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## Ampithoidae and Maeridae Amphipods from Timor-Leste (Crustacea: Peracarida)

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**ABSTRACT.** Five known and four new species of amphipod are documented from Timor-Leste. The species biodiversity of the region shows a close affinity to what is known from tropical north Australia. Although records of amphipods from the Lesser Sunda Region are limited, the species recorded have distributions throughout the broader Indo-Pacific. The new species *Ampithoe atauru*, *Elasmopus tibarensis*, *Linguimaera christorei* and *Quadrinemaera metinara* are described herein.

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Studies of amphipods from the Indonesian Archipelago have been based on small collections. Early works by from The Siboga Expedition collected amphipod specimens from the Lesser Sunda Region, Sulawesi, Sulu Archipelago, North and South Moluccas and Irian Jaya (Pirlot, 1932; 1934; 1936; 1938). This extensive work remains the largest study for the region recording over 100 amphipod species.

The Rumphius II Expedition of 1975 resulted in the documentation of over 30 amphipod species from the North Moluccas by Ledoyer (1979). Collections from the Grigor Antipa study by Ortiz & Lalana (1997, 1999, 2003; Gutu, 1997) documented 69 amphipod taxa from the Indonesian Archipelago including Pati (Java), Bali (Lesser Sunda Region), Bontang (Borneo), Bunaken (northern Sulawesi) and Maros (southern Sulawesi). A single species from West Java, *Quadrinemaera franzi* Krapp-Schickel & Ruffo, 2006 described from Pulu Putri was included in a larger work on the genus. Eight corophiidean amphipods are documented from Bali (Lesser Sunda Region) by Krapp-Schickel & Myers (2006).

The rare interstitial beach amphipods from the North Moluccas have been recently treated by Vonk *et al.*, (2011) and Vonk & Juame (2013, 2014) with 3 species described from 2 families.

The Australian Museum collection of amphipods from Timor-Leste further expands our knowledge on the fauna from the developing area of Lesser Sunda Region, reporting five known and four new species.

### Materials and methods

The material examined for this study was collected during the Australian Museum Timor-Leste Expedition in September 2012. Sampling in the field was by hand on Scuba. A map to all Australian Museum Timor-Leste marine collection locations is shown in Fig. 1. All material examined is deposited in the Australian Museum, Sydney (AM). Material was dissected in 80% ethanol. Permanent slides were made using Aquatex mounting agent. Illustrations were made using a Leitz Laborlux K and Wilde Heerbrugg stereomicroscopes fitted with camera lucida. Abbreviations for parts are as follows: *A*—antenna; *F*—accessory flagellum; *G*—gnathopod; *L*—left; *LL*—lower lip; *Md*—mandible; *Mx*—maxilla; *p*—palp; *P*—pereopod; *R*—right; *T*—telson; *U*—uropod; and *UL*—upper lip. Descriptions were generated from an Open DELTA database of the Ampithoidae and Maeridae, containing all Indo-Pacific species of *Ampithoe*, *Elasmopus*, *Linguimaera* and *Quadrinemaera*, respectively. Station numbers for the expedition are of the form TM 2012-*n* where *n* is a unique sample number useful when studying species assemblages.

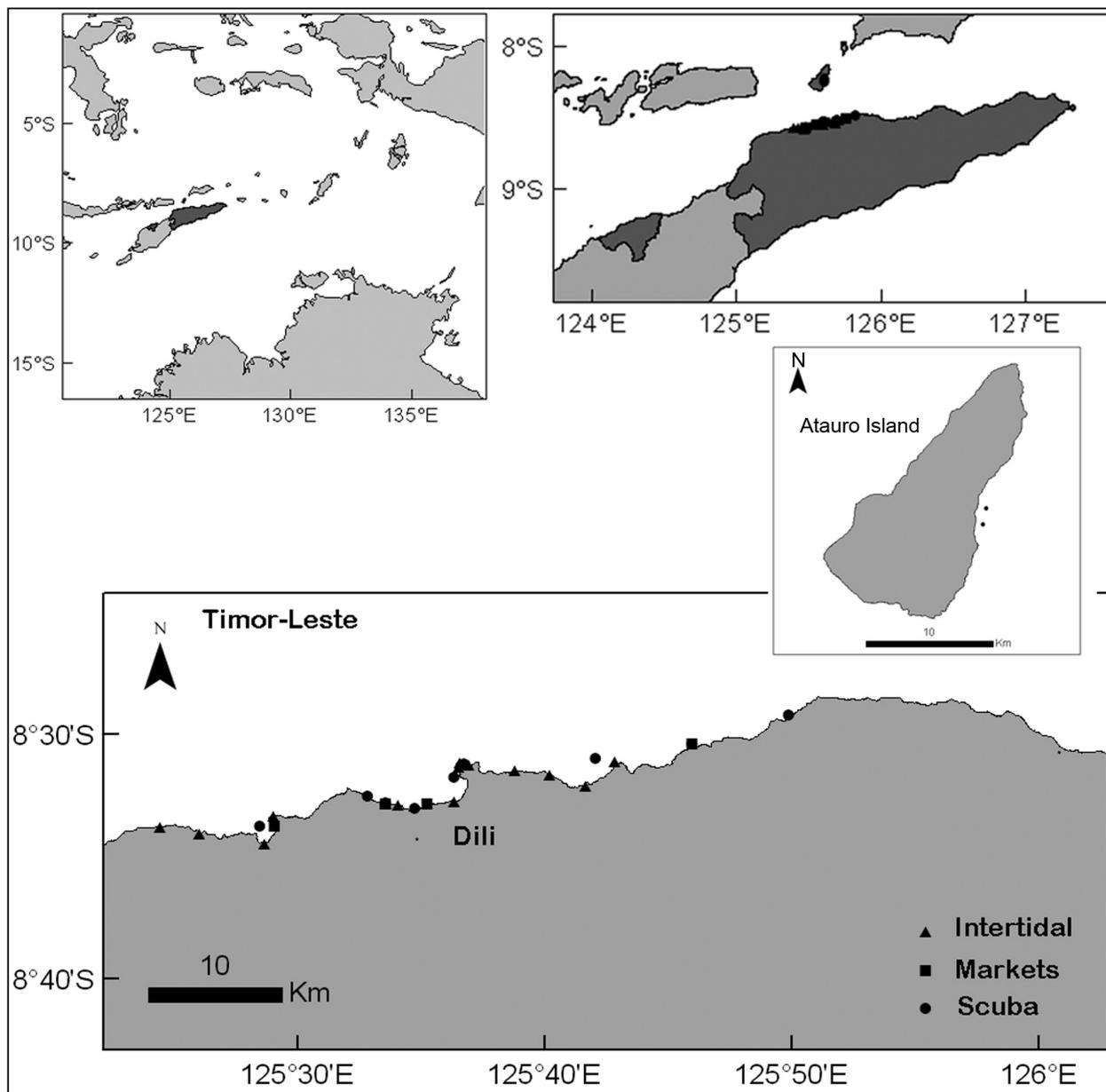


Figure 1. Map of Timor-Leste, symbols (see key) indicate sampling sites.

