

Iphimedia poorei, a new species of Iphimediidae (Crustacea, Amphipoda) from the New South Wales Australian coast

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Abstract

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The new species *Iphimedia poorei* is described and illustrated in detail. It differs very much from all known species of the genus by its numerous, extravagant dorsal processes, stout spines on all coxal plates, cuspidate basis and the drawn out, pointed merus on each of pereopods 5–7.

Keywords

Crustacea, Amphipoda, Iphimediidae, taxonomy, new species, Australia

Introduction

Recently the number of taxa of Iphimediidae recognized has been significantly increased, especially due to descriptions of new species of *Iphimedia* from the Indo-West Pacific and the coasts of Australia (Coleman and Lowry, 2006). Lowry and Myers (2003) described six species of *Iphimedia* from New Caledonia, Papua New Guinea and Thailand. Coleman and Lowry (2006) reviewed the Australian iphimediid fauna and described six additional species, based on collections from around the entire coastline. This brought the total number of known Australian species to ten. It was therefore unexpected when a new and highly conspicuous species of Iphimediidae was recently collected on the rather well sampled coast of New South Wales. This species is described herein.

Material was fixed in 70% ethanol. Pencil drawings were made with a camera lucida on a Leica Wild M5 dissecting microscope and a Olympus BX50 compound microscope. The line drawings were made using the technique described in Coleman (2003). Length measurements were made along the dorsal outline of the animals, beginning at the tip of the rostrum to the end of the urosome. The material is deposited in the Australian Museum, Sydney.

Iphimediidae Boeck, 1871

Iphimedia Rathke, 1843

Iphimedia poorei sp. nov.

Figures 1–7

Type material. Holotype, female, 5.2 mm, AM P74747, north side of Burrewarra Point, south of Batemans Bay, New South Wales, Australia

(35°49'53"S 150°14'6"E), Australian Museum Party, 27 March 2004 (NSW 2606).

Type locality. Burrewarra Point, south of Batemans Bay, New South Wales, Australia (35°49'53"S 150°14'6"E).

Etymology. The species is named for Dr. Gary C. B. Poore to thank him for his great contributions to the knowledge of crustaceans.

Diagnosis. Pereonites and pleonites covered with dorsal, dorsolateral and lateral spines. Maxilla 1 palp much shorter than outer plate. Maxilliped palp 3-articulate, article 2 distomedially strongly expanded into rounded lobe, guarding along article 3 and almost reaching its apex. Pereopods 1–7 coxae with spines on lateral faces. Pereopods 5–7 each with spiny basis and considerably drawn out and pointed merus.

Description. Based on holotype, female, 5.2 mm.

Head. Head with rather straight rostrum, with dorsal elevated ridge; eyes round, bulging; anterior head margin angularly pointed; ventral margin rounded. *Antenna 1* with massive peduncle article 1, expanded distally into 2 anteromedially directed spines; peduncle article 2 with short lateral and very long medial distal spine, the latter surpassing article 3; accessory flagellum vestigial, only consisting of short scale; flagellum short, consisting of 9 articles. *Antenna 2* peduncle article 1 scale-like with additional rounded lobe; article 2 with truncate gland cone; article 3 expanded distally and drawn out into a spine laterally; article 4 subequal to 5, distally expanded and acutely drawn out laterally; article 5 subrectangular; flagellum consisting of 10 articles. Mouthparts bundled into a tapering cone. *Labrum (upper lip)* longer than wide, tapering with rounded apex. *Mandibles* long, slender,

