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A generic review of the lysianassoid family Uristidae and descriptions of new taxa from Australian waters (Crustacea, Amphipoda, Uristidae)

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A generic review of the lysianassoid family Uristidae and descriptions of new taxa from Australian waters (Crustacea, Amphipoda, Uristidae)

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Abstract

In this paper we review the genera of the family Uristidae and report for the first time from Australian waters: the new genus and species *Des griffini*; the genus *Euonyx* with two new species; *Koroga megalops*; the genus *Parschisturella* with three new species; and *Stephonyx arabiensis* plus one new species. We provide keys to species in the genera *Abyssorchomene*, *Euonyx*, and *Parschisturella*. Ten genera and 24 species of uristid lysianassoids are now known from Australian waters.

Key words: Crustacea, Amphipoda, Lysianassidae, Uristidae, taxonomy, new genus, new species, *Abyssorchomene, Des*, *Euonyx*, *Koroga*, *Parschisturella*, *Stephonyx*

Introduction

The Uristidae is a widespread family of scavenging lysianassoid amphipods that contains 23, mostly well-defined, genera. The largest genus, *Anonyx* Krøyer, 1838a, with about 51 species is Arctic/boreal. A second large genus *Onisimus* Boeck, 1871, with 26 species, is also known from the Arctic/boreal. The genus, *Ichnopus* Costa, 1853 with about 18 species, has a tropical/temperate distribution and occurs mainly in the Indo West Pacific. The widespread genus *Stephonyx* Lowry & Stoddart, 1989, with 14 species, is known from all oceans except the Southern Ocean. Other genera are often monotypic. *Uristes* Dana, 1852, which currently contains 22 species is revised and reduced to two species confined to the subantarctic and Antarctic.

The family Uristidae is characterised by mouthpart modifications. The setal-tooth arrangement on the outer plate of maxilla 1 forms a 7/4 crown (see Lowry & Stoddart 1989) and is considered to be very efficient to move bites of flesh onto the molar and into the stomadeum. The mandibular incisor forms a curved blade in most species and the molar is modified into a setose tongue, often with a vestigial triturating patch, but in some species it retains a reduced column with triturating surface similar to the tryphosine molar. In most uristids the inner plate of maxilla 2 is reduced in size so that it is significantly shorter than the outer plate.

Uristids have a callynophore in both sexes and often have plumose setae on the rami of uropod 3. Calceoli are present in some genera (eg. *Abyssorchomene*, *Galathella*, *Koroga*, *Parschisturella* and *Stephonyx*) and the mature males do not develop the long second antenna found in lysianassids. There are three kinds of gnathopods found in uristids. The majority of genera have well developed or weakly developed subchelate first gnathopods, similar to tryphosines. Six genera have simple first gnathopods, two (*Eclecticus* and *Ichnopus*) with highly complex dactyli. Three genera (*Euonyx*, *Kyska* and *Stephonyx*) have distinctive chelate gnathopods. Whether these gnathopod types form natural groups has yet to be tested.

There are currently six genera and 15 species of uristid amphipods known from Australian waters. Haswell (1879) described *Ichnopus tenuicornis* (Haswell, 1879) from the Great Barrier Reef. Sheard (1938) described *Stephonyx pirloti* (Sheard, 1938) from South Australia. In a monograph on the genus *Ichnopus* Costa, 1853, Lowry & Stoddart (1992) reported eight species from Australian waters, including six new species. Lowry & Stoddart (1995a) reported two species in the genus *Galathella* Barnard & Karaman, 1987 and a new species in the genus *Gippsia* Lowry & Stoddart, 1995a. Lowry & Stoddart (2009) reported *Nagada uwedoae* Lowry & Stoddart, 1995b from the Great Barrier Reef. Lowry & Stoddart (2003) reported two species of *Abyssorchomene* from deep water off eastern Australia.

In this paper we report for the first time the new genus and species, *Des griffini* **gen. nov.**, **sp. nov.** We report the genus *Euonyx* Norman, 1867 in Australian waters and describe two new species, *E. urania* **sp. nov.** and *E. xarifa* **sp. nov.** The wide-spread pelagic uristid, *Koroga megalops* Holmes, 1908, is identified in Australian waters for the first time. The genus *Parschisturella* is also reported from Australian waters and three new species, *P. martrudan* **sp. nov.**, *P. medora* **sp. nov.**, and *P. pilot* **sp. nov.** are described.

Stephonyx Lowry & Stoddart (1989), a widespread genus of scavenging abyssal amphipods is reviewed and *Stephonyx arabiensis* Diffenthal & Horton, 2007, is reported from Australian waters and one new species, *S. rafaeli* **sp. nov.**, is described. Including the new species described here, *Stephonyx* currently contains 14 species from abyssal depths of the North and South Atlantic, the North and South Pacific and the Indian Oceans. In this paper we catalogue all known species.

Ten genera and 24 species of uristid lysianassoids are now known from Australian waters.

Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the uristid genera and species of the world. Diagnostic characters, which distinguish each taxon in at least two respects from every other taxon, are denoted by ***bold italic*** type. Material referred to in this study is lodged in the Australian Museum, Sydney (AM), Los Angeles County Museum of Natural History, Los Angeles, California, USA (LACMNH); Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil (MNRJ); Muséum National d'Histoire Naturelle, Paris, France (MNHN); National Museum of Natural History, Smithsonian Institution, Washington DC, USA (USNM); Natural History Museum, London, UK (NHM) (formerly British Museum (Natural History) (BMNH)); National Museum of Nature and Sciences, Tokyo, Japan (NSMT); Museum Victoria, Melbourne, Australia (NMV); South African Museum, Cape Town, South Africa (SAM); South Australian Museum, Adelaide, Australia (SAMA); the Naturalis Biodiversity Centre, Leiden, the Netherlands (ZMA); Zoology Museum, Berlin, Germany (ZMB); and the Zoological Museum, Hamburg, Germany (ZMH). Ship names used as species names in this study are from the Australian National Shipwreck Database (Department of Environment 2014). In the text labrum is used as a composite word including upper lip and epistome. Standard abbreviations on the plates are: A, antenna; EP, epimeron; G, gnathopod; H, head; LB, labium; LM, labrum; MD, mandible; MX, maxilla; MP, maxilliped; P, pereopod; T, telson; U, uropod; l, left; r, right.

List of Australian Uristidae

Abyssorchomene De Broyer, 1984
- *Abyssorchomene distinctus* (Birstein & Vinogradov, 1960)
- *Abyssorchomene gerulicorbis* (Shulenberger & Barnard, 1976)

Des **gen. nov.**
- *Des griffini* **sp. nov.**

Euonyx Norman, 1867
- *Euonyx urania* **sp. nov.**
- *Euonyx xarifa* **sp. nov.**

Galathella Barnard & Karaman, 1987
- *G. bassiana* Lowry & Stoddart, 1995a
- *G. palana* Lowry & Stoddart, 1995a

Gippsia Lowry & Stoddart, 1995a
- *G. jonesae* Lowry & Stoddart, 1995a

Ichnopus Costa, 1853
- *I. annasona* Lowry & Stoddart, 1992
- *I. capricornus* Lowry & Stoddart, 1992
- *I. caritus* Lowry & Stoddart, 1992
- *I. cribensis* Lowry & Stoddart, 1992
- *I. parriwi* Lowry & Stoddart, 1992
- *I. pelagicus* Schellenberg, 1926a
- *I. tenuicornis* (Haswell, 1879)
- *I. wardi* Lowry & Stoddart, 1992

Koroga Holmes, 1908
- *Koroga megalops* Holmes, 1908

Nagada Lowry & Stoddart, 1995b
Nagada uwedoae Lowry & Stoddart, 1995b

Parschisturella Andres, 1983
Parschisturella martrudan **sp. nov.**
Parschisturella medora **sp. nov.**
Parschisturella pilot **sp. nov.**

Stephonyx Lowry & Stoddart, 1989
Stephonyx arabiensis Diffenthal & Horton, 2007
Stephonyx pirloti (Sheard, 1938)
Stephonyx rafaeli **sp. nov.**

Systematics

Uristidae Hurley, 1963

Abyssorchomene De Broyer, 1984
(Fig. 1)

Abyssorchomene De Broyer, 1984: 198.—Barnard & Karaman, 1991: 507 (in part).—Lowry & Stoddart 2003: 281 (catalogue).

Type species. *Orchomenopsis chevreuxi* Stebbing, 1906, original designation.

Included species. *Abyssorchomene* includes eleven species: *A. abyssorum* (Stebbing, 1888); *A. charcoti* (Chevreux, 1912); *A. chevreuxi* (Stebbing, 1906); *A. distinctus* (Birstein & M. Vinogradov, 1960); *A. gerulicorbis* (Shulenberger & Barnard, 1976); *A. musculosus* (Stebbing, 1888); *A. nodimanus* (Walker, 1903); *A. pelagicus* (Birstein & M. Vinogradov, 1960); *A. plebs* (Hurley, 1965); *A. rossi* (Walker, 1903); *A. scotianensis* (Andres, 1983).

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 with brush setae. Mandible molar setose with a triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly to significantly shorter than outer plate. ***Gnathopod 1 subchelate or parachelate***; coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin or adze-shaped; ischium short (length less than 2 × breadth); ***carpus compressed***; propodus margins subparallel. Uropod 2 inner ramus not constricted. ***Telson moderately to deeply cleft***.

Remarks. *Abyssorchomene* is most similar to *Koroga*. Both genera have subchelate first gnathopods with a compressed carpus. However, *Abyssorchomene* has a moderately to deeply cleft telson (notched in *Koroga*). Both genera are scavengers with wide-spread distributions.

D'Udekem d'Acoz & Havermans (2012) include *A. plebs* and *A. rossi* in the tryphosine genus *Pseudorchomene* Schellenberg, 1926 based on molecular evidence. *Abyssorchomene plebs* and *A. rossi* are morphologically dissimilar to *P. coatsi* (Chilton, 1912), the type species of *Pseudorchomene*, Schellenberg, 1926, but very similar to species usually assigned to *Abyssorchomene*. D'Udekem d'Acoz & Havermans (2012) did not test the molecular affinities of the other ten species of *Abyssorchomene* against *Pseudorchomene* before moving these species. Transferring *A. rossi* and *A. plebs* to *Pseudorchomene* confounds the morphological concept of both genera. Therefore based on the maxilla 1 setal-tooth arrangement and the morphology of the first gnathopods we prefer to retain these species within *Abyssorchomene* until such time as affinities of the entire *Abyssorchomene*/*Pseudorchomene* complex have been tested.

Abyssorchomene abyssorum Stebbing, 1888, *A. gerulicorbis* (Shulenberger & Barnard, 1976) and *A. scotianensis* (Andres, 1983) are extremely similar morphologically. The only character difference we see is the first coxa which is rectangular in A. *gerulicorbis* and subtlety adze-shaped in *A. scotianensis*. We leave them as separate

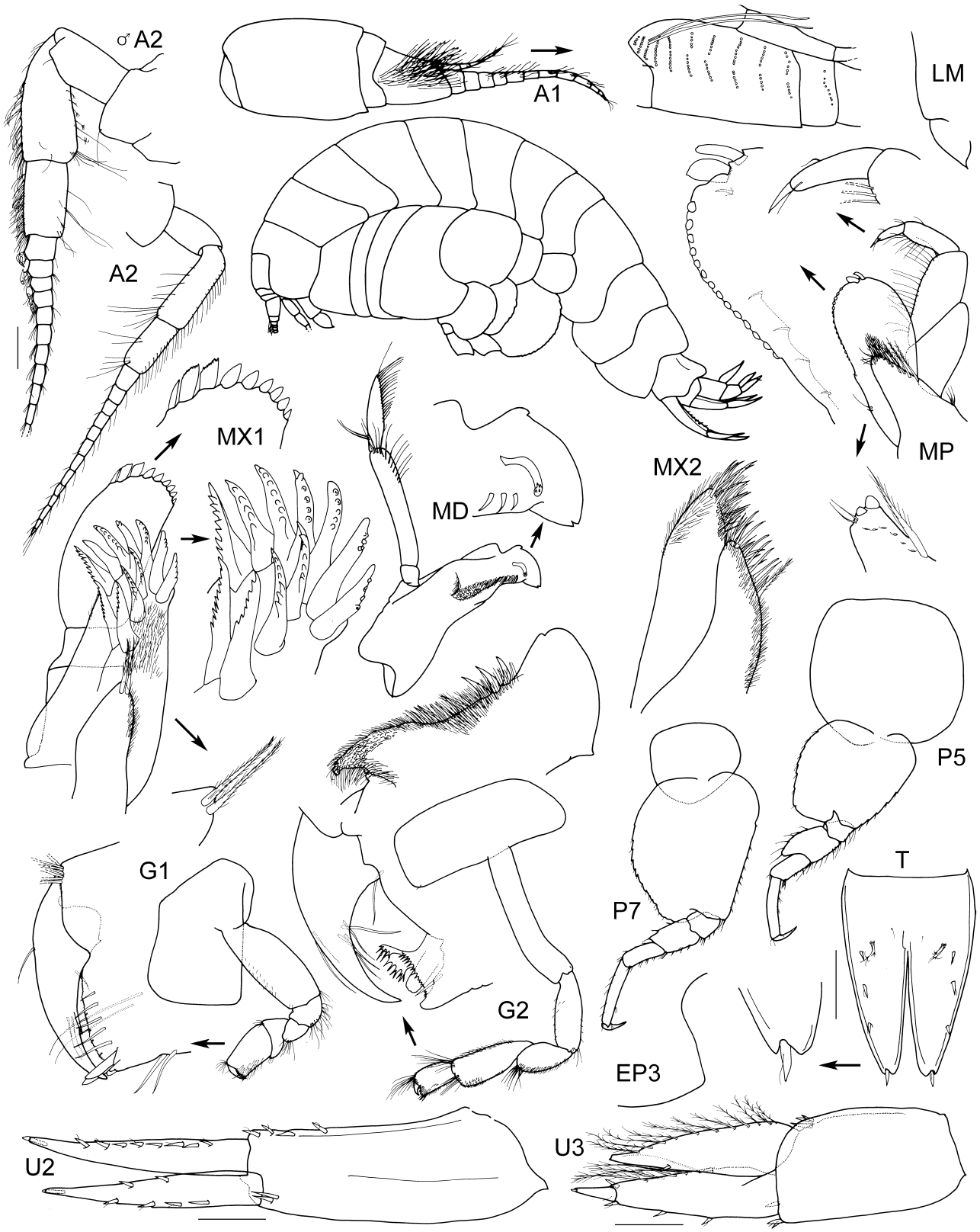

FIGURE 1. *Abyssorchomene chevreuxi* (Stebbing, 1906), *habitus* and LM from syntype female 'A', MNHN, from Princesse Alice stn 1534; A1, A2, mouthparts, G1, G2, P5, P7 from syntype female 'B', all after C. De Broyer (unpublished); male A2, U2, U3, T, male from eastern North Atlantic Ocean (48°50.02'N 16°30.42'W), 4842 m. Scale bars: unknown for De Broyer material; remainder, 0.2 mm.

species for the moment. The species recorded as *A. abyssorum* by Barnard & Ingram, 1990 and by Birstein & Vinogradov, 1960 from the tropical Pacific Ocean look more similar to each other than either does to the *A. abyssorum* of Stebbing, 1888 from the south-western Atlantic.

Distribution. Cosmopolitan.

Key to *Abyssorchomene* species

[*A. abyssorum*, *A. gerulicorbis* and *A. scotianensis* are difficult to separate in this key]

1. Gnathopod 1 parachelate 2
- Gnathopod 1 subchelate 3
2. Gnathopod 1 coxa rectangular with straight anterior margin; ischium not enlarged; propodus palm slightly obtuse. Pereopod 7 basis posterior margin with distal concavity . . . . . *A. charcoti*
- Gnathopod 1 coxa adze-shaped; ischium enlarged; propodus palm transverse. Pereopod 7 basis posterior margin entire . . . . . *A. nodimanus*
3. Uropod 3 inner ramus about 2/3 as long as outer ramus . . . . . *A. plebs*
- Uropod 3 inner ramus slightly shorter (reaching base of article 2) or subequal to outer ramus 4
4. Epimeron 3 posteroventral corner subquadrate. . . . . *A. rossi*
- Epimeron 3 posteroventral corner broadly rounded 5
- Epimeron 3 posteroventral corner narrowly rounded 6
5. Gnathopod 1 propodus palm convex. . . . . *A. distinctus*
- Gnathopod 1 propodus palm straight . . . . . *A. musculosus*
6. Urosomite 1 with straight boss not projecting over urosomite 2 . . . . . *A. pelagicus*
- Urosomite 1 with rounded boss slightly projecting over urosomite 2 7
7. Gnathopod 1 coxa weakly adze-shaped. Uropod 3 inner ramus just reaching base of outer ramus article 2 . . . *A. scotianensis*
- Gnathopod 1 coxa subrectangular. Uropod 3 rami subequal in length 8
8. Gnathopod 2 palm straight 9
- Gnathopod 2 palm excavate 10
9. Maxilla 2 inner plate significantly shorter than outer plate . . . . . *A. abyssorum* (of Barnard & Ingram 1990, Birstein & Vinogradov 1960)
- Maxilla 2 inner plate slightly shorter than outer plate . . . . . *A. abyssorum* (of Stebbing 1888)
10. Gnathopod 2 dactylus without setal basket. . . . . *A. chevreuxi*
- Gnathopod 2 dactylus with setal basket. . . . . *A. gerulicorbis*

Abyssorchomene distinctus (Birstein & Vinogradov, 1960)

Orchomene distinctus Birstein & Vinogradov, 1960: 191, fig. 10.
Orchomene (*Abyssorchomene*) *distinctus*.—Barnard & Ingram, 1990: 22, figs 12–14.—Vinogradov, 1993: 43.
Abyssorchomene distinctus.—?Thurston, 1990: 264 (ecology).—Lowry & Stoddart 2003: 281.—Jamieson, Kilgallen, Rowden, Fujii, Lorz, Kitazawa & Priede, 2011: 55, table 3, 58, table 6 (ecology).—Horton, Thurston & Duffy, 2013: 355, table 2 (ecology).
Orchomene distinctus.—Barnard & Karaman, 1991: 508.
Orchomenella distinctus.—Lowry & Stoddart 1994: 181.

Types. Unknown.

Type locality. Near Palau, western South Pacific Ocean (5°02'N 135°33'E) 4732 m, trawl 0–2000 m; East Pacific vent region 13°N, 2635 m.

Material examined. 1 female, AM P.70533, east of Sydney, New South Wales, Australia (33°50.9'S 152°15.2'E), 3178–4860 m, Isaacs-Kidd midwater trawl, 26–27 April 1989, J.R. Paxton, NMAS *Cook* [JP 89-2]; 1 specimen, AM P.96583, Hill D1, south-southeast of South East Cape (44°23.4'S 147°16.2'E), 1942 m, baited trap, 31 January 1997, CSIRO party on FRV *Southern Surveyor*, FRV *Southern Surveyor* [SS01/97/65].

Diagnostic description. Mandible molar setose with triturating surface. Maxilla 2 inner plate significantly shorter than outer plate. Gnathopod 1 subchelate; coxa 1 large, about as long as coxa 2, subtriangular, adze-shaped; ischium not enlarged; propodus margins subparallel; palm transverse, ***slightly convex***. Gnathopod 2 subchelate; palm transverse, margin sinusoidal. ***Pereopod 7 basis tapering distally. Epimeron 3 posteroventral corner broadly rounded***. Telson moderately cleft.

Remarks. *Abyssorchomene distinctus* has a broadly rounded posteroventral corner on epimeron 3 such as *A.*

charcoti, *A. musculosus* and *A. nodimanus*. Gnathopod 1 is subchelate in *A. distinctus* and *A. musculosus* (parachelate in *A. charcoti* and *A. nodimanus*). There is little difference between *A. distinctus* and *A. musculosus*. The palm of gnathopod 1 is slightly convex in *A. distinctus* (straight in *A. musculosus*) and the setal-teeth on maxilla 1 appear to be more slender, but this could be the angle of the illustration. In other respects they appear to be the same.

Depth range. 2635–5173 m (Barnard & Ingram 1990, Jamieson *et al*. 2011).

Distribution. *Pacific Ocean:* Near Palau (5°02'N 135°33'E) (Birstein & Vinogradov 1960); East Pacific vent region 13°N (Barnard & Ingram 1990); Loyalty Islands (Lowry & Stoddart 1994); Kermadec Trench (Jamieson *et al*. 2011). *North Atlantic Ocean.* Cape Verde Plain (Thurston 1990).

Abyssorchomene gerulicorbis (Shulenberger & Barnard, 1976) comb. nov.

Orchomene affinis.—Birstein & Vinogradov, 1955: 223, fig. 9.

Orchomene gerulicorbis Shulenberger & Barnard, 1976: 243, figs 1–3.—Thurston, 1979: 56 (biology).—Barnard & Ingram, 1990: 21.—Barnard & Karaman, 1991: 508.

Orchomenella (*Orchomenopsis*) *gerulicorbis*.—Palerud & Vader, 1991: 41.—Jones, Collins, Bagley, Addison & Priede (1998): 1124, table 2 (ecology).

Orchomenella gerulicorbis.—Thurston, 1990: 262 Table 3, 264 Table 5, etc. (ecology).—Lowry Stoddart, 1994: 181.—Lowry & Stoddart 2003: 169.—Jamieson, Kilgallen, Rowden, Fujii, Lörz, Kitazawa & Priede, 2011: 53, 55, table 3, 58, table 6 (ecology).—Duffy, Horton & Billet, 2012: 4865, table 3 (ecology).—Corrigan, Horton, Fotherby, White & Hoelzel, 2013: 6 (molecular).—Cousins, Horton, Wigham & Bagley, 2013: 303, table 3 (ecology).

Types. Holotype, female, 13. 9 mm, USNM 149204.

Type locality. 440 miles north of Oahu, Hawaii, (28°00'00"N 155°00'00"W), 5720 m, water temperature, 1.2°C, bottom smooth red mud with Manganese nodules.

Australian material examined. *Queensland:* 22 specimens, AM P.49519; 4 specimens, AM P.49523; 261 specimens, AM P.50232; 270 specimens, AM P.50239; 21 specimens, AM P.50295; 14 specimens, AM P.57597; 3 specimens, AM P.57601; 10 specimens, AM P.57603; 5 specimens, AM P.57610; 2 specimens, AM P.57613; 1 female, AM P.71842; 14 specimens, AM P.71843, east of Flynn Reef, Queensland, Australia (16°37.82'S 146°23.08'E), 1000 m, baited trap, 7–8 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-930–QLD932 & QLD-948–QLD-950/SEAS].

Tasmania. 20 specimens, AM P.73704, Hill D1, south-southeast of South East Cape (44°23.4'S 147°16.2'E), 1942 m, baited trap, 31 January 1997, CSIRO party on FRV *Southern Surveyor*, FRV *Southern Surveyor* [SS01/97/65].

Extralimital material examined: 8 specimens, AM P.40544, San Clemente Basin, California, United States of America (32°29.8'N 117°59.0'W), 1860 m, 05 November 1987, S.C. France, RV *Robert Gordon Sproul* [114]; 22 specimens, AM P.42143, off Rapa, Austral Isles, French Polynesia, (27°35.3' S 144°15.5'W), 870 m, baited trap, 17 August 1991, J.K. Lowry & J.M. Poupin, RV *Marara* [FRP-55]; 48 specimens, AM P.42144; 4 specimens, AM P.42145, off Rapa, Austral Isles, French Polynesia, (27°35.5' S 144°15.8'W), 750 m, baited trap, 18 August 1991, J.K. Lowry & J.M. Poupin, RV *Marara* [FRP-64 & FRP-66].

Diagnostic description. Mandible molar setose with a triturating surface. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1*** subchelate; ***coxa 1 large, about as long as coxa 2, subrectangular, anterior margin nearly straight***; ischium not enlarged; propodus margins subparallel; palm transverse, slightly convex. Gnathopod 2 chelate; palm obtuse, margin excavate; dactylus with 'setal basket' on posterodistal margin. ***Pereopod 7 basis tapering distally. Epimeron 3 posteroventral corner narrowly rounded***. Telson moderately cleft.

Remarks. *Abyssorchomene gerulicorbis* has a subrectangular first coxa with a nearly straight anterior margin similar to *A. abyssorum* and *A. charcoti*. *Abyssorchomene gerulicorbis* and *A. abyssorum* have subchelate first gnathopods (parachelate in *A. charcoti*). It is difficult to separate *A. gerulicorbis* from *A. abyssorum* and *A. scotianensis*. *Abyssorchomene gerulicorbis* and *A. abyssorum* both have subrectangular first coxae (subtly adze-shaped in *A. scotianensis*). The inner plate of maxilla 2 is significantly shorter than the outer plate in the *A. abyssorum* of Barnard & Ingram (1990), but not in the specimen of Stebbing (1888) or to a less extent the specimen of Birstein & Vinogradov (1990). The adze-shaped first coxa separated *A. scotianensis* separates form these two species but in other characters they are extremely similar.

Abyssorchomene gerulicorbis differs from *A. chevreuxi* mainly in the upper lip which is slightly produced and apically narrowly rounded (upper lip not produced in *A. chevreuxi*) and in *A. gerulicorbis* the dactylus of gnathopod 1 has a posterodistal 'setal basket' (absent in *A. chevreuxi*).

Distribution. *North Atlantic Ocean:* Porcupine, Iberian, Madeira, Cape Verde, and Guiana Abyssal Plains (Thurston 1990). *North Pacific Ocean:* Kuril-Kamchatka (Birstein & Vinogradov 1955); north of Hawaii (Shulenberger & Barnard 1976). *South Pacific Ocean:* Austral Isles (Lowry & Stoddart 1994); Kermadec Trench (Jamieson *et al*. 2011); east coast of Australia (this study). *Indian Ocean:* Crozet Plateau (Cousins *et al.* 2013).

Anonyx Krøyer, 1838a

(Fig. 2)

Anonyx Krøyer, 1838a: 256.—Krøyer, 1838b: 243.—Stebbing, 1906: 53.—Gurjanova, 1962: 207 (key).—Steele & Brunel, 1968: 949 (key).—J.L. Barnard, 1969: 324.—Lincoln, 1979: 76.—Barnard & Karaman, 1991: 442 (key), 463.
Chironesimus Sars, 1891: 108 (type species, *Anonyx debruynii* Hoek, 1882, monotypy).
Lakota Holmes, 1908: 498 (type species, *Lakota carinata* Holmes, 1908, original designation).

Type species. *Lysianassa lagena* Krøyer, 1838b, selected by Boeck, 1876 (junior synonym of *A. nugax* (Phipps, 1774)).

Included species. *Anonyx* includes 50 species: *A. abei* Takekawa & Ishimaru, 2001; *A. adoxus* Hurley, 1963; *A. affinis* Ohlin, 1895; *A. attenuatus* Steele, 1989; *A. barrowensis* Steele, 1982; *A. beringi* Steele, 1982; *A. birulai* Gurjanova, 1962; *A. bispinosus* Steele, 1967; *A. comecrudus* J.L. Barnard, 1971; *A. compactus* Gurjanova, 1962; *A. dalli* Steele, 1983; *A. debruynii* Hoek, 1882; *A. eous* Gurjanova, 1962; *A. eousides* Steele, 1991; *A. epistomicus* Kudrjaschov, 1965; *A. grebnitzkii* Steele, 1991; *A. gurjanovai* Steele, 1986; *A. hayashii* Sekiguchi & Yamaguchi, 1983; *A. hurleyi* Steele, 1986; *A. knipowitschi* Gurjanova, 1962; *A. laticoxae* Gurjanova, 1962; *A. lilljeborgi* Boeck, 1871; *A. makarovi* Gurjanova,1962; *A. minimus* Gurjanova, 1962; *A. multiarticulatus* (Pearse, 1913); *A. nugax* (Phipps, 1774); *A. ochoticus* Gurjanova, 1962; *A. oculatus* Gurjanova, 1962; *A. omorii* Takekawa & Ishimaru, 2001; *A. orientalis* Gurjanova, 1962; *A. pacificus* Gurjanova, 1962; *A. pareous* Steele, 1991; *A. pavlovskii* Gurjanova, 1962; *A. petersoni* Steele, 1986; *A. pseudeous* Steele, 1991; *A. robustus* Gurjanova, 1962; *A. sarsi* Steele & Brunel, 1968; *A. schefferi* Steele, 1986; *A. schokalsii* Gurjanova, 1962; *A. sculptifer* Gurjanova, 1962; *A. shoemakeri* Steele, 1983; *A. simplex* Hirayama, 1985; *A. stappersi* Steele, 1989; *A. stebbingi* Steele, 1989; *A. stegnegeri* Steele, 1986; *A. validus* Gurjanova, 1962; *A. volkovi* Kudrjaschov, 1965.

Incertae sedis. *Anonyx anivae* Gurjanova, 1962 (gnathopod 1 propodus margins subparallel, antenna 2 without brush setae, mouthparts unknown); *A. derjugini* Gurjanova, 1962 (accessory flagellum not forming a cap); *Anonyx lebedi* Gurjanova, 1962 (gnathopod 1 ischium long); *Anonyx magnus* Gurjanova, 1962 (gnathopod 1 very weakly subchelate and no constriction on uropod 2 inner ramus).

Removals. *Anonyx lebedi* Gurjanova, 1962 to *Tmetonyx*. Gnathopod 1 with long ischium and propodus with subparallel margins.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; ***accessory flagellum forming cap covering callynophore***. ***Antenna 2 with brush setae***. Mandible molar setose with vestigial triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly to significantly shorter than outer plate. ***Gnathopod 1 subchelate (occasionally parachelate)***; coxa 1 large, about as long as coxa 2, subrectangular with straight or concave anterior margin; ischium short (length less than 2 × breadth); carpus short (length 1 to 2 × breadth) or long; ***propodus margins slightly tapering distally***. Uropod 2 inner ramus constricted (weak to strong). Telson moderately to deeply cleft.

Remarks. *Anonyx* appears to be most similar to *Onisimus*. Both genera have a subchelate first gnathopod with a short carpus. However *Anonyx* has bush setae on antenna 2 (absent in *Onisimus*) and the molar is a strong setose tongue (a reduced column with triturating surface in *Onisimus*). Both genera are scavengers with wide-spread distributions in arctic/boreal regions.

Anonyx is also similar to *Tmetonyx*. They differ in the accessory flagellum cap (absent in *Tmetonyx*), the mandibular molar (setose with a reduced column with convex triturating surface in *Tmetonyx*), the ischium of gnathopod 1 (long in *Tmetonyx*), and the margins of the propodus (subparallel in *Tmetonyx*).

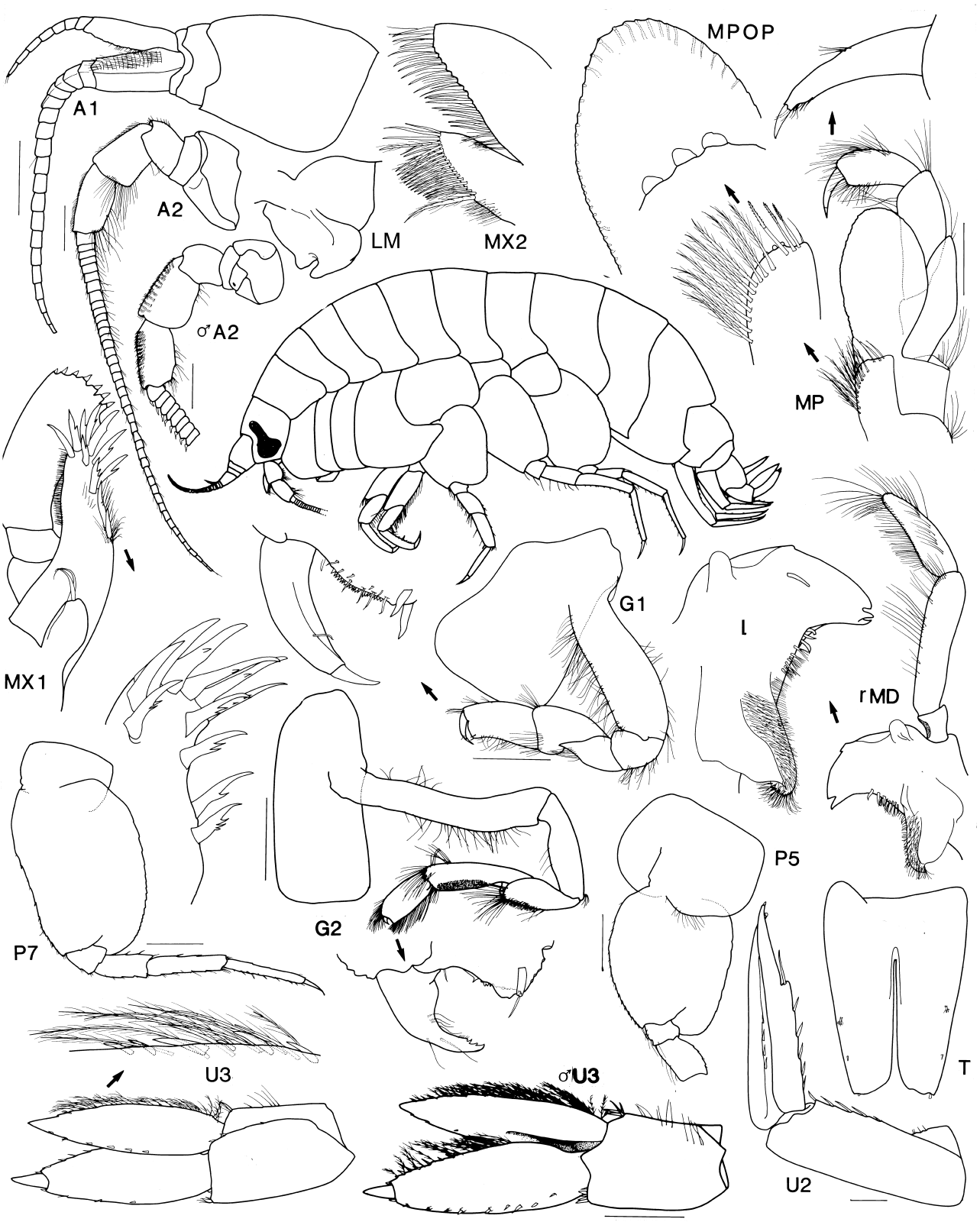

FIGURE 2. *Anonyx nugax* (Phipps, 1774), female, 44.0 mm, ZMUC and *habitus*, male, 45.0 mm, ZMUC, from the Norwegian Sea; male A2 and U3, 46.0 mm, AM P.32406, from Igloolik, Nunaavut, Canada. Scale bars: gnathopods, pereopods, 2.0 mm; remainder, 1.0 mm.

Caeconyx Barnard & Karaman, 1991
(Fig. 3)

Caeconyx Barnard & Karaman, 1991: 473.

Type species. *Hoplonyx caeculus* Sars, 1891, original designation.

Included species. *Caeconynx* includes one species: *C. caeculus* (Sars, 1891).

Diagnostic description. ***Antenna 1*** peduncle article 1 without anterodistal lobe; ***accessory flagellum forming cap covering callynophore***. Antenna 2 without brush setae. Mandible molar setose with vestigial triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1 subchelate; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin***; ischium short (length less than 2 × breadth); carpus long (length 2 to 4 × breadth); ***propodus margins subparallel***. Uropod 2 inner ramus not constricted. ***Telson deeply cleft***.

Remarks. *Caeconyx* has no distinctive generic level characters. It appears to be similar to *Anonyx*. It differs from *Anonyx* in the mandibular palp which is attached midway in *Anonyx* (attached distally in *Caeconyx*) and the margins of the gnathopod 1 propodus which are tapering in *Anonyx*.

Distribution. North-eastern Atlantic Ocean. Iceland to Trondheimsfjord.

Cicadosa Barnard & Karaman, 1991
(Fig. 4)

Cicadosa Barnard & Karaman, 1991: 441 (key), 476.

Type species. *Anonyx cicadoides* Stebbing, 1888, original designation.

Included species. *Cicadosa* includes one species: *C. cicadoides* Stebbing, 1888.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 with brush setae. Mandible molar setose with vestigial triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. ***Maxilla 2 inner plate significantly shorter than outer plate***. ***Gnathopod 1 weakly subchelate***; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin; ischium short (length less than 2 × breadth); carpus long (length 2 to 4 × breadth); propodus margins tapering distally. ***Uropod 2 inner ramus strongly constricted***. Telson deeply cleft.

Remarks. *Cicadosa* is most similar to *Parschisturella* from which it differs in the labrum in which is the upper lip is acutely produced (more rounded apically in *Cicadosa*) and the inner ramus of uropod 2 (not constricted in *Parschisturella*).

Distribution. Kerguelen Island.

Des gen. nov.

Type species. *Des griffini* **sp. nov.**

Included species. *Des* includes one species: *D. griffini* **sp. nov.**

Etymology. Named for Dr Des Griffin, eminent carcinologist and past Director of the Australian Museum, in recognition of his unwavering support for science at the Australian Museum.

Diagnostic description. ***Antenna 1*** peduncle article 1 without anterodistal lobe; ***accessory flagellum forming cap covering callynophore***. Antenna 2 with brush setae. Mandible molar setose with vestigial triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1 weakly subchelate***; coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin; ischium short (length less than 2 × breadth); carpus long (length 2 to 4 × breadth); propodus margins tapering distally. Uropod 2 inner ramus strongly constricted. ***Telson deeply cleft***.

Remarks. *Des* is similar to *Menigrates*. They differ most conspicuously in the mandibular molar which is a triturating button in *Menigrates* and the telson which is notched to moderately cleft in *Menigrates*.

Distribution. *Australia* (this study).

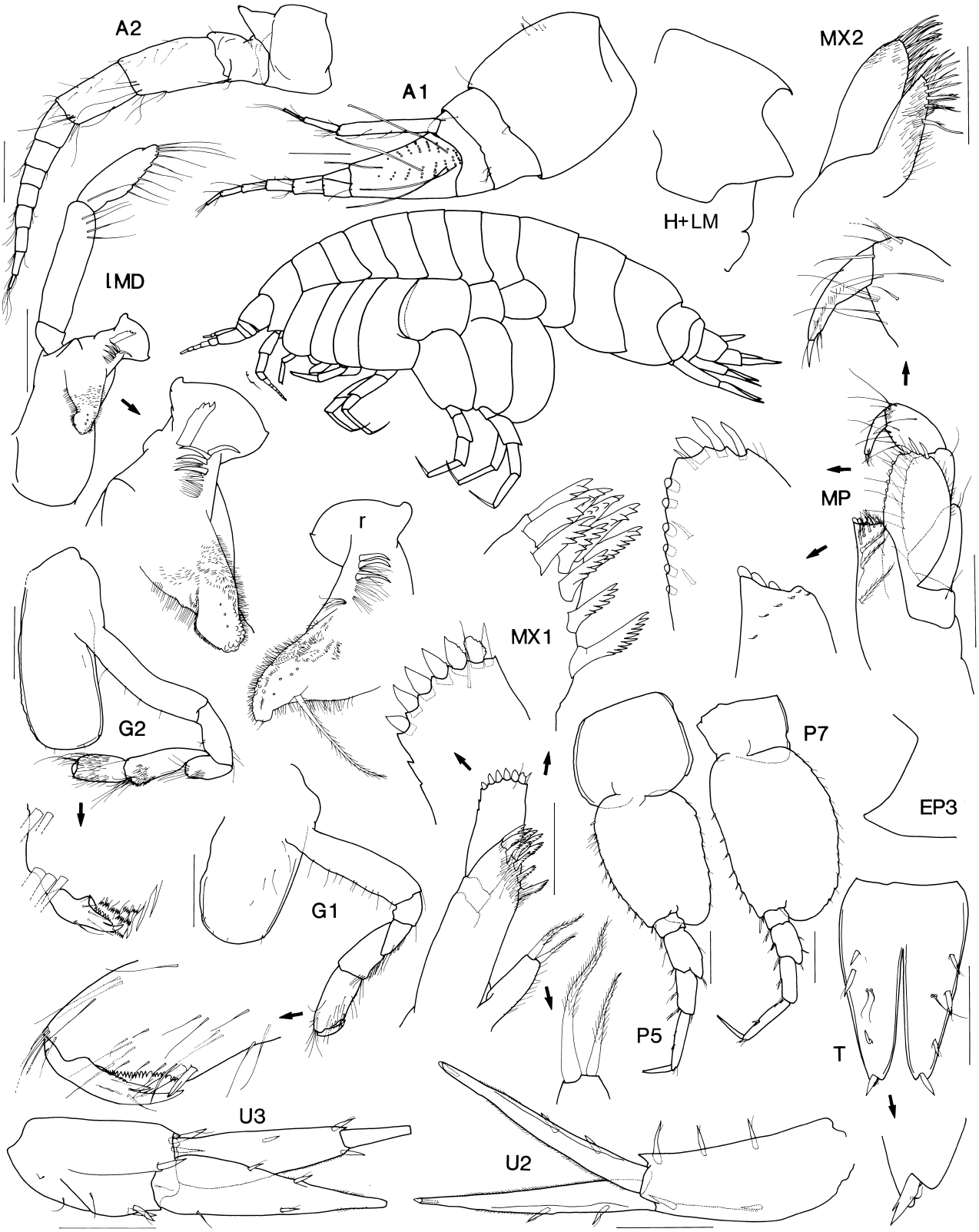

FIGURE 3. *Caeconyx caeculus* (Sars, 1891), ? male, approx. 3.7 mm, ZMO F13319, Leksvigen, Trondhjemsfjord, Norway. Scale bars: gnathopods, pereopods, 0.2 mm; remainder, 0.1 mm.