## Systematics section

### Ampithoidae Stebbing, 1899

#### *Ampithoe atauro* sp. nov.

Figs 2–4

**Type material.** Holotype male, 6.0 mm, dissected, 4 slides, AM P.90591, east of Atauro Island ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ), 14 m, inner reef, reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034); paratype male, 6.5 mm, dissected, 1 slide, AM P.90592, east of Atauro Island ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ), 14 m, inner reef, reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034); paratype female, 7.5 mm, dissected, 1 slide, AM P.90593, east of Atauro Island ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ), 14 m, inner reef, reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034); paratypes 2 specimens, AM P.90603, east of Atauro Island ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ), 14 m, inner reef,

reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034); paratypes, many specimens, AM P.90590, east of Atauro Island, ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ), 14 m, inner reef, reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034); paratypes, 3 specimens, AM P.90604, east of Atauro Island ( $8^{\circ}13'48''\text{S}$   $125^{\circ}36'57''\text{E}$ ), 17 m, outer reef, dense coral reef slope, green alga *Halimeda* sp., coll. L.E. Hughes, 20 September 2012 (TM 2012-087).

**Type locality.** Atauro Island, Timor-Leste ( $8^{\circ}14'30''\text{S}$   $125^{\circ}36'49''\text{E}$ ).

**Etymology.** Named from the type locality, applied as a noun in apposition.

**Additional material examined.** 8 male and female specimens, AM P.90605, 150 m off shore, halfway between Hera and Metinaro, east of Dili ( $8^{\circ}31'01''\text{S}$   $125^{\circ}42'05''\text{E}$ ), 12–13 m, coral rubble bank, silty dead coral substrate, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 4 specimens, AM P.90606 south side off Christo Rei Beach, east of Dili ( $8^{\circ}31'46''\text{S}$   $125^{\circ}36'21''\text{E}$ ), 5.5 m, coral slope, broad-leaf green

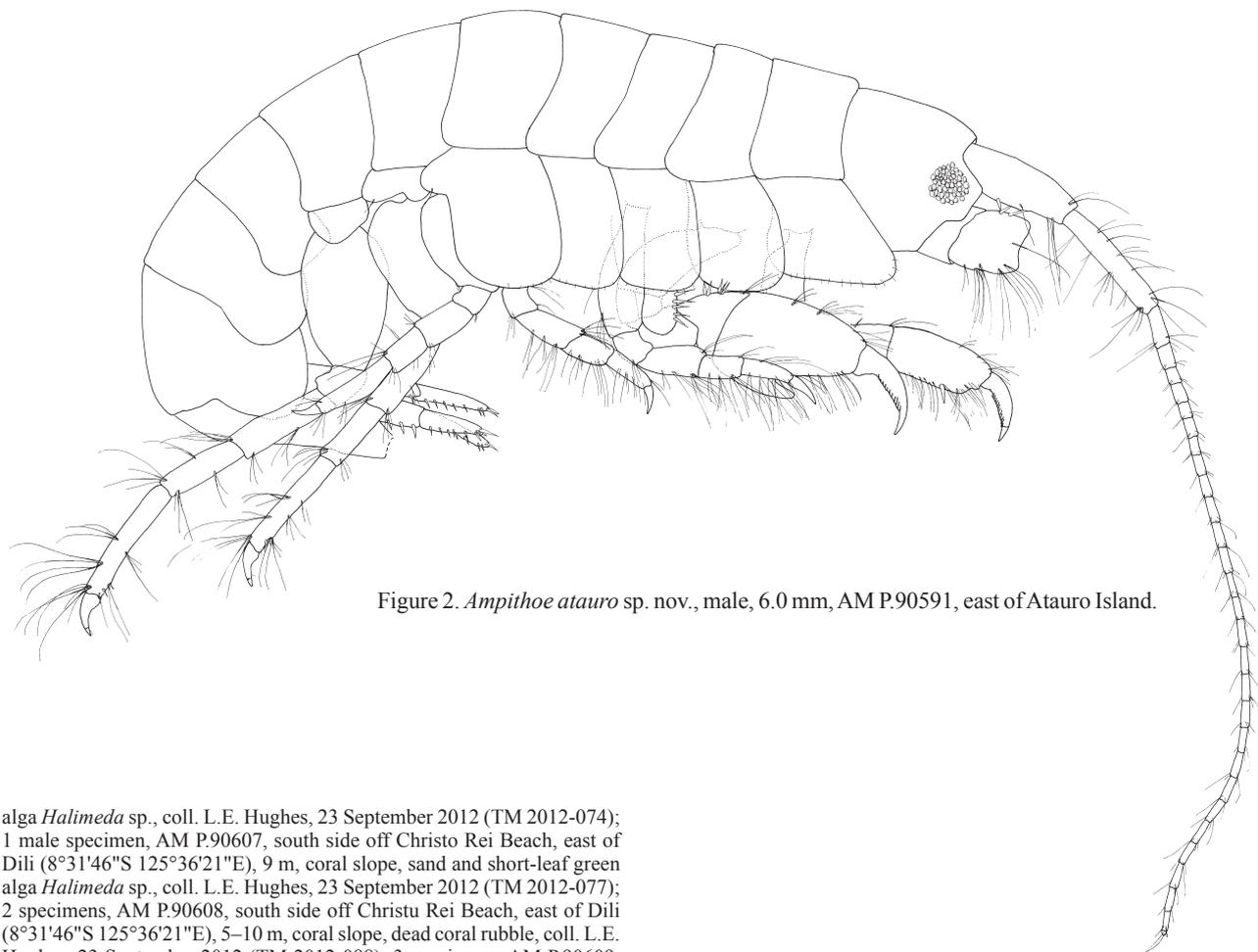


Figure 2. *Ampithoe atauru* sp. nov., male, 6.0 mm, AM P.90591, east of Atauro Island.

alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-074); 1 male specimen, AM P.90607, south side off Christu Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 9 m, coral slope, sand and short-leaf green alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-077); 2 specimens, AM P.90608, south side off Christu Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 5–10 m, coral slope, dead coral rubble, coll. L.E. Hughes, 23 September 2012 (TM 2012-088); 3 specimens, AM P.90609, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth and sponges, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); 4 specimens, AM P.90610, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12 m, red and green algae, coll. L.E. Hughes, 19 September 2012 (TM 2012-019).

