

*TYLOS BILOBUS* SP. NOV., A SECOND AUSTRALIAN SPECIES OF TYLIDAE  
(CRUSTACEA: ISOPODA: ONISCIDEA)

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**Abstract**

Lewis, F., 1990. *Tylos bilobus* sp. nov., a second Australian species of Tylidae (Crustacea: Isopoda: Oniscidea). *Memoirs of the Museum of Victoria* 51(1): 93–97.

*Tylos bilobus* sp. nov. is described from specimens collected from three Queensland beaches. The new species differs from the recently described *Tylos australis* Lewis and Bishop (1990) by a lobed telson and a triangular frontal process.

**Introduction**

This second Australian species of *Tylos* is described from specimens collected from three beaches in Queensland: Clairview, south of Mackay, Cardwell, north of Townsville and Tin Can Bay, south of Maryborough. Until recently the infraorder Tylomorpha was considered to contain one family, Tylidae, with two genera, *Tylos* Latreille, 1826 and *Helleria* Ebner, 1868 (Holdich et al., 1984). Now, it has been suggested that the Tylidae should be reclassified in the section Crinocheta as one of the three families of the superfamily Scyphacoidea (Schmalfuss, 1989). Three Australian species of *Tylos* have been collected within the last three years, *T. australis* (Lewis and Bishop, 1990) from the New South Wales and Victorian coasts, the species described here from the eastern Queensland coast, and a third from Western Australia (Lewis, in press).

The following abbreviations are used: AM, Australian Museum, Sydney; TM, Tasmanian Museum and Art Gallery, Hobart; QM, Queensland Museum, Brisbane; MU, Macquarie University, Biological Sciences Museum, Sydney.

**Tylidae**

***Tylos* Audouin, 1826**

*Type species. Tylos latreillei* Audouin, 1826.

**Diagnosis.** (Adapted from Schmalfuss and Ferrara, 1978). Able to roll up into perfect ball; head with triangular protrusion between antennae and lateral quadrangular grooves into which antennae fit when animal is rolled up; antenna 1 of 1 article; antenna 2 with 4-articled flagellum; pereonite 1 with ventral grooves in the epimera (locking mechanism when conglobating); pleonal tergites not fused (fused in *Helleria*);

pleonal epimera forming ventral plates (phylacomeres) covering part of ventral surface of pleon; pleopodal exopods with tracheal system; only pleopod 2 endopod modified as male copulatory organ; uropods completely ventral, with terminal endopod, exopod obsolete.

**Remarks.** The genus *Tylos* currently contains 24 species (Roman, 1977; Schultz, 1983; Lewis and Bishop, 1990) of which nine are from the southern hemisphere. With the exception of *Tylos latreillei* the other species of *Tylos* have a restricted distribution. The species are distinguished by variations in the shape of the frontal process, the shape and ornamentation of the telson, the shape of the lateral border of the first epimeron and the shape of the fifth pleon plate.

***Tylos bilobus* sp. nov.**

Figures 1–3

**Type material.** Holotype male, Clairview Beach, Queensland (22°07'S, 149°32'E), from under debris along high tide line, Aug 1988, Fiona Lewis, AM P39118.

Paratypes. Collection data as for holotype, AM P38911 (2 males, 2 females). Cardwell Beach, Queensland (18°10'S, 146°01'E), from under debris along high tide line, Fiona Lewis, Aug 1988, TM G3286 (2 males, 2 females), QM W15792 (2 males, 2 females), MU (2 males, 2 females).

**Diagnosis.** 2 raised lobes on the telson, prominent triangular frontal process, evenly convex lateral border of epimeron 1, straight medial margin of fifth pleon plate.

