

## Stegocephalidae (Crustacea: Amphipoda) from Australia and New Zealand, With Descriptions of Eight New Species

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**ABSTRACT.** The species belonging to the marine amphipod (Crustacea) family Stegocephalidae Dana, 1852 from Australia and New Zealand are reviewed; 25 species are recognized, and a key to the species is presented. Eight new species from the area are described: *Andaniexis andaniexis* n.sp., *Andaniexis elinae* n.sp., *Glorandaniotes sandroi* n.sp., *Glorandaniotes traudlae* n.sp., *Stegocephaloides gunnae* n.sp., *Stegocephaloides ingstadi* n.sp., *Stegocephaloides tori* n.sp., and *Stegocephaloides tucki* n.sp.

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Until recently, only six stegocephalid species, belonging to five genera, were known from Australia and New Zealand: *Andaniotes corpulentus* Stebbing, 1897, *Andaniotes wallaroo* J.L. Barnard, 1972, *Parandania boeckii* Stebbing, 1897, *Stegocephalopsis latus* (Haswell, 1879), *Stegosoladidus simplex* (K.H. Barnard, 1930), and *Tetradion crassum* (Chilton, 1883). Berge (2001a,b) and Berge & Vader (2000) then described six new species and also reported three species as new for the area (in one case re-established *Andaniotes abyssorum* (Stebbing, 1888) as a valid species, see Berge, 2001b). At present, including the species that are recognized herein, the number of stegocephalid species in the area has increased to 25, belonging to 10 different genera.

This paper is a review of the stegocephalid genera and species found in Australia and New Zealand. Phylogenetic relationships between and within the genera are at present not resolved. Pending a revision and a phylogenetic analysis of the entire family (Berge & Vader, 2001b), these relationships will not be discussed herein. Thus, the generic position of all new species described herein strictly follow

the diagnoses of genera presented by J.L. Barnard & Karaman (1991).

During the last years, the number of recorded stegocephalid genera and species in Australia and New Zealand has increased significantly. In the present paper, the number of genera found in the area is increased from 5 to 10: *Andaniella* Sars, 1891, *Andaniexis* Stebbing, 1906, *Glorandaniotes* Ledoyer, 1986, *Phippsia* Stebbing, 1906, and *Stegocephaloides* Sars, 1891 are all recorded for the first time in the area. Of these five genera, *Andaniexis*, *Phippsia* and *Stegocephaloides* have been considered to be mainly North Atlantic and Arctic genera that had not previously been recorded outside the Atlantic. The two other genera, *Andaniella* and *Glorandaniotes*, had both previously been recorded from adjacent areas.

### Material and methods

This study is based upon material from the Australian Museum, Sydney (AM) and Museum Victoria, Melbourne (MV).

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All dissected appendages were mounted in polyvinyl-lactophenol, stained with rose-bengal. These appendages were drawn using a Leica compound microscope equipped with a drawing-tube, while the habitus-drawings were made using a Leica dissecting microscope. Mature and immature females were distinguished from males by the presence of oostegites. The classification of setae and setae-groups follows that of Berge (2001a). All scales attached to the figures are 0.1 mm unless otherwise stated.

For each of the new species a diagnosis is included prior to the descriptions (characters used in the diagnoses are omitted in the descriptions). Due to the current uncertain

taxonomic status at the generic level (see above) in this family, these diagnoses will separate the present species from all other known stegocephalid taxa. For a discussion on the taxonomic status at the generic level, see Berge & Vader (2001b).

**Symbols.** A1–2, antenna 1–2; EP3, epimeral plate 3; IP, inner plate; L, labium; LBR, labrum; LMND, left mandible; MX1, maxilla 1; MX2, maxilla 2; MXP, maxilliped; OP, outer plate; P1–7, pereopods 1–7; PLP, palp; RMND, right mandible; ST, setal teeth on the first maxilla; T, telson; U1–3, uropods 1–3.

### Key to the stegocephalid species of Australia and New Zealand

*Stegocephalopsis latus* (Haswell, 1879) is not included due to insufficient descriptions.

- |    |  |   |
|----|--|---|
| 1  | Basis pereopod 6 more than 1.5 times as broad as basis pereopod 5 .....  | 2   |
| —  | Basis pereopod 6 less than 1.5 times as broad as basis pereopod 5 .....  | 10  |
| 2  | Telson as long as peduncle uropod 3 .....  | 3   |
| —  | Telson clearly shorter than peduncle uropod 3 .....  | 5   |
| 3  | Telson not longer than broad, distally rounded .....   | 4   |
| —  | Telson longer than broad, distally pointed and acute .....   | <i>Stegocephaloides tori</i>                        |
| 4  | Maxilliped palp with 3 articles .....  | <i>Stegosoladidus simplex</i>                       |
| —  | Maxilliped palp with 4 articles .....  | <i>Stegosoladidus complex</i>                       |
| 5  | Coxa 1 about as deep as basis pereopod 1, telson cleft .....   | 6   |
| —  | Coxa 1 shorter than basis pereopod 1, telson entire .....  | 8   |
| 6  | Pereopod 2 ischium elongate, at least twice as long as broad<br>..... (see key to the species) <i>Andaniotes</i> |   |
| —  | Pereopod 2 ischium not elongate, about as long as broad .....  | 7   |
| 7  | Antenna 2 peduncle article 4 shorter than 5 .....  | <i>Glorandaniotes traudlae</i> n.sp.                |
| —  | Antenna 2 peduncle article 4 as long as 5 .....  | <i>Glorandaniotes sandroi</i> n.sp.                 |
| 8  | Antenna 2 conspicuously longer than antenna 1 .....  | <i>Parandania boeckii</i>                           |
| —  | Antennae equal to subequal .....   | 9   |
| 9  | Telson distally rounded .....  | <i>Andaniexis andaniexis</i> n.sp.                  |
| —  | Telson distally pointed .....  | <i>Andaniexis elinae</i> n.sp.                      |
| 10 | Epistome produced laterally, maxilla 2 not gaping and geniculate .....   | 11  |
| —  | Epistome unproduced laterally (convex), maxilla 2 gaping and<br>geniculate .....                                 | 13  |
| 11 | Telson cleft .....   | 12  |
| —  | Telson entire .....  | <i>Andaniella integripes</i>                        |
| 12 | Maxilliped palp with 3 articles, almost without setae .....  | <i>Stegosoladidus simplex</i>                       |
| —  | Maxilliped palp with 4 articles, heavily setose .....  | (see separate key to the species) <i>Andaniotes</i> |
| 13 | Pereopod 7 with all articles present .....   | 15  |
| —  | Pereopod 7 with less than 7 articles .....   | 14  |
| 14 | Pereopod 7 with five articles (including coxa) .....   | <i>Tetradeion quatro</i>                            |
| —  | Pereopod 7 with three articles (including coxa) .....  | <i>Tetradeion crassum</i>                           |
| 15 | Telson entire .....  | 16  |
| —  | Telson cleft .....   | 17  |

- 16 Epistomal plate large, labrum about as long as broad ..... *Phippsia dampieri*
- Epistomal plate weakly developed, Labrum longer than broad and triangular ..... *Phippsia angustipalpa*
- 17 Uropod 3 outer ramus 2-articulate ..... *Stegocephaloides ingstadi* n.sp.
- Uropod 3 outer ramus 1-articulate ..... 18
- 18 Epimeral plate 3 posteroventral corner without serrations ..... 19
- Epimeral plate 3 posteroventral corner with serrations ..... *Phippsia vanhoeffeni*
- 19 Maxilliped palp dactylus slender and pointed (ordinary) ..... 20
- Maxilliped palp dactylus distally bifid, setose ..... *Stegocephaloides tucki* n.sp.
- 20 Accessory flagellum antenna 1 longer (weakly) than flagellum article 1, basis pereopod 4 distally without plumose setae ..... *Stegocephaloides gunnae* n.sp.
- Accessory flagellum antenna 1 shorter than flagellum article 1, basis pereopod 4 distal anterior and posterior margins with plumose setae ..... *Stegocephaloides tori* n.sp.

**Andaniella Sars**

*Andaniella* Sars, 1891: 210.

**Type species.** *Andania pectinata* Sars, 1883.

**Included species.** *Andaniella integripes* Bellan-Santini & Ledoyer, 1986; *A. pectinata* (Sars, 1883).

**Species found in the area.** *Andaniella ?integripes* Bellan-Santini & Ledoyer, 1986.

**Material examined.** MV J45325, 1 specimen (immature), 40°43.85'S 148°37.46'E, 69.5 m, Tasmania, Eastern Bass Strait.

**Remarks.** This is the first record of *Andaniella* in the area. The identification is, however, based upon a single immature specimen. Furthermore, considering that the specimen at hand is partly damaged, and that its type locality is the Prince Edward Islands, this identification should be considered as uncertain. It may turn out to belong to a different species, but a final answer must await study of additional material.

**Andaniexis Stebbing**

*Andania* Boeck, 1871: 128 (homonym, Lepidoptera).

*Andaniexis* Stebbing, 1906: 94 (new name).

**Type species.** *Andania abyssi* Boeck, 1871, selected by Boeck, 1876.

**Included species.** *Andaniexis abyssi* (Boeck, 1871); *A. americana* Berge *et al.*, 2001; *A. andaniexis* n.sp.; *A. eilae* Berge & Vader, 1997; *A. elinae* n.sp.; *A. gloriosa* Berge *et al.*, 2001; *A. gracilis* Berge & Vader, 1997; *A. lupus* Berge & Vader, 1997; *A. mimonectes* Ruffo, 1975; *A. oculata* Birstein & Vinogradov, 1970; *A. ollii* Berge *et al.*, 2000; *A. spinescens* (Alcock, 1894); *A. spongicola* Pirlot, 1933; *A. stylifer* Birstein & Vinogradov, 1960; *A. subabyssi* Birstein & Vinogradov, 1955; *A. tridentata* Ledoyer, 1986.

**Species found in the area.** *Andaniexis andaniexis* n.sp. and *A. elinae* n.sp.

**Remarks.** These are the first records of *Andaniexis* in the area, although the genus has previously been recorded east of Papua New Guinea (*A. stylifer*).

As is evident from Table 1, two of the species within the

genus (*A. eilae* and *A. spongicola*) possess a cleft telson, and do thus seem to be more closely related to the genus *Glorandaniotes*. Furthermore, the two species *A. spinescens* and *A. tridentata* have a dorsal carina on pleonites 1–3, and thus seem to be related to the genus *Parandaniexis*. However, pending a revision of the entire family (Berge & Vader, 2001b), no changes are here made in the classification of these species.

**Table 1.** Differences between species in the genus *Andaniexis*. A dash indicates either that morphological information is missing or that the character is inapplicable.

Description of the characters: **character 1:** pleonites dorsally, a—smooth, b—dentate; **character 2:** antenna 1 flagellum, number of articles; **character 3:** maxilla 1 palp, a—between 4 and 8 robust setae, b—>10 robust setae; **character 4:** maxilliped inner plate number of nodular setae; **character 5:** coxa 4 distally, a—broad, b—narrow/pointed; **character 6:** pereopod 4 basis, a—with long setae, b—without long setae; **character 7:** pereopod 7 basis anteriorly, a—straight, b—weakly concave; **character 8:** telson apically, a—rounded, b—pointed; **character 9:** telson, a—entire, b—cleft.

species	characters								
	1	2	3	4	5	6	7	8	9
<i>Andaniexis abyssi</i>	a	5	a	2	a	b	a	b	a
<i>Andaniexis americana</i>	a	5	a	1	b	a	b	a	a
<i>Andaniexis andaniexis</i>	a	5	a	1	a	a	a	a	a
<i>Andaniexis australis</i>	a	5	a	1	a	b	b	b	a
<i>Andaniexis eilae</i>	a	4	a	2	b	a	a	a	b
<i>Andaniexis elinae</i>	a	5	a	1	a	a	a	b	a
<i>Andaniexis gloriosa</i>	a	5	a	1	b	b	a	b	a
<i>Andaniexis gracilis</i>	a	5	a	2	b	b	b	a	a
<i>Andaniexis lupus</i>	a	5	a	2	a	a	a	b	a
<i>Andaniexis mimonectes</i>	a	4	a	3	b	a	a	a	a
<i>Andaniexis oculata</i>	a	5	a	—	a	b	b	b	a
<i>Andaniexis ollii</i>	a	5	a	1	a	b	a	b	a
<i>Andaniexis spinescens</i>	b	—	—	—	b	—	a	a	a
<i>Andaniexis spongicola</i>	a	—	a	2	b	a	a	a	b
<i>Andaniexis stylifer</i>	a	5	b	2	a	a	b	a	a
<i>Andaniexis subabyssi</i>	a	4	a	—	a	a	b	a	a
<i>Andaniexis tridentata</i>	b	5	a	—	b	b	a	a	a

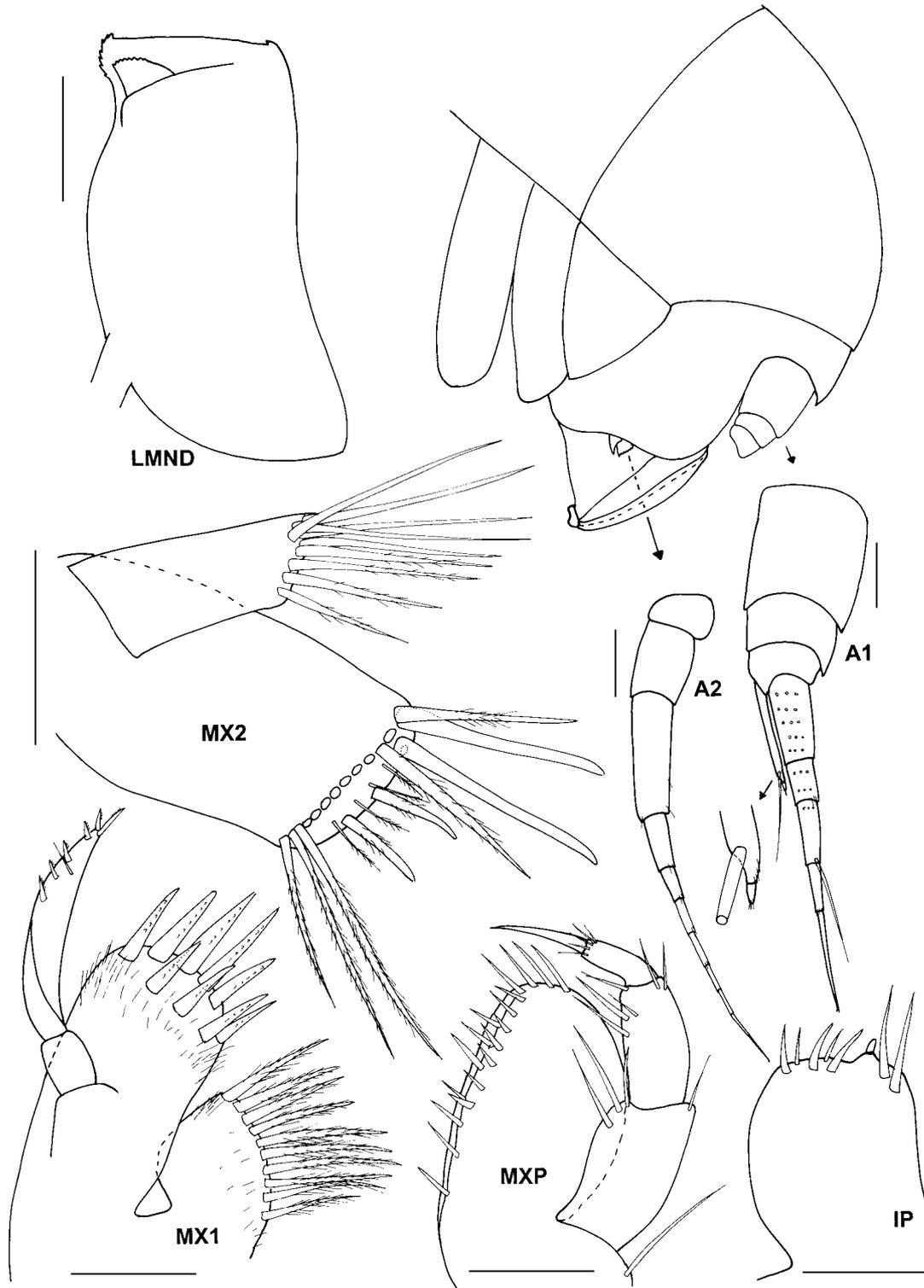


Fig. 1. *Andaniexis andaniexis* n.sp. holotype. IP, inner plate of maxilliped.

***Andaniexis andaniexis* n.sp.**

Figs. 1–3

**Type material.** HOLOTYPE: AM P52714, ♀ 4 mm, 16°37.81'S 146°23.08'E, 1000 m (QLD-932), east of Flynn Reef, Queensland, Australia, 06 Jun. 1993. Collector: J.K. Lowry & party on RV “Sunbird” (SEAS project trap 3, transect 1). PARATYPE: AM P52716, ♀ 5 mm, 16°37.81'S 146°23.08'E, 1000 m (QLD-949), east of Flynn Reef, Queensland, Australia, 07 Jun. 1993. Collector: J.K. Lowry

& party on RV “Sunbird” (SEAS project trap 2, transect 2).

