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Bogidiellidae*

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Abstract

The new amphipod species *Xystriogidiella juliani* from the Great Barrier Reef is described. Characteristics for this species are the 2-articulate accessory flagellum, a short second article of the maxilla 1 palp, the lack of inner rami on the pleopods and a short, emarginate telson. A short description of *Xystriogidiella capricornea*, a second species occurring in the Great Barrier Reef, is given additionally.

Key words: Crustacea, Amphipoda, Bogidiellidae, Great Barrier Reef, Australia, taxonomy, new species, *Xystriogidiella capricornea*, *Xystriogidiella juliani*

Introduction

Most bogidiellid species live in inland ground-waters but a few species occur in marine interstitial habitats. Stock (1984) described the first Bogidiellidae from the Pacific, a new species from the Great Barrier Reef, *Bogidiella* (*Xystriogidiella) capricornea*, collected close to Heron Island. Koenemann & Holsinger (1991) raised all bogidiellid subgenera to generic level status. This was followed herein. We collected another new *Xystriogidiella* species on Lizard Island and described it herein.

Materials and methods

The descriptions were generated from a DELTA database (Dallwitz 2005). 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.

Bogidiellidae Hertzog, 1936

Xystriogidiella Stock, 1984

Xystriogidiella juliani sp. nov.
(Figs 1, 2)

Type material. Holotype, male, 1.6 mm, AM P71601, Research Beach, Lizard Island (14°40.856’S

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145°26.788'E), 20 cm below surface of sand, sandy beach, surface, J. Just, 6 March 2005 (QLD 1843). Paratypes: 5 adults, 2 juveniles, AM P78976, same station data.