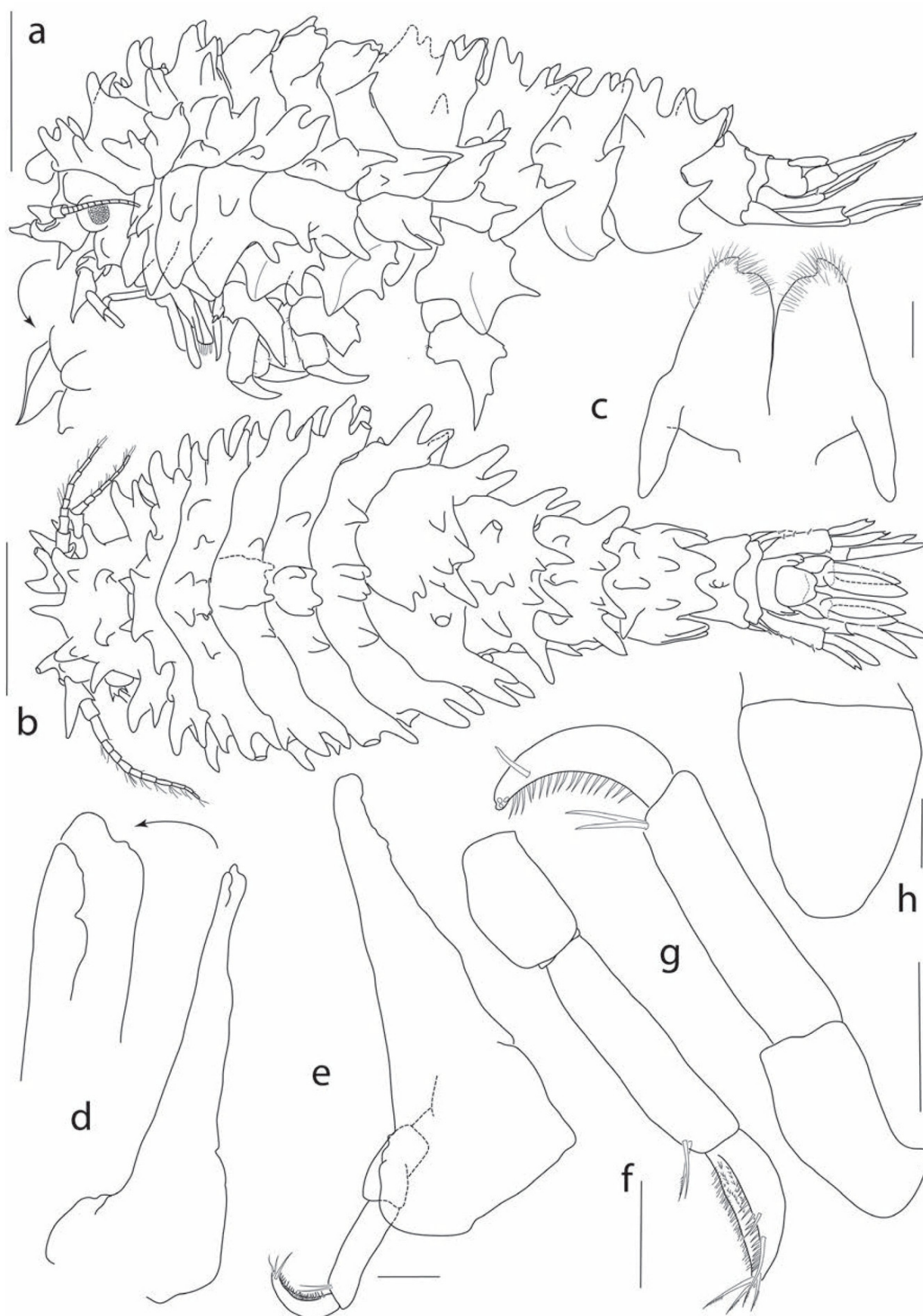


Figure 1a–h. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) left side of habitus; b) dorsal view; c) hypopharynx (lower lip); d) left mandible; e) right mandible; f) palp of left mandible; g) palp of right mandible; h) labrum (upper lip). Scale bars: a–b) 1 mm; c–h) 100 μm.

