

A new genus and new species of Desmosomatidae (Crustacea: Isopoda: Asellota) from the deep sea of south-eastern Australia

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Abstract

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A new genus and species, *Chelantermedia composita* sp. nov., and five new species of Desmosomatidae Sars, 1897 (*Paradesmosoma australis* sp. nov., *Oecidiobranchus nowrae* sp. nov., *Disparella kensleyi* sp. nov., *Whoia victoriensis* sp. nov., *Echinopleura cephalomagna* sp. nov.) are described from the deep sea off south-eastern Australia. The species of Desmosomatidae sampled in 1988 are the first record of this family in Australian waters.

Keywords

Isopoda, Desmosomatidae, Australia, taxonomy, *Chelantermedia*, new genus, new species

Introduction

The new species described below were collected in the 1980s as part of the SLOPE Program of Museum Victoria and the then Victorian Institute of Marine Sciences. Samples were taken off southern New South Wales and Tasmania and in Bass Strait in 1988 from RV *Franklin*. Poore et al., 1994 analysed depth and geographical diversity patterns of all species of Isopoda. The present paper describes members of the asellote family Desmosomatidae Sars, 1897, common deep-sea benthic isopods with a slender body (Hessler, 1970; Svavarsson, 1984, 1988; Wägele, 1989). In deep-sea areas that are sampled for the first time, the fraction of isopod species new to science ranges from 50–100% (Wilson, 1980; Poore et al., 1994; Park, 1999; Brandt et al., 2004). The species of Desmosomatidae described here are the first record of this family in Australian waters. From a total of 21 desmosomatid species new to science, six new species are described from the material lodged in the Museum Victoria, Melbourne (Poore et al., 1994).

The specimens were compared with relevant type material of similar species. For the drawings a Leitz MI85 compound microscope (Biocenter Grindel and Zoological Museum, Hamburg) and Olympus BX20 (Museum Victoria, Melbourne) with a camera lucida were used. The dorsal and lateral habitus drawings were made from the holotype in glycerine stained with methylene green. All appendages were dissected from a paratype (if not available, from the holotype) and deposited in water-free glycerin jelly, stained and finally sealed. The total body length was measured in dorsal and lateral views from the

anterior edge of the head to the posterior medial tip of the pleotelson. Length-to-width ratios refer to the greatest length and width of the limb articles or segments. The terminology used in this study for the most important setal types follows Hessler (1970). Following Wolff (1962) and Hessler (1970) roman numerals refer to pereopods and Arabic numerals for body segments and articles of appendages.

Abbreviations: A1 = antennula; A2 = antenna; MdL = left mandible; MdR = right mandible; Mx1 = maxillula; ip = incisor process; lm = lacinia mobilis; mp = molar process; Mx2 = maxilla; Mxp = maxilliped; Op = operculum; PI–VII = pereopods I–VII; Plt = pleotelson; Plp 1–5 = pleopods 1–5; Prn 1–7 = pereonites 1–7; Urp = uropods; ZMH = Zoological Museum of Hamburg; AM = Australian Museum, Sydney, NMV = Museum Victoria, Melbourne.

Chelantermedia gen. nov.

Type and only species. *Chelantermedia composita* sp. nov.

Diagnosis. Body elongated, length about 5 times longer than width of pereonite 2. Lateral margins of pereonites straight, Pereonites 6, 7 and pleotelson dorsally fused. Pereopod chelate, enlarged, carpus ventrally with 1 slender seta midway and 1 slender seta proximal to claw-seta.

Etymology. The first part of the name refers to the chela of pereopod I. *Chela* (Latin, a claw) and *intermedia* (Latin, in between) reflect the intermediate set of characters between Desmosomatidae and Nannoniscidae – as it occurs for example in the chela of pereopod I.

Discussion. The new genus shows a mixture of characters of Desmosomatidae Sars, 1897 and Nannoniscidae Hansen, 1916, two families that are poorly differentiated. The new species, *C. composita*, will be important in phylogenetic studies leading to better understanding of the relationships within the family Desmosomatidae. It possesses a combination of character states not compatible with any existing genus. No desmosomatid genus has pereonites 6 and 7 and the pleotelson fused as in some nannoniscid genera, for example *Rapaniscus* Siebenhaller and Hessler, 1981. All nannoniscid genera including species with fused pereonites 6 and 7 (*Hebefustis* Siebenhaller and Hessler, 1977, *Rapaniscus*, *Regabellator* Siebenhaller and Hessler, 1981, *Nannoniscoides* Hansen, 1916, *Nannoniscus* Sars, 1870, *Saetoniscus* Brandt, 2002) have an antennula with a bulbous distal article. The new genus does not possess such a specialisation, the flagellar articles of the antennula tapering towards the distal article. Pereopod I resembles most species of *Prochelator* Hessler, 1970, *Chelator* Hessler, 1970 or *Oecidiobranthus* Hessler, 1970. *Prochelator* is the only one of these three that includes species with biramous uropods but none has fused pereonites.

Chelantermedia composita sp. nov.

Figures 1–3

Material examined. Holotype. Female, preparatory, 2.1 mm; NMV J18612. Australia, NSW, off Nowra (34°59.52'S, 151°5.94'E), 204.0 m, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 14 Jul 1986 (stn SLOPE 1).

Paratypes (7 specimens: 3 females, 4 males). Same data as holotype. NMV J186121.

Description. (Holotype female). *Habitus* (fig. 1): body 2.1 mm long, 5.17 times longer than width of pereonite 2. Pereonite 1 width 1.16 times cephalon width in dorsal view. Pereonite 1 length 1.11 pereonite 2 length, 0.96 pereonite 2 width. Pereonite 5 width 0.60 length, anterior margin straight. Pereonite 6 and 7 fused with pleotelson, lateral margins straight. Coxae 1–4 slightly produced, without setae. Pleotelson length as long as wide, without posterolateral spines. Lateral margins straight, posterior margin slightly rounded.

Antennula: 0.23 mm long, length 0.02 body length, 5 articles. Article 1 with 2 broom setae and 1 simple seta. Article 2 length 3.67 width, 1.94 article 1 length; with 2 long articulated broom setae distally and 2 simple seta midway. Article 3 with 1 simple seta, article 4 with 2 long slender setae and article 5 distally with 1 aesthetasc and 2 long slender setae. *Antenna:* length about one-third of body length, with 11 articles. Article 3 with 1 small seta. Article 4 with 2 small setae. Article 5 distally with 3 simple setae, 1 simple seta located midway. Article 6 with 4 simple setae midway, distally with 2 small broom setae and 6 long slender setae. Flagellar articles with few setae.

Mandible: Without palp. Incisor process with 3 lobes. Lacinia mobilis of left mandible with 4 teeth. Spine row containing 4 spines. Molar process triangular with 7 setae. *Maxilliped:* Epipodite lost during dissection. Endite with 2 coupling hooks and numerous fine setae on inner margin and on distal tip. Palp of 4 articles, articles 1 and 2 clearly broader

than articles 3 and 4. Article 1 length 1.14 width. Edge of palp article 2 with 4 long slender setae and inner margin with 2 long slender setae. Article 2 about 2 times width, article 3 length 5.00 width, article 4 length 3.50 width. Article 3 with 2 setae, article 4 with 3 setae.

Pereopod I: Chelate. Basis length 3.75 width, proximal to ischium ventrally 1 large seta. Ischium length 1.77 width, with 1 ventral seta. Merus length 2.38 width, ventrally with 1 strong unequally bifid seta, midway 1 slender seta, distodorsally 1 large simple seta. Carpus length 1.38 width, ventrally with claw-seta, penultimate slender seta and 1 slender seta midway. Claw-seta as long as propodus. Propodus length 2.69 width, dorsally with 2 small setae, ventral margin with cuticular membrane and 6 small slender setae. Dactylus length 3.6 width, without setae. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopods II–IV:* Similar. *Pereopod III:* Basis length 4.29 width, with 2 simple setae and 1 broom seta. Ischium length 2.15 width, with 2 simple slender setae. Merus length 1.36 width, ventrally with 2 simple setae, distodorsally 1 simple seta. Carpus length 3.90 width, ventrally 3 distally setulate setae and combs between insertion of setae, distodorsally 1 small simple seta. Propodus length 3.90 width; ventral margin with 2 setae and combs between them. Dactylus length 3.84 width, with 3 small slender seta, unguis (claw) of 1 strong spittle-like formed conate seta and 3 slender setae inserting ventrally. *Pereopods V–VII:* Similar. *Pereopod V:* Basis length 3.00 width, with 7 broom setae in irregular distances and ventrally 1 slender seta near ischium. Ischium length 2 times width, with 1 dorsal and 1 ventral simple seta. Merus length 0.89 width, distodorsally with 2 setae, ventrally 1 seta. Carpus length 2.80 width, with ventral row of 4 long slender distally unequally bifid setae, dorsally 3 slender setae and near propodus 1 small broom seta. Propodus length 5.60 width, dorsally with 3 slender distally unequally bifid setae increasing in length towards dactylus, ventrally with row of 5 slender distally unequally bifid setae increasing in length towards dactylus and 1 simple seta between 4th and 5th seta of ventral row. Dactylus length 4.67 width, (slightly damaged) with unguis (claw) of 1 small robust seta and 1 long conate seta broadened distally, 3 slender setae inserting between them.

Pleopod 2 (operculum): Length 1.15 width. Form nearly rectangular, lateral margins straight, distal margin straight. Ventral surface without setae. Distal margin with 4 slender setae. *Pleopod 3:* Endopod length 1.39 width, distally with 3 long plumose setae. Exopod length 1.46 of endopod length, outer margin hirsute. *Pleopod 4:* Endopod oval and tapering to tip, length 1.62 width. Exopod length 6.90 width, distally with 1 long plumose seta.

Uropods: Biramous. Exopod length 0.58 times endopod length. Endopod 5.14 times longer than wide, 1 small broom seta inserting medially, a bunch of 4 small broom setae and 1 slender seta inserting between the single small broom seta and the tip of the endopod, distally with 3 long broom setae and 2 small simple setae. Exopod length 4.2 width, distally with 2 long slender setae. Protopod length 1.39 width, with 1 small broom seta and 3 simple setae.

Male. Habitus similar to female, 5.43 times longer than width of pereonite 2. *Antenna*: 20 articles, flagellum basally swollen, with 14 articles. *Pleopod 1*: 4.93 times longer than distal width, tips triangular with 4 small slender setae on outer side. *Pleopod 2*: sympod length 2.03 times width, outer lateral margin slightly convex, distally with 4 setae. Endopod inserting about 0.50 of sympod length.

Etymology. From the latin word *composita*, composite. The new species is composed of character states that occur in Desmosomatidae and Nannoniscidae and are observed together in the same species for the first time.

Distribution. Off southern NSW, Australia.

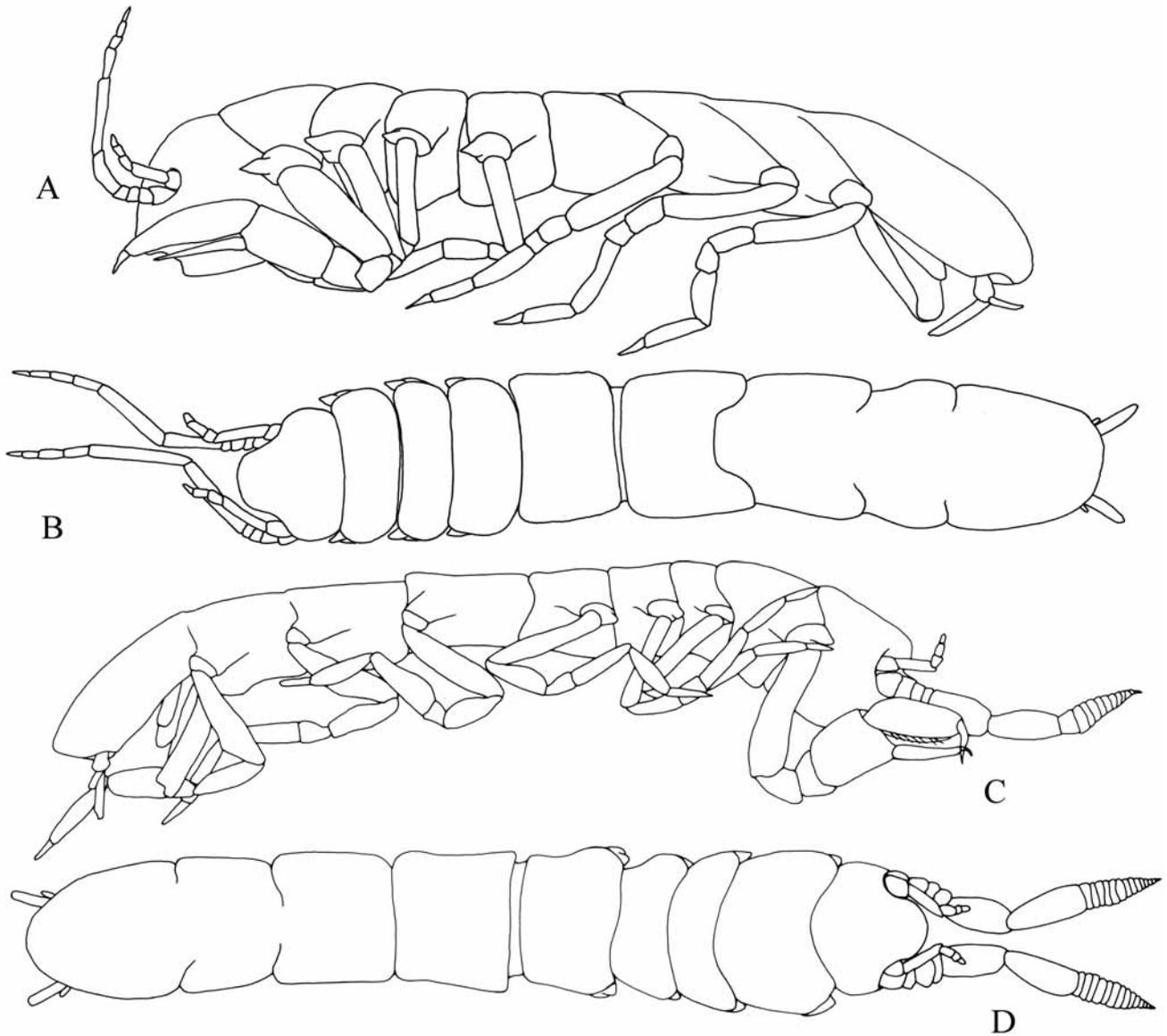


Figure 1. *Chelantermedia composita* sp. nov. Holotype female. NMV J18612. Dorsal and lateral views (A, B). Allotype male. NMV J186121. Dorsal and lateral views (C, D).

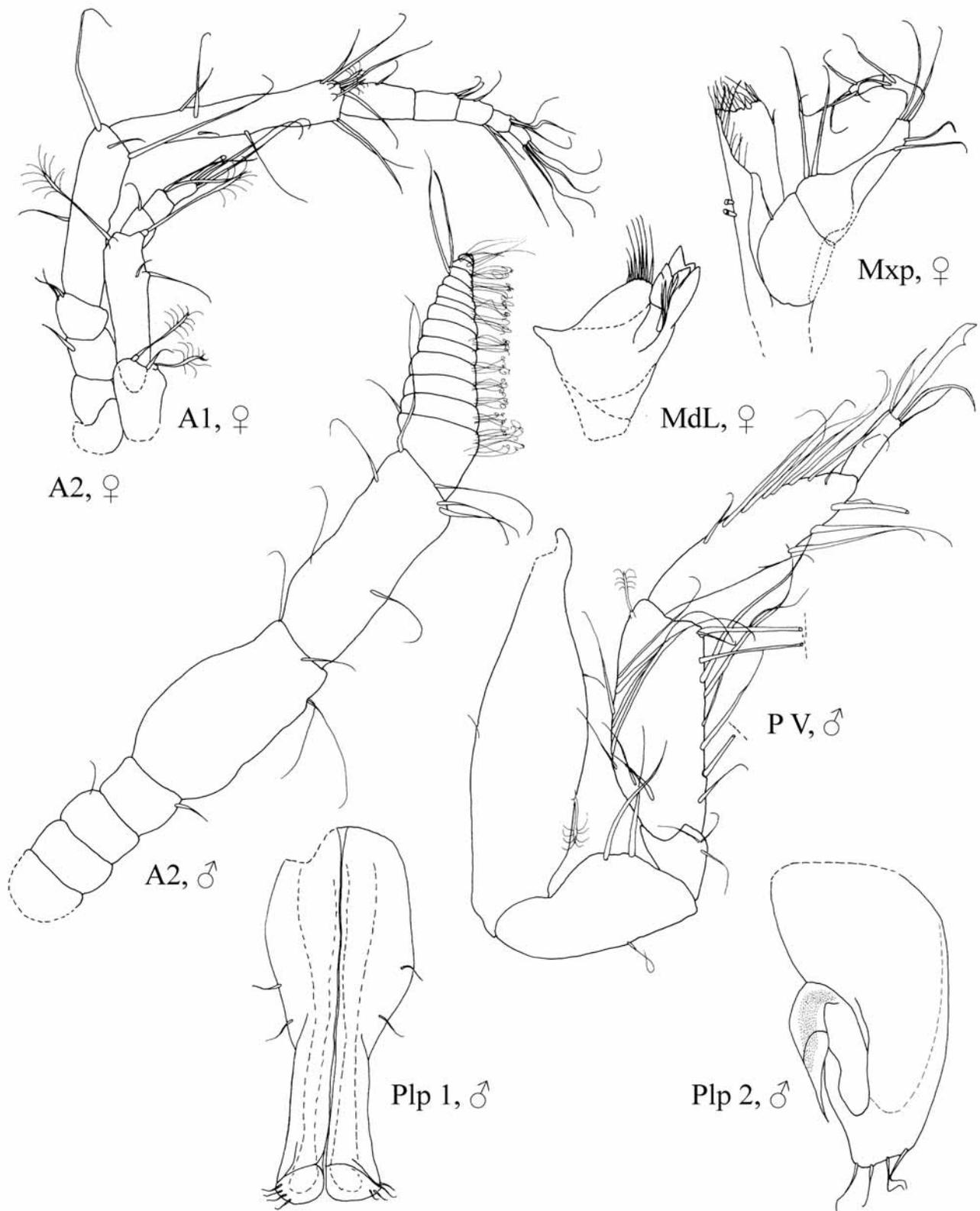


Figure 2. *Chelantermedia composita* sp. nov. Paratype female, Allotype male. NMV J186121. Antennae, mouthparts, pereopod V, male pleopods.