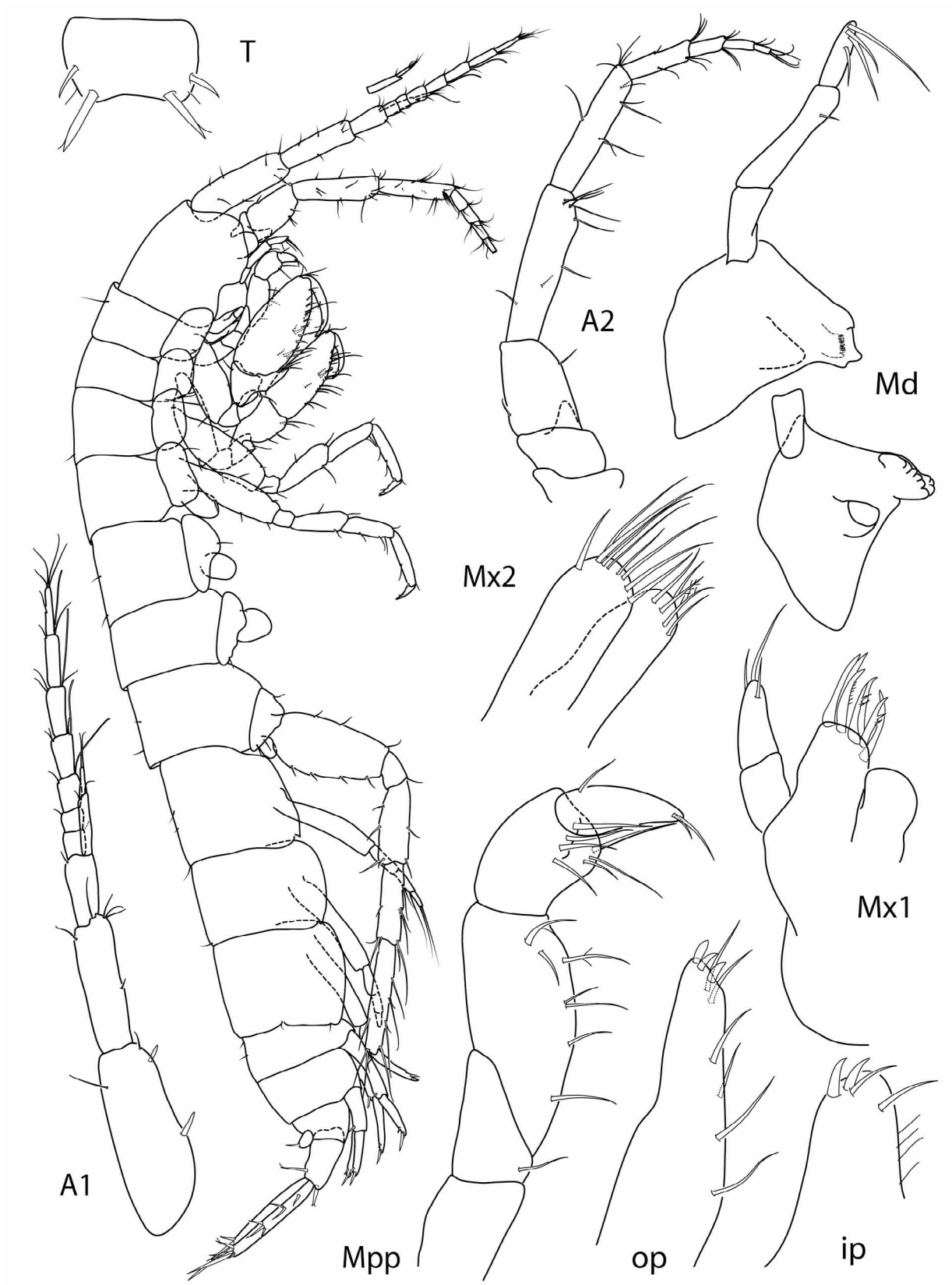

FIGURE 1. *Xystriogidiella juliani* **sp. nov.**, holotype, male, 1.6 mm, AM P71601, Lizard Island, Great Barrier Reef. Habitus drawing mirrored for better fit on the plate.