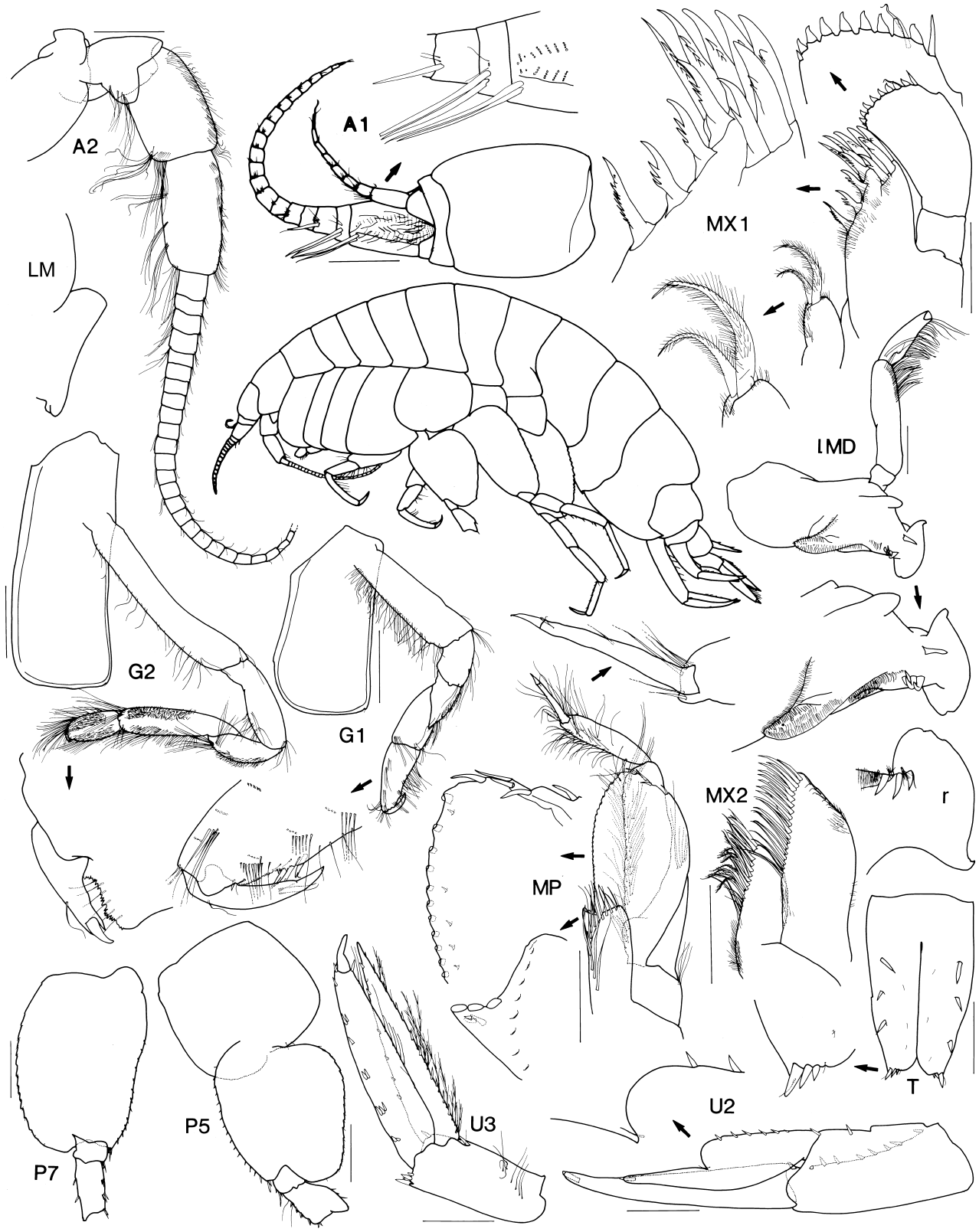

FIGURE 4. *Cicadosa cicadoides* (Stebbing, 1888), female, 24.5 mm; male, 19.0 mm, BMNH 1889:5:15:4, from Kerguelen Island. Scale bars: mouthparts, 0.1 mm; remainder, 0.5 mm.

***Des griffini* sp. nov.**
(Figs 5–7)

Types. Holotype, female, 19.5 mm, AM P.71840, east of Broken Bay, New South Wales, Australia (33°40.0'S 152°06.0'E to 33°43.0'S 152°04.0'E), 1108–1115 m, trawl, 19 December 1985, FRV *Kapala* [K85-21-05].

Type locality. East of Broken Bay, New South Wales, Australia.

Etymology. Named for Dr Des Griffin, eminent carcinologist and past Director of the Australian Museum, in recognition of his unwavering support for science at the Australian Museum.

Description. Based on holotype, female, 19.5 mm, AM P.71840. Head, ***lateral cephalic lobe subtriangular, apically rounded***; eyes lageniform. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum forming cap covering callynophore, 5-articulate, terminal article not offset; primary flagellum with strong 2-field callynophore; robust setae present on proximal articles; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged, brush setae present; flagellum short; calceoli absent. Labrum, epistome and upper lip separate; epistome produced equally with upper lip, straight; upper lip not produced. Mandible incisor large, left and right slightly asymmetrical; molar setose with vestigial triturating surface; palp attached about midway, article 2 margins subparallel. Maxilla 1 outer plate setal-tooth 7 present, left and right symmetrical, cuspidate distally along inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 5–6 vestigial apical robust setae.

Gnathopod 1 weakly subchelate; coxa large, about as long as coxa 2, subrectangular with straight to slightly concave anterior margin; basis densely setose along anterior margin; ischium short (length less than 2 × breadth); ***carpus long (length 2 to 4 × breadth)***, slightly longer than propodus, without posterior lobe; propodus margins tapering distally, palm indistinct, strongly acute, entire, straight; dactylus simple. Gnathopod 2 propodus palm slightly obtuse. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 basis longer than broad, posterior margin weakly or not serrate. Pereopod 7 basis not reaching merus.

Epimeron 3 posterior margin smooth, ***posteroventral corner forming small spine above broadly rounded posteroventral corner***. Urosomite 1 not projecting over urosomite 2, with rounded boss. Uropod 2 inner ramus constricted. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, without plumose setae on rami. Telson deeply cleft.

Sexually dimorphic characters. Unknown.

Depth range. 1108–1115 m.

Distribution. *Australia.* Known only from east of Broken Bay, New South Wales.

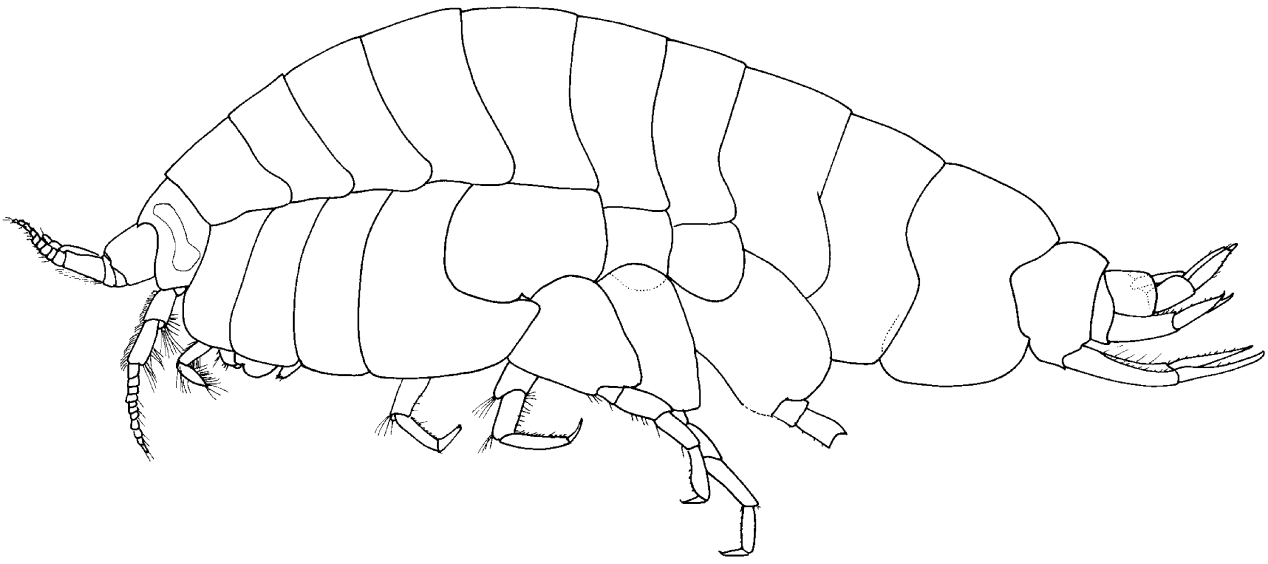

FIGURE 5. *Des griffini* **sp. nov.**, holotype, female, 19.5 mm, AM P.71840, from east of Broken Bay, New South Wales, Australia.

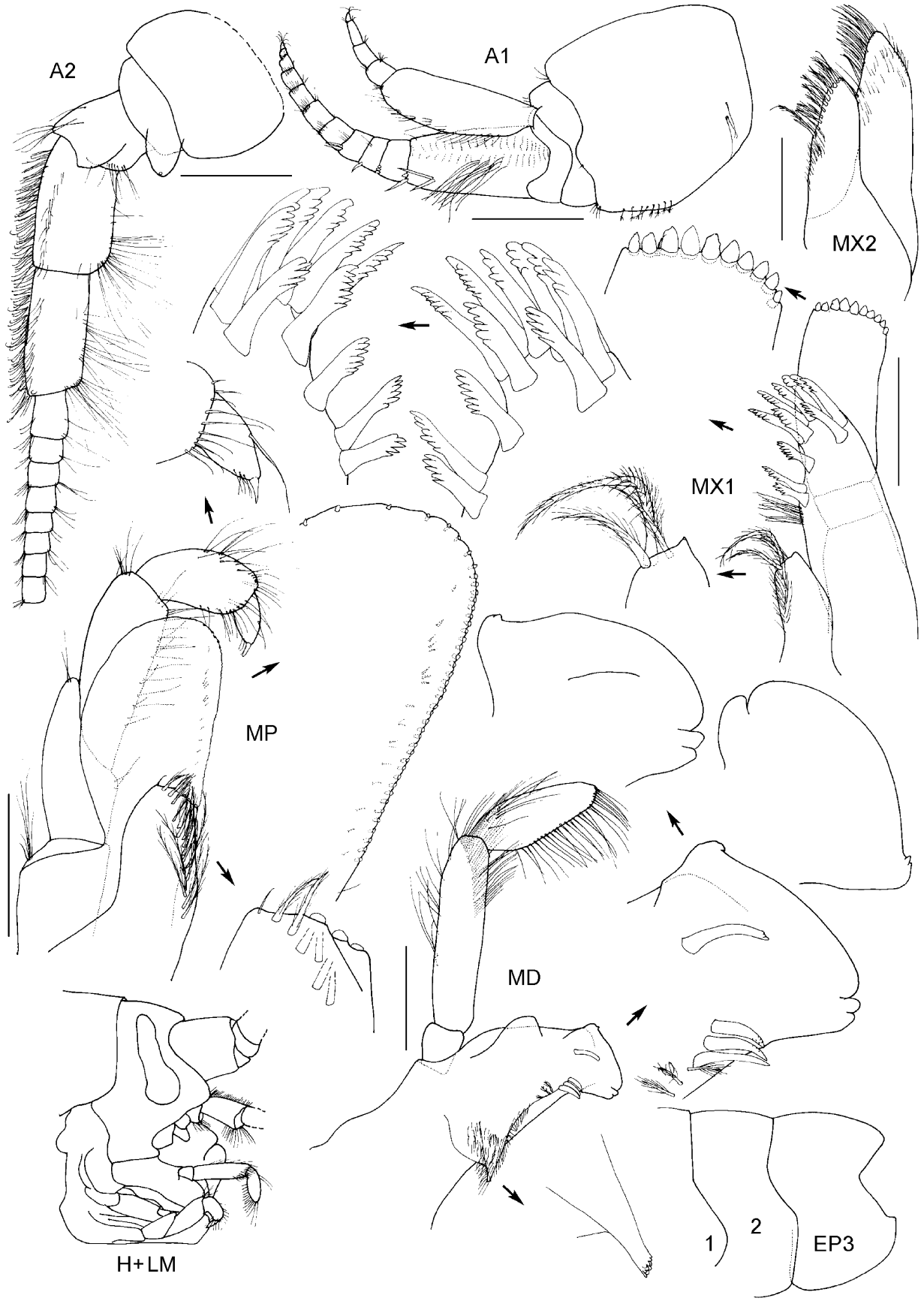

FIGURE 6. *Des griffini* **sp. nov.**, holotype, female, 19.5 mm, AM P.71840, from east of Broken Bay, New South Wales, Australia. Scale bars: 0.5 mm.

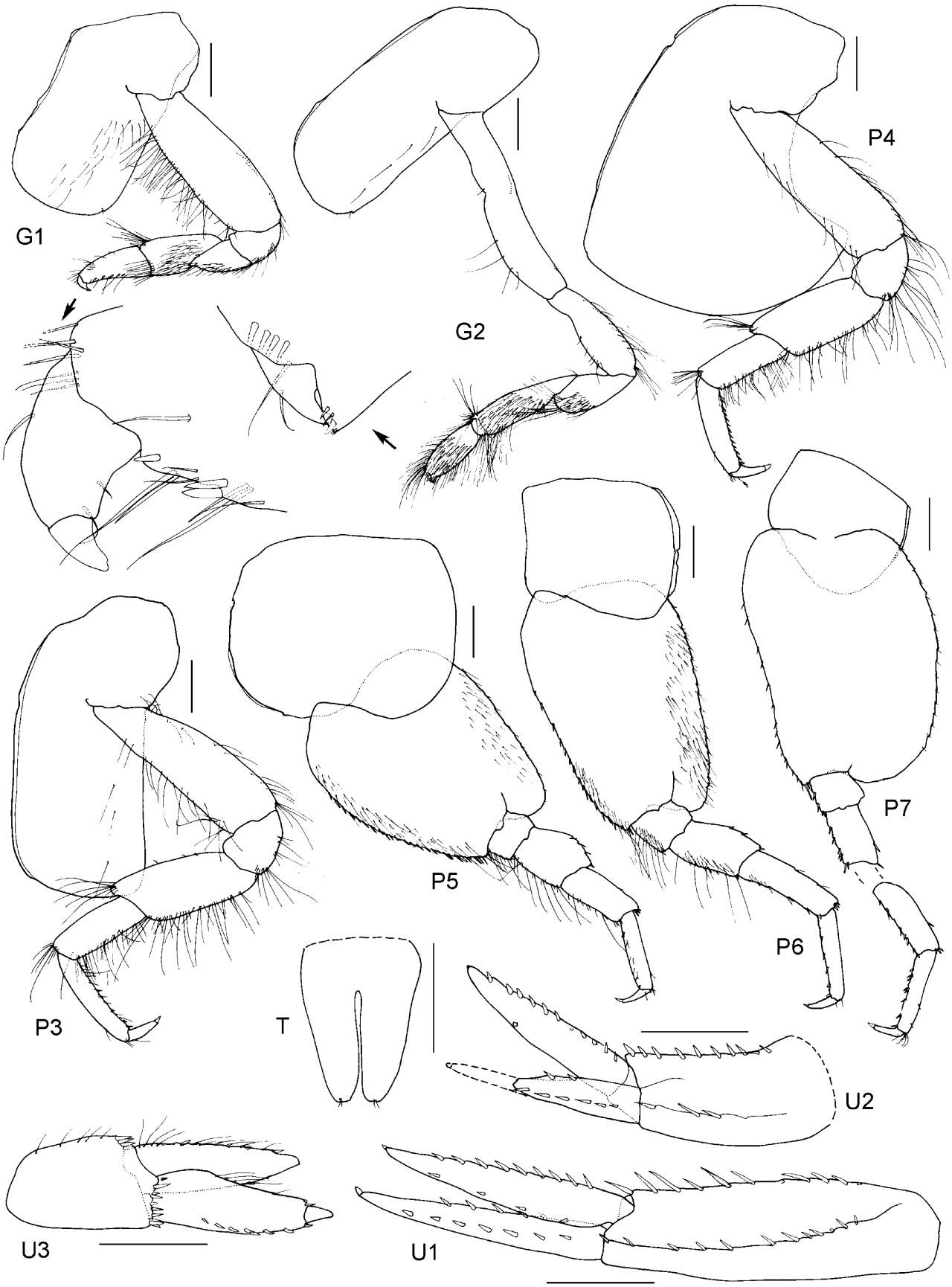

FIGURE 7. *Des griffini* **sp. nov.**, holotype, female, 19.5 mm, AM P.71840, from east of Broken Bay, New South Wales, Australia. Scale bars: 0.5 mm.

Eclecticus Lowry & Stoddart, 1997
(Fig. 8)

Eclecticus Lowry & Stoddart, 1997: 69.

Type species. *Eclecticus eclecticus* Lowry & Stoddart, 1997, original designation.

Included species. *Eclecticus* includes 1 species: *E. eclecticus* Lowry & Stoddart, 1997.

Diagnostic description. Antenna 1 peduncle without posterodistal lobe or spine; accessory flagellum not forming cap covering callynophore. Antenna 2 brush setae (in male). ***Mandible*** incisors large, convex; left lacinia mobilis a long slender peg*;* ***molar a setose tongue***. Maxilla 1 outer plate setal-teeth a well developed 7/4 crown. Maxilla 2 inner plate significantly shorter than outer. ***Gnathopod 1 simple*****;** coxa large, about as large as coxa 2 with a straight anterior margin; ***ischium long (length 2 × to 4 × breadth)****;* ***carpus long (length 2 to 4 × breadth)****,* ***dactylus with complex spination along anterior margin****.* ***Uropod 2 inner ramus with weak constriction****.* Uropod 3 outer ramus article 2 long. ***Telson entire***.

Remarks. *Eclecticus* appears to be most similar to *Nagada*. They differ mainly in the gnathopod 1 dactylus (complex spines in *Eclecticus* and simple in *Nagada*). *Ichnopus* also has the dactylus of gnathopod 1 with complex spination but *Ichnopus* has a deeply cleft telson (entire in *Eclecticus*).

Distribution. Gulf of Mexico.

Euonyx Norman, 1867
(Fig. 9)

Euonyx Norman, 1867: 202.—Sars, 1891: 116.—Stebbing, 1906: 19 (in part). Pirlot, 1936: 116 (in part).—J.L. Barnard, 1969: 342 (in part).—Lincoln, 1979: 54 (in part).—Lowry & Stoddart, 1989: 519.—Barnard & Karaman, 1991: 485, fig. 92I (in part).

Leptochela Boeck, 1876: 190 (homonym, Decapoda) (type species, *Opis leptochela* Bate & Westwood, 1868, monotypy.

Type species. *Euonyx chelatus* Norman, 1867, monotypy.

Included species. *Euonyx* includes four species: *E. chelatus* Norman, 1867; *E. coecus* Pirlot, 1933 *E. urania* **sp. nov.**; *E. xarifa* **sp. nov.**

Incertae sedis. *Euonyx conicurus* K.H. Barnard, 1955 (genus uncertain);

Diagnostic description. *Antenna 1* peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae. Mandible molar a large, asetose flap or absent. ***Maxilla 1 outer plate with reduced seta-teeth in a modified 7/4 crown***. Maxilla 2 inner plate subequal to or significantly shorter than outer plate. ***Gnathopod 1 chelate****; coxa 1 reduced, significantly shorter than coxa 2, tapering distally or subquadrate****; ischium long (length 2 × to 4 × breadth) too very long (length 4 × to 6 × breadth)***; carpus long (length 2 to 4 × breadth); propodus margins subparallel. Uropod 2 inner ramus not constricted. Telson deeply cleft.

Remarks. *Euonyx* appears to be the immediate sister taxon of *Stephonyx* Lowry & Stoddart, 1989. *Euonyx* has abandoned the scavenging life-style to become an ectoparasite of echinoids and in the process developed severely reduced mouthparts, particularly the seta-teeth of the maxilla 1 outer plate.

In *Euonyx coecus* Pirlot, 1933 the setal-teeth of maxilla 1 appear to be intermediate between *Euonyx* and *Stephonyx*, but the mandibular molar is absent, an important characteristic of *Euonyx*.

Distribution. North Atlantic Ocean. Indonesia. Eastern Australia.

Key to *Euonyx* species

1.	Antenna 1 peduncular article 1 without anterodistal lobe	*E. xarifa*
-	Antenna 1 peduncular article 1 with small to large anterodistal lobe	2
2.	Gnathopod 1 carpus longer than propodus.	*E. urania*
-	Gnathopod 1 carpus shorter than or subequal to propodus	3
3.	Urosomite 1 dorsal margin a broad angled wedge	*E. chelatus*
-	Urosomite 1 dorsal margin an acute triangular process	? *Euonyx conicurus*
-	Urosomite 1 dorsal margin a rounded boss	*Euonyx coecus*

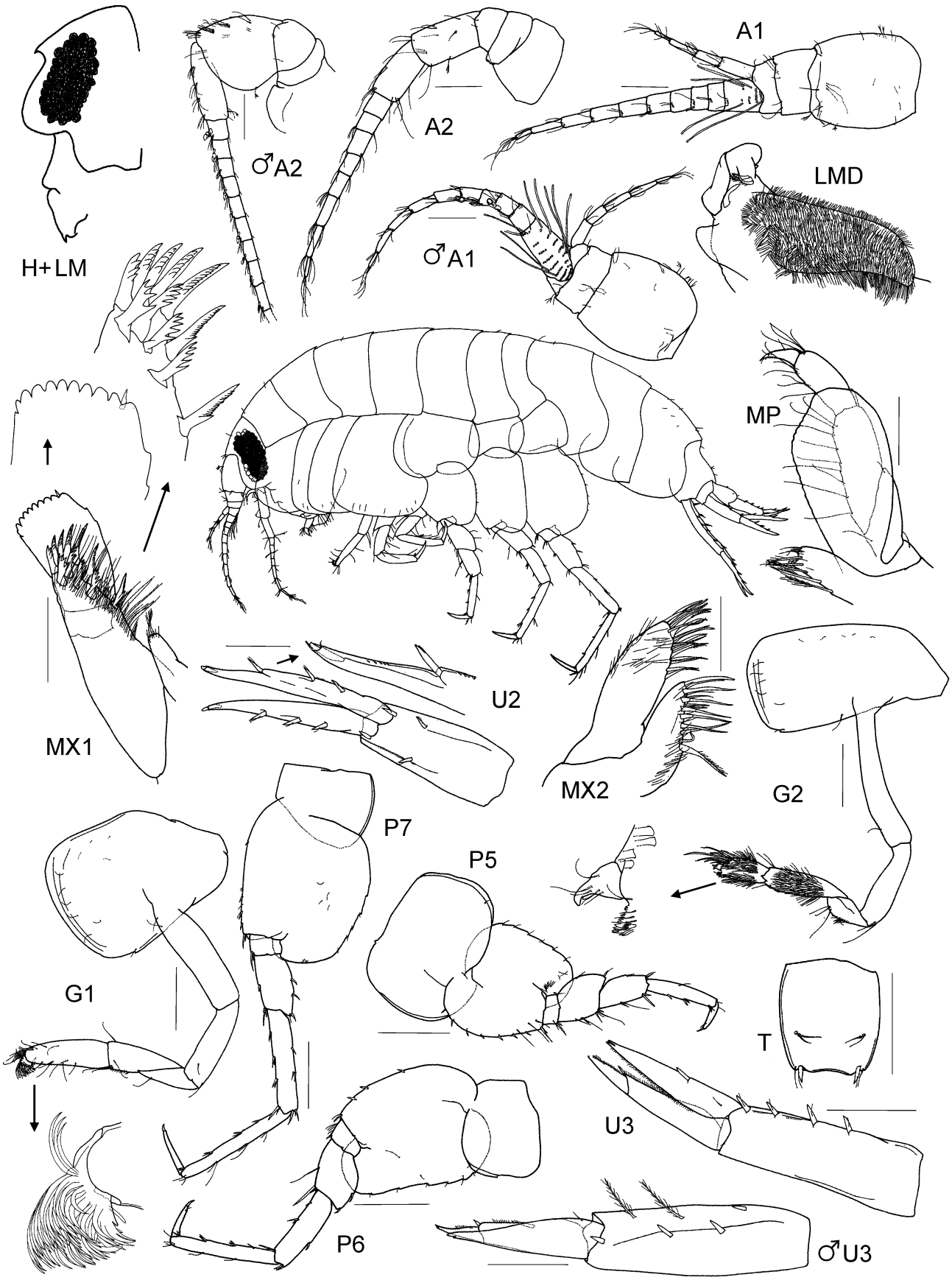

FIGURE 8. *Eclecticus eclecticus* Lowry & Stoddart, 1997, *habitus*, paratype female, AM P.40961; parts from holotype, female, 4.4 mm, AM P.41435; paratype, male 3.8 mm, AM P.41438, from the San Blas Islands, Caribbean Sea. Scale bars: gnathopods, pereopods, 0.2 mm; remainder, 0.1 mm.

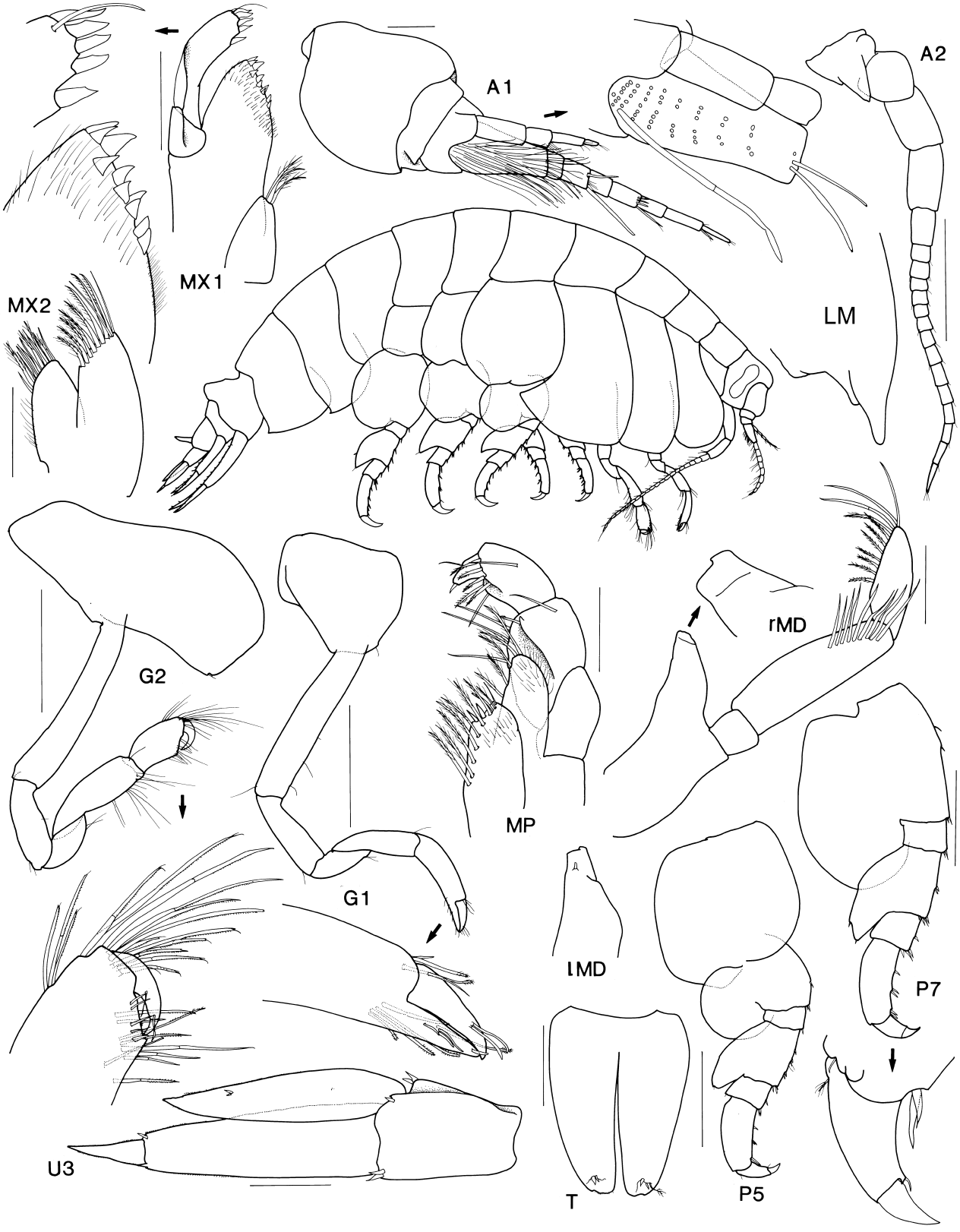

FIGURE 9. *Euonyx chelatus* Norman, 1867, A2 from female B, 8.0 mm; MP from female C; all other parts from female A, 6.2 mm; BMNH 1925.9.8:3-7, from North Minch, eastern North Atlantic Ocean. *Habitus* after Lincoln, 1979. Scale bars: antennae, gnathopods, pereopods, 0.5 mm; remainder, 0.1 mm.

Euonyx chelatus Norman, 1867

Euonyx chelatus Norman, 1867: 202.—Robertson, 1888: 94.—Stebbing, 1888: 673.—Walker, 1889: 77.—Sars, 1891: 117, pl. 40 fig. 1.—Walker, 1892: 244.—Walker, 1895a: 294.—Walker, 1895b: 422.—Norman, 1900: 214.—Scott, 1901: 259.—Stebbing, 1906: 19.—Stephensen, 1923: 41.—Stephensen, 1929: 52, figs 14, 16.—H.B. Moore, 1932: 156.—Stephensen, 1932: 353.—Pirlot, 1933: 120 (key).—Stephensen, 1935: 33.—Moore, 1937: 117.—Jones, 1940: 25, table 1.—Stephensen, 1942: 470 (table).—Jones, 1948: 404.—Enequist, 1949: 387 (table).—Gurjanova, 1951: 159, fig. 34. J.L. Barnard, 1958: 91 (list).—Bruce, Colman & Jones, 1963: 150.—Thurston & Allen, 1969: 358.—Vader, 1978: 127.—Lincoln, 1979: 54, fig. 18.—P.G. Moore, 1984: 32.—Comely & Ansell, 1988: 114, 123.—Costello *et al.*, 1989: 33.—Lowry & Stoddart, 1989: 519.—Barnard & Ingram, 1990: 2 (list), 3 (key).—Barnard & Karaman, 1991: 485.—Palerud & Vader, 1991: 35.—Sainte-Marie, 1991: 217, appendix 1.—Holmes *et al.*, 1997: 186 (list).—Johnson *et al.*, 2001: 198, table 3.—O'Reilly *et al.*, 2001: 36.—Tzvetkova & Golikov, 2001: 88 (table).

? *Opis leptochela* Bate & Westwood, 1868: 501 fig.

Types. Syntypes: NHM Reg. no. 1911:11:8:13684-13686 (3 specimens, alcohol), 1911:11:8:M843-M845 (3 slides). **Type locality.** Sleat Sound, Hebrides, North Atlantic Ocean (~57°10'N 5°50'W) on the sea urchin *Echinus esculentus* Linnaeus, 1758.

Habitat. An apparent obligate ectoparasite of the sea urchin *Echinus esculentus* Linnaeus, 1758 (Vader 1978).

Depth range. 31–900 m (H.B. Moore 1937; Stephensen 1923).

Remarks. There are currently only three recognized species in Euonyx—the type species and the two new species described here. *Euonyx chelatus* and *E. urania* show some similarity. *Euonyx xarifa* is the least similar. It has an apically rounded lateral cephalic lobe (apically acute or subacute in *E. chelatus* and *E. urania*); no anterodistal lobe on article 1 of the antenna 1 peduncle (present in *E. chelatus* and *E. urania*); mandibular incisor vestigial (reduced in *E. chelatus* and *E. urania*); mandibular molar a large flap (absent in *E. chelatus* and *E. urania*); lacinia mobilis absent (vestigial in *E. chelatus* and *E. urania*); epimeron 3 with a rounded posteroventral corner (forming a spine spine in *E. chelatus* and *E. urania*); and the dorsal margin of urosomite 1 forming a rounded boss extending over urosomite 2 (an elongate truncated boss in *E. chelatus* and *E. urania*).

Distribution. *Northeast Atlantic Ocean*. Coasts of Scotland (Norman 1967; Robertson 1888; Scott, 1901); Isle of Man (Bate & Westwood 1868 (as *Opis leptochela*); H.B. Moore 1937); Norway (Sars 1891); Wales (Walker 1892); England (Walker 1895a, 1895b); southwest of the Faeroe Islands (Stephensen 1923); west coast of Ireland (Costello *et al.* 1989); Bay of Biscay (Dauvin & Sorbe 1995). *Arctic Ocean.* Barents Sea (Sars 1891; Tzvetkova & Golokov 2001). ?*Northwest Atlantic Ocean.* West of Greenland (determination uncertain) (Stephensen 1923).

Euonyx coecus Pirlot, 1933

Euonyx coecus Pirlot, 1933: 116, figs 35–37.—J.L. Barnard, 1958: 91 (list).—Barnard & Ingram, 1990: 2 (list), 3 (key).—Barnard & Karaman, 1991: 485.

Types. One female, about 7 mm (with small oostegites), ZMA**.**

Type locality. Southern Gulf of Boni, south-eastern Sulawesi, Indonesia (5°40'7"S 120°45'5"E), 1158 m depth, coarse grey mud, brown surface layer.

Habitat. Marine.

Depth range. 1158 m (Pirlot 1933).

Feeding strategies. Not recorded.

Distribution. *Indonesia.* Gulf of Boni, Sulawesi (Pirlot 1933).

? *Euonyx conicurus* K.H. Barnard, 1955

Euonyx conicurus K.H. Barnard, 1955: 80, fig. 38.—J.L. Barnard, 1958: 91 (list).—Day *et al.*, 1970: 50 (table).—Griffiths, 1974: 309.—Griffiths, 1975: 145.—Griffiths, 1976: 58 (key), fig. 32.—Barnard & Ingram, 1990: 2 (list), 3 (key).—Barnard & Karaman, 1991: 485.

Types. SAM. One specimen, 6.5 mm.

Type locality. Fish Hoek Bay (False Bay), South Africa, 15 m.

Habitat. Marine.

Depth range. 15–130 m (K.H. Barnard 1955; Griffiths 1974)

Remarks. Since the mouthparts of this species have not been illustrated or described its generic status cannot be confirmed. It could be a *Stephonyx.*

Distribution. *South Africa*. Port Elizabeth to False Bay (Griffiths 1975).

***Euonyx urania* sp. nov.**
(Figs 10–12)

Types. Holotype, female, 19.0 mm, AM P.68881, east of Broken Bay, New South Wales, Australia (33°35.0'S 152°05.0'E to 37°37.0'S 152°05.0'E), 1144 m, dredge 10 December 1980, FRV *Kapala* [K80-20-10].

Type locality. East of Broken Bay, New South Wales, Australia (33°35.0'S 152°05.0'E to 37°37.0'S 152°05.0'E), 1144 m depth.

Etymology. Named for the sailing vessel *Urania* lost off the central New South Wales coast in December 1876; used as a noun in apposition.

Description. Based on holotype, female, 19.0 mm. Head, lateral cephalic lobe subtriangular, apically acute and slightly upturned; eyes apparently absent. ***Antenna 1 peduncular article 1 with well-developed anterodistally rounded lobe***; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore, 6-articulate, terminal article not offset; primary flagellum with strong 2-field callynophore; robust setae present on proximal articles; calceoli absent. Antenna 2 peduncle articles 3 to 5 not enlarged, brush setae absent; flagellum long; calceoli absent. ***Labrum***, epistome and upper lip separate; epistome less produced than upper lip, slightly concave; ***upper lip produced, downward-pointing and acute apically***. Mandible incisor small, left and right slightly asymmetrical; molar absent; palp attached about midway, article 2 with central bulge. Maxilla 1 outer plate setal-tooth 7 present, not cuspidate; palp distal margin with apical robust setae. Maxilla 2 inner plate significantly shorter than outer plate. Maxilliped outer plate apical robust setae absent (with 3 subapical robust setae along inner margin).

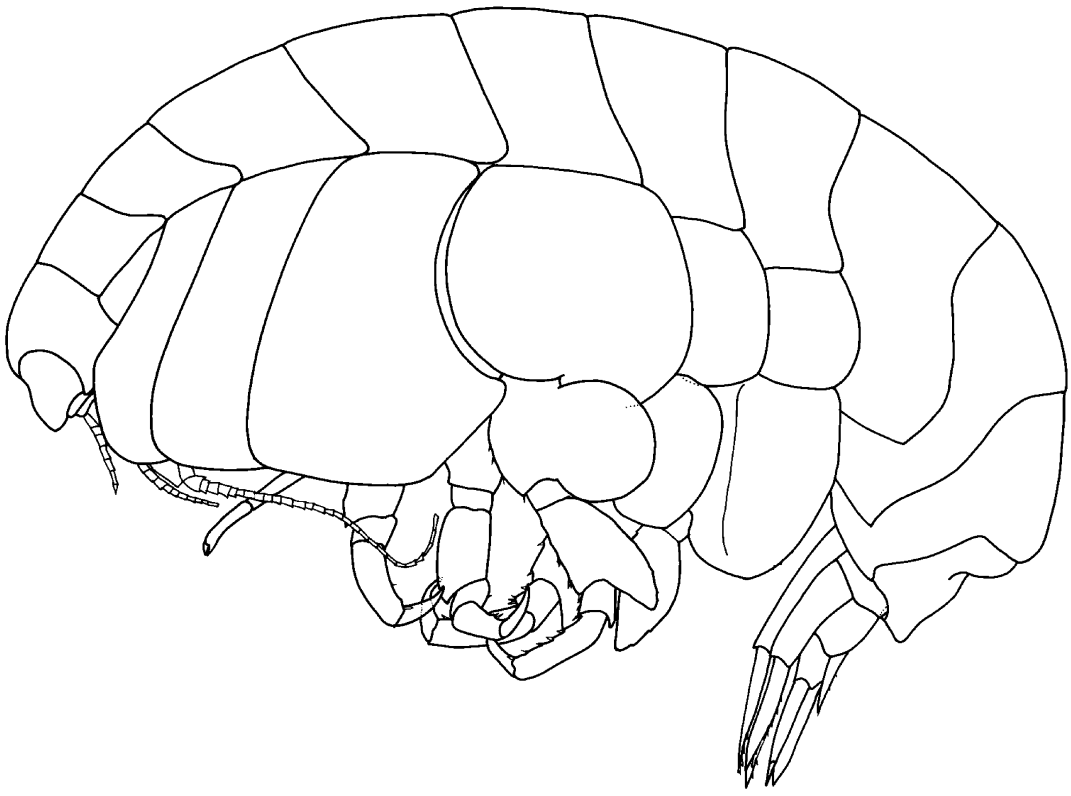

FIGURE 10. *Euonyx urania* **sp. nov.**, holotype, female, 19.0 mm, AM P.68881, from east of Broken Bay, New South Wales, Australia.

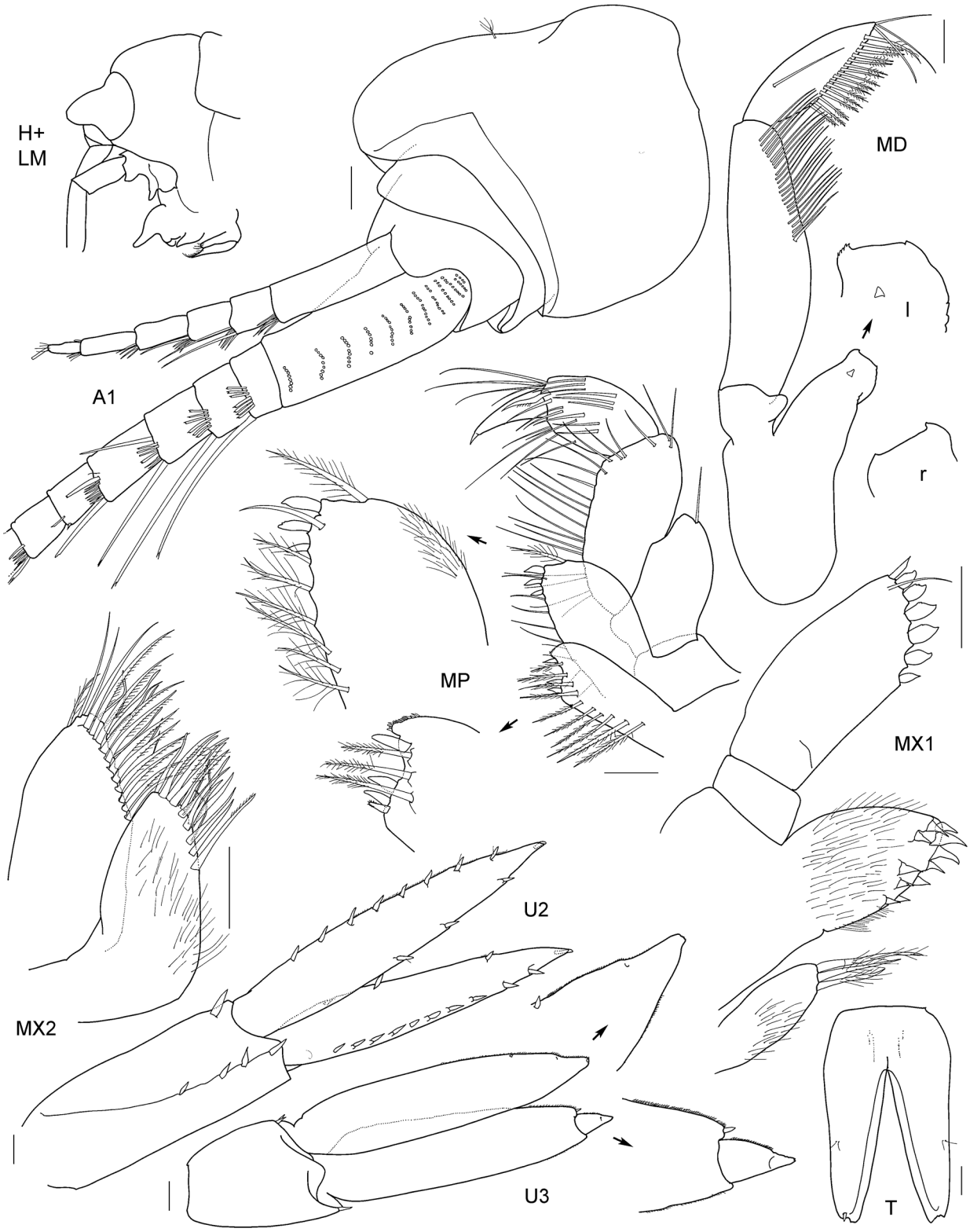

FIGURE 11. *Euonyx urania* **sp. nov.**, holotype, female, 19.0 mm, AM P.68881, from east of Broken Bay, New South Wales, Australia. Scale bars: 0.2 mm.