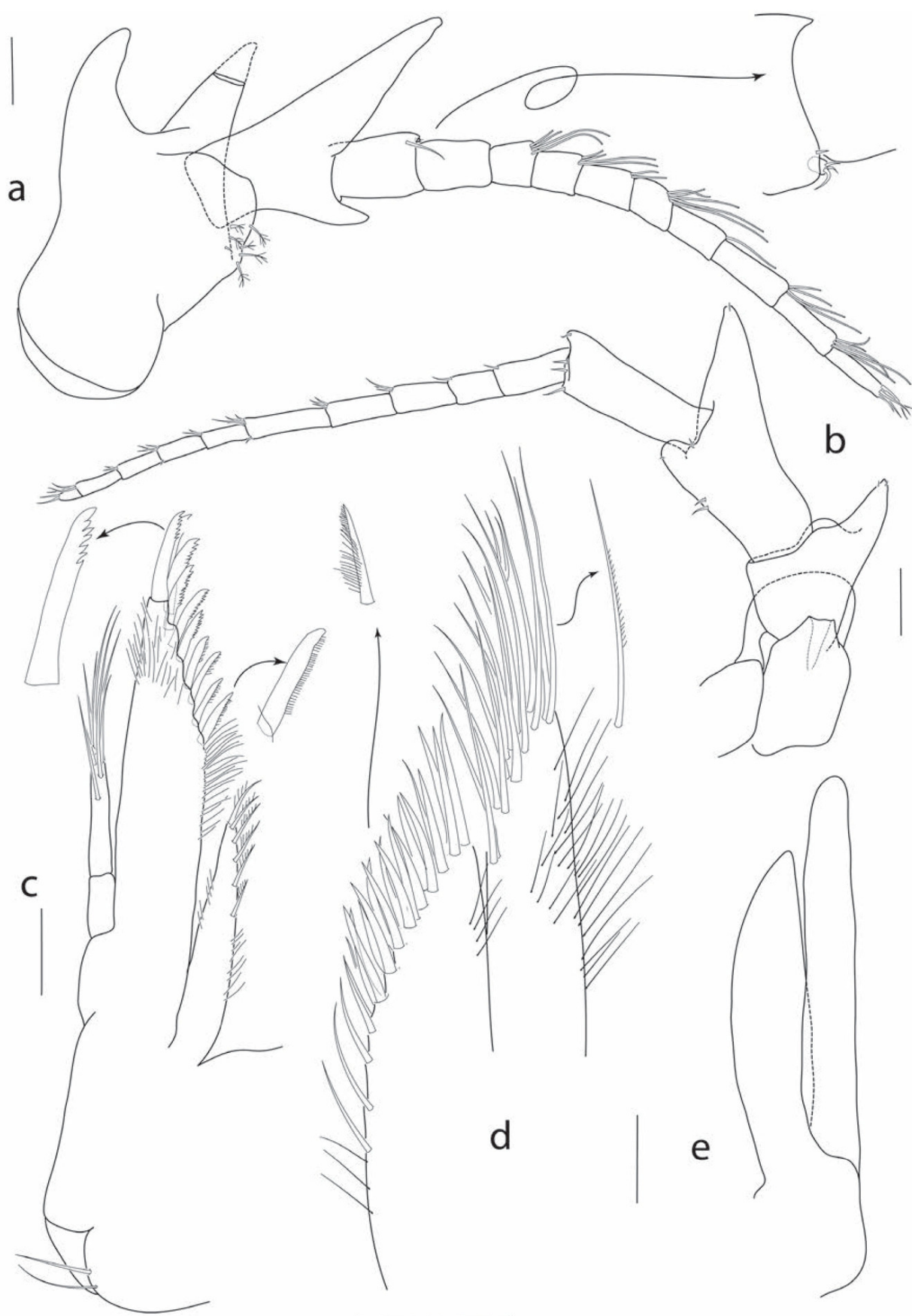


Figure 2a–e. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) antenna 1; b) antenna 2; c) maxilla 1; d) apex of maxilla 2; e) outline of maxilla 2. Scale bars: a–e) 100 μ m.