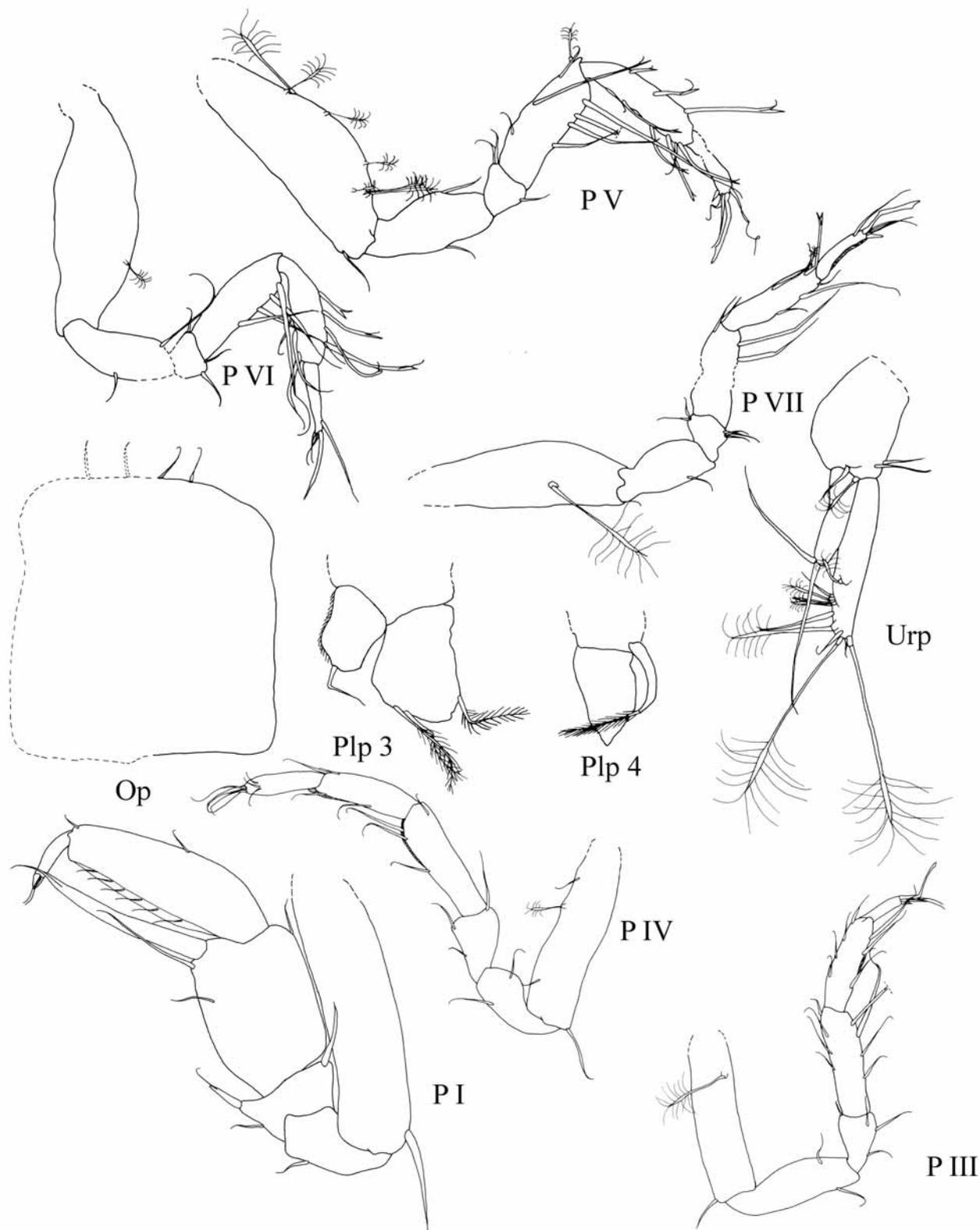


Figure 3. *Chelantermedia composita* sp. nov. Paratype female. NMV J186121. Pereopods I–VII and pleopods (Op, Plp 3, 4, Urp).

Paradesmosoma australis sp. nov.

Figures 4–7

Material examined. Holotype. Female, preparatory, NMV J18608; Type locality. - Australia, Vic., S of Point Hicks (38°17.70'S, 149°11.30'E), depth 400 m, WHOI epibenthic sled, RV *Franklin*, 24 Jul 1986 (stn. SLOPE 40).

Diagnosis. Body length about 4.4 times longer than width of pereonite 2. Palp of left mandible with 2 articles, article 2 length 2.10 width, tapering to distal end, terminally 1 small seta, margins hirsute. Pereonite 1 length 1.36 pereonite 2 length. Coxae 1–4 faintly produced, without setae. Pleotelson anteriorly widest, about as wide as long, posterolateral spines present, lateral margins slightly convex, posterior margin slightly rounded. Uropods uniramous, endopod length 4.82 protopod length, 10.25 times longer than wide.

Description. Habitus: body 2.6 mm long, 4.36 times longer than width of pereonite 2. Pereonite 1 width 1.44 times cephalon width in dorsal view. Pereonite 1 length 1.36 pereonite 2 length, 0.97 pereonite 2 width. Pereonite 5 anterior margin straight, lateral margins slightly concave. Coxae 1–4 faintly produced, without setae. Pleotelson anteriorly widest, about as wide as long, posterolateral spines present, lateral margins slightly convex, posterior margin slightly rounded.

Antennula: About 0.26 mm long, length about 0.10 body length, with 5 articles. Article 1 with 1 small slender seta and 4 small broom setae. Article 2 length 3.70 width, 1.48 article 1 length; marginally with 2 slender setae, distally with 2 long articulated broom setae. Article 3 with 2 slender setae, article 4 distally with 1 broom seta, distal article with 1 aesthetasc, 1 broom seta and 2 long slender setae. *Antenna* (fig. 5): broken off.

Mandible: Palp of 2 articles. Article 1 without setae, article 2 length 2.1 width, tapering to distal end, terminally 1 small seta, margins hirsute. Incisor process with 3 teeth. Lacinia mobilis of left mandible with 3 teeth, right mandible not dissected from specimen. Spine row containing 8 spines. Molar process large, with 12 slender setae. *Maxillula:* Inner lobe not dissected from specimen. Outer lobe broken off from inner lobe, marginally with 6 ventral setae and 6 dorsal setae, terminally with 12 strong spines. *Maxilla:* Medial lobe as long, slightly broader than other lobes, terminally with 3 slender setulate setae, marginally with 14 setae, setae inserting near base longest. Outer lobe terminally with 3 long slender setulate setae, dorsal margin with 5 pairs of fine setae. *Maxilliped:* Epipodite length 3.31 width, length 1.17 endite length, outer margin hirsute. Endite with 2 coupling hooks, with numerous fine setae. Edge of endite and palp articles 1–3 fringed with row of fine setae and 1 seta on distal corner. Palp article 2 with 6 setae on inner margin, article 3 with 12 setae on inner margin, article 4 with 3 setae, article 5 with 4 setae. Article 1 length 0.37 width, article 2 length 1.03 width, article 3 length 0.85 width, article 4 length 1.5 width, article 5 length 1.50 width.

Pereopod I: Basis length 2.57 width, near coxa with 1 distally slender plumose seta, 5 simple slender setae and proximal to ischium 1 slender seta. Ischium length 2.43 width, ventrally with row of 6 simple setae, dorsolaterally with row of

7 simple setae. Merus length 0.72 width, distodorsally 1 simple slender seta, ventrally with a row of 5 simple setae, 2 distally setulate setae and 1 stout unequally bifid seta. Carpus length 1.44 width, with dorsolateral row of 5 simple slender setae, distoventrally with claw-seta and a ventral row of setae of irregular size and type: 3 robust unequally bifid setae and 5 slender setae (1 slender seta inserting proximal to propodus). Propodus broadest at articulation to carpus, tapering towards dactylus, length 3.05 width, ventrally fringed with fine setae and 12 small setae inserted in cuticular membrane. Dactylus length 5 times width, mediodistally with 3 small setae. Unguis (claw) of 1 conate setae, 3 slender setae inserting ventrally. *Pereopod II:* Similar to pereopod III, different from pereopod IV. Basis length 3.04 width, marginally with 7 slender setae and 1 small broom seta, proximal to ischium ventrally with bunch of 5 distally slender plumose setae. Ischium length 3 times width, ventrally with row of 23 distally slender plumose setae, dorsally with 5 setae. Merus length 1.86 width, with dorsolateral row of 9 long simple setae, ventrally with 6 simple slender setae and 2 distally setulate setae. Carpus length 3.05 width, with ventral row of 8 robust unequally bifid setae increasing in length towards propodus, distal seta of row as long as propodus, dorsally with row of 12 simple setae. Propodus length 4.18 width dorsally, ventrally 4 small slender setae, dorsally 7 setae. Dactylus length 5.60 width, mediodistally with 3 small seta. Unguis (claw) of 1 long conate seta, 2 slender setae inserting ventrally. *Pereopod IV:* Basis marginally with 8 distally slender plumose setae. Ischium length 1.77 width, ventrally with row of 24 distally slender plumose setae and dorsally 3 slender setae. Merus length 1.67 width, with 9 simple slender setae and ventral row of 13 distally slender plumose setae. Carpus length 2.41 width, with dorsal row of 16 slender setae and a ventral row of 33 distally slender plumose setae. Propodus length 1.66 width, dorsally with 24 simple slender setae, ventrally with row of 25 distally slender plumose setae, distally 2 small slender setae. Dactylus width 0.13 propodus width, length 1.5 width, 3 small setae mediodistally. Unguis (claw) with 1 conate seta, 2 slender setae ventrally. *Pereopod VI:* Similar to pereopod V and pereopod VII. Basis length 1.93 width, with few small slender setae and 1 long slender seta ventrally proximal to ischium. Ischium length 2.15 width, ventrally with 1 simple seta, distodorsally 2 simple slender setae. Merus length 1.21 width, with 2 ventral setae, distodorsally 1 simple slender seta. Carpus length 3.53 width, ventrally with row of 6 long distally setulate setae and 1 short unequally bifid seta, dorsally with row of 7 simple slender setae. Propodus length 3.91 width, ventrally with row of 11 long distally setulate setae, dorsally with row of 4 simple slender seta, distally 1 small broom seta. Dactylus length 6.75 width, proximal to unguis (claw) 4 simple slender setae. Unguis (claw) of 1 long conate seta.

Pleopod 2 (operculum): Length 0.93 width, lateral margins slightly convex, distal margin deeply concave, with 4 small simple setae. *Pleopod 3:* Endopod length 1.62 width, distally with 3 long plumose setae. Exopod length 0.75 of endopod length, margins hirsute, distally with 1 small seta. *Pleopod 4:* Endopod oval-shaped, length 2.31 width. Exopod length 5 width, distally 1 long plumose seta, outer margin hirsute.

Uropods: Uniramous. Endopod length 4.82 protopod length, 10.25 times longer than wide, marginally with 2 small broom setae, distally with 4 slender setae and 5 broom setae. Protopod length 1.7 width, with 3 simple slender setae.

Etymology. *Australis* (Latin), means “from the south”. The name refers to the fact that this species is the first record of the genus *Paradesmosoma* from the southern hemisphere.

Distribution. South-eastern Australia, off Vic.

Discussion. The new species is assigned to the genus *Paradesmosoma* Kussakin, 1965 based on the characteristic shape of pereopod IV, the kind of setation of this pereopod, carpus and propodus “paddle-like” and surrounded by numerous distally slender plumose setae (occurring in

Paradesmosoma only) and the characters of pereopod I: carpus less enlarged than propodus, with ventral row of irregular setae of varying types. *P. australis* sp. nov. is most similar to *P. orientale* Kussakin, 1965 in the shape of palp article 2 of the mandible. As in *P. orientale*, palp article 2 is about 2.17 times longer than wide and tapers to the distal end which is tipped by a small simple setae. In contrast to *P. orientale*, the lateral margins of this article are hirsute in *P. australis*. According to Kussakin’s (1965) drawings, neither *P. orientale* nor *P. conforme* Kussakin, 1965 possesses posterolateral spines on the pleotelson. *P. australis* has posterolateral spines on the pleotelson. Unlike in the two species from the northern hemisphere, the propodus of pereopod I is posteriorly widest in *P. australis* and tapers toward the dactylus.

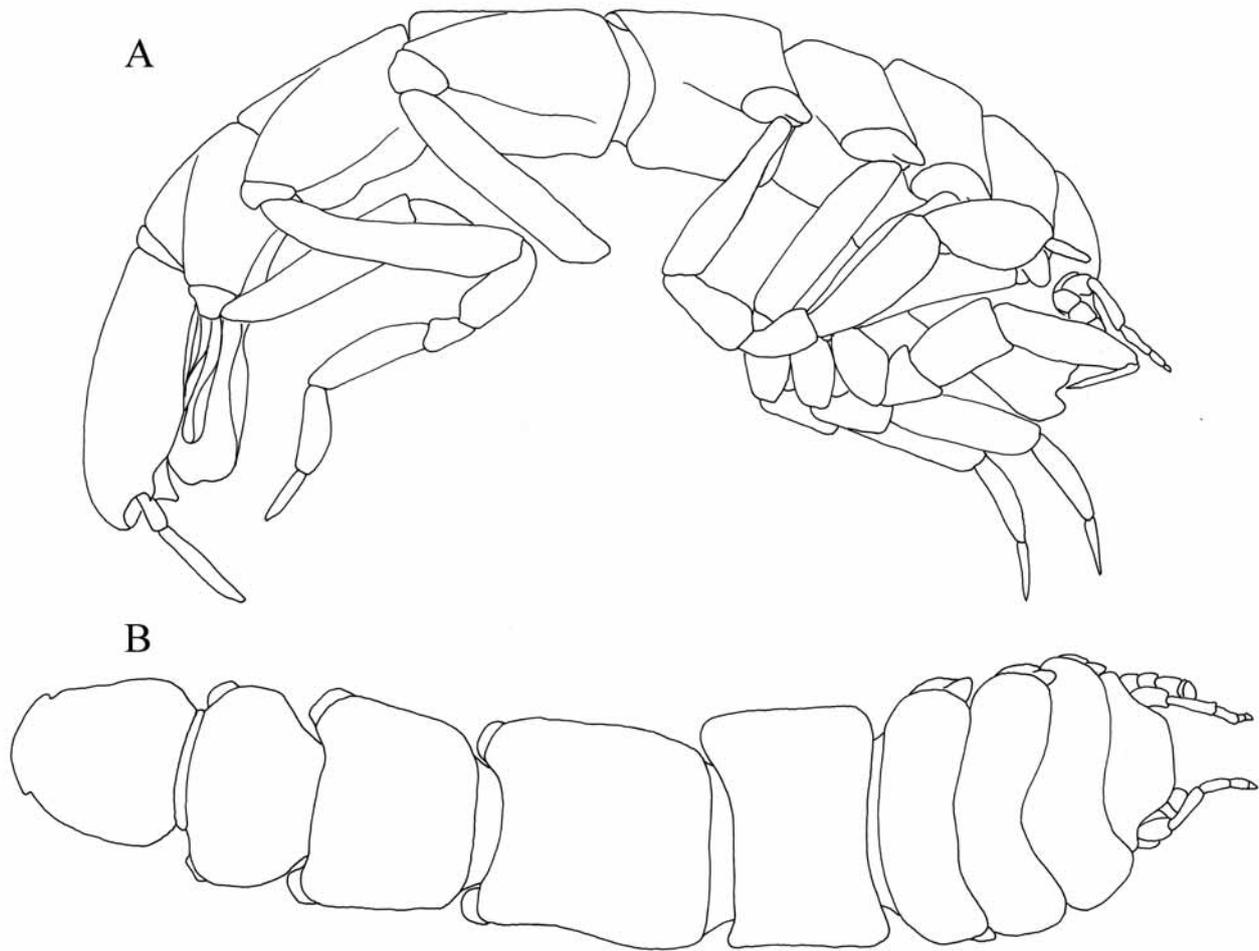


Figure 4. *Paradesmosoma australis* sp. nov. Holotype female. NMV J18608. (A) Lateral and (B) dorsal views.