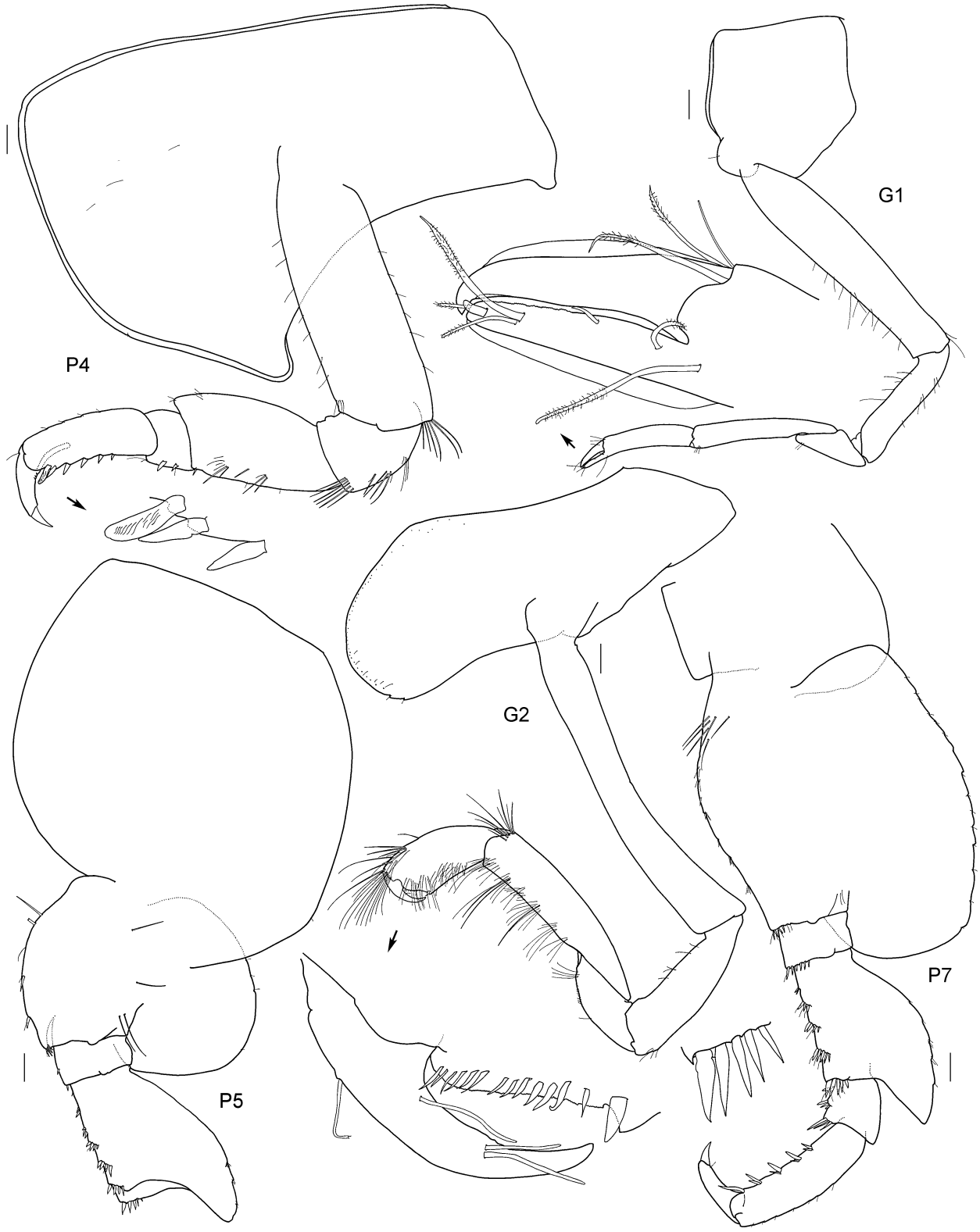

FIGURE 12. *Euonyx urania* **sp. nov.**, holotype, female, 19.0 mm, AM P.68881, from east of Broken Bay, New South Wales, Australia. Scale bars: 0.2 mm.

Gnathopod 1 chelate; coxa vestigial, significantly shorter than coxa 2, subquadrate; basis sparsely setose along anterior margin; ***ischium very long (length 4 × to 6 × breadth); carpus very long (length more than 4 × breadth), longer than propodus***, without posterior lobe; propodus margins subparallel, palm obtuse, entire, straight; dactylus simple. Gnathopod 2 propodus palm slightly acute. Pereopod 4 coxa with a well-developed posteroventral lobe.

Pereopod 5 coxa without distinct lateral ridge; basis broader than long, posterior margin weakly or not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. Epimeron 3 posterior margin smooth, posteroventral corner forming, weak spine. ***Urosomite 1*** not projecting over urosomite 2, with a weakly produced, ***broadly truncated boss***. Uropod 2 inner ramus without constriction. Peduncle without dorsolateral flange; outer ramus article 2 short, without plumose setae on rami. Telson deeply cleft.

Sexually dimorphic characters. Unknown.

Depth range. 1144 m.

Remarks. See remarks under *E. chelatus*.

Distribution. *Australia.* New South Wales.

***Euonyx xarifa* sp. nov.**
(Figs 13–15)

Types. Holotype, female, 10.7 mm, AM P.68882, east of Cape York, Queensland, Australia (11°35.62'S 145°28.42'E), 1770–1863 m, epibenthic sled, 22 August 1988, P.A. Hutchings *et al.*, RV *Franklin* [FR0688-14]. Paratype, male, 8.5mm, AM P.68883, same collection details as holotype.

Type locality. East of Cape York, Queensland, Australia (11°35.62'S 145°28.42'E), 1770–1863 m east of Cape York, Queensland, Australia (11°35.62'S 145°28.42'E), 1770–1863 m.

Etymology. Named for the pearling lugger 'Xarifa' one of the fleet wrecked off Cape York (probably Thursday Island) during the severe cyclone Mahine on 4 March 1899; used as a noun in apposition.

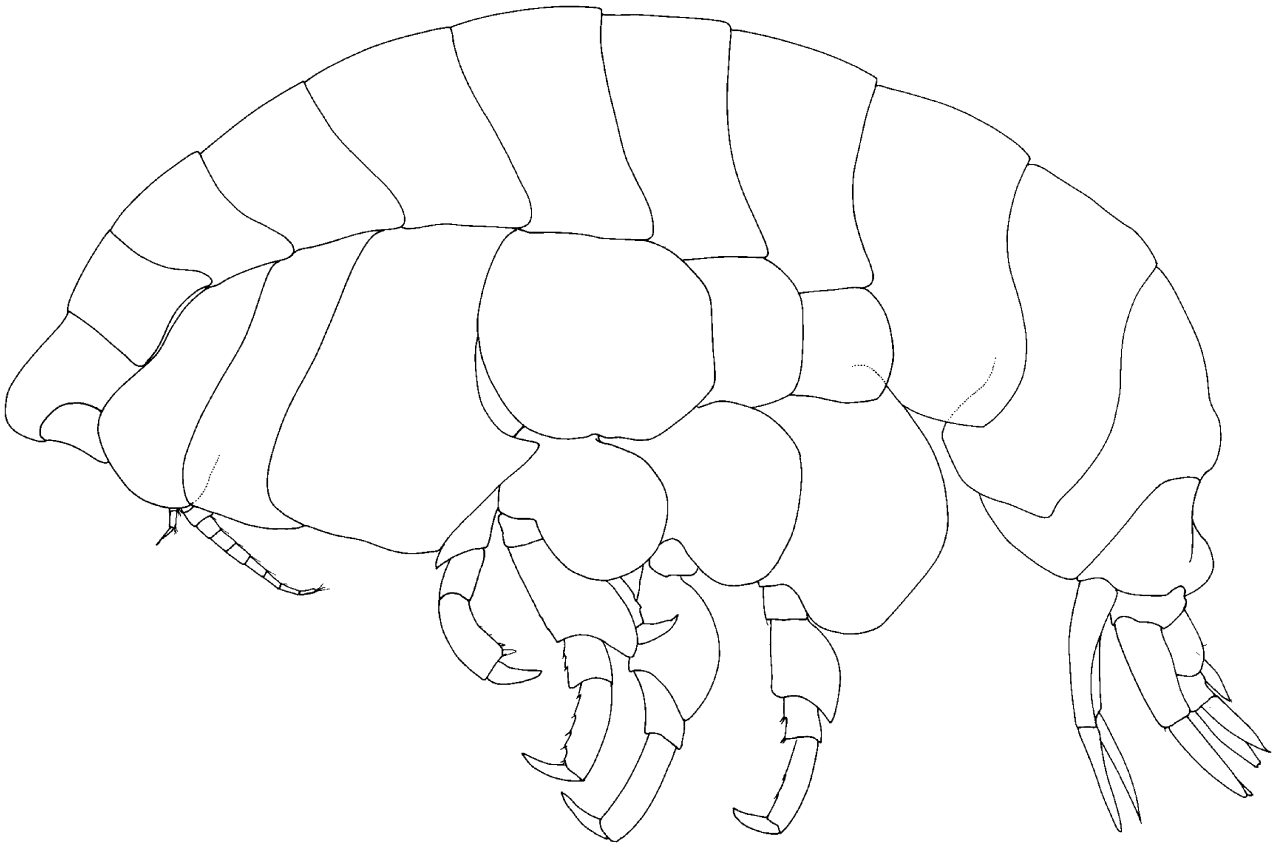

FIGURE 13. *Euonyx xarifa* **sp. nov.**, holotype, female, 10.7 mm, AM P.68882, from east of Cape York, Queensland, Australia.

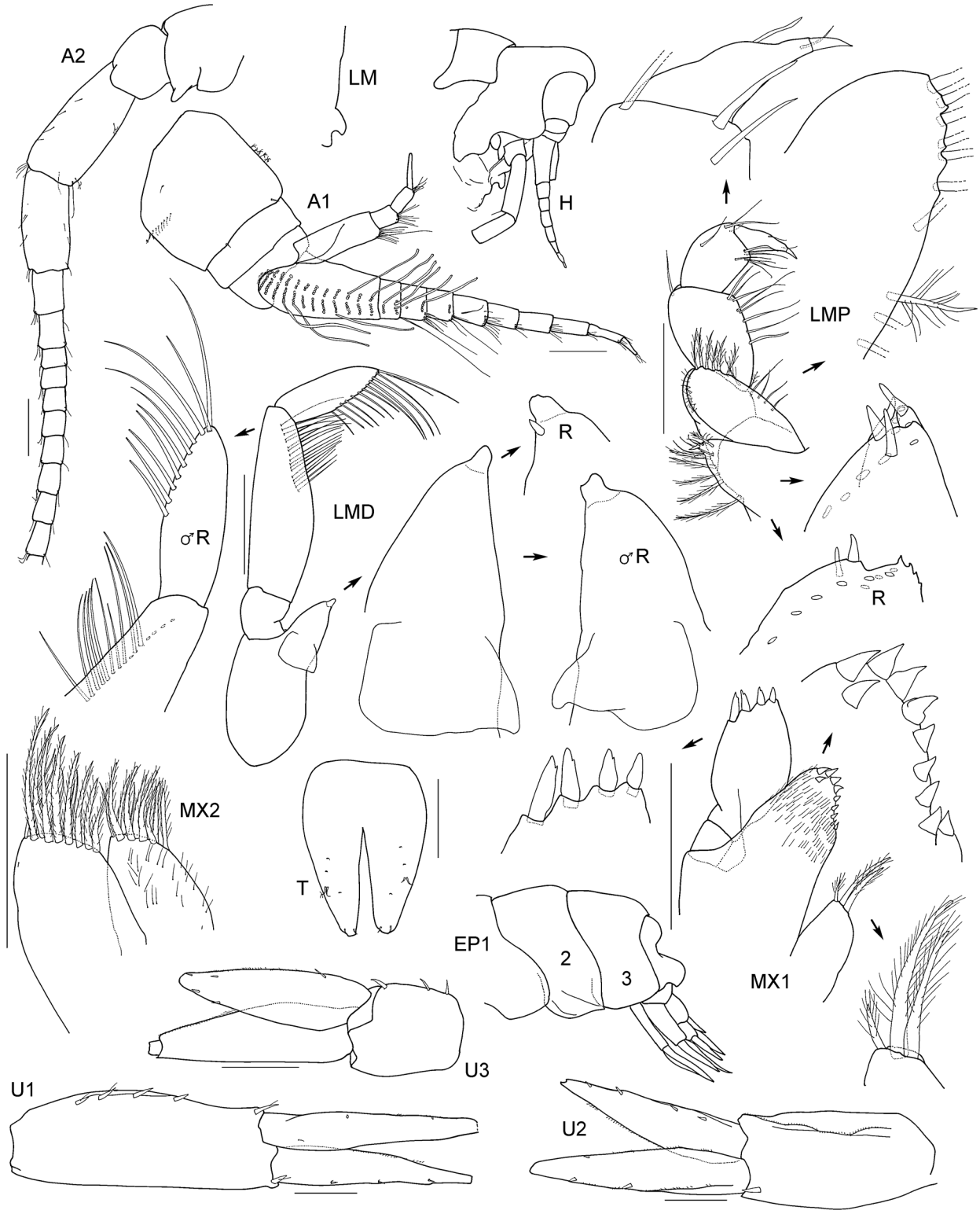

FIGURE 14 *Euonyx xarifa* **sp. nov.**, holotype, female, 10.7 mm, AM P.68882; paratype, male 8.5 mm, AM P.68883, from east of Cape York, Queensland, Australia. Scale bars: 0.2 mm.

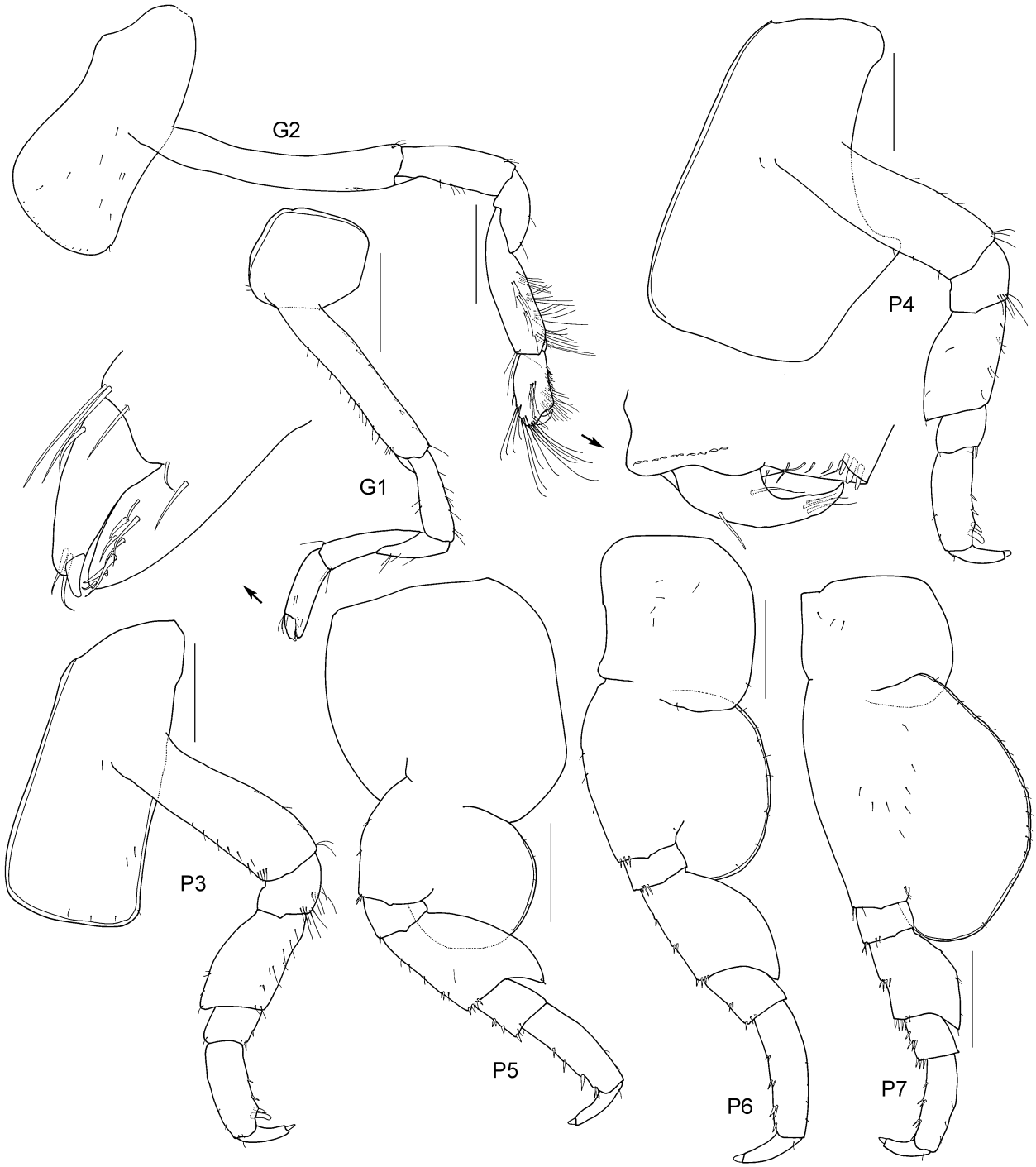

FIGURE 15. *Euonyx xarifa* **sp. nov.**, holotype, female, 10.7 mm, AM P.68882, from east of Cape York, Queensland, Australia. Scale bars: 0.5 mm.

Description. Based on holotype, female, 10.7 mm, AM P.68882. Head lateral cephalic lobes small, rounded; eyes apparently absent. ***Antenna 1 peduncular article 1 without anterodistal lobe***; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore, 4-articulate, terminal article large, offset; primary flagellum with strong 2-field callynophore; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged, brush setae absent; flagellum short; calceoli absent. Labrum, epistome and upper lip separate. Mandible incisor very reduced, left and right slightly asymmetrical; molar an asetose flap; palp attached distally, article 2 with central bulge. Maxilla 1 outer plate setal-tooth 7 present, not cuspidate; palp distal margin with apical robust setae. Maxilliped outer plate without apical robust setae.

Gnathopod 1 chelate; coxa vestigial, significantly shorter than coxa 2, subquadrate; basis sparsely setose along anterior margin; ***ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth), longer than***

propodus, without posterior lobe; propodus margins subparallel, palm obtuse, entire, slightly convex; dactylus simple. Gnathopod 2 propodus palm slightly acute. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis broader than long, posterior margin weakly or not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. Epimeron 3 posterior margin smooth, posteroventral corner subquadrate. ***Urosomite 1*** not projecting over urosomite 2, ***with rounded boss***. Uropod 2 inner ramus without constriction. Peduncle without dorsolateral flange; outer ramus article 2 short, without plumose setae on rami. Telson deeply cleft, or moderately cleft.

Depth range. 1770–1863 m.

Remarks. See remarks under *E. chelatus*.

Distribution. *Australia.* Queensland.

Galathella Barnard & Karaman 1987

(Fig. 16)

Galathella Barnard & Karaman 1987: 866.—Barnard & Karaman 1991: 488.—Lowry & Stoddart, 1995: 12.—Lowry & Stoddart 2003: 281 (catalogue).

Type species. *Schisturella galatheae* Dahl, 1959, original designation.

Included species. *Galathella* includes 5 species: *G. bassiana* Lowry & Stoddart, 1995; *G. galatheae* (Dahl, 1959); *G. latipes* (Ledoyer, 1986); *G. palana* Lowry & Stoddart, 1995; *G. solivagus* Kilgallen, 2009.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae. Mandible molar a reduced column with triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly shorter to significantly shorter than outer plate. ***Gnathopod 1*** weakly to strongly subchelate or simple; ***coxa 1 reduced or large, shorter than coxa 2, tapering***; ischium short (length less than 2 × breadth) or long (length more than 2 × breadth); carpus long to very long (greater than 2 × breadth); propodus margins tapering distally. Uropod 2 inner ramus not constricted. ***Telson moderately to deeply cleft***.

Remarks. *Galathella* is the only uristid with gnathopod 1 coxa slightly shorter than coxa 2 and tapering distally, similar to *Ventiella* in which coxa 1 is more reduced and tapering. These genera differ mainly in maxilla 2 (inner plate longer than outer plate in *Ventiella*) and in the cleftness of the telson (moderately to deeply in *Galathella* and notched in *Ventiella*).

Distribution. South-western Pacific Ocean: Kermadec Trench. Eastern Australia. Western Indian Ocean.

Gippsia Lowry & Stoddart 1995

(Fig. 17)

Gippsia Lowry & Stoddart 1995a: 21.—Lowry & Stoddart 2003: 282 (catalogue).

Type species. *Gippsia jonesae* Lowry & Stoddart, 1995, original designation.

Included species. *Gippsia* includes 1 species: *G. jonesae* Lowry & Stoddart, 1995.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae. Mandible molar setose with reduced triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. ***Maxilla 2 inner plate longer than outer plate***. Gnathopod 1 weakly subchelate; coxa 1 large, subrectangular with concave anterior margin; ischium short (length less than 2 × breadth); carpus short (length 1 to 2 × breadth); propodus margins tapering distally. Uropod 2 inner ramus not constricted. ***Telson entire.***

Remarks. Based on the simple to weakly subchelate gnathopod 1 (a very weak palm occurs in *Gippsia*) and the entire telson *Gippsia* is similar to *Nagada* and *Paralibrotus*. *Gippsia* differs from all uristid genera except *Ventiella*, in having the inner plate of maxilla 2 longer than the outer plate.

Distribution. *Australia.* Southeastern Australia.

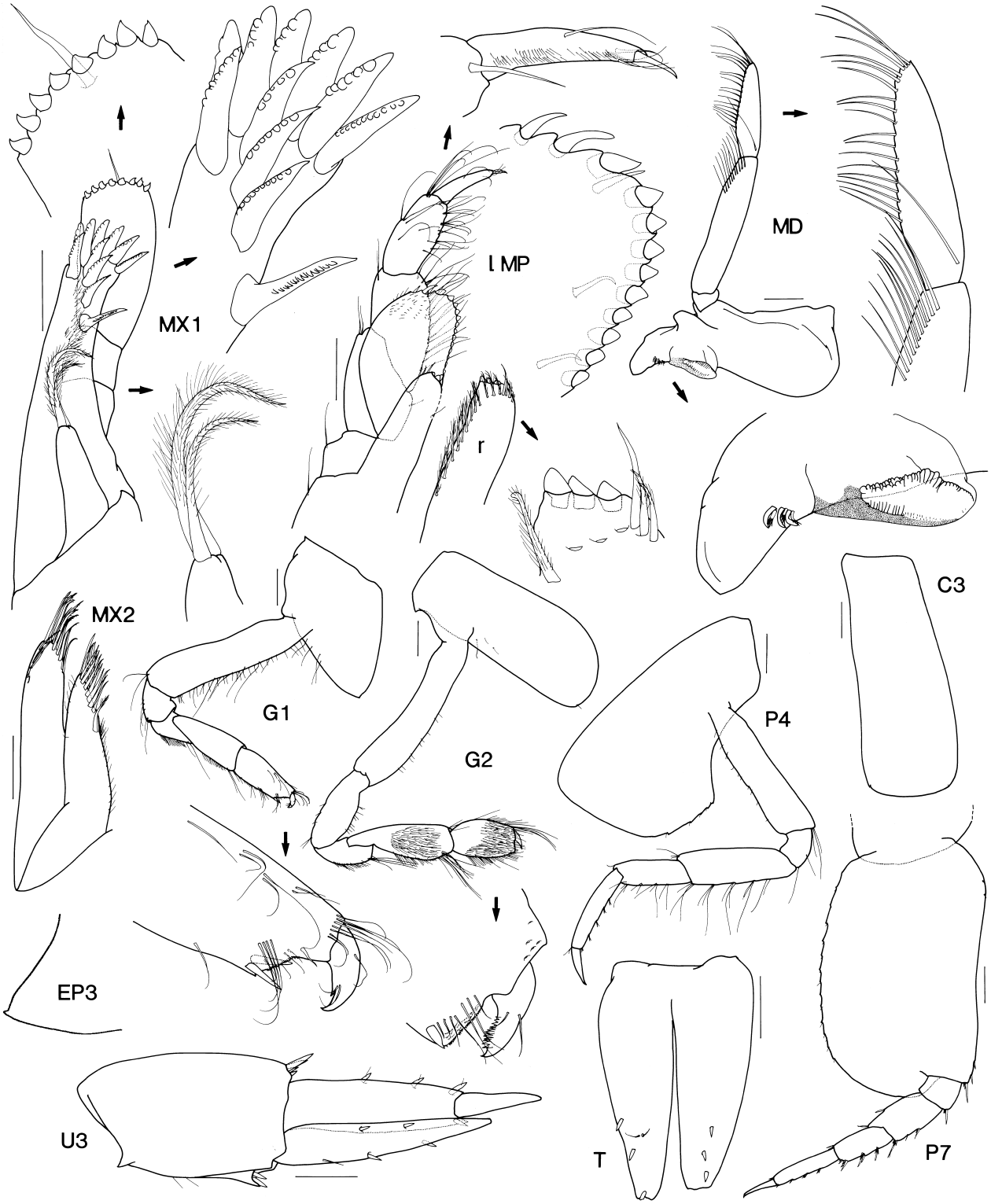

FIGURE 16. *Galathella galatheae* (Dahl, 1959), holotype, female, 10.0 mm, ZMUC CRU-2082, from the Kermadec Trench, western South Pacific Ocean. EP3 after Dahl (1959). Scale bars: gnathopods, pereopods, 0.2 mm; remainder, 0.1 mm.

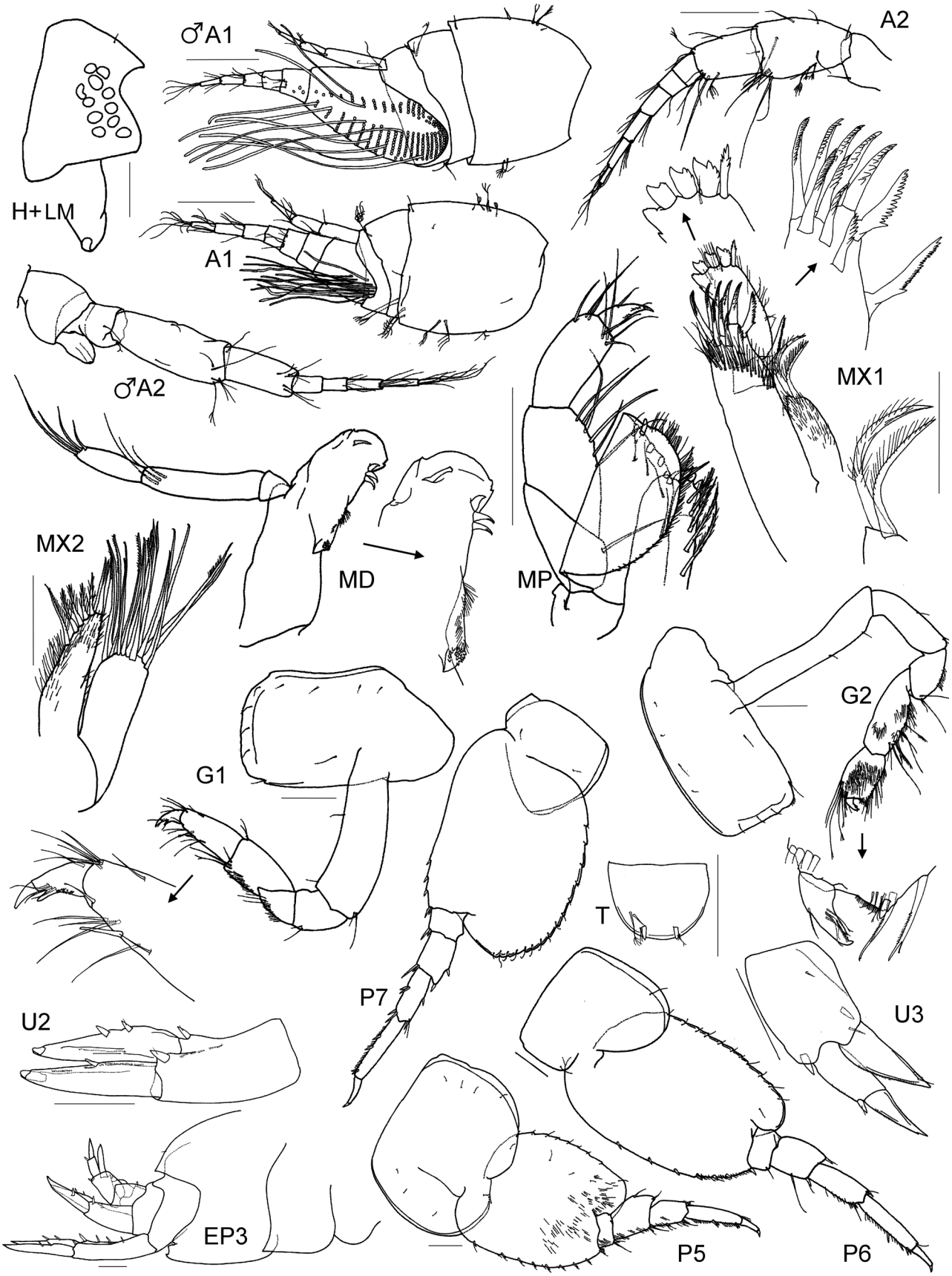

FIGURE 17. *Gippsia jonesae* Lowry & Stoddart, 1995, holotype, female, 3.0 mm, NMV J22344; male, 2.0 mm, NMV J22346; urosome from paratype female, 3.0 mm, AM P.42289, from off Gippsland, Victoria, Australia. Scale bars: H+LM, 0.2 mm; remainder, 0.1 mm.

Ichnopus Costa 1853
(Fig. 18)

Ichnopus Costa 1853: 169.—Costa, 1857: 188.—Boeck, 1871: 98.—Sars, 1890: 39.—Della Valle, 1893: 800 (in part).—Stebbing, 1906: 52.—Chevreux & Fage, 1925: 46.—Stephensen, 1929: 60.—Pirlot, 1936: 269.—Gurjanova, 1951: 219.—J.L. Barnard, 1969: 346.—Lincoln, 1979: 94.—Ledoyer, 1986: 760.—Diviacco & Ruffo, 1989. 486—Barnard & Karaman, 1991: 491.—Lowry & Stoddart, 1992: 191 (key).—Lowry & Stoddart, 2003: 282 (catalogue).
Glycera Haswell, 1879: 256 (homonym Polychaeta) (type species, Glycera tenuicornis Haswell, 1879, monotypy.
Glycerina Haswell, 1882: 256 (new name for Glycera Haswell, 1879).—Stebbing, 1906: 60.—Pirlot, 1936: 270.—J.L. Barnard, 1969: 345.—Barnard & Karaman, 1991: 488.

Type species. *Ichnopus taurus* Costa, 1853, monotypy.

Included species. *Ichnopus* includes 18 species: *I. annasona* Lowry & Stoddart, 1992; *I. capricornis* Lowry & Stoddart, 1992; *I. caritus* Lowry & Stoddart, 1992; *I. comorensis* Lowry & Stoddart, 1992; *I. cribensis* Lowry & Stoddart, 1992; *I. macrobetomma* Stebbing, 1917; *I. malpatun Lowry &* Stoddart, 1992; *I. parriwi* Lowry & Stoddart, 1992; *I. pelagicus* Schellenberg, 1926a; *I. pseudoserricrus* Ledoyer, 1986; *I. serricrus* Walker, 1909; *I. spinicornis* Boeck, 1861; *I. taurus* Costa, 1853; *I. tenuicornis* (Haswell, 1879a); *I. teretis* (Andres, 1981); *I. walkeri* G. Vinogradov, 2004; *I. wardi* Lowry & Stoddart, 1992; *I. woodmasoni* (Giles, 1890).

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum not forming cap covering callynophore. Antenna 2 with brush setae. Mandible molar setose with variously reduced triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1 simple***; coxa 1 large, subrectangular with concave anterior margin; ***ischium long (length 2 × to 4 × breadth)****;* carpus long (length 2 to 4 × breadth) to very long; propodus margins subparallel; ***dactylus with complex spination on posterior margin***. Uropod 2 inner ramus constricted. ***Telson moderately to deeply cleft***.

Remarks. Based on the simple first gnathopods, with a long ischium and long to very long carpus and a dactylus with complex spination, *Ichnopus* is most similar to *Eclecticus* and *Nagada*. *Ichnopus* differs from both genera in having a deep to moderately cleft telson.

Distribution. Temperate/tropical cosmopolitan.

Koroga Holmes, 1908

Koroga Holmes, 1908: 502.—J.L. Barnard, 1969: 346.—Barnard & Karaman, 1991: 494.—Lowry & Stoddart, 2003: 282 (catalogue).

Type species. *Koroga megalops* Holmes, 1908, original designation.

Included species. *Koroga* includes one species: *K. megalops* Holmes, 1908.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 with brush setae. Mandible molar a setose tongue with strongly spinose triturating area. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1 subchelate****; coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin*; ischium short (length less than 2 × breadth); ***carpus compressed***; propodus margins subparallel. Uropod 2 inner ramus not constricted. ***Telson notched***.

Remarks. *Koroga* is most similar to *Abyssorchomene*. Both taxa have a subchelate first gnathopod with a large coxa with a concave anterior margin and with a compressed carpus. *Koroga* has a large head, most of which is covered by the eye, a very large propodus on gnathopod 1, the inner plate of maxilla 1 is only slightly shorter than the outer plate and the telson is notched.

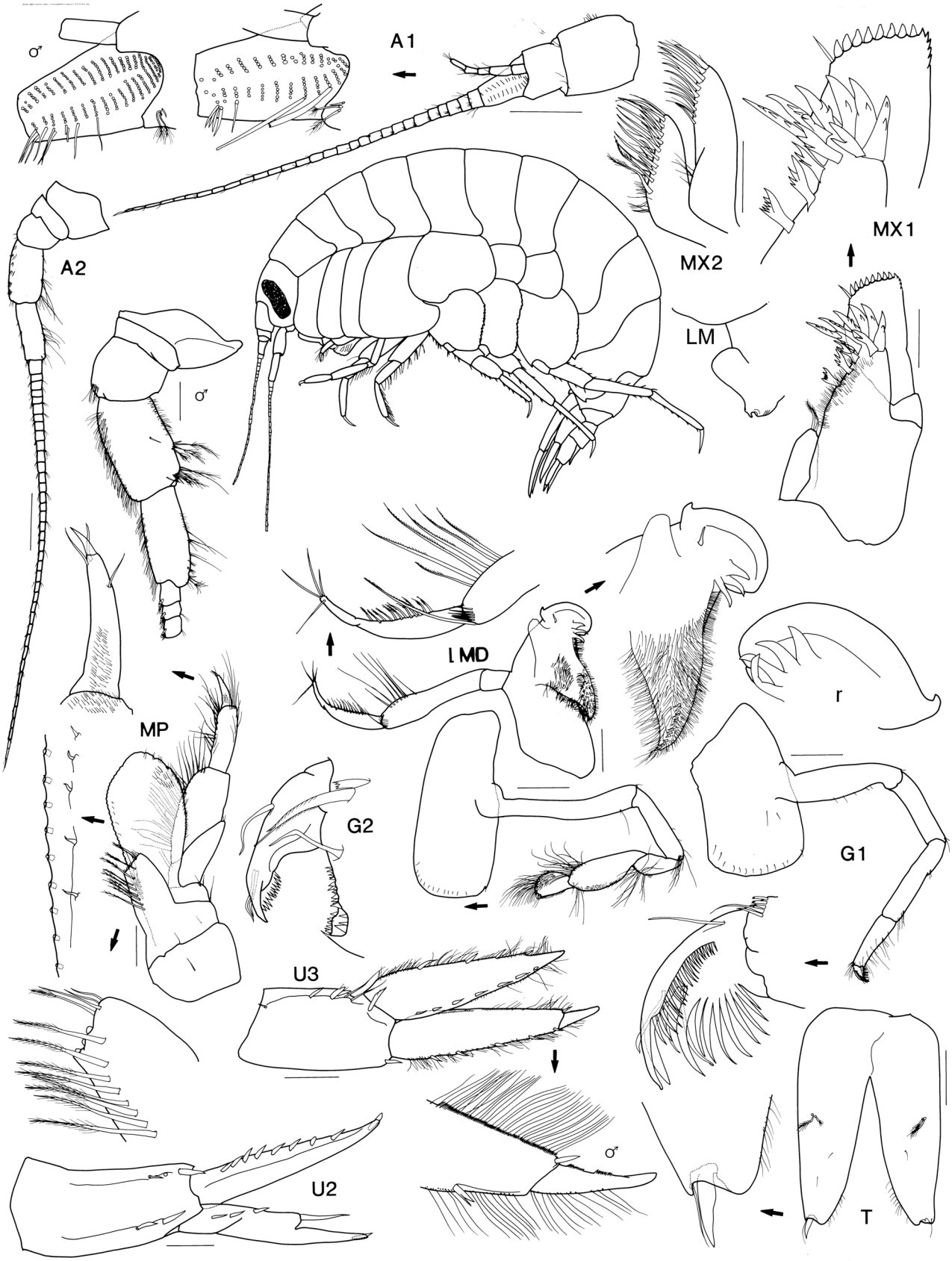

FIGURE 18. *Ichnopus taurus* Costa, 1853, female, 15 mm, AM P35698; male, 12 mm, AM P35699; from the Gulf of Naples, Mediterranean Sea. Scales bars: A1, female A2, gnathopods, 0.5 mm; remainder, 0.2 mm.

***Koroga megalops* Holmes, 1908**
(Figs 19–22)

Koroga megalops Holmes, 1908: 503, fig. 13.—Stephensen, 1923: 60, fig. 5.—Stephensen, 1925: 60, fig. 5.—Stephensen, 1933: 11.—K.H. Barnard, 1937: 145, fig. 3.—Thorsteinson, 1941: 56, pl. 2, figs 18–20.—Shoemaker, 1945: 186.—Gurjanova, 1951: 192, fig. 62.—Birstein & Vinogradov, 1955: 222.—Birstein & Vinogradov, 1958: 224.—Birstein & Vinogradov, 1960: 166, 187.—Gurjanova, 1962: 93, fig. 20.—Nagata, 1963: 1.—J.L. Barnard, 1964: 317, fig. 2.—Birstein & Vinogradov, 1964: 152 (list), 171.—Birstein & Vinogradov, 1970: 402, table 1, 417, table 3.—Percy & Ambler, 1974: 749, table 2.—Thurston, 1990: 270.—Barnard & Karaman, 1991: 494.—Lowry & Stoddart, 2003: 283.

Types. Holotype, female (ovigerous), 10 mm, USNM 38539.

Type-locality. Vicinity of Funter Bay, Lynn Canal, Alaska, 640 m depth.

Australian material examined. *New South Wales.* 1 female, AM P.69465, east of Sydney (33°44.5'S 152°24.4'E to 34°08.9'S 152°09.68'E), 0–1800 m over bottom depth 2994–3828 m, Isaacs-Kidd midwater trawl, 27–28 April 1989, J.R. Paxton, HMAS *Cook* [JP 89-5]; 1 male, AM P.69464, east of Broken Bay (33°30.0'S 152°09.0'E to 33°33.0'S 152°11.0'E), 922–1015, beam trawl, 12 February 1986, R.T. Springthorpe, FRV *Kapala* [K86-01-08]; 1 female, AM P.69461; 1 female, AM P.69462; 1 male, AM P.69463, east of Shoalhaven Heads (34°54.0'S 151°14.0'E to 34°50.0'S 151°15.0'E), 988–1015, beam trawl, 26 October 1983, FRV *Kapala* [K83-14-04]; 5 specimens, NMV J67749, 52 km east-south-east of Nowra (34°56.10'S 151°14.69'E), 3 m Isaacs-Kidd midwater trawl, G.C.B. Poore *et al.,* 21 October 1988, RV *Franklin* [SLOPE 51]; 4 specimens, NMV J15791, 63 km east-south-east of Nowra (34°57.06'S 151°20.39'E), 3 m Isaacs-Kidd midwater, G.C.B. Poore *et al.,* 21 October 1988, RV *Franklin* [SLOPE 52]; 9 specimens, AM P.43370, north-east of Coffs Harbour, New South Wales, Australia (30°10.93'S 153°32.26'E), 1000 m, *Globigerina* ooze, baited trap, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1000]; 1 specimen, AM P.43433, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-955]; 1 specimen, AM P.43449, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-971]; 2 specimens, AM P.44379, off Wollongong, (34°33.42'S 151°21.35'E), 1000 m, *Globigerina* ooze, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-789]; 25 specimens, AM P.48100; 2 specimens, AM P.48126, north-east of Coffs Harbour, (30°10.93'S 153°32.26'E), 963 m, baited trap, 11–12 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-862 & NSW-863]; 19 specimens, AM P.49811; 1 specimen, AM P.56084, north-east of Coffs Harbour (30°10.88'S 153°32.22'E), 1000 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-876 & NSW-877]; 20 specimens, AM P.50078, north-east of Coffs Harbour (30°10.93'S 153°32.26'E), 1000 m, baited trap, 9–10 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1022]; 14 specimens, AM P.51129.

Queensland. 2 specimens, AM P.47886, due east of Mooloolaba (26°36.23'S 153°50.23'E), 1006 m, baited trap, 2–3 August 1994, J.K. Lowry & K. Dempsey, MV *Capricorn I* [QLD-1140].

Tasmania. 22 specimens, AM P.96584, Hill D1, south-southeast of South East Cape (44°23.4'S 147°16.2'E), 1942 m, baited trap, 31 January 1997, CSIRO party on FRV *Southern Surveyor*, FRV *Southern Surveyor* [SS01/97/65]; 3 specimens, NMV J67750, 52 km east-north-east of Cape Tourville (42°02.39'S 148°58.26'E), 3 m Isaacs-Kidd midwater trawl over bottom depth 1695–2029 m, 28 October 1988, G.C.B. Poore *et al*., RV *Franklin* [SLOPE 76]; 2 specimens, NMV J67751, 61 km east-north-east of Cape Tourville (41°58.49'S 149°04.41'E), 3 m Isaacs-Kidd midwater trawl over bottom depth 1685–2524 m, 28 October 1988, G.C.B. Poore *et al*., RV *Franklin* [SLOPE 75]; 2 specimens, AM P.57983, east of Fortescue Bay (43°08.96'S 148°15.36'E), 1000 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-423]; many specimens, AM P.73692, 76.8km south-southeast of South East Cape, Main Pedra Hill (44°15.6'S 147°07.8'E), 1312 m, baited trap, 21–24 January 1997, CSIRO party, FRV *Southern Surveyor* [SS01/97/08]; 50 specimens, AM P.73693, 82.8 km south-southeast of South East Cape, Hill U (44°19.2'S 147°07.2'E), 1083–1448 m, baited trap, 27–28 January 1997, CSIRO party, FRV *Southern Surveyor* [SS01/97/41]; 10 specimens, AM P.73694, Hill V, south-southeast of South East Cape (44°23.6'S 147°10.7'E), 1400 m, baited trap, 30 January 1997, CSIRO party, FRV *Southern Surveyor*, [SS01/97/61]; many specimens, AM P.73695, Hill D1, south-southeast of South East Cape (44°23.4'S 147°16.2'E), 1942 m, baited trap, 31 January 1997, CSIRO party, FRV *Southern Surveyor* [SS01/97/65]; 13 specimens, AM P.76864; 4 specimens, AM P.76865; 21 specimens, AM P.76866; 1 specimen, AM P.76867; 5 specimens, AM P.76868; 6 specimens, AM P.76869; 37 specimens, AM P.76870, north of Hill U Seamount, Huon Study Area (44°17.53'S 147°11.6'E), 1350 m, baited trap, 7 April 2007, S.J. Keable, FRV *Southern Surveyor* [SS02/2007/57].