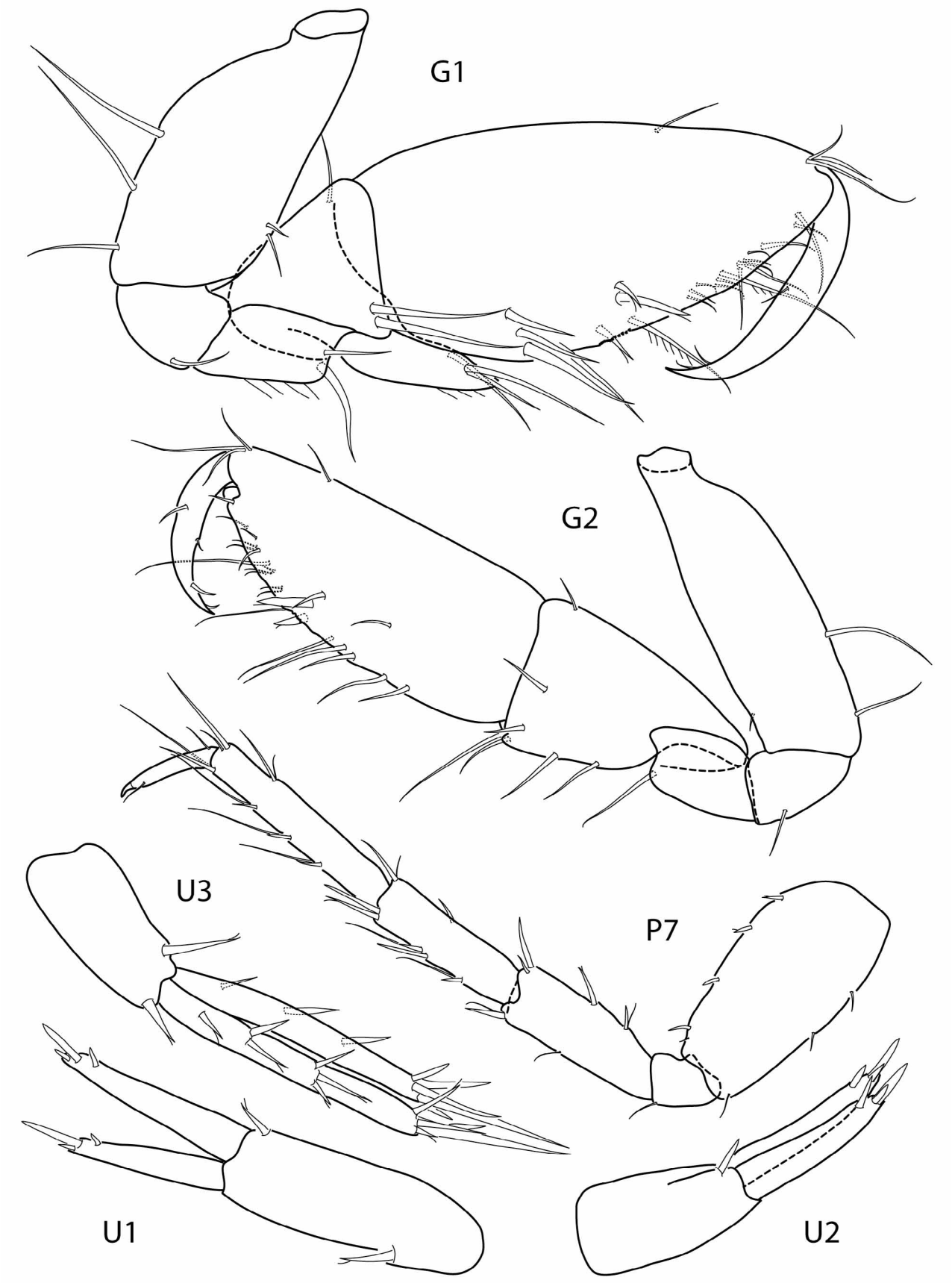

FIGURE 2. *Xystriogidiella juliani* **sp. nov.**, holotype, male, 1.6 mm, AM P71601, Lizard Island, Great Barrier Reef.

Type locality. Research Beach, Lizard Island, Queensland, Australia (14°40.856'S 145°26.788'E).

Etymology. This species is named for the artist Mr. Julian Klein, the director of the great art performance "HUM" at the Museum für Naturkunde Berlin in the spring of 2008.

Description. Based on male holotype 1.6 mm, AM P71601.

Body slender. **Head** without eyes, about as long as pereonites 1–2 combined, anterior head margin evenly rounded. *Antenna 1* peduncle longer than flagellum; accessory flagellum 2 articulate, article 1 twice as long as article 2, apically oblique. *Antenna 2* peduncle as long as that of antenna 1; flagellum with 4 articles. *Mandible* of right side with 3 dentate incisor, smaller lacinia mobilis than that of left side; palp 3-articulate, article 1 and 3 subequal in length. *Lower lip* with inner lobes and wide gap. *Maxilla 1* inner plate rounded without setae, outer plate with 7(8?) robust setae apically; palp 2 articulate. *Maxilla 2* inner plate with fewer and shorter setae than outer plate. *Maxillipeds* inner plate with 2 terminal robust setae; outer plate taping distally with 3 terminal robust setae; palp 4–articulate, article 2 longest, article 3, subequal to 4, article 4 relatively stout.

Pereon. *Pereonites 5–7* longer than preceding segments. *Coxae 1–4* overlapping, roundly lobate anteriorly; *coxae 5–7* subtriangular, separate. *Gnathopod 1* basis expanded posteriorly; ischium slightly shorter than merus; carpus distally expanded and drawn out into ventral subacute lobe; propodus twice as long as wide, tapering distally; dactylus tip reaching half of the ventral propodus margin. *Gnathopod 2* differing from gnathopod 1 in the following: basis only weakly expanded; carpus longer, without ventral lobe; propodus more slender, dactylus much shorter than half of ventral propodus margin. *Pereopods 3–4*: coxa subrectangular rounded, basis slender; merus weakly expanded anterodistally; carpus and propodus subequal; dactylus short and weakly curved. *Pereopod 7* similar to pereopods 3–4 but much longer, basis wider and propodus much longer than carpus, especially anterior margins of both articles with groups of stout setae and long slender setae.