**Description** (of holotype except where indicated). Length 10 mm, breadth 4.5 mm.

Colour (live). Dorsal surface creamy-grey with very small black chromatophores scattered

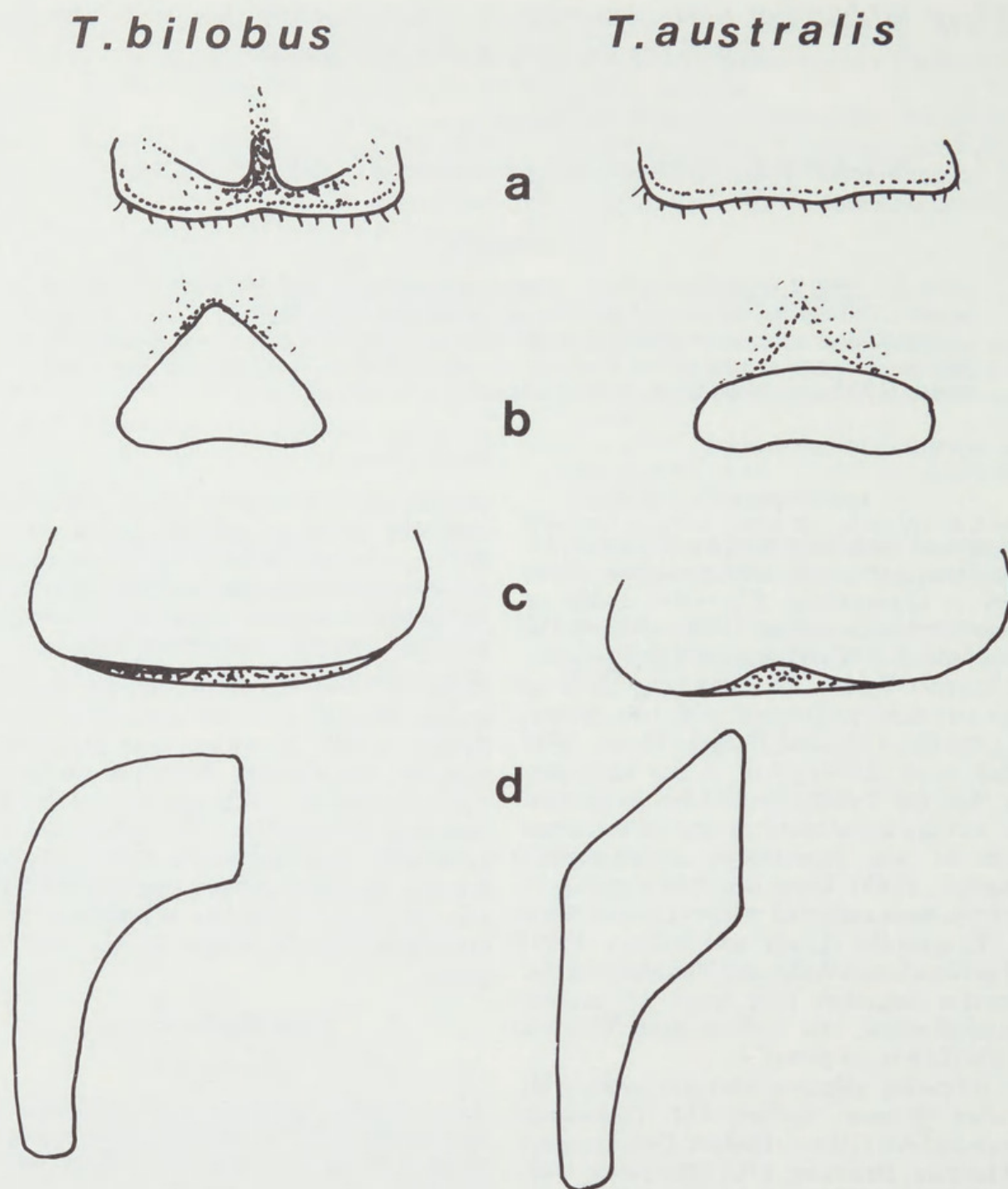


Figure 1. Differences between *Tylos bilobus* sp. nov. and *T. australis* Lewis and Bishop, 1990. a, telson. b, frontal process. c, epimeron 1. d, pleon plate 5.

along the posterior pereonite borders, sparse elsewhere; few on antennae and none on pereopods. Some specimens with denser chromatophores on pereonites 4 and 5.