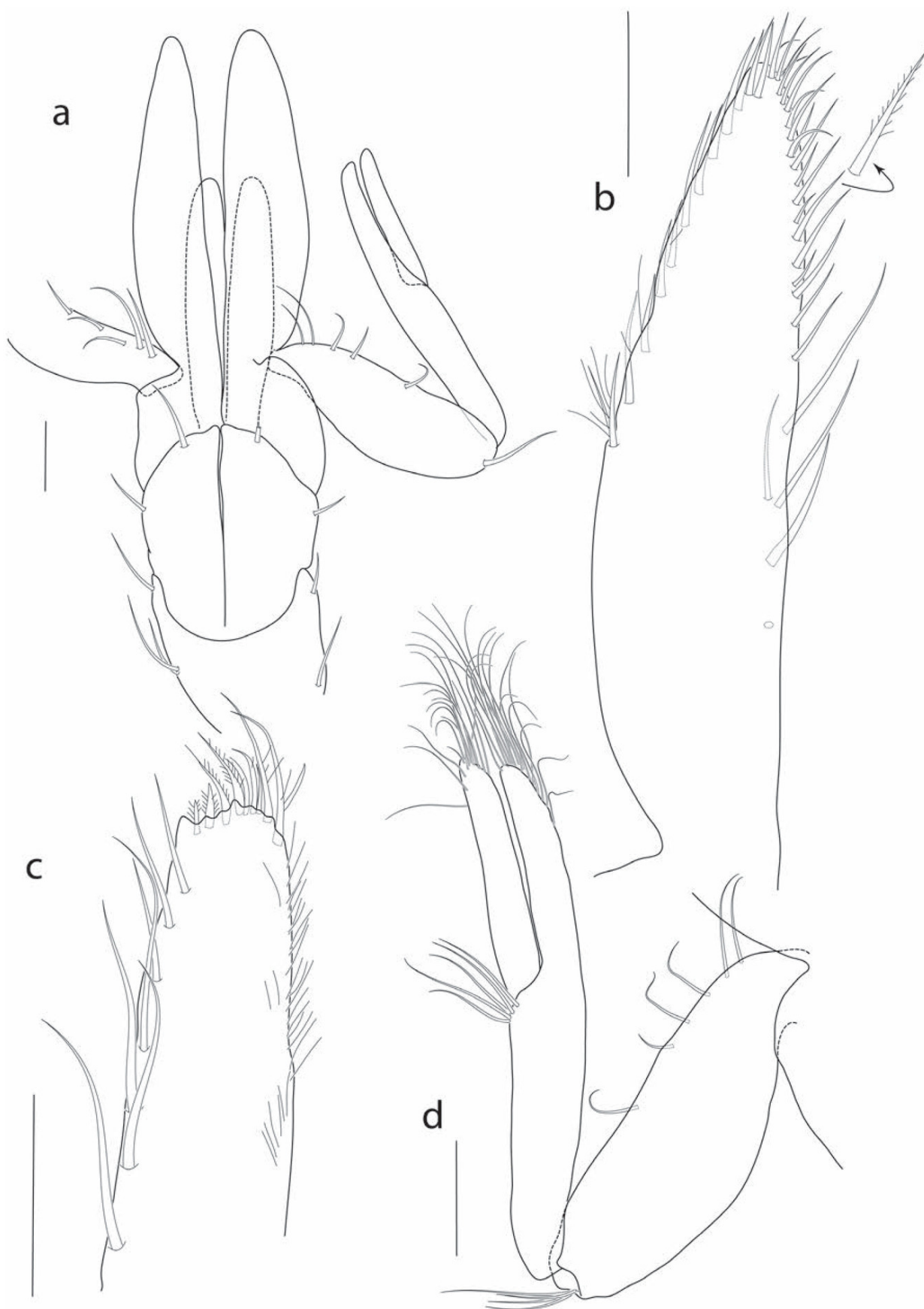


Figure 3a–d. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) outline of maxilliped; b) outer plate of maxilliped; c) inner plate of maxilliped; d) palp of maxilliped. Scale bars: a–d) 100 μ m.