**Distribution.** Known only from the type locality.

**Diagnosis** (see also Table 1): Pleonites dorsally smooth. Antenna 1 flagellum with 5 articles, accessory flagellum longer than flagellum article 1. Antenna 2 peduncle article 4 shorter than article 5. Epistome produced laterally, epistomal plate present. Labrum shorter than broad, both lobes reduced. Mandibular incisor smooth, transverse. Lacinia mobilis reduced, not expanded laterally. Maxilla

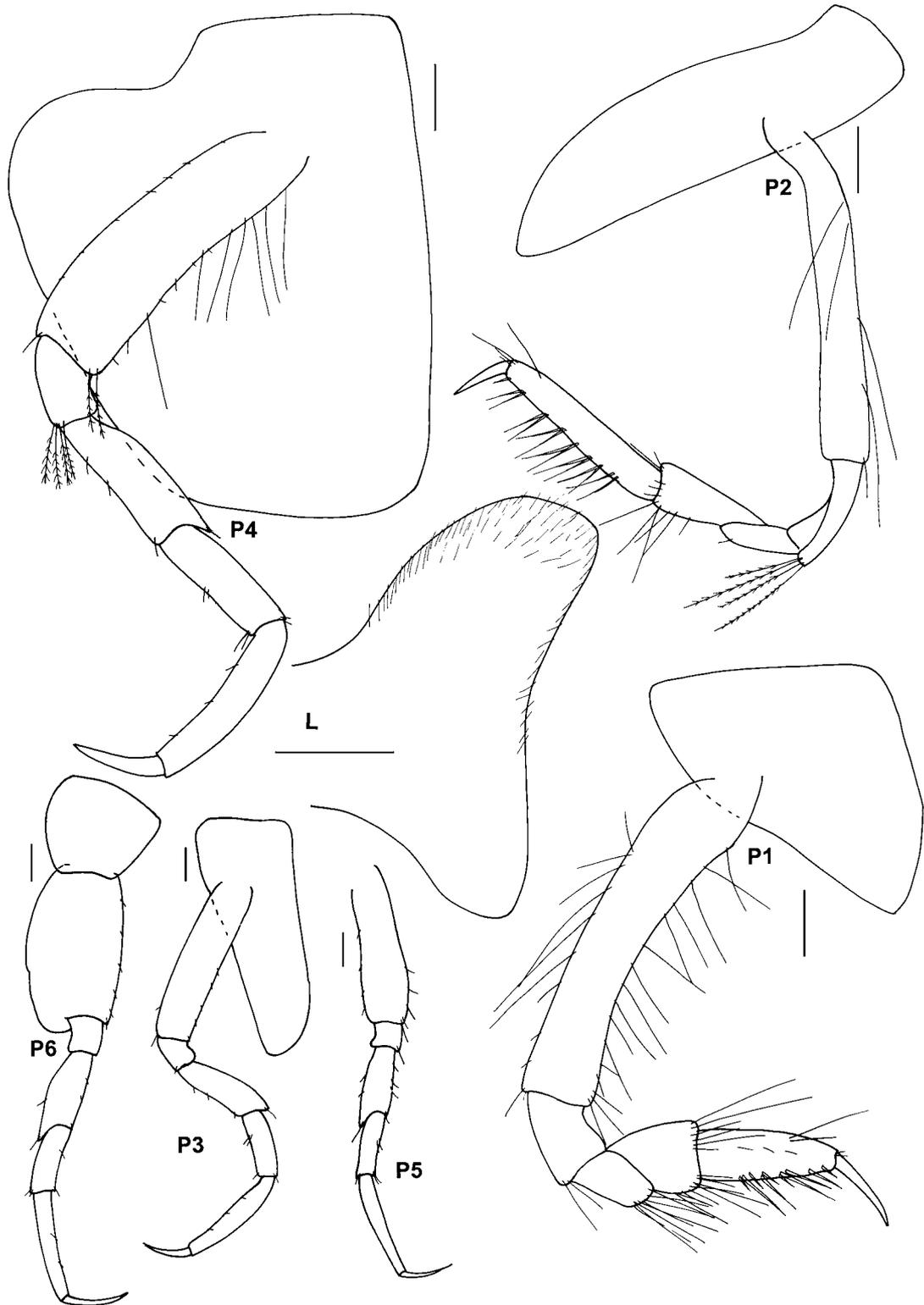


Fig. 2. *Andaniexis andaniexis* n.sp. holotype.

1 outer plate with ST in two parallel rows, palp 2-articulate. Maxilla 2 outer plate not gaping and geniculate. Maxilliiped inner plate with one nodular seta. Coxa 4 distally broad. Pereopod 6 basis expanded. Articulation present between urosomites 2 and 3. Uropod 3 outer ramus 2-articulate. Telson about as long as broad, apically rounded, entire.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 weakly longer than antenna 2; accessory flagellum article

2 present. Antenna 2 peduncle articles 3–5 shorter than flagellum; article 3 short, about as long as broad. Epistome rectangular, with a long ridge on each side; epistomal plate produced into a small elongate medial ridge covering the entire epistome. Maxilla 1 palp reaching above the apex of outer plate; outer plate distally rounded; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A–C present, part of second row; inner plate with pappose setae. Maxilla 2 ordinary; outer plate

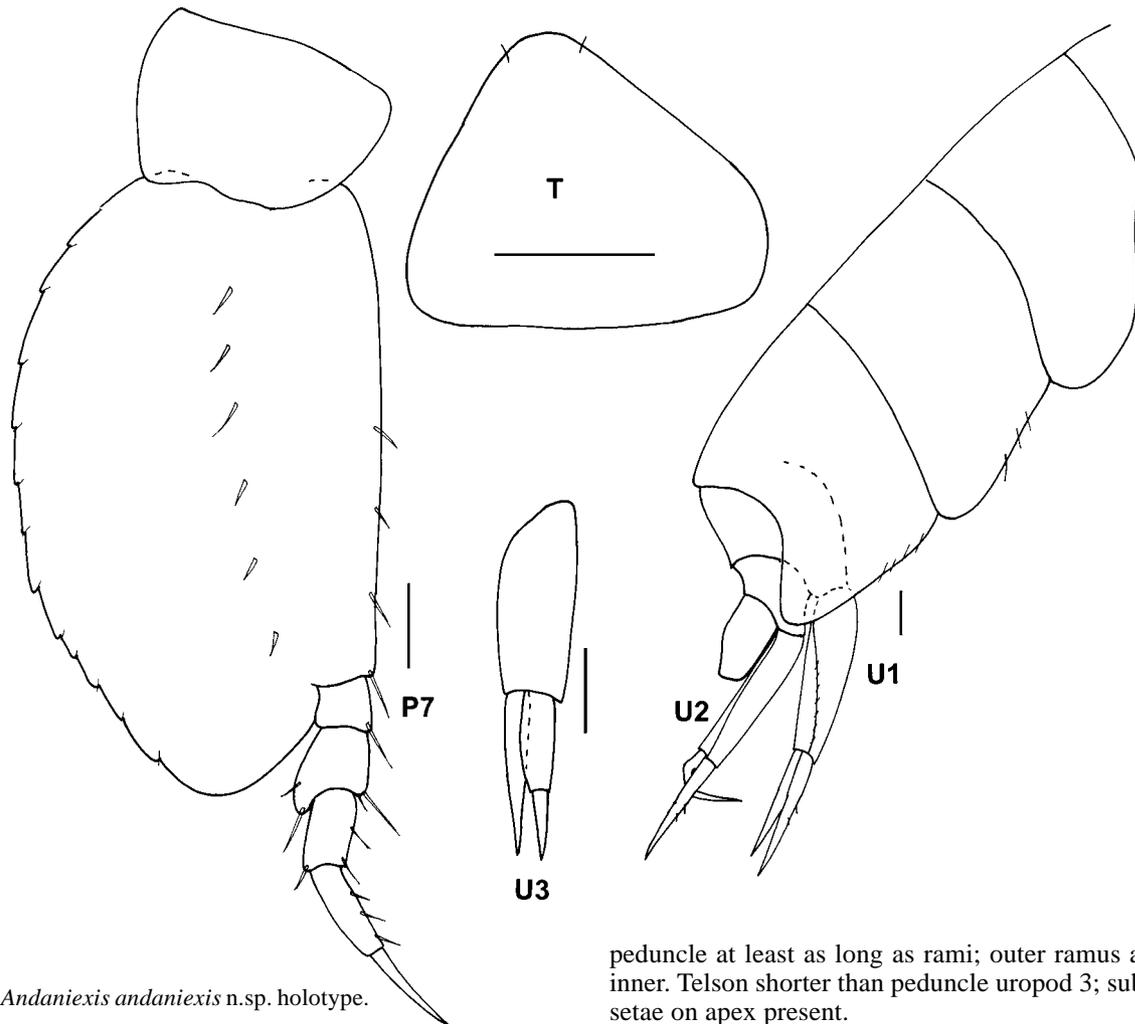


Fig. 3. *Andaniexis andaniexis* n.sp. holotype.

setae distally simple; inner plate setae row A covering the entire margin, clearly separated from row B; row A setae pappose; row B setae proximally pappose, distally without cusps; row C present; row D present, reduced, 1–3 long slender setae distally. Maxilliped palp 4-articulate; article 2 distally unproduced; dactylus distally simple, pointed; inner plate not exceeding base of palp article 2; medial setae-row transverse with setae simple; distal setae-row present; inner setae-row reduced to one or two setae; outer plate with outer setae-row submarginal, with long robust setae; inner setae-row well developed with long robust setae, appressed to outer setae-row; distal setae-group absent. Labium distally broad, oval. Coxae and bases on the pereopods smooth. Coxae 1–3 contiguous. Pereopod 1 coxa not as deep as basis; propodus subrectangular. Pereopod 2 longer and thinner than pereopod 1; ischium elongate, ratio length to breadth exceeding 1.5, distal posterior margin with plumose setae; propodus subrectangular, palm absent. Pereopod 4 basis anterior margin with long setae, posterior margin without long setae; plumose setae on anterior distal margin; ischium with plumose setae on posterior distal margin. Pereopod 6 basis about twice as broad as basis on pereopod 5. Pereopod 7 basis anterior margin straight; distally rounded; medial row of setae present; setae short and robust. Oostegites on pereopods 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus longer than inner. Uropod 2 peduncle longer than rami; outer ramus as long as inner. Uropod 3

peduncle at least as long as rami; outer ramus as long as inner. Telson shorter than peduncle uropod 3; submarginal setae on apex present.

**Male.** Unknown.

**Etymology.** Based upon the general morphology of the present species, it is a typical member of the genus, hence the name.

**Remarks.** For differences among the world's species of *Andaniexis*, see Table 1.

***Andaniexis elinae* n.sp.**

Figs. 4, 5

**Type material.** HOLOTYPE: MV J40614, ♀ 5 mm, 42°2.20'S 148°38.70'E, 800 m, off Freycinet Peninsula, Tasmania, Australia, 27 Jul. 1986. Collector: M.F. Gomon and party. PARATYPE: MV J24061, immature 3 mm, 42°2.20'S 148°38.70'E, 800 m, off Freycinet Peninsula, Tasmania, Australia, 27 Jul. 1986. Collector: M.F. Gomon and party.

**Additional material.** MV J24051, 4 specimens, 34°57.90'S 150°20.20'E, 503 m, New South Wales, off Nowra, 14 Jul. 1986; MV J24055, 4 specimens, 38°25.00'S 149°0.00'E, 1500 m, Victoria, south of Point Hicks, 22 Jul. 1986; MV J24058, 7 specimens, 38°19.60'S 149°24.30'E, 930 m, Victoria, south of Point Hicks, 23 Jul. 1986; MV J24064, 5 specimens, 41°57.50'S 148°37.90'E, 400 m, Tasmania, off Freycinet Peninsula, 27 Jul. 1986; MV J40617, 1 specimen, 38°25.90'S 148°58.60'E, 1850 m, Victoria, south of Point Hicks, 22 Jul. 1986; MV J40619, 20 specimens, 38°21.90'S 149°20.00'E, 1000 m, Victoria, south of Point Hicks, 23 Jul. 1986; MV J40622, 2 specimens, 38°16.40'S 149°27.60'E, 800 m, Victoria, south of Point Hicks, 23 Jun. 1986.

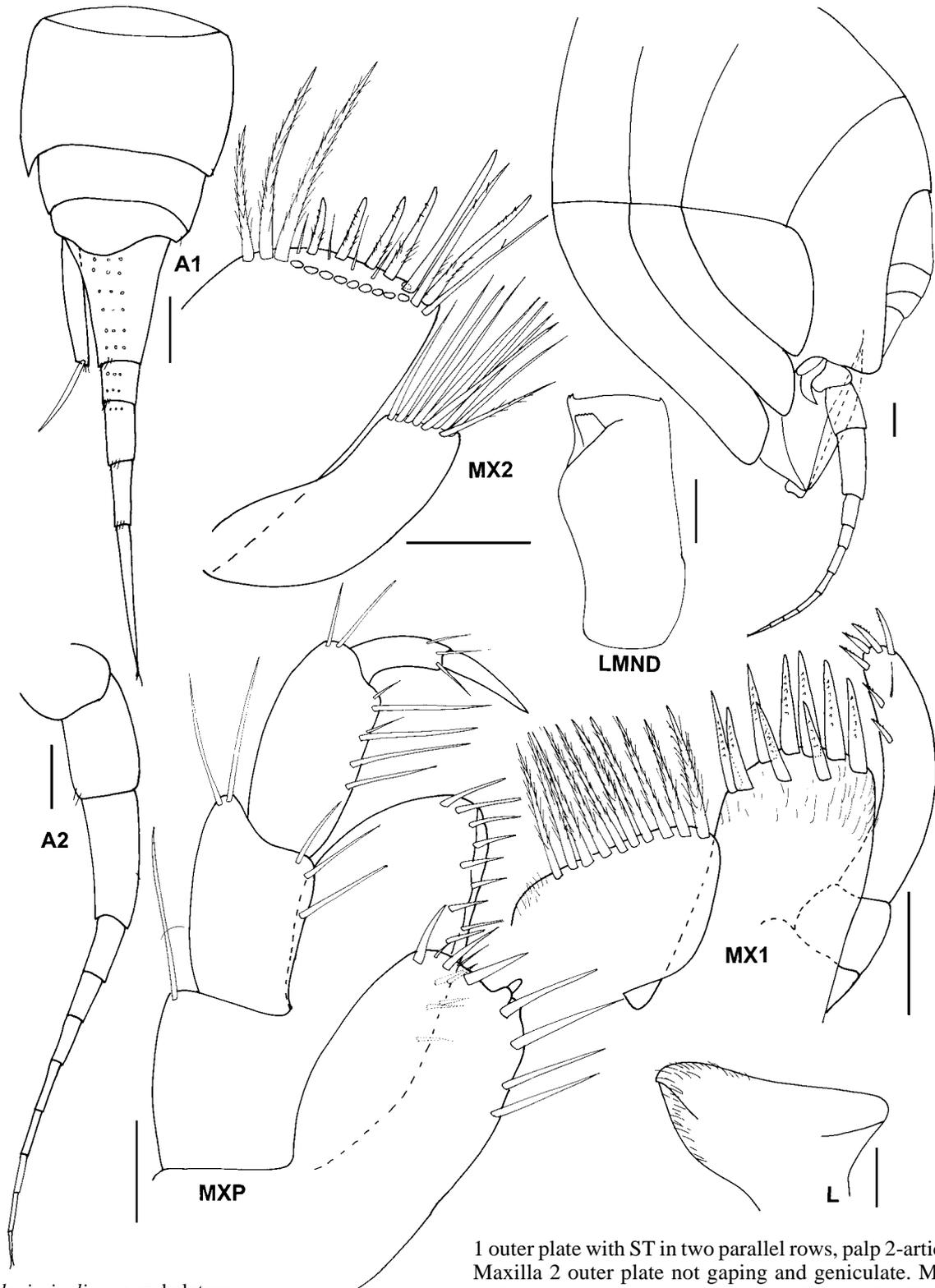


Fig. 4. *Andaniexis elinae* n.sp. holotype.

