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Cheirocratidae*

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Abstract

Prosocratus carolinae **sp. nov.** from the Great Barrier Reef is described. It is very similar to the South Australian species *Prosocratus butcheri* Barnard & Drummond, 1982, but differs in male gnathopod 1 characters. Additionally the Cheirocratidae is rediagnosed.

Key words: Crustacea, Amphipoda, Cheirocratidae, Great Barrier Reef, Australia, taxonomy, new species, *Prosocratus carolinae*

Introduction

The cheirocratids were first mentioned as a complex of genera by Barnard & Barnard (1983), but a formal description of a family Cheirocratidae was not done at that time. Karaman (1985) devoted a paper to the "*Cheirocratus* complex". By that time the following genera were included: *Casco* Shoemaker, 1930; *Cheirocratella* Stephensen, 1940; *Cheirocratus* Norman, 1867; *Degocheirocratus* G. Karaman, 1985; *Incratella* Barnard & Drummond, 1982; *Prosocratus* Barnard & Drummond, 1982. Ren (2006) used for the first time the family name Cheirocratidae and diagnosed it. We rediagnose the family here.

Barnard & Drummond (1982) defined the genus *Prosocratus* consisting of only one species, *Prosocratus butcheri* Barnard & Drummond, 1982, originating from Southern Australia. In this contribution a new species of this genus from the Great Barrier Reef is described.

Materials and methods

The description was generated from a DELTA database (Dallwitz 2005). Illustrations were made using the methods described in Coleman (2003, 2006). Material was hand-collected on scuba or snorkel 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). 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.

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Cheirocratidae Ren, 2006

Cheirocratids Barnard & Barnard, 1983: 597, fig. 15.
Cheirocratidae Ren, 2006, 259.

Diagnosis. Eyes round. Antenna 1 not longer than the peduncle of antenna 2, with sparse slender setae. Antennae without calceoli. Mandible palp article 1 about 3 x longer than broad. Maxilliped outer plate large, longer than palp article 2, not longer than article 3. Coxae 1–3 large, all similar in size. Gnathopods 1–2 simple or subchelate. Pereopods 5–6 basis slightly expanded. Pereopods 6–7 similar in structure. Pereopod 5 shorter than pereopod 6. Urosomite 2, with mid-dorsal serration and simple or robust setae (except *Incratella*). Uropods 1–2, apices of rami with robust setae. Uropod 1 peduncle without basofacial robust seta. Uropod 3 biramous; peduncle long, at least 2 x as long as broad. Telson deeply cleft.

Included genera. Cheirocratidae includes 7 genera: *Casco* Shoemaker, 1930; *Cheirocarpochela* Ren & Andres, 2006; *Cheirocratella* Stephensen, 1940; *Cheirocratus* Norman, 1867; *Degocheirocratus* G. Karaman, 1985; *Incratella* Barnard & Drummond, 1982; *Prosocratus* Barnard & Drummond, 1982.

Remarks. Ren (2006) used the name Cheirocratidae and attributed the authorship to Barnard & Barnard (1983). However, Barnard & Barnard (1983), only referred to an informal group. Ren (2006) used the formal name Cheirocratidae, provided a diagnosis and therefore becomes the author of the family.

Cheirocratidae appears to be most similar to the Maeridae Krapp-Schickel, 2008. There are several significant differences between these taxa. In cheirocratids antenna 1 is shorter than the peduncle of antenna 2 whereas in the *Ceradocus* group it is subequal in length or longer than antenna 2. In general, gnathopod morphology is very different between these groups. For instance gnathopod 1 is almost always simple in male and female cheirocratids and subchelate in the Maeridae. Within the cheirocratids gnathopod 2 is usually simple in females and subchelate in males whereas in melitids it is subchelate in both sexes. In both families the male gnathopod 2 is usually larger than gnathopod 1. The shape of the anterior margin in the heads is also different. Although both families have an anteroventral notch, in the cheirocratids the anteroventral corner of the head is distinctively subquadrate.

An apparent autapomorphy that distinguishes cheirocratids from all other amphipods, except the Talitridae, is that antenna 1 is shorter than the peduncle of antenna 2. These shortened antennae appear to be independently derived in the two families. A second autapomorphy appears to be the significantly elongated first article of the mandibular palp, which can be up to 3 x as long as broad.