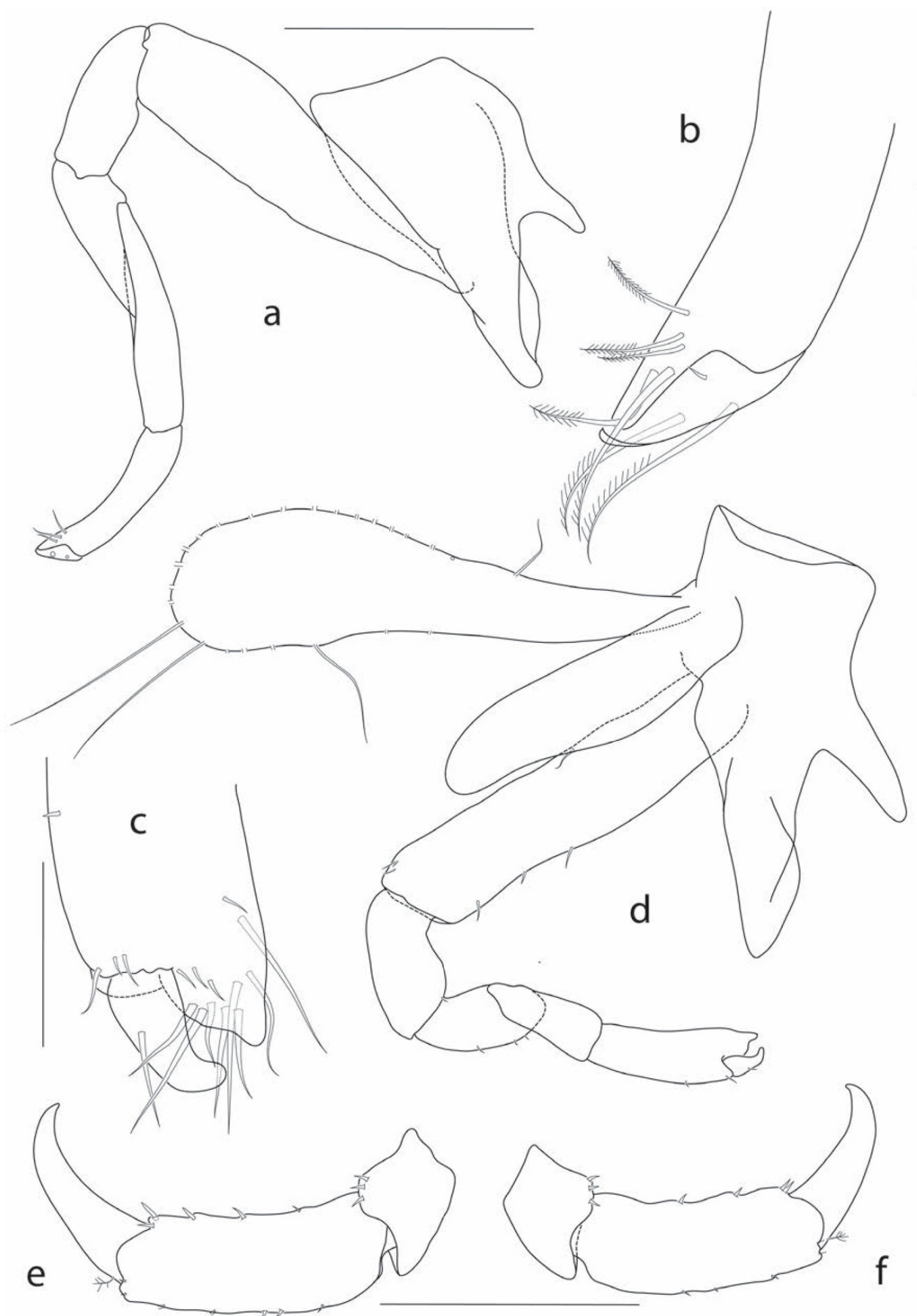


Figure 4a–f. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) gnathopod 1; b) chela of gnathopod 1; c) chela of gnathopod 2; d) gnathopod 2 (seta on chela omitted); e–f) broken off carpus to dactylus of pereopods. Scale bars: a, d, e–f) 500 μ m; b–c) 100 μ m.