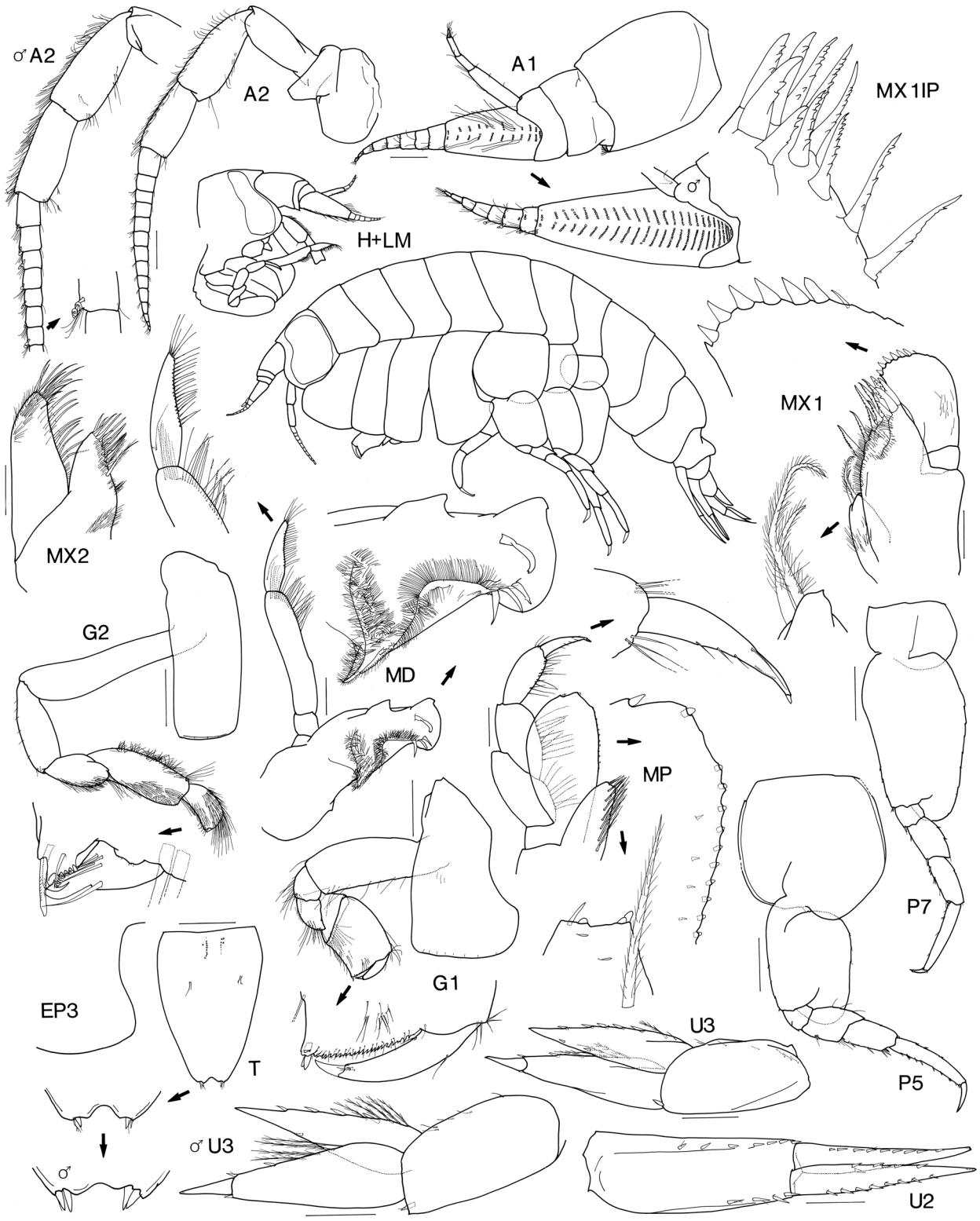

FIGURE 19. *Koroga megalops* Holmes, 1908, holotype female, 10.5 mm, USNM 38539, from Lynn Canal, Alaska; male, 7.4 mm, USNM, from British Columbia, Canada. Scale bars: gnathopods, pereopods, 0.5 mm; remainder, 0.2 mm.

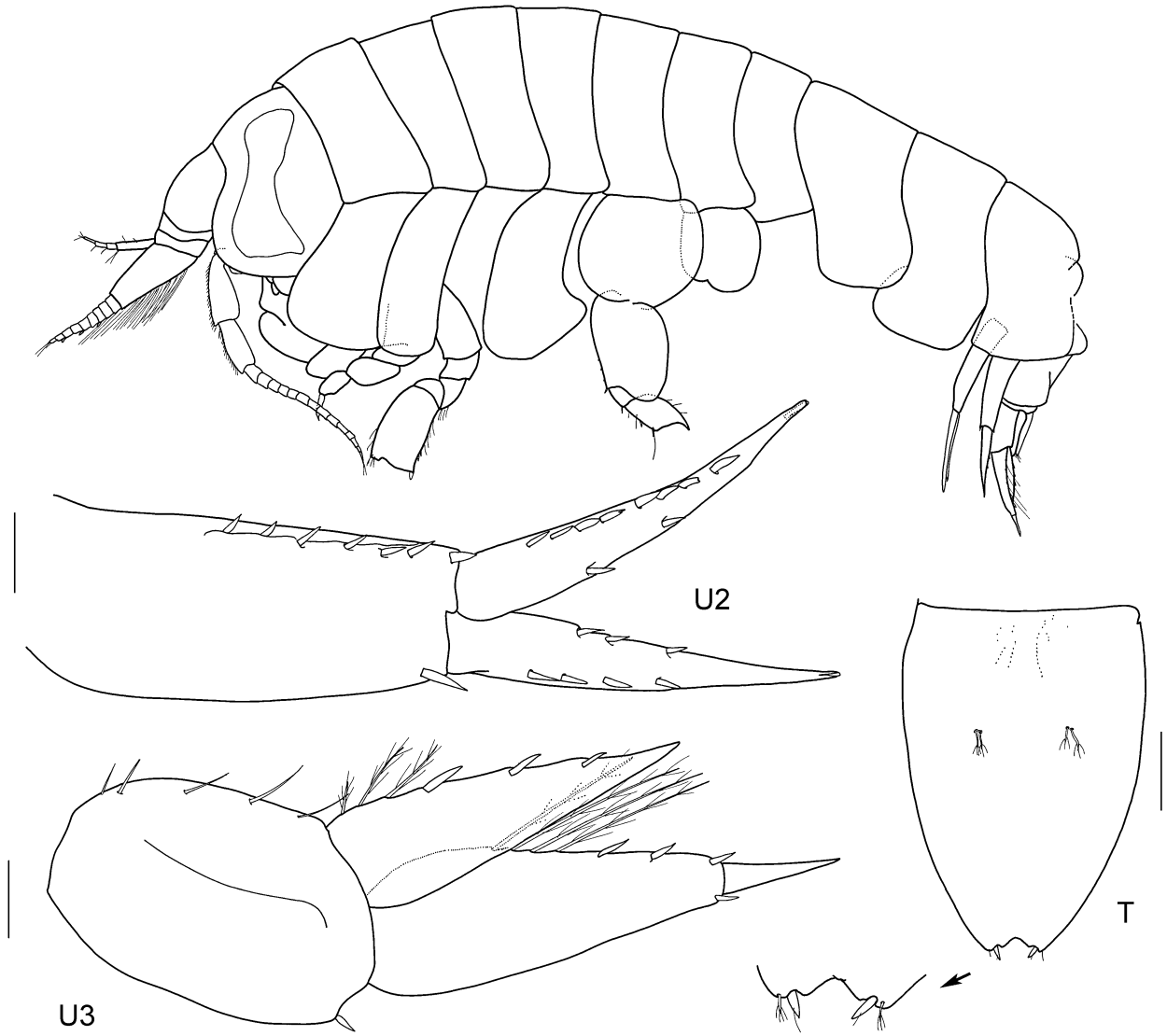

FIGURE 20. *Koroga megalops* Holmes, 1908, male, 8.7 mm, AM P.69463, from east of Shoalhaven Heads, New South Wales, Australia. Scale bars: 0.1 mm.

Victoria. 3 specimens, NMV J67752, 78 km south of Point Hicks (38°30.13'S 149°15.52'E), 3 m Isaacs-Kidd midwater trawl over bottom depth 1960–1990 m, 25 October 1988, G.C.B. Poore *et al*., RV *Franklin* [SLOPE 65].

Extralimital material examined. *United States*. 7 specimens, AM P.35549, Alexander Archipelago, Revillagigedo Island, Bushy Point, Alaska (55°44.38'N 131°45.22'W), 0–503 m, plankton net, 30 June 1905, United States Fish Commission, USS *Albatross* [4747].

Description. Based on female, approx. 10.0 mm, AM P.69462. Head, lateral cephalic lobes broadly rounded; eyes reniform. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum 4-articulate, terminal article not offset; primary flagellum with weak 2-field callynophore; calceoli absent. Antenna 2 peduncular article 3 elongate, articles 3 to 5 not enlarged, brush setae present; flagellum short; calceoli absent. Labrum, epistome and upper lip separate; epistome produced equally with upper lip; upper lip not produced. Mandible incisors large, left and right symmetrical; molar setose, with a weakly spinose triturating area; palp attached slightly proximally, article 2 margins subparallel, article 3 blade-like. Maxilla 1 outer plate setal-tooth 7 present, cuspidate along most of inner; palp distal margin with apical robust setae, serrate at apicomedial corner. Maxilliped outer plate with 2 short, slender apical robust setae.

Gnathopod 1 strongly subchelate; coxa large, about as long as coxa 2, subrectangular with concave anterior margin; basis sparsely setose along anterior margin; ischium short (length less than 2 × breadth); carpus compressed, shorter than propodus; propodus large, margins subparallel, palm transverse, entire, slightly concave;

dactylus simple. Gnathopod 2 propodus palm moderately obtuse. Pereopod 4 coxa with a moderately developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis longer than broad, posterior margin not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

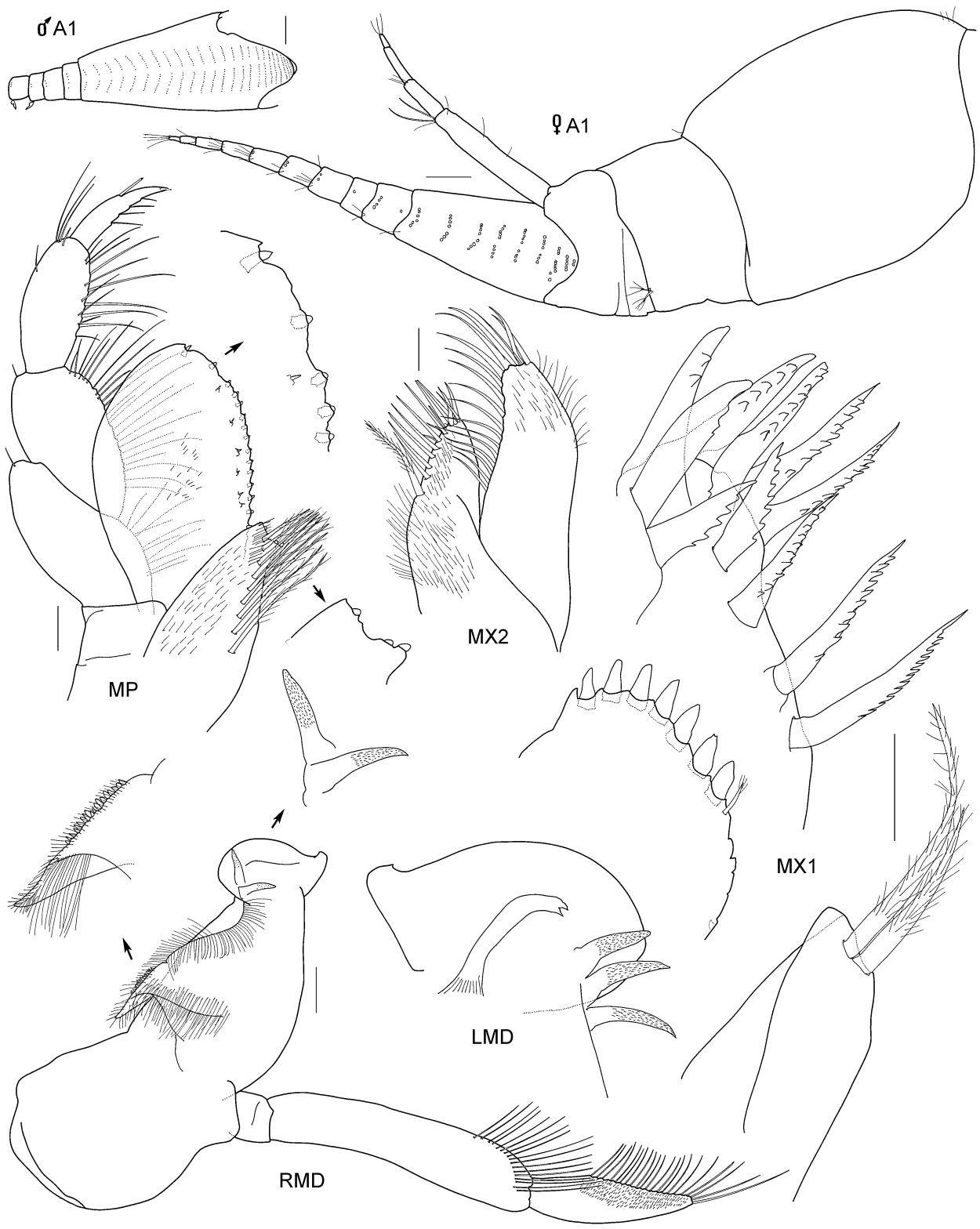

FIGURE 21. *Koroga megalops* Holmes, 1908, female, approx. 10.0 mm mm, AM P.69462; male A1 from male, 8.7 mm, AM P.69463, from east of Shoalhaven Heads, New South Wales, Australia. Scale bars: 0.1 mm.

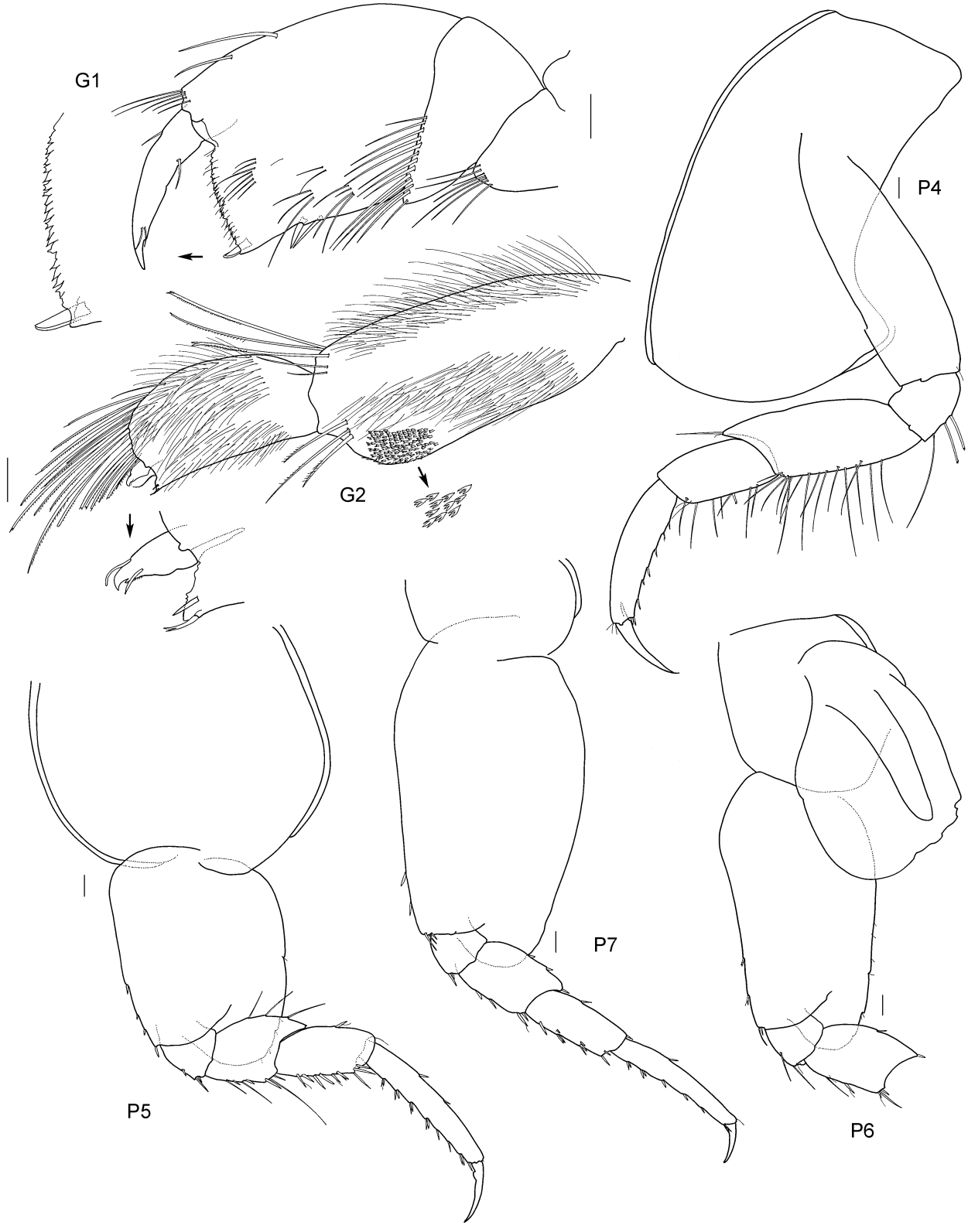

FIGURE 22. *Koroga megalops* Holmes, 1908, female, approx. 10.0 mm mm, AM P.69462; P7 from female, AM P.69461, from east of Shoalhaven Heads, New South Wales, Australia. Scale bars: 0.1 mm.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. Epimeron 3 posterior margin smooth, posteroventral corner narrowly rounded. Urosomite 1 not projecting over urosomite 2, with rounded boss. Uropod 2 inner ramus without constriction. Uropod 3 peduncle without

dorsolateral flange; outer ramus article 2 short, with plumose setae on both rami. Telson notched, without dorsal robust setae, with 1 apical robust setae on each lobe.

Sexually dimorphic characters. Based on male, 8.7 mm, AM P.69463. Antenna 1 primary flagellum with strong 2-field callynophore; calceoli present. Antenna 2 flagellum short; calceoli present.

Depth range. Depths given in the literature range from 0–9120 m (Birstein & Vinogradov 1960), however, as these records represent specimens taken in trawls with no closing mechanism they are highly overestimated. Most records seem to come from bathyal and upper abyssal depths, i.e. approximately 200–3000 m.

Feeding strategy. A scavenger frequently taken in traps off the east coast of Australia. According to Thurston (1990) *K. megalops* attacks and feeds voraciously on dead and moribund fish in net catches.

Remarks. This is the first record of *K. megalops* in Australian waters though it has been taken from the Kermadec Trench and off the east coast of New Zealand (Birstein & Vinogradov 1960).

Distribution. *North-east Pacific Ocean.* Alaska (Holmes 1908; Thorsteinson 1941); Queen Charlotte Islands (J.L. Barnard 1964); Kurile-Kamchatka Region (Birstein & Vinogradov 1955, 1958, 1970); east of the Ryukyu Islands, Japan (Birstein & Vinogradov 1960). *North-west Pacific Ocean.* Japan Trench (Nagata 1963). *North Atlantic Ocean.* South of Iceland (Stephensen 1935); Bermuda (Shoemaker 1945). *Indian Ocean.* Near the Seychelles (K.H. Barnard 1937). *Sea of Okhotsk*. Off the Patience Peninsula, Sakhalin, Russia (Gurjanova 1962); Kuril Strait (Gurjanova 1962). *Bering Sea*. Komandorski Islands (J.L. Barnard 1964). *South Pacific Ocean.* Kermadec Trench (Birstein & Vinogradov 1960); off the east coast of New Zealand (Birstein & Vinogradov 1960); east coast of Australia (this study).

Kyska Shoemaker, 1964

(Fig. 23)

Kyska Shoemaker, 1964: 391.—J.L. Barnard, 1969: 346.—Barnard & Karaman, 1991: 424 (key), 494.

Type species. *Kyska dalli* Shoemaker, 1964, original designation

Included species. *Kyska* includes one species: *K. dalli* Shoemaker, 1964.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum forming cap covering callynophore. Antenna 2 with brush setae. Mandible molar a setose tongue. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate significantly shorter than outer plate. ***Gnathopod 1 chelate; coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin***; ischium short (length less than 2 × breadth); carpus compressed; propodus margins tapering distally. Uropod 2 inner ramus not constricted. Telson notched.

Remarks. Only three uristid genera (*Euonyx*, *Kyska* and *Stephonyx*) have chelate first gnathopods. Unlike *Kyska*, *Euonyx* and *Stephonyx* both have reduced vestigial coxae on gnathopod 1.

Based on the well developed coxa of gnathopod 1 with a concave anterior margin and a compressed carpus *Kyska* is similar to *Abyssorchomene* and *Koroga*. *Kyska* differs from both genera in the chelate first gnathopod, from *Koroga* in less well developed eyes and a deeply cleft telson (notched in *Koroga*) and from *Abyssorchomene* in the straight mandibular incisors (curved in *Abyssorchomene*) in the small setose molar and in the tapering margins of the gnathopod 1 propodus.

Distribution. *Arctic*. Alaskan endemic.

Menigrates Boeck, 1871

(Fig. 24)

Menigrates Boeck, 1871: 113.—Sars, 1891: 110.—Stebbing, 1894: 15.—Stebbing, 1906: 48.—J.L. Barnard, 1969: 349.—Lincoln, 1979: 92.—Barnard & Karaman, 1991: 438 (key), 500.

Type species. *Anonyx obtusifrons* Boeck, 1861, monotypy.

Included species. *Menigrates* includes five taxa: *M. angustipes* Gurjanova, 1962; *M. maslovi* Bryazgin, 1974; *M. obtusifrons* (Boeck, 1861); *M. spinirami spinirami* Gurjanova, 1936; *M. spinirami japonica* Gurjanova, 1962.

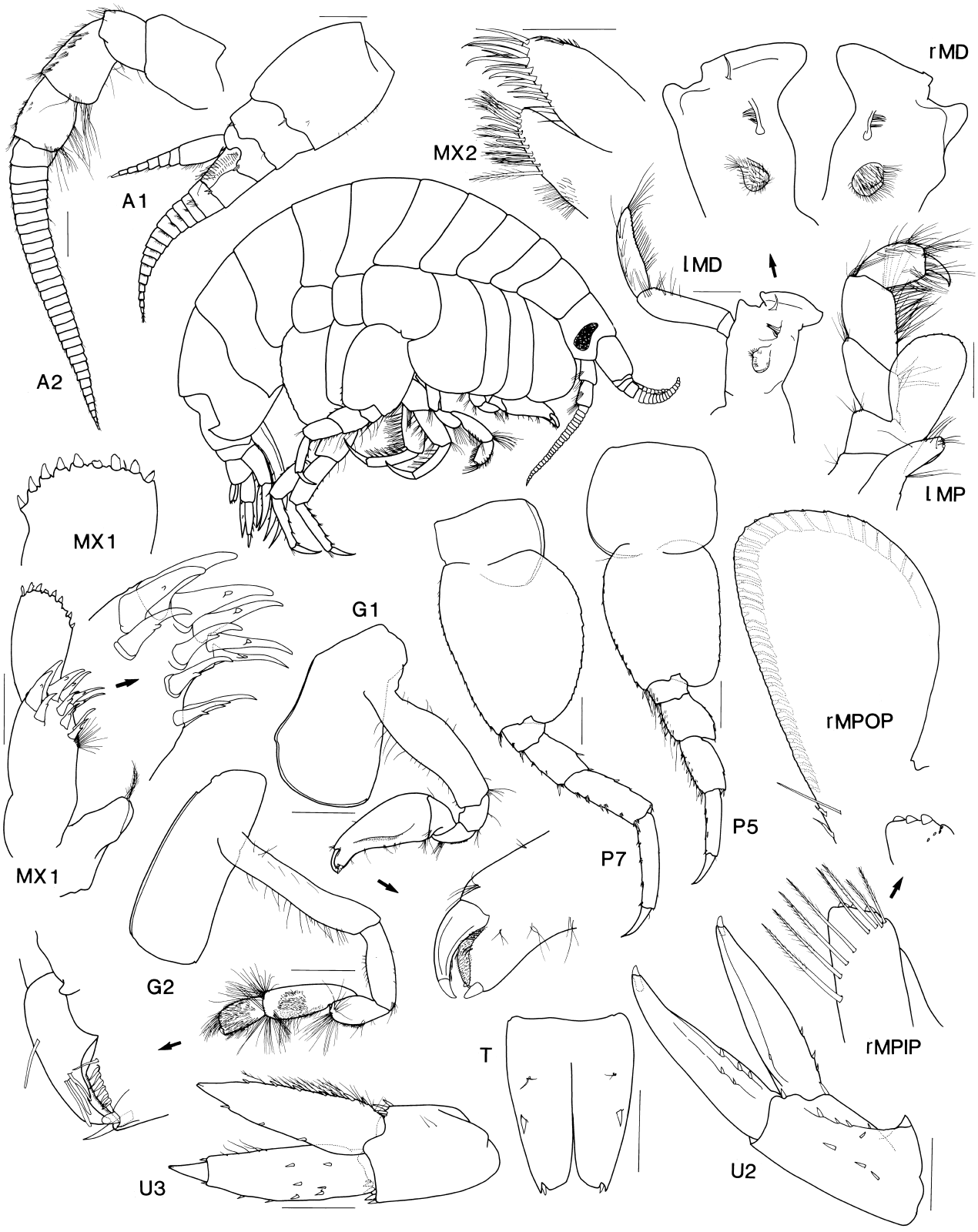

FIGURE 23. *Kyska dalli* Shoemaker, 1964, paratype, male, 24.5 mm, AM P.35548, from the western Aleutian Islands, Alaska. *Habitus* after Shoemaker (1964). Scale bars: gnathopods, pereopods, 1.0 mm; remainder, 0.5 mm.

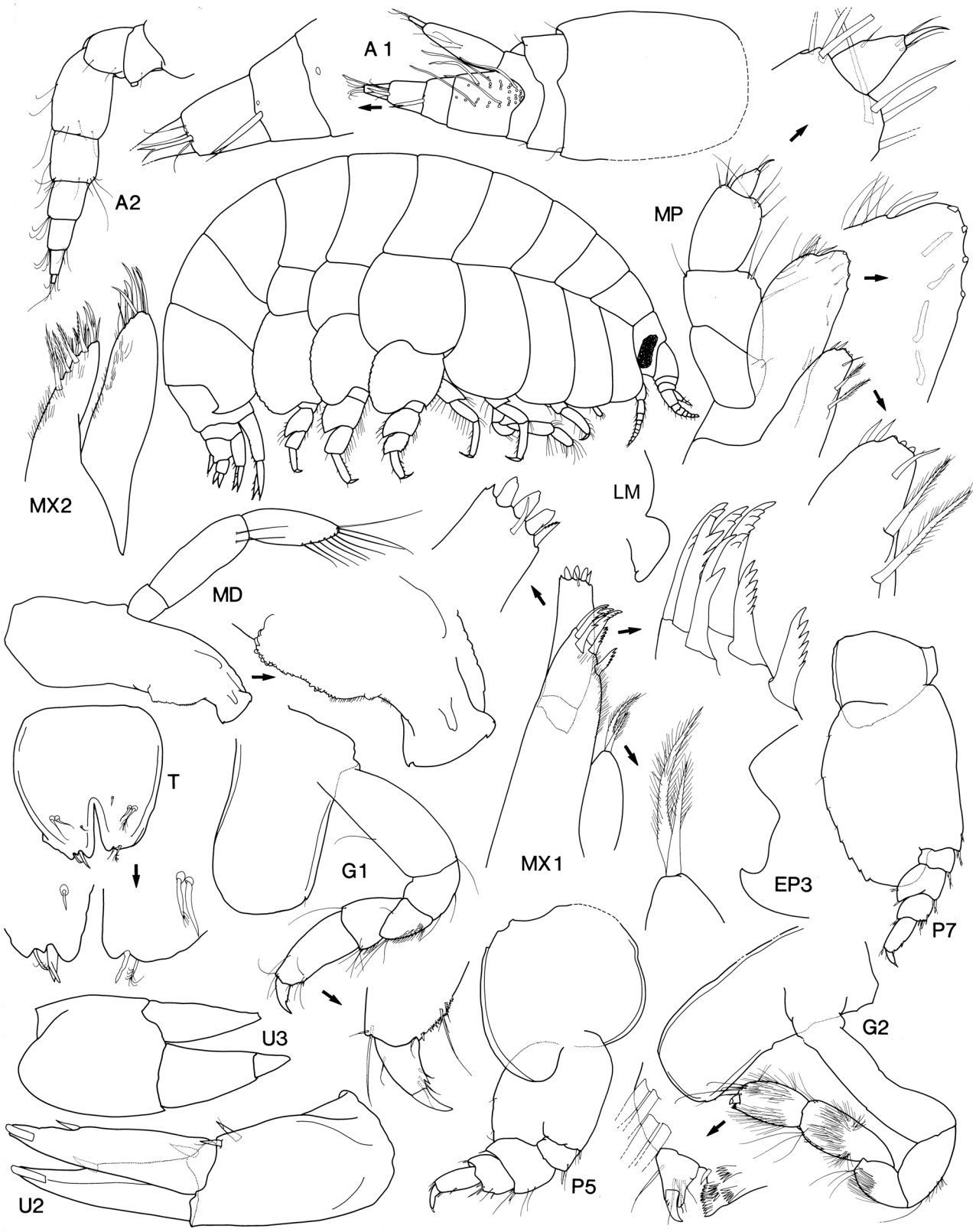

FIGURE 24. *Menigrates obtusifrons* (Boeck, 1861), syntypes, sex unknown, 4.0 mm (mouthparts, gnathopods) and 5.0 mm (remainder), ZMO F13157, from Karmø, Norway. *Habitus* after Sars (1891). Scale bars: 0.1 mm.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with or without cap covering callynophore. Antenna 2 without brush setae. Mandible molar with reduced column and reduced triturating surface. Maxilla 1 outer plate with 7 well-developed setal-teeth in modified 7/4 crown. ***Maxilla***

2 inner plate slightly shorter than outer plate. Gnathopod 1 weakly subchelate; coxa 1 large, about as long as coxa 2, subrectangular with concave or straight anterior margin; ischium short (length less than 2 × breadth); ***carpus short (length 1 to 2 × breadth)***; propodus margins tapering distally. Uropod 2 inner ramus not constricted. ***Telson moderately cleft, notched to emarginate***.

Remarks. Based on gnathopod 1 coxa and carpus and the moderately cleft telson *Menigrates* is most similar to *Anonyx* and *Onisimus*. *Menigrates* differs from both of these genera in the reduced number of setal-teeth on the outer plate of maxilla 1 and the weakly subchelate gnathopod 1.

Menigratopsis Dahl, 1945
(Fig. 25)

Menigratopsis Dahl, 1945: 2.—J.L. Barnard, 1969: 349.—Just, 1976: 2.—Barnard & Karaman, 1991: 438 (key), 501.

Type species. *Menigratopsis svennilssoni* Dahl, 1945, monotypy.

Included species. *Menigratopsis* includes one species: *M. svennilssoni* Dahl, 1945.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae***. Mandible molar plate-like.*** Maxilla 1 outer plate with 10 well-developed setal-teeth in modified 7/4 crown. Maxilla 2 inner plate subequal in length to outer plate. Gnathopod 1 weakly subchelate, appearing simple; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin; ischium short (length less than 2 × breadth); carpus long (length 2 to 4 × breadth); propodus margins tapering distally. Uropod 2 inner ramus not constricted. Telson moderately to deeply cleft.

Remarks. Based on the weakly subchelate gnathopod 1 with a long carpus and the moderately or deeply cleft telson *Menigratopsis* is similar to *Cicadosa*, *Des* and *Parschisturella*. It differs from these genera in its peculiar plate-like mandibular molar and maxilla 2 with the inner and outer plates subequal in length.

Distribution. North-east Atlantic Ocean.

Nagada Lowry & Stoddart, 1995
(Fig. 26)

Nagada Lowry & Stoddart, 1995b: 146.—Lowry & Stoddart, 2003: 283.

Type species. *Nagada uwedoae* Lowry & Stoddart, 1995, by original designation.

Included species. *Nagada* includes three species: *N. garagassi* Lowry & Stoddart, 1995b; *N. papua* Lowry & Stoddart, 1995b; *Nagada uwedoae* Lowry & Stoddart, 1995b.

Diagnostic description. Antenna 1 peduncle without posterodistal lobe or spine; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae. ***Mandible*** incisors large, convex; left lacinia mobilis a cuspidate peg*;* ***molar a setose tongue***. Maxilla 1 outer plate setal-teeth a well developed 7/4 crown. Maxilla 2, inner plate significantly shorter than outer. ***Gnathopod 1 simple***; coxa large, about as large as coxa 2 with a straight anterior margin; ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth), dactylus with or without complex spines on posterior margin. Uropod 2 inner ramus constricted. Uropod 3 outer ramus article 2 long. ***Telson entire***.

Remarks. Based on simple first gnathopod with long ischium and an entire telson *Nagada* is similar to *Eclecticus*. Both genera have the mandibular palp attached midway, both have a well developed 7/4 crown on the outer plate of maxilla 1, and both have a long ischium on the first gnathopod. They differ mainly in the dactylus of gnathopod 1 which has an explosion of complex setae on the anterior margin in *Eclecticus*.

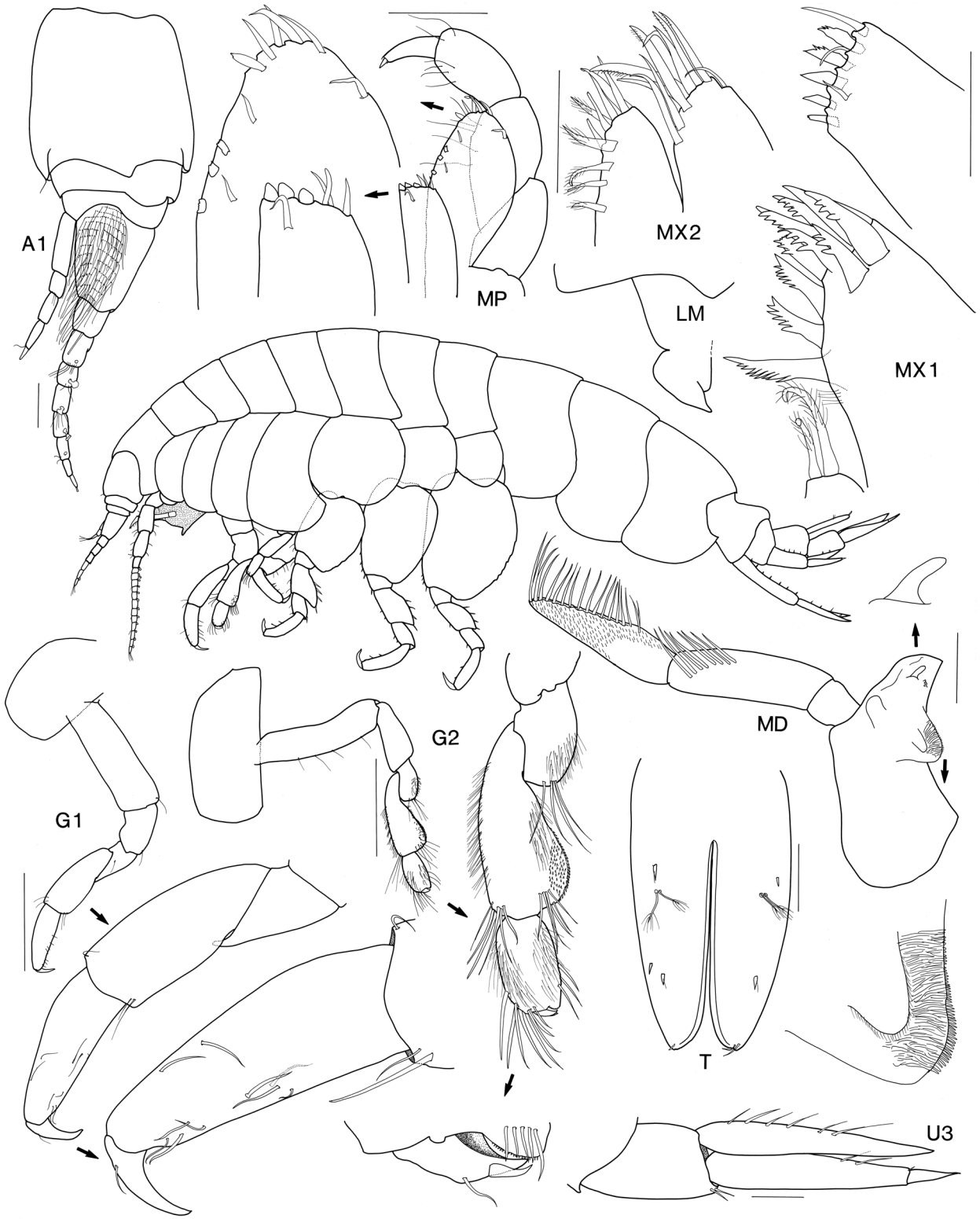

FIGURE 25. *Menigratopsis svennilssoni* Dahl, 1945, male, 6.3 mm, ZMC, from the Öresund. *Habitus*, LM, G1, G2, U3 after Just (1976). Scale bars: MX1, MX2, 0.05 mm; gnathopods, 0.5 mm; remainder, 0.1 mm.

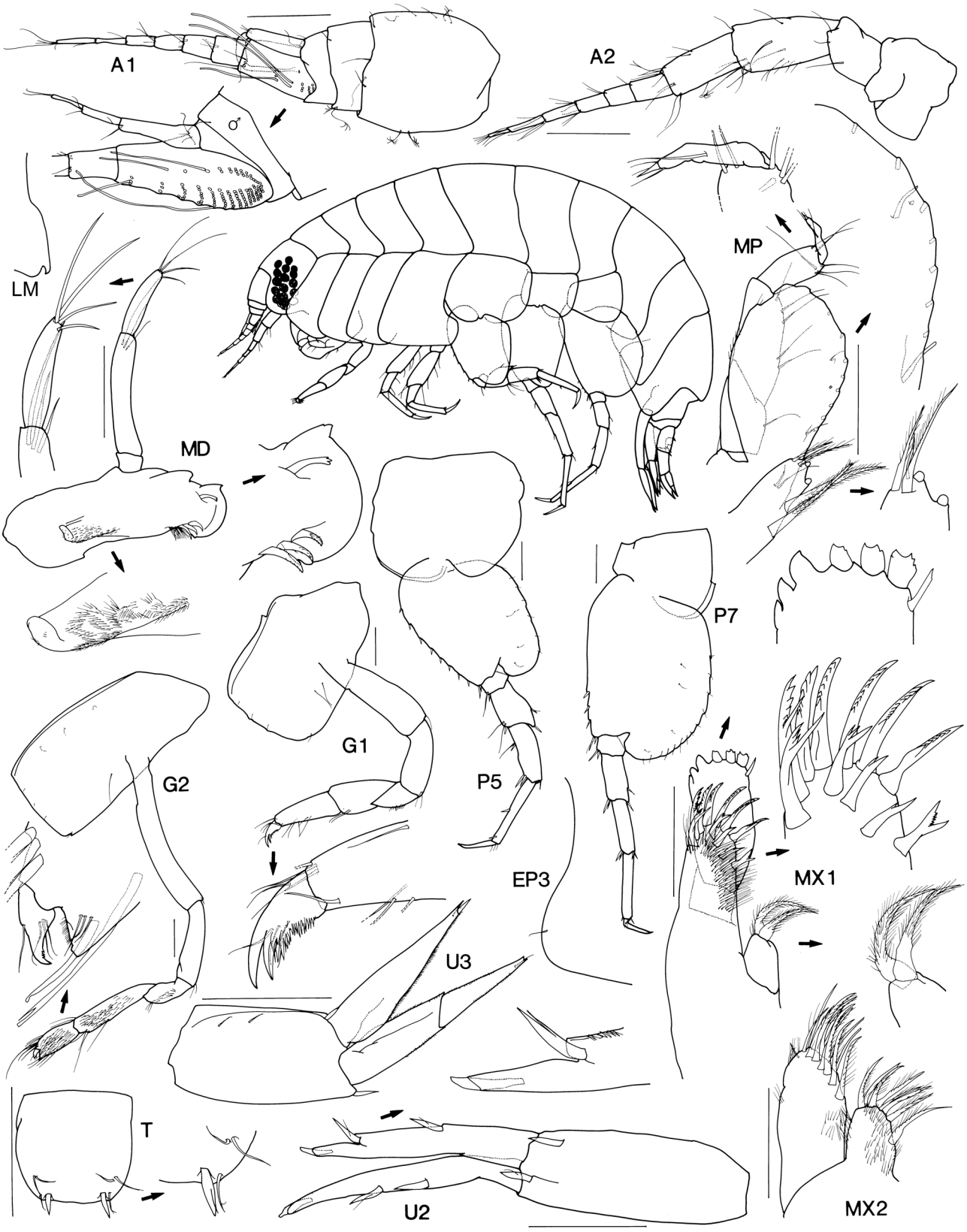

FIGURE 26. *Nagada uwedoae* Lowry & Stoddart, 1995, holotype, female, 3.6 mm, AM P41605; paratype, male, 2.1 mm, AM P41607; from Astrolabe Bay, Papua New Guinea. Scale bars: 0.1 mm.

Nagada garagassi Lowry & Stoddart, 1995

Nagada garagassi Lowry & Stoddart, 1995: 147, figs 29, 30.

Types. Holotype, female with non-setose oostegites, 5 mm, AM P.41596. Paratypes: 1 male, AM P.41597; 13 specimens, AM P.41598.

Type locality. East from Planet Rock, Astrolabe Bay, Papua New Guinea (55.48'S 145º49.14'E), about 500 m depth.

Habitat. Marine.

Depth range. 500 m (Lowry & Stoddart 1995).

Feeding strategies. Scavenger, taken in baited traps.

Distribution. *Papua New Guinea.* Astrolabe Bay (Lowry & Stoddart 1995).

Nagada papua Lowry & Stoddart, 1995

Nagada papua Lowry & Stoddart, 1995: 150, figs 31–33.

Types. Holotype, female, 3.8 mm, AM P.41599. Paratypes: 8 females, AM P.41600; 1 male, AM P.41601; 83 specimens, AM P.41602; 20 specimens, AM P.41603; 10 specimens, BMNH 1995.582.591; 10 specimens, USNM 274111.

Type locality. Face of outer barrier between Dam Awan (Rasch Passage) and Wongad, Astrolabe Bay, Papua New Guinea (5°08.59'S 145°49.65'E), 290 m depth.

Habitat. Marine.

Depth range. 50–290 m (Lowry & Stoddart 1995).

Feeding strategies. Scavenger, taken in baited traps.

Distribution. *Papua New Guinea.* Astrolabe Bay (Lowry & Stoddart 1995).

Nagada uwedoae Lowry & Stoddart, 1995

Nagada uwedoae Lowry & Stoddart, 1995: 154, figs 34–36. —Lowry & Stoddart, 2003: 283 (catalogue).—Lowry & Stoddart, 2009: 914, figs 5, 6.

Types. Holotype, female, 3.6 mm, AM P.41605. Paratypes: 108 specimens, AM P.41606; 79 specimens, AM P.41609; 60 specimens, USNM 274112; 33 specimens, BMNH 1995.592.624; 1 make, AM P.41607; 288 specimens, AM P.41608.

Type locality. Face of outer barrier between Dam Awan (Rasch Passage) and Wongad, Astrolabe Bay, Papua New Guinea (5°08.59'S 145°49.65'E), 290 m depth.