**Distribution.** New South Wales, Victoria and Tasmania, 400–1850 m.

**Diagnosis** (see also Table 1). Pleonites dorsally smooth. Antenna 1 flagellum with 5 articles, accessory flagellum not longer than flagellum article 1. Antenna 2 peduncle article 4 shorter than article 5. Epistome produced laterally, epistomal plate present. Labrum shorter than broad, both lobes reduced. Mandibular incisor smooth, transverse. Lacinia mobilis reduced, not expanded laterally. Maxilla

1 outer plate with ST in two parallel rows, palp 2-articulate. Maxilla 2 outer plate not gaping and geniculate. Maxilliped inner plate with one nodular seta. Coxa 4 distally broad. Pereopod 6 basis expanded. Articulation present between urosomites 2 and 3. Uropod 3 outer ramus 2-articulate. Telson about as long as broad, apically pointed, entire.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 about as long as antenna 2; accessory flagellum article 2 absent. Antenna 2 peduncle articles 3–5 shorter than flagellum; article 3 short, about as long as broad. Epistome rectangular, with a long ridge on each side; epistomal plate produced into a small elongate medial ridge covering the entire epistome. Maxilla 1 palp reaching above the apex of

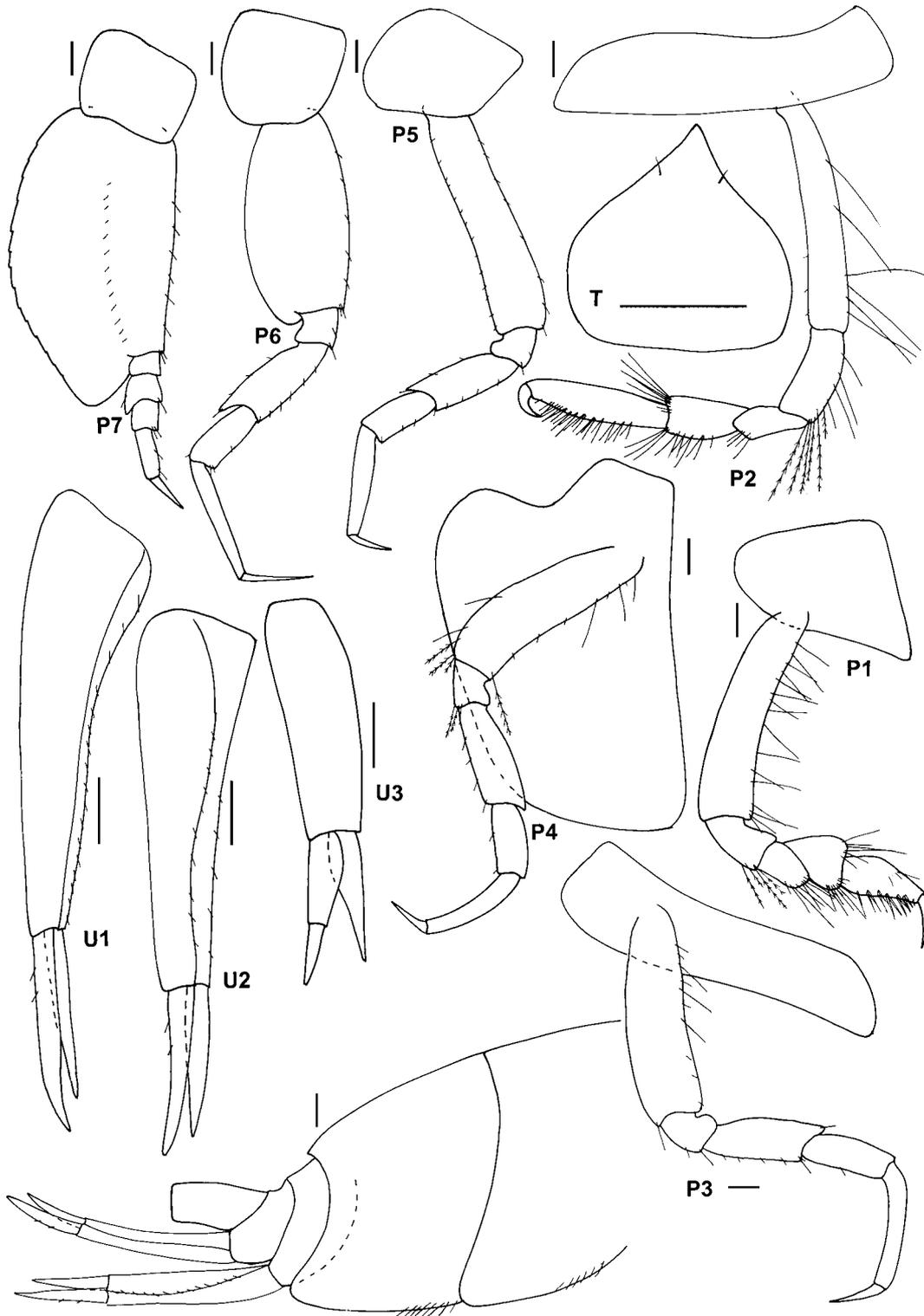


Fig. 5. *Andaniexis elinae* n.sp. holotype, except U3—female A MV J40619.

outer plate; outer plate distally rounded; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A present, part of second row; ST B present; ST C present; inner plate with pappose setae. Maxilla 2 ordinary; outer plate setae distally simple; inner plate setae row A covering the entire margin; clearly separated from row B; row A setae pappose; row B setae proximally pappose; distally with cusps present; row C present; row D present, reduced, 1–3 long slender setae distally. Maxilliped palp 4-articulate; article 2 distally unproduced; dactylus

distally simple, pointed; inner plate not exceeding base of palp article 2; medial setae-row transverse with simple setae; distal setae-row present; inner setae-row not reduced; outer plate with outer setae-row submarginal with long robust setae; inner setae-row well developed with long robust setae, row appressed to outer setae-row; distal setae-group absent. Labium distally broad, oval. Coxae and bases on the pereopods smooth. Coxae 1–3 contiguous. Pereopod 1 coxa not as deep as basis; propodus subovate. Pereopod 2 longer and thinner than pereopod 1; ischium elongate, ratio length

to breadth exceeding 1.5, distal posterior margin with plumose setae; propodus subrectangular, palm absent. Pereopod 4 basis anterior and posterior margins with long setae, with plumose setae on distal anterior and posterior margins; ischium with plumose setae on posterior distal margin. Pereopod 6 basis about twice as broad as basis on pereopod 5. Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopod 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus longer than inner. Uropod 2 peduncle longer than rami; outer ramus longer than inner. Uropod 3 peduncle at least as long as rami; outer ramus longer than inner. Telson shorter than peduncle uropod 3; submarginal setae on apex present.

**Male.** Unknown.

**Etymology.** Named after the first author's sister Astrid Eline Berge.

**Remarks.** For differences between the world's species of *Andaniexis*, see Table 1.

### *Andaniotes* Stebbing

*Andaniotes* Stebbing, 1897: 30.

*Andaniotes*.—Berge, 2001b (revision).

**Type species.** *Anonyx corpulentus* Thomson, 1882.

**Included species.** *Andaniotes abyssorum* (Stebbing, 1888); *A. bagabag* Lowry & Stoddart, 1995; *A. corpulentus* (Thomson, 1882); *A. karkar* Lowry & Stoddart, 1995; *A. linearis* K.H. Barnard, 1930; *A. lowryi* Berge, 2001b; *A. pooh* Berge, 2001b; *A. poorei* Berge, 2001b; *A. pseudolinearis* Berge, 2001b; *A. wallaroo* J.L. Barnard, 1972; *A. wollongong* Berge, 2001b.

**Species found in the area.** *Andaniotes abyssorum* (Stebbing, 1888); *A. corpulentus* (Thomson, 1882); *A. lowryi* Berge, 2001b; *A. pooh* Berge, 2001b; *A. poorei* Berge, 2001b; *A. wallaroo* J.L. Barnard, 1972; *A. wollongong* Berge, 2001b.

**Remarks.** For a revision of *Andaniotes*, and details about the species, see Berge, 2001b.

### Key to the world species of *Andaniotes*

See also Table 2 for male specimens.

- |   |  |                          |
|---|--|--------------------------|
| 1 | Pereopod 6 basis medially with a long row (covering the entire length of basis) of robust slender setae .....                              | <i>A. linearis</i>       |
| — | Pereopod 6 basis medially without setae or with a short distal row of long plumose setae .....   | 2                        |
| 2 | Pereopod 6 basis not more than 1.5 times as broad as basis pereopod 5, posterior margin faintly concave .....                              | 3                        |
| — | Pereopod 6 basis about twice as broad as basis pereopod 5, posterior margin linear or convex .....   | 4                        |
| 3 | Maxilliped inner plate with 4 nodular setae, males with outer ramus enlarged (stout, strongly curved upwards) on both uropod 1 and 2 ..... | <i>A. pooh</i>           |
| — | Maxilliped inner plate with 3 nodular setae, males with outer ramus enlarged (stout, strongly curved upwards) on uropod 2 only .....       | <i>A. poorei</i>         |
| 4 | Pereopod 7 merus conspicuously enlarged, posterior lobe about twice as long as carpus .....  | <i>A. wallaroo</i>       |
| — | Pereopod 7 merus not conspicuously enlarged .....  | 5                        |
| 5 | Pereopod 7 basis similar to basis on pereopod 6, posterior margin straight or slightly convex .....  | 6                        |
| — | Pereopod 7 basis broader and longer than basis on pereopod 6, basis conspicuously subovate .....   | 8                        |
| 6 | Oostegites on pereopods 3–5 .....  | 7                        |
| — | Oostegites on pereopods 4–5 .....  | <i>A. karkar</i>         |
| 7 | Pereopod 4 basis distally with plumose setae on both posterior and anterior margin .....   | <i>A. lowryi</i>         |
| — | Pereopod 4 basis distally with plumose setae only on the anterior margin .....   | <i>A. bagabag</i>        |
| 8 | Antenna 1 flagellum article 1 at least 1.5 times longer than articles 2–4 combined .....   | <i>A. pseudolinearis</i> |
| — | Antenna 1 flagellum article 1 about as long as articles 2–4 combined .....   | 9                        |

- 9 Gills on pereopods 2 and 3 long and narrow (shape similar to that of the oostegites), distinct from those on pereopods 4 and 5 ..... *A. wollongong*  
 — Gills on pereopods 2 and 3 similar to those on pereopods 4 and 5 ..... 10
- 10 Epistome anteriorly broad and rounded ..... *A. abyssorum*  
 — Epistome anteriorly subrectangular ..... *A. corpulentus*

**Table 2.** Comparison of male characteristics of the genus *Andaniotes* (for three of the species, a male specimen has not been reported). Character states (reduced, ordinary and enlarged) are based upon a comparison with the females of the respective species.

species, males	urosome	uropod 1 outer ramus	uropod 2 outer ramus	uropod 3 rami
<i>Andaniotes abyssorum</i>	enlarged	enlarged	enlarged	reduced
<i>Andaniotes bagabag</i>	males unknown			
<i>Andaniotes corpulentus</i>	enlarged	enlarged	ordinary	reduced
<i>Andaniotes karkar</i>	enlarged	enlarged	ordinary	reduced
<i>Andaniotes linearis</i>	males unknown			
<i>Andaniotes lowryi</i>	enlarged	enlarged	ordinary	reduced
<i>Andaniotes pooh</i>	enlarged	enlarged	enlarged	ordinary
<i>Andaniotes poorei</i>	enlarged	ordinary	enlarged	ordinary
<i>Andaniotes pseudolinearis</i>	enlarged	ordinary	enlarged	ordinary
<i>Andaniotes wallaroo</i>	enlarged	enlarged	ordinary	reduced
<i>Andaniotes wollongong</i>	males unknown			

One of the main characteristics of this genus is the conspicuous sexual dimorphism found mainly on the urosome, but also to a varying degree on the epistome and pereopods 1 and 2. Males of all *Andaniotes* species, (a male has not yet been recorded for three species, see Table 2), possess an enlarged urosome. Furthermore, the outer ramus on uropod 1 and/or 2 may be enlarged, and the rami of uropod 3 may be reduced. To help identification of also male specimens, this sexual dimorphism on the urosome is summarized in Table 2. Except for *A. linearis* and *A. pseudolinearis*, the present genus is endemic to the area, and is, by far, represented with the highest number of species (7).

### *Glorandaniotes* Ledoyer

*Glorandaniotes* Ledoyer, 1986: 957.

**Type species.** *Glorandaniotes fissicaudata* Ledoyer, 1986.

**Included species.** *Glorandaniotes fissicaudata* Ledoyer, 1986; *G. sandroi* n.sp.; *G. traudlae* n.sp.

**Species found in the area.** *Glorandaniotes sandroi* n.sp. and *G. traudlae* n.sp.

**Remarks.** These are the first records of *Glorandaniotes* from the area.

### *Glorandaniotes sandroi* n.sp.

Figs. 6, 7

**Type material.** HOLOTYPE: MV J40630, ♀ 5 mm: 38°52.6'S 148°25.2'E, 130 m (fine sand), 100 km NE of North Point, Flinders Island, Eastern Bass Strait, Tasmania, Australia, 15 Nov. 1981. Collector: R. Wilson. PARATYPES: MV J40629, 1 ♂ and 6 ♀: 38°52.6'S 148°25.2'E, 130 m (fine sand), 100 km NE of North Point, Flinders Island, Eastern Bass Strait, Tasmania, Australia, 15 Nov. 1981. Collector: R. Wilson.

**Distribution.** Known only from the type locality.

**Diagnosis.** Pleonites dorsally smooth. Antenna 1 flagellum with 4 articles. Antenna 2 peduncle article 4 slightly longer than article 5. Epistome produced laterally, epistomal plate present. Labrum shorter than broad, both lobes reduced. Mandibular incisor smooth, transverse. Lacinia mobilis reduced, not expanded laterally. Maxilla 1 outer plate with ST in two parallel rows, palp uni-articulate. Maxilla 2 outer plate not gaping and geniculate. Coxa 4 distally broad. Pereopod 6 basis expanded. Uropod 3 outer ramus 2-articulate. Articulation between urosomites 2 and 3 present. Telson about as long as broad, rounded, cleft.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 shorter than antenna 2; accessory flagellum article 2 present. Antenna 2 peduncle articles 3–5 longer than flagellum; article 3 short, about as long as broad. Epistome rectangular, with a long ridge on each side; epistomal plate produced into a small elongate medial ridge covering the entire epistome (similar to *G. traudlae*, see Fig. 8). Maxilla 1 palp reaching above the apex of outer plate; outer plate distally rounded; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A–C present, part of second row; inner plate with pappose setae. Maxilla 2 ordinary; outer plate setae distally simple; inner plate setae row A covering the entire margin, clearly separated from row B; row A setae pappose; row B setae proximally pappose; distally with cusps present; row C present; row D absent. Maxilliped palp 4-articulate; article 2 distally unproduced; dactylus distally simple, pointed; inner plate not exceeding base of palp article 2; 2 nodular setae; medial setae-row transverse with pectinate setae; distal setae-row present; inner setae-row not reduced; outer plate with outer setae-row marginal with long robust setae; inner setae-row reduced, setae short and simple, parallel but not appressed to outer setae-row; distal setae-group absent. Labium distally broad, oval. Coxae and bases on the pereopods smooth. Coxae 1–3 contiguous. Pereopod 1 coxa deeper than basis; propodus distally narrowing.

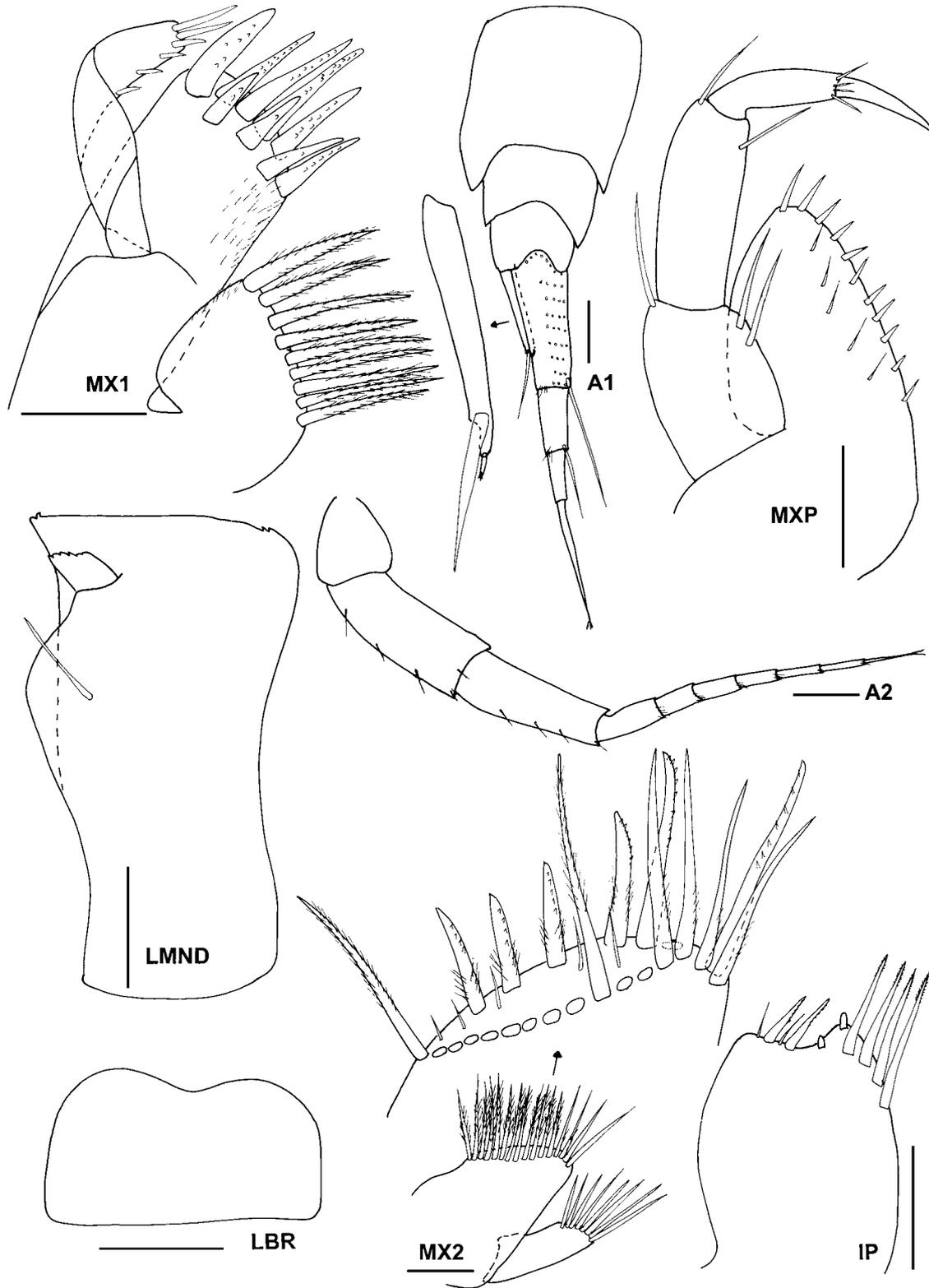


Fig. 6. *Glorandaniotes sandroi* n.sp. holotype. IP, inner plate of maxilliped.