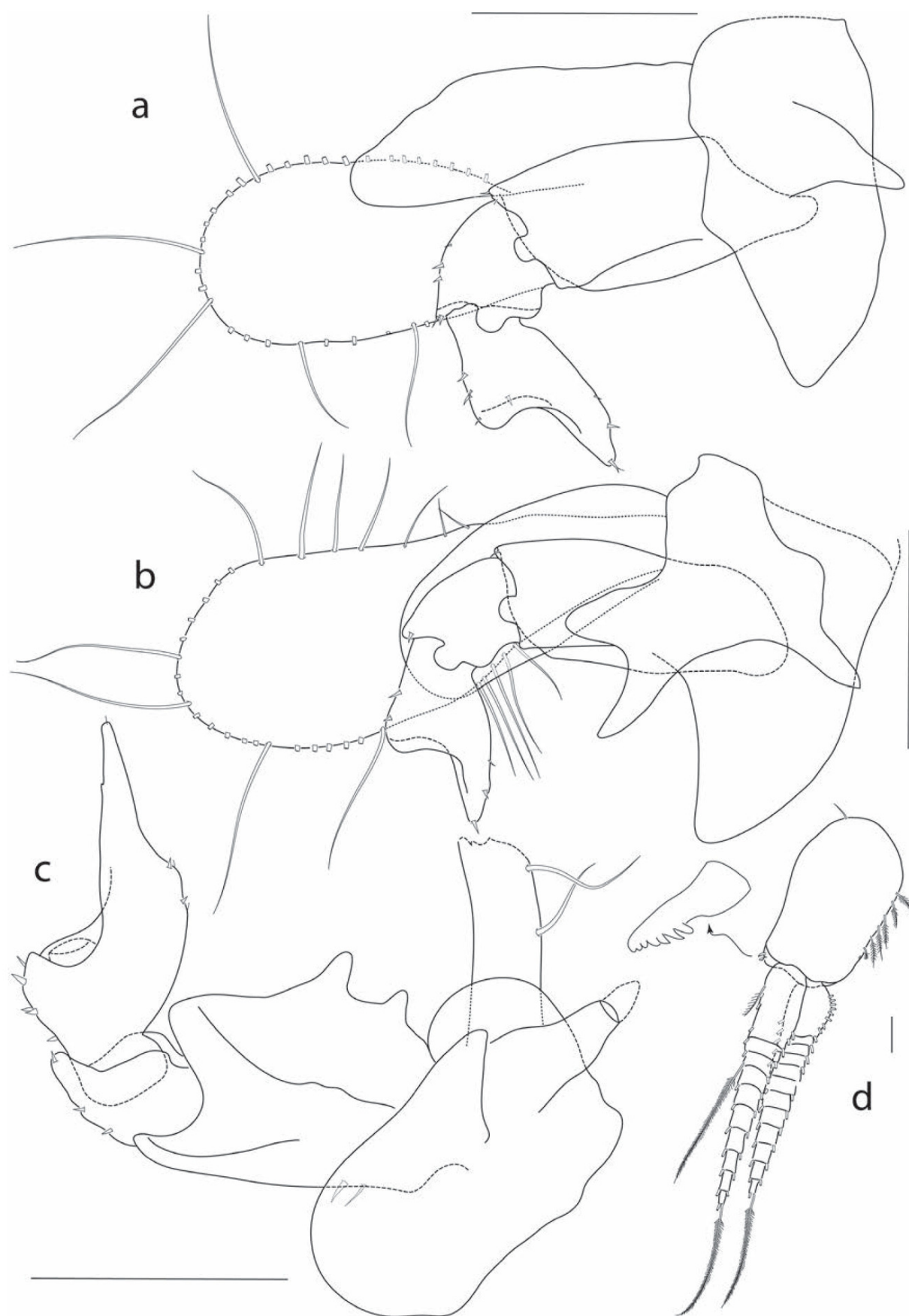


Figure 5a–d. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) pereopod 3; b) pereopod 4; c) pereopod 5; d) pleopod 1. Scale bars: a–c) 500 μm ; d) 100 μm .