**Diagnosis.** *Mandible* accessory setal row with 5 robust setae. *Labium* outer plates slit, forming a deep distal cleft, medial and lateral lobes subequal in size. *Maxilla 1* palp article 2 with 6 robust setae. *Gnathopod 1* coxa distinctly larger than coxa 2, anterior margin straight, basis anterodistal lobe large and rounded, with 1 robust seta. *Gnathopod 2* basis shorter than coxa, anterodistal lobe very large and rounded, reaching beyond ischium, with row of 7 robust setae; ischium anterior margin bilobate; carpus cup-shaped, width 0.9 times length, shorter than propodus, anterior margin with 3–4 robust setae; propodus broad, subovoid, 1.1 times as long as broad, palm acute, excavate, posterodistal tooth, short (length 1.5 times breadth), apically subacute, without palm defining robust setae; dactylus shorter than palm. *Uropod 1* peduncle with long slender setal fringe 0.8 times length. *Uropod 3* peduncle without marginal slender or robust setae, with 5 distal peduncular robust setae, with 5 distal slender setae; inner ramus without lateral robust setae, with 3 distal robust and 5 distal slender setae.

**Description.** Based on male holotype, 6.0 mm, AM P.90591.

**Head.** As long as deep. *Antenna 1* longer than antenna 2; peduncular article 1 subequal to article 2; article 2 longer (3 times) than article 3; article 3 (0.3 times) shorter than article

1; primary flagellum 19 articles; accessory flagellum, absent/vestigial. *Antenna 2* slender, similar to antenna 1; peduncle article 4 subequal in length to article 5; flagellum longer than peduncular article 5, with 15 articles. *Mandible* molar well developed, triturating, accessory setal row with 5 robust setae; palp 3-articulate, apically and marginally setose; article 1 shorter (0.3 times) than article 2; article 2 subequal in length to article 3; article 3 long, 3 times as long as wide. *Labium* outer plates slit, forming a deep distal cleft, medial and lateral lobes subequal in size; medial lobes with ducts; mandibular lobe with curved margins, apically rounded to subacute. *Maxilla 1* inner plate with 4 slender setae; palp well developed, with 6 robust setae. *Maxilla 2* inner and outer plates subequal in width. *Maxilliped* outer plate with developed row of large robust setae along medial margin.

**Pereon.** *Coxae 1 to 4* longer than broad. *Gnathopod 1* coxa distinctly larger than coxa 2, broader than deep, anterior margin straight, anteroventral corner produced, rounded; basis subequal in length to coxa, posterior margin without setae, anterodistal lobe large and rounded, with 1 robust seta; ischium anterior margin with large lobe; merus anterodistal lobe rounded, posterodistal corner produced, subacute; carpus subtriangular, 1.75 times as long as broad, longer than merus, shorter than propodus, 0.95 times propodus, anterior margin with 2 robust setae, posterior margin lobe truncated; propodus subrectangular, narrow, length 2.1 times width, palm acute, convex, without posterodistal shelf, palm defining corner rounded with 1 robust seta; dactylus subequal