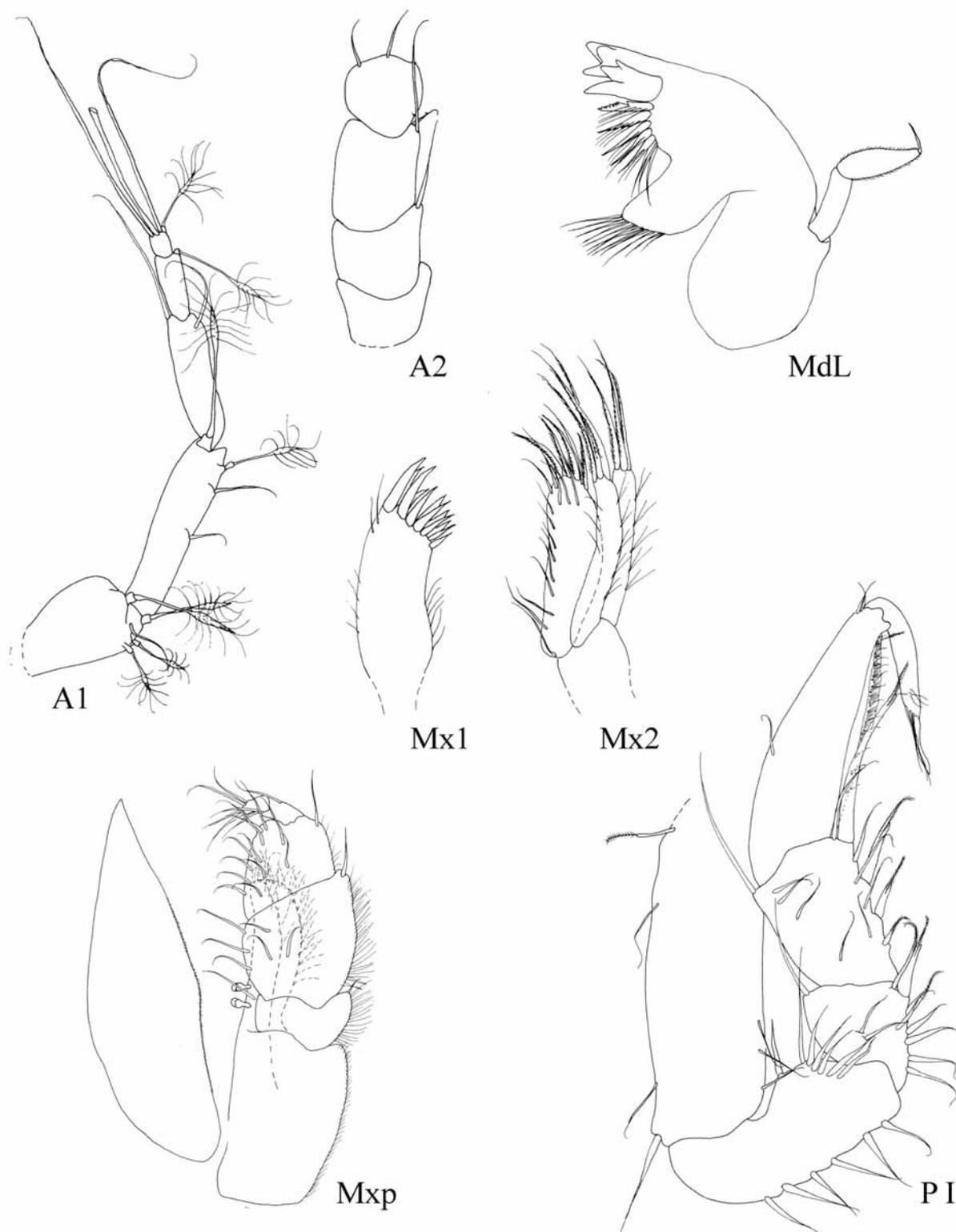


Figure 5. *Paradesmosoma australis* sp. nov. Holotype female. NMV J18608. Antennae, mouthparts and pereopod I.

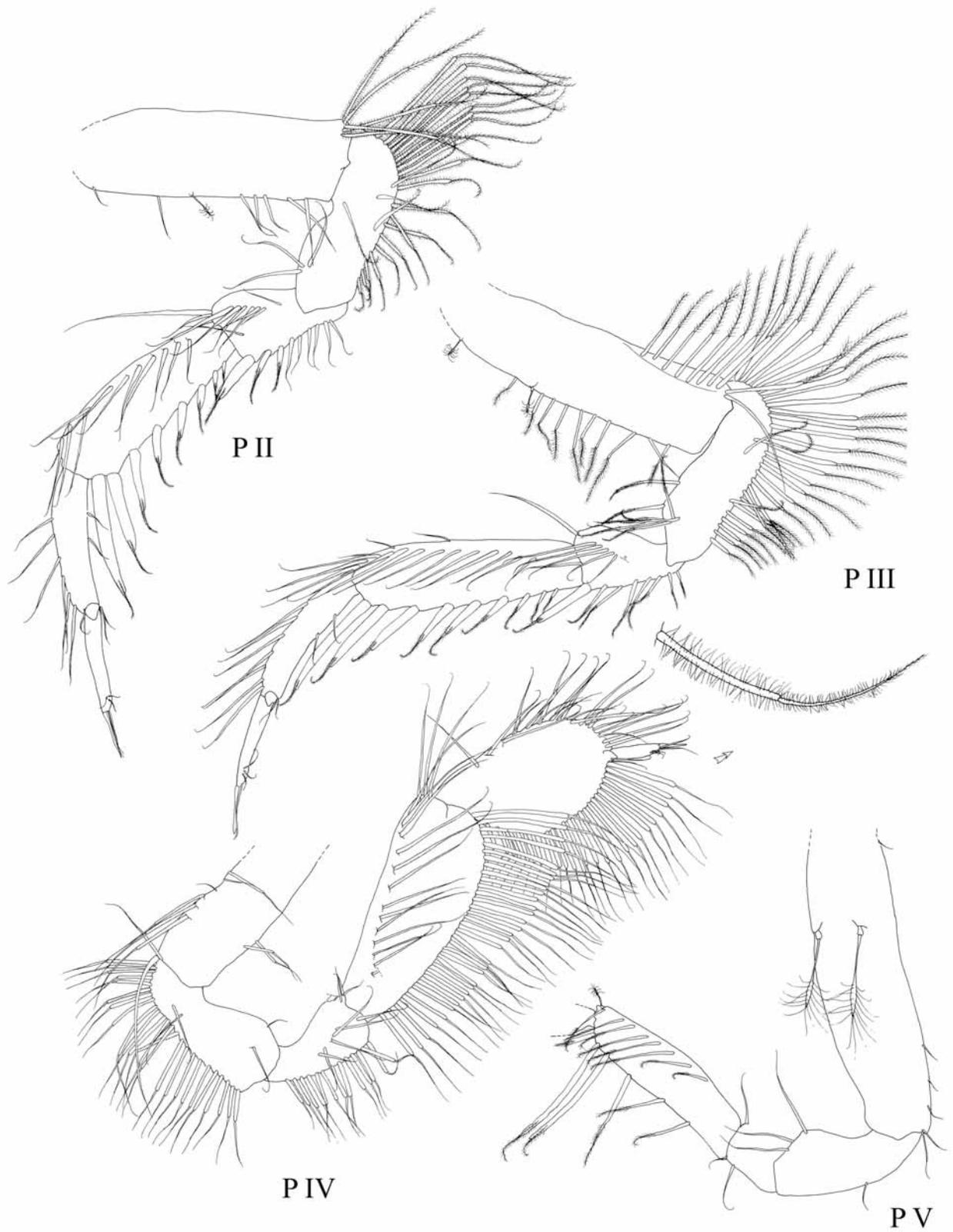


Figure 6. *Paradesmosoma australis* sp. nov. Holotype female. NMV J18608. Pereopods II–V.

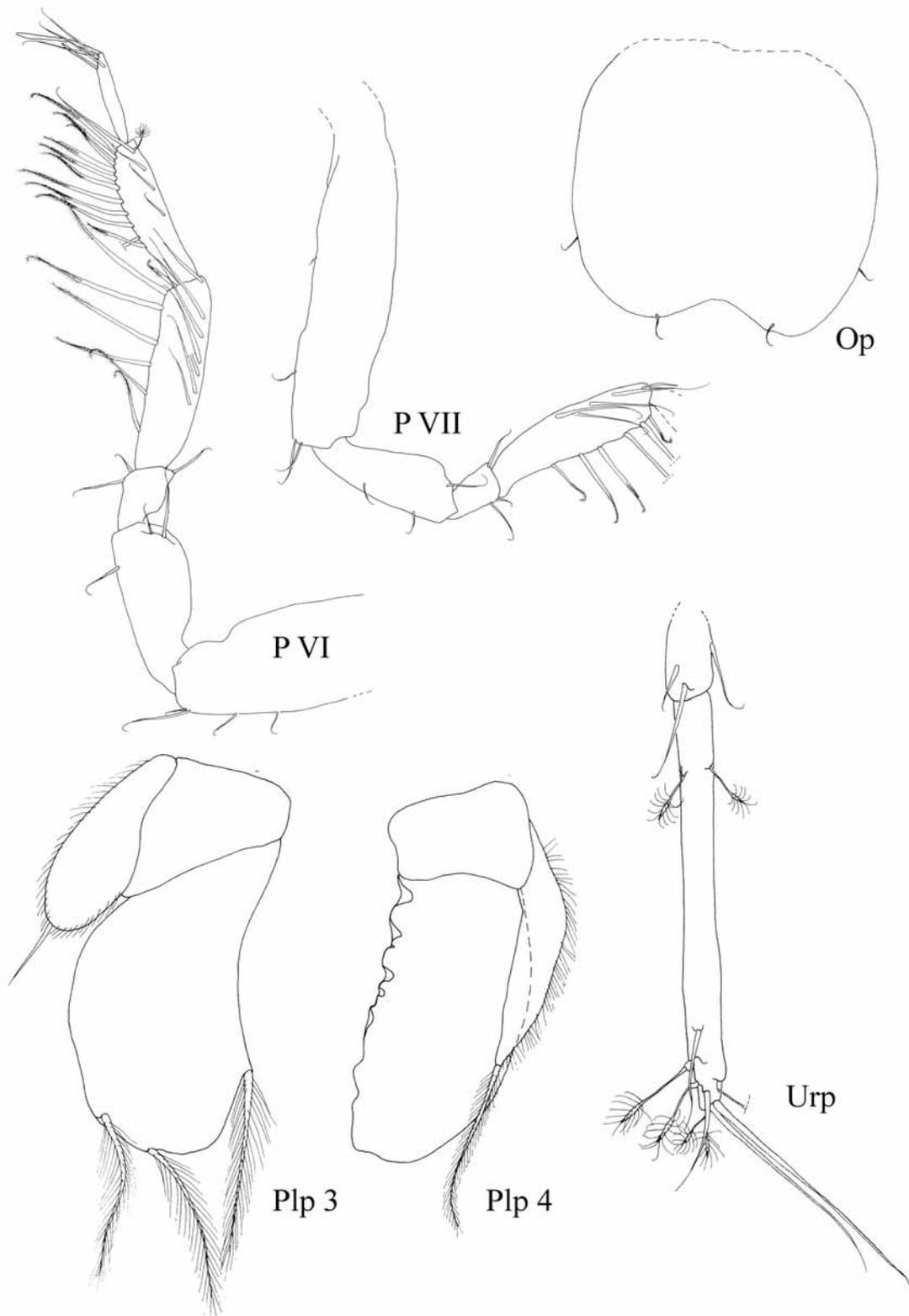


Figure 7. *Paradesmosoma australis* sp. nov. Holotype female. NMV J18608. Pereopods VI and VII, pleopods (Op, Plp 3, Plp 4, Urp).

Oecidiobranthus nowrae sp. nov.

Figures 8–10

Material examined. Holotype. Male, 1.4 mm, NMV J18606. Australia, NSW, 65 km E of Nowra (34°55.52'S, 151°22.20'E), 2055 m depth, G.C.B. Poore et al., RV *Franklin*, 23 Oct 1988 (stn. SLOPE 63).

Diagnosis. Body length 3.83 times longer than width of pereonite 2. Pereonite 1 length 1.10 pereonite 2 length, similar to pereonite 2 width. Pereonite 5 anterior margin slightly convex, lateral margins straight. Lacinia mobilis of left mandible with 5 teeth. Coxae 1–4 produced, tipped with stout setae. PI carpus length 1.41 width, distodorsally with 1 long robust simple seta, ventrally with the large claw-seta and a row of distally setulate setae and setal combs inserted in a cuticular membrane, propodus length 2.61 width, more enlarged than carpus. Pleotelson with posterolateral spines.

Description. Habitus: body 1.4 mm long (measured without appendages), 3.83 times longer than width of pereonite 2. Pereonite 1 width 1.13 times cephalon width in dorsal view. Pereonite 1 length 1.10 pereonite 2 length, similar to pereonite 2 width. Pereonite 5 width 1.36 length, anterior margin slightly convex, lateral margins straight. Coxae 1–4 produced, tipped with stout setae. Pleotelson length 0.71 width, posterolateral spines present. Lateral margins convex, posterior margin rounded.

Antennula: 0.31 mm long, length 0.22 body length, with 5 articles. Article 1 with 3 broom setae. Article 2 length 1.53 width, 2.36 article 1 length; distally with 3 broom setae and 1 small seta. Article 3 with 1 slender seta, article 4 with 2 small broom setae, distal article with 1 aesthetasc, 1 broom seta and 4 long slender setae. *Antenna:* About 1 mm long, length about 0.71 body length, with 22 articles. Articles 3 with 3 small setae, article 4 with 3 small setae. Article 5 with 4 slender setae and distally 1 broom seta. Article 6 with 6 slender setae. Flagellum basally swollen (sexual dimorphism), articles with 1 or 2 slender setae each, distal article with 5 long slender setae.

Mandible: Article 2 of palp ventrodorsally with 4 small setae, dorsally with rows of fine setae, apical article with 6 setae, distal one longest. Incisor process with 3 teeth. Lacinia mobilis of left mandible with 5 teeth. Right mandible not dissected from specimen. Spine row containing 5 spines. Molar process with 6 fine slender setae. *Maxillula:* Inner lobe slightly smaller than outer lobe, terminally with 5 setae. Outer lobe dorsally with 4 fine setae, terminally with 11 strong spines (4 spines with setules). *Maxilla:* Not dissected from specimen. *Maxilliped:* Epipodite length 3.13 width, length 1.43 endite length. Endite with 2 coupling hooks, terminally with 1 conate seta and numerous fine setae. Outer edge of endite and palp articles 1–3 fringed with numerous fine setae, distal corners tipped with 1 seta. Palp article 3 with 6 setae on inner margin, article 4 with 2 setae and article 5 with 4 setae. Article 1 length 0.5 width, article 2 length 1.16 width, article 3 length 1.07 width, article 4 length 1.1 width, article 5 length 1.6 width.

Pereopod I: Enlarged, chelate. Basis length 4.53 width, marginally with 1 small broom seta and 5 simple setae, proximal to ischium ventrally 1 long simple seta. Ischium

length 1.87 width, distodorsally 1 simple seta, ventrally 2 simple setae. Merus length 1.13 width, ventrally 2 setal combs inserted in a cuticular membrane, distally 1 distally setulate and 1 simple seta, distodorsally 2 setae. Carpus length 1.41 width, distodorsally 1 long robust simple seta, ventrally with the large claw-seta and a row of distally setulate setae and setal combs inserted in a cuticular membrane. Propodus length 2.61 width, more enlarged than carpus, ventral and dorsal margin convex, distodorsally 2 small setae, ventrally fringed with fine setae and 9 small setae inserted in a cuticular membrane. Dactylus length 7.50 width, folding to propodus, mediolaterally with 3 small setae. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod III:* Pereopod II missing from specimen, pereopod III similar to pereopod IV. Basis length 5.70 width, marginally with 4 broom setae, 5 small slender setae and proximal to ischium ventrally 1 large simple seta. Ischium length 2.25 width, distodorsally 1 long simple seta and distoventrally 1 long simple seta. Merus length 2.50 width, dorsally with 2, ventrally with 1 simple seta. Carpus length 4.30 width, with ventral row of 4 long slender setae, dorsally with row of 4 setae. Propodus length 3.50 width, ventrally with row of 5 slender setae, dorsally with 4 slender setae and 1 small broom seta. Dactylus length 4 times width, mediolaterally with 3 small slender setae. Unguis (claw) of 1 conate seta, 2 slender setae inserting ventrally. *Pereopod V:* Similar to pereopod VI and VII. Basis length 4 times width, marginally with 3 simple slender setae and 3 broom setae. Ischium length 2.64 width, dorsally with 4 slender setae, ventrally with 2 small slender setae. Merus length 1.89 width, 1 small slender seta distodorsally and 1 small slender seta distolaterally. Carpus length 3 times width, ventrally with row of 5 long slender setae, and distodorsally 1 small broom seta. Propodus length 3.4 width, ventrally with a row of 6 long slender setae, dorsally with 7 long slender setae and 2 unequally bifid setae (1 midway, 1 distally). Dactylus length 4 times width, mediolaterally with 3 small slender setae, unguis (claw) of 1 long conate seta, 2 slender setae inserting ventrally.

Pleopod 1: Length 2.04 width. Outer margins straight, terminal margin rounded, with 3 small setae on each side. *Pleopod 2:* Sympod oval-shaped, length 2.24 width. Outer margin distally with 1 small seta. Endopod inserting 0.56 of sympod length. *Pleopod 3:* Endopod length 1.4 width, distally with 3 long plumose setae. Exopod length 0.52 of endopod length, terminally tapering, with 1 simple seta, outer margin hirsute. *Pleopod 4:* Endopod oval-shaped, length 1.92 width. Exopod missing.