Additional material examined. *New South Wales.* 4 specimens, AM P.50752, north-east of Coffs Harbour (30°15.93'S 153°21.9'E), 100 m, baited trap, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-985]; 3 specimens, AM P.50750, north-east of Coffs Harbour (30°15.93'S 153°21.9'E), 100 m, *Globigerina* ooze, baited trap, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-984]; 2 specimens, AM P.51132, north-east of Coffs Harbour (30°14.63'S 153°27.68'E), 199 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-882]; 1 female, AM P.69473, Wattamolla, off Providential Head (34°08'S 151°08.5'E), 59 m, baited trap, 14–15 January 1991, S.J. Keable, A.R. Parker & J.K. Lowry, MV *Krista* [PIO-110].

Tasmania. 10 specimens, AM P.58313; 6 specimens, AM P.51099, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-357]; 19 specimens, AM P.51104; 16 specimens, AM P.58317, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-376 & TAS-374]; 1 specimen, AM P.51100; 10 specimens, AM P.51101, east of Fortescue Bay (43°09.37'S 148°13.6'E), 300 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-359 & TAS-361]; 7 specimens, AM P.51092, east of Fortescue Bay (43°09.37'S 148°13.6'E), 300 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-395]; 2 specimens, AM P.51105, east of Fortescue Bay (43°07.37'S

148°13.75'E), 400 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-380]; 1 specimen, AM P.57716, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-421]; 3 specimens, AM P.51103; 13 specimens, AM P.51102, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-372 & TAS-371].

Habitat. Marine soft bottoms.

Depth range. 59–1000 m (this study).

Feeding strategies. A scavenger taken in baited traps.

Distribution. *Papua New Guinea.* Madang Lagoon and Astrolabe Bay (Lowry & Stoddart 1995). *Australia.* East coast from Queensland to Tasmania (Lowry & Stoddart 2009, this study).

Onisimus **Boeck, 1871**

(Fig. 27)

Onisimus Boeck, 1871: 111.—Stebbing 1906: 25.—Schellenberg 1927: 659.—Stephensen 1929: 53.—Gurjanova 1951: 161.—J.L. Barnard 1969: 352.—Barnard & Karaman 1991: 506.—Lowry & Stoddart, 1993: 168.—Vader, Johnsen & Berge, 2005: 2.

Onesimus Boeck, 1876: 161 (invalid emendation of *Onisimus* Boeck, 1871) .—G.O.Sars 1891: 104.

Pseudalibrotus Della Valle, 1893: 798.—Stebbing 1906.—33.—Schellenberg 1927: 671.—Stephensen 1929: 55 (type species: *Anonyx litoralis* Boeck, 1871, monotypy).

Alibrotus Sars**,** 1891: 101.

Paronesimus Stebbing, 1894: 14.—Stebbing 1906: 43.—Gurjanova 1951: 196.—Barnard 1969: 357.—Barnard & Karaman 1991: 516 (type species: *Paronesimus barentsi* Stebbing, 1894, monotypy).

Boeckosimus J.L. Barnard, 1969: 330.—Barnard & Karaman 1991: 470 (type species: *Anonyx edwardsii* Krøyer, 1846, original designation).

Type species. *Anonyx litoralis* Krøyer, 1845, selected by Boeck, 1876.

Included species. *Onisimus* includes 26 species: *O. abyssi* Oldevig, 1959; *O. affinis* Hansen, 1887; *O. barentsi* (Stebbing, 1894); *O. birulai* (Gurjanova, 1929b); *O. botkini* Birula,1897; *O. brevicaudatus* Hansen, 1887; *O. caspius* (G.O. Sars, 1896); *O. caricus* Hansen, 1887; *O. derjugini* (Gurjanova, 1929a); *O. dubius* Schellenberg, 1935b; *O. edwardsii* Krøyer, 1846; *O. glacialis* (G.O. Sars, 1900); *O. krassini* Gurjanova, 1951); *O. leucopis* G.O. Sars, 1879; *O. litoralis* (Krøyer, 1845); *O. nanseni* (G.O. Sars, 1900); *O. normani* G.O. Sars, 1891; *O. platyceras* (G.O. Sars, 1896); *O. plautus* Krøyer, 1845; *O. punctatus* (Bate, 1862); *O. sextonae* Chevreux, 1926; *O. sibiricus* Brüggen, 1909; *O. simus* Gurjanova, 1962; *O. turgidus* G.O. Sars, 1879; *O. uschakovi* (Gurjanova, 1933); *O. zenkevitchi* Mednikov, 1960.

Nomina nuda. *Onisimus abyssicola* (Stuxberg, 1880); *O. crassini* (Gorbunov, 1946); *O. vorax* (Stuxberg, 1880); *O. zebra* (Stuxberg, 1880).

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe*;* ***accessory flagellum forming cap covering callynophore***. Antenna 2 without brush setae. ***Mandible molar a column with fully triturating surface***. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate significantly shorter than outer plate. ***Gnathopod 1 subchelate****;* ***coxa 1 large, about as long as coxa 2, subrectangular with concave anterior margin***; ischium short (length less than 2 × breadth); ***carpus short (length 1 to 2 × breadth)****;* propodus margins slightly tapering distally. Uropod 2 inner ramus with or without constriction. Telson entire to moderately cleft.

Remarks. Based on the morphology of gnathopod 1 *Onisimus* and *Anonyx* are very similar. *Onisimus* retains the triturating molar characteristic of tryphosine amphipods while *Anonyx* has a derived setose tongue.

Paralibrotus **Stephensen, 1923**

(Fig. 28)

Paralibrotus Stephensen, 1923: 61.—J.L. Barnard, 1969: 356.—Barnard & Karaman, 1991: 512.

Type species. *Paralibrotus setosus* Stephensen, 1923, monotypy.

Included species. *Paralibrotus* includes 1 species: *P. setosus* Stephensen, 1923

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum forming

cap covering callynophore. Antenna 2 without brush setae. Mandible molar a weakly setose flap. ***Maxilla 1 outer plate with 8 well developed setal-teeth in modified 7/4 crown***. Maxilla 2 inner plate significantly shorter than outer plate. ***Gnathopod 1 simple; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin***; ischium short (length less than 2 × breadth); carpus short (length 1 to 2 × breadth); propodus margins tapering distally. Uropod 2 inner ramus not constricted. ***Telson entire***.

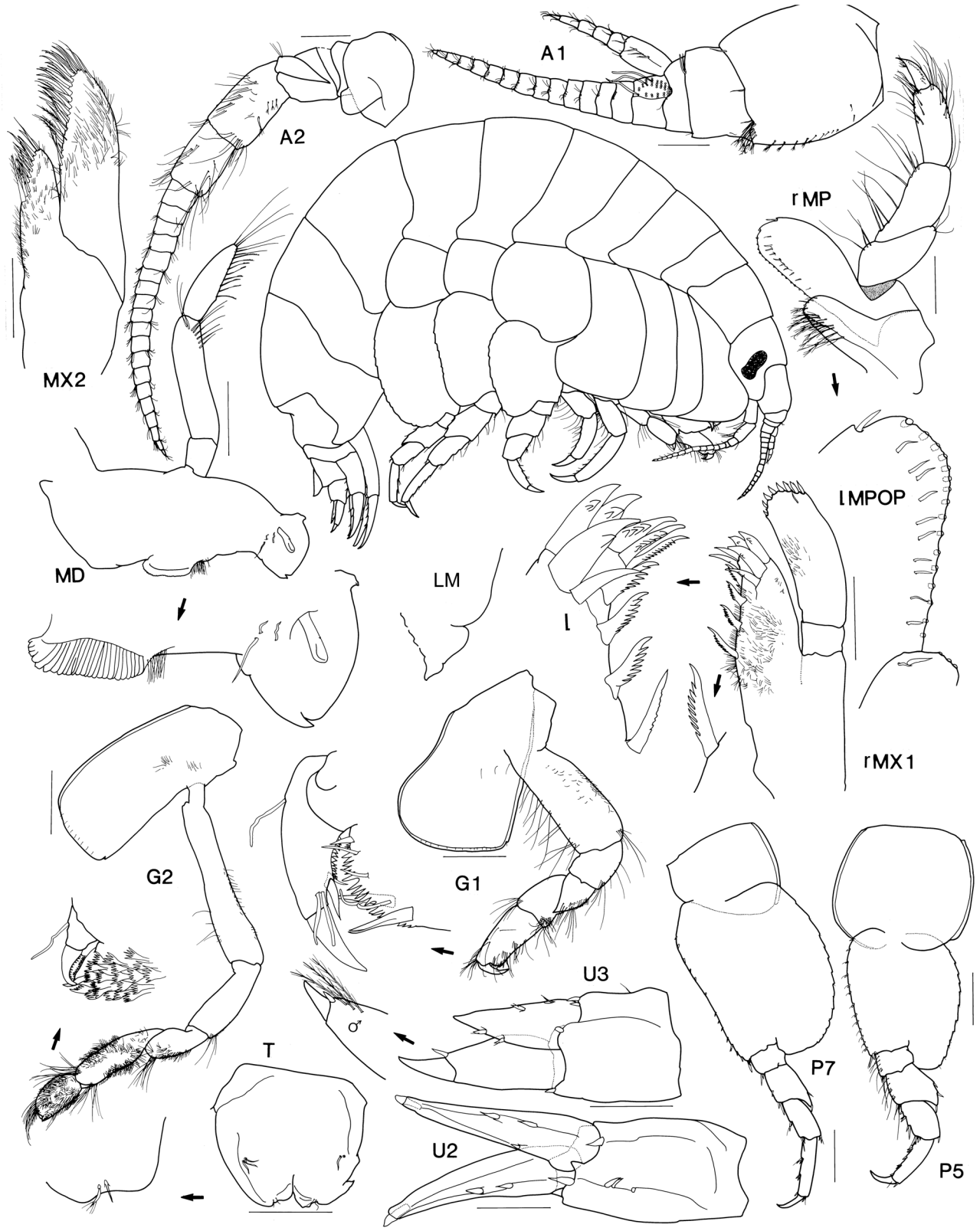

FIGURE 27. *Onisimus edwardsi* (Krøyer, 1846), female, 13.0 mm, AM P.35587, from west Greenland. Scale bars: gnathopods, pereopods, 0.5 mm; remainder, 0.2 mm.

Remarks. *Paralibrotus* has a number of highly derived characters which make it difficult to characterize. Based on the gnathopod 1 large coxa and short carpus, and an entire telson it is most similar to *Onisimus*. It differs mainly in the reduced flap-like molar and the simple first gnathopod.

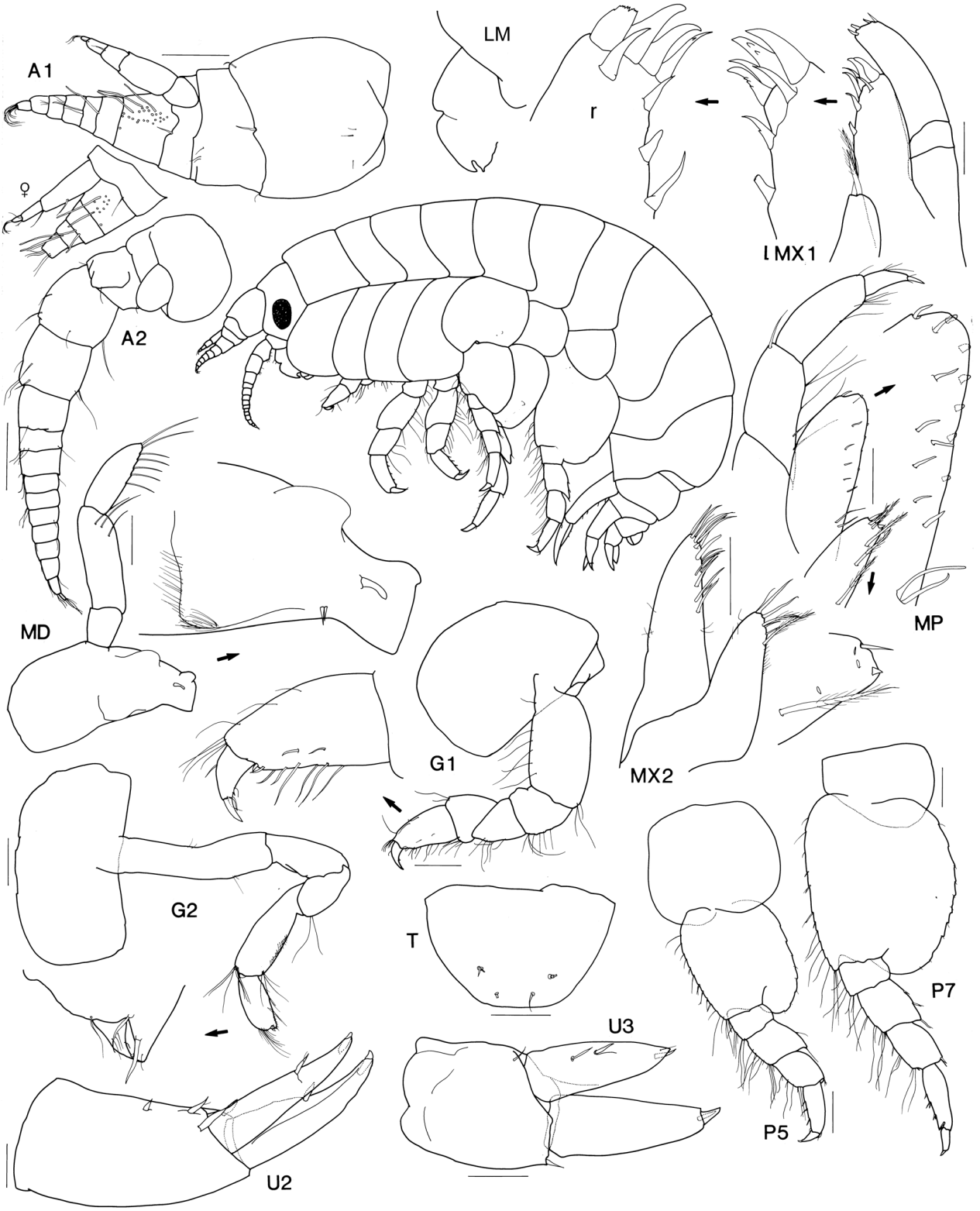

FIGURE 28. *Paralibrotus setosus* Stephensen, 1923, paratype male, 9 mm, ZMUC, from west Greenland; female, 8.5 mm, AM P.35572, from north-west Greenland. Scale bars: antennae, gnathopods, pereopods, 0.2 mm; remainder, 0.1 mm.

Parschisturella Andres, 1983
(Fig. 29)

Parschisturella Andres, 1983: 212.—Barnard & Karaman, 1991: 517.

Type species. *Parschisturella simplex* Andres, 1983, original designation.

Included species. *Parschisturella* includes five species: *P. carinata* (Schellenberg, 1926b); *P. martrudan* **sp. nov.**; *P. medora* **sp. nov.**; *P. pilot* **sp. nov.**; *P. simplex* Andres, 1983.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum without cap covering callynophore. Antenna 2 with brush setae. Labrum epistome and upper lip separate; ***upper lip strongly produced and apically acute***. ***Mandible molar a reduced column, proximally setose, distally triturating*** *or* ***setose with distal triturating surface***. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate slightly to significantly shorter than outer plate. ***Gnathopod 1*** simple, parachelate or weakly subchelate; ***coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin***; ischium short (length less than 2 × breadth); ***carpus long (length 2 to 4 × breadth)***; propodus margins tapering distally. Uropod 2 inner ramus constricted (weakly) or not. Telson deeply to moderately cleft.

Remarks. Six uristid genera (*Eclecticus*, *Galathella*, *Ichnopus*, *Nagada*, *Paralibrotus* and *Parschisturella*, have simple first gnathopods. *Parschisturella* does not appear to be particularly similar to any of these genera. All have four to five generic level differences from *Parschisturella*.

In *Parschisturella* gnathopod 1 varies from simple to weakly subchelate to parachelate and the telson varies from moderatly to deeply cleft. All species have a spine on the posterior margin of the gnathopod 1 dactylus. *Parschisturella* appears to be most smilar to the Australian endemic genus *Des*. The main differences between *Parschisturella* and *Des* are the accessory flagellum cap (absent or partially developed in *Parschisturella*, large and fully-developed in *Des*) and the labium (upper lip apically produced in *Parschisturella* and not produced in *Des*).

Until now *Parschisturella* has been considered an Antarctic endemic, but it is well represented in the temperate Australian fauna by at least three species.

Distribution. Antarctica and Australia.

Key to *Parschisturella* species

1.	Gnathopod 1 parachelate	*P. carinata*
-	Gnathopod 1 weakly subchelate	2
-	Gnathopod 1 simple	3
2.	Epimeron 3 posteroventral corner forming a weak spine	*P. medora*
-	Epimeron 3 posteroventral corner acutely produced with a tiny notch	*P. pilot*
3.	Urosomite 1 evenly rounded. Telson with 2 apical robust setae per lobe	*P. martrudan*
-	Urosomite 1 dorsally straight. Telson with 4–5 apical robust setae per lobe	*P. simplex*

Parschisturella carinata (Schellenberg, 1926b)

Hoplonyx stebbingi Walker, 1903: 52, pl. 9 figs 52–57 (in part, part = *Uristes stebbingi*).
Tryphosa kergueleni.—Walker, 1907: 16 (in part).
Tryphosites stebbingi.—Chilton, 1912: 469.
Tryphosa carinata Schellenberg, 1926b: 271, fig. 18.—Schellenberg, 1931: 36.—J.L. Barnard, 1962: 29.
Tmetonyx carinata.—K.H. Barnard, 1932: 55.—J.L. Barnard, 1958: 100.
Tryphosites capadarei.—Hurley, 1965: 177, figs 14, 15.—Thurston & Allen, 1969: 372.—Lowry & Bullock, 1976: 109.—Andres, 1983: 212.
'Tryphosa' carinata.—J.L. Barnard, 1969: 304 (key).—Lowry & Bullock, 1976: 106.
Parschisturella carinata.—Barnard & Karaman, 1991: 517.—Klages, 1991: 50.—De Broyer & Jazdzewski, 1993: 74.—De Broyer *et al.*, 1999: 166.—Dauby *et al.*, 2001: 81.—De Broyer *et al.*, 2001: 746, table 1.—Nyssen *et al.*, 2002: 282, 283, table 1, fig. 4.—De Broyer *et al*., 2004: 1740, tables 3, 4.—De Broyer *et al.*, 2007: 165.

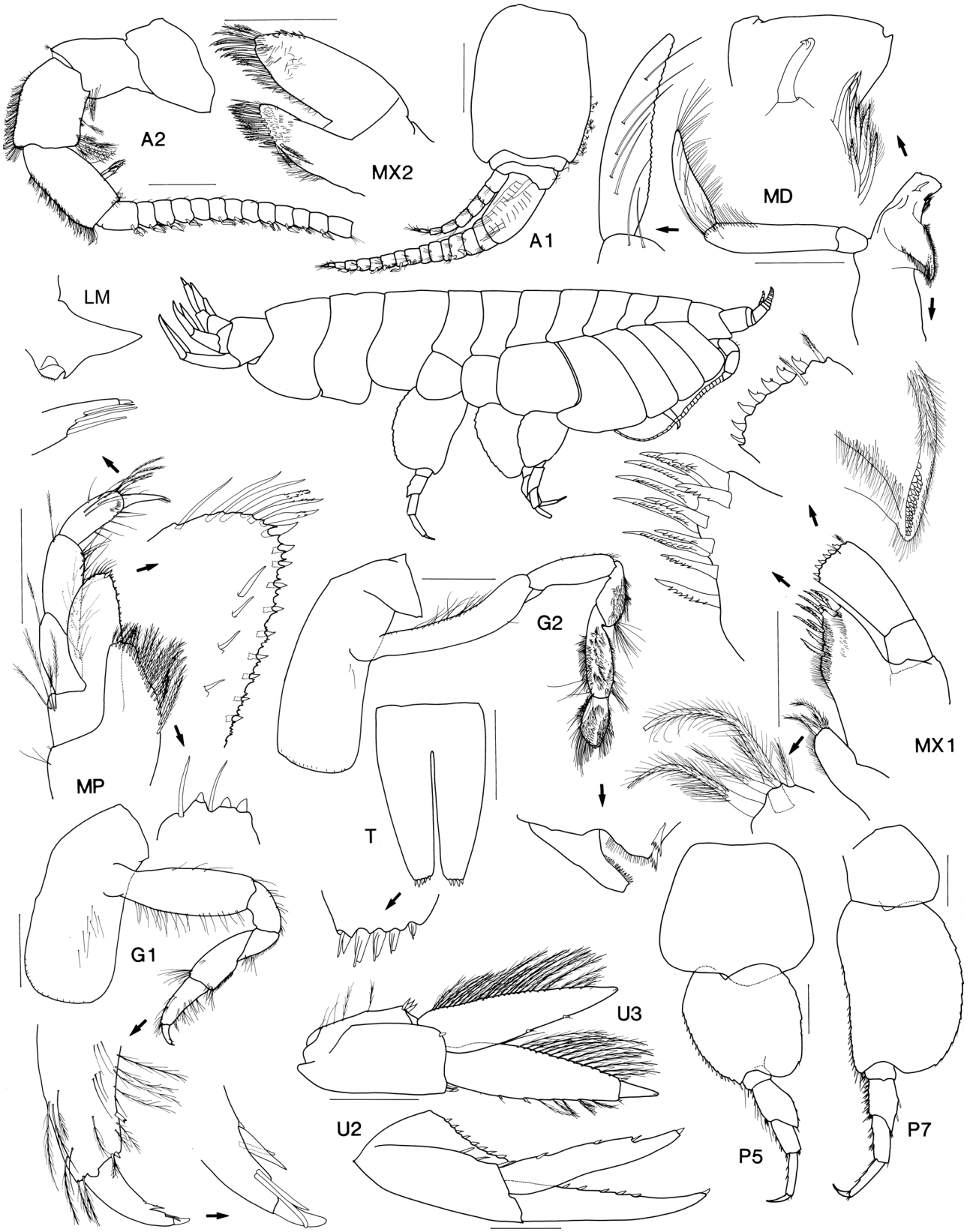

FIGURE 29. *Parschisturella simplex* Andres, 1983, *habitus* and LM from holotype male, 16 mm, ZMH K32410; remainder from paratype male, 20.3 mm, ZMH K32411; near South Georgia, South Atlantic Ocean. LM, P5, P7, U2 after Andres, 1983. Scale bars: gnathopods, pereopods, 1.0 mm; remainder, 0.5 mm.

Types. Syntypes, ZMB 20304.

Type-locality. Davis Sea "Gauss Station" (66°02'S 89°38'E), 385 m.

Habitat. Marine.

Depth range. 14–2081 m (Walker 1907; De Broyer *et al.* 2001).

Feeding strategies. Scavenger, taken in baited traps.

Remarks. *Parschisturella carinata* is the most distinctive species in the genus because of the parachelate first gnathopod with its serrate palm. It is the only species with a distict constriction on the outer ramus of uropod 2. It shares a rounded boss on urosomite 1 with the Ausralian species *P. martrudan* and *P. piloti*. It shares a well developed spine on the posteroventral corner of epimeron 3 with the Australian species *P. martrudan* and *P. medora*.

Distribution. *Southern Ocean.* Davis Sea (Schellenberg 1926b); Ross Sea (Walker 1903, 1907); Weddell Sea (Chilton 1912; De Broyer *et al.* 1999; De Broyer *et al*. 2004); South Georgia (Schellenberg 1931); South Shetland Islands (K.H. Barnard 1932).

***Parschisturella martrudan* sp. nov.**
(Figs 30–32)

Types. Holotype, female, 12.0 mm, AM P.69042, east of Broken Bay, New South Wales, Australia (33°37'S 152°04'E to 33°39'S 152°02'E), 896–923 m, dredge, 10 December 1980, R.T. Springthorpe, FRV *Kapala* [K80-20-09]. Paratypes: 1 male, 10.2 mm, AM P.69044, north-east of Port Jackson, New South Wales, Australia (33°41'S 152°00'E to 33°44'S 151°57'E), 820–888 m, beam trawl, 11 February 1986, R.T. Springthorpe, FRV *Kapala* [K86-01-07]; 1 female, 12.8 mm, AM P.69045, east of Broken Bay, New South Wales, Australia (33°30'S 152°09'E to 33°33'S 152°11'E), 922–1015 m, beam trawl, 12 February 1986, R.T. Springthorpe, FRV *Kapala* [K86-01-08].

Type locality. East of Broken Bay, New South Wales, Australia (33°37'S 152°04'E to 33°39'S 152°02'E), 896–923 m depth.

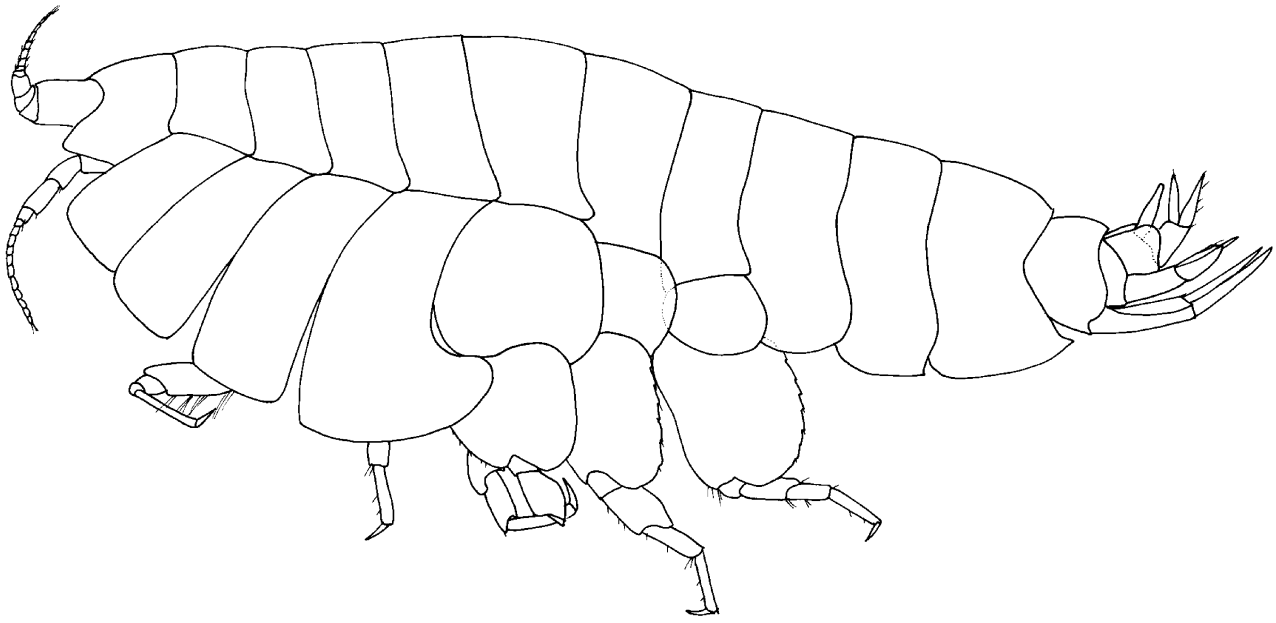

FIGURE 30. *Parschisturella martrudan* **sp. nov.,** holotype, female, 12.0 mm, AM P.69042, from east of Broken Bay, New South Wales, Australia.

Additional material described. *New South Wales.* 1 specimen, AM P.44445, off Wollongong (34°32.25'S 151°15.16'E), 300 m, baited trap, 6 May 1993–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-782]; 3 specimens, AM P.69041, east of Broken Bay (33°31'S 152°08'E to 33°33'S 152°07'E), 914 m, 2.5 m sled dredge, 10 December 1980, R.T. Springthorpe, FRV *Kapala* [K80-20-08]; 2 females, AM P.69043, east of Broken Bay

(33°37'S 152°04'E to 33°39'S 152°02'E), 896–923 m, dredge, 10 December 1980, R.T. Springthorpe, FRV *Kapala* [K80-20-09]; 1 male, AM P.69046, east of Broken Bay (33°30'S 152°09'E to 33°33'S 152°11'E), 922–1015 m, beam trawl, 12 February 1986, R.T. Springthorpe, FRV *Kapala* [K86-01-08]; 1 specimen, AM P.69047, east of Broken Bay (33°30'S 152°12'E to 33°33'S 152°09'E), 1053–1066 m, beam trawl, 12 February 1986, R.T. Springthorpe, FRV *Kapala* [K86-01-10].

Tasmania. 16 specimens, AM P.51146; 8 specimens, AM P.51164, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-365 & TAS-367]; 539 specimens, AM P.51176; 503 specimens, AM P.51179, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-383 & TAS-384]; 5 specimens, AM P.51310; 10 specimens, AM P.51313; 41 specimens, AM P.51381; 180 specimens, AM P.57977, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-401, TAS-403 & TAS-422-423]; 43 specimens, AM P.51357, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-419]; 315 specimens, AM P.51388; 1 specimen, AM P.56090, east of Fortescue Bay (43°08.97'S 148°15.37'E), 1000 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-421]; many specimens, AM P.73705, 76.8km south-south-east of South East Cape, Main Pedra Hill (44°15.6'S 147°07.8'E), 1312 m, baited trap, 21–24 January 1997, CSIRO party, FRV *Southern Surveyor* [SS01/97/08]. 4 specimens, NMV J67753, 48 km east-north-east of Cape Tourville (42°00.25'S 148°43.55'E to 41°57.77'S 148°42.08'E), 1264–1130 m, gravel with lumps of sandy mud aggregate, WHOI epibenthic sled, 30 October 1988, G.C.B. Poore *et al.,* RV *Franklin* [SLOPE 81]; 19 specimens, NMV J67754, off Freycinet Peninsula (42°2.20 'S 148°38.70'E), 800 m, coarse shelly sand, WHOI epibenthic sled, 27 July 1986, M.F. Gomon *et al.,* RV *Franklin* [SLOPE 45].

Victoria. 2 specimens, NMV J67755, south of Point Hicks (38°19.60'S 149°24.30'E), 930 m, rock, rubble, clay, sand, biogenic sediment, WHOI epibenthic sled, 23 July 1986, M.F. Gomon *et al.,* RV *Franklin* [SLOPE 33].

Etymology. Named for the beautiful crayfishing boat MV *Martrudan* which collected many of the amphipods used in this and other studies of Australian lysianassoid amphipods; used as a noun in apposition.

Description. Based on holotype, female, 12.0 mm, AM P.69042. Head, lateral cephalic lobes subtriangular, apically subacute. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum not forming cap, 5-articulate, terminal article not offset; primary flagellum with strong 1-field callynophore; robust setae absent from proximal articles; calceoli absent. Antenna 2 peduncular article 3 short, articles 3 to 5 not enlarged, brush setae absent; flagellum short; calceoli absent. Labrum, epistome and upper lip separate; epistome less produced than upper lip, straight; upper lip produced, strongly acute apically. Mandible incisor large, left and right symmetrical; molar with asymmetrically reduced column, proximally setose, distally triturating; palp attached about midway, article 2 margins subparallel, article 3 blade-like. ***Maxilla 1*** outer plate setal-tooth 7 present, left and right symmetrical, ***cuspidate distally along inner margin***; palp distal margin with apical robust setae. Maxilliped outer plate with one slender and one broad apical robust setae.

Gnathopod 1 simple; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis moderately to densely setose along anterior margin; ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth), slightly longer than propodus, without posterior lobe; propodus margins tapering distally; dactylus simple. ***Gnathopod 2 propodus palm transverse, dactylus distinctly shorter than palm***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis about as long as broad, posterior margin weakly or not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. Epimeron 3 posterior margin smooth, posteroventral corner acutely produced, forming weak spine. ***Urosomite 1*** not projecting over urosomite 2, ***dorsally rounded***. ***Uropod 2 inner ramus with slight constriction***. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with few plumose setae on inner ramus. ***Telson moderately cleft***, without dorsal robust setae, with 2 apical robust setae on each lobe.

Sexually dimorphic characters. Based on paratype male, 10.2 mm, AM P.69044. Antenna 1 primary flagellum with strong 2-field callynophore; robust setae absent from proximal articles; calceoli present. Antenna peduncular brush setae present; calceoli present. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with plumose setae on both rami.

Depth range. 820–1312 m.

Remarks. *Parschisturella martrudan* and *P. simplex* appear to be the only species with truly simple first gnathopods. In *Parschisturella martrudan* the cusps on the medial margin of setal-tooth 7 are distal in *P. martrudan* (along most of the medial margin in *P. simplex*); the gnathopod 2 dactylus is shorter than the palm in *P. martrudan* (fitting the palm in *P. simplex*); the dorsal margin of urosomite 1 is evenly rounded in *P. martrudan* (straight in *P. simplex*) and the telson is moderately cleft (deeply cleft in *P. simplex*).

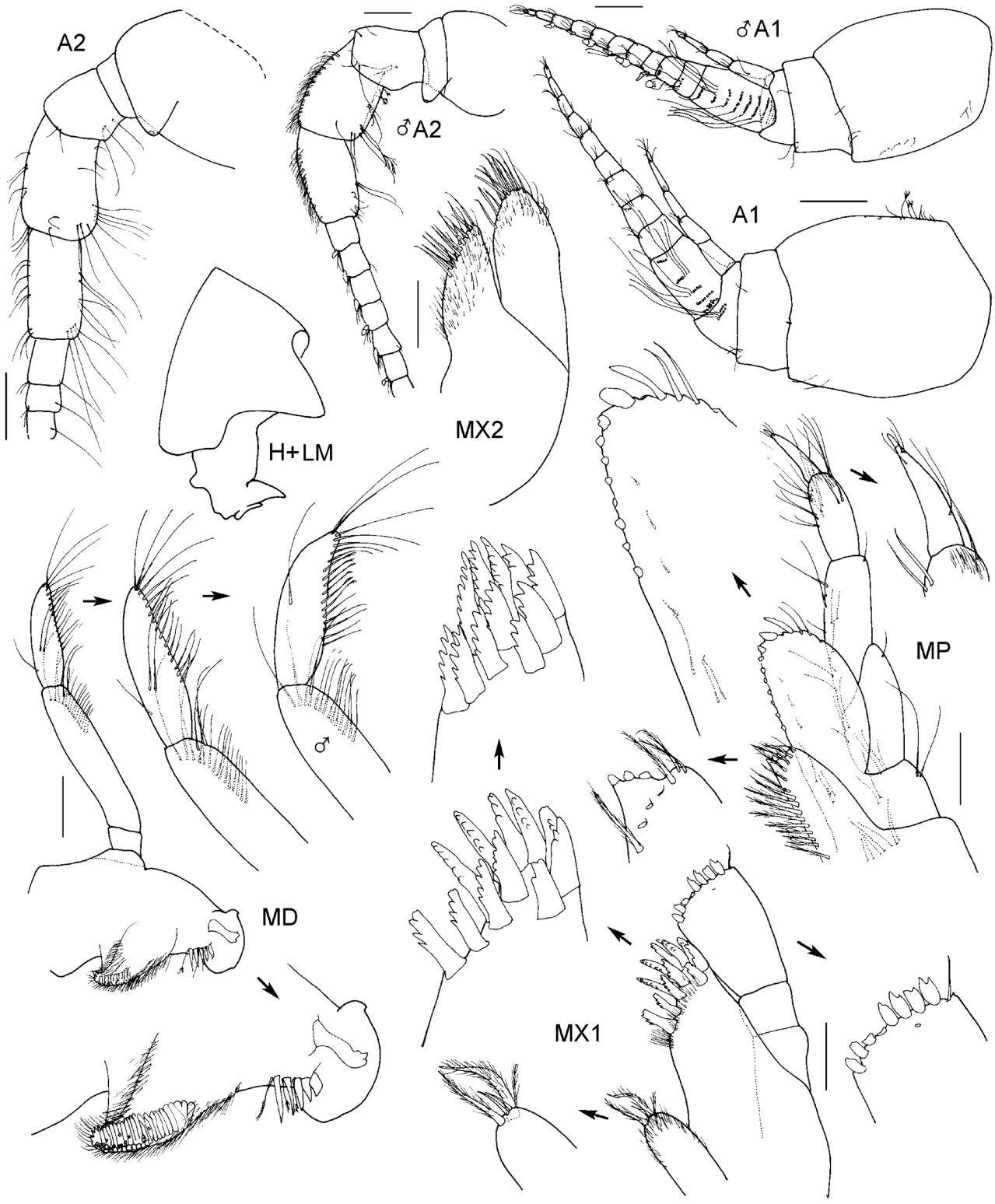

FIGURE 31. *Parschisturella martrudan* **sp. nov**, holotype, female, 12.0 mm, AM P.69042, from east of Broken Bay; paratype, male, 10.2 mm, AM P.69044, from north-east of Port Jackson, New South Wales, Australia. Scale bars: 0.2 mm.

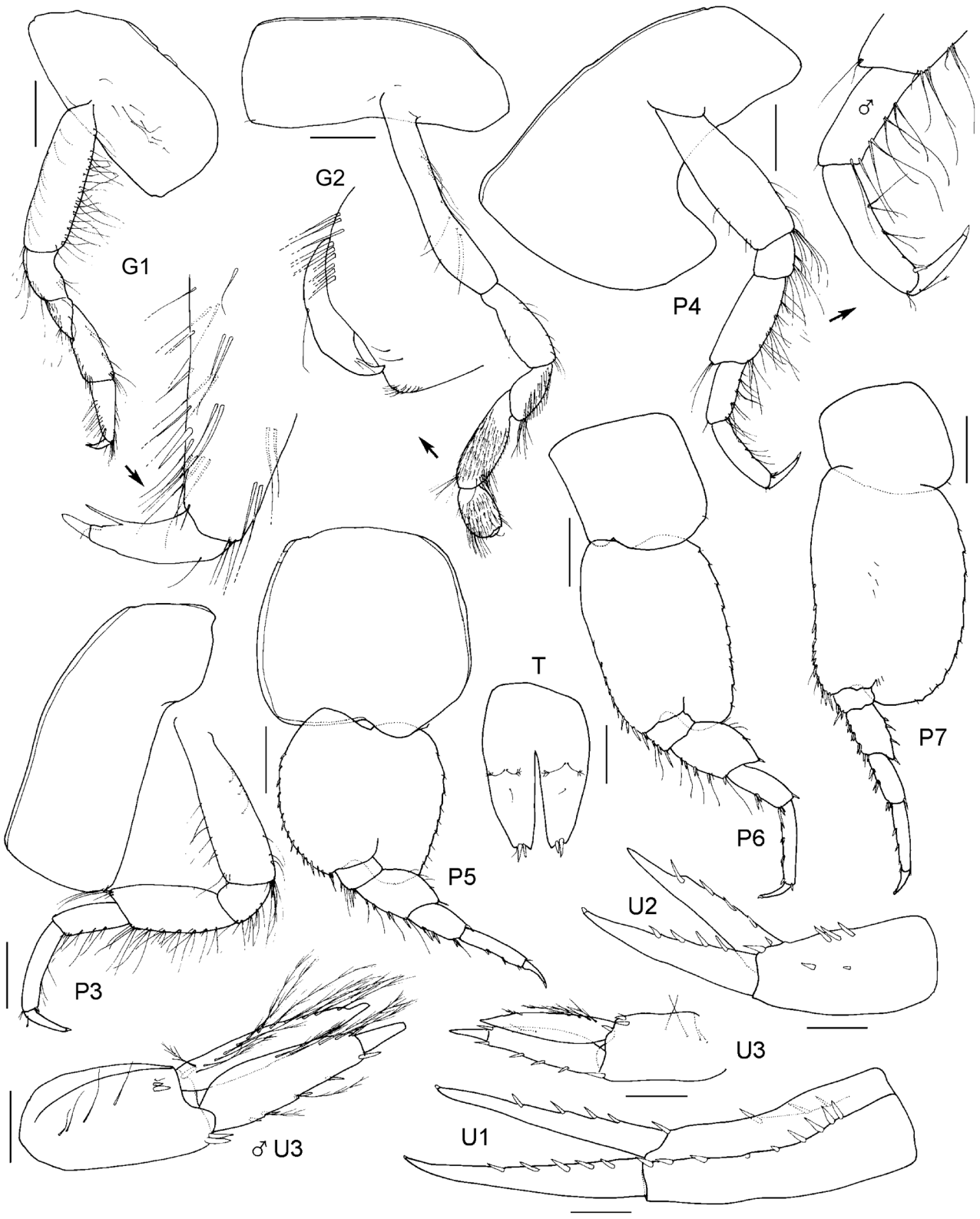

FIGURE 32. *Parschisturella martrudan* **sp. nov.**, holotype, female, 12.0 mm, AM P.69042, from east of Broken Bay; paratype, male, 10.2 mm, AM P.69044, from north-east of Port Jackson, New South Wales, Australia. Scale bars: gnathopods, pereopods, 0.5 mm; uropods, telson, 0.2 mm.

Distribution. *Australia*. New South Wales: east of Broken Bay; off Wollongong. Tasmania: east of Fortescue Bay; south-south-east of South East Cape, Main Pedra Hill; east-north-east of Cape Tourville. Victoria: south of Point Hicks.

***Parschisturella medora* sp. nov.**
(Figs 33–35)

Types. Holotype, female, 11.0 mm, NMV J67756, 96 km south of Point Hicks, Victoria, Australia (38°40.29'S 149°18.06'E), 2900 m, compacted clay, WHOI epibenthic sled, 25 October 1988, G.C.B. Poore *et al.*, RV *Franklin* [SLOPE 66]. Paratypes: 8 specimens, 4.0–8.7 mm, NMV J67757; 1 female, 10.3 mm, NMV J67758; 6 specimens, 5.4–10.2 mm, NMV J17167, same collection details as holotype.

Type locality. 96 km south of Point Hicks, Victoria, Australia (38°40.29'S 149°18.06'E), 2900 m depth.

Etymology. Named for the brig *Medora* which caught fire off the Tamar Heads, Tasmania, on the morning of 31 July 1854 and was scuttled after cutting away the mast; used as a noun in apposition.

Additional material examined. *Tasmania.* 18 specimens, AM P.71839, east of Cape Naturaliste, Tasmania, Australia (40°45.93'S 149°1.62'E), 2400–2500 m, sledge, 10 December 1986, P.A. Hutchings, W.F. Ponder & R.T. Springthorpe, RV *Franklin* [FR1086-04]; 1 specimen, NMV J67760, 48 km east-north-east of Cape Tourville (42°00.25'S 148°43.55'E to 41°57.77'S 148°42.08'E), 1264–1130 m, gravel with lumps of sandy mud aggregate, WHOI epibenthic sled, 30 October 1988, G.C.B. Poore et al., RV *Franklin* [SLOPE 81].

Victoria. 1 specimen, NMV J67759, 67 km south of Point Hicks (38°23.95'S 149°17.02'E), 1277 m, fine mud, WHOI epibenthic sled, 25 October 1988, G.C.B. Poore *et al*., RV *Franklin* [SLOPE 67].