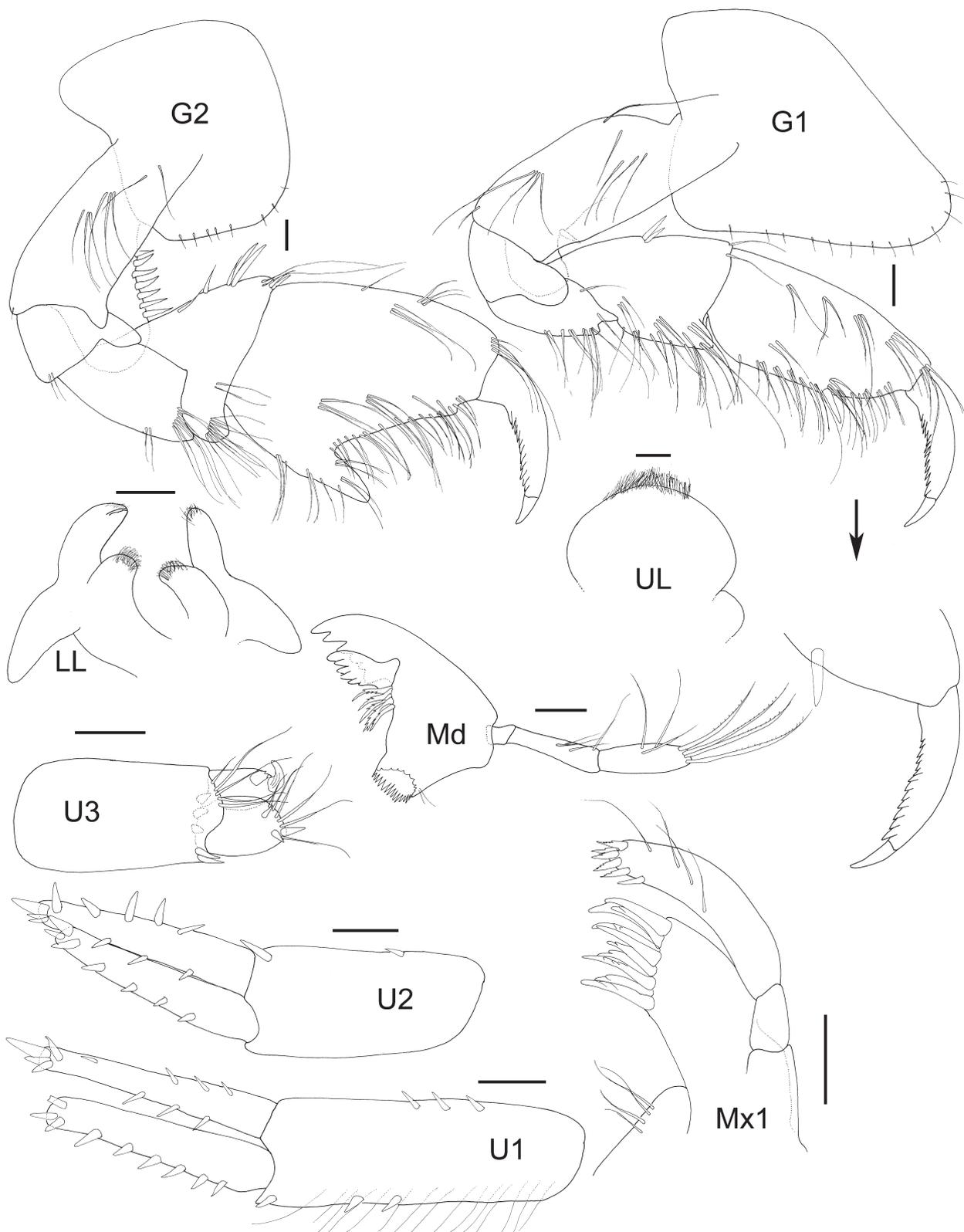


Figure 3. *Amphipoe atauro* sp. nov., male, 6.0 mm, AM P.90591, east of Atauro Island, scales 0.1 mm.

in length to palm, inner margin serrate. *Gnathopod 2* sexually dimorphic; basis shorter than coxa, anterodistal lobe very large and rounded, reaching beyond ischium, with row of 7 robust setae; ischium anterior margin bilobate; merus margin with long, subacute anterodistal lobe; carpus cup-shaped,

width 0.9 times length, shorter than propodus, anterior margin with 3–4 robust setae; propodus broad, subovoid, 1.1 times as long as broad, palm acute, excavate, without proximal or midpalmar tooth, posterodistal tooth, short (length 1.5 times breadth), apically subacute, without palm

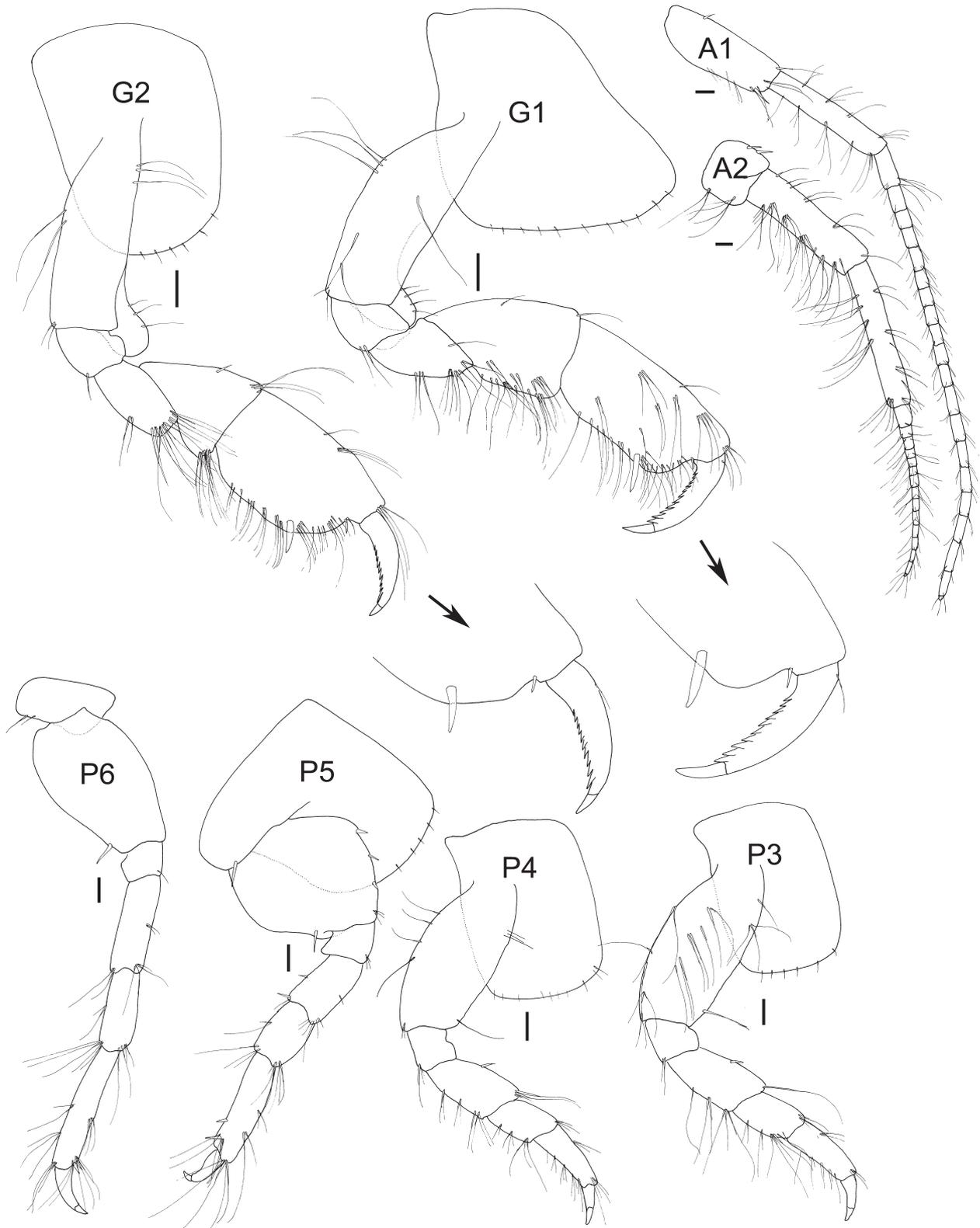


Figure 4. *Ampithoe atauro* sp. nov., male, 6.0 mm, AM P.90591, G1 and G2 female, 7.5 mm, AM P.90593, east of Atauro Island, scales 0.1 mm.

defining robust setae; dactylus shorter than palm, tapering evenly, apically acute, inner margin serrate. *Pereopods 3–4* basis expanded; carpus as long as broad. *Pereopods 5–7* merus subrectangular; distal articles slender; propodus not expanded distally, not expanded, subrectangular; dactylus

slightly curved. *Pereopod 6* basis posterior margin rounded proximally, straight distally, with marginal robust setae, without medial slender setae.