Cephalon. Eyes each of 35–36 ocelli. Vertex without distinct frontal line but with slightly raised areas adjoining and median to eyes; fron-

tal process broadly triangular with apex sharply joining cephalon; clypeus distinctly tuberculate and spinose.

Antenna 1 medial to and slightly above antenna 2 base, of 1 immobile, triangular article. Antenna 2 short and stout; flagellum of 4 articles, 0.2, 0.2, 0.5 and 0.05 mm long, terminal



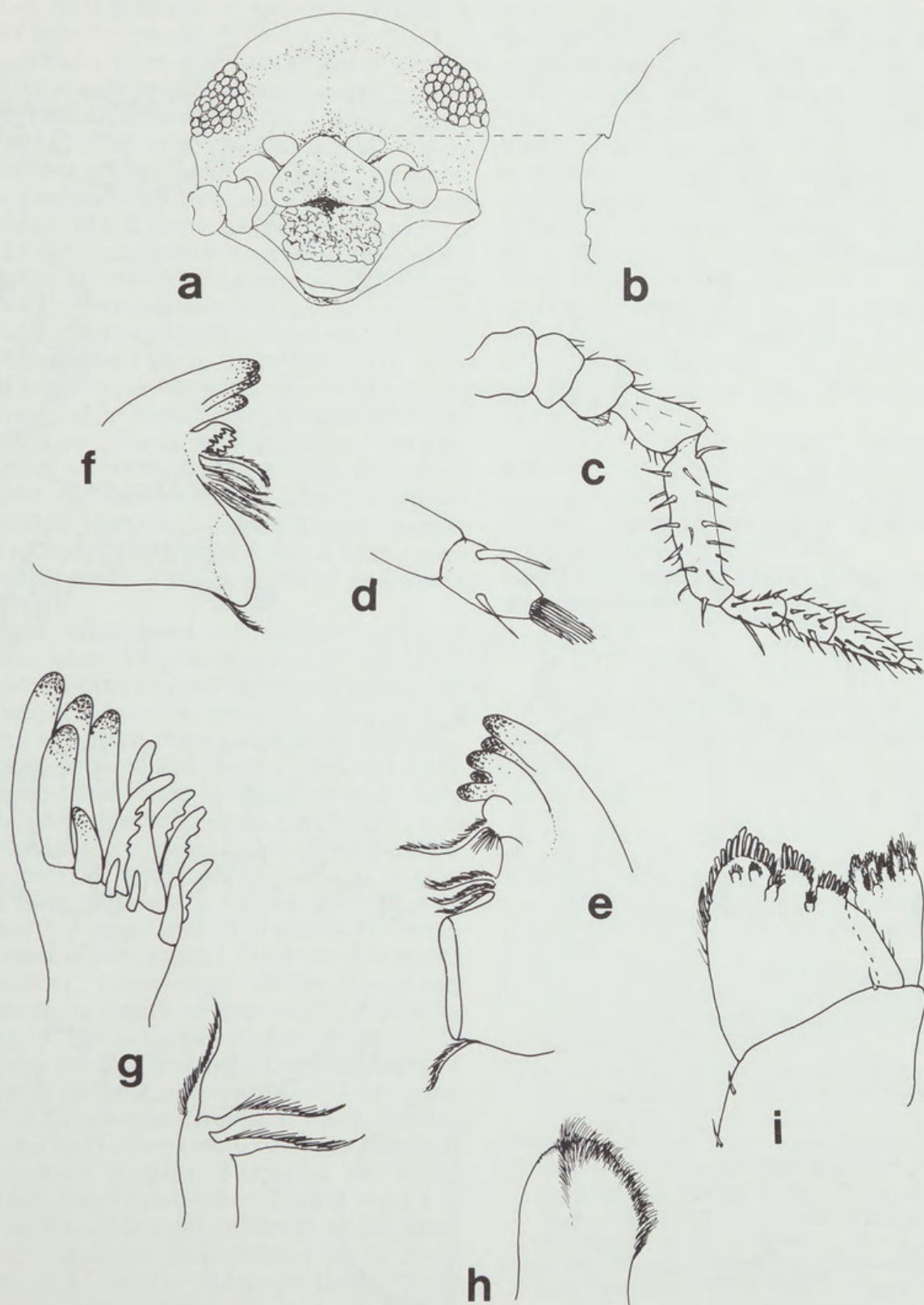


Figure 2. *Tylos bilobus* (holotype): a, anterior view of cephalon. b, lateral view of cephalon. c, antenna 2. d, flagellar article 4. Paratype male, similar size: e, left mandible. f, right mandible. g, maxilla 1. h, maxilla 2. i, maxilliped.