Description. Based on holotype, female, 11.0 mm, NMV J67756. Head, lateral cephalic lobe subtriangular, apically subacute. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum not forming cap, 5-articulate, terminal article not offset; primary flagellum with strong 1-field callynophore; robust setae absent from proximal articles; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged; flagellum short; calceoli absent. Labrum, epistome and upper lip fused, concave; ventrally produced, acute apically. Mandible incisor large, left and right very slightly asymmetrical; molar with asymmetrically reduced column, proximally setose, distally triturating; palp attached slightly distally, article 2 margins subparallel, article 3 blade-like. Maxilla 1 outer plate setal-tooth 7 present, left and right symmetrical, cuspidate distally along inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 6 long, apical robust setae.

Gnathopod 1 weakly subchelate; coxa large, about as long as coxa 2, distally subovate; basis moderately to densely setose along anterior margin; ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth), longer than propodus, without posterior lobe; propodus margins tapering distally; dactylus with large subapical spine. ***Gnathopod 2 propodus palm slightly obtuse; dactylus fitting palm***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis about as long as broad, posterior margin weakly serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

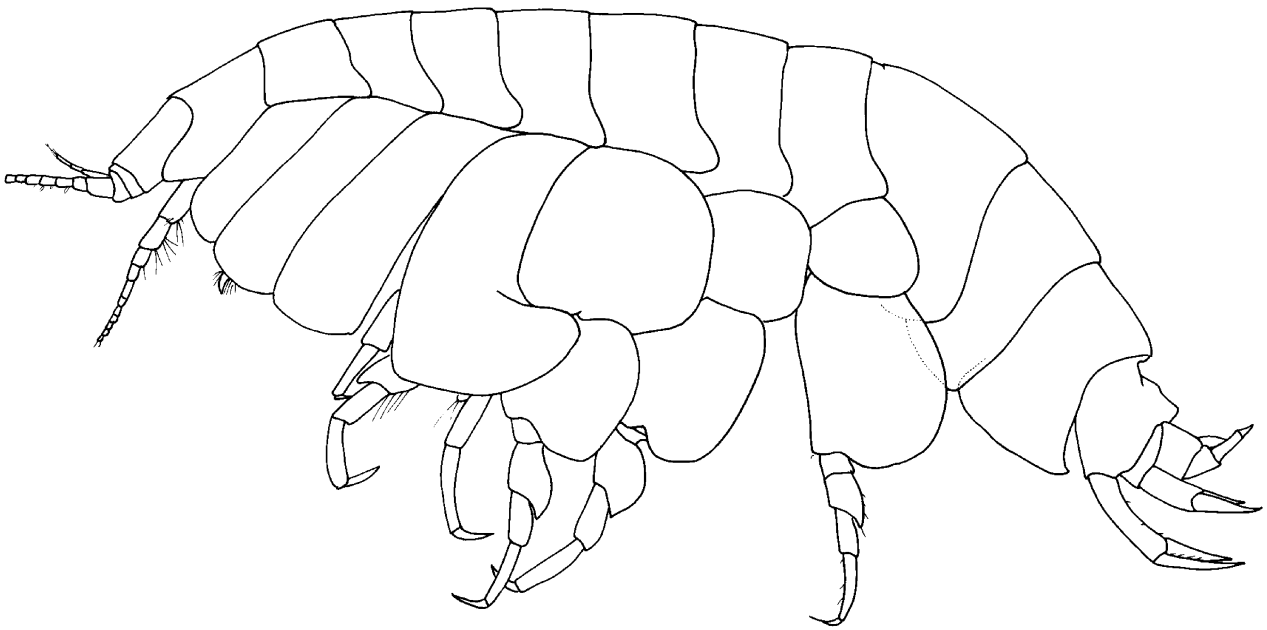

FIGURE 33. *Parschisturella medora* **sp. nov.**, holotype, female, 11.0 mm, NMV J67756, from south of Point Hicks, Victoria, Australia.

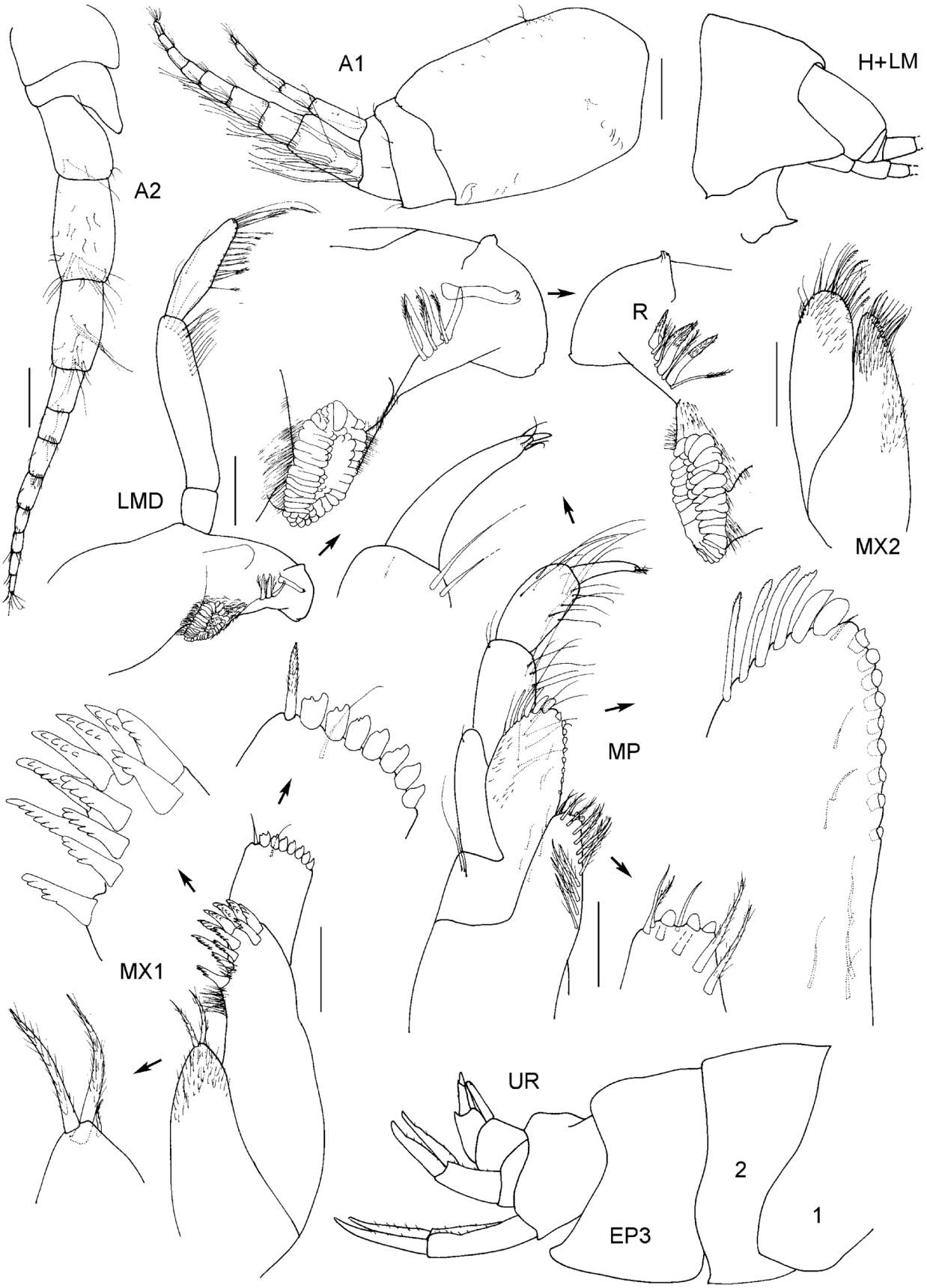

FIGURE 34. *Parschisturella medora* **sp. nov.**, holotype, female, 11.0 mm, NMV J67756, from south of Point Hicks, Victoria, Australia. Scale bars: 0.2 mm.

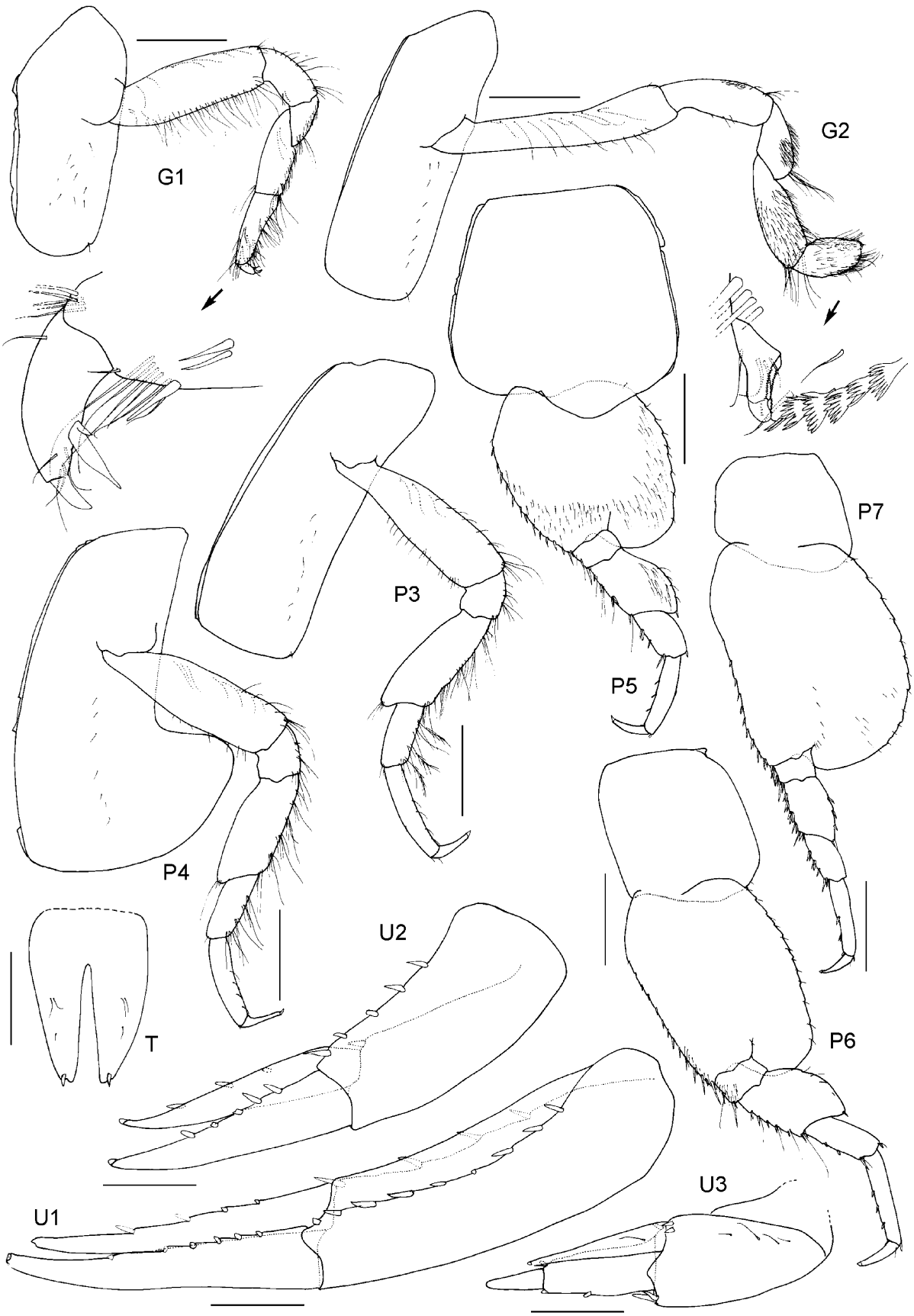

FIGURE 35. *Parschisturella medora* **sp. nov.**, holotype, female, 11.0 mm, NMV J67756, from south of Point Hicks, Victoria, Australia. Scale bars: gnathopods, pereopods, 0.5 mm; uropods, telson, 0.2 mm.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. ***Epimeron 3*** posterior margin smooth, ***posteroventral corner acutely produced, forming weak spine. Urosomite 1*** not projecting over urosomite 2***, with a weakly produced, broadly truncated boss. Uropod 2 inner ramus without constriction.*** Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, without plumose setae on rami. Telson deeply cleft, without dorsal robust setae, with 1 apical robust setae on each lobe.

Sexually dimorphic characters. Male unknown.

Depth range. 1264–2900 m.

Remarks. The Australian species *Parschisturella medora* and *P. piloti* both have weakly subchelate first gnathopods. The most conspicuous differences between these species is the posteroventral corner of epimeron 3 (forming a small spine in *P. medora* and with a small notch above the corner in *P. piloti*), and the dorsal margin of urosomite 1 (a weakly produced, broadly truncated boss in *P. medora* and a rounded margin in *P. piloti*).

Distribution. *Australia.* Coasts of Victoria and Tasmania, Bass Strait.

***Parschisturella pilot* sp. nov.**
(Figs 36–38)

Types. Holotype, female, 12.0 mm, AM P.69452, north side of Cape Sorell, about 400 m outside Hannants Bight on a line toward large bluff of Ocean Beach, Tasmania, Australia (42°11.4'S 145°11.08'E), 30 m, sand, baited trap, 26 April 1991–27 April 1991, J.K. Lowry & S.J. Keable, *Flying Scud* [TAS-279]. Paratypes: 59 specimens, 7.5–12.4 mm, AM P.69451; 1 male, 12.1 mm, AM P.69453; 1 male, 9.2 mm, AM P.69454, same collection details as holotype.

Type locality. North side of Cape Sorell, about 400 m outside Hannants Bight on a line toward large bluff of Ocean Beach, Tasmania, Australia (42°11.4'S 145°11.08'E), 30 m depth.

Etymology. Named for the Macquarie Harbour pilot boat that put out on 23 July 1830 to guide the Government brig *Tamar* through the difficult harbour entrance known as 'Hells Gates'. When about half-way to the brig conditions deteriorated into a south-westerly gale and the pilot boat, with its nine crew, disappeared.

Additional material examined. *New South Wales*. 2 specimens, AM P.44241; 4 specimens, AM P.44252, off Wollongong (34°31.48'S 151°13.22'E), 200 m, *Globigerina* ooze, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-962, NSW-964]; 2 specimens, AM P.44265, off Wollongong (34°31.48'S 151°13.22'E), 200 m, 95.9% sand, 4.9% mud, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-944]; 10 specimens, AM P.51107; 6 specimens, AM P.46906, off Wollongong (34°32.02'S 151°13.0'E), 200 m, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-780, NSW-781]; 2 specimens, AM P.47020; 22 specimens, AM P.47034; 10 specimens, AM P.48186, off Wollongong (34°32.08'S 151°12.55'E), 200 m, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-797, NSW-798]; 10 specimens, AM P.44428; 1 specimens, AM P.44439, off Wollongong (34°32.38'S 151°15.0'E), 300 m, *Globigerina* ooze, baited trap, 7–8 May 1993, P. Freewater, S.J. Keable & W. Vader, MV *Robin E* [NSW-801, NSW-802]; 1 specimen, AM P.44455, off Wollongong (34°32.25'S 151°15.17'E), 300 m, *Globigerina* ooze, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-783]; 3 specimens, AM P.48395, off Wollongong (34°26.42'S 150°58.03'E), 50 m, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-792]; 26 specimens, AM P.48196, north-east of Coffs Harbour (30°15.93'S 153°21.9'E), 100 m, baited trap, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-984]; 17 specimens, AM P.48423; 1 specimen, AM P.48411, north-east of Coffs Harbour (30°15.93'S 153°21.9'E), 100 m, baited trap, 9–10 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1006, NSW-1007]; 14 specimens, AM P.55967, north-east of Coffs Harbour (30°15.93'S 153°21.9'E), 92.7 m, baited trap, 11–12 August 1993, P.B. Berents & R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-870]; 85 specimens, AM P.55978; 3 specimens, AM P.57648; 2 specimens, AM P.69459; 5 specimens, AM P.52649, north-east of Coffs Harbour (30°15.75'S 153°21.98'E), 98 m, baited trap, 12–13 August 1993, P.B. Berents & R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-885–NSW-887]; 55 specimens, AM P.58467, north-east of Coffs Harbour (30°14.63'S 153°27.68'E), 199 m, baited trap, 12–13 August 1993, P.B. Berents & R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-884]; 1 specimen, AM P.69458, east of Long Reef (33°43'S 151°46'E to 33°44'S 151°46'E), 174 m, epibenthic sled, 20 December 1985, J.K. Lowry & R.T. Springthorpe, FRV *Kapala* [K85-21-08].

Queensland. many specimens, AM P.69460, east of Fitzroy Reef (23°26.16'S 152°28.46'E), 400 m, baited trap, 16–17 June 1993, J.K. Lowry, P. Freewater & R.T. Springthorpe, MV *Reefknot* [QLD-963/SEAS].

Tasmania. 1 specimen, AM P.50826, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7' S 148°03.45'E), 100 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-354]; 1 specimen, AM P.51321, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7' S 148°03.45'E), 100 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-409]; many specimens, AM P.69455, north side of Cape Sorell, about 80 m outside Hannants Bight (42°11.5'S 145°11.0'E), 18 m, sand and detritus, baited trap, 26–27 April 1991, J.K. Lowry & S.J. Keable, *Flying Scud* [TAS-277]; 2 specimens, AM P.69456, D'Entrecasteaux Channel, north end of Tower Bay, 400 m off small shingle beach (43°23.6'S 147°02.4'E), 40 m, baited trap, 20–21 April 1991, J.K. Lowry & S.J. Keable, *Flying Scud* [TAS-222]; 1 specimen, AM P.69457, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-390].

Description. Based on holotype, female, 12.0 mm, AM P.69452. Head, lateral cephalic lobes small, subtriangular, apically subacute. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum not forming cap, terminal article not offset; primary flagellum with strong 2-field callynophore; robust setae absent from proximal articles; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged; flagellum short; calceoli absent. Labrum, epistome and upper lip separate; epistome less produced than upper lip, straight; upper lip produced, acute apically. Mandible incisor large, left and right symmetrical; molar with asymmetrically reduced column, proximally setose, distally triturating; article 2 margins subparallel. Maxilla 1 outer plate setal-tooth 7 present, left and right symmetrical, cuspidate distally along inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 5 long apical robust setae, medial margins crenulated.

Gnathopod 1 weakly subchelate; coxa large, about as long as coxa 2, distally subovate; basis densely setose along anterior margin; ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth), longer than propodus, without posterior lobe; propodus margins subparallel, palm slightly to moderately acute, entire, straight; dactylus simple, with large subapical spine. ***Gnathopod 2 propodus palm slightly obtuse; dactylus fitting palm***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis about as long as broad or longer than broad, posterior margin weakly serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

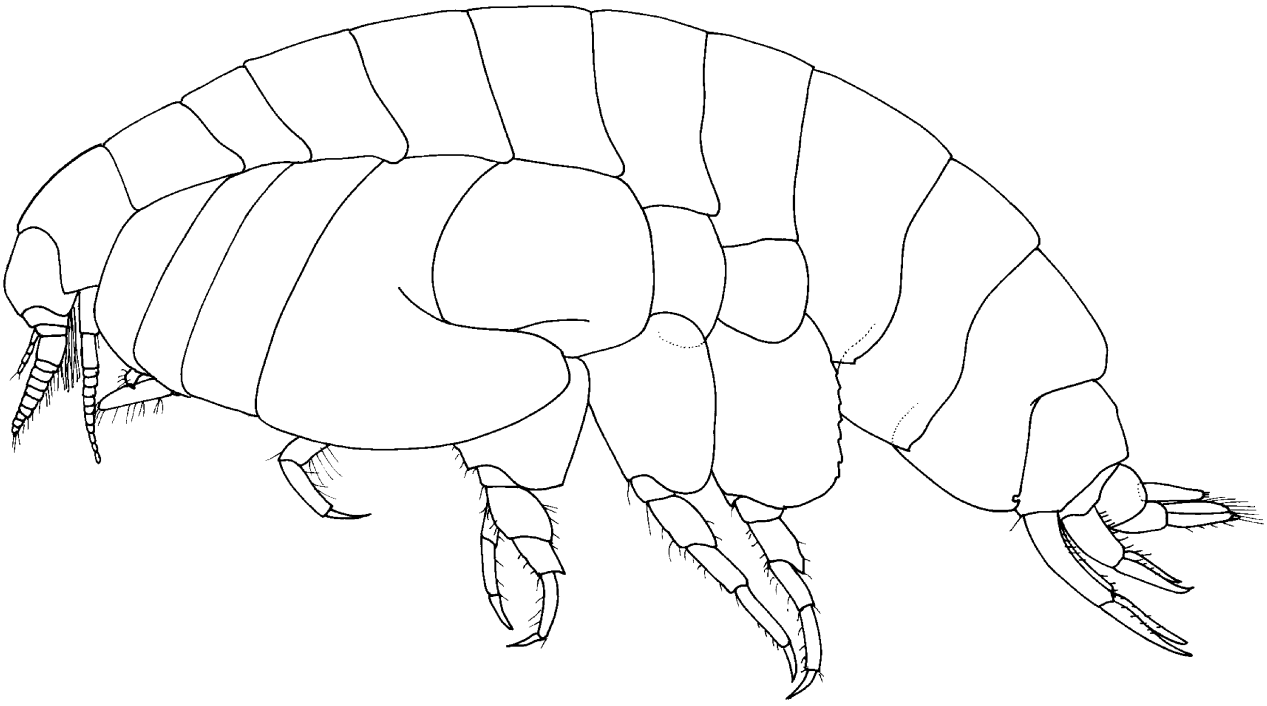

FIGURE 36. *Parschisturella pilot* **sp. nov.**, holotype, female, 12.0 mm, AM P.69452, from the north side of Cape Sorrell, Tasmania, Australia.

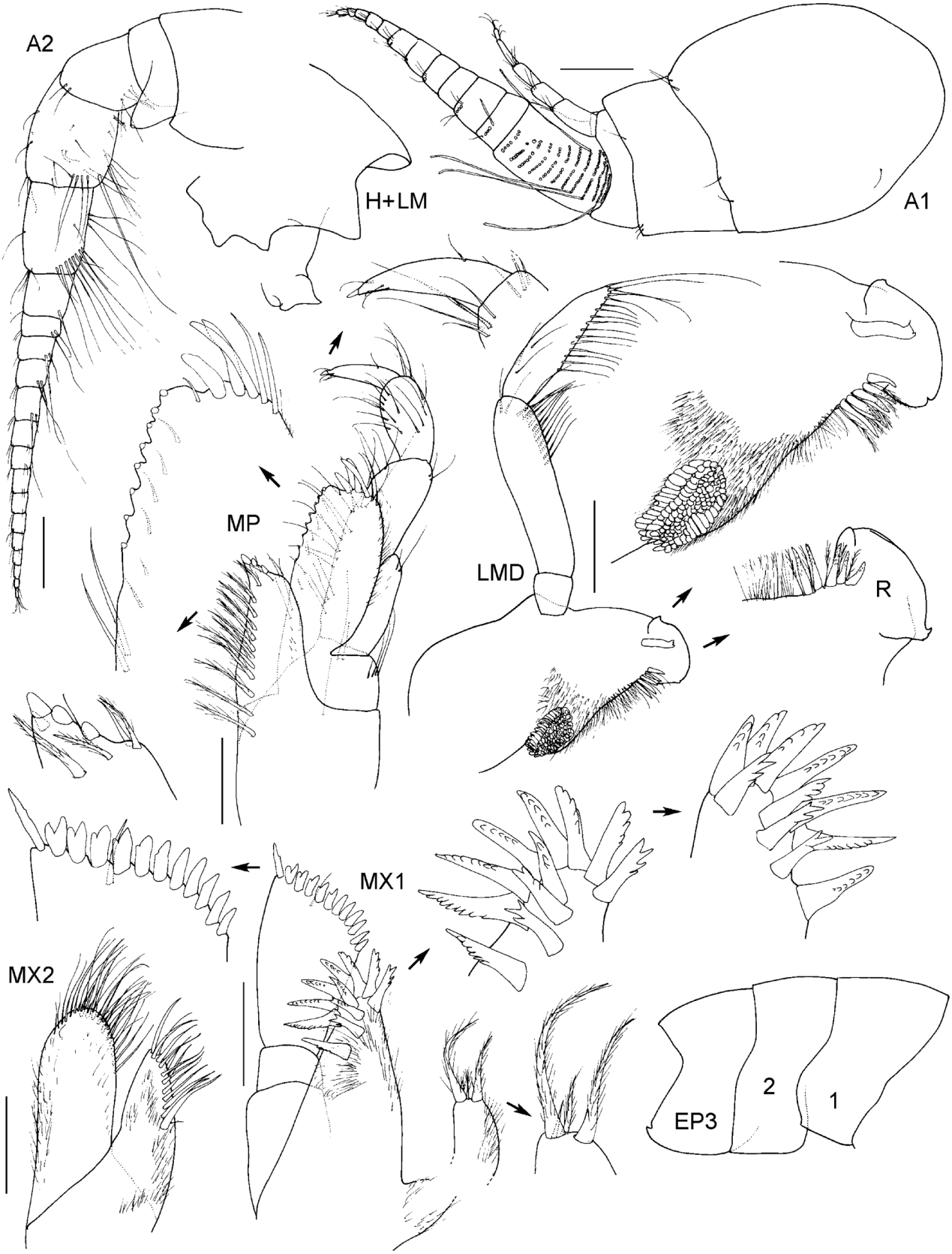

FIGURE 37. *Parschisturella pilot* **sp. nov.**, holotype, female, 12.0 mm, AM P.69452, from the north side of Cape Sorell, Tasmania, Australia. Scale bars: 0.2 mm.

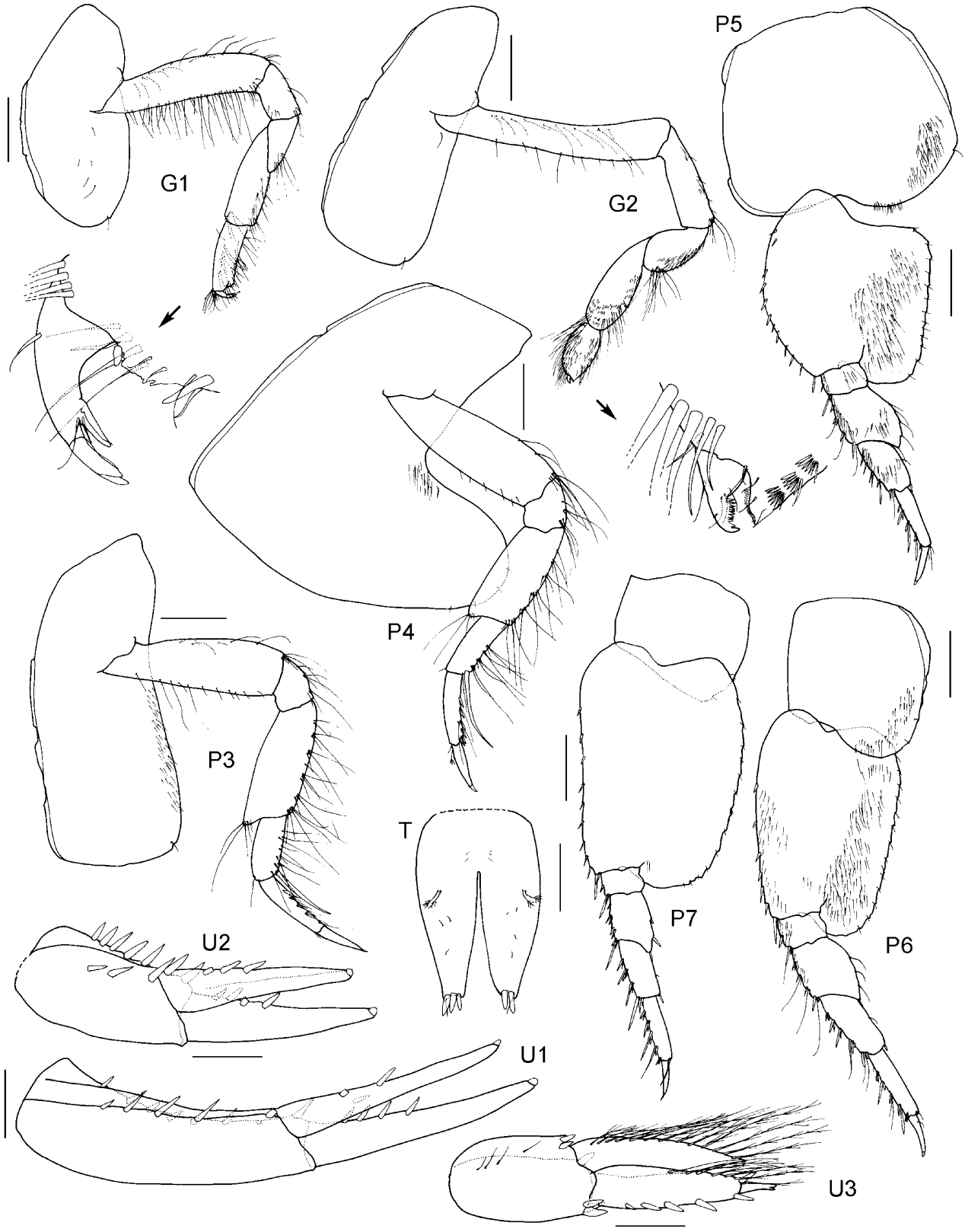

FIGURE 38. *Parschisturella pilot* **sp. nov.**, holotype, female, 12.0 mm, AM P.69452, from the north side of Cape Sorell, Tasmania, Australia. Scale bars: gnathopods, pereopods, 0.5 mm; uropods, telson, 0.2 mm.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. ***Epimeron 3*** posterior margin smooth, ***posteroventral corner acutely produced, with tiny basal notch and weak spine. Urosomite 1*** not projecting over urosomite 2, ***with rounded boss***. Uropod 2 inner ramus without constriction. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with plumose setae on both rami. Telson deeply cleft, without dorsal robust setae, with 2–3 apical robust setae on each lobe.

Depth range. 18–400 m.

Remarks. See remarks under *Parschisturella medora.*

Distribution. *Australia*. New South Wales: north-east of Coffs Harbour; east of Long Reef; off Wollongong. Queensland: east of Fitzroy Reef. Tasmania: east of Fortescue Bay; D'Entrecasteaux Channel; north of Hippolyte Rocks; north side of Cape Sorell.

Parschisturella simplex Andres, 1983

Parschisturella simplex Andres, 1983: 213, figs 13, 14.—Barnard & Karaman, 1991: 517.—De Broyer & Jażdżewski, 1993: 74.—De Broyer *et al.*, 2007: 165.

Types. Holotype, male, 16 mm, ZMH K 32410. Paratype, male 20.3 mm ZMH K 32411.

Type-locality. South Georgia, *Walther Herwig 1977-78*, sta. 492, (55°00'S 35°30'W), 0–120 m depth.

Habitat. Marine.

Depth range. 0–120 m.

Feeding strategies. Not recorded.

Remarks. See remarks under *Parschisturella martrudan*.

Distribution. *Southern Ocean.* South Georgia (Andres 1983).

Stephonyx Lowry & Stoddart, 1989

(Fig. 39)

Stephonyx Lowry & Stoddart, 1989: 521.—Lowry & Stoddart, 2003: 284 (catalogue).—Diffenthal & Horton, 2007: 32.—Senna & Serejo, 2007: 8, 13 (key).—Narahara, Tomikawa & Torigoe: 2012 (key).

Type species. *Euonyx biscayensis* Chevreux, 1908, by original designation.

Included species. *Stephonyx* includes 13 species: *S. arabiensis* Diffenthal & Horton, 2007; *S. biscayensis* (Chevreux, 1908); *S. carinatus* Bellan-Santini, 1997; *S. incertus* Bellan-Santini, 1997; *S. mytilus* (Barnard & Ingram, 1990); *S. laqueus* (J.L. Barnard, 1967); *S. normani* (Stebbing, 1888); *S. perexcavatus* Narahara, Tomikawa & Torigoe, 2012; *S. pirloti* (Sheard, 1938); *S. rafaeli* **sp. nov.**; *S. scutatus* (Griffiths, 1977); *S. talismani* (Chevreux, 1919); *S. uncinatus* Senna & Serejo, 2007.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum not forming cap covering callynophore. Antenna 2 with weakly developed brush setae. Mandible molar a setose tongue with vestigial triturating area, a reduced column with a triturating surface or occasionally a raised weakly setose plate. ***Maxilla 1 outer plate a well developed 7/4 crown***. Maxilla 2 inner plate slightly shorter than outer plate. ***Gnathopod 1 chelate; coxa 1 reduced, significantly shorter than coxa 2, subquadrate or tapering distally; ischium long (length 2 × to 4 × breadth) to very long (length 4 × to 6 × breadth)***; carpus very long (length more than 4 × breadth); propodus margins subparallel. Uropod 2 inner ramus not constricted. Telson deeply cleft.

Remarks. Only three uristid genera, *Euonyx*, *Kyska* and *Stephonyx* have chelate first gnathopods. *Kyska* differs from *Euonyx* and *Stephonyx* in having a fully developed gnathopod 1 coxa (significantly reduced in *Euonyx* and *Stephonyx*). *Stephonyx* is a genus of scavengers with fully developed 7/4 crown of setal-teeth on the outer plate of maxilla 1 whereas *Euonyx* is a genus of ectoparasitic amphipod with strongly reduced (small) setal-teeth on the outer plate of maxilla 1.

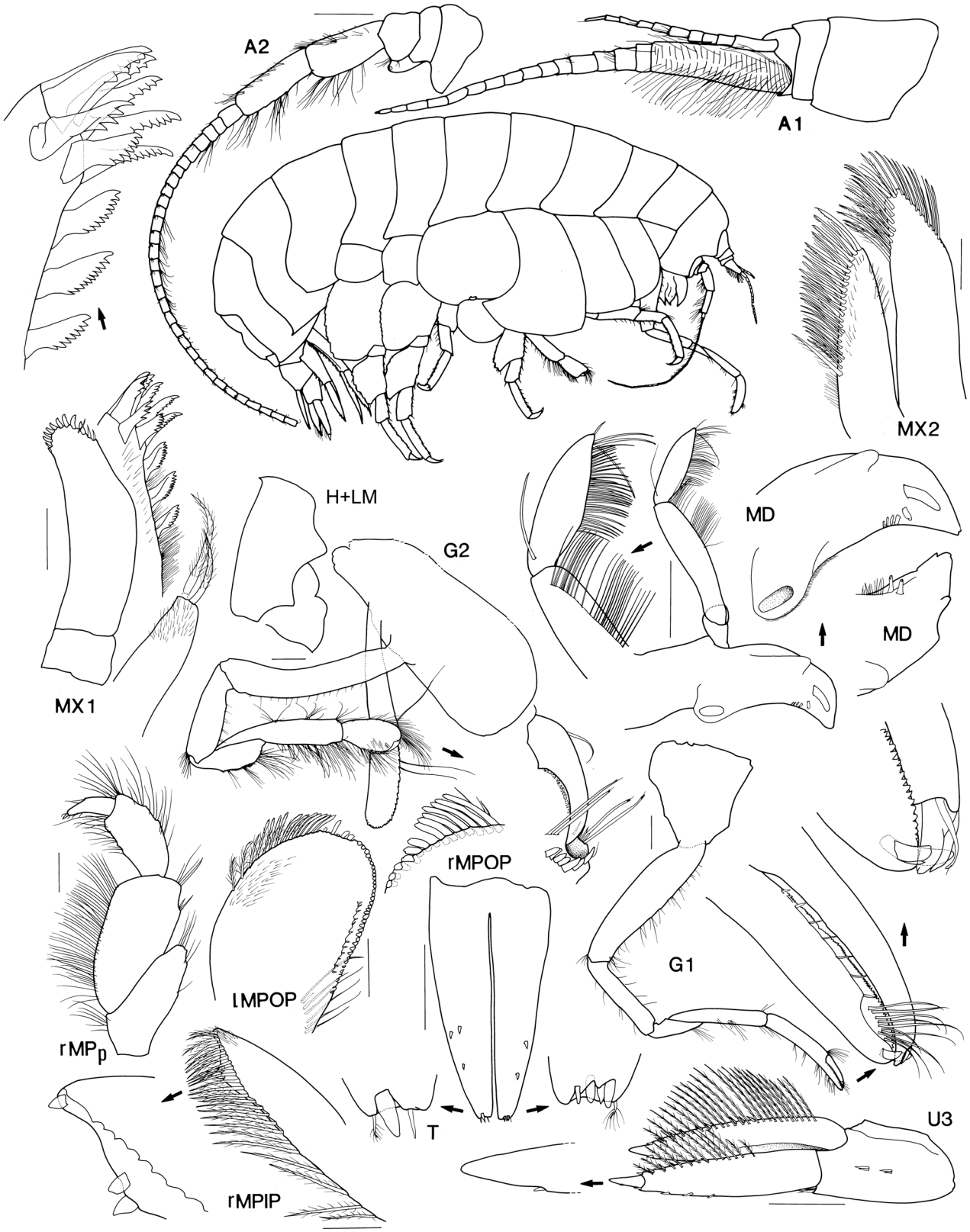

FIGURE 39. *Stephonyx biscayensis* (Chevreux, 1908), female, 22 mm, AM P.35583, from southwest of Ireland, North Atlantic Ocean. Scale bars: MX1, MX2, MP, 0.2 mm; remainder, 0.5 mm.

***Stephonyx arabiensis* Diffenthal & Horton, 2007**
(Figs 40–41)

Stephonyx arabiensis Diffenthal & Horton, 2007: 33, figs 1–4.—Narahara *et al.*, 2012: 1505 (key).—Corrigan *et al.*, 2013: fig. 5.

Types. Holotype female, 26.7 mm, NHM 2007.799. Paratypes: male, 24.9 mm, NHM 2007.800; 6 large mature females, NHM 2007.801–806; 31 males, NHM 2007.807–816; 14 immature females, NHM 2007.817–826; 14 juveniles, NHM 2007.827–836.

Type locality. Off the coast of Pakistan in the northern Arabian Sea (22º51.067'N 65º59.916'E), 1864 m depth, mean bottom temperature = 3.53ºC.

Material examined. *New South Wales.* 1 specimen, AM P.96589, northeast of Coffs Harbour (30º10.88'S 153º32.22'E), 1000 m, baited trap, 12–13 August 1993, P.B Berents & R.T. Springthorpe, MV *Cheryl Lee* [NSW-877]; 2 specimens, AM P.96590, off Wollongong (34º32.4'S 151º22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-972]; 4 specimens, AM P.96591, off Wollongong (34º32.4'S 151º22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-971]; 7 specimens, AM P.96592, off Wollongong (34º32.4'S 151º22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-973]; 7 juveniles, AM P.48101, north-east of Coffs Harbour (30°10.93'S 153°32.26'E), 963 m, baited trap, 11–12 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-862]; 2 specimens, AM P.52661; 2 specimens, AM P.49815, north-east of Coffs Harbour (30°10.88'S 153°32.22'E), 1000 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-876]; 1 specimen, AM P.43430, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, muddy sand, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-953]; 9 specimens, AM P.43496, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, *Globigerina* ooze, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-954]; 3 specimens, AM P.43446, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-971]; 15 specimens, AM P.43372, north-east of Coffs Harbour (30°10.93'S 153°32.26'E), 1000 m, baited trap, *Globigerina* ooze, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1000]; 1 specimen, AM P.50071, north-east of Coffs Harbour (30°10.93'S 153°32.26'E), 1000 m, baited trap, 9–10 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Anne* [NSW-1021]; 6 specimens, AM P.50080, north-east of Coffs Harbour (30°10.93'S 153°32.26'E), 1000 m, baited trap, 9–10 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1022].

Queensland. Male 22.7 mm, AM P.96587, 2 specimens, 8.1–12.5 mm, AM P.96588, east of Flynn Reef, Queensland, Australia (16º37.82'S 146º23.08'E), 1000 m, baited trap, 6–7 June 1993, J.K. Lowry & P. Freewater, RV *Sunbird* [QLD-931]; 30 specimens, AM P.96593, off Flynn Reef (16º37'S 146º23'E), 1000 m, baited trap, 7–8 June 1993, J.K. Lowry & P. Freewater, RV *Sunbird* [QLD-950]; 6 specimens, AM P.50235, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 6–7 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-931/SEAS]; 6 specimens, AM P.50244; 4 specimens, AM P.57607, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 6–7 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-932/SEAS]; 11 specimens, AM P.50297; 3 specimens, AM P.57614, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 7–8 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-949/SEAS]; 3 specimens, AM P.58069, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 7–8 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-950/SEAS]; 2 specimens, AM P.57611; 2 specimens, AM P.49520, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 7–8 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-948/SEAS]; 6 specimens, AM P.47889, due east of Mooloolaba (26°36.23'S 153°50.23'E), 1006 m, baited trap, 2–3 August 1994, J.K. Lowry & K. Dempsey, MV *Capricorn I* [QLD-1140].

Tasmania. Many specimens, AM P.73709, Hill V, south-southeast of South East Cape (44°23.6'S 147°10.7'E), 1400 m, baited trap, 30 January 1997, CSIRO party on FRV *Southern Surveyor*, [SS01/97/61].

Description. Based on male, 22.7 mm, AM P.96587. Head, lateral cephalic lobe subtriangular, apically subacute. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum not forming cap, 8-articulate, terminal article not offset; primary flagellum with strong 2-field callynophore; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged, brush setae present; calceoli present. ***Labrum, epistome***

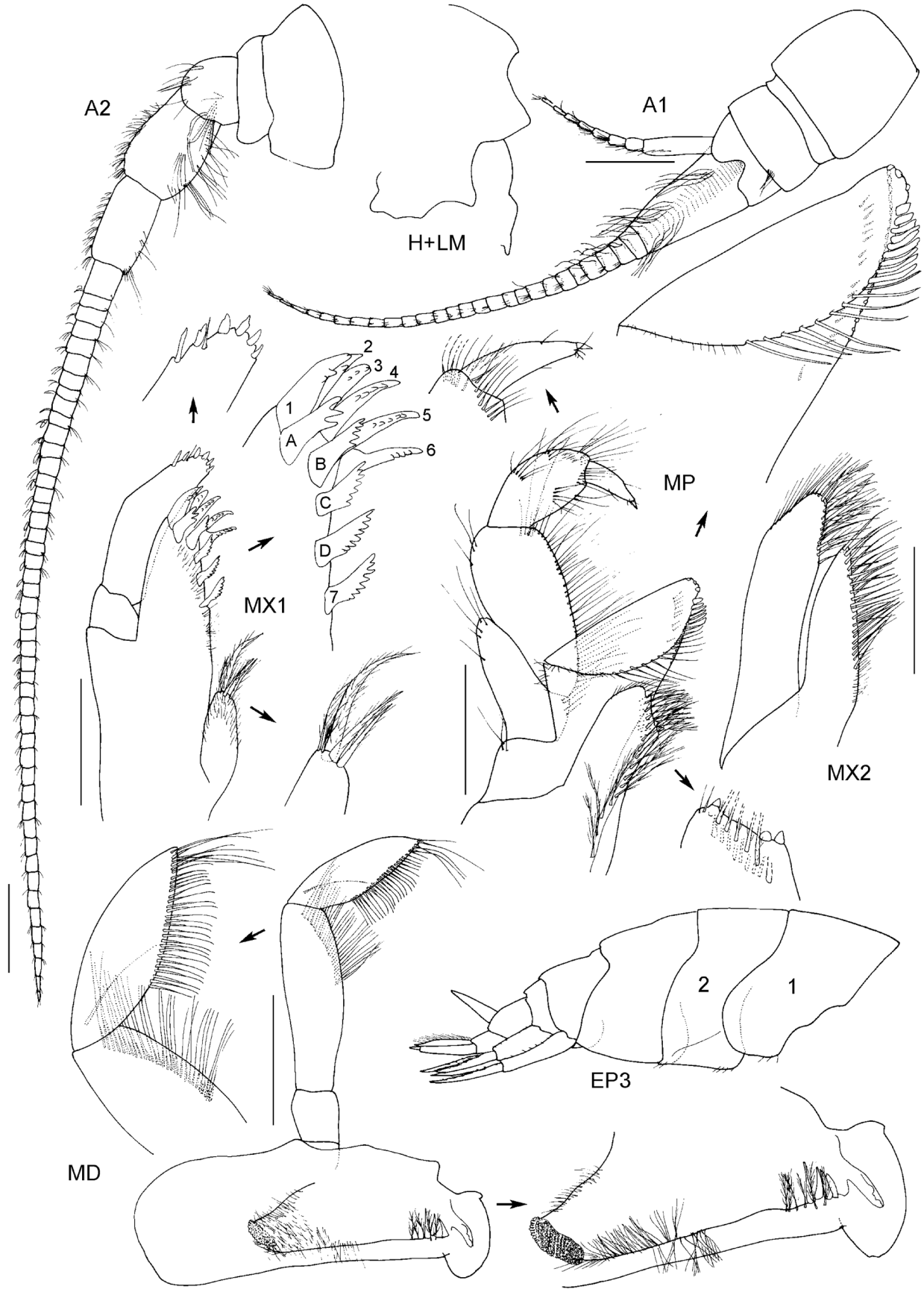

FIGURE 40. *Stephonyx arabiensis* Diffenthal & Horton, 2007, male, 22.7 mm, AM P. 96587, from east of Flynn Reef, Queensland, Australia. Scale bars: 0.5 mm.