Incratella Barnard & Drummond, 1982 has always been considered to be the senior synonym of *Cheirocratus* (*Indiocratus*) Ledoyer, '1982'. It was unclear which taxon was published first. In fact the date of publication for *Cheirocratus* (*Indiocratus*) Ledoyer, '1982' was actually January 1983 (Aberlenc (Ed, *Faune de Madagascar*), pers. comm.), thus *Incratella* has preference.

***Prosocratus* J.L. Barnard & Drummond, 1982**

***Prosocratus carolinae* sp. nov.**
(Figs 1, 2)

Type material. Holotype, female, 4.8 mm, AM P75544, largest bommie in lagoon at the 'Entrance', One Tree Island (23°29.283'S 152°4.773'E) medium fine grain sediment, 4.2 m,, L.E. Hughes & I. Takeuchi, 24 October 2006 (QLD 1935). Paratype: male, 4.5 mm, AM P78977, same station data.

Type locality. "Entrance", One Tree Island, Queensland, (23°29.283'S 152°4.773'E), 4 m.

Etymology. This species is named for Ms Caroline Fenes to thank her for the great work for the art performance "HUM, the art of collection" in February and March 2008 at the Museum für Naturkunde Berlin.

Description. Based on female holotype, 4.8 mm and male allotype, 4.5 mm.

Head. *Head* with rounded anteroventral margin. *Eyes* round, black pigmented.