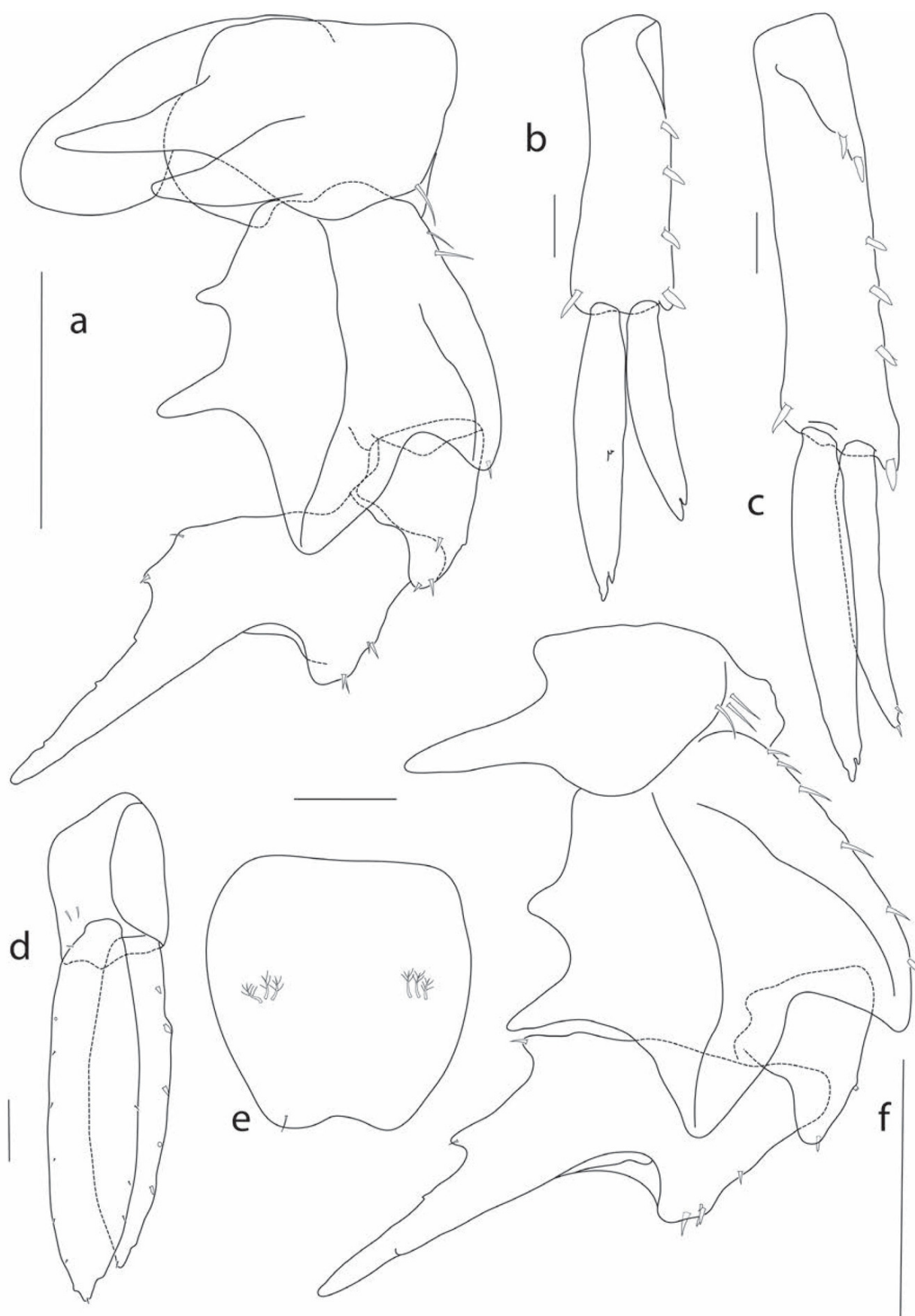


Figure 6a–f. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. a) pereopod 6; b) uropod 2; c) uropod 1; d) uropod 3; e) telson; f) pereopod 7. Scale bars: a, f) 500 μ m; b–e) 100 μ m.



Figure 7. *Iphimedia poorei* sp. nov., holotype, female 5.2 mm. Photography of the habitus

with narrow apex; molar and spine row wanting; palp 3—articulate; left mandible with inconspicuous lacinia mobilis. *Hypopharynx* (lower lip) with medially notched lobes, hypopharyngeal processes narrow. *Maxilla 1* inner plate narrow, pointed, with 5 mediomarginal setae; outer plate distally oblique with 10 serrate setal-teeth; palp 2—articulate, much shorter than outer plate. *Maxilla 2* outer lobe narrower and longer than inner plate, with long setae; inner plate with shorter and stouter setae. *Maxilliped* slender; inner plate apically truncate with stout and several long and slender setae, long slender setae on medial margin; outer plate slender and tapering distally into subacute apex; palp article 1 long, expanded posteriorly; article 2 half the width of article 1, distomedially strongly expanded into rounded lobe, guarding along article 3 and almost reaching its apex; article 3 about half the width of article 2; apices of articles 2 and 3 with a dense tuft of slender setae.

Pereon. *Pereonite 1* with a rounded anteriorly directed lobe on the front margin; on both sides 2 spines anterolaterally, 1 dorsolateral spine, 2 posterolateral spines and a pair of mid-dorsal spines at the posterior segmental border. *Pereonite 2* shortest, on both sides with 2 lateral spines, 1 dorsolateral spine and a pair of mid-dorsal spines, accompanied by a pair of small spines anteriorly. *Pereonite 3* on both sides with 2 lateral spines plus 1 small spine ventrally of those, 1 dorsolateral spine and a pair of mid-dorsal accompanied by a pair of shorter

spines posteriorly. *Pereonites 4–6* on both sides with 2 lateral spines plus 1 small spine ventrally of those, and an arrangement of 2 pairs of bilobed wide carinate spines. *Pereonite 7* on both sides with 2 lateral spines plus 1 small ventral spine, a dorsolateral spine and anteriorly with a bilobed mid-dorsal carina followed by 2 pairs of spines posteriorly. *Gnathopod 1* coxa strongly tapering, apically pointed, anterior margin with slender prominent spine; basis long expanded distally; ischium and merus subequal in length; carpus 1.3 x propodus; propodus slightly curved, forming a chela with dactylus. *Gnathopod 2* coxa strongly tapering, apically pointed, anterior margin with slender prominent spine, longer and stronger than that of coxa 1; basis subrectangular; ischium and merus subequal, shorter and those of gnathopod 1; merus and carpus subequal; propodus 1.3 x carpus length, setose apically only, forming a stouter chela compared to gnathopod 1. *Pereopod 3* with wider coxa compared to gnathopods, with spine on lateral face; basis wide, rounded narrow lobe distally; ischium short, wide, slightly curved anteriorly, rounded narrow lobe distally; merus anterodistally acutely drawn out; carpus to dactylus broken off. *Pereopod 4* with 2 spines on lateral face and a subacute lobe posteromarginally; basis to merus as for pereopod 3; carpus to dactylus broken off. *Pereopod 5* coxa wider than long, rounded anteriorly, with a rounded slightly ventrally expanded lobe, 2 stout spines on lateral face directed posteriorly; basis wide, 2 spines posteromarginally, ventral

spine longer, posteroventrally lobate, anteroventrally produced; ischium produced anterodistally; merus, widened distally, acutely drawn out posterodistally; carpus to dactylus broken off. *Pereopod 6* coxa slightly wider than long, anteriorly straight, small posterior lobe, 2 strong spines on lateral face; basis similar to that of pereopod 5 but larger and posteroventral lobe pronounced; ischium as for pereopod 5; merus dramatically drawn out posterodistally, posterior margin with 1 protrusion; carpus to dactylus broken off. *Pereopod 7* coxa smallest with one stout spine posteriorly; basis similar to that of pereopod 6, but wider; ischium as for pereopod 6; merus similar in shape to that of pereopod 6 but longer and wider and with 2 posteromarginal subacute protrusions.