Pleon. *Epimera 1–3* posteroventral corner rounded. *Uropod 1* reaching end of uropod 2 rami; peduncle with 6

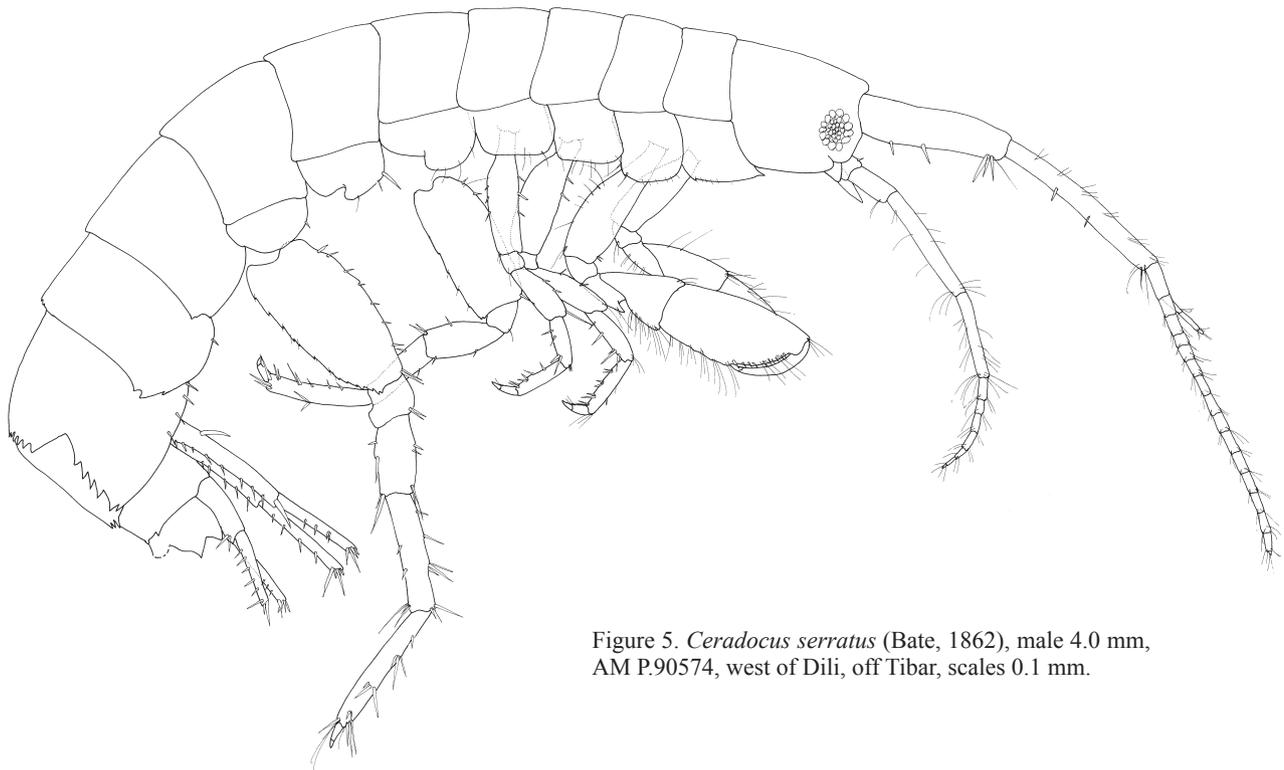


Figure 5. *Ceradocus serratus* (Bate, 1862), male 4.0 mm, AM P.90574, west of Dili, off Tibar, scales 0.1 mm.

robust setae, with long slender setal fringe 0.8 times length of peduncle, distoventral spine absent; inner ramus subequal in length to outer ramus, with 6 marginal robust setae; outer ramus slender, length 4.5 times as long as broad, with more 6 marginal robust setae. *Uropod 2* peduncle without distolateral projection, with 2 robust setae; rami subequal in length; inner ramus with 7 marginal robust setae; outer ramus with 4 marginal robust setae. *Uropod 3* peduncle longer than broad, length 1.6 times breadth, 2.2 times rami length, without marginal slender or robust setae, with 5 distal peduncular robust setae, with 5 distal slender setae; rami short, 0.9 times as long as broad; inner ramus without lateral robust setae, with 3 distal robust and 5 distal slender setae; outer ramus subequal in length to inner ramus, with 2 large recurved distal robust setae, without lateral robust setae, without setal fringe or patch of small lateral denticles.

**Female** (sexually dimorphic characters). Based on paratype, 7.5 mm, AM P.90593.

*Gnathopod 1* coxa distinctly larger than coxa 2, as broad as deep, anterior margin straight, anteroventral corner produced, rounded; basis posterior margin with a few setae, anterodistal lobe large and rounded, with 4 robust setae; ischium anterior margin without lobe; carpus subtriangular, 1.9 times as long as broad, longer than merus, shorter than propodus, 0.95 times propodus, anterior margin without

robust setae. *Gnathopod 2* basis anterodistal lobe large and rounded, reaching end of ischium, with 3 slender setae; ischium anterior margin truncate; merus margin distally truncate; carpus subtriangular, shorter than propodus, anterior margin with 1 robust seta; propodus subrectangular, 1.5 times as long as broad, palm subacute, convex, without proximal or midpalmar tooth, palm defined by broadly rounded corner with 1 robust seta.

**Remarks.** *Ampithoe atauru* sp. nov. is most similar to *A. akuolaka* Barnard, 1970 based on the combination of the male gnathopod 2 propodus anterior margin without rows of long slender setae and the palm defined by a tooth. In *A. atauru* sp. nov., the gnathopod 2 palm is much broader than in *A. akuolaka*.

*Ampithoe atauru* sp. nov. can be readily distinguished from other *Ampithoe* by the male gnathopod 2 basis anterior margin which has an extremely well-developed anterodistal lobe lined that is lined with 7 robust setae. The gnathopod 2 basis with an extremely large anterodistal lobe with setae, is also seen in *A. cookana*, Peart, 2007, *A. meganae* Peart, 2007; and *A. hinatore* Barnard, 1972b. In *A. atauru* sp. nov., *A. cookana* and *A. meganae*, the lobe is lined with differing counts of robust setae and only slender setae are present in *A. hinatore*.