Pereopod 2 general appearance like pereopod 1; ischium not elongate, distal posterior margin with plumose setae; propodus subrectangular but distally narrowing, palm absent. Pereopod 4 basis posterior margin with long setae present, plumose setae on distal anterior and posterior margins; ischium with plumose setae on distal posterior margin. Pereopod 6 basis more than twice as broad as basis on pereopod 5, medially with a row of long plumose setae.

Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopod 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus longer than inner. Uropod 2 peduncle longer than rami; outer ramus longer than inner. Uropod 3 peduncle at least as long as rami; outer ramus longer than inner. Telson shorter than peduncle uropod 3; submarginal setae on apex of each lobe present.

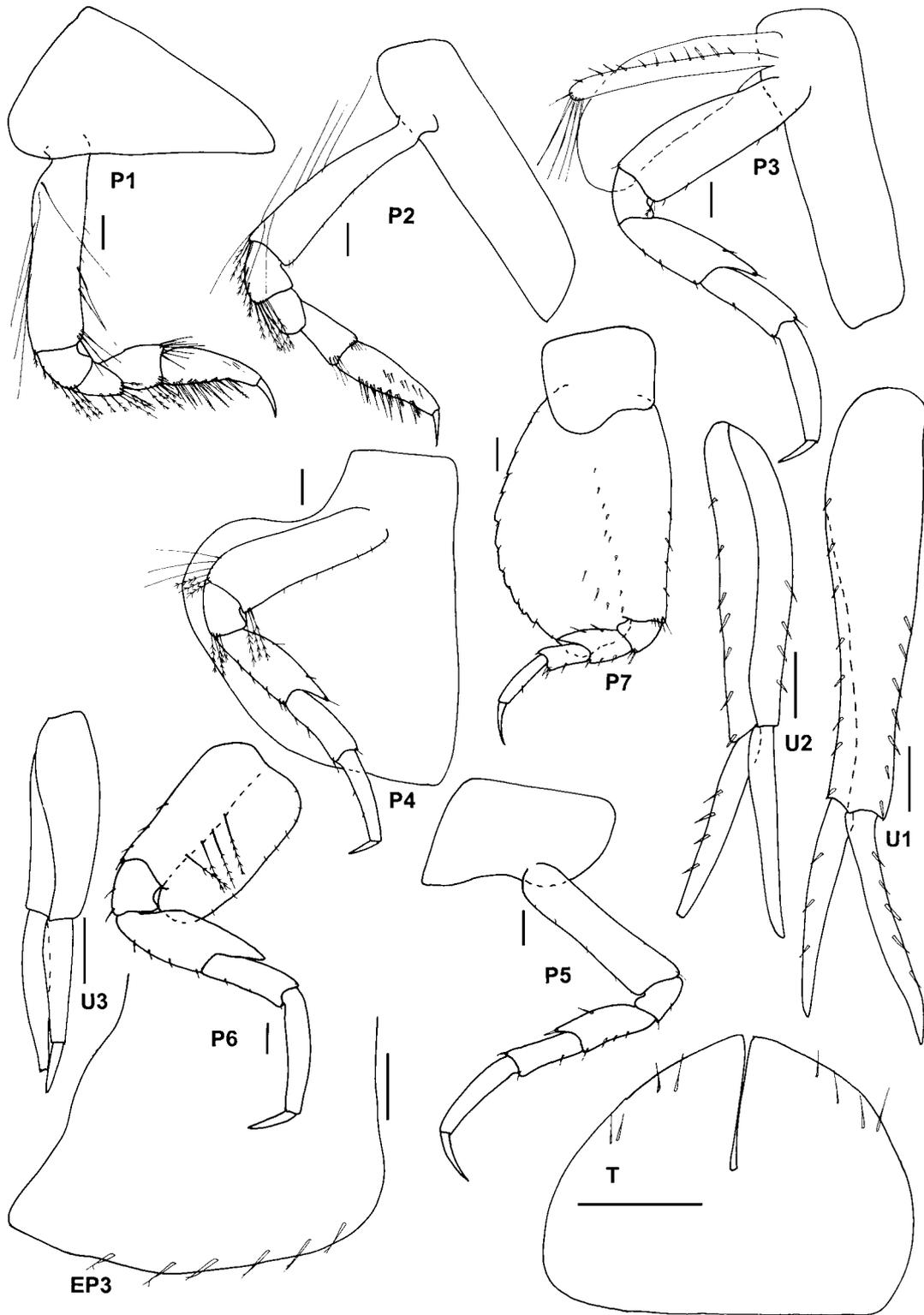


Fig. 7. *Glorandaniotes sandroi* n.sp. holotype.

**Male.** Pereopod 2 propodus equally sized in males and females, urosome ordinary (similar to females).

**Etymology.** Named after Prof Sandro Ruffo (Verona), grand old man of amphipod research.

**Remarks.** The general morphology of *Glorandaniotes sandroi* is very similar to that of *G. traudlae* (habitus only figured for the latter, see below). The two species are

separated mainly on the absence of an articulation between urosomites 2 and 3 in *G. traudlae*, the long peduncle article 4 on the second antenna in *G. sandroi*, and the different setation on pereopod 4. Furthermore, the males of *G. sandroi* do not possess an enlarged propodus on pereopod 2, as in *G. traudlae*.

Both new species described herein are separated from the type species by their small and inconspicuous epistomal plate.

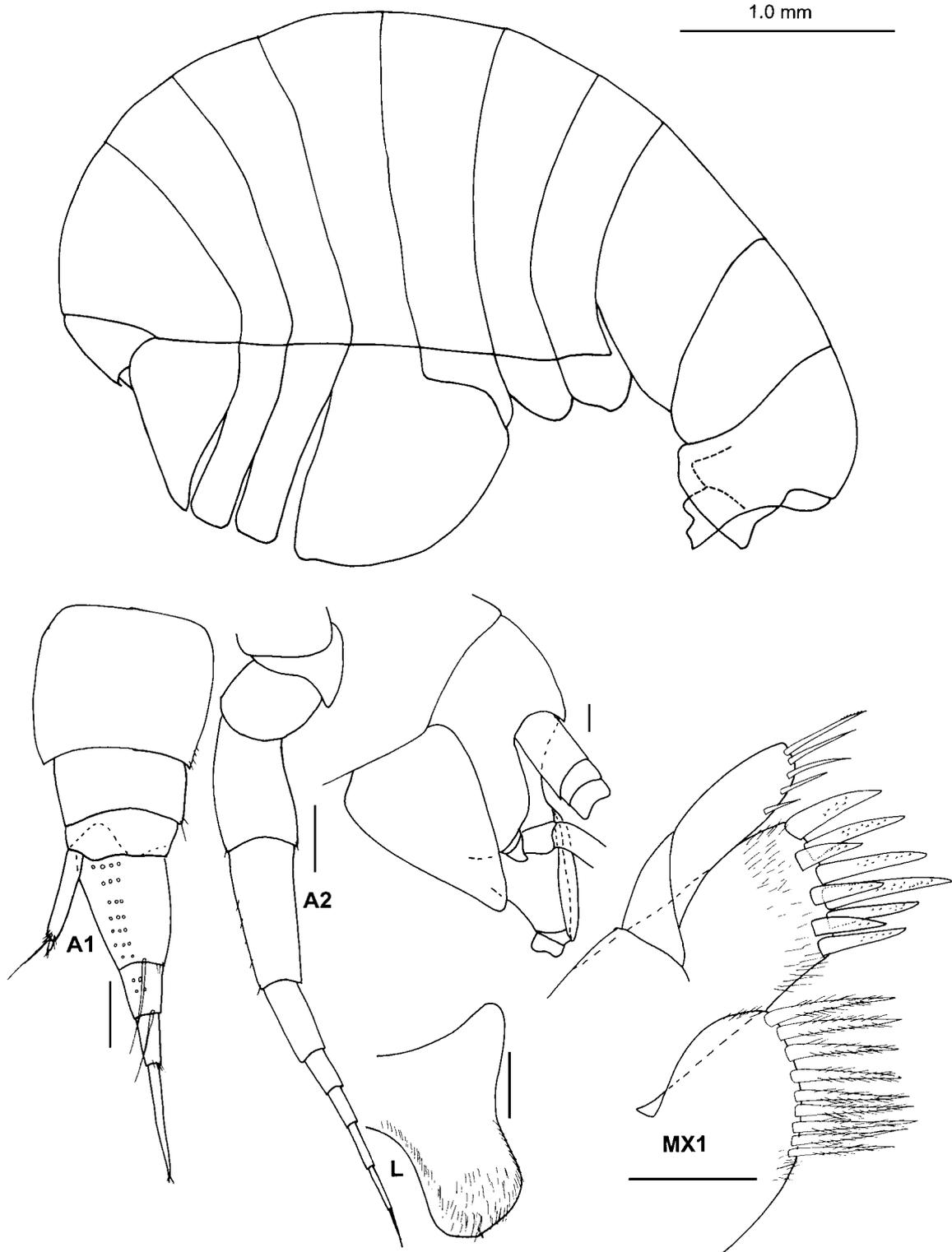


Fig. 8. *Glorandaniotes traudlae* n.sp. holotype, except habitus—paratype female B.

***Glorandaniotes traudlae* n.sp.**

Figs. 8–10

**Type material.** HOLOTYPE: AM P47042, ♀ 4 mm, 34°32.09'S 151°12.55'E, 200 m (NSW-797), off Wollongong, New South Wales, Australia, 07 May 1993. Collector: P. Freewater & party on MV “Robin E” (SEAS project, trap 1, transect 2). PARATYPES: AM P60468, 122 specimens (♂♂ and ♀♀), 3–5 mm, 34°32.09'S 151°12.55'E, 200 m

(NSW-797), off Wollongong, New South Wales, Australia, 07 May 1993. Collector: P. Freewater & party on MV “Robin E” (SEAS project, trap 1, transect 2).

**Distribution.** Known only from the type locality.

**Diagnosis.** Pleonites dorsally smooth. Antenna 1 flagellum with 4 articles. Antenna 2 peduncle article 4 shorter than article 5. Epistome produced laterally, epistomal plate present. Labrum shorter than broad, both lobes reduced.

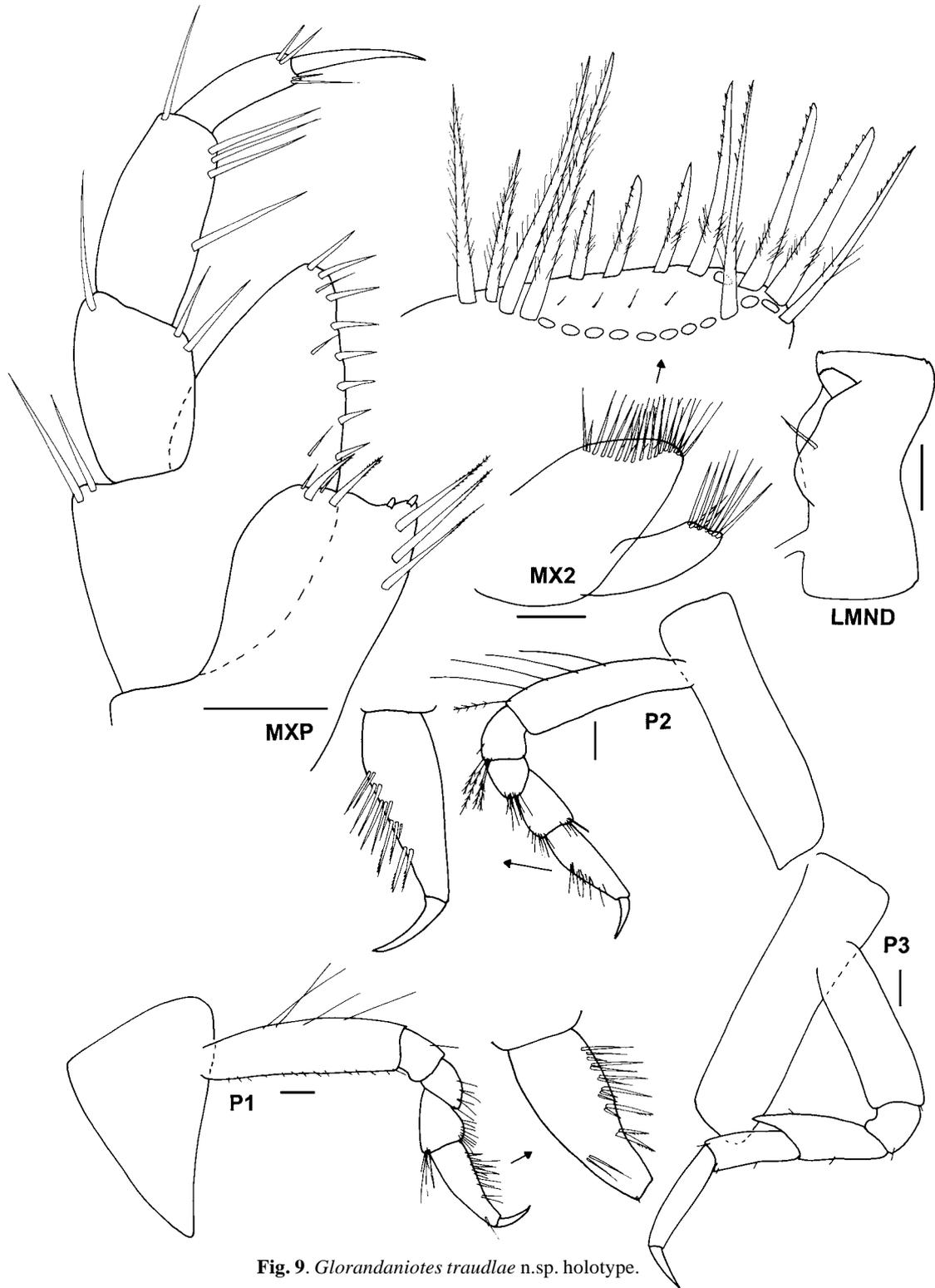


Fig. 9. *Glorandaniotes traudlae* n.sp. holotype.