Pleon. *Pleonites* 1–3 longest, posteroventral angle pointed each with minute notch and microtrich. *Pleopods* with 3–articulate outer rami, inner rami wanting. *Urosomites* 1–2 subequal, urosomite 3 shortest. *Uropod 1* peduncle longer than rami, outer ramus shorter than inner ramus. *Uropod 2* peduncle about the length of subequal rami. *Uropod 3* peduncle massive, rami subequal, about the length of total uropod 1, with robust setae on surface and long setae terminally. *Telson* emarginate (with a shallow apical depression), 1.8 x wider than long, with two robust setae on both sides.

Female (sexually dimorphic characters). Based on female, AM P78976. *Pereopods 5 and 6* (missing in male holotype) similar in shape to each other but pereopod 6 longer; basis to dactylus more slender compared to pereopod 7; coxae subtriangular; basis moderately expanded posteriorly; ischium slender; merus slightly longer than carpus; carpus and propodus subequal, one long seta on propodus apically, much longer than dactylus.

Habitat. Interstitial in sandy beach.

Remarks. The species bears some resemblance to *X. capricornea* from Heron Island. There are some differences that indicate that the Lizard Island material belongs to another species (see table 1).

Distribution. *Australia:* Lizard Island, Queensland (current survey).

***Xystriogidiella capricornea* Stock, 1984**
(Fig. 3)

Description based on Stock (1984).

Head. *Antenna 1* accessory flagellum 3-articulate, second article longest. Right *mandible* incisor smooth, lacinia mobilis 4-dentate and wide; left mandible incisor 2-dentate, lacinia mobilis with numerous teeth. *Lower lip* with wide gap and inner lobes. *Maxilla 1* inner plate with 3 terminal setae; outer plate with 8 robust setae; palp 2-articulate, article 2 twice as long as article 1. *Maxilla 2* inner lobe slightly wider than outer lobe. *Maxillipeds* inner plate with 2 bicuspidate robust setae; outer lobe with 3 terminal robust setae; palp 4-articulate, article 4 slender, falcate with terminal nail.