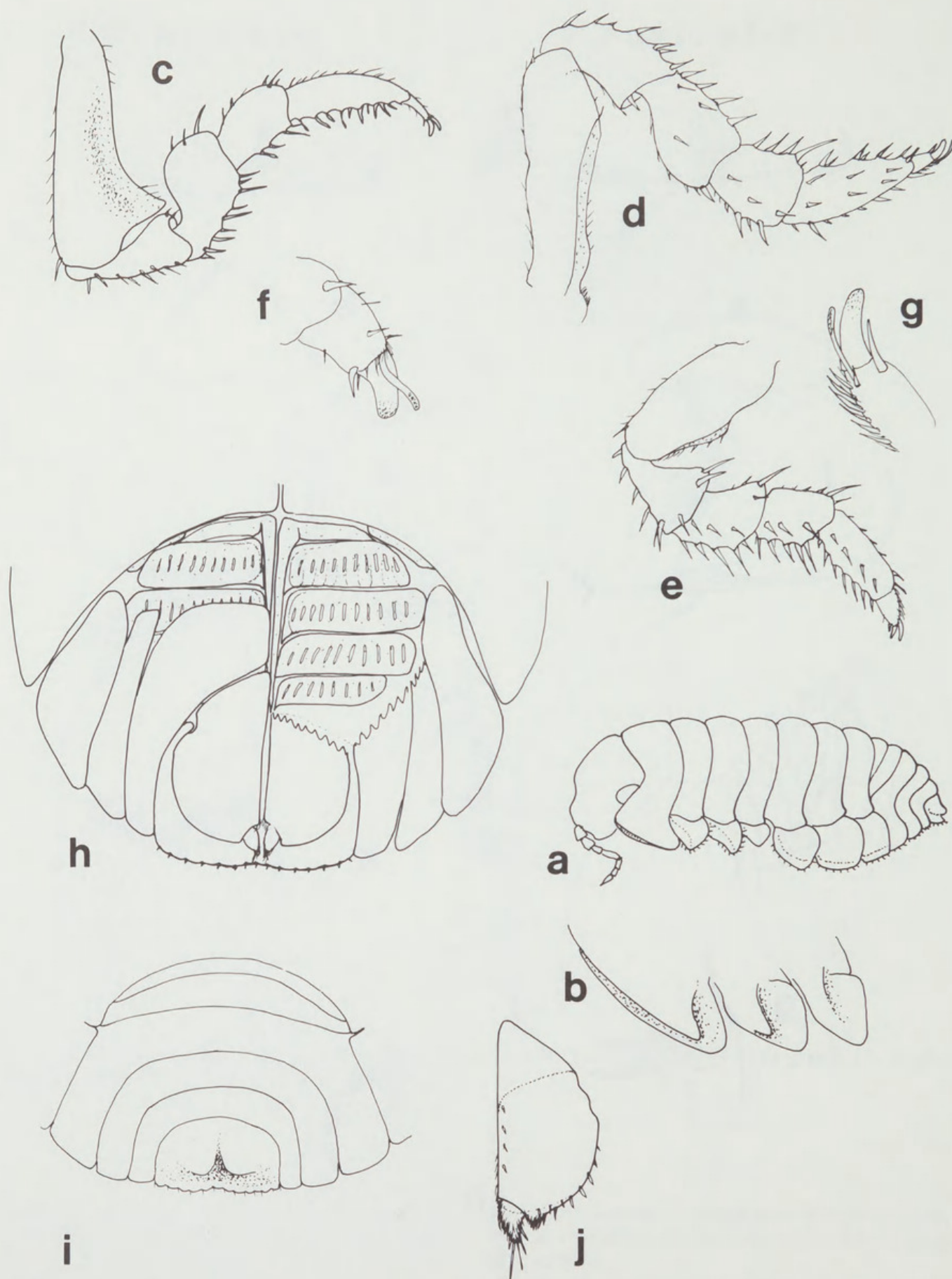


Figure 3. *Tylos bilobus* (holotype): a, lateral view of whole animal. b, ventral view of epimera 1 and 2. c, pereopod 1. d, pereopod 2. e, pereopod 7. f, dactylus of pereopod 1. g, dactylus of pereopod 7. h, ventral view of pleon. i, dorsal view of pleon. j, left uropod, ventral view.



one minute with few spines, ending with clump of setae; fifth peduncular and first 3 flagellar articles heavily spinose.

Mouthparts from male paratype of similar size. Left mandible incisor process with 2 teeth; lacinia mobilis terminating in 3 teeth with 1 penicil, bunch of setae on lobe at base; clearly separated is second small lobe with 3 penicils; molar process large, oval and flat, with penicil on medial side. Right mandible incisor process with 3 teeth; lacinia mobilis, ring of small teeth and 1 penicil; second lobe separated with 5 penicils; molar process similar to left. Labium bilobed and setose. Maxilla 1 outer lobe longer, with 4 large and 1 short, stout terminal teeth on lateral side, 5 serrated teeth medially, at bases of which are 3 short teeth; inner lobe terminating in 3 long setose penicils. Maxilla 2 broad lamella, terminally setose. Maxilliped basis with broad endopod and smaller endite; anterior edge of endopod divided into 3 lobes bearing numerous blunt setae; endite terminating in 5 setose penicils, with 1 tooth at bases of second and fourth penicils.

Pereon. Granulated and sparsely scattered with fine setae. All epimera except 1 separated. Epimeron 1 extends anteriorly closely below the eye, lateral border is smoothly curved with anterior extension of ventral lobe visible below it forming shallow, cleft border produced posteroventrally into raised, approximately triangular lobe joining anteriorly into cleft border. Ventral surface of epimeron 2 has slightly raised, subrectangular area; epimeron 3 has