De Man, 1888) (Decapoda: Caridea: Pontoniinae) and other De Man's type specimens deposited in the collection of the Senckenberg Natural History Museum (SMF), Frankfurt-at-Maine, Germany. *Zootaxa*, 2296, 39–46.