**Distribution.** Timor-Leste. Arturo Island, Dili (current study).

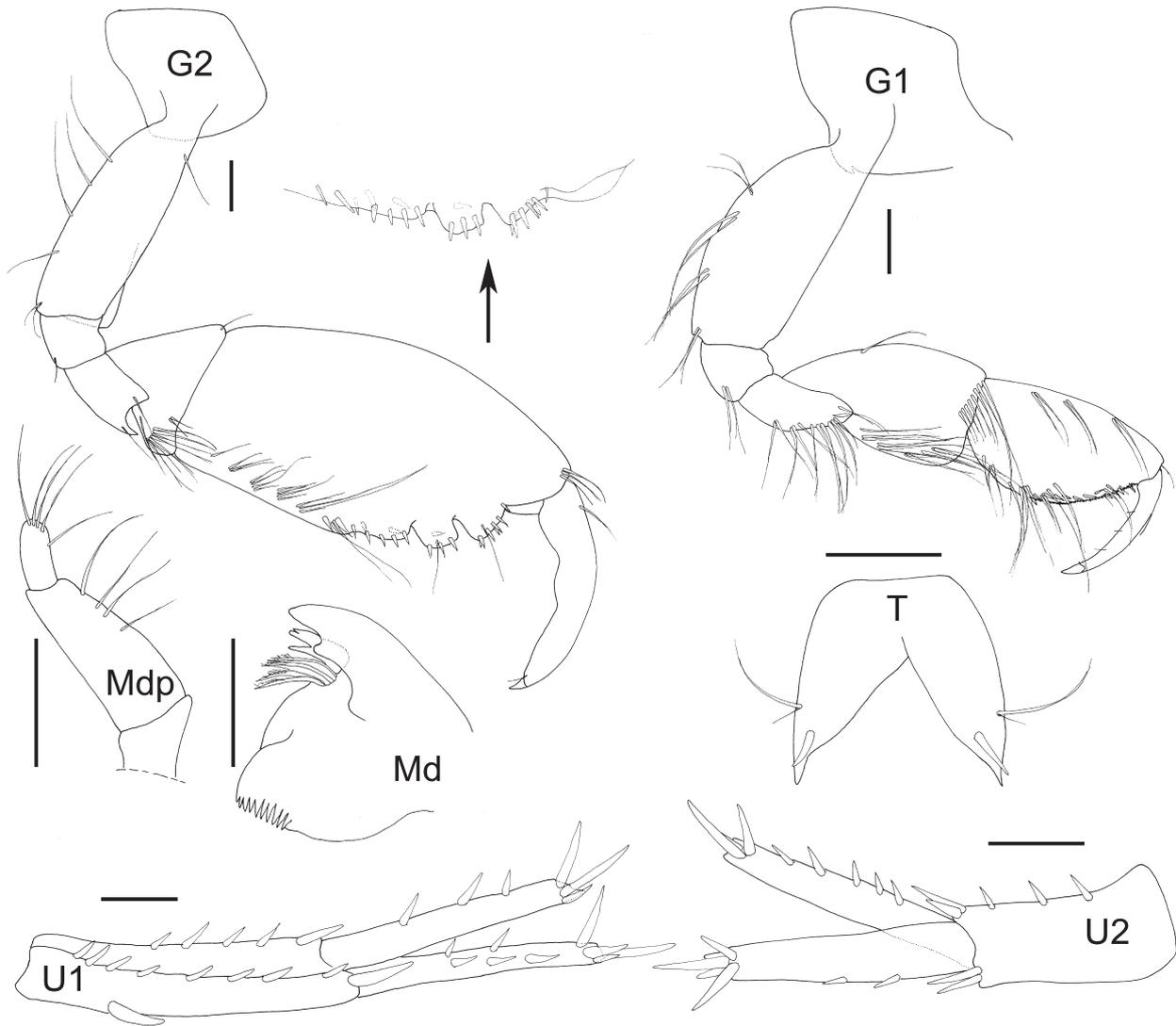


Figure 6. *Ceradocus serratus* (Bate, 1862), female 5.5 mm, AM P.90575, west of Dili, off Tibar, scales 0.1 mm.

## Maeridae Krapp-Schickel, 2008

### *Ceradocus* Costa, 1853

#### *Ceradocus serratus* (Bate, 1862)

Figs 5–6

- Megamaera serrata* Bate, 1862: 226, pl. 39, fig. 5.  
*Moera spinosa* Haswell, 1879a: 268, pl. 10, fig. 5. —Haswell, 1882: 257. —Haswell, 1885: 105, figs 5–12 (part).  
*Ceradocus rubromaculatus*. —Della Valle, 1893: 720 (in part). —Stebbing, 1906: 431 (in part).  
*Maera spinosa*. —Stebbing, 1910a: 642.  
*Ceradocus (Denticeradocus) serrata*. —Sheard, 1939: 285, figs 4, 5a–m.  
*Ceradocus serratus*. —J. L. Barnard, 1972a: 221, figs 130–131. —Ledoyer, 1979: 66, fig. 36. —Ledoyer, 1983: 440, fig. 165. —Barnard & Barnard, 1983: 616. —Lowry & Stoddart, 2003: 176, (catalogue). —Krapp-Schickel & Vader, 2009: 2061–2065, (key). —Ren, 2012: 190, fig. 82.