Mandibular incisor smooth, transverse. Lacinia mobilis reduced, not expanded laterally. Maxilla 1 outer plate with ST in two parallel rows, palp uni-articulate. Maxilla 2 outer plate not gaping and geniculate. Coxa 4 distally broad. Pereopod 6 basis expanded. Uropod 3 outer ramus 2-articulate. Articulation between urosomites 2 and 3 absent. Telson about as long as broad, rounded, cleft.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 about as long as antenna 2; accessory flagellum article 2 present. Antenna 2 peduncle articles 3–5 longer than

flagellum; article 3 short, about as long as broad. Epistome rectangular, with a long ridge on each side; epistomal plate produced into a small elongate medial ridge covering the entire epistome. Maxilla 1 palp reaching above the apex of outer plate; outer plate distally subrectangular; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A–C present, part of second row; inner plate with pappose setae. Maxilla 2 ordinary; outer plate setae distally simple; inner plate setae row A covering the entire margin, clearly separated from row B; row A setae pappopectinate; row B setae proximally pappose, distally

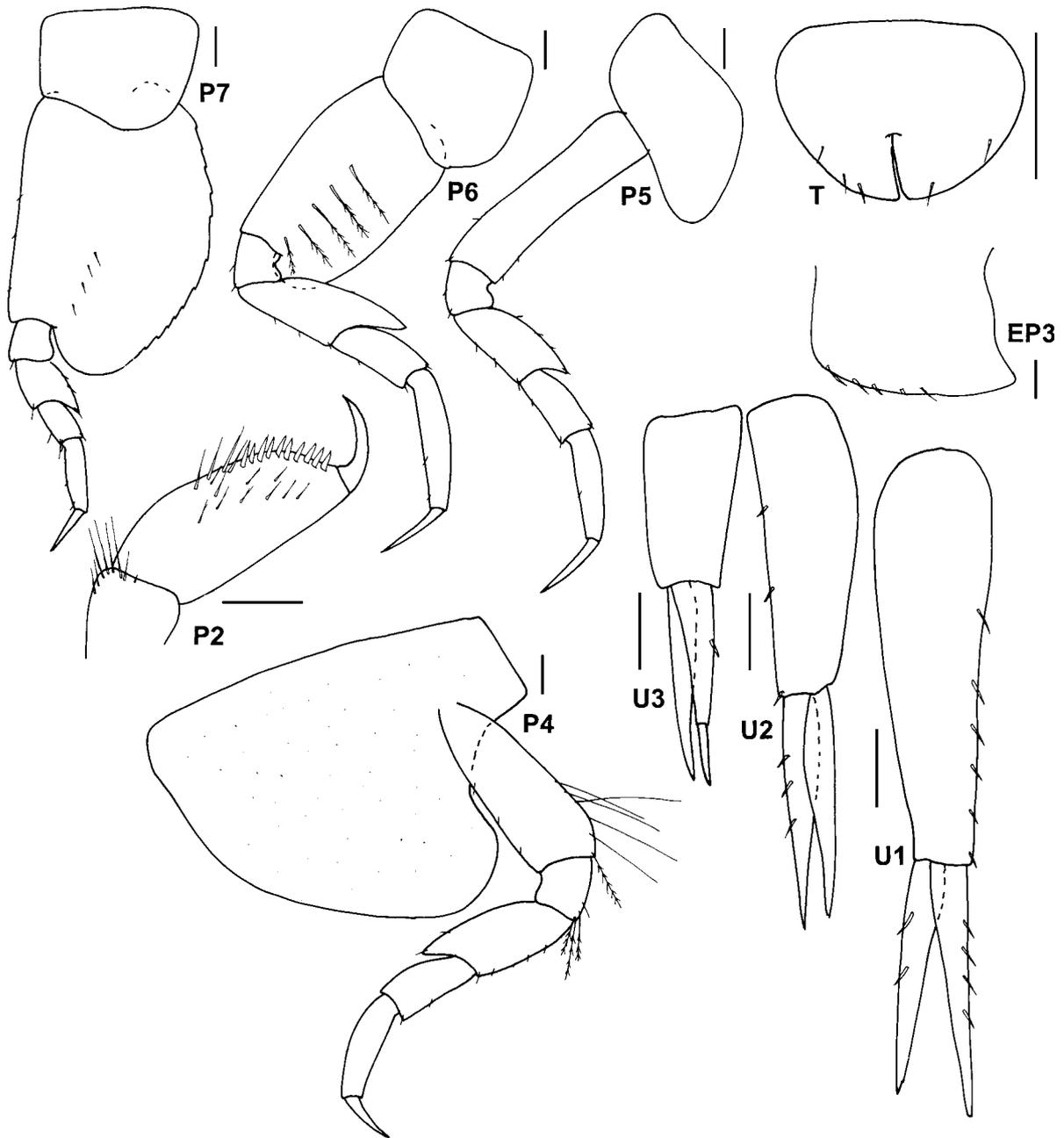


Fig. 10. *Glorandaniotes traudlae* n.sp. holotype, except P2—paratype male A and EP3—paratype female B.

with cusps present; row C present; row D absent. Maxilliped palp 4-articulate; article 2 distally unproduced; dactylus distally simple, pointed; inner plate not exceeding base of palp article 1; 2 nodular setae; medial setae-row transverse with pectinate setae; distal setae-row present; inner setae-row not; outer plate with outer setae-row marginal, setae long robust; inner setae-row reduced with short and simple setae; row parallel but not appressed to outer setae-row; distal setae-group absent. Labium distally broad, oval. Coxae and bases on the pereopods covered with setae; setae very short. Coxae 1–3 contiguous. Pereopod 1 coxa deeper than basis; propodus distally narrowing. Pereopod 2 general appearance like pereopod 1; ischium not elongate, distal posterior margin with plumose setae; propodus distally narrowing, palm absent. Pereopod 4 basis posterior margin with long setae, plumose setae on distal posterior margin; ischium with plumose setae on distal posterior margin.

Pereopod 6 basis more than twice as broad as basis on pereopod 5, medially with a row of long plumose setae. Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopod 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus longer than inner. Uropod 2 peduncle longer than rami; outer ramus longer than inner. Uropod 3 peduncle longer than half the length of rami; outer ramus longer than inner. Telson shorter than peduncle uropod 3; submarginal setae on apex of each lobe present.

**Male.** Pereopod 2 propodus larger in males than in females, urosome ordinary (similar to females).

**Etymology.** Named after Dr Traudl Krapp (Bonn), great friend and indefatigable amphipod worker.

**Remarks.** See remarks under *Glorandaniotes sandroi*.

**Parandania Stebbing***Parandania Stebbing*, 1899: 206.**Type species.** *Andania boecki* Stebbing, 1888. Monotypic genus.**Species found in the area.** *Parandania boecki* (Stebbing, 1888).**Material examined.** AM P50233, 121 specimens, 16°37.81'S 146°23.08'E, 1000 m, east of Flynn Reef, far north Queensland, Australia.**Remarks.** Marine cosmopolitan species, 300–2200 m.**Phippsia Stebbing***Aspidopleurus* Sars, 1891: 203 (homonym, Pisces).*Phippsia* Stebbing, 1906: 89 (new name).*Phippsia*.—Berge & Vader, 2000: 150 (revision).**Type species.** *Stegocephalus gibbosus* Sars, 1883.**Included species.** *Phippsia angustipalpa* Berge & Vader, 2000; *P. dampieri* Berge & Vader, 2000; *P. gibbosa* (Sars, 1883), *P. roemeri* Schellenberg, 1925, *P. unihamata* Berge & Vader, 2000; *P. vanhoeffeni* (Schellenberg, 1926).**Species found in the area.** *Phippsia angustipalpa* Berge & Vader, 2000, *P. dampieri* Berge & Vader, 2000 and *P. vanhoeffeni* (Schellenberg, 1926).**Remarks.** For a revision of *Phippsia*, and details about the species, see Berge & Vader, 2000.**Stegocephaloides Sars***Stegocephaloides* Sars, 1891: 201.**Type species.** *Stegocephalus christianiensis* Boeck, 1871.**Included species.** *Stegocephaloides attingens* K.H. Barnard, 1916; *S. auratus* (Sars, 1883); *S. australis* K.H. Barnard, 1916; *S. barnardi* Berge & Vader, 1997; *S. boxshalli* Berge *et al.*, 2001; *S. calypsonis* Berge *et al.*, 2001; *S. camoti* J.L. Barnard, 1967; *S. christianiensis* (Boeck, 1871); *S. gunnae* n.sp.; *S. ingstadi* n.sp.; *S. ledoyeri* Berge *et al.*, 2001; *S. tori* n.sp.; *S. tucki* n.sp.; *S. wagini* (Gurjanova, 1936).**Species found in the area.** *Stegocephaloides gunnae* n.sp.; *S. ingstadi* n.sp.; *S. tori* n.sp.; *S. tucki* n.sp.**Remarks.** These are the first records of the genus *Stegocephaloides* in the area.**Stegocephaloides gunnae n.sp.**

Figs. 11–13

**Type material.** HOLOTYPE: MV J40615, ♀ 5 mm: 38°16.40'S 149°27.60'E, 800 m, south of Point Hicks, Victoria, Australia, 23 Jun. 1986. Collector: M.F. Gomon and party. PARATYPES: MV J24059, 25 specimens: 38°16.40'S 149°27.60'E, 800 m, south of Point Hicks, Victoria, Australia, 23 Jun. 1986. Collector: M.F. Gomon and party.**Additional material.** MV J24004, 1 immature, 37°07.30'S 150°20.20'E, 520 m, New South Wales, off Eden, 20 Jul. 86; MV J24056, 1 specimen, 38°24.14'S 149°13.07'E, 1220 m, Victoria, south of Point Hicks, 23 Jul. 1986; MV J40620, 24 specimens, 38°21.90'S 149°20.00'E, 1000 m, Victoria, south of Point Hicks, 23 Jul. 1986; MV J40621, 26 specimens, 38°19.60'S 149°24.30'E, 930 m, Victoria, south of Point Hicks, 23 Jul. 1986; MV J40626, 19 specimens, 42°2.20'S 148°38.70'E, 800 m, Tasmania, off Freycinet Peninsula, 27 Jul. 1986; MV J24062, 12 specimens, 42°0.20'S 148°37.70'E, 720 m, Tasmania, off Freycinet Peninsula, 27 Jul. 1986.**Distribution.** Tasmania, Victoria and New South Wales, 500–1220 m.**Diagnosis** (see also Table 3): Pleonites dorsally smooth. Antenna 1 flagellum with 5 articles. Antenna 2 peduncle article 4 as long as article 5. Epistome not produced laterally, epistomal plate present. Labrum as long as broad, left lobe reduced. Mandibular incisor toothed, lateral. Lacinia mobilis powerful, expanded laterally. Maxilla 1 outer plate with ST in a pseudocrown, palp uni-articulate. Maxilla 2 outer plate gaping and geniculate. Maxilliped palp dactylus simple and pointed. Pereopod 6 basis posteriorly expanded, expansion rudimentary. Uropod 3 outer ramus uni-articulate. Articulation between urosomites 2 and 3 absent. Telson longer than broad, pointed, cleft.**Description.** Rostrum reduced, inconspicuous. Antenna 1 as long as antenna 2; accessory flagellum article 2 present. Antenna 2 peduncle articles 3–5 longer than flagellum; article 3 short, about as long as broad. Epistome curved (convex) and smooth; epistomal plate produced into a small**Table 3.** Differences between the species of *Stegocephaloides* (for differences between *S. gunnae* and *S. tori*, see key above). A dash indicates either that morphological information is missing or that the character is inapplicable. Description of the characters—*character 1*: antenna 1 flagellum article 1, *a*, elongate, *b*, not elongate; *character 2*: antenna 2 peduncle article 4, *a*, about as long as article 5, *b*, shorter than article 5; *character 3*: epistomal plate, *a*, absent, *b*, present; *character 4*: maxilla 1 outer plate with an additional ST, *a*, absent, *b*, present; *character 5*: maxilla 1 palp articulation, *a*, absent, *b*, present; *character 6*: maxilliped palp dactylus, *a*, simple, *b*, cleft; *character 7*: pereopod 2 oostegite, *a*, well developed, *b*, reduced; *character 8*: pereopod 7 basis distally, *a*, rounded, *b*, pointed; *character 9*: uropod 3 outer ramus articulation, *a*, absent, *b*, present; *character 10*: uropod 3 outer ramus second article, *a*—long/ordinary, *b*—very short.

species	characters									
	1	2	3	4	5	6	7	8	9	10
<i>Stegocephaloides attingens</i>	a	a	a	a	a	a	b	b	a	–
<i>Stegocephaloides auratus</i>	a	b	a	a	a	a	a	b	a	–
<i>Stegocephaloides australis</i>	b	a	a	a	a	b	a	a	b	b
<i>Stegocephaloides barnardi</i>	b	a	a	a	a	a	a	a	a	–
<i>Stegocephaloides boxshalli</i>	b	a	a	b	a	a	a	a	b	b
<i>Stegocephaloides calypsonis</i>	b	a	a	a	a	a	a	a	b	a
<i>Stegocephaloides camoti</i>	b	a	a	a	a	a	a	a	b	b
<i>Stegocephal. christianiensis</i>	a	a	a	a	a	a	a	a	a	–
<i>Stegocephaloides gunnae</i>	b	a	b	a	a	a	a	a	a	–
<i>Stegocephaloides ingstadi</i>	b	a	a	a	a	a	a	a	a	b
<i>Stegocephaloides ledoyeri</i>	a	b	a	a	a	a	a	a	a	–
<i>Stegocephaloides tori</i>	b	a	b	a	a	a	a	a	a	–
<i>Stegocephaloides tucki</i>	a	a	a	a	a	b	a	a	a	–
<i>Stegocephaloides wagini</i>	a	a	a	a	b	a	a	a	a	–

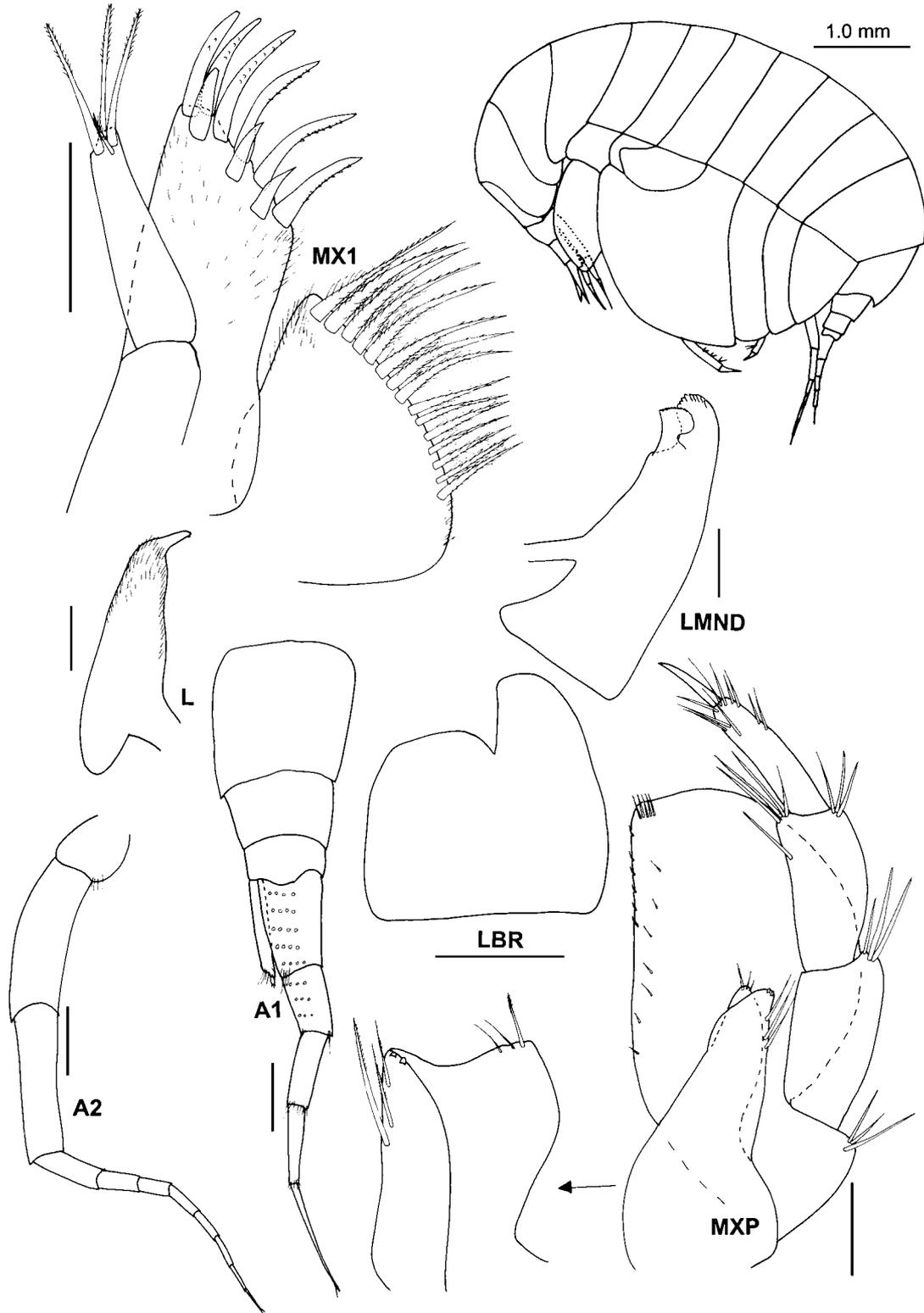
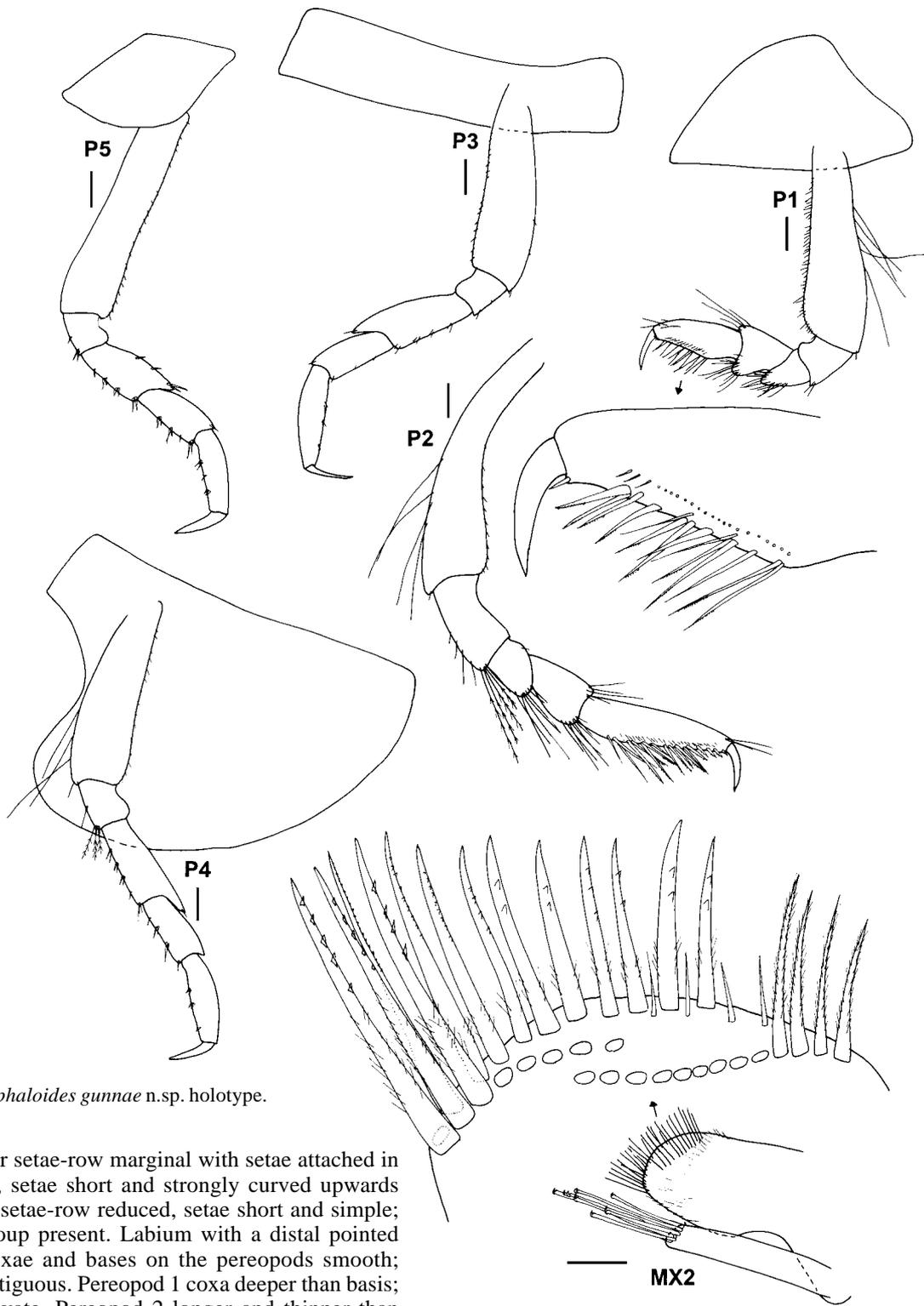