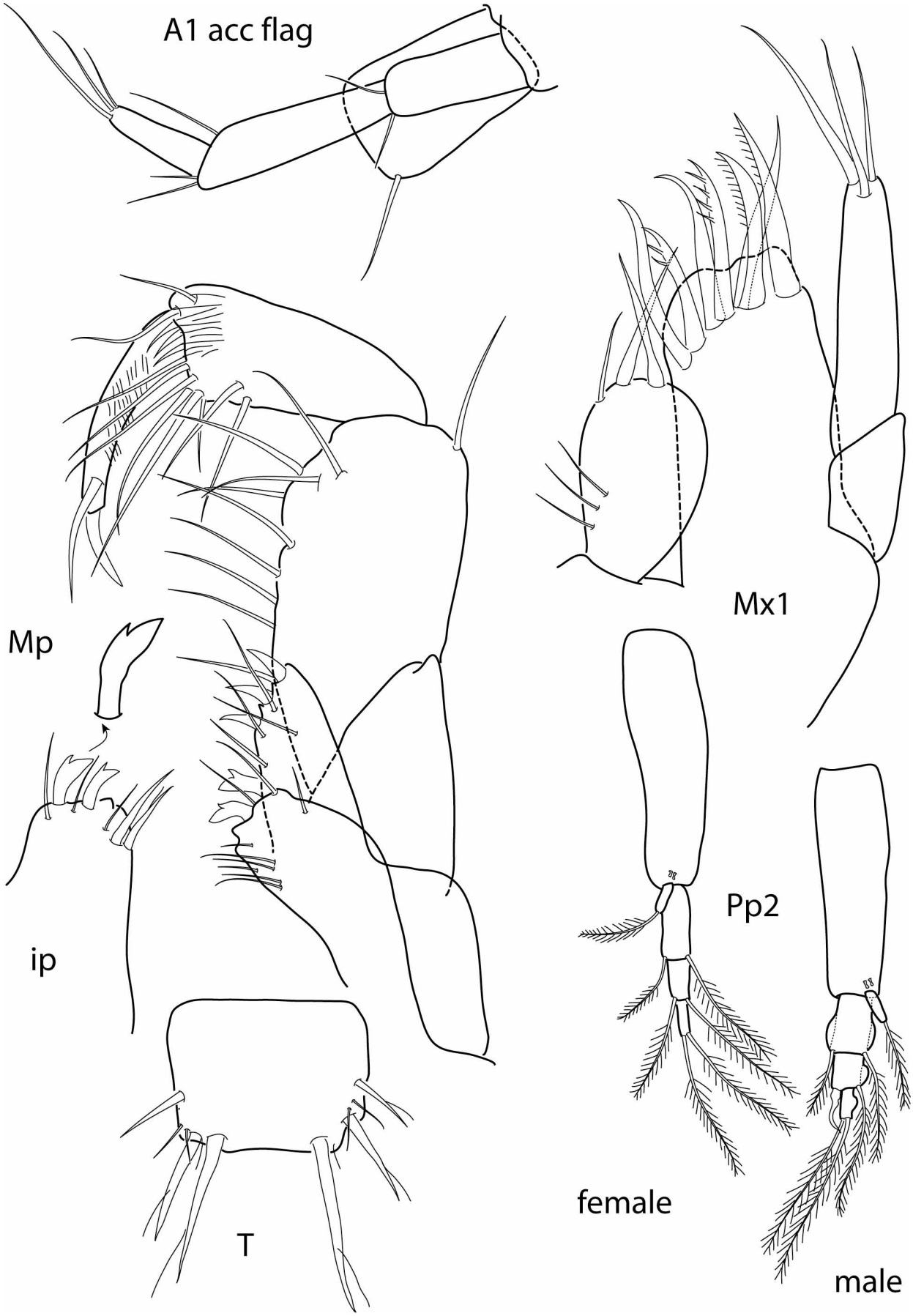

FIGURE 3. *Xystriogidiella capricornea* Stock, 1984, redrawn from Stock, 1984.

Pereon. Coxae 1–7 small. *Gnathopod 1* carpus with posterodistal pointed lobe; propodus egg-shaped. *Gnathopod 2* with non projecting carpus; propodus slightly smaller than that of gnathopod 1. *Pereopods 3 and 4* subequal. *Pereopod 7* longest, stouter and with longer setation compared to preceding appendages.

Pleon. *Pleopods* 1–3 with 3 articulate outer rami and short uni-articulate inner rami. *Epimera 1–3* posteroventrally pointed. *Uropod 1* peduncle longer than rami, outer ramus shorter than inner one. *Uropod 2* peduncle subequal in length to rami, rami of the same length. *Telson* apically truncate, 1.3 x as wide as long, 3 pairs of stout robust setae.

Habitat. In fine coral sand, exposed at low tide.

Remarks. For differences to *X. juliani* see table 1.

Distribution. *Australia:* Heron Island, Queensland (Stock 1984).

TABLE 1. Morphological differences between *X. juliani* and *X. capricornea*.

	Xystriogidiella juliani **sp. nov.**	*Xystriogidiella capricornea* Stock, 1984
Antenna 1 accessory flagellum	1 long article & 1 short article	3 short articles
Maxilla 1 inner plate	without setae	setose
Maxilla 1 palp, second article	subequal in length to article 1	twice as long
Maxillipeds, palp article 4	rather stout	slender and falcate
Pereopods 5–7, propodus, terminal setation	with long setae, longer than dactylus	with short setae, not surpassing dactylus
Pleopods 1–3	without inner rami	with short inner rami
Telson	1.8 x as wide as long, 2 pairs of stout spine-like setae	1.3 x as wide as long, 3 pairs of stout spine-like setae

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