slightly raised ridge. Epimera 2-4 small, subtriangular; epimera 5-7 larger and subrectangular. Pereopods bases of pereopods 1-3 subequal in length to ischium, merus and carpus combined, decreasing in length on pereopod 4. Anterior margin of basis distally produced sharply to triangular process; process decreases sharply in size, small on pereopod 2 and absent on pereopods 5-7. Sulcus near the process which receives the folded limb, decreases in size from pereopod 2-4. Anterior margins of ischium and merus expanded distally into lobes. Carpus short and rounded. Dactylus short and stout on all pereopods, long dactylar organ present on all. Setae present on all articles and large, strong spines more numerous on distal 5.

Pleon. Pleonites 1 and 2 visible dorsally, 3-5 curve posteriorly to blunt points forming contin-

uous line with pleotelson which is roughly rectangular and broader than long, with posterior margin slightly concave in midline and with regularly spaced short spines. Two large lobes on dorsal surface angled towards and close to midline. Ventrally much of pleon covered by broad plates of pleonites 3-5, those of 5 meeting medially in a straight line with anterior margins curving from midline to lateral angle.

Pleopod 1 reduced to a slender lamella curving around the lateral angle of second pleopod. Pleopod 2 endopod copulatory stylet extending past anterior margin of uropod; pseudotracheae present in exopod. Pleopod 3 exopod and endopod lamellar, folds of exopod enclosing slit openings of pseudotracheae. Pleopods 4 and 5 similar to 3.

Uropod not visible dorsally, ventral to pleotelson, wedge-shaped and plate-like, produced into a small, spinose lobe lateral to heavily setose endopod which has long spine extending from posterior angle.

Female. Length of largest specimen, 9 mm, breadth 4 mm.

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