**Type locality.** Flinders and Hummock Islands, Bass Strait, southern Australia.

**Material examined.** 1 male, 4.0 mm, dissected, 4 slides, AM P.90574, west of Dili, off Tibar, on outer side of reef, rubble and sandy reef slope (8°33'48"S 125°28'31"E), 10–12 m, coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); 1 female, 5.5 mm, dissected, 1 slide, AM P.90575, west of Dili, off Tibar, on outer side of reef, rubble and sandy reef slope (8°33'48"S 125°28'31"E), 10–12 m, coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); 1 specimen, AM P.90573, west of Dili, off Tibar, on outer side of reef, rubble and sandy reef slope (8°33'48"S 125°28'31"E), 10–12 m, coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); 2 specimens, AM P.90596, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 11.9 m, dead coral head, coll. L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-020); 1 specimen, AM P.90597, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth and sponges, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); 1 specimen, AM P.90598, east of Atauro Island, inner reef, reef slope (8°14'30"S

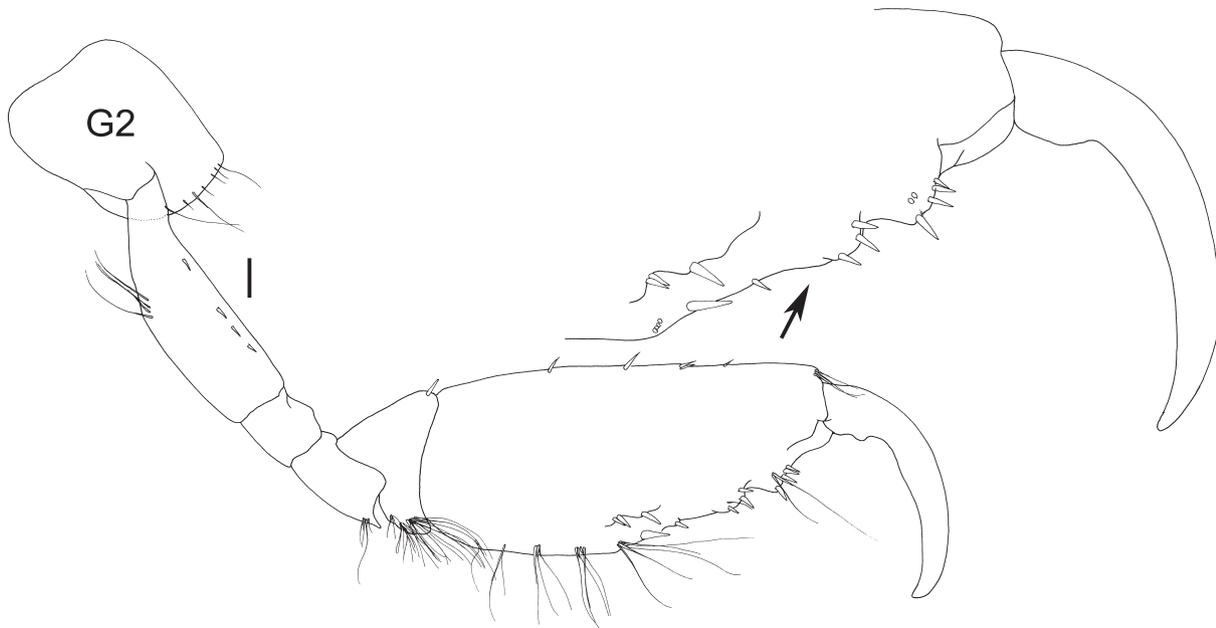


Figure 7. *Elasmopus alalo* Myers, 1986, male, 9.0 mm, AM P.90560, east of Metinaro, Secret Garden Reef, scales 0.1 mm.

125°36'49"E), 12 m, fine-leaf green alga *Halimeda* sp. and lump of dead coral, coll. P.A. Hutchings, 20 September 2012 (TM 2012-029).

**Distribution.** Timor-Leste (current study). Australia: New South Wales, Victoria, Tasmania (Bate, 1862; Barnard, 1972a; Haswell, 1879; Haswell, 1885; Sheard, 1939).

### *Elasmopus* Costa, 1853

#### *Elasmopus alalo* Myers, 1986

##### Fig. 7

*Elasmopus pseudaffinis* Barnard, 1965: 501, figs 12, 13. —Ledoyer, 1972: 219, pls 38, 39. —Ledoyer, 1978: 273, fig. 20a (in part). —Berents, 1983: 118, figs 15, 16. —Ledoyer, 1983: 480, figs 181, 182. —Ledoyer, 1984: 65, fig. 30b. —Ren, 1998: 203–205, fig. 6.

*Elasmopus alalo* Myers, 1986: 273, figs 4, 5. —Myers, 1995: 27. —Lowry and Stoddart, 2003: 177. —Lowry and Hughes, 2009: 646–649, figs 1, 2. —Hughes & Lowry, 2011: 583, 584. —Krapp-Schickel & Muller, 2011: 1, 2, figs. 1, 2. —Vader & Krapp-Schickel, 2012: 1196 (key).

**Type locality.** Utulau, Tonga.

**Material examined.** 1 A male, 9.0 mm, dissected, 4 slides, AM P.90560, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 20 m, tufts of red algae, coll. L.E. Hughes, 22 September 2012 (TM 2012-060); 1 B female, 8.0 mm, dissected, 1 slide, AM P.90561, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 20 m, tufts of red algae, coll. L.E. Hughes, 22 September 2012 (TM 2012-060).

**Distribution.** Timor-Leste: Metinaro (current study). Australia: Western Australia (Hughes, 2011); Northern Territory (Lowry & Hughes, 2009); Queensland (Hughes, 2011; Lowry & Hughes, 2009). Tasman Sea: Lord Howe Island (Hughes, 2011); Norfolk Island (Hughes, 2011). Madagascar: Tuléar (Ledoyer, 1972). Mauritius: (Ledoyer

1978). Micronesia: Marshall Islands (Barnard 1965). New Caledonia: Îlot Maitre (Ledoyer 1984). Society Islands: Moorea (Krapp-Schickel & Muller, 2011). South China Sea: Nansha (or Spratly) Islands (Ren 1998). Tonga: Utulau (Myers, 1986).

### *Elasmopus hooheno* Barnard, 1970

##### Figs 8–9

*Elasmopus hooheno* J. L. Barnard, 1970: 120, fig. 70. —J. L. Barnard, 1971: 71, figs 33–35. —Ledoyer, 1972: 217, pls 35, 36. —Ledoyer, 1978: 269. —Ledoyer, 1979: 69, fig. 40. —Ledoyer, 1983: 470, fig. 174b, 177. —Barnard & Barnard, 1983: 628. —Berents, 1983: 116, fig. 13. —Lyons & Myers, 1993: 587, fig. 10. —Myers, 1995: 38. —Myers, 1997: 109. —Ren, 1998: 197, fig. 3. —Ortiz & Lalana, 1999: 195 (list). —Lowry & Hughes, 2009: 652–656, figs 5, 6. —Krapp-Schickel & Muller, 2011: 3, 4, figs. 10–14. —Vader & Krapp-Schickel, 2012: 1198, 1199 (key). —Hughes & Lowry, 2011: 593, 594. —Ren, 2012: 200–202, fig. 86.