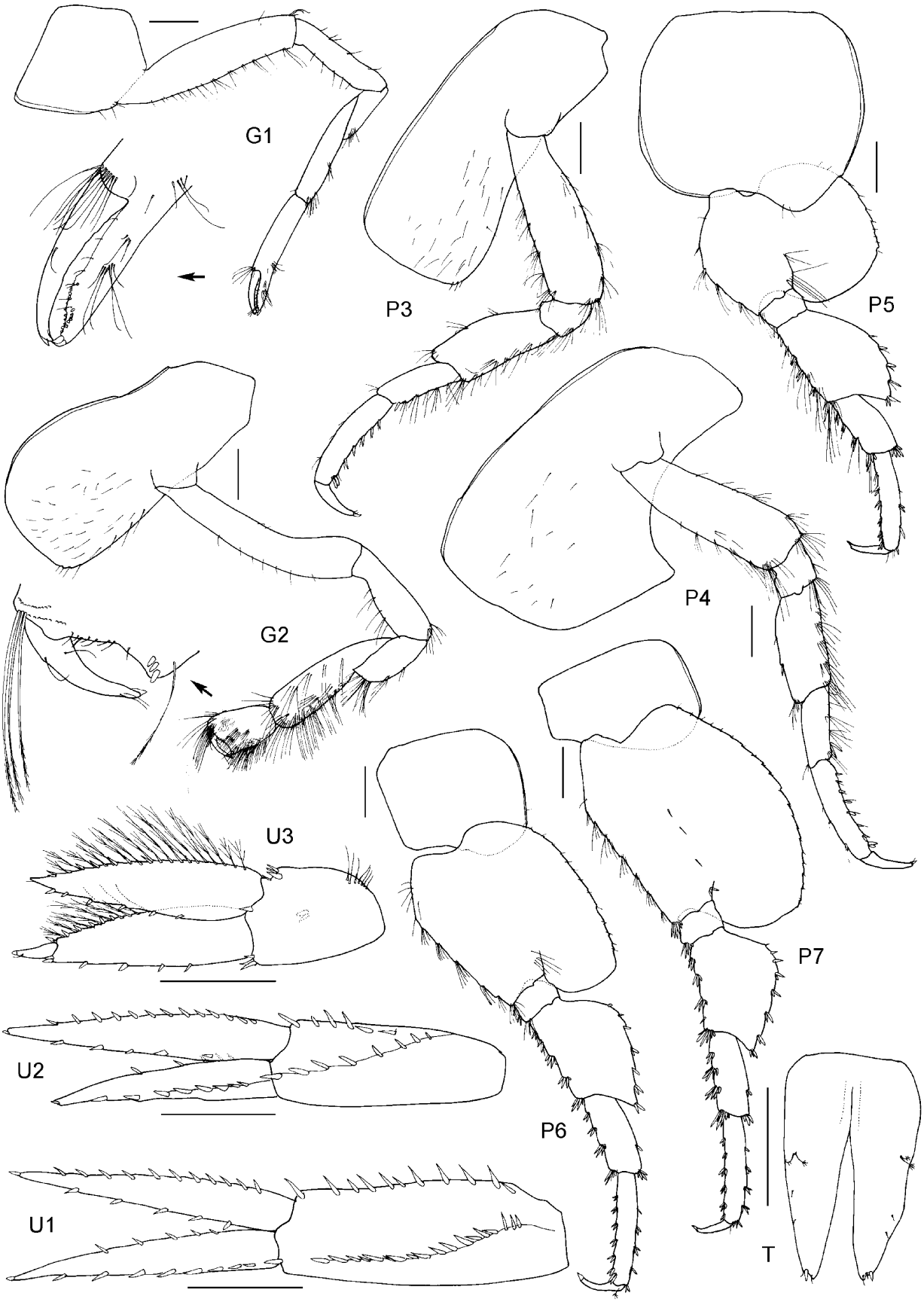

FIGURE 41. *Stephonyx arabiensis* Diffenthal & Horton, 2007, male, 22.7 mm, AM P. 96587, from east of Flynn Reef, Queensland, Australia. Scale bars: 0.5 mm.

and upper lip separate, with weak suture; epistome broadly rounded; upper lip produced, subacute apically. Mandible molar setose with vestigial triturating surface; palp attached about midway, article 2 not strongly broadened distally, article 3 blade-like. Maxilla 1 outer plate setal-tooth 7 present, cuspidate along most of straight inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 9 apical robust setae.

Gnathopod 1 chelate; coxa reduced, significantly shorter than coxa 2, subquadrate; basis moderately setose along anterior margin, or sparsely setose along anterior margin; ischium very long (length 4 × to 6 × breadth); carpus very long (length more than 4 × breadth), subequal in length to propodus, without posterior lobe; propodus margins subparallel, palm obtuse, entire, slightly concave; dactylus simple. ***Gnathopod 2 propodus palm transverse, slightly concave***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis broader than long, posterior margin not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. ***Epimeron 3 posterior margin smooth, posteroventral corner subquadrate, producing minute spine***. Urosomite 1 not projecting over urosomite 2, with anterodorsal notch and slightly rounded boss. Uropod 2 inner ramus without constriction. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with strong plumose setae on both rami. Telson deeply cleft, with 1 apical robust setae on each lobe.

Habitat. Marine.

Feeding strategies. Scavenger (Diffenthal & Horton 2007).

Depth range. 963–1864 m.

Remarks. Our material agrees very well with the description of Diffenthal & Horton (2007). This is the first record of *S. arabiensis* outside the type locality in the Arabian Sea. This remarkable range extension from the north-western Indian Ocean into the South Pacific Ocean indicates a wide range for the species. There is no other species of *Stephonyx* known from this vast area except for the *S. biscayensis* of J.L. Barnard (1961) and Ledoyer (1986) from Kenya and Madagascar, which appears to be an undescribed species (see remarks under *S. biscayensis*).

Distribution. *Australia.* Off the east coast from Flynn Reef, Queensland, to South East Cape, Tasmania (this study). *Pakistan*. Northern Arabian Sea (Diffenthal & Horton 2007).

Stephonyx biscayensis (Chevreux, 1908)

Euonyx biscayensis Chevreux, 1908: 1, fig. 1.—K.H. Barnard, 1916: 110.—Stephensen, 1923: 42.—Schellenberg, 1926a: 200.—Chevreux, 1927: 47.—Pirlot, 1933: 120 (key).—Chevreux, 1935: 7, pl. 5 fig. 2.—? K.H. Barnard, 1940: 514 (list).—J.L. Barnard, 1958: 91.—Belloc, 1960: 6.—? J.L. Barnard, 1961: 34, fig. 4.—? Griffiths, 1975: 144.—? Griffiths, 1976: 58, 100, fig. 32G.—Desbruyères *et al.*, 1985: 236, 237.—? Ledoyer, 1986: 748, fig. 289.—Andres, 1987: 96 (table 2).—Costello *et al.*, 1989: 32.—Barnard & Ingram, 1990: 2 (list), 3 (key).—Barnard & Karaman, 1991: 485.—Holmes *et al.*, 1997: 186 (list).—Dauvin & Bellan-Santini, 2002: 315 (table 1).

Stephonyx biscayensis.—Lowry & Stoddart, 1989: 522, figs 2, 3.—Palerud & Vader, 1991: 43.—Poupin, 1994: 16.—Lowry & Stoddart, 1997: 129, fig. 63.—Escobar-Briones & Winfield, 2003: 42.—Ortiz *et al.*, 2007: 516.—Diffenthal & Horton, 2007: 40 (key).—Senna & Serejo, 2007: 13 (key).—Brown & Thatje, 2011: 1, figs 1–3.—Narahara, *et al.*, 2012; 1486, 1506 (key), figs 7–11.—Corrigan *et al.*, 2013: 10, fig. 5.

Stephonyx sp. Paulmier, 1993: 29, pl. 34 fig. 1.

Types. Syntypes, 10 specimens MOM. Female originally illustrated and described is lost (Ed Hendrycks pers. comm.).

Type locality. Gulf of Gascony, Bay of Biscay, Northeast Atlantic Ocean (45°02'N 3°6'W), 1455 m depth.

Habitat. Marine.

Depth range. 494–1510 m (Lowry & Stoddart 1997; J.L. Barnard 1961).

Feeding strategies. Scavenger (taken in baited traps).

Remarks. Based on the key of Narahara *et al*. (2012) the records of J.L. Barnard (1961) and Ledoyer (1986) from the western Indian Ocean would key to *S. biscayensis* except for the posteroventral corner of epimeron 2 which has no spine. In addition the the cephalic lobe of *S. biscayensis* illustrated by both authors is rounded (triangular and apically subacute in the redescription of *S. biscayensis* of Lowry & Stoddart (1989), based on material from off Ireland). In fact neither of these characters were illustrated or described by Chevreux 1908.

Distribution. *North Atlantic Ocean*. Bay of Biscay (Chevreux 1908); south-west of the Faeroes (Stephensen 1923); south-west of Ireland (Stephensen 1923; Lowry & Stoddart 1989); Hatton-Rockall Basin (Andres 1987); off the coast of northwest Africa (Chevreux 1927). *South Atlantic Ocean*. ? Off Cape Point, South Africa (K.H. Barnard 1916; Schellenberg 1926a; Griffiths 1975). *Indian Ocean*. ? Off Kenya (J.L. Barnard 1961); ? Madagascar (Ledoyer 1986). *Caribbean Sea*. Off Puerto Rico and west of Basse Terre, Guadeloupe (Paulmier 1993; Poupin 1994; Lowry & Stoddart 1997). *Gulf of Mexico*. Off Florida, USA (Lowry & Stoddart 1997). *East China Sea*. Okinawa Trough and off Aguni-jima Island (Narahara, Tomikawa & Torigoe 2012).

Stephonyx carinatus Bellan-Santini, 1997

Stephonyx carinatus Bellan-Santini, 1997: 13, figs 7, 8.—Ortiz *et al.*, 2007: 516.—Diffenthal & Horton, 2007: 39 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1505 (key).

Types. Holotype, 7 mm, MNHN-Am 4903.

Type locality. Barbados Trench, North Atlantic Ocean (10°19.97'N 58°37.30'W), 1947 m depth.

Habitat. Marine, cold seeps.

Depth range. 1947 m (Bellan-Santini 1997).

Distribution. *North Atlantic Ocean*. Barbados trench (Bellan-Santini 1997).

Stephonyx incertus Bellan-Santini, 1997

Stephonyx incertus Bellan-Santini, 1997: 16, figs 9, 10.—Ortiz *et al.*, 2007: 516.—Diffenthal & Horton, 2007: 40 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1506 (key).

Types. Holotype, 8 mm, MNHN-Am 4904.

Type locality. Barbados trench, North Atlantic Ocean (10°19.97'N 58°37.30'W), 1947 m depth.

Habitat. Marine, cold-seeps.

Depth range. 1947 m (Bellan-Santini 1997).

Distribution. *North Atlantic Ocean*. Barbados trench (Bellan-Santini 1997).

Stephonyx laqueus (J.L. Barnard, 1967)

Euonyx laqueus J.L. Barnard, 1967: 55, figs 23, 24.—Sekiguchi & Yamaguchi, 1983: 7, fig. 4.—Barnard & Ingram, 1990 (key).—Barnard & Karaman, 1991: 485.—Boudrias, 1991: 13.
Stephonyx laqueus.—Lowry & Stoddart, 1989: 521.—France, 1994: 71.—Diffenthal & Horton, 2007: 40 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1493, 1505 (key), figs 1, 12–14.
Stephonyx c.f. *laqueus*.—Kaufman, 1994: 56, 63, fig. 10A, B, tables 1, 2.

Types. Holotype, male, 19 mm, LACM CR 1961-101.1.

Type locality. 8.5 miles west of San Benitos Islands, Baja California, Mexico (28°20'N 115°45'W), 1187 m.

Additional material. 26 specimens, LACM CR 1961-101.2. from the type locality.

Habitat. Marine.

Depth range. 330–1850 m (Sekiguchi & Yamaguchi 1983; Kaufman 1994).

Feeding strategies. Scavenger, collected in baited traps.

Distribution. *Eastern Pacific Ocean.* West coast of Baja California, Mexico (J.L. Barnard 1967; France 1994; Kaufman 1994). *Western Pacific Ocean and Sea of Okhotsk.* Coasts of Japan (Sekiguchi & Yamaguchi 1983; Narahara *et al*. 2012).

Stephonyx mytilus (Barnard & Ingram, 1990)

Euonyx mytilus Barnard & Ingram, 1990: 3, figs 1–3.—Vinogradov, 1995: 77 (table 1).
Stephonyx mytilus.—Diffenthal & Horton, 2007: 39 (key).—Narahara *et al.*, 2012: 1499, 1505 (key), figs 1, 15–18.

Types. Holotype, female "x", 20.04 mm, USNM 195194.

Type locality. Garden of Eden, Galapagos vents, eastern Pacific Ocean (00°47.9'N 86°09.2'W), 2491 m depth.

Habitat. Marine, thermal vents.

Depth range. 2447–2635 m (J.L. Barnard & Ingram 1990).

Feeding strategies. Scavenger.

Distribution. *Eastern Pacific Ocean*. Galapagos vents, Garden of Eden, Rose garden, and Thirteen Degree North Rift (Barnard & Ingram 1990). *Western Pacific Ocean.* Japan (Narahara *et al.* 2012).

Stephonyx normani (Stebbing, 1888)

Euonyx normani Stebbing, 1888: 669, pl. 19.—Della Valle, 1893: 842.—Stebbing, 1906: 19.—Pirlot, 1933: 120 (key).—J.L. Barnard, 1958: 92.—Thurston & Allen, 1969: 358.—Mills, 1972: 76 (table 1).—Barnard & Ingram, 1990: 2 (key).—Barnard & Karaman, 1991: 485.

Stephonyx normani.—Lowry & Stoddart, 1989: 521.—Diffenthal & Horton, 2007: 39 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1505 (key).

not *Euonyx normani*.—Chilton, 1921: 52, figs 5a-d.—Pirlot, 1933: 120 (key).—Sheard, 1937: 19. (= *S. pirloti*).

Types. Holotype female, BMNH 1889 : 5 : 15 : 21 (specimen in alcohol + 8 slides).

Type locality. Near the Kermadec Islands (29°45'S 178°11'W), 1152 m depth.

Habitat. Marine, volcanic mud.

Depth range. 1152 m (Stebbing 1888).

Feeding strategies. Unreported.

Distribution. *Pacific Ocean*. Kermadec Islands (Stebbing 1888).

Stephonyx perexcavatus Narahara, Tomikawa & Torigoe, 2012

Stephonyx perexcavatus Narahara, Tomikawa & Torigoe, 2012: 1479, 1505 (key), figs 2–6.

Types. Holotype male, 22.9 mm, NSMT-Cr 22011. Paratypes: four males (20.4–22.9 mm) NSMT-Cr 22012–22015; five females (21.9–23.2 mm) NSMT-Cr 22016–22020.

Type locality. Okinawa Trough, East China Sea (28°29.5'N, 127°59.2'E), 1073–1080 m.

Habitat. Marine, benthic.

Depth range. 1073–1080 m (Narahara *et al*. 2012).

Feeding strategies. Scavenger taken in baited trap.

Distribution. *Pacific Ocean*. Okinawa Trough, East China Sea (Narahara *et al*. 2012).

Stephonyx pirloti (Sheard, 1938)

(Figs 42–44)

Euonyx normani.—Chilton, 1921: 52, figs 5a–d.—Pirlot, 1933: 120 (key).—Sheard, 1937: 19.

Euonyx pirloti Sheard, 1938: 170, figs 1–3.—J.L. Barnard, 1958: 92.—Zeidler, 1986: 109.—Barnard & Ingram, 1990: 3 (key).—Barnard & Karaman, 1991: 485.

Euonyx pirloti.—Springthorpe & Lowry, 1994: 28.

Stephonyx pirloti.—Lowry & Stoddart, 1989: 521.—Lowry & Stoddart, 2003: 284.—Diffenthal & Horton, 2007: 39 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1505 (key).

Types. Syntypes, five specimens (one dissected), SAMA C2177; one microscope slide (lost) SAMA C2201.

Type locality. Nepean Bay, Kangaroo Island, South Australia (~35°42'S 137°45'E).

Additional material examined. *New South Wales.* 1 specimen, AM P.57649, north-east of Coffs Harbour (30°14.63'S 153°24.68'E), 199 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-882]; 5 specimens, AM P.63983; 320 specimens, AM P.44268; 1 specimen, AM P.63984,

off Wollongong (34°31.48'S 151°13.22'E), 200 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-946]; 628 specimens, AM P.44258, off Wollongong (34°31.48'S 151°13.22'E), 200 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-944]; 87 specimens, AM P.43486, off Wollongong (34°31.48'S 151°13.22'E), 200 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-945]; 446 specimens, AM P.44245; 446 specimens, AM P.44307, off Wollongong (34°31.48'S 151°13.22'E), 200 m, *Globigerina* ooze, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-964]; 439 specimens, AM P.46909, off Wollongong (34°32.02'S 151°13.0'E), 200 m, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-781]; 2 specimens, AM P.44417, off Wollongong (34°33.02'S 151°16.53'E), 400 m, *Globigerina* ooze, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-803]; 1 female, AM P.96595; 1 male, AM P.96594, 1832 specimens, AM P.44231, off Wollongong (34°31.48'S 151°13.22'E), 200 m, *Globigerina* ooze, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-962]; 1 specimen, AM P.44429, off Wollongong (34°32.38'S 151°15.0'E), 300 m, *Globigerina* ooze, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-801]; 377 specimens, AM P.46928, off Wollongong (34°32.02'S 151°13.0'E), 200 m, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-780]; 437 specimens, AM P.47037, off Wollongong (34°32.08'S 151°12.55'E), 200 m, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-797]; 1 specimen, AM P.51131, north-east of Coffs Harbour (30°10.88'S 153°32.22'E), 1000 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-877]; 1 specimen, AM P.85714, south-east of Port Stephens (32°52'S 152°32'E), 145 m, dredge, 6 December 1978, FRV *Kapala* [K78-26-07]; 367 specimens, AM P.47023, off Wollongong (34°32.08'S 151°12.55'E), 200 m, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-798]; 1 specimen, AM P.85715, east of The Entrance (33°22'S 152°04'E), 205 m, benthic trawl, 11 February 1986, FRV *Kapala* [K86-01-04]; 59 specimens, AM P.43513, off Wollongong (34°31.48'S 151°13.22'E), 200 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-963]; 1 specimen, AM P.24235, east of Long Reef (33º44'S 151º22'E) 32 m, 1973, Australian Museum Shelf Benthic Survey.

South Australia. 1 specimen, AM P.68511, Kangaroo Island, Penneshaw, 8 km off Hogg Point, (35°37'S 137°57'E), 25 m, trawl, 30 May 2001, W. Rumball, MRV *Ngérin*; 1 specimen, AM P.85719, Gulf St Vincent, 8–10 km off Semaphore (34°52'S 138°20'E), 9 m, 1925–1925, H.M. Hale [SA 74]; 1 specimen, AM P.85718, Investigator Strait (35°33'S 137°37'E), 50–80 m, J.C. Verco; 5 specimens, AM P.85709, Yorke Peninsula, Edithburgh Pier (35°05'S 137°45'E), 3 m, baited trap, 16 April 2008, T. Laperousaz; 2 specimens, AM P.85713, Gulf St Vincent, Marino (35°03'S 138°31'E), 1910, W.H. Baker [SA 79]; 2 specimens, SAMA C8034, Dangerous Reef, Spencer Gulf, South Australia, [approx. 34°49'S 136°12'E], dredged, K. Sheard; 1 specimen, SAMA C8035, 8 miles off Halletts Cove, Gulf St Vincent, South Australia [approx. 35°05'S 138°30'E], 30 m, A.T. trawl, 2-2.30 a.m., 14 April 1945, H.M. Hale & K. Sheard; 1 specimen, SAMA C8036, Whalers Bay, Thistle Island, South Australia [approx. 35°00'S 136°11'E], 7 fms [12.8 m], 3 March 1941, K. Sheard.

Tasmania. 1 male, AM E.6521, Bass Strait, east coast of Flinders Island (40°00'S 148°30'E), 1909-1914, FIS *Endeavour*; 87 specimens, AM P.38829; 11 specimens, AM P.50876; 450 specimens, AM P.50877, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-386]; 549 specimens, AM P.51037, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-376]; 1 specimen, AM P.51224, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-393]; 1 specimen, AM P.57709, east of Fortescue Bay (43°09.36'S 148°13.6'E), 300 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-378]; 52 specimens, AM P.51015, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-356]; 17 specimens, AM P.50932, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-357]; 1 specimen, AM P.85717, off Babel Island (39°55'S 148°31'E), 25 m over a bottom depth of 51 m, horizontal plankton haul, 20 January 1939, CSIRO, FRV *Warreen* [29/39]; 8 specimens, AM P.51147, east of Fortescue Bay (43°09.36'S 148°13.6'E), 300 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-377]; 1 specimen, AM P.51139, east of Fortescue Bay (43°09.36'S 148°13.6'E), 300 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-359]; 2 specimens, AM P.51227, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-394]; 700 specimens, AM P.50891, east of Fortescue Bay, north of Hippolyte

Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-390]; 771 specimens, AM P.51188; 41 specimens, AM P.51190, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-391]; 1820 specimens, AM P.51329, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-408]; 356 specimens, AM P.51315, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-409]; 2903 specimens, AM P.51033, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-372]; 11004 specimens, AM P.50821, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-354]; 3187 specimens, AM P.50866, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-371]; 188 specimens, AM P.51157, east of Fortescue Bay (43°06.7'S 148°13.6'E), 200 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-374]; 1 specimen, AM P.85712, Bass Strait, east of Flinders Island (40°01'S 148°02'E), m, FIS *Endeavour*, 1909-1914, FIS *Endeavour*; 67 specimens, AM P.46651, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-368]; 2 specimens, AM P.85711, north side of Cape Sorell (42°11.5'S 145°10.8'E), 13 m, baited trap, 27–28 April 1991, J.K. Lowry & S.J. Keable, *Flying Scud* [TAS-301]; 35 specimens, AM P.85716, Freycinet Peninsula, about 800 m east of Point Geographe (42°17.0'S 148°18.8'E), 45 m, baited trap, 30 April 1991–1 May 1991, J.K. Lowry & S.J. Keable, *Flying Scud* [TAS-337]; 13 specimens, AM P.50839, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-370]; 200 specimens, AM P.50915, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-405]; 1 specimen, AM P.85710, off the coast of Tasmania, Australia (42°00'S 146°45'E), 1909-1914, FIS *Endeavour*; 259 specimens, AM P.50884, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-387]; 9963 specimens, AM P.45772, east of Fortescue Bay, north of Hippolyte Rocks (43°06.7'S 148°03.45'E), 100 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-353]; 511 specimens, AM P.45741, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-350]; 47 specimens, AM P.51394, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-406]; 86 specimens, AM P.46644, mouth of Fortescue Bay (43°07.76'S 147°59.98'E), 50 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-352]; 2 specimens, AM P.51167, east of Fortescue Bay (43°07.36'S 148°13.75'E), 400 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-380]; 2 specimens, AM P.51173, east of Fortescue Bay (43°07.36'S 148°13.75'E), 400 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-382]; 1 specimen, AM P.51181, east of Fortescue Bay (43°08.96'S 148°15.36'E), 1000 m, baited trap, 17–18 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-384]; 1 specimen, NMV J67769, 5 km north-east of Mistaken Cape, Maria Island, Tasmania (42º37.0'S 148º12.5'E), 100 m, fine muddy bryzoan, epibenthic sled, 23 April 1985, RV *Challenger* [MV TAS-31]; 2 specimens, NMV J67766, 25 km north-east of Deal Island, Tasmania, eastern Bass Strait, Australia (39°16.8'S 147°33.2'E), 57 m, medium sand, epibenthic sled, 18 November 1981, RV *Tangaroa* [BSS 174S]; 1 specimen, NMV J67761, 9 km south-south-west of Cape Adansan, Three Hummock Island, central Bass Strait, Australia (40°30.9'S 144°56'E), 27 m, very coarse sand, epibenthic sled, 2 November 1980, M. Gomon & G.C.B. Poore, FRV *Sarda* [BSS 109S]; 5 specimens, NMV J67762, 9 km south-south-west of Cape Adansan, Three Hummock Island, central Bass Strait, Australia (40°30.9'S 144°56'E), 27 m, very coarse sand, epibenthic sled, 2 November 1980, M. Gomon & G.C.B. Poore, FRV *Sarda* [BSS 109S].

Victoria. 1 specimen, NMV J67767, south of Point Hicks (38°17.70'S 149°11.30'E), 400 m, coarse sand, gravel, mud, many sponges, WHOI epibenthic sled, 24 July 1986, M.F. Gomon *et al.,* RV *Franklin* [SLOPE 40]; 1 specimen, NMV J7469, 51 km south-south-west of Cape Otway, western Bass Strait, Australia (39°16'S 143°17'E), 90 m, medium sand, dredge, 10 October 1980, G.C.B. Poore, HMAS *Kimbla* [BSS-73D]; 3 specimens, NMV J67764, 15 km east of Cape Wellington, Wilsons Promontory, Victoria, eastern Bass Strait, Australia (39º03.2'S 146º39.5'E), 55 m, muddy fine sand, epibenthic sled, 18 November 1981, R. Wilson, RV Tangaroa [BSS-179S]; 1 specimen, NMV J7446, 25 km west-south-west of Cape Otway, western Bass Strait, Australia (38°55'S 143°25'E),

67 m, coarse sand, dredge, G.C.B. Poore, 8 October 1980, HMAS *Kimbla* [BSS-53D]; 1 specimen, NMV J67763, 70 km south-west of Cape Otway, western Bass Strait, Australia (39°26.3'S 143°06.8'E), 115 m, sand, epibenthic sled, 21 November 1981, R. Wilson, RV *Tangaroa* [BSS-194S].

Western Australia. 5 specimens, AM P.78479, north-east of Dampier, drill platform, (19°46.28'S 115°20.03'E), 222 m, baited trap, 17 July 2008, H. Smith.

Description. Based on female, 18.9 mm, AM P.96595. Head, lateral cephalic lobe rounded; eyes reniform. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum not forming cap, 10-articulate, terminal article not offset; primary flagellum with strong 2-field callynophore; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged, brush setae absent; flagellum long; calceoli absent. ***Labrum, epistome and upper lip fused, slightly concave proximally, with central bulge***. Mandible molar setose with vestigial triturating surface; palp attached proximally, article 2 not broadened distally, article 3 blade-like. Maxilla 1 outer plate setal-tooth 7 present, cuspidate distally along inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 3 long apical robust seta.

Gnathopod 1 chelate; coxa reduced, significantly shorter than coxa 2, subquadrate; basis sparsely setose along anterior margin; ischium very long (length 4 × to 6 × breadth); carpus very long (length more than 4 × breadth), subequal in length to propodus, without posterior lobe; propodus margins subparallel, palm obtuse, entire, straight; dactylus simple. ***Gnathopod 2 propodus palm transverse to slightly acute***, ***straight***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis broader than long, posterior margin not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced**.** ***Epimeron 3 posterior margin smooth, posteroventral corner narrowly rounded***. Urosomite 1 not projecting over urosomite 2, with anterodorsal notch and slightly rounded boss. Uropod 2 inner ramus without constriction. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with strong plumose setae on both rami. Telson deeply cleft; without dorsal robust setae; with 1 apical robust setae on each lobe.

Sexually dimorphic characters. Based on male, 17.0 mm, AM P.96594. Antenna 1 flagellum article 1 longer than female, with strong 2-field callynophore, stronger than female; calceoli present. Antenna 2 flagellum calceoli present.

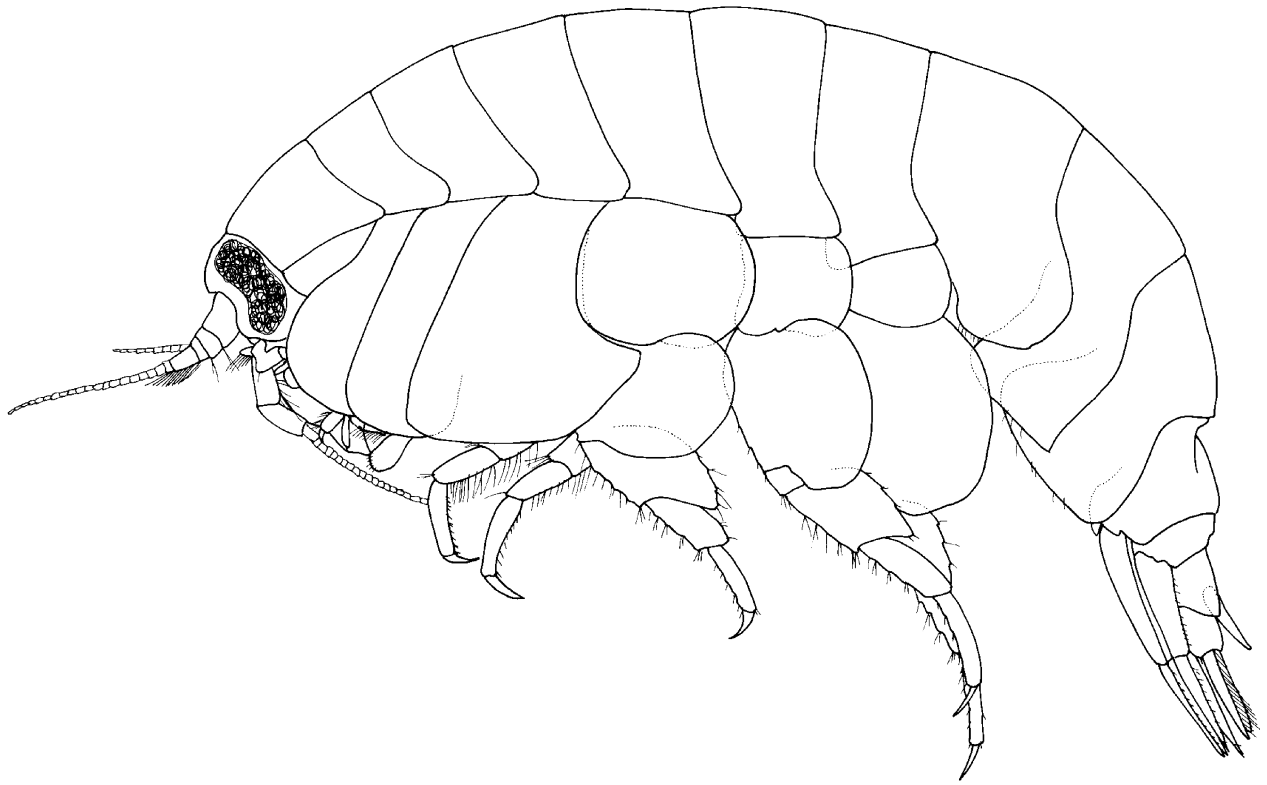

FIGURE 42. *Stephonyx pirloti* (Sheard, 1938), female, 18.9 mm, AM P. 96595, from off Wollongong, New South Wales, Australia.

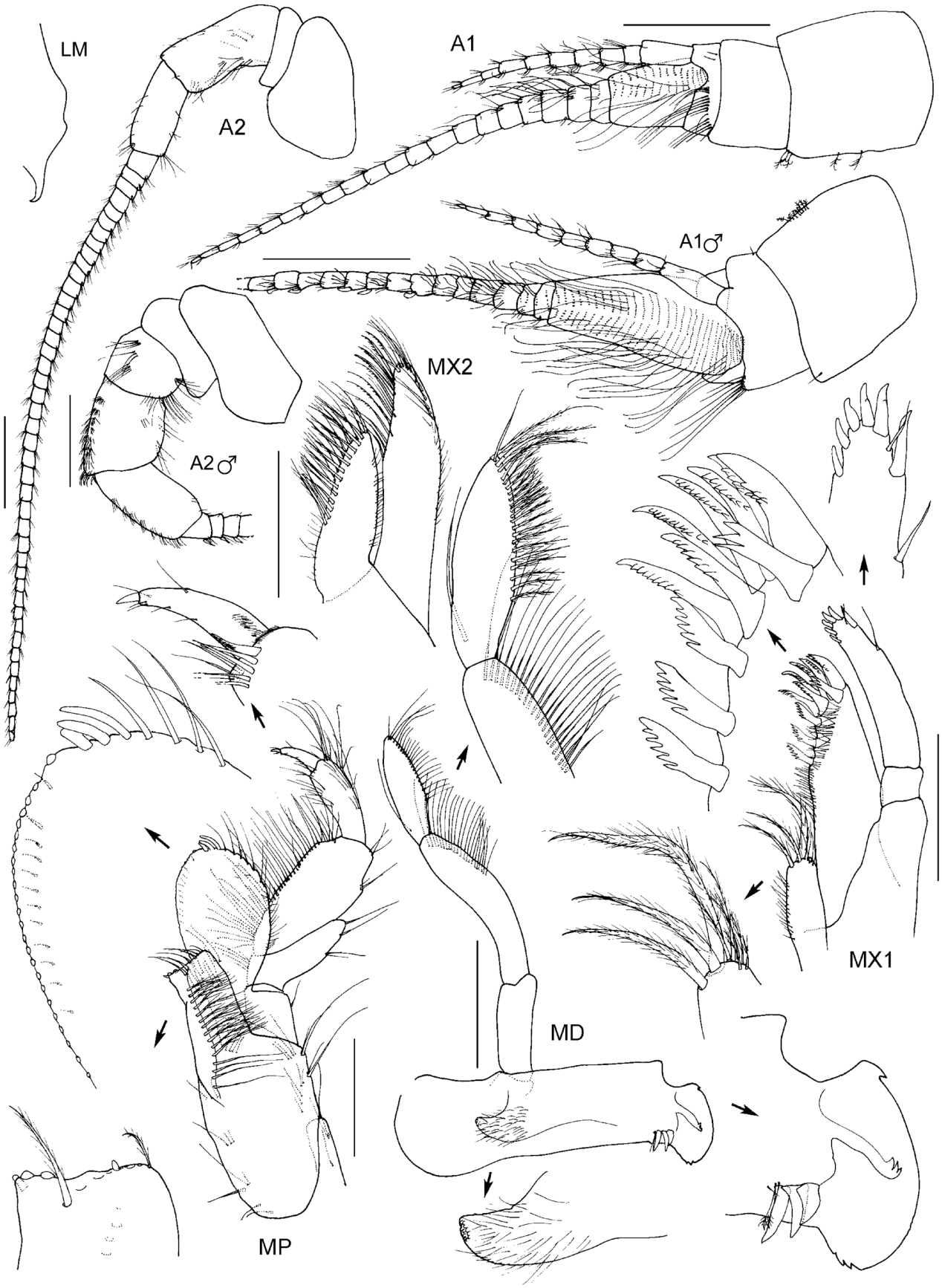

FIGURE 43. *Stephonyx pirloti* (Sheard, 1938), female, 18.9 mm, AM P. 96595; male 17.0 mm, AM P. 96594, from off Wollongong, New South Wales, Australia. Scale bars: 0.5 mm.

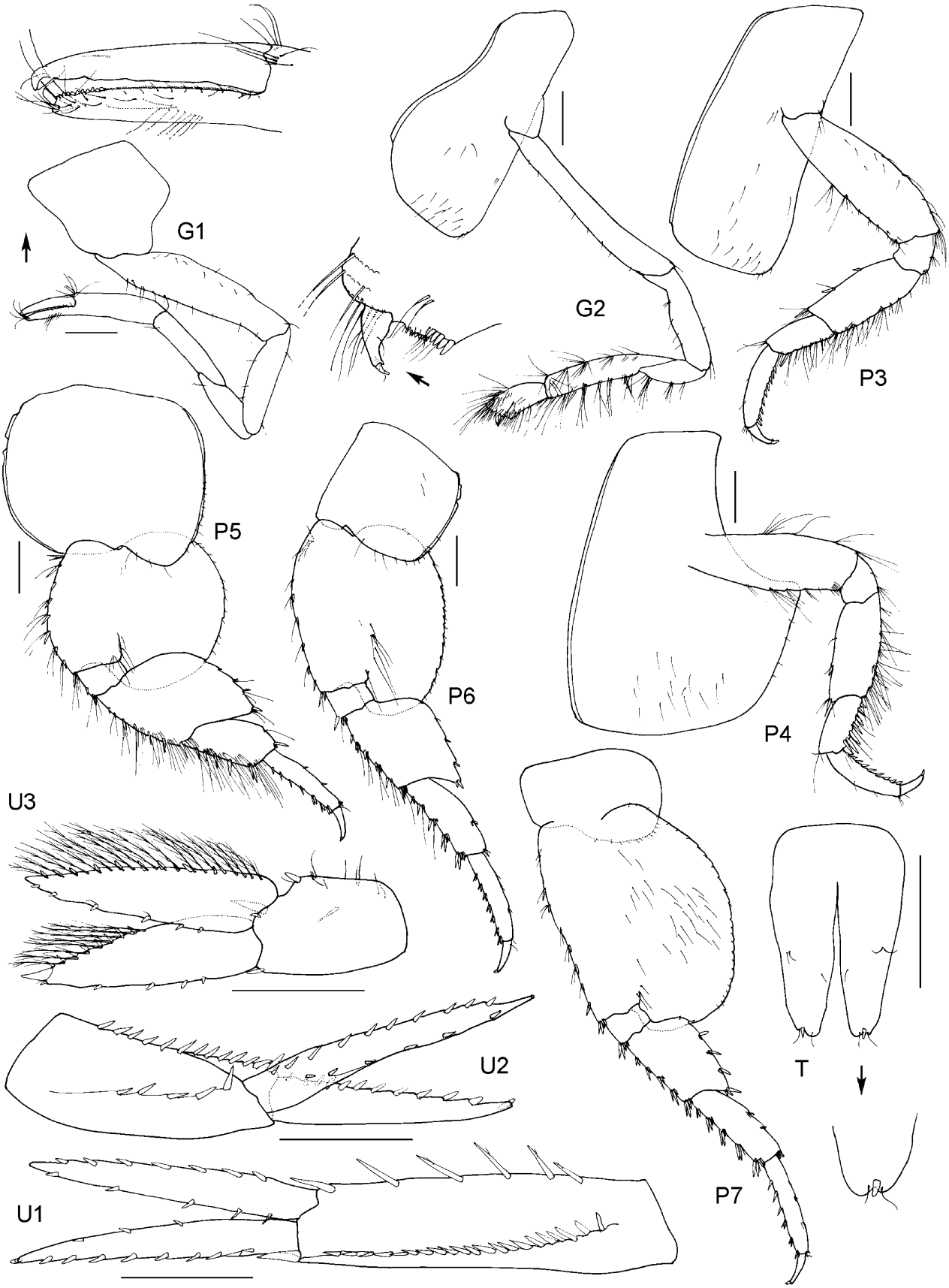

FIGURE 44. *Stephonyx pirloti* (Sheard, 1938), female, 18.9 mm, AM P. 96595, from off Wollongong, New South Wales, Australia. Scale bars: 0.5 mm.

Habitat. Marine.

Depth range. 3–1000 m (this study).

Feeding strategies. Scavenger, taken in baited traps.

Remarks. *Stephonyx pirloti* is a distinctive species. It differs from other species in the genus by the epistome which is fused and by the long first article on the mandibular palp. The gnathopod 2 carpus, as illustrated by Sheard (1938) was about 3.5 × as long as the propodus. In material we have examined from Kangaroo Island, the type locality, the carpus is about 2.5 × as long as the propodus. In a selection of material we found a range from 2.2 × to 2.8 × the propodus, well outside the length ratio of Sheard. The most frequent length ratio is about 2.5. In all other respects our material corresponds with the material of Sheard 1938.

Distribution. *Australia*. Coasts of New South Wales (this study); Flinders Islands, Victoria (Chilton 1921); Gulf St Vincent, Kangaroo Island South Australia (Sheard 1938; this study); Tasmania (this study); Western Australia (this study).

***Stephonyx rafaeli* sp. nov.**
(Figs 45–47)

Types. Holotype, female, 34.0 mm, AM P.96585, off Wollongong, New South Wales, Australia (32°32.4'S 151°22.8'E), 1000 m, baited trap, 28 March 1994–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-971]. Paratype, male, 26.4 mm, AM P.96586, same collection details as holotype.

Type locality. Off Wollongong, New South Wales, Australia (32°32.4'S 151°22.8'E), 1000 m depth.

Etymology. Named for the son of the first author on the occasion of his first birthday, 21 January 2014.