Fig. 11. *Stegocephaloides gunnae* n.sp. holotype, except LMND and MXP IP—J 24057 female A.

elongate medial ridge covering the entire epistome. Maxilla 1 palp not reaching above the apex of outer plate; outer plate distally subrectangular; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; STA present, located distally, part of first row; ST B present, part of second row; ST C present; inner plate with pappocuspitate setae. Maxilla 2 outer plate setae with distal hooks, setae without distal cleft; inner plate setae row A covering about two thirds of the margin, clearly

separated from row B; row A setae pappose; row B setae proximally pappose, distally with cusps present; row C present; row D present, expanded, row elongated towards and beyond row A, setae with many small cusps distally. Maxilliped palp 4-articulate; article 2 distal inner margin weakly produced; inner plate not exceeding base of palp article 2; 2 nodular setae; medial setae-row reduced and transverse, setae pectinate; distal setae-row present; inner setae-row reduced, setae not conspicuously large; outer



**Fig. 12.** *Stegocephalooides gunnae* n.sp. holotype.

plate with outer setae-row marginal with setae attached in a deep hollow, setae short and strongly curved upwards (hooks); inner setae-row reduced, setae short and simple; distal setae-group present. Labium with a distal pointed projection. Coxae and bases on the pereopods smooth; Coxae 1–3 contiguous. Pereopod 1 coxa deeper than basis; propodus subovate. Pereopod 2 longer and thinner than pereopod 1; ischium elongate, ratio length to breadth exceeding 1.5, distal posterior margin with plumose setae; propodus subrectangular but distally weakly narrowing, palm absent. Pereopod 4 basis posterior margin with long setae; ischium with plumose setae on distal posterior margin. Pereopod 6 basis submarginally with a row of long plumose setae. Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopods 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus longer than inner. Uropod 2 peduncle as

long as rami; outer ramus weakly longer than inner. Uropod 3 peduncle about half the length of rami; outer ramus as long as inner. Telson longer than peduncle uropod 3; submarginal setae on apex of each lobe absent.

**Male.** Pereopod 2 propodus larger in males than in females, urosome ordinary (similar to females).

**Etymology.** The present species is named after the first author's mother, Gunn Berge.

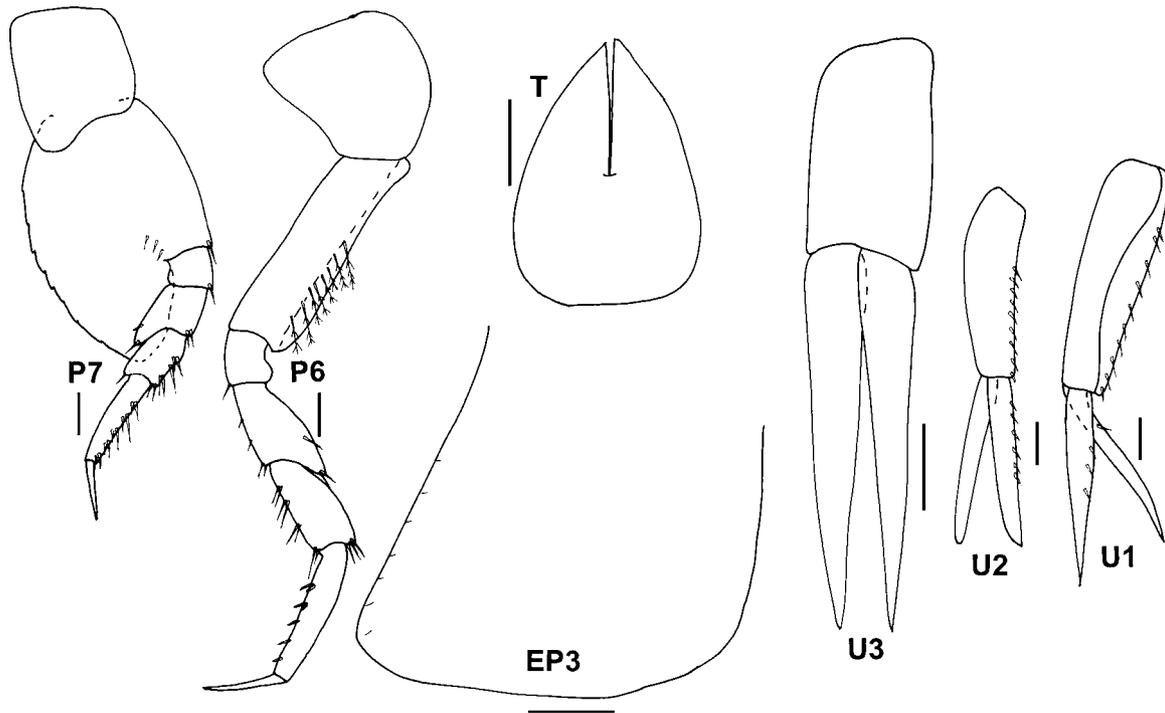


Fig. 13. *Stegocephalooides gunnae* n.sp. holotype except U1, U2, U3 and P2—J 24057 female A.

**Remarks.** The morphology of the mouthparts, antennae, pereopod 6 and the uropods makes this a “typical” member of the genus, and closely related to *Stegocephalooides tori*. Both species are separated from its congeners mainly by the absence of several features (see Table 3), but also by the presence of an epistomal plate.

***Stegocephalooides ingstadi* n.sp.**

Figs. 14, 15

**Type material.** HOLOTYPE: AM P50234, ♀ 5 mm, 16°37.81'S 146°23.08'E, 1000 m (QLD-931), east of Flynn Reef, Queensland, Australia, 06 Jun. 1993. Collector: J.K. Lowry & party on RV “Sunbird” (SEAS project, trap 2, transect 1).

**Additional material.** AM P60489, immature ♀ 4 mm, 30°10.94'S 153°32.27'E, 1000 m (NSW-863), NE of Coffs Harbour, New South Wales, Australia, 11 Aug. 1993. Collector: P. Berents & party on MV “Cheryl Lee”. AM P49967, immature 2 mm, 30°13.75'S 153°28.56'E, 300 m (NSW-881), NE of Coffs Harbour, New South Wales, Australia, 12 Aug. 1993. Collector: P. Berents & party on MV “Cheryl Lee”.

**Distribution.** known from the east coast of Australia (Queensland and New South Wales) at depths between 300 and 1000 m.

**Diagnosis** (see also Table 3): Pleonites dorsally smooth. Antenna 1 flagellum with 4 articles. Antenna 2 peduncle article 4 longer than article 5. Epistome not produced laterally, epistomal plate absent. Labrum longer than broad, left lobe reduced. Mandibular incisor toothed, lateral. Lacinia mobilis powerful, expanded laterally. Maxilla 1 outer plate with ST in a pseudocrown, palp uni-articulate. Maxilla 2 outer plate gaping and geniculate. Maxilliped palp dactylus simple and pointed. Pereopod 6 basis posteriorly expanded, expansion rudimentary. Uropod 3 outer ramus 2-articulate. Articulation between urosomites 2 and 3 absent. Telson longer than broad, pointed, cleft.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 as long as antenna 2; accessory flagellum article 2 present. Antenna 2 peduncle articles 3–5 longer than flagellum; article 3 short, about as long as broad. Epistome curved (convex) and smooth. Maxilla 1 palp not reaching above the apex of outer plate; outer plate distally rectangular; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A present, located distally, part of first row; ST B present, part of second row; ST C present; inner plate with pappocuspitate setae. Maxilla 2 outer plate setae with distal hooks, distal cleft absent; inner plate setae row A covering about two thirds of the margin, clearly separated from row B; row A setae pappose; row B setae proximally simple; distally with cusps present; row C present; row D present, row elongated towards and beyond row A, setae with many small cusps distally. Maxilliped palp 4-articulate; article 2 distally not produced; inner plate not exceeding base of palp article 2; 2 nodular setae; medial setae-row reduced and transverse, setae simple; distal setae-row present; inner setae-row not reduced, setae not conspicuously large; outer plate with outer setae-row marginal with setae attached in a deep hollow, setae short and strongly curved upwards (hooks); inner setae-row reduced with short and simple setae; distal setae-group present, setae short simple. Labium with a distal pointed projection. Coxae and bases on the pereopods covered with setae; setae very short. Coxae 1–3 contiguous. Pereopod 1 coxa about as deep as basis; propodus subrectangular but distally narrowing. Pereopod 2 longer and thinner than pereopod 1; ischium not elongate, distal posterior margin with plumose setae; propodus subrectangular but distally narrowing, palm absent. Pereopod 4 basis posterior margin with long setae; ischium with plumose setae on distal posterior margin. Pereopod 6 basis submarginally with a row of long plumose setae. Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopods 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami;

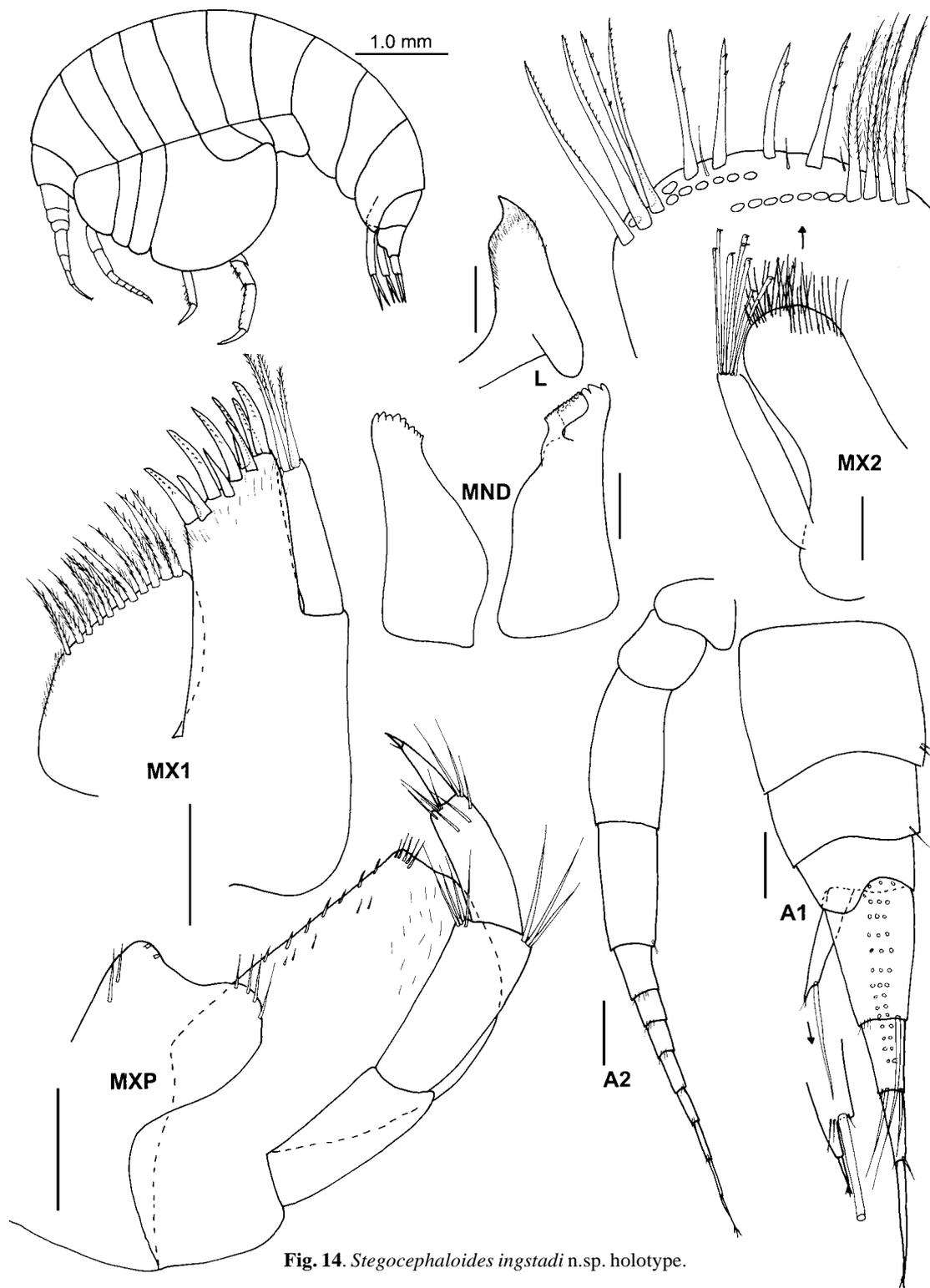


Fig. 14. *Stegocephalooides ingstadi* n.sp. holotype.

Table 4. Differences between *Stegocephalooides camoti* and *S. ingstadi* n.sp.

characters	species	
	<i>Stegocephalooides ingstadi</i>	<i>Stegocephalooides camoti</i>
antenna 1 flagellum	normal	flattened and inflated
labium, distal projection	pointed	crenulated
epimeral plate 3 posteroventrally	weakly produced, rounded	produced and acute/pointed
uropod 3 outer ramus	shorter than inner	longer than inner

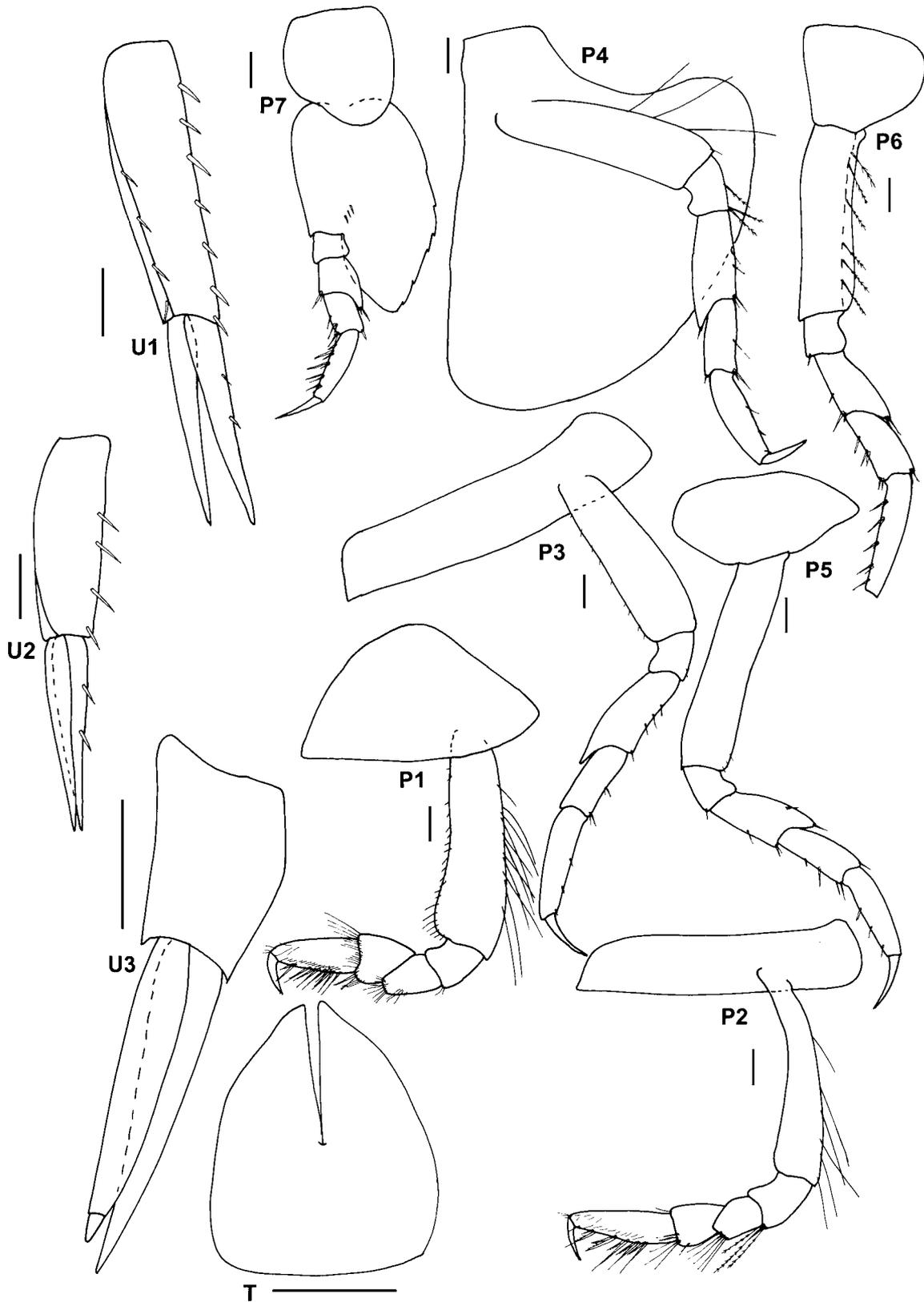


Fig. 15. *Stegocephaloides ingstadi* n.sp. holotype.

outer ramus weakly longer than inner. Uropod 2 peduncle as long as rami; outer ramus as long as inner. Uropod 3 peduncle shorter than half the length of rami; outer ramus shorter than inner. Telson longer than peduncle uropod 3; submarginal setae on apex of each lobe absent.