Uropods: Uniramous. Endopod length 2.33 protopod length, 3.5 times longer than wide, distally with 3 broom setae, 1 small seta and 4 slender setae. Protopod length 1.5 width, with 3 simple slender setae.

Etymology. *Nowrae* (Lat.) means “from Nowra”. The name refers to the sampling area on the southern Australian continental slope 65 km E of Nowra.

Distribution. Off NSW, Australia.

Discussion. *Oecidiobranthus nowrae* sp. nov. is assigned to the genus *Oecidiobranthus* Hessler, 1970 on the basis of the small and rounded breathing chamber. The male of the new species differs from the other two species of the genus in the characters of pereopod I. Unlike *O. plebejum* Hansen, 1916 and

O. nanseni Just, 1980, *O. nowrae* possesses a ventral row of distally setulate seta on the carpus. Furthermore, the new species possesses posterolateral spines at the pleotelson. Neither *O. plebejum*, nor *O. nanseni* possess posterolateral spines at the pleotelson.

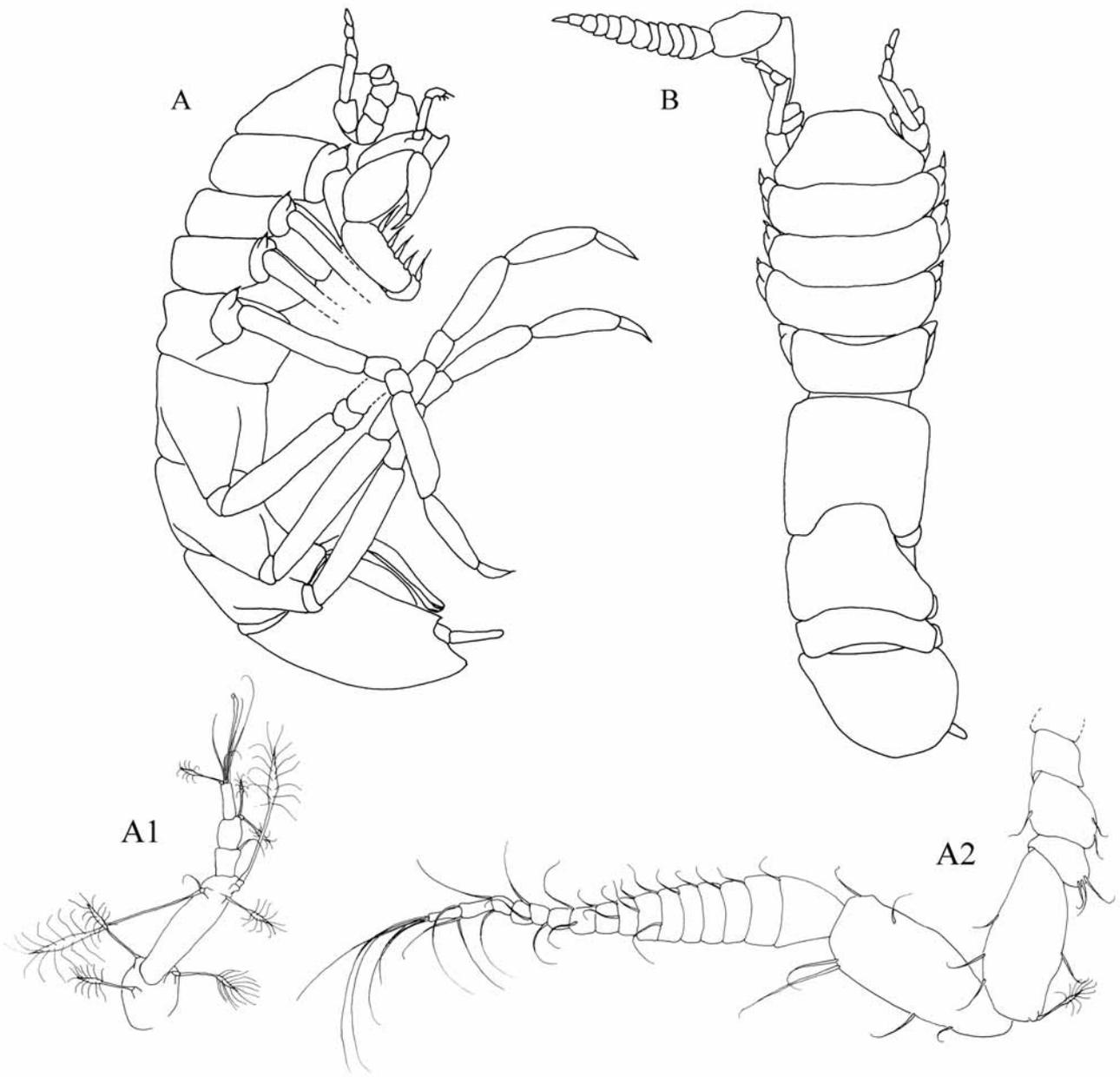


Figure 8. *Oecidiobranthus nowrae* sp. nov. Holotype male. NMV J18606. (A) Lateral and (B) dorsal views, antennae.

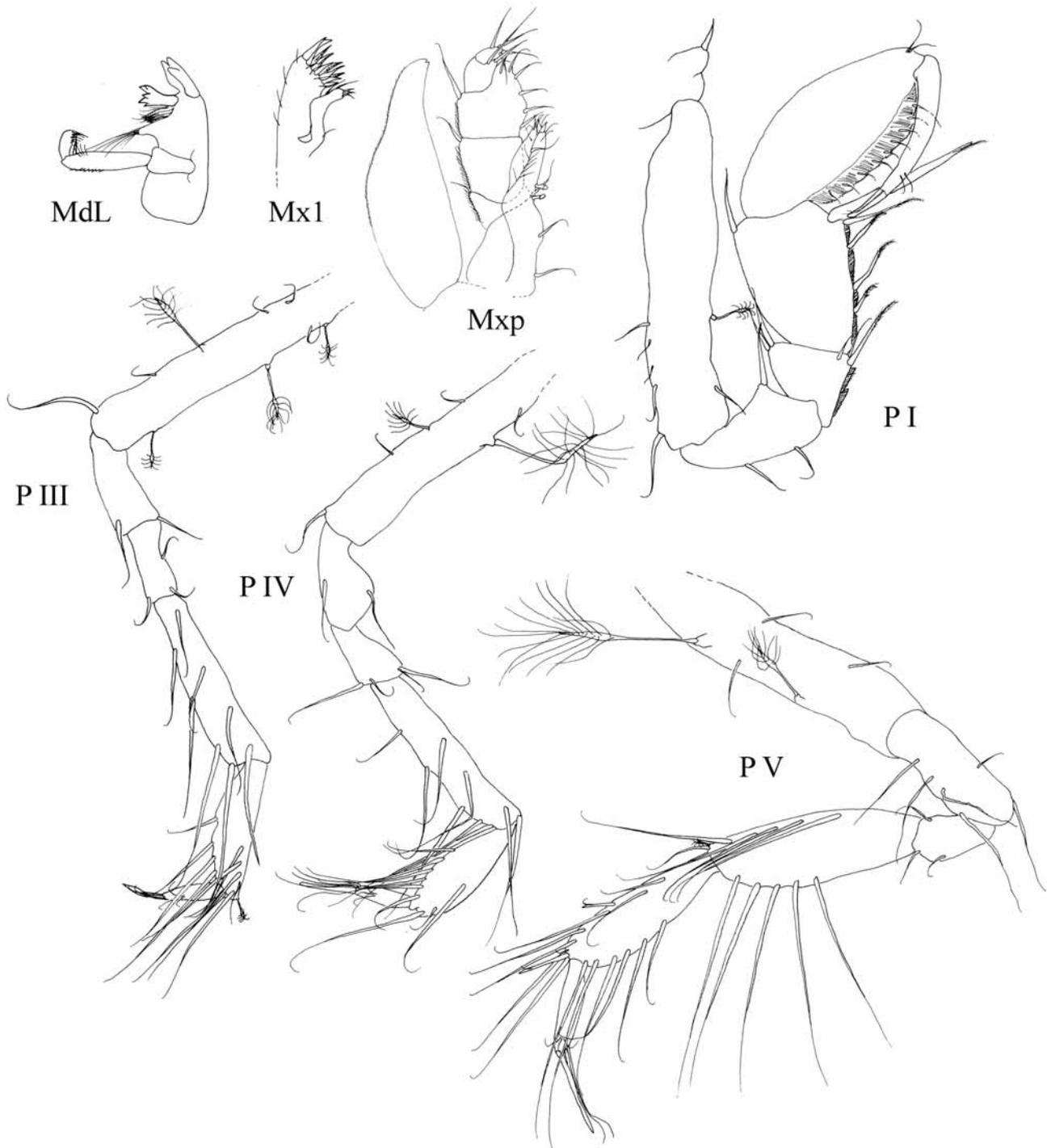


Figure 9. *Oecidiobranthus nowrae* sp. nov. Holotype male. NMV J18606. Mouthparts, pereopods I–V.

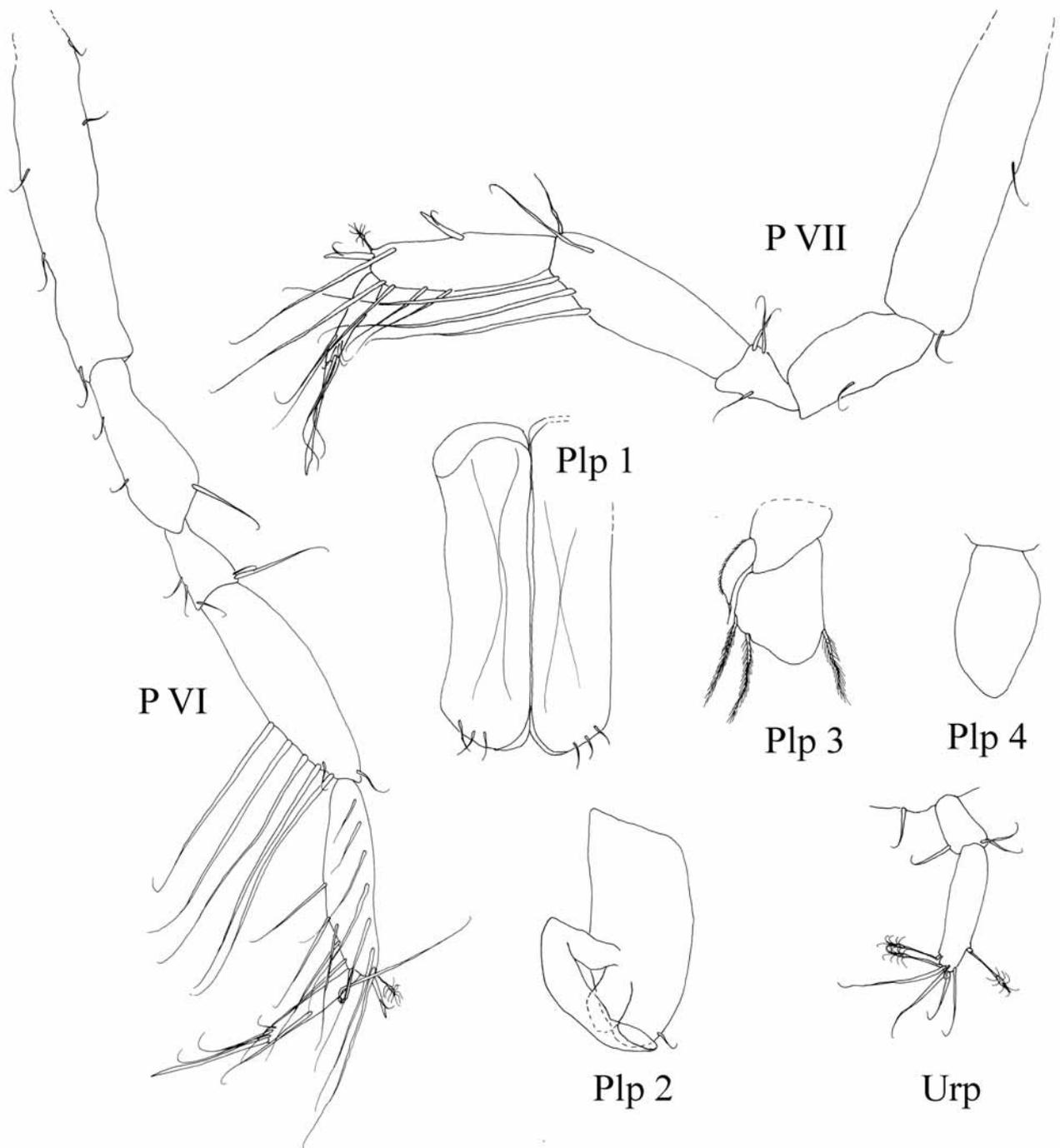


Figure 10. *Oecidiobanchus nowrae* sp. nov. Holotype male. NMV J18606. Pereopods VI and PVII, pleopods (Plp 1, 2, 3, 4, Urp).

Disparella kensleyi sp. nov.

Figures 11–14

Material examined. Holotype. Female, preparatory, 1.9 mm; NMV J18605; Type locality. - Australia, NSW, 74 km E of Nowra (34°56.11'S, 151°28.06'E), 3150 m, box corer, G.C.B. Poore et al, RV *Franklin*, 23 Oct 1988 (stn. SLOPE 64).

Diagnosis. Body length 3.98 times longer than width of pereonite 2. Pereonite 1 length 1.05 pereonite 2 length, 0.93 pereonite 2 width. Pereonite 5 with spine-like ventral elongation. Cephalon with 1 short anteriorly directed spine at insertion of antennae. Palp of mandible of 2 articles, article 1 with 1 small seta, article 2 terminally with 1 small seta. Incisor process with 4 teeth. Lacinia mobilis of left mandible with 4 teeth. Carpus of pereopod I length 5 times width, with ventral row of 5 long unequally bifid setae increasing in length towards the propodus and 3 setal combs inserted in a cuticular membrane, dorsally with 2 long simple setae. Pleotelson with posterolateral spines. Distal margin of operculum slightly concave, with 6 slender setae. Uropods biramous, exopod length 0.43 endopod length.

Description. Habitus: body 1.9 mm long (measured without appendages), 3.98 times longer than width of pereonite 2. Pereonite 5 with spine-like ventral elongation. Cephalon with 1 short anteriorly directed spine at insertion of antennae. Pereonite 1 slightly wider than cephalon. Pereonite 1 length 1.05 pereonite 2 length, 0.93 pereonite 2 width. Pereonite 5 anterior margin straight, lateral margins slightly concave. Coxae 1–4 produced, tipped with small stout setae. Pleotelson length 0.71 width, posterolateral spines present, lateral margins convex, posterior margin rounded.

Antennula: 0.3 mm long, length 0.16 body length, with 5 articles. Article 1 with 3 small broom setae. Article 2 length 3.83 width, 1.64 article 1 length; distally with 2 large articulated broom setae. Article 3 with 1 small slender seta, article 4 distally with 2 small broom setae, distal article terminally with 1 aesthetasc, 1 broom seta and 2 long slender setae. *Antenna:* About 1.1 mm long, length 0.58 body length, with about 12 articles (broken off after article 12). Article 3 with 2 small slender setae. Article 4 with 2 slender setae. Article 5 with 3 small slender setae. Article 6 marginally with 2 and distally with 3 slender setae. Flagellar articles 1–3 distally with 2 slender setae, following articles with long slender setae.

Mandible: Palp of 2 articles, article 1 with 1 small seta, article 2 terminally with 1 small seta. Incisor process with 4 teeth. Lacinia mobilis of left mandible with 4 teeth, lacinia mobilis of right mandible triangular and distally serrated (5 small teeth). Spine row containing 3 spines. Molar process with 7 setae. *Maxillula:* Inner lobe smaller than outer lobe (0.71 of outer lobe length), terminally with 5 setae. Outer lobe 5 times longer than wide, marginally with 3 pairs of fine setae, terminally with 9 strong spines and 4 simple setae. *Maxilla:* Not dissected from specimen. *Maxilliped:* Epipodite length 3.13 width, length similar endite length. Endite with 2 coupling hooks, terminally with 2 conate setae and 5 small setae, marginally few fine setae. Outer edge of endite and palp articles 1 and 2 with row of fine setae and 1 small seta on distal corners, inner margin of article 3 with 5 setae, outer margin with 1 seta,

article 4 with 3 setae, article 5 with 2 setae. Article 1 length 0.6 width, article 2 length 0.93 width, article 3 length 1.07 width, article 4 length 2.5 width, article 5 length 3 times width.