*Elasmopus rapax*. —Sivaprakasm, 1969: 45, fig. 6A. not *Elasmopus hooheno*. —Appadoo & Steele, 1998: 639. (= *E. pseudinteger* Appadoo & Myers, 2003).

**Type locality.** Kawela Bay, Oahu, Hawaii.

**Material examined.** 1 A male, 5.0 mm, dissected, 3 slides, AM P.90514, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); 12 specimens, AM P.90513, 150 m off shore, halfway between Hera and Metinaro, east of Dili (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, silty dead coral substrate, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 1 A male, 4.0 mm, dissected, 4 slides, AM P.90558, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 11.9 m, dead coral head, coll. L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-020); 1 B female, 4.0 mm, dissected, 1 slide, AM P.90559, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 11.9 m, dead coral head, coll. L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-020); 1 specimen, AM P.90557, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E),

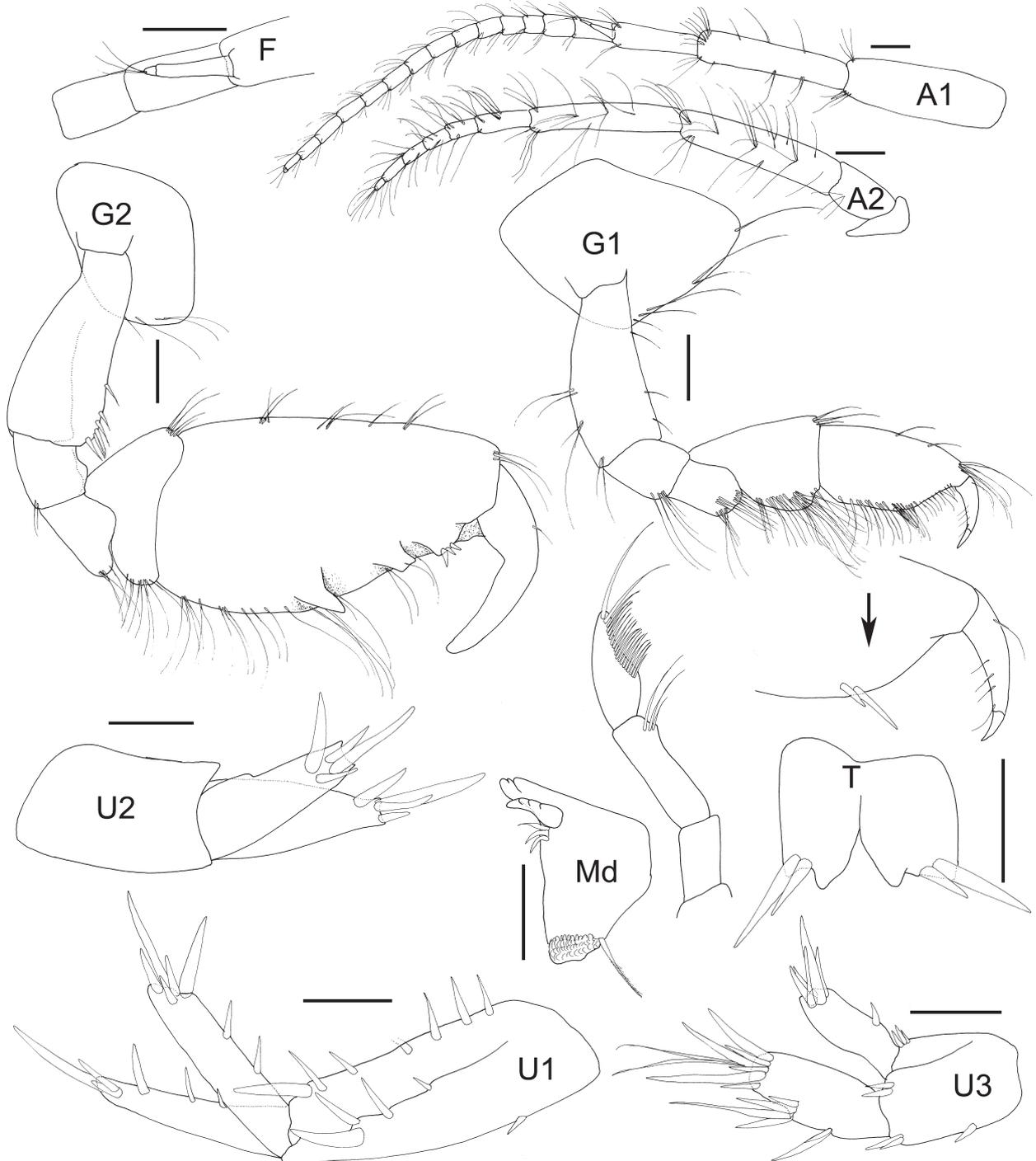


Figure 8. *Elasmopus hooheho* Barnard, 1970, male, 5.0 mm, AM P.90514, Jesus Backside Beach, east of Cape Fatucama, scales 0.1 mm.

11.9 m, dead coral head, coll. L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-020); 1 A male, 5.0 mm, dissected, 4 slides, AM P.90517, 150 m off shore, halfway between Hera and Metinaro, east of Dili (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, silty dead coral substrate, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 1 specimen, AM P.90516, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); 1 B male, 4.5 mm, dissected, 1 slide, AM P.90518, 150 m off shore, halfway between Hera and Metinaro, east of Dili (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, silty dead coral substrate, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 8 specimens, AM P.90515, east of Atauro Island (8°13'48"S

125°36'57"E), 17 m, outer reef, dense coral reef slope, green alga *Halimeda* sp., coll. L.E. Hughes, 20 September 2012 (TM 2012-087).

**Distribution.** Timor-Leste (current study). Indonesia: Marsegu Island, Moluccas (Ledoyer, 1979). South China Sea: Nansha Islands (Ren, 1998). Australia: Queensland; Cocos (Keeling) Islands; Christmas Island (Berents, 1983; Lowry & Hughes, 2009; Hughes & Lowry, 2011). India: Kilkkarai, Gulf of Mannar (Sivaprakasam, 1969). Society Islands: Moorea (Krapp-Schickel & Muller, 2011). Hawaii (Barnard, 1970).