**Male.** Unknown.

**Etymology.** The present species is named after the Norwegian scientist, explorer and writer Helge Ingstad (1899–2001). Ingstad discovered remains of Viking settlements in North America built 500 years before the arrival of Columbus.

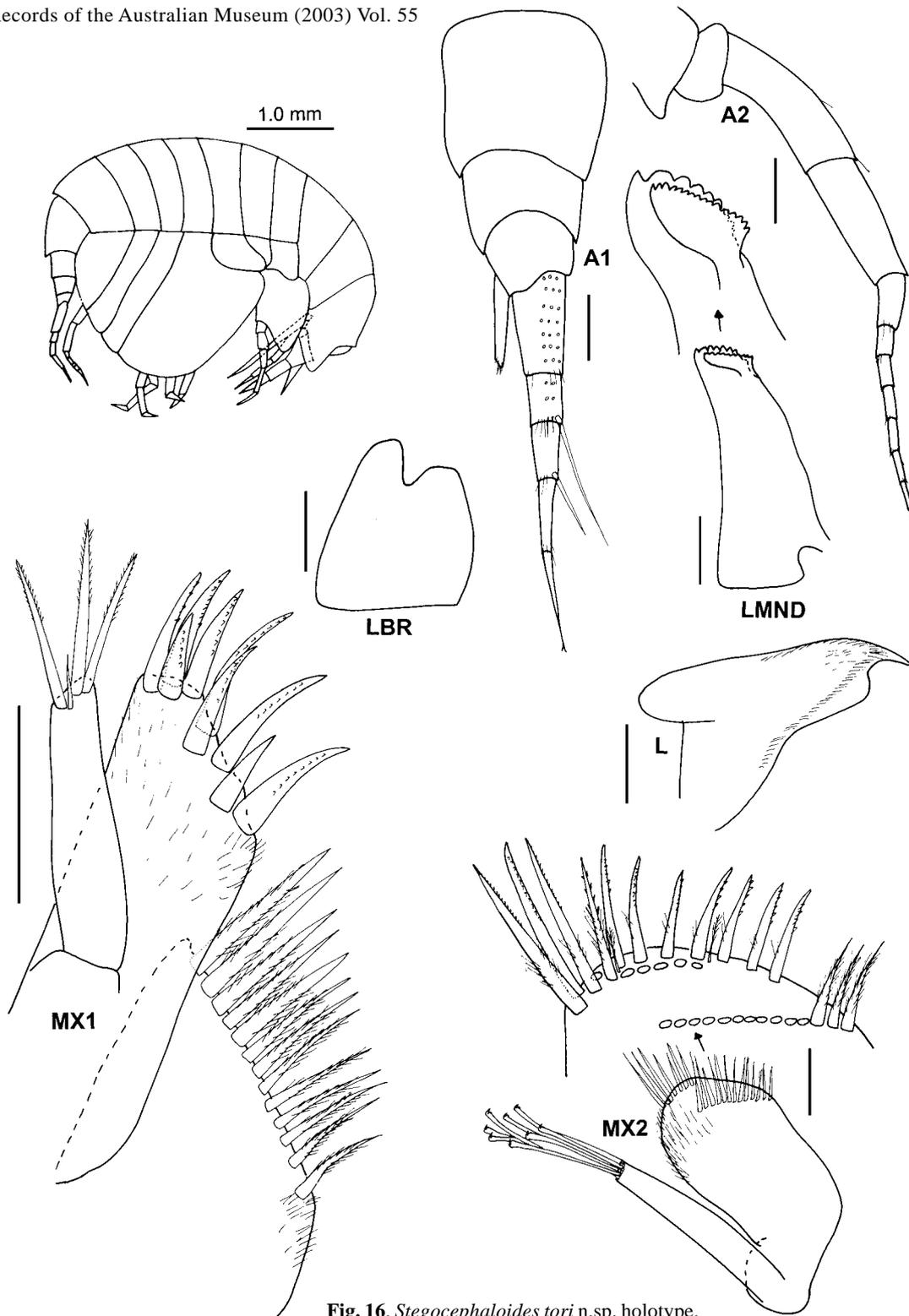


Fig. 16. *Stegocephalooides tori* n.sp. holotype.

**Remarks.** J.L. Barnard (1967) described *Stegocephalooides camoti* based upon a single specimen, which unfortunately has been inaccessible for examination. However, the material examined and described herein does show some distinctive and important differences from the holotype of *S. camoti* (see Table 4). First of all, J.L. Barnard (1967: 148) describes the first article of the flagellum of antenna 1 as “flattened and inflated (from lateral view)”, and figures a distinctive crenulated distal projection on the labium. In *S. ingstadi*, the antenna 1 flagellum is round (the normal condition in the family), and the distal projection on the

labium is pointed. Furthermore, *S. ingstadi* has the outer ramus on uropod 3 shorter than inner ramus, versus longer in *S. camoti*. Thus, although the two specimens appear to be closely related, a new species is erected for the Australian material.

***Stegocephalooides tori* n.sp.**

Figs. 16–18

**Type material.** HOLOTYPE: MV J24054, ♀ 4 mm, 38°25.90'S 148°58.60'E, 1850 m, south of Point Hicks, Victoria, Australia, 22 Jul. 86. Collector: G.C.B. Poore and party.

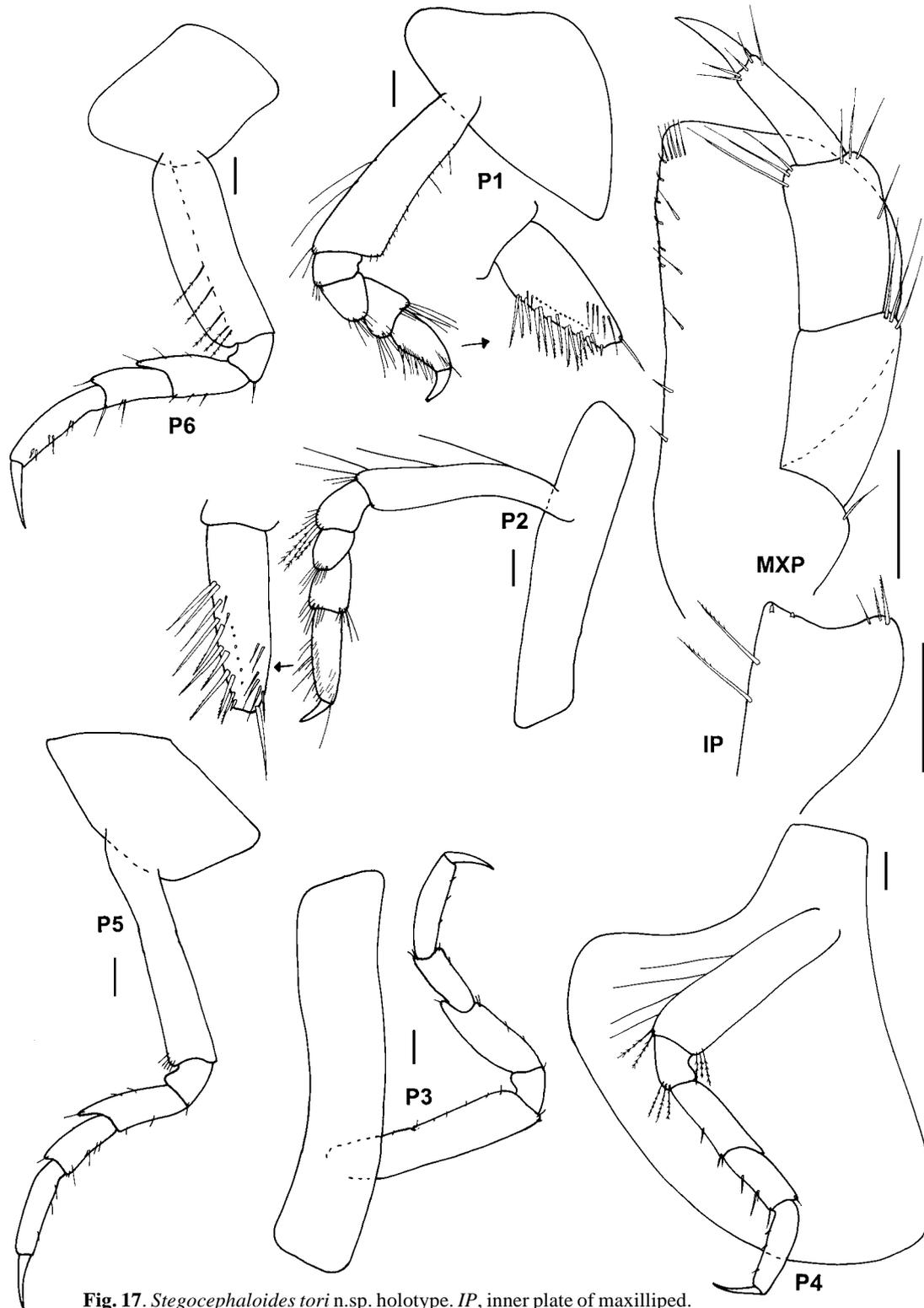


Fig. 17. *Stegocephaloides tori* n.sp. holotype. IP, inner plate of maxilliped.

**Additional material.** MV J24055, ♀ 4 mm, 38°25.00'S 149°0.00'E, 1500 m, south of Point Hicks, Victoria, Australia, 22 Jul. 1986; MV J45336, ♂ 3 mm, 38°52.6'S 148°25.2'E, 130 m, Eastern Bass Strait, Tasmania, Australia, 15 Nov. 1981.

**Distribution.** Bass Strait, 130–1850 m.

**Diagnosis** (see also Table 3). Pleonites dorsally smooth. Antenna 1 flagellum with 5 articles. Antenna 2 peduncle article 4 longer than article 5. Epistome not produced laterally, epistomal plate present. Labrum longer than broad, left lobe reduced. Mandibular incisor toothed, lateral.

Lacinia mobilis powerful, expanded laterally. Maxilla 1 outer plate with ST in a pseudocrown, palp uni-articulate. Maxilla 2 outer plate gaping and geniculate. Maxilliped palp dactylus simple and pointed. Pereopod 6 basis expanded. Uropod 3 outer ramus uni-articulate. Articulation between urosomites 2 and 3 absent. Telson longer than broad, pointed, cleft.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 longer than antenna 2; accessory flagellum article 2 absent. Antenna 2 peduncle articles 3–5 shorter than flagellum;

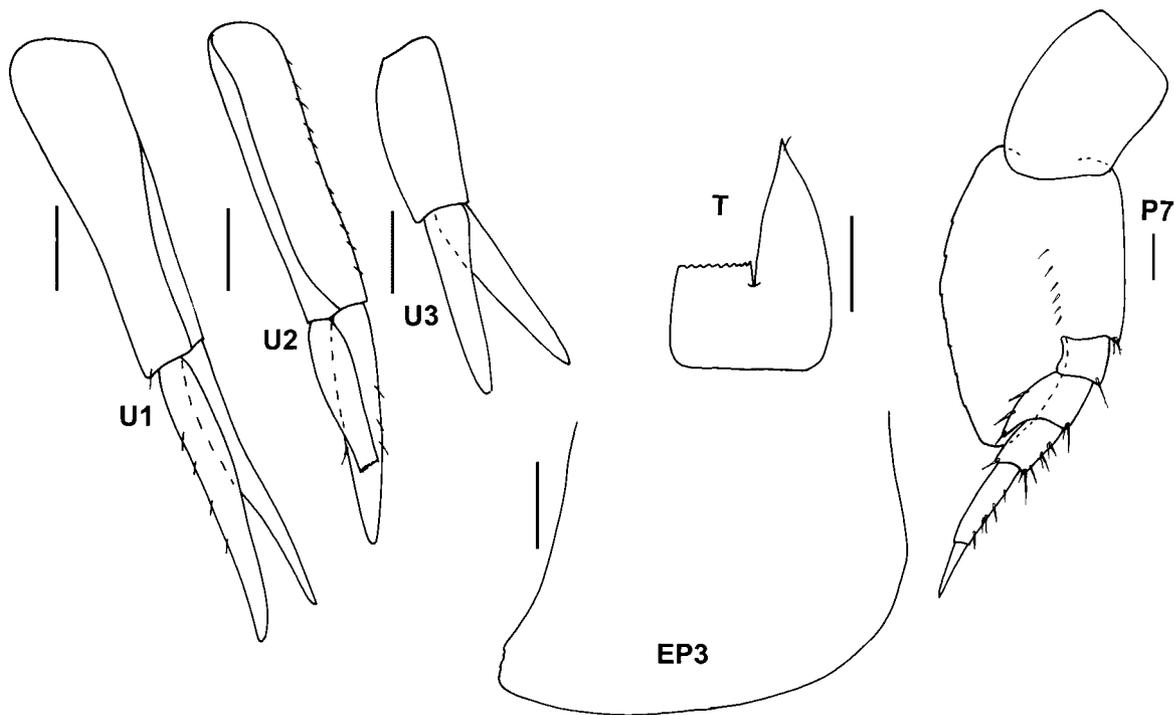


Fig. 18. *Stegocephalooides tori* n.sp. holotype.

article 3 short, about as long as broad. Epistome curved (convex) and smooth; epistomal plate produced into a small elongate medial ridge covering the entire epistome. Maxilla 1 palp not reaching above the apex of outer plate; outer plate distally subrectangular; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; STA present, located distally, part of first row; ST B present, part of second row; ST C present; inner plate with pappose setae. Maxilla 2 outer plate setae with distal hooks, setae without distal cleft; inner plate setae row A covering about two thirds of the margin, clearly separated from row B; row A setae pappose; row B setae proximally pappose, distally with cusps present; row C present; row D present, expanded, elongated towards and beyond row A, setae with many small cusps distally. Maxilliped palp 4-articulate; article 2 distal inner margin weakly produced; inner plate not exceeding base of palp article 2; 2 nodular setae; medial setae-row reduced and transverse, with pectinate setae; distal setae-row present; inner setae-row not reduced, setae not conspicuously large; outer plate with outer setae-row marginal with setae attached in a deep hollow, setae short and strongly curved upwards (hooks); inner setae-row reduced, setae short simple; distal setae-group present, setae short simple. Labium with a distal pointed projection. Coxae and bases on the pereopods smooth. Coxae 1–3 contiguous. Pereopod 1 coxa deeper than basis; propodus subovate. Pereopod 2 longer and thinner than pereopod 1; ischium elongate, ratio length to breadth exceeding 1.5, distal posterior margin with plumose setae; propodus subrectangular, palm absent. Pereopod 4 basis posterior margin with long setae, distal anterior and posterior margins with plumose setae; ischium with plumose setae on distal posterior margin. Pereopod 6 basis about 1.5 times as broad as pereopod 5 basis, medially with a row of long plumose setae. Pereopod 7 basis anterior margin straight, distally rounded; medial row of setae present, setae short and robust. Oostegites on pereopods 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus

weakly longer than inner. Uropod 2 peduncle longer than rami; outer ramus as long as inner. Uropod 3 peduncle longer than half the length of rami; outer ramus about as long as inner. Telson longer than peduncle uropod 3; submarginal setae on apex of each lobe present.