Pleon. Pleonite 1 with a similar mid-dorsal and dorsolateral arrangement as pereonite 7; epimeron with a long narrow pointed posterolateral process and an additional spine, ventral margin narrowly rounded. *Pleonite 2* with a small rounded anterior protrusion and a posterior pair of double spines mid-dorsally, 1 dorsolateral spine on both sides; epimeron with a posterolateral spine, posteroventral corner with pointed spine. *Pleonite 3* with a large bilobed carina and a posterior pair of double spines mid-dorsally, 1 dorsolateral spine on both sides; epimeron with a posterolateral slightly upward curved spine and an equally long pointed spine at the posteroventral angle.

Pleopods normal, inner ramus slightly longer than outer.

Urosome. Urosomite 1 with short narrow rounded mid-dorsal process somewhat directing anteriorly. *Urosomite 2* shortest. *Uropod 1* peduncle longer than rami; outer ramus slightly shorter than inner; both rami without marginal spines (except for minute apical ones on outer ramus). *Uropod 2* peduncle subequal in length to inner ramus; outer ramus shorter than inner, both rami without marginal spines. *Uropod 3* peduncle short; rami lanceolate; outer ramus shorter than inner, with marginal spines on outer margin; inner ramus with only minute spines. *Telson* about as long as wide, emarginate.

Remarks. This species has a very special habitus that differs from all other Australian iphimediids and is superficially similar to some species in the Antarctic genus *Echiniphimedia* K.H. Barnard, 1930. Similar to this genus *Iphimedia poorei* sp. nov. has several rows of spines on the dorsal side of its pereon and pleon, as well as on the face of the coxae, mid-dorsal carinae on some segments and a typical arrangement of paired dorsal processes (sometimes combined with a mid-dorsal carina) on the posterior pereon and the pleon that most iphimediids have.

However, the new species is not classified as *Echiniphimedia* because of the following characters. In *I. poorei* the antenna 2 peduncular articles 3 and 4 are each drawn out into an apical spine (vs spine-less); the mandibular incisors are narrow (vs wider, dentate incisors); there are medioapical notches on the hypopharyngeal lobes (vs unnotched); the palp of the maxilla 1 is much shorter than the outer plate (vs subequal or longer); the palp of the maxilliped is 3-articulate with article 2 medioapically strongly produced along article 3 (vs basic, 4-articulate without any article medially produced); gnathopod 2 is weakly setose only on the chela (vs dense setation along posterior margin of carpus and propodus); the merus on pereopods 5–7 dramatically drawn out posterodistally (vs only weakly drawn out).

A closer look shows that the new species is very similar in several aspects to some species of *Iphimedia*. However, none of these species of *Iphimedia* exhibits such an extraordinary dorsal spination, spines on the face of the coxal plates and extremely drawn out posterodistal angles of the merus on each of the posterior pereopods as the new species. Traditionally, taxonomists would have classified this species as a new genus, due to its remarkable differences to all known species of Iphimediidae. We, however, see this species embedded inside the genus *Iphimedia*. It has morphological affinities to *Iphimedia macrocystidis* (K.H. Barnard, 1932), *Iphimedia magellanica* Watling and Holman, 1980 and *Iphimedia multidentata* (Schellenberg, 1931), all species known only from the Antarctic. They have the same arrangement of the maxilliped palp article 2 projecting along article 3, a maxilla 1 palp which is shorter than the outer plate and an multicuspitate basis of pereopod 7. A combination of some of these character combinations can also be found within the Australian iphimediids: *Iphimedia beesleyae* Coleman and Lowry, 2006, *Iphimedia oetkeri* Coleman and Lowry, 2006 and *Iphimedia filmersankeyi* Coleman and Lowry, 2006 have very similar mouthparts to the new species. *Iphimedia filmersankeyi* is the most similar species to *I. poorei*. The mandible, maxilla 1 and maxilliped only differ in very small details; pereopods 5–7 each have a spiny basis with the merus considerably drawn out and pointed.

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