Additional material examined. *New South Wales.* 273 specimens, AM P.43443, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-971]; 89 specimens, AM P.43451, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-972]; 1 specimen, AM P.49816, north-east of Coffs Harbour (30°10.88'S 153°32.22'E), 1000 m, baited trap, 12–13 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-876]; 26 specimens, AM P.44378, off Wollongong (34°33.42'S 151°21.35'E), 1000 m, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-789]; 193 specimens, AM P.43434, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-973]; 2 specimens, AM P.88939, east of Shoalhaven Heads (34°53'S 151°15'E to 34°56'S 151°13'E), 1079 m, trawl, 26 October 1983, FRV *Kapala*, FRV *Kapala* [K83-14-06]; 1 specimen, AM P.48123, north-east of Coffs Harbour (30°10.93' S 153°32.26'E), 963 m, baited trap, 11–12 August 1993, P.B. Berents, R.T. Springthorpe & W. Vader, MV *Cheryl Lee* [NSW-863]; 242 specimens, AM P.43426, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-953]; 173 specimens, AM P.43422, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-954]; 45 specimens, AM P.43431, off Wollongong (34°32.4'S 151°22.8'E), 1000 m, baited trap, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-955]; 233 specimens, AM P.44386, off Wollongong (34°33.22'S 151°21.4'E), 1000 m, baited trap, 7–8 May 1993, P. Freewater & party, MV *Robin E* [NSW-808]; 18 specimens, AM P.44369, off Wollongong (34°33.42'S 151°21.35'E), 1000 m, baited trap, 6–7 May 1993, P. Freewater & party, MV *Robin E* [NSW-788]; 3 specimens, AM P.43366, north-east of Coffs Harbour (30°10.93' S 153°32.26'E), 1000 m, baited trap, 8–9 September 1994, J.K. Lowry & K. Dempsey, MV *Carrie Ann* [NSW-1000].

Queensland. 1 specimen, AM P.57599, east of Flynn Reef (16°37.82'S 146°23.08'E), 1000 m, baited trap, 6–7 June 1993, J.K. Lowry, P. Freewater & W. Vader, RV *Sunbird* [QLD-930/SEAS].

Description. Based on holotype, female, 34.0 mm, AM P. 96585. Head, lateral cephalic lobe rounded; eyes lageniform. Antenna 1 peduncular article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore; 10-articulate, terminal article not offset; primary flagellum with strong 2-field callynophore; calceoli absent. Antenna 2 peduncular article 3 short; articles 3 to 5 not enlarged, brush setae absent; flagellum short; calceoli absent. ***Labrum, epistome and upper lip separate; epistome less produced than upper lip, broadly rounded; upper lip slightly produced, rounded apically.*** Mandible molar with asymmetrically reduced column, proximally setose, distally triturating; palp attached about midway, article 2

not broadened distally, article 3 blade-like. Maxilla 1 outer plate setal-tooth 7 present, cuspidate along most of inner margin; palp distal margin with apical robust setae. Maxilliped outer plate with 5 long, slender apical robust setae.

Gnathopod 1 chelate; coxa reduced, significantly shorter than coxa 2, subquadrate; basis moderately setose along anterior margin; ischium very long (length 4 × to 6 × breadth); carpus very long (length more than 4 × breadth), slightly longer than propodus, without posterior lobe; propodus margins subparallel, palm obtuse, entire, slightly concave; dactylus simple. ***Gnathopod 2 propodus palm transverse, straight***. Pereopod 4 coxa with a well-developed posteroventral lobe. Pereopod 5 coxa without distinct lateral ridge; basis broader than long, posterior margin not serrate. Pereopod 7 basis posterodistally produced less than halfway along merus.

Pleonite 3 without mid-dorsal carina, not produced dorsodistally, posterodorsal margin not produced. ***Epimeron 3 posterior margin smooth, posteroventral corner appearing subquadrate, forming a minute spine***. Urosomite 1 not projecting over urosomite 2, with anterodorsal notch and slightly rounded boss. Uropod 2 inner ramus without constriction. Uropod 3 peduncle without dorsolateral flange; outer ramus article 2 short, with strong plumose setae on both rami. Telson deeply cleft, with dorsal robust setae, with 2 apical robust setae on each lobe.

Sexually dimorphic characters. Based on paratype, male, 26.4 mm, AM P.96586. Antenna 1 flagellum with very strong 1-field callynophore, calceoli present. Antenna 2 peduncle articles 3–4 with brush setae; calceoli present.

Depth range. 963–1079 m.

Remarks. Based on the keys in Diffenthal and Horton (2007) and Narahara *et al*. (2012) *Stephonyx rafaeli* is similar to *S. biscayensis*. In *S. rafaeli* the lateral cephalic lobe is apically rounded (apically acute in *S. biscayensis*), the carpus of the first gnathopod is longer than the propodus (subequal in *S. biscayensis*), the palm of gnathopod 2 is transverse (slightly acute in *S. biscayensis*) and the carpus of gnathopod 2 is much shorter in *S. rafaeli*.

Distribution. *Australia.* Off the east coast from Flynn Reef, Queensland, to Shoalhaven Heads, New South Wales.

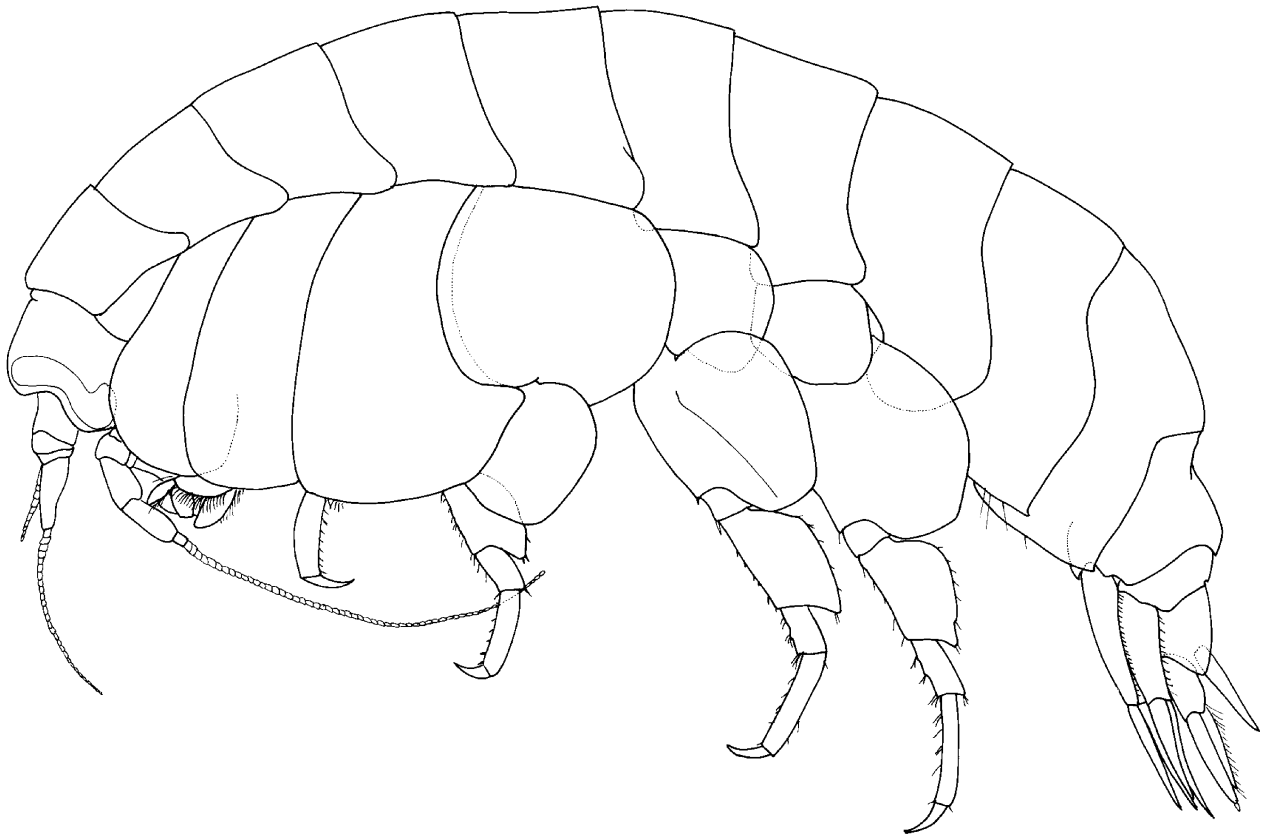

FIGURE 45. *Stephonyx rafaeli* **sp. nov.**, holotype, female, 34.0 mm, AM P. 96585, from off Wollongong, New South Wales, Australia.

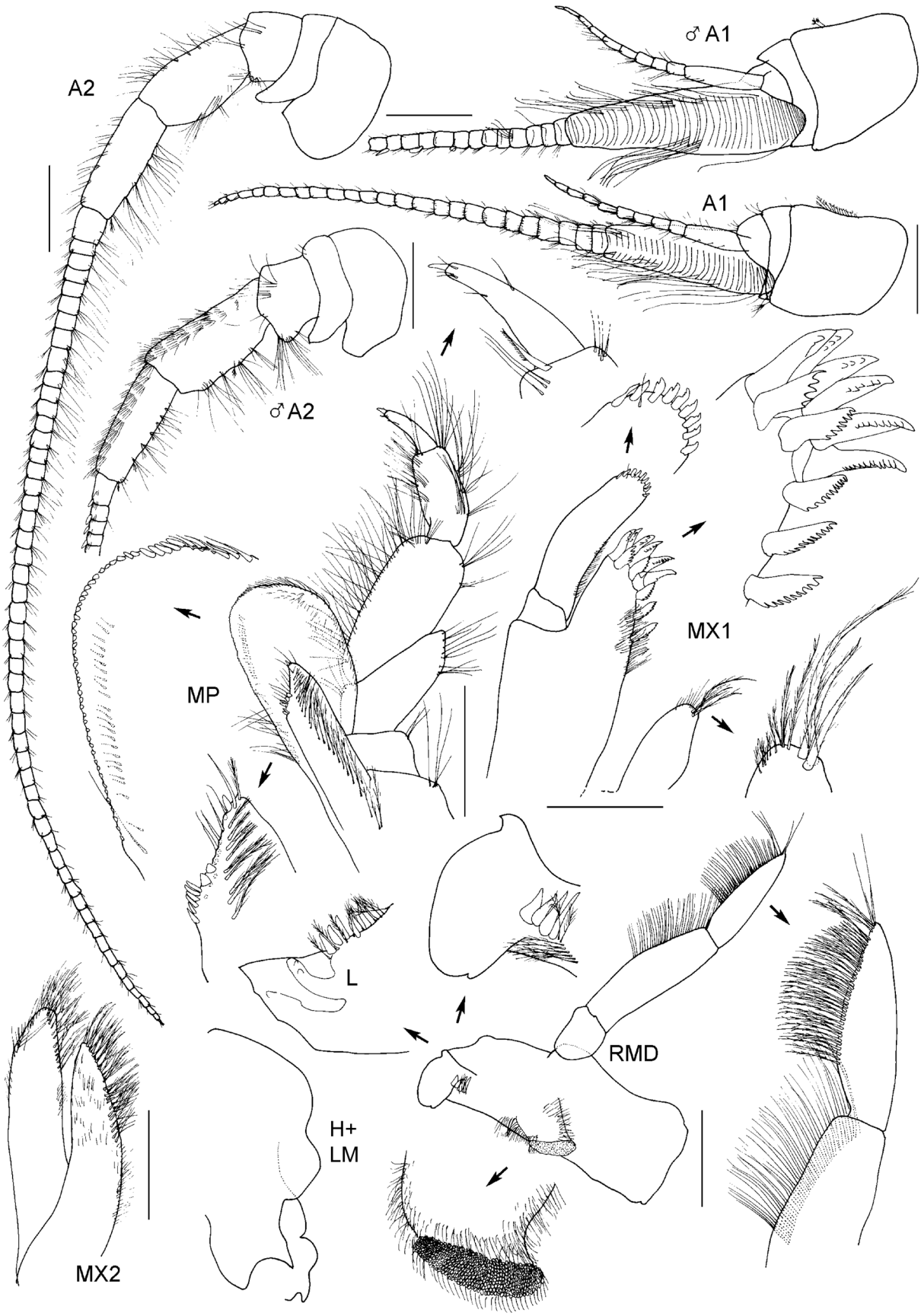

FIGURE 46. *Stephonyx rafaeli* **sp. nov.,** holotype, female, 34.0 mm, AM P. 96585; paratype, male 26.4 mm, AM P. 96586, from off Wollongong, New South Wales, Australia. Scale bars: 0.5 mm.

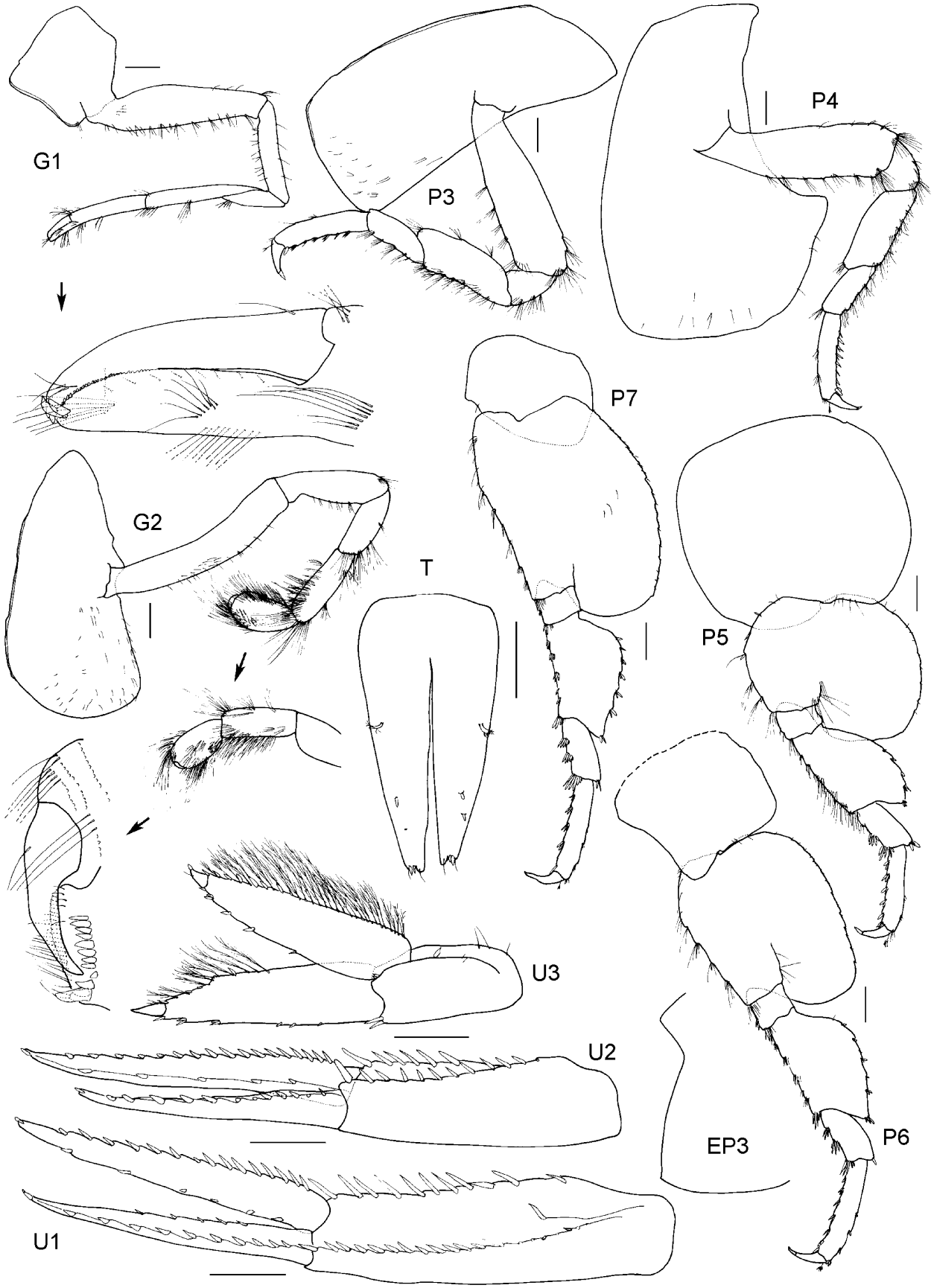

FIGURE 47. *Stephonyx rafaeli* **sp. nov.,** holotype, female, 34.0 mm, AM P. 96585, from off Wollongong, New South Wales, Australia. Scale bars: 0.5 mm.

Stephonyx scutatus (Griffiths, 1977)

Euonyx scutatus Griffiths, 1977: 98, fig. 3.—Barnard & Ingram, 1990: 3 (key).—Barnard & Karaman, 1991: 485.
Stephonyx scutatus.—Lowry & Stoddart, 1989: 521.—Diffenthal & Horton, 2007: 40 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1505 (key).

Types. Holotype female, 16 mm, SAM A13652.

Type locality. Cape Basin, South Atlantic Ocean (34°37'S 17°03'E).

Habitat. Marine.

Depth range. 2900 m (Griffiths 1977).

Remarks. *Stephonyx scutatus* is different from other species of *Stephonyx* in the dorsal body carination and in the peculiar conical hump of coxa 5. The mandibular molar, described as 'a large plate with raised margins' is not like the setose tongues or triturating molars usually found in scavenging uristids and particularly in *Stephonyx*.

Distribution. *South Atlantic Ocean*. Cape Basin (Griffiths 1977).

Stephonyx talismani (Chevreux, 1919)

Euonyx talismani Chevreux, 1919: 576.—Stephensen, 1923: 41, fig. 2.—Chevreux, 1927: 47, pl. 2 figs 1–13.—Pirlot, 1933: 120 (key).—J.L. Barnard, 1958: 92.—Andres, 1987: 96 (table 2).—Costello *et al*., 1989: 32.—Barnard & Ingram, 1990: 3 (key).—Barnard & Karaman, 1991: 485.—Holmes *et al.*, 1997: 186 (list).—Dauvin & Bellan-Santini, 2002: 315 (table 1).
Stephonyx talismani.—Lowry & Stoddart, 1989: 521.—Palerud & Vader, 1991: 43.—Diffenthal & Horton, 2007: 39 (key).—Senna & Serejo, 2007: 13 (key).—Narahara *et al.*, 2012: 1505 (key).

Types. Syntypes, 1 juvenile, 5 mm, MNHN Am5498; 1 female, 12 mm, MNHN Am5499.

Type locality. Off Cape Bojador, eastern North Atlantic Ocean (25°39'N 18°18'W), 698 m; and (25°39'N 18°22'W) 882 m [*Talisman* dredge stns 70 and 72 respectively].

Habitat. Marine, sand and coral shell.

Depth range. 698–1275 m (Chevreux 1919; Stephensen 1923).

Distribution. *North Atlantic Ocean*. Near Cape Bojador (Chevreux 1919); south-west of the Faeroe Islands (Stephensen 1923); Hatton-Rockall Basin (Andres 1987); coast of France (Dauvin & Bellan-Santini 2002).

Stephonyx uncinatus Senna & Serejo, 2007

Stephonyx uncinatus Senna & Serejo, 2007: 8, figs 1–3.—Narahara *et al.*, 2012: 1506 (key).

Types. Holotype, male, 36 mm, MNRJ 19498. Paratypes: 13 specimens (four males, five females, four juveniles), MNRJ 18292; four specimens (one male, two females, one juvenile), MNRJ 18293.

Type locality. Off the coast of Bahia State, Brazil (14°27'654"S 38°51'130"W), 730–739 m depth.

Habitat. Marine.

Depth range. 687–739 m (Senna & Serejo 2007).

Feeding strategies. Scavenger, taken in baited traps (Senna & Serejo 2007).

Distribution. *Brazil*. Off the coast of Bahia State (Senna & Serejo 2007).

Tmetonyx Stebbing 1906
(Fig. 48)

Hoplonyx Sars, 1891: 91 (homonym, Coleoptera).—Stebbing, 1894: 9.
Tmetonyx Stebbing 1906: 73 (new name).—J.L. Barnard, 1969: 365.—Barnard & Karaman, 1991: 441 (key), 535.

Type species. *Oniscus cicada* O. Fabricius, 1780, original designation.

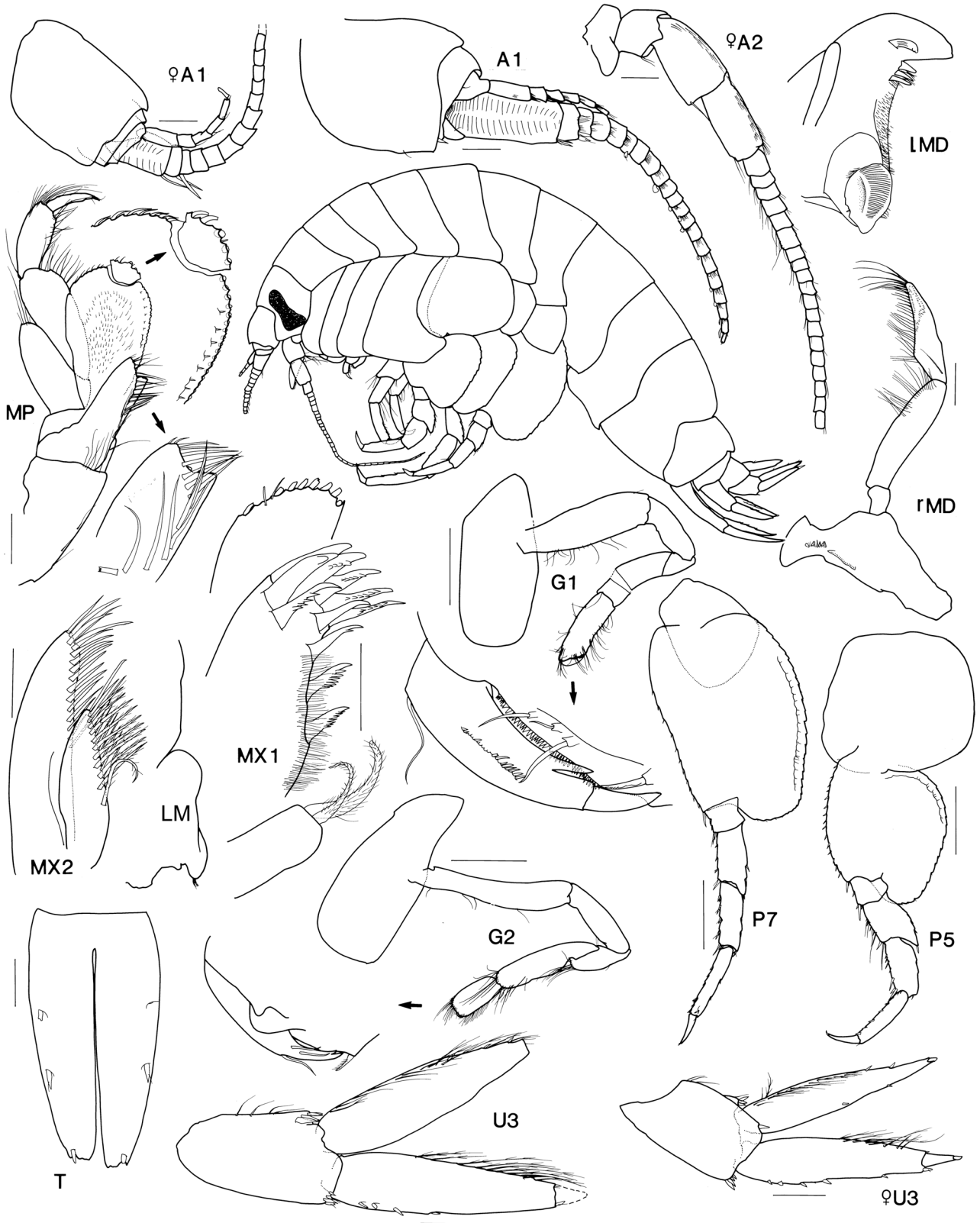

FIGURE 48. *Tmetonyx cicada* (O. Fabricius, 1780), syntype male, 16.9 mm, female, 18.1 mm, ZMUC CRU-6032; *habitus* from male, 14.5 mm, AM P.38309; western Greenland. Scale bars: gnathopods, pereopods, 1.0 mm; remainder, 0.2 mm.

Included species. *Tmetonyx* includes 8 species: *T. acuta* (G.O. Sars, 1891); *T. albida* (G.O. Sars, 1891); *T. cicada* (O. Fabricius, 1780); *T. gulosa* (Krøyer, 1845); *T. leucophthalma* (G.O. Sars, 1891); *T. nardonis* (Heller, 1867); *T. palpiserrata* Bellan-Santini, 1985; *T. rotundata* (Chevreux, 1926a); *T. similis* (G.O. Sars, 1891).

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 with weakly developed brush setae. Mandible molar a reduced column with convex, fully triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate significantly shorter than outer plate. ***Gnathopod 1 subchelate; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin; ischium long (length 2 × to 4 × breadth); carpus long (length 2 to 4 × breadth)***; propodus margins subparallel. ***Uropod 2 inner ramus not constricted.*** Telson deeply cleft.

Remarks. Based on the subchelate gnathopod 1 with a fully developed coxa and long carpus *Tmetonyx* appears to be similar to *Anonyx* and *Caeconyx*. *Tmetonyx* differs from *Anonyx* in the accessory flagellum cap (present in *Anonyx* and *Caeconyx*), the mandibular molar (setose with a vestigial triturating surface in *Anonyx* and *Caeconyx*), gnathopod 1 ischium (short in *Anonyx* and *Caeconyx*).

Distribution. Atlantic Ocean: North Atlantic; North Polar Sea; Mediterranean Sea.

Uristes Dana, 1849

(Fig. 49, 50)

Uristes Dana, 1849: 136.—Dana, 1852: 209.—Dana, 1853: 917.—Bate, 1862: 89.—Stebbing, 1906: 63.—Stephensen, 1929: 64.—J.L. Barnard, 1962: 35.—Hurley, 1963: 91.—J.L. Barnard, 1969: 367.—Ledoyer, 1986: 816.—Barnard & Karaman, 1991: 538.—Lowry & Stoddart, 2003: 284 (catalogue).
Uristoides Schellenberg, 1931: 27.—Barnard & Karaman, 1991: 539 (in part).

Type species. *Uristes gigas* Dana, 1852, monotypy.

Included species. *Uristes* contains 2 species: *U. gigas* Dana, 1849; *U. subchelatus* (Schellenberg, 1931).

Incertae sedis. *Uristes abyssi* (Norman, 1900) (family unknown); *U. albinus* (K.H. Barnard, 1932) (family unknown); *U. dawsoni* Hurley, 1963 (family unknown); *U. entalladurus* J.L. Barnard, 1963 (Lysianassidae, Tryphosinae); *U. georgianus* (Schellenberg, 1931) (family unknown); *U. natalensis* K.H. Barnard, 1916 (family unknown); *U. paramoi* (Schellenberg, 1931).

Removals. *Uristes perspinis* J.L. Barnard, 1967 to the tryphosine genus *Cedrosella* Barnard & Karaman, 1987 based on gnathopod 1 with a tapering first coxa and a short carpus, a non-constricted inner ramus on uropod 2 and a moderately cleft telson.

Uristes abyssalis (Stephensen, 1925) is tentatively removed to the tryphosine genus *Gronella* Barnard & Karaman, 1991, based on mandible molar triturating, gnathopod 1 coxa is slightly tapering, carpus short, propodus margins subparallel and the telson moderately cleft. The condition of the male antenna 2 peduncle (with or without brush setae) and the condition of the inner ramus of uropod 2 (constricted or not) needs to be verified to confirm the generic placement.

Uristes barbatipes (Stebbing, 1888) is removed the tryphosine genus *Tasmanosa* Lowry & Kilgallen, 2014 based on the well-developed antenna 1 accessory flagellum and the triturating molar, maxilla 2 inner plate slightly shorter than outer, the distinctive carpus and propodus of gnathopod 1.

Uristes serratus Schellenberg, 1931 and *U. yamana* Chiesa & Alonso de Pina, 2007 appear to be congeneric, and belong to a yet to be described genus in the Uristidae based on the absence of a callynophore in the female and apparently in the male, the compressed carpus of gnathopod 1 and the cleft telson.

Uristes adarei (Walker, 1903); *U. antennibrevis* J.L. Barnard, 1962; *U. californicus* Hurley, 1963; *U. mediator* J.L. Barnard, 1962; *U. stebbingi* (Walker, 1903); *U. sulcus* Griffiths, 1974 are removed to the tryphosine genus *Tryphosella* Bonnier, 1893 based on the triturating molar, maxilla 1 with a 6/5 setal-tooth arrangement, the tapering coxa of gnathopod 1.

Uristes velia J.L. Barnard, 1961 is removed to the tryphosine genus *Cheirimedon* Stebbing, 1888 based on the maxilla 1 setal-tooth arrangement; gnathopod 1 carpus short and propodus margins subparallel; pereopod 4 with weak posteroventral lobe; and telson deeply cleft.

Diagnostic description. [based on type species] Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum not forming cap covering callynophore or flagellum with an elongate article 1 (at least twice as long as article 2) partially covering callynophore. Antenna 2 without brush setae. ***Mandible molar ridge-like, narrow, setose with narrow distal triturating surface***. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2

inner plate slightly shorter than outer plate. Gnathopod 1 subchelate; coxa 1 large, about as long as coxa 2, subrectangular with straight anterior margin or distally subovate; ischium short (length less than 2 × breadth); carpus short (length 1 to 2 × breadth) to long (length 2 to 4 × breadth); propodus margins subparallel or slightly tapering. Uropod 2 inner ramus not constricted. Telson deeply cleft.

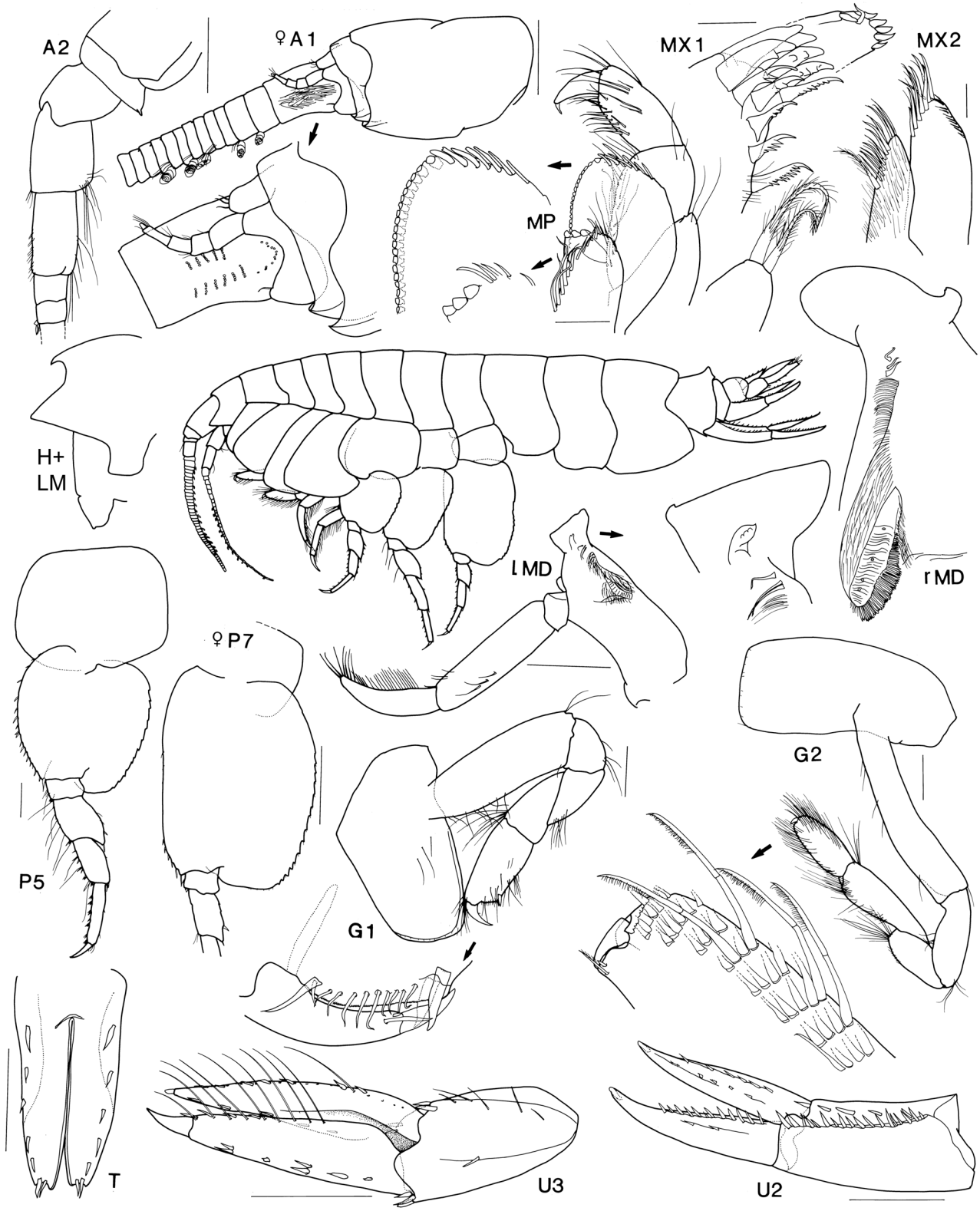

FIGURE 49. *Uristes gigas* Dana, 1849, male, 14.6 mm, AM P.38310; female, approx. 19 mm, BMNH 1889:5:15:6 (as *Tryphosa antennipotens*); from off Heard Island, Southern Ocean. Scale bars: MP, MX1, 0.1 mm; remainder, 0.5 mm.

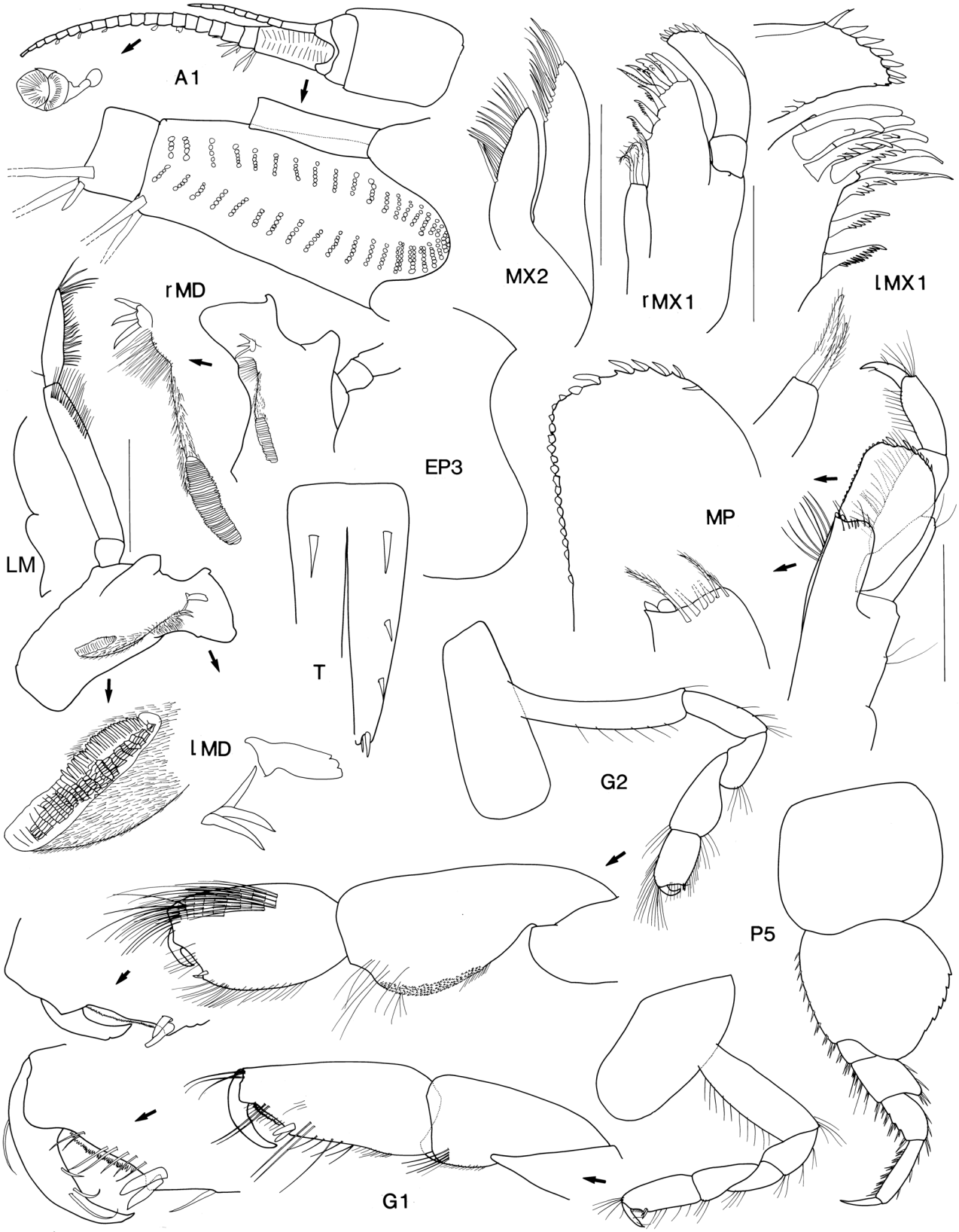

FIGURE 50. *Uristes subchelatus* (Schellenberg, 1931), syntype female, 17.5 mm, ZMB 22726, from Bahia Inutil, Magellanic area. LM, EP3, whole G1, whole G2, P5, T after Schellenberg (1931). Scale bars: 0.5 mm.

Remarks. As Chisea & Alonso (2007) point out *Uristes* is in need of revision. The diagnosis provided here is based on the type species. Of the 23 species currently assigned to *Uristes*, only two remain. Eight of these species are so poorly described that they cannot be placed.

Based on the subchelate first gnathopod with a large coxa with a straight anterior margin and a short carpus *Uristes* appears to be most similar to the Arctic/boreal genera *Anonyx* and *Onisimus*. It differs from both in having a ridge-like narrow setose molar with a distal triturating surface and in not having an accessory flagellum cap.

Distribution. Southern Ocean and southern Australian waters.

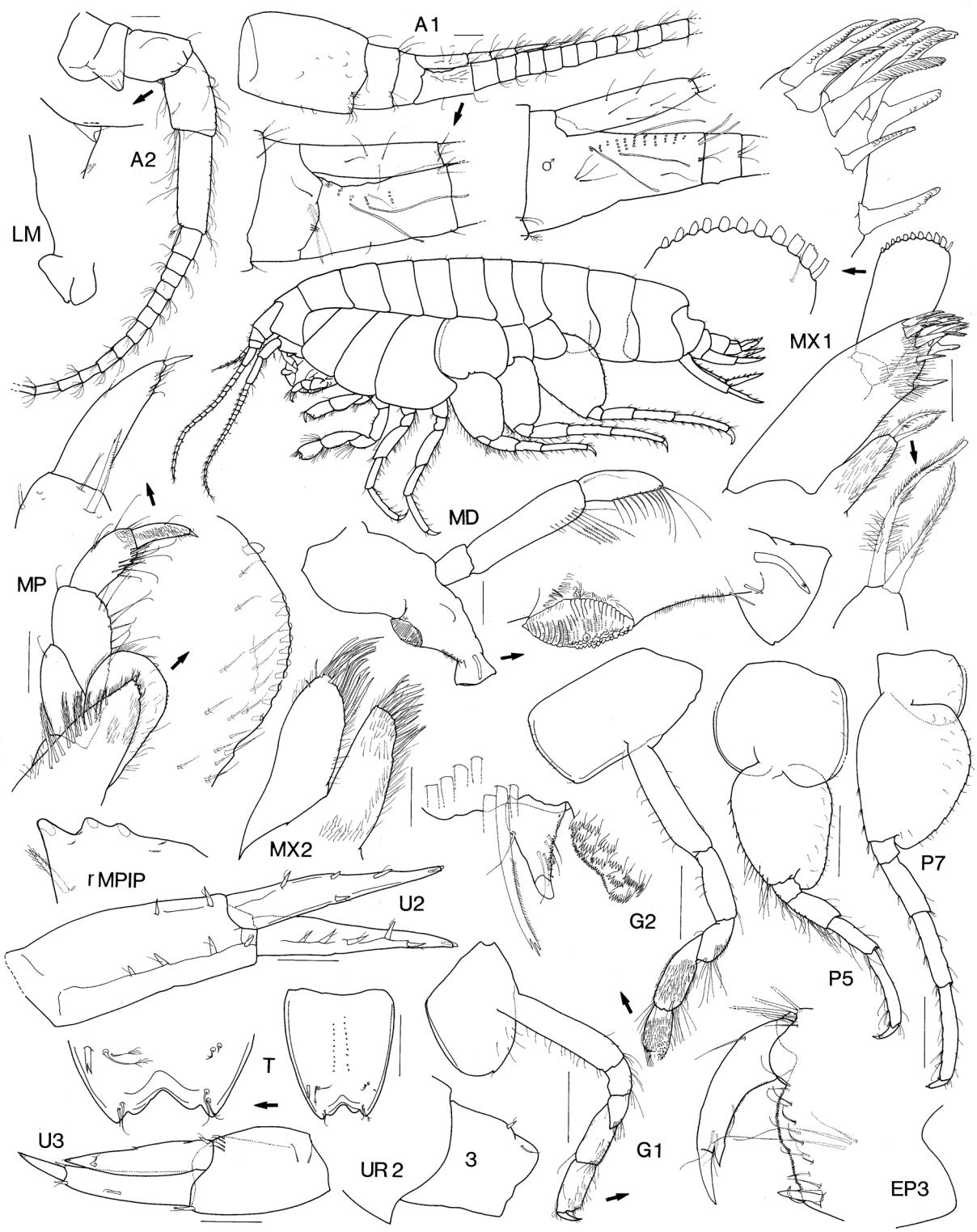

FIGURE 51. *Ventiella sulfuris* Barnard & Ingram, 1990, all parts from male, female, AM P.40541, from Galapagos Rift Vent, east Pacific Ocean; except *habitus*, after Barnard and Ingram (1990). Scale bars: gnathopods, pereopods, 0.5 mm; remainder, 0.1 mm.

***Ventiella* Barnard & Ingram 1990**
(Fig. 51)

Ventiella Barnard & Ingram, 1990: 31.

Type species. *Ventiella sulfuris* Barnard & Ingram, 1990, original designation.

Included species. *Ventiella* includes 1 species: *V. sulfuris* Barnard & Ingram, 1990.

Diagnostic description. Antenna 1 peduncle article 1 without anterodistal lobe; accessory flagellum forming cap covering callynophore. Antenna 2 brush setae [unknown]. Mandible molar a reduced column with convex, fully triturating surface. Maxilla 1 outer plate a well developed 7/4 crown. Maxilla 2 inner plate subequal to or slightly longer than outer plate. ***Gnathopod 1 subchelate; coxa 1 reduced, significantly shorter than coxa 2, tapering distally***; ischium short (length less than 2 × breadth); ***carpus long (length 2 to 4 × breadth)***; propodus margins subparallel. Uropod 2 inner ramus not constricted. ***Telson notched***.

Remarks. Only *Ventiella* and *Galathella* have a subchelate gnathopod 1 with a reduced tapering coxa. They differ significantly in the the relative lengths of the maxilla 2 plates (subequal in *Ventiella*, inner plate slightly to significantly shorter in *Galathella*) and in the telson (notched in *Ventiella*, moderately to deeply cleft in *Galathella*).

Distribution. *Pacific Ocean*. Galapagos vents (Barnard & Ingram, 1990).

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