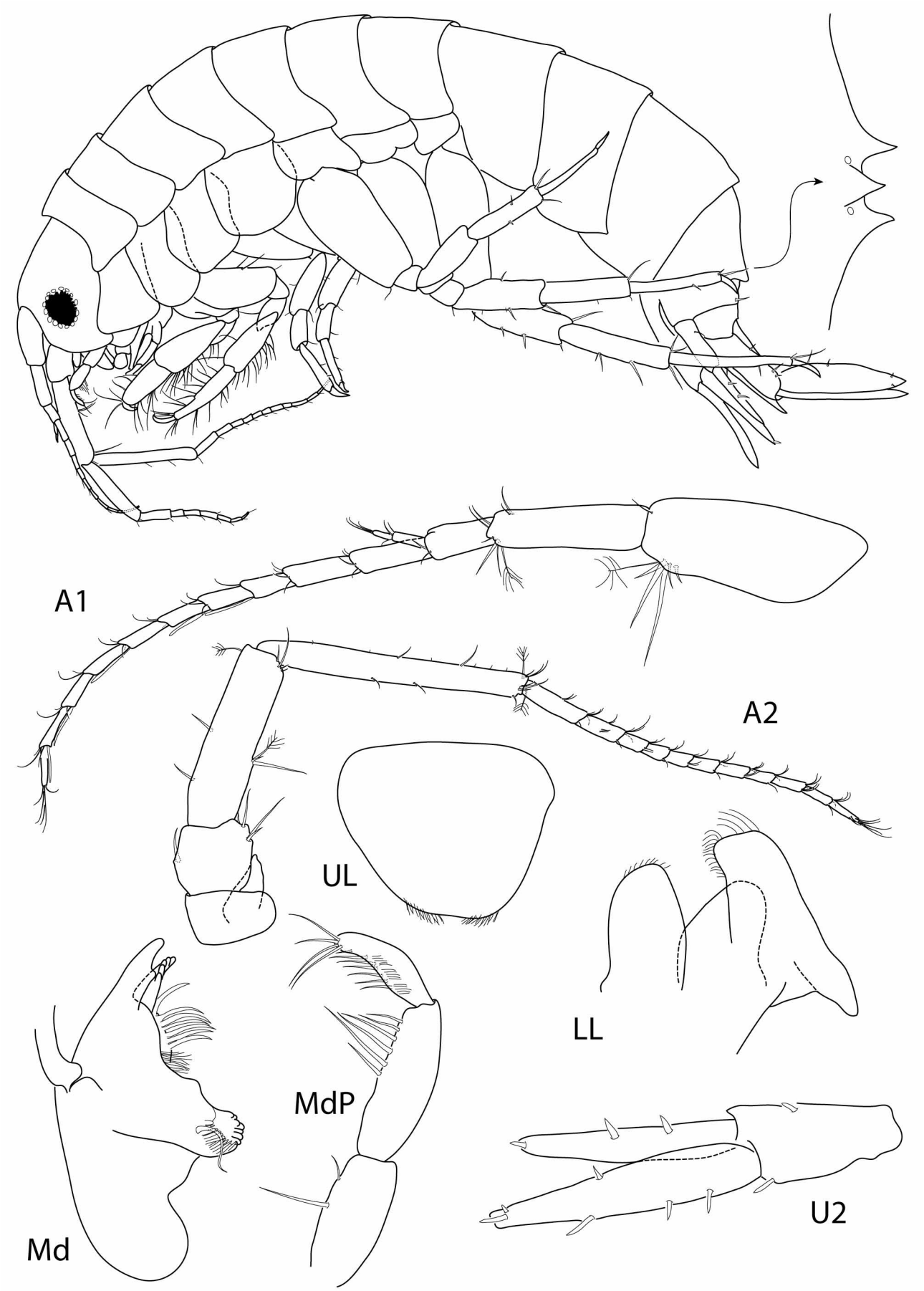

FIGURE 1. *Prosocratus carolinae* **sp. nov.**, female holotype, 4.8 mm, AM P75544, One Tree Island, Great Barrier Reef.