Pereopod I: Basis length 4.04 width, proximal to ischium ventrally 1 long simple seta. Ischium length 0.63 width, ventrally 1 small slender seta. Merus length 0.71 width, dorsally 2 robust simple setae, ventrally 1 seta (broken off). Carpus length 1.43 width, ventrodorsally with large claw-seta and slender proximal seta, ventrally 1 small seta midway. Propodus length 3.47 width, ventrally fringed with fine setae and row of 12 small setae inserted in a cuticular membrane. Dactylus length 7.6 width, mediodistally 1 small seta. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod II:* Similar to pereopod III and pereopod IV. Basis length 6.33 width, marginally with few simple setae and 1 small broom seta, proximal to ischium ventrally with 1 long simple seta. Ischium length 2.62 width, distodorsally with 1 seta, ventrally 1 seta midway. Merus length 1.45 width, distoventrally with 1 stout unequally bifid seta and 2 small slender setae, distodorsally 1 composed seta. Carpus length 5 times width, with ventral row of 5 long unequally bifid setae increasing in length towards the propodus and 3 setal combs inserted in a cuticular membrane, dorsally with 2 long simple setae. Propodus length 5.38 width, ventrally with 1 small slender seta midway, fringed with fine setae, dorsally 2 long simple setae and distally 1 small broom seta. Dactylus length 6.67 width, mediodistally 2 small setae. Unguis (claw) of dactylus with 1 conate seta, 2 slender setae ventrally. *Pereopod V:* Similar to pereopod VI and pereopod VII. Basis length 6.30 width, marginally with 1 small and 2 broom setae. Ischium length 4.10 width. Merus length 1.60 width, with 3 slender setae. Carpus length 4.80 width, with ventral row of 5 long slender setae and dorsally 2 long setae (broken off), distally 1 small slender seta and 1 small broom seta. Propodus length 4.13 width, ventrally with 1 small seta and 3 long slender setae, dorsally with 2 slender setae. Dactylus length 7.60 width, mediodistally 3 small setae, unguis (claw) of 1 long conate seta, 2 slender setae inserting ventrally.

Pleopod 2 (operculum): Length 1.19 width. Lateral margins slightly convex, distal margin slightly concave, distal margin with 6 slender setae. *Pleopod 3:* Endopod length 1.44 width, distally with 3 long plumose setae. Exopod length 0.74 of endopod length, with 1 small terminal seta, outer margin hirsute. *Pleopod 4:* Endopod length 2.66 width. Exopod length 8 times width, distally with 1 long plumose seta.

Uropods: Biramous. Endopod length 3.5 protopod length, 4.66 times longer than wide, distally with 5 broom setae, 2 small slender setae and 2 long slender setae. Exopod length 0.43 endopod length, 4 times width, terminally with 2 slender setae. Protopod length similar width, with 1 slender seta.

Etymology. The name is in remembrance of Dr Brian Kensley.

Distribution. Off NSW, Australia.

Discussion. *Disparella kensleyi* sp. nov. shows affinity to species of *Chelator* and *Prochelator* Hessler, 1970. The chela of the new species is similar to the chela as found in *Chelator* (ventral margin of carpus with small setae only), but *Chelator*

species possess uniramous uropods and a lacinia mobilis with three teeth. A single midventral seta on the carpus together with the claw-seta and the penultimate slender seta is also known for the genus *Prochelator* but in *Prochelator* species the midventral seta is always of composed setal type. Due to the anteriorly directed spine at the antennular folds, which is

known for all species of *Disparella*, and the biramous uropods, *D. kensleyi* fits best into *Disparella*. It is distinguished from the other members of the genus by the spine-like ventral elongation at pereonite 5 and the single small midventral seta on the carpus of pereopod I together with the claw-seta and the penultimate slender seta.

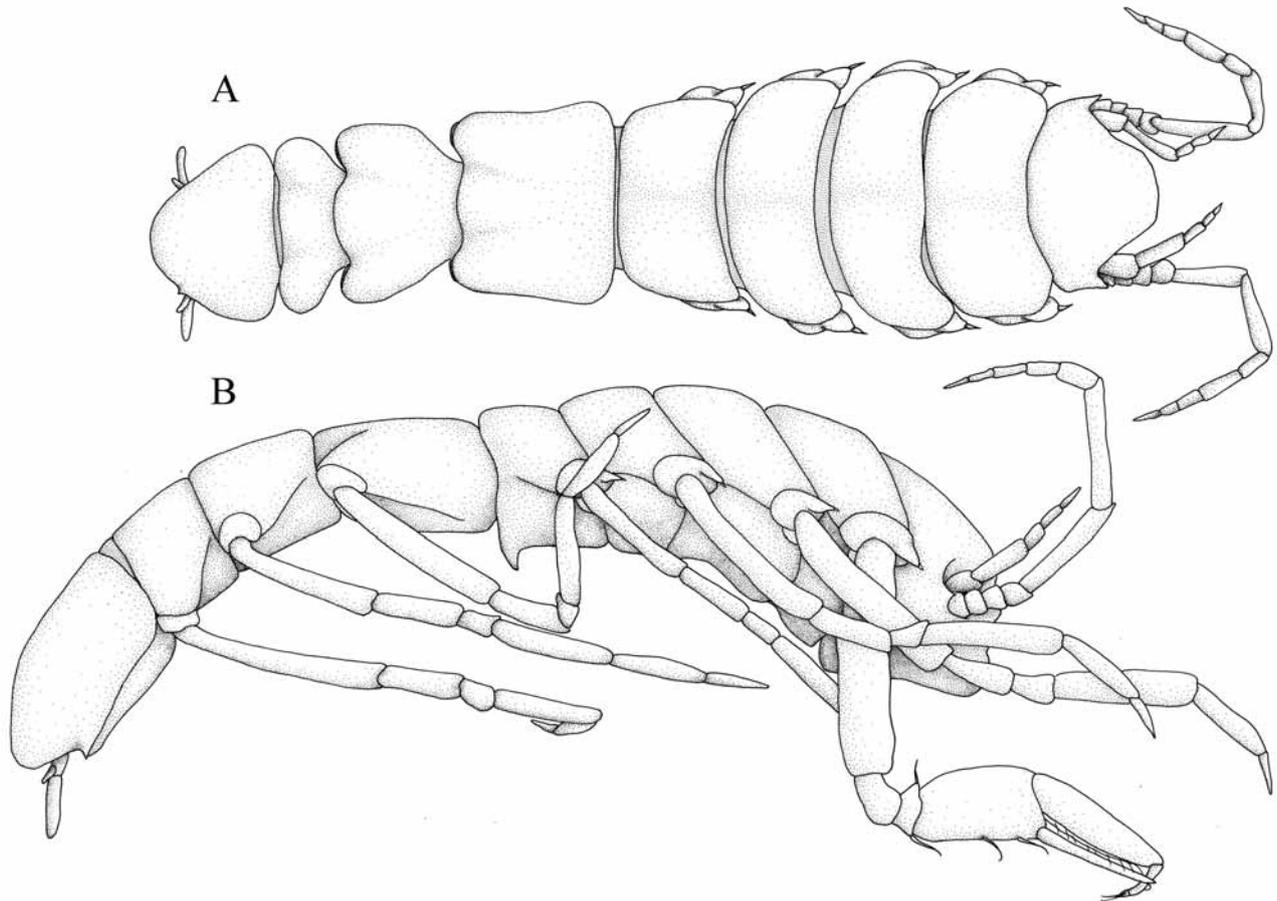


Figure 11. *Disparella kensleyi* sp. nov. Holotype female. NMV J18605. (A) Dorsal and (B) lateral views.

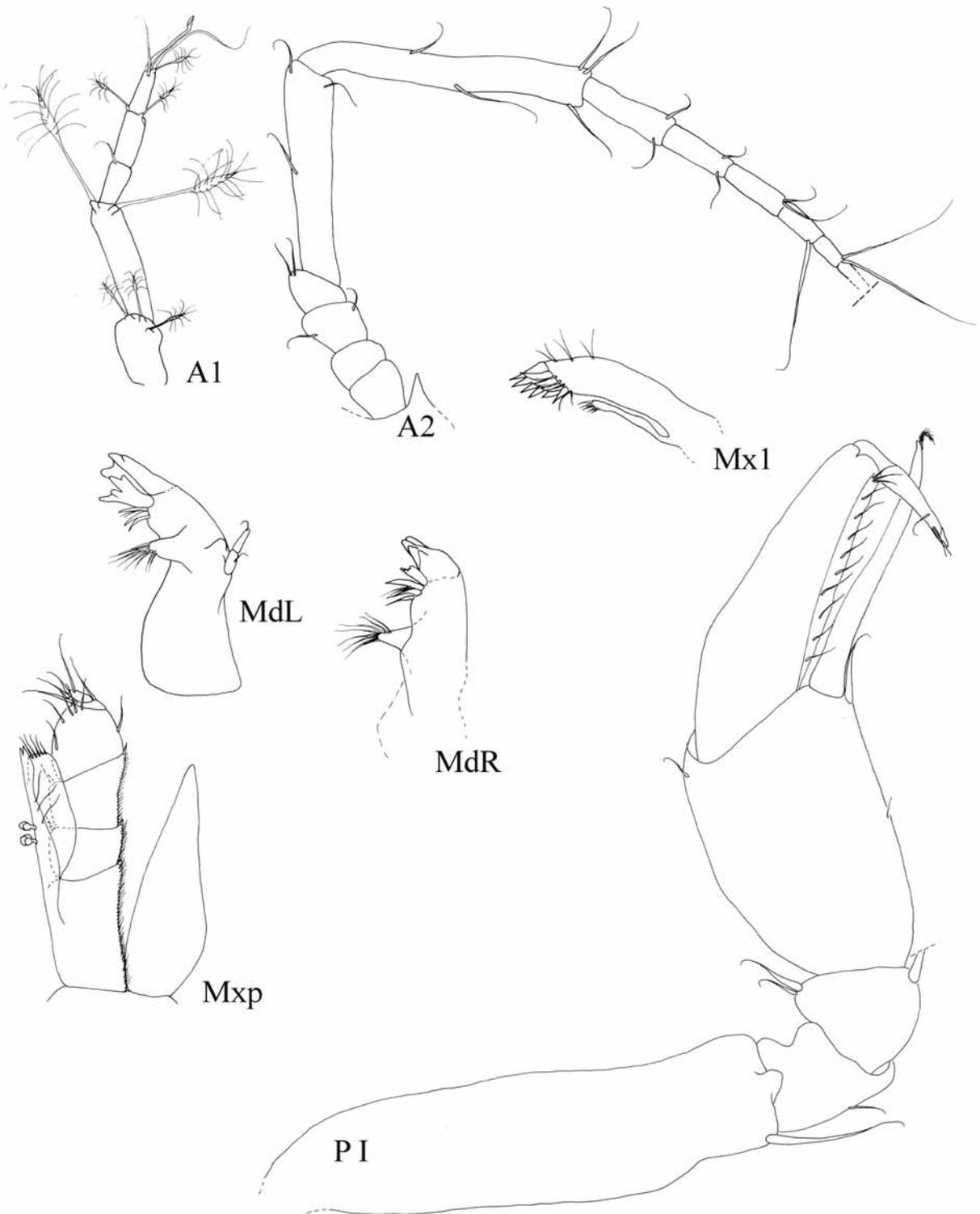


Figure 12. *Disparella kensleyi* sp. nov. Holotype female. NMV J18605. Antennae, mouthparts, pereopod I.

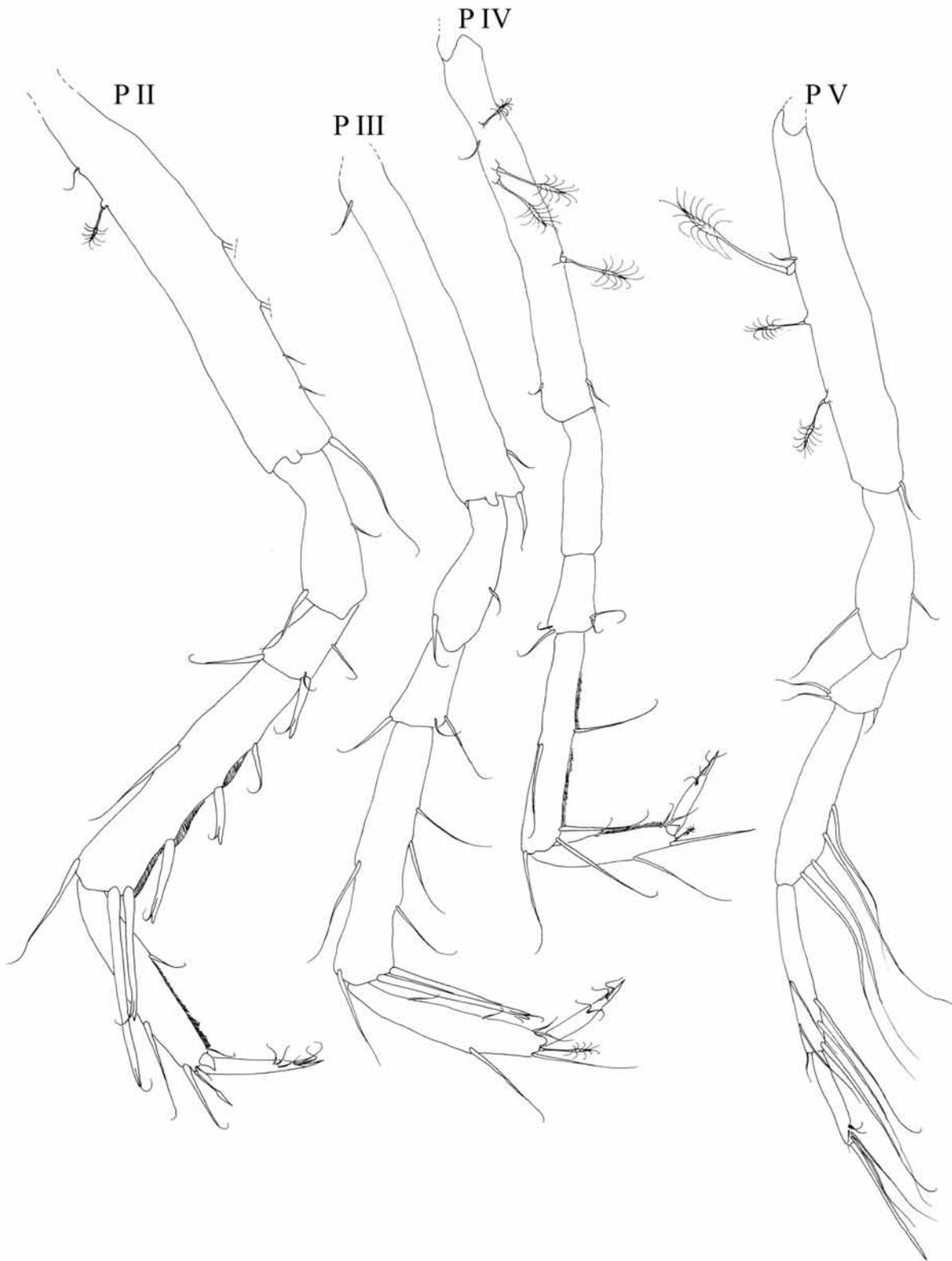


Figure 13. *Disparella kensleyi* sp.nov. Holotype female. NMV J18605. Pereopods II–V.

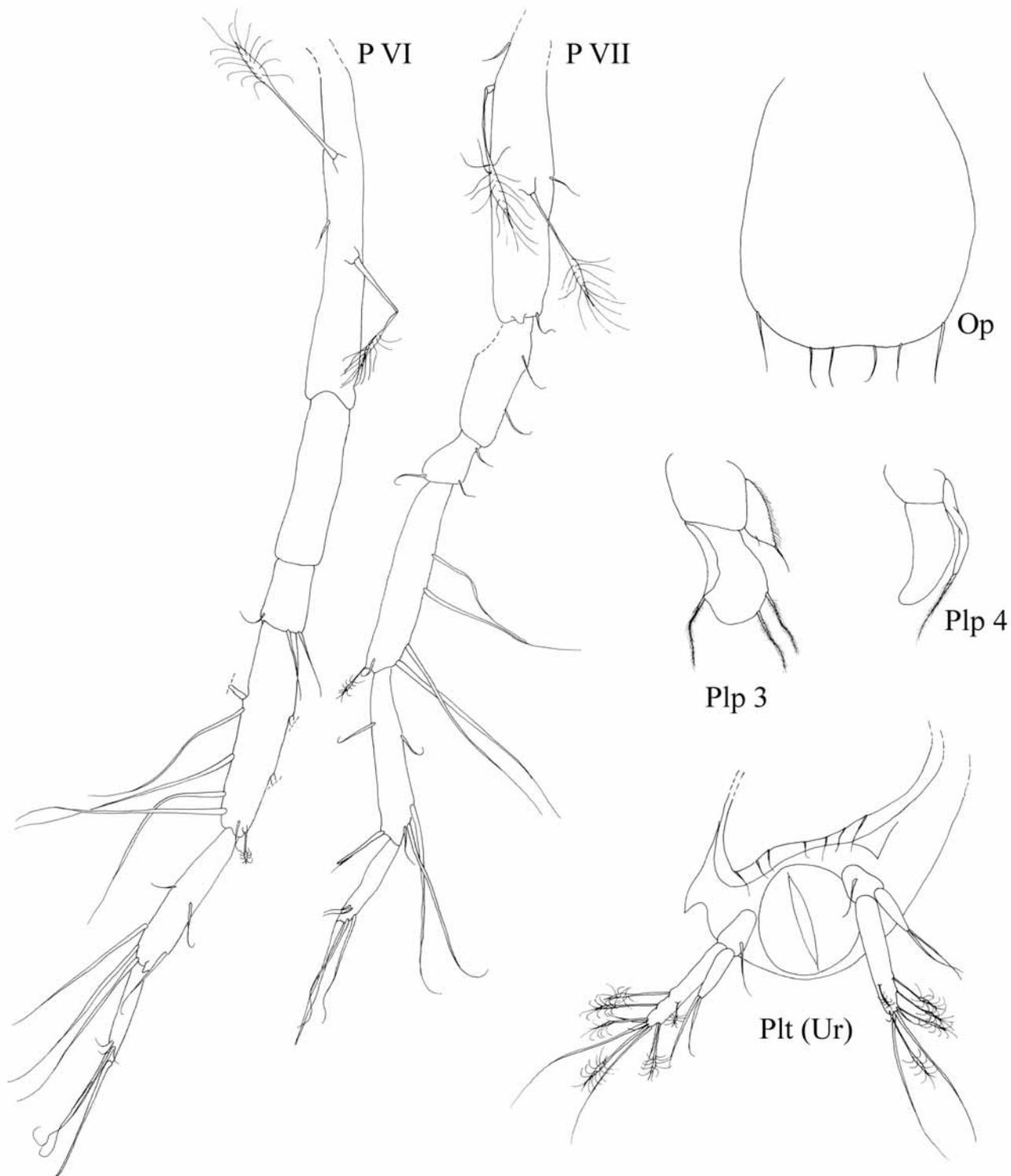


Figure 14. *Disparella kensleyi* sp. nov. Holotype female. NMV J18605. Pereopods VI and VII, pleopods (Op, Plp 3, 4) and pleotelson ventral view.