**Male.** Pereopod 2 propodus larger in males than in females; Urosome ordinary (similar to females).

**Etymology.** The present species is named after the first author's father, Tor Berge.

**Remarks.** See remarks under *Stegocephalooides gunnae*.

#### *Stegocephalooides tucki* n.sp.

Figs. 19–21

**Type material.** HOLOTYPE: AM P52713, ♂ 7 mm, 43°08.96'S 145°15.36'E, 1000 m (TAS-384), east of Fortescue Bay, Tasmania, Australia, 17 Apr. 1993. Collector: J.K. Lowry & party on MV "Tasmanian Enterprise" (SEAS project trap 2, transect 2). PARATYPES: AM P60409, 2♂♂, 6–7 mm, 43°08.96'S 145°15.36'E, 1000 m (TAS-384), east of Fortescue Bay, Tasmania, Australia, 17 Apr. 1993. Collector: J.K. Lowry & party on MV "Tasmanian Enterprise" (SEAS project trap 2, transect 2).

**Additional material.** MV J40623, 1♀, 38°16.40'S 149°27.60'E, 800 m, Victoria, south of Point Hicks, 23 Jun. 1986.

**Distribution.** Victoria and Tasmania, 800–1000 m.

**Diagnosis** (see also Table 3): Pleonites dorsally smooth. Antenna 1 flagellum with 9 articles. Antenna 2 peduncle article 4 shorter than article 5. Epistome not produced laterally, epistomal plate absent. Labrum longer than broad, left lobe reduced. Mandibular incisor toothed, lateral. Lacinia mobilis powerful, expanded laterally. Maxilla 1 outer plate with ST in a pseudocrown, palp uni-articulate. Maxilla 2 outer plate gaping and geniculate. Maxilliped

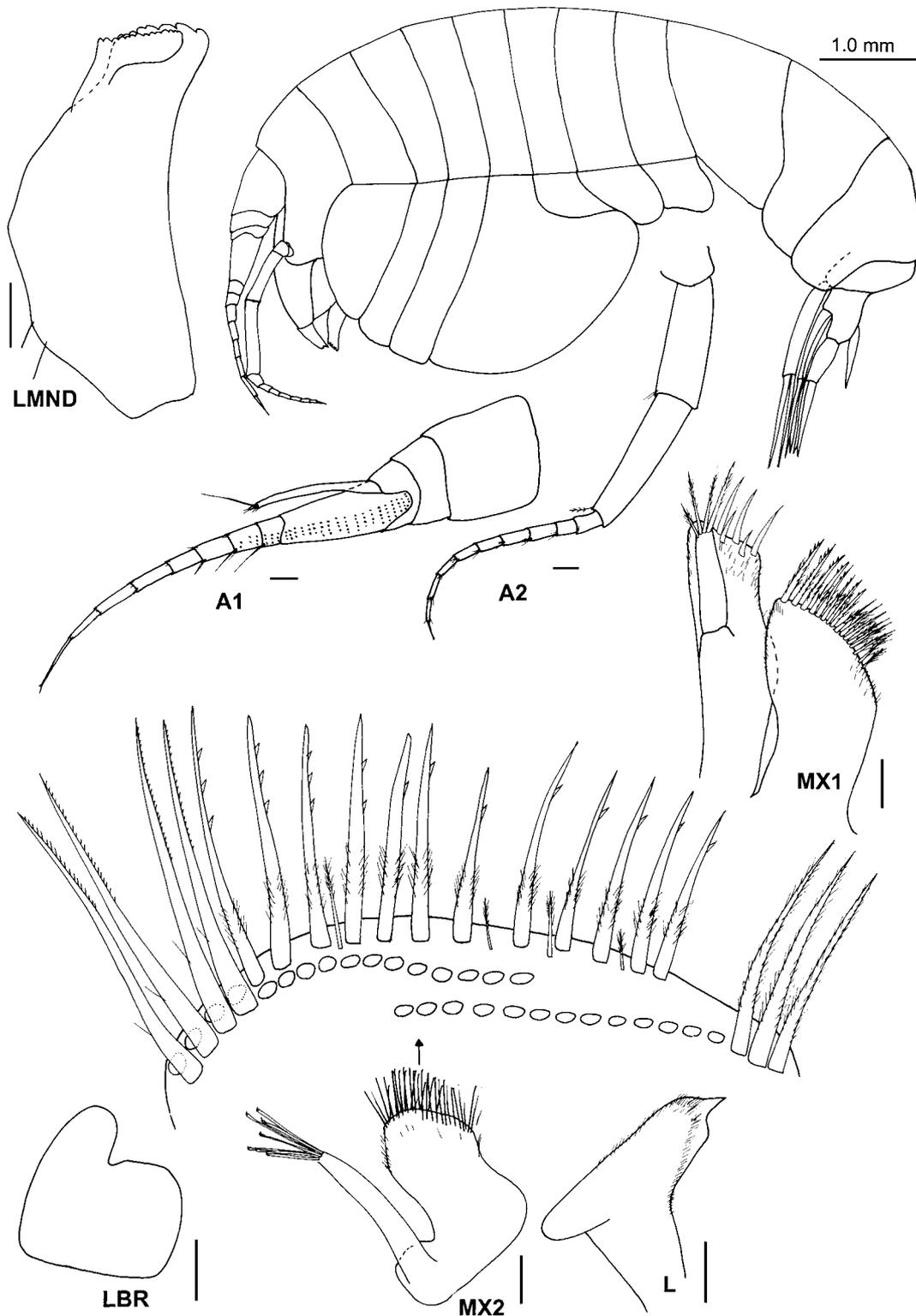


Fig. 19. *Stegocephaloides tucki* n.sp. holotype.

palp dactylus produced and bifid. Pereopod 6 basis posteriorly expanded, expansion rudimentary. Uropod 3 outer ramus uni-articulate. Articulation between urosomites 2 and 3 absent. Telson longer than broad, pointed, cleft.

**Description.** Rostrum reduced, inconspicuous. Antenna 1 longer than antenna 2; accessory flagellum article 2 present. Antenna 2 peduncle articles 3–5 longer than flagellum; article 3 short, about as long as broad. Epistome curved (convex) and smooth. Maxilla 1 palp not reaching above

the apex of outer plate; outer plate distally subrectangular; ST first row with 6 setae (ST1–5, ST7); ST 6 absent; gap between ST 5 and ST 7 present; ST A present, located distally, part of first row; ST B present, part of second row; ST C present; inner plate with pappose setae. Maxilla 2 outer plate setae with distal hooks, setae without distal cleft; inner plate setae row A covering about two thirds of the margin, clearly separated from row B; row A setae pappose; row B setae proximally pappose, distally with

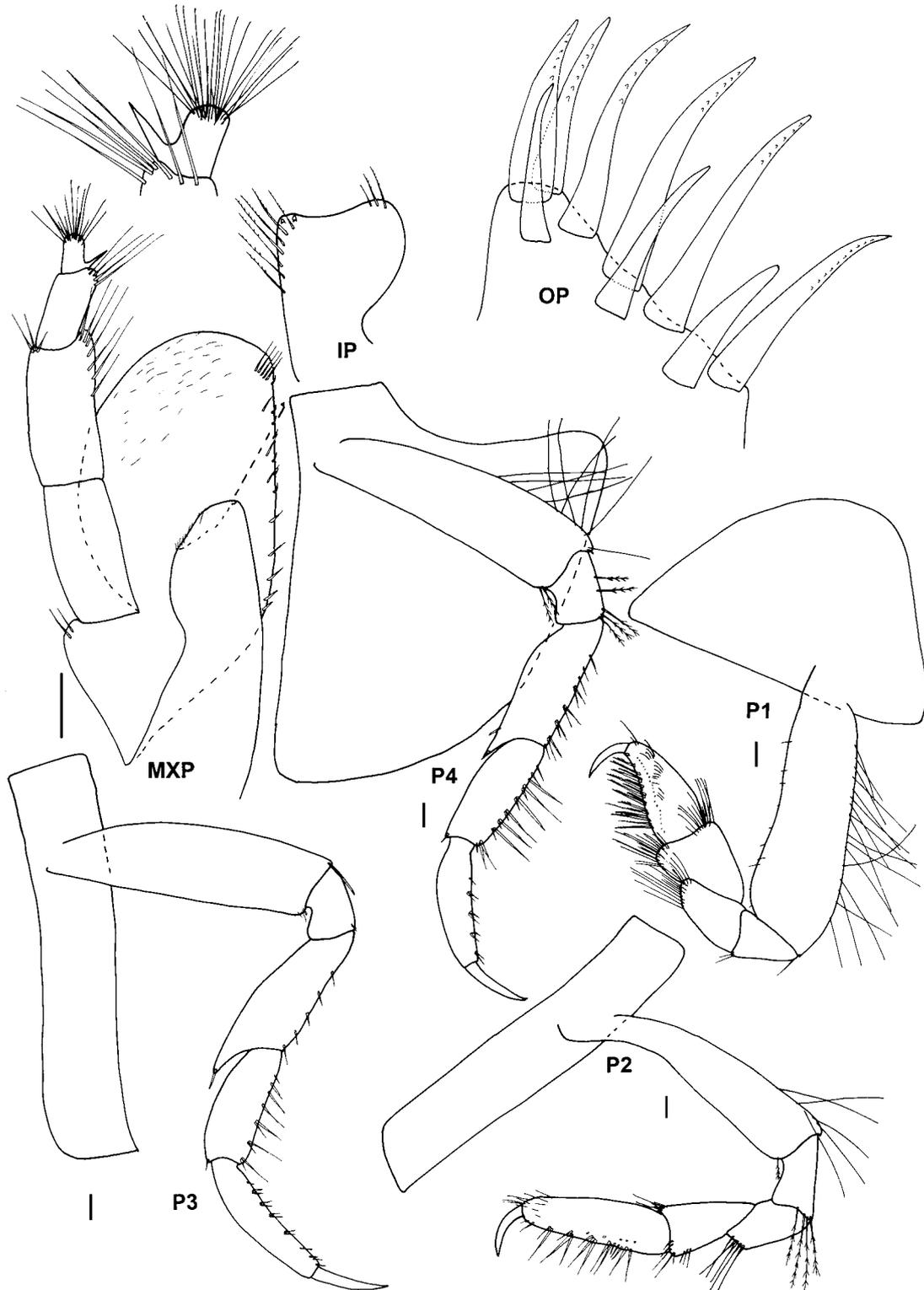


Fig. 20. *Stegocephalooides tucki* n.sp. holotype. OP, maxilla 1 outer plate; IP, inner plate of maxilliped.

cusps present; row C present; row D present, row elongated towards and beyond row A, with many small cusps distally. Maxilliped palp 4-articulate; article 2 distally produced; distal inner margin weakly produced; inner plate not exceeding base of palp article 2; 2 nodular setae; medial setae-row transverse, setae pectinate; distal setae-row present; inner setae-row not reduced; outer plate with outer setae-row marginal, setae short and strongly curved upwards (hooks); inner setae-row reduced, setae short and simple; distal setae-group present, setae short and simple. Labium

with a distal pointed projection. Coxae and bases on the pereopods covered with setae; setae simple. Coxae 1–3 contiguous. Pereopod 1 coxa deeper than basis; propodus subovate. Pereopod 2 longer and thinner than pereopod 1; ischium elongate, ratio length to breadth exceeding 1.5, distal posterior margin with plumose setae; propodus subrectangular, palm absent. Pereopod 4 basis posterior margin with long setae; plumose setae on distal anterior margin; ischium with plumose setae on distal posterior margin. Pereopod 7 basis anterior margin straight, distally rounded;

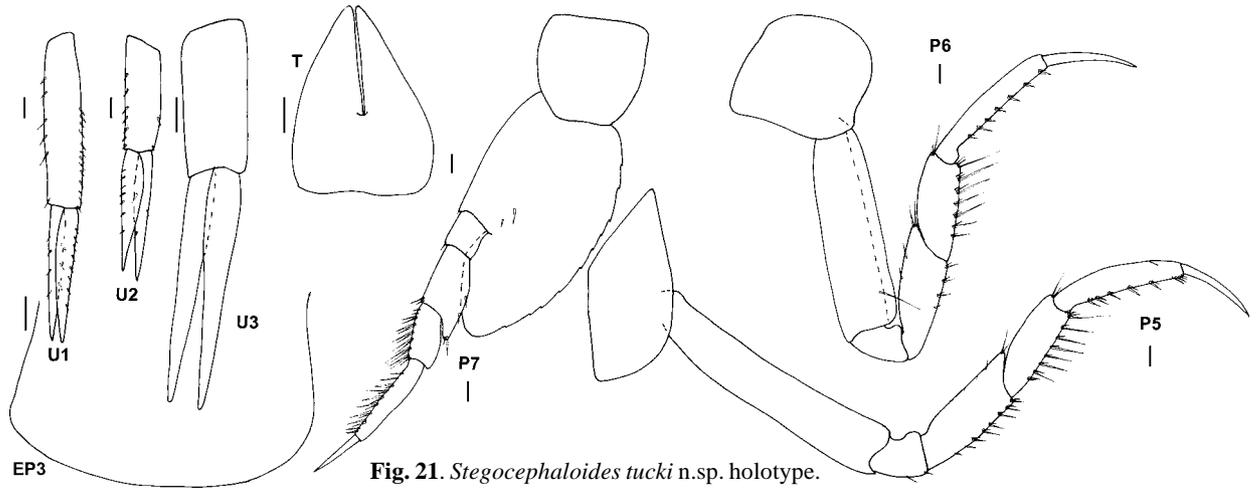


Fig. 21. *Stegocephaloides tucki* n.sp. holotype.

medial row of setae present, setae short and robust. Oostegites on pereopods 2–5, gills on pereopods 2–7. Uropods: Uropod 1 peduncle longer than rami; outer ramus as long as inner. Uropod 2 peduncle shorter than rami; outer ramus longer than inner. Uropod 3 peduncle longer than half the length of rami; outer ramus as long as inner. Telson longer than peduncle uropod 3; submarginal setae on apex of each lobe absent. **Male.** Pereopod 2 propodus larger in males than in females; Urosome ordinary (similar to females).

**Etymology.** The present species is named after the very distinct morphology of its maxilliped palp: the dactylus is distally bifid, with one projection pointed and acute (most probably homologous to the dactylus found in other stegocephalids) and one blunt and heavily setose. The latter is distally slender but, seen from above, smooth with a dense collar of setae around. It is this arrangement of setae that the first author found similar to his childhood vision of the head of Friar Tuck, the good companion of the English hero, Robin Hood.

**Remarks.** This species and *Stegocephaloides australis* K.H. Barnard, 1916, are the only known species within the family that possess a cleft dactylus of the maxilliped palp (see Fig. 21). These two species can be separated on the absence of an articulation on outer ramus of uropod 3 and the long antennae in *S. tucki*.

### *Stegocephalopsis* Schellenberg

*Stegocephalopsis* Schellenberg, 1925: 200.

**Type species.** *Cancer ampulla* Phipps, 1774.

**Included species.** *Stegocephalopsis ampulla* (Phipps, 1774); *S. latus* (Haswell, 1879); *S. mamillidacta* Moore, 1992; *S. pacifica* (Bulycheva, 1952).

**Species found in the area.** *Stegocephalopsis latus* (Haswell, 1879).

**Remarks.** *Stegocephalopsis latus* was one of the first stegocephalid species to be recorded from the area (Tasmania), but the species has never been sufficiently described. Only two specimens have ever been recorded, both from the type locality (Haswell, 1879, 1885). For a further discussion on this species, see Berge & Vader (2000).

*Stegocephalopsis vegae* Oldevig, 1959 was put into synonymy with the type of the genus, *S. ampulla* by Berge & Vader (2001a).

### *Stegosoladidus* J.L. Barnard & Karaman

*Stegosoladidus* J.L. Barnard & Karaman, 1987: 869.

*Stegosoladidus*.—Berge, 2001a (revision).

**Type species.** *Andaniotes simplex* K.H. Barnard, 1930.

**Included species.** *Stegosoladidus antarcticus* Berge, 2001a; *S. complex* Berge, 2001a; *S. debroyeri* Berge, 2001a; *S. ingens* (Chevreux, 1906); *S. simplex* (K.H. Barnard, 1930).

**Species found in the area.** *Stegosoladidus complex* Berge, 2001a and *S. simplex* (K.H. Barnard, 1930).

**Remarks.** For a revision of the genus, and details about the species, see Berge, 2001a.

### *Tetradeion* Stebbing

*Tetradeion* Stebbing, 1899: 207.

*Tetradeion*.—Berge & Vader, 2000: 170 (revision).

**Type species.** *Cyproidea crassa* Chilton, 1883.

**Included species.** *Tetradeion crassum* (Chilton, 1883) and *T. quatro* Berge & Vader, 2000.

**Species found in the area.** *Tetradeion crassum* (Chilton, 1883) and *T. quatro* Berge & Vader, 2000.

**Remarks.** For a revision of the genus, and details about the species, see Berge & Vader, 2000.

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