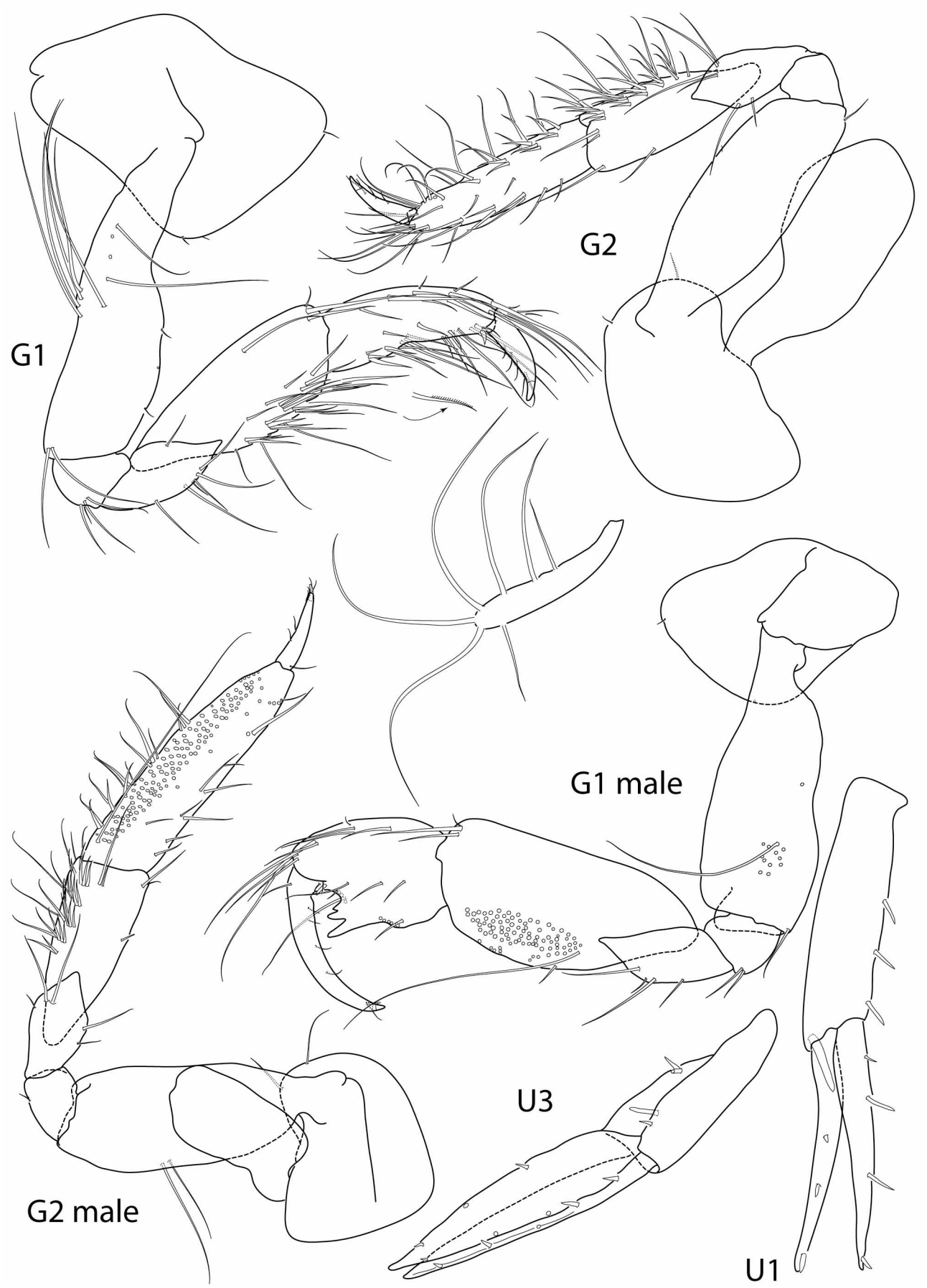

FIGURE 2. *Prosocratus carolinae* **sp. nov.**, female holotype, 4.8 mm and male paratype, 4.5 mm, AM P75544, One Tree Island, Great Barrier Reef.

Urosomite 1 with 3 transverse teeth; middle tooth, accompanied by a seta on both sides, slightly shorter than lateral teeth; urosomite 2 with a strong seta on both sides. *Antenna 1* ratio of peduncular articles = 15:11:4; flagellum slightly longer than peduncle, some articles with slender aesthetasc; accessory flagellum 2-articulate. *Antenna 2* longer than 1; peduncular article 2 pointed; article 4 shorter than article 5. *Labrum* entire. *Mandible* with 2–dentate incisor, left lacinia mobilis 5–dentate, right lacinia mobilis slender ending in 3 tips; palp article 2 longest with group of setae posteromarginally. *Lower lip* with inner lobes, outer lobe truncate apically. *Maxilla 1* inner lobe distally pointed with a row of setae marginally and an additional row submarginally; outer lobe with 11(?) spine-like setae; palp 2 articulate, surpassing outer plate, 2-article widened apically. *Maxilla 2* inner plate with shorter apical setae compared to outer plate and additional row of facial setae. *Maxillipeds* inner plate subrectangular with 2 medioapical nodular spatulate setae on both sides; outer plate ovoid, nodular setae along medial margin; slender palp 4-articulate, surpassing outer plate, article 2 longest.

Pereon. *Pereonites* 1–2 combined as long as head; pereonites 1–3 equal in length. *Gnathopod 1* (female holotype) coxa expanded anterodistally; basis sinuous posteriorly, with group of long setae posteromarginally; ischium short; merus distally pointed, carpus slightly longer and wider than propodus; dactylus with row of setae on inner margin. *Gnathopod 1* (male allotype) coxa to merus similar to female; carpus widened with field of very long slender setae on inner face; propodus about half as long as carpus, palm posteriorly with long projecting teeth; dactylus falcate, twice as long as palm with setae on inner margin. *Gnathopod 2* (female holotype) more slender and longer than gnathopod 1, basis posteriorly convex; merus pointed distally; carpus and propodus subequal in length, both with groups of setae, especially posteromarginally; dactylus similar to that of gnathopod 1. *Gnathopod 2* (male allotype) coxa to merus similar to that of female; propodus longer with large field of very long slender setae on medial face; dactylus as for female. *Pereopods 3 and 4* short, subequal. *Pereopod 5* coxa bilobed; basis long, slightly tapering distally; ischium subquadrate; merus weakly expanded distally; merus to propodus subequal in length, but successively narrower; dactylus short. *Pereopod 6* coxa posterior lobe shortened; basis to propodus similar to pereopod 5 but longer. *Pereopod 7* similar to pereopod 6, but coxa not bilobed and basis to propodus longer.

Pleon. *Pleonites* 1–3 longest, posteroventral angles pointed. *Uropod 1* peduncle as long as rami, with long stout spine-like robust seta distally. *Uropod 2* outer ramus shortened. *Uropod 3* peduncle widened distally; rami lanceolate. *Telson* deeply cleft, lobes pointed.

Habitat. Medium fine grain sediment.

Remarks. *Prosocratus carolinae* **sp. nov.** is very similar to *Prosocratus butcheri* Barnard & Drummond, 1982 know from Victoria. The new species differs in the propodus palm projections of male gnathopod 1, which are not present in *P. butcheri,* and its dense and long setation on the medial face of the carpus.

Distribution. *Australia:* Queensland: One Tree Island (current study).

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