Echinopleura cephalomagna sp. nov.

Figures 15–18

Material examined. Holotype. Female, preparatory, 1.8 mm; NMV J18600 Australia, Vic., S of Point Hicks (38°17.70'S, 149°11.30'E), 400 m depth, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 24 Jul 1986 (stn. SLOPE 40).

Paratypes. 1 female, adult, 2.2 mm; NMV J18601; locality. - Australia, NSW, 54 km ESE of Nowra (34°52.72'S, 151°15.04'E), 996–990 m, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 22 Oct 1988 (stn. SLOPE 53). 1 female, preparatory; 2.1 mm; NMV J53074. Australia, NSW, 54 km ESE of Nowra (34°52.72'S, 151°15.04'E), 996–990 m, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 22 Oct 1988 (stn. SLOPE 53).

Diagnosis. Body length 3.20 times longer than width of pereonite 2. Cephalothorax highest part of body from lateral view. Pereonite 1 slightly smaller than pereonite 2. Lateral margins of pereonite 5, 6 and 7 as well as of pleotelson serrated. Incisor process with 1 rounded tooth. Lacinia mobilis of left mandible represented by 1 small bulge-like tooth.

Description. Habitus: body 2.2 mm long (measured without appendages), 3.20 times longer than width of pereonite 2. Cephalothorax highest part of body from lateral view. Pereonite 1 width 1.16 times cephalon width in dorsal view. Pereonite 1 length 0.94 pereonite 2 length, 0.91 pereonite 2 width. Pereonite 5 width 0.67 length, anterior margin straight, lateral margins serrated. Coxae 1–4 produced, tipped with small stout setae. Pleotelson length 1.06 width, lateral margins serrated, lightly convex, posterior margin smooth, rounded.

Antennula: 0.27 mm long, length 0.12 body length, with 6 articles. Article 1 with 1 small slender seta and 3 broom setae. Article 2 length 2.57 width, 0.69 article 1 length; distally with 4 articulated broom setae. Article 3 with 1 small seta, article 4 distally with 2 broom setae, distal article with 1 aesthetasc and 4 slender setae. *Antenna* (fig. 12): broken off.

Mandible: Article 1 of palp distally with 1 slender seta, article 2 distoventrally with 2 small setae, fringed with rows of fine setae, article 3 with 4 small and distally 1 setulate seta. Incisor process with 1 rounded tooth. Lacinia mobilis of left mandible represented by 1 small bulge-like tooth. Lacinia mobilis absent at right mandible. Spine row containing 9 spines. Molar process with 10 setae. *Maxillula:* Inner lobe smaller than outer lobe (0.63 of outer lobe length), distally with 7 simple setae, dorsally with 12 fine setae and ventrally with 5 pairs of fine setae. Outer lobe marginally with 21 pairs of fine setae, terminally with 11 strong spines (7 spines with setules). *Maxilla* (fig. 12): Medial lobe broader than other lobes, terminally with 3 slender setae, ventrolaterally with 12 setae, setae near base longest. Outer lobe dorsally with 8 pairs of fine setae, terminally with 3 long ventrally setulate setae. *Maxilliped* (fig. 12): Epipodite length 3.08 width, length similar endite length. Endite with 2 coupling hooks, terminally with 1 fan seta and numerous fine setae, marginally with pairs of fine setae. Edge of endite fringed with fine setae, palp article 1 with 2 setae on outer margin, article 2 with 3 setae on outer margin and 3 setae on inner margin, article 3 with 7 setae on inner margin, article 4 with 4 setae, article 5 with 3 setae. Article 1 length 0.91 width, article 2 length 0.89 width, article

3 length 1.11 width, article 4 length 1.6 width, article 5 length 2.67 width.

Pereopod I: Basis length 5.94 width, marginally with 14 setae. Ischium length 3.17 width, ventrally with 7 small slender setae, dorsally with 2 simple slender setae. Merus length 1.18 width, ventrally with a row of 4 simple setae, distodorsally with 1 seta (broken off). Carpus length 3.20 width, ventrally with dorsal row of 7 setae, distal and penultimate seta longest, distally setulate, dorsally with 3 small slender setae. Propodus length 8.00 times width, with few setae distally. Dactylus length 4.20 width, mediolaterally 3 small setae. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod II:* Similar to pereopod III. Basis length 4.00 times width, marginally with 27 small setae, proximal to ischium ventrally 1 long simple seta. Ischium length 3.13 width, ventrally 16 simple seta, dorsally 4 simple setae. Merus length 1.38 width, ventrally with row of 6 setae, distodorsally 2 simple setae. Carpus length 3.57 width, with ventral row 11 long unequally bifid setae increasing in length towards the propodus, dorsolaterally with row of 11 long simple setae, dorsally with 6 small slender setae. Propodus length 2.70 times width, ventrally with 1 small slender seta, 2 small stout unequally bifid setae and 2 setal combs inserted in a cuticular membrane, dorsally with row of 8 long simple setae. Dactylus length 2.50 width, mediolaterally 3 small setae. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod VI:* Similar to pereopod VII, pereopod V missing from specimen. Basis length 4.19 width, with 2 large broom setae, marginally with 13 small setae. Ischium length 3.39 width, laterally with 9 small setae, dorsally with 6 slender setae. Merus length 1.38 width, ventrally with 3 small slender setae. Dorsally with 1 small seta and 1 long simple seta. Carpus length 4.11 width, ventrally with row of 12 long slender setae, dorsally with row of 9 slender setae and 4 small setae. Propodus length 3.79 width, ventrally with row of 5 long slender setae, dorsally with row of 6 setae. Dactylus length 8.50 width, distally with 1 slender seta, unguis (claw) of 1 long conate seta, 2 slender setae inserting ventrally.

Pleopod 2 (operculum): Length 1.37 width. Lateral margins straight, operculum tapering towards distal tip, setose (ventral surface with about 34 setae), marginally with 58 setae. *Pleopod 3:* Endopod length 1.8 width, distally with 3 long plumose setae. Exopod length 0.44 of endopod length, margins hirsute, distally with 1 simple seta. *Pleopod 4:* Endopod oval-shaped, length 2 times width. Exopod length 7.80 width, distally 1 long plumose seta.

Uropods: Uniramous. Endopod length 2.04 protopod length, 8.17 times longer than wide, marginally with 6 slender setae, distally with 5 long slender setae, 2 small setae and 5 broom setae. Protopod length 1.85 width, with 12 setae.

Etymology. The name refers to the extremely large cephalothorax of the new species.

Distribution. South-eastern Australia, off Vic.

Discussion. *Echinopleura cephalomagna* sp. nov. is the second species of the genus *Echinopleura* Sars, 1897. It belongs to this genus because of the slender pereopod I and the features of the

mandible and the serrated body margins from pereonite 5 to the pleotelson. The simplified mandible is unique to *Echinopleura*. The new species is easy to distinguish from the only other species, *E. aculeata* Sars, 1897, by the presence of a well developed mandibular palp. In *E. aculeata* the whole body

is serrated, even the cephalon and the coxae. *E. aculeata* possesses a dorsal hook on the ischium of pereopod II, *E. cephalomagna* lacks this hook. While the antennula of *E. aculeata* consists of five articles, the antennula of *E. cephalomagna* consists of six articles.

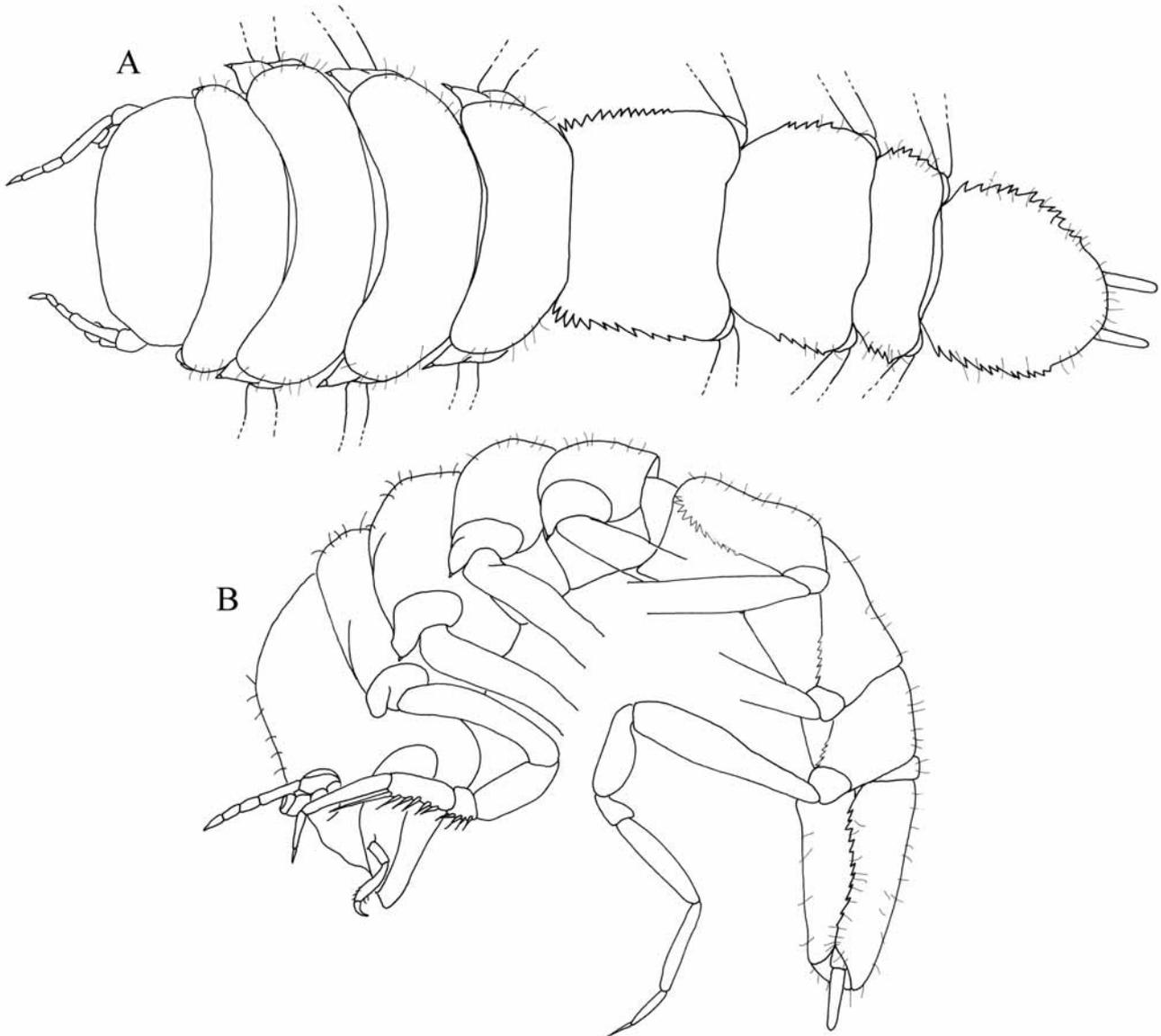


Figure 15. *Echinopleura cephalomagna* sp. nov. Holotype female. NMV J18600. (A) Dorsal and (B) lateral views.

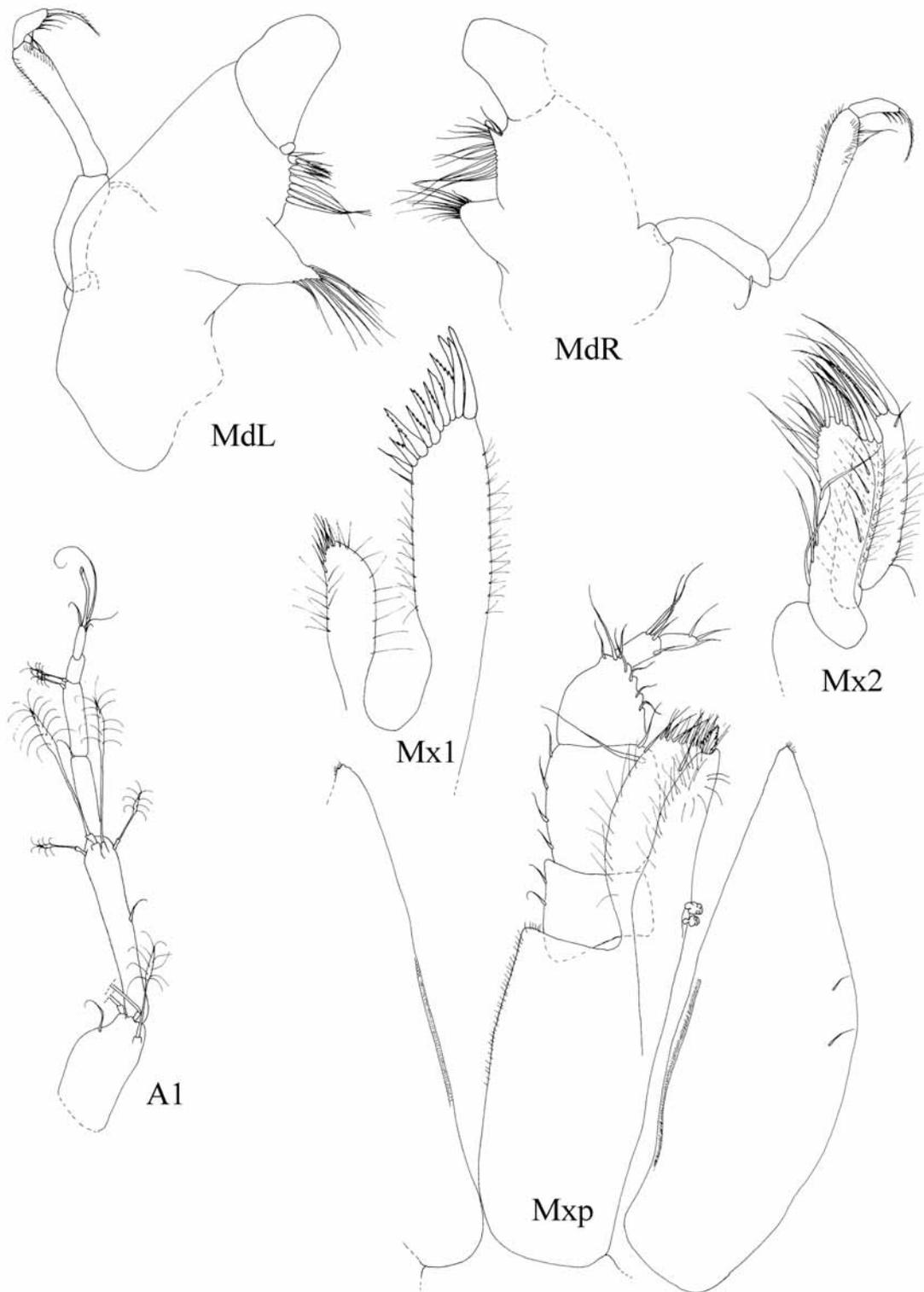


Figure 16. *Echinopleura cephalomagna* sp. nov. Paratype female. NMV J18601. Antennula, mouthparts.

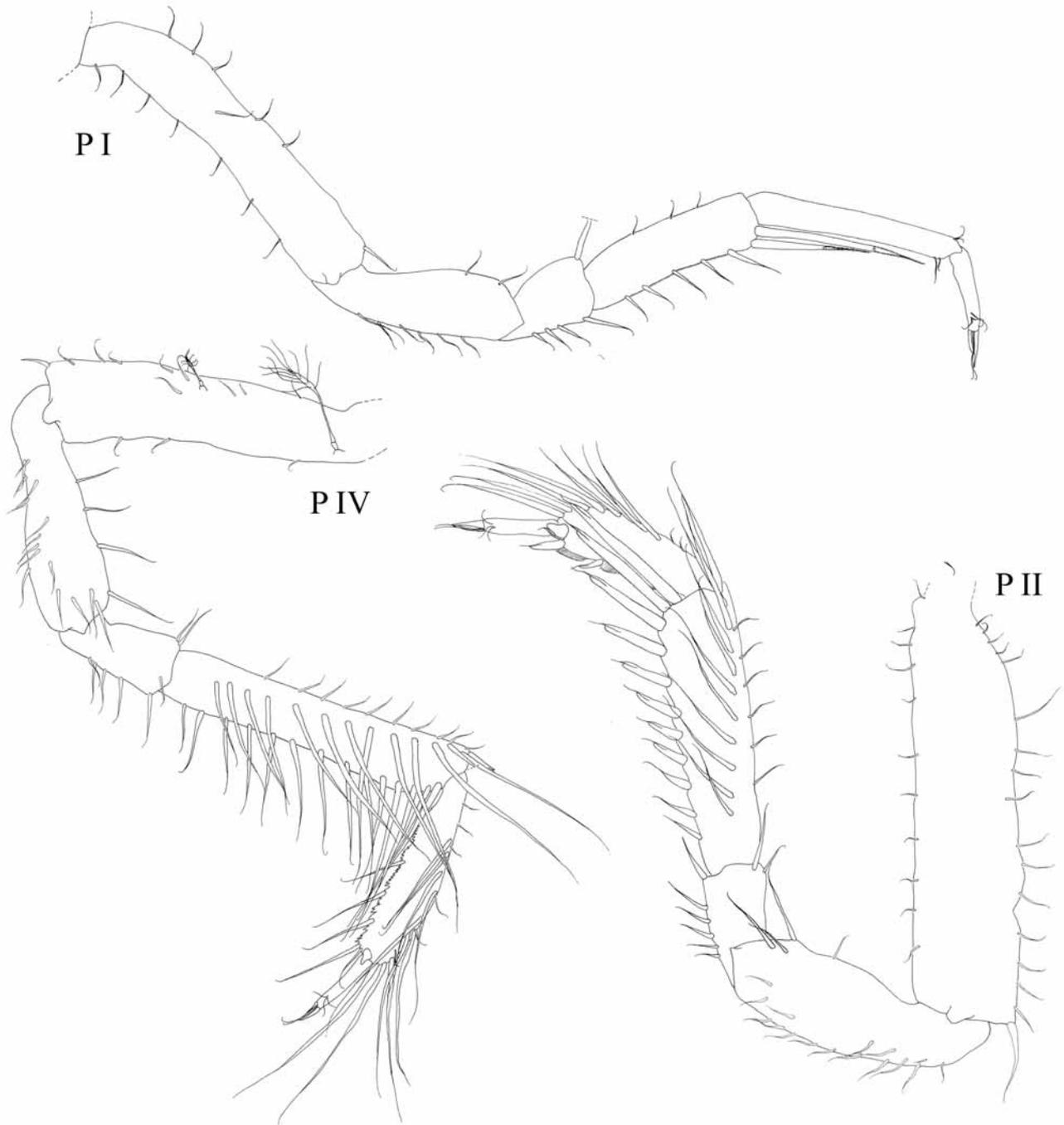


Figure 17. *Echinopleura chephalomagna* sp. nov. Paratype female. NMV J18601. Anterior pereopods.

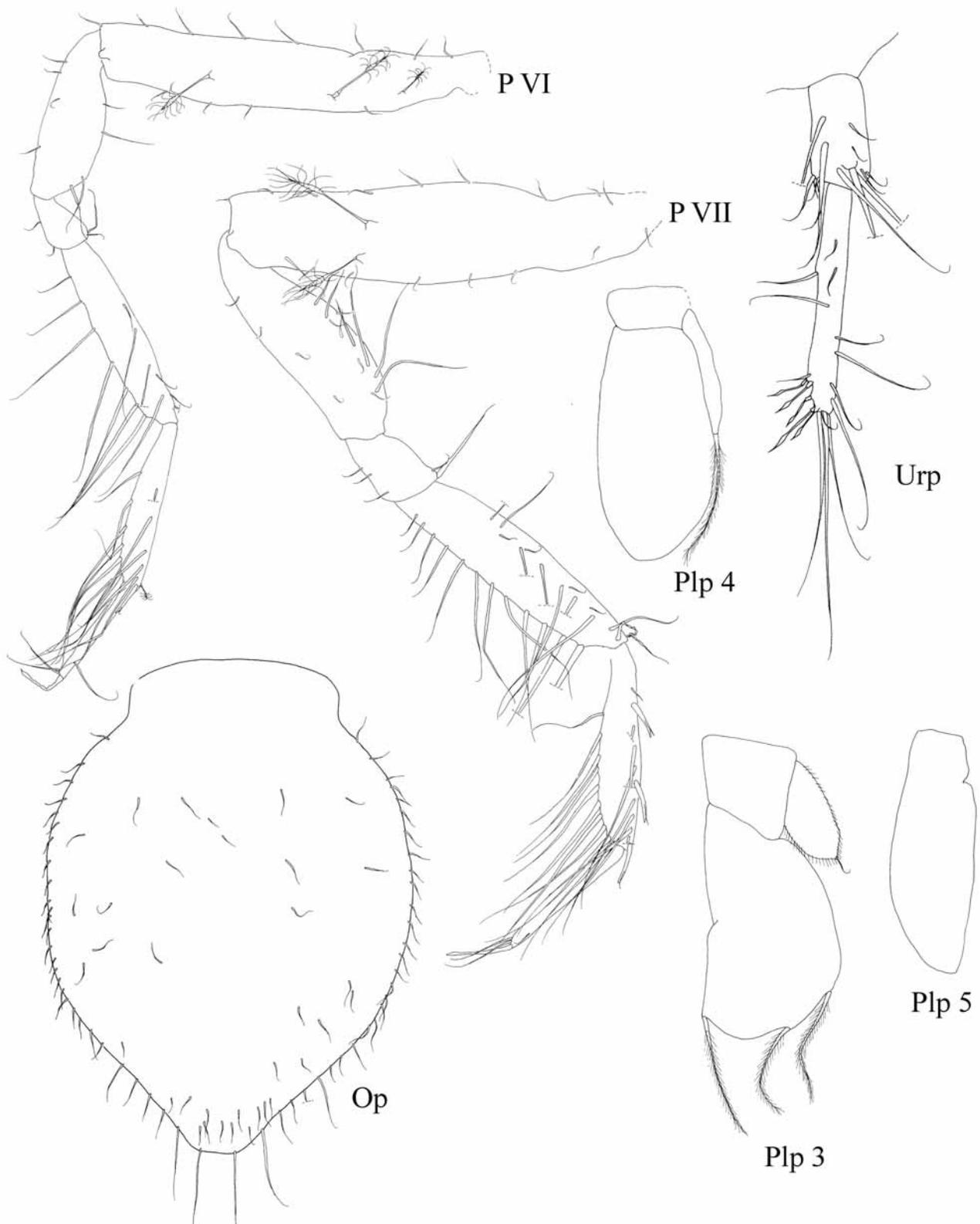


Figure 18. *Echinopleura cephalomagna* sp. nov. Paratype female. NMV J18601. Posterior pereopods, pleopods (Op, Plp 3, Plp 4, Plp 5, Urp).

Whoia victoriensis sp. nov.

Figures 19–23

Material examined. Holotype. Female, preparatory, 1.6 mm NMV J18598; Type locality. – Australia, Vic., 76 km S of Point Hicks (38°29.33'S, 149°19.98'E), 1840–1750 m depth, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 26 Oct 1988 (stn SLOPE 69).

Paratype. Female, preparatory, 1.5 mm NMV J18599. Australia, Vic., 67 km S of Point Hicks (38°23.95'S, 149°17.02'E), 1277–1119 m depth, WHOI epibenthic sled, G.C.B. Poore et al., RV *Franklin*, 25 Oct 1988 (stn. SLOPE 67).

Diagnosis. Body length 4 times longer than width of pereonite 2. Pereonite 1 slightly smaller than pereonite 2. Pereonite 5 anterior margin straight, lateral margins straight. Antennula with 6 articles. Incisor process with 2 teeth. Lacinia mobilis of left mandible with 1 tooth. Coxae 1–4 angular, coxa 1 with small stout seta, 2–4 without setae. Ischium, merus and carpus of anterior pereopods laterally with numerous folds in which rows of fine setae are inserted. Pereopod I and pereopod II similar in setation, carpus with ventral row of 5 large robust unequally bifid distally setulate setae increasing in length towards propodus, distal seta of row reaching full length of propodus, dorsally with a row of 5 slender distally setulate setae, propodus ventrally with 2 small stout unequally bifid setae and a row of 14 small setae inserted between them, dorsally with a row of 5 slender distally setulate setae and distally 1 small seta. Lateral margins of pleotelson hirsute, form tapering to posterior margin. Urbiramous, setose, exopod well developed (length 0.64 endopod length).

Description. Habitus: body 1.6 mm long (measured without appendages), 4.02 times longer than width of pereonite 2. Pereonite 1 width 1.13 times cephalon width in dorsal view. Pereonite 1 length 0.60 pereonite 2 length, 0.91 pereonite 2 width. Pereonite 5 anterior margin straight, lateral margins straight. Coxae 1–4 angular, coxa 1 with small stout seta, 2–4 without setae. Pleotelson tapering to posterior margin, length 1.19 width, without posterolateral spines, lateral margins hirsute, convex, posterior margin triangularly convex.

Antennula: Length 0.23 body length, with 6 articles. Article 1 with 1 small seta and 4 broom setae. Article 2 length 4.25 width, 1.90 article 1 length; distally with 4 articulated broom setae and 1 small seta. Article 3 with 1 small seta, article 4 with 2 slender setae and 1 small seta, article 5 with 1 slender seta, distal article terminally with 1 aesthetasc, 1 broom seta and 2 long slender setae. *Antenna:* broken off.

Mandible: 1st article of palp with 1 small seta, 2nd article ventrodorsally with 2 small setulate setae, dorsally with rows of fine setae, apical article dorsally with 1 small seta and rows of fine setae, ventrally with 5 setae, distal 1 longest. Incisor process with 2 teeth. Lacinia mobilis of left mandible with 1 tooth, lacinia mobilis of right mandible of the same shape as lacinia mobilis of left mandible. Spine row containing 9 spines. Molar process with 5 finely setulate setae. *Maxillula:* Inner lobe slightly smaller than outer lobe, terminally with 7 setae, ventrally with 4 slender setae, dorsally with 5 pairs of fine setae. Outer lobe marginally with 10 pairs of fine setae, terminally with 9 strong spines (3 spines with setules). *Maxilla:* Medial lobe broader than other lobes, distally with 7 simple setae, marginally with pairs of

fine setae, basally with 7 slender setae. Outer lobe terminally with 3 setae, ventrally with 3 simple setae, dorsally with fine setae. *Maxilliped:* Epipodite length 2.67 width, length 0.90 endite length. Endite with 2 coupling hooks, terminally with 1 fan seta and numerous small setae. Edge of endite and palp articles 1.3 hirsute, distal corners with 1 small seta. Article 2 inner margin with 3 setae, article 3 inner margin with 7 setae, article 4 with 4 setae, article 5 with 5 setae. Article 1 length 0.69 width, article 2 length similar to width, article 3 length 0.79 width, article 4 length 1.8 width, article 5 length 4 times width.

Pereopod I: Basis length 2.28 width, with few small setae and proximal to ischium ventrally with 1 long simple seta. Ischium length 2.14 width, ventrally with 3 slender distally setulate setae and 2 robust unequally bifid distally setulate setae, dorsally with 3 slender distally setulate setae. Ischium, merus and carpus laterally with numerous folds in which rows of fine setae are inserted. Merus length 0.42 width, ventrally with 3 robust stout unequally bifid distally setulate setae, distodorsally 1 simple slender seta and 1 robust unequally bifid distally setulate seta. Carpus length 1.96 width, with ventral row of 5 large robust unequally bifid distally setulate setae increasing in length toward propodus, distal seta of row reaching full length of propodus, dorsally with a row of 5 slender distally setulate setae. Propodus length 2.69 width, ventrally with 2 small stout unequally bifid setae and a row of 14 small setae inserted between them, dorsally with a row of 5 slender distally setulate setae and distally 1 small seta. Dactylus length 4.13 width, mediolaterally with 3 small setae, unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod II:* In setation similar to pereopod I. Difference in length-to-width ratios: basis length 1.90 width, ischium length 2.10 width, merus length 0.35 width, carpus length 1.93 width, propodus length 2.94 width, dactylus length 3.43 width. Unguis (claw) of dactylus with 1 cuspidate and 1 conate seta, 2 slender setae medially. *Pereopod VII:* Similar to pereopod V and pereopod VI. Basis length 3.06 width, with few setae. Ischium length 2.19 width, ventrally with 3 small slender setae. Merus length 0.73 width, distodorsally 1 simple slender seta, ventrally 1 small and 1 simple slender seta. Carpus length 2.58 width, ventrally with row of 9 long slender distally setulate setae, dorsally with a row of 11 long slender distally setulate setae. Propodus length 3.79 width, ventrally with row of 4 long slender distally setulate setae, dorsally with row of 10 long slender distally setulate setae and 2 small unequally bifid setae, 1 midway, 1 distally. Dactylus length 4.2 width, unguis (claw) of 1 conate seta, 1 slender seta inserted ventrally.

Pleopod 2 (operculum): Length 1.16 width. Surrounded by 64 setae, lateral margins slightly convex, distal margin straight. *Pleopod 3:* Endopod length 1.62 width, inner margin hirsute, distally with 3 long plumose setae. Exopod length 0.41 of endopod length, outer margin hirsute, distally 1 slender seta. *Pleopod 4:* Endopod oval-shaped, length 1.91 width. Exopod length 7.5 width, outer margin basally hirsute, distally with 1 long plumose seta. *Pleopod 5:* Endopod only, length 4.18 width.

Uropods: Biramous. Endopod length 2.64 protopod length, 5.50 times longer than wide, marginally with 6 small broom setae and 2 simple slender setae, distally with 2 broom setae, 1

small slender seta and 5 long slender setae. Exopod length 0.64 endopod length, 7 times width with marginally 2 simple slender setae, distally with 5 long slender setae. Protopod length 1.39 width, with 2 small slender setae and 4 long simple slender setae.

Etymology. The name refers to the state Victoria in Australia.

Distribution. South-eastern Australia, off Vic.

Discussion. The new species is assigned to the genus *Whoia* Hessler, 1970 because of its robust pereopod I with nearly quadrangular articles and the similar size and shape of pereopods I and II. *Whoia victoriensis* sp. nov. is in regard to the body shape most similar to *W. angusta* Sars, 1899. Characters

distinguishing the new species from the other three species of the genus are: lacinia mobilis only one tooth, pereopod I with rows of extremely robust ventral setae on carpus and propodus, propodus dorsally with row of setae, uropods biramous, exopod well developed, reaching more than half of endopod length. The new species shares an antennula consisting of six articles with *W. dumbshafensis* Svavarsson, 1988, in *W. variabilis* Hessler, 1970 and *W. angusta* the antennula has five articles. In *W. angusta* the lacinia mobilis has four teeth and the lateral margins of pereonite 5 are straight. In *W. variabilis* the uropodal exopod is much smaller than in *W. victoriensis* sp. nov and the uropods are less setose, pereopod I does not bear large robust setae, the lacinia mobilis has four teeth. The lacinia mobilis of *W. dumbshafensis* has only two teeth.

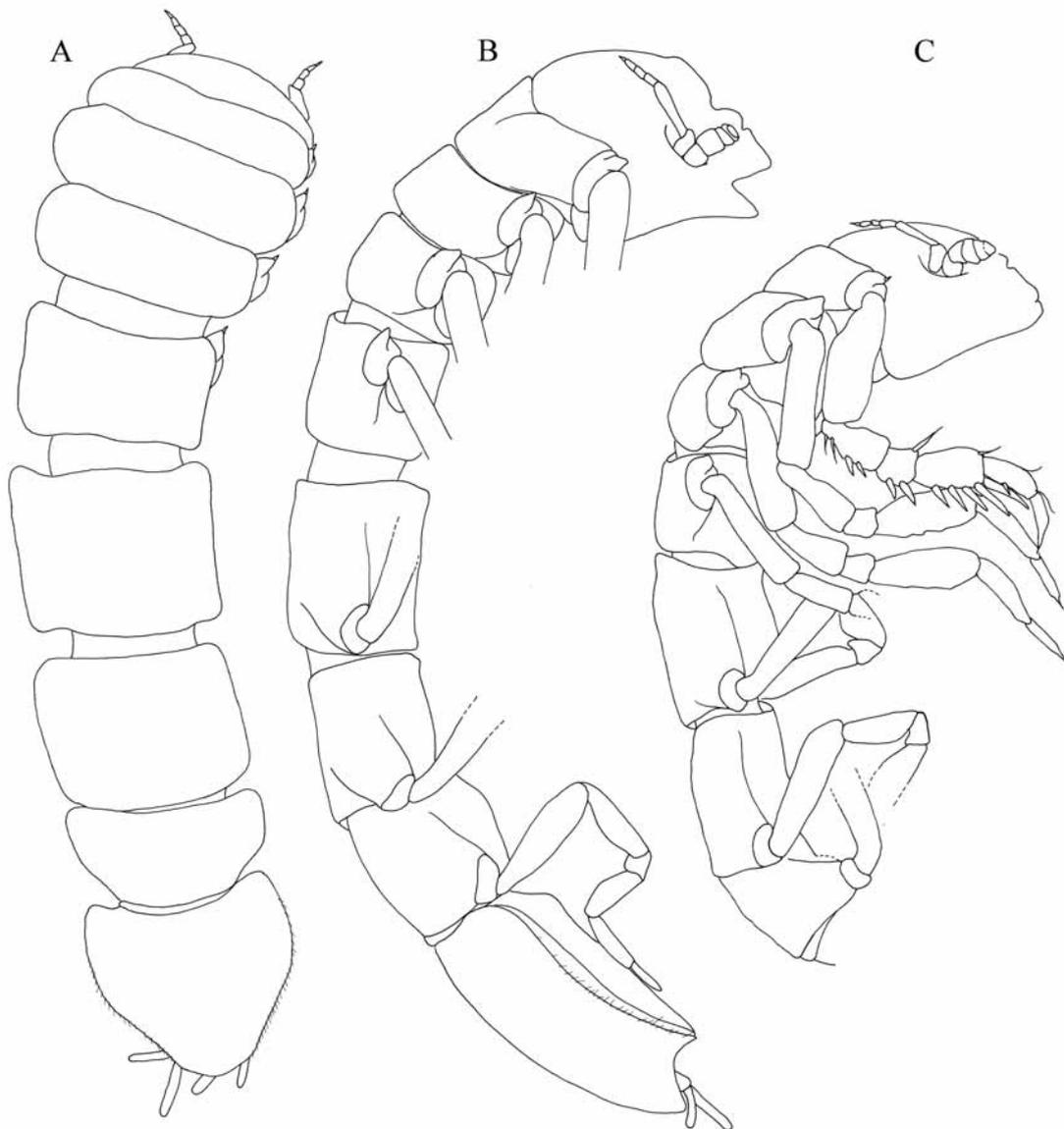


Figure 19. *Whoia victoriensis* sp. nov. Holotype female. NMV J18598. Dorsal and lateral views (A, B), paratype female, lateral view (C).

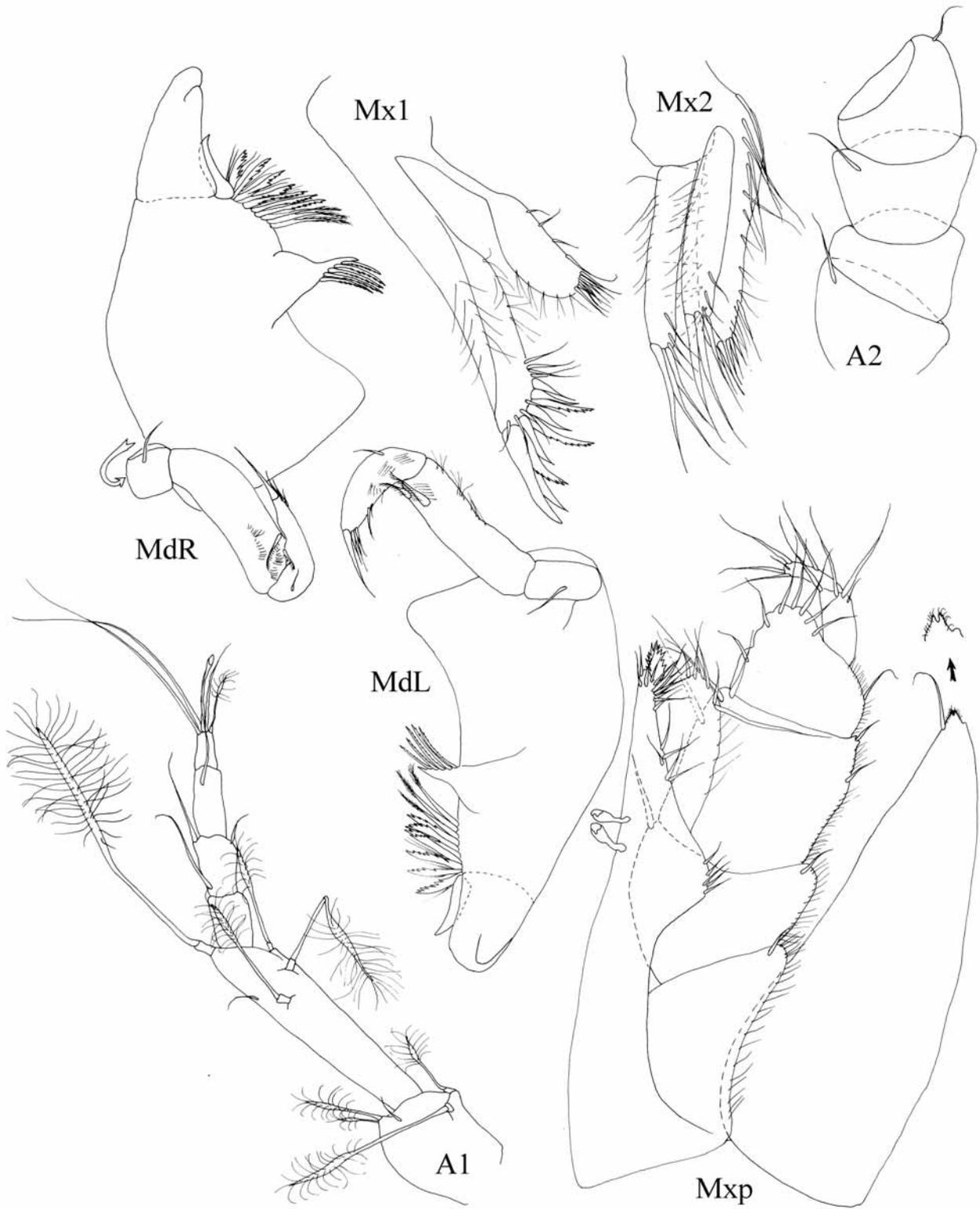


Figure 20. *Whoia victoriensis* sp. nov. Paratype female. NMV J18599. Antennae (A2 only articles 1–4), mouthparts.

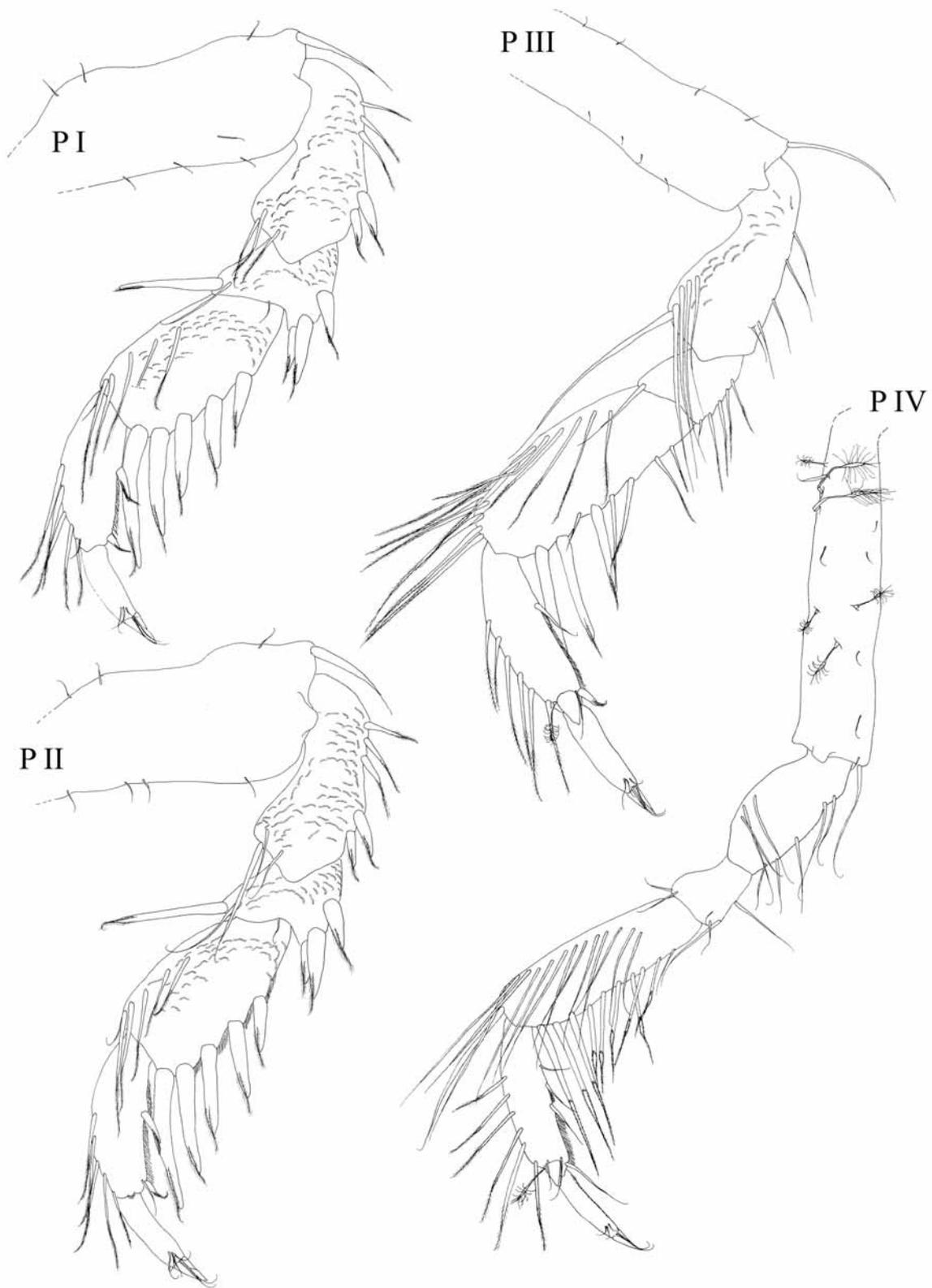


Figure 21. *Whoia victoriensis* sp. nov. Paratype female. NMV J18599. Anterior pereopods.



Figure 22. *Whoia victoriensis* sp. nov. Paratype female. NMV J18599. Posterior pereopods.

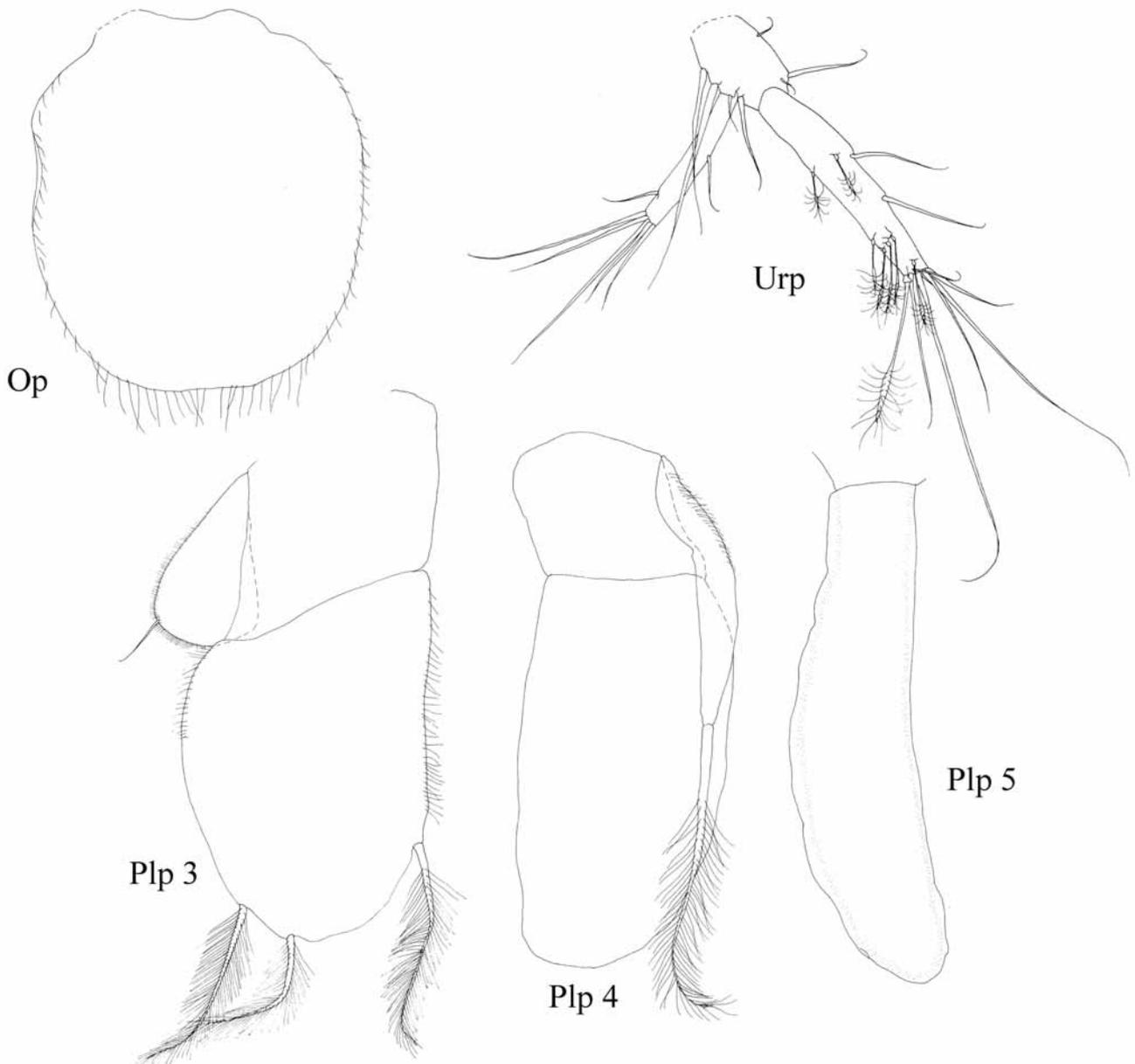


Figure 23. *Whoia victoriensis* sp. nov. Paratype female. NMV J18599. Pleopods (Op, Plp 3, Plp 4, Urp).

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References

- Brandt, A. 2002. New species of Nannoniscidae (Crustacea, Isopoda) and *Saetoniscus* n. gen. from the deep sea of the Angola Basin. *Zootaxa* 88: 1–36.
- Brandt, A., Brökeland, W., Brix, S., and Malyutina, M. 2004. Diversity of Southern Ocean deep-sea Isopoda (Crustacea, Malacostraca)- a comparison with shelf data. *Deep-Sea Research II* 51: 1753–1768.
- Brandt, A., Brenke, N., Andres, H.-G., Brix, S., Guerrero-Kommritz, J., Mühlenhardt-Siegel, U. and Wägele, J.-W. 2005. Diversity of peracarid crustaceans (Malacostraca) from the abyssal plain of the Angola Basin. *Organisms, Diversity and Evolution* 5: 105–112.
- Gage, J.D., and Tyler, P.A. 1991. *Deep-sea biology: a natural history of organisms at the deep-sea floor*. Cambridge University Press: Cambridge. 504 pp.
- Hansen, H.J. 1916. Crustacea Malacostraca: The order Isopoda. *Danish Ingolf Expedition* 3 (5): 1–262.
- Hessler, R.R. 1970. The Desmosomatidae of the Gay Head - Bermuda Transect. *Bulletin of the Scripps Oceanographic Institute* 15: 1–63.
- Hessler, R.R., Wilson, G.D.F., and Thistle, D. 1979. The deep-sea isopods: a biogeographic and phylogenetic overview. *Sarsia* 64: 67–75.
- Kussakin, O.G. 1965. On the fauna of Desmosomatidae (Crustacea, Isopoda) on the Far-Eastern Seas of the USSR. *Issledovanija dal'nevostocrya morej SSSR. - Exploration of the Fauna of the Seas* 3: 115–144. (in Russian)
- Park, J.-Y. 1999. A new isopod species from the abyssal South Pacific Ocean: *Eugerdia gigantea* sp. nov. (Isopoda: Asellota: Desmosomatidae). *Journal of the Marine Biological Association of the United Kingdom* 79: 1061–1067.
- Poore, G.C.B., Just, J., and Cohen, B.F. 1994. Composition and diversity of Crustacea (Isopoda) of the southeastern Australian continental slope. *Deep-Sea Research I* 41 (4): 677–693.
- Sars, G. O. 1870. Nye Dybvandskrustaceer fra Lofoten. *Forhandlinger i Videnskaps-selskabet i Christiania* 1869: 205–221.
- Sars, G.O. 1897. Parts 7, 8. Desmosomidae, Munnopsidae (part). Pp. 117–144, pls. 149–164 in: *An account of the Crustacea of Norway with short descriptions and figures of all the species*. Bergen Museum: Bergen.
- Sars, G.O. 1899. Parts 13, 14. Cryptoniscidae, Appendix. Pp. 233–270 in: *An account of the Crustacea of Norway with short descriptions and figures of all the species*. Bergen Museum: Bergen.
- Siebenhaller, J. F., and Hessler, R.R. 1977. The Nannoniscidae (Isopoda, Asellota): *Hebefustus* n. gen. and *Nannoniscoides* Hansen. *Transaction of the San Diego Society of Natural History* 19 (2): 17–44.
- Siebenhaller, J. F., and Hessler, R.R. 1981. The genera of the Nannoniscidae (Isopoda, Asellota). *Transaction of the San Diego Society of Natural History* 19 (16): 227–250.
- Svarvarsson, J. 1984. Description of the male of *Pseudomesus brevicornis* Hansen, 1916 (Isopoda, Asellota, Desmosomatidae) and rejection of the family Pseudomesidae. *Sarsia* 69: 37–44.
- Svarvarsson, J. 1988. Desmosomatidae (Isopoda, Asellota) from bathyal and abyssal depths in the Norwegian, Greenland and North Polar Seas. *Sarsia* 73: 1–32.
- Wägele, J.-W. 1989. Evolution und phylogenetisches System der Isopoda. Stand der Forschung und neue Erkenntnisse. *Zoologica, Stuttgart* 140: 1–262.
- Wilson, G.D.F. 1980. New insights into the colonization of the deep sea. Systematics and Zoogeography of the Munnidae and the Pleurogoniidae comb. nov. (Isopoda; Janiroidea). *Journal of Natural History* 14: 215–236.
- Wolff, T. 1962. The systematics and biology of bathyal and abyssal Isopoda Asellota. *Galathea Reports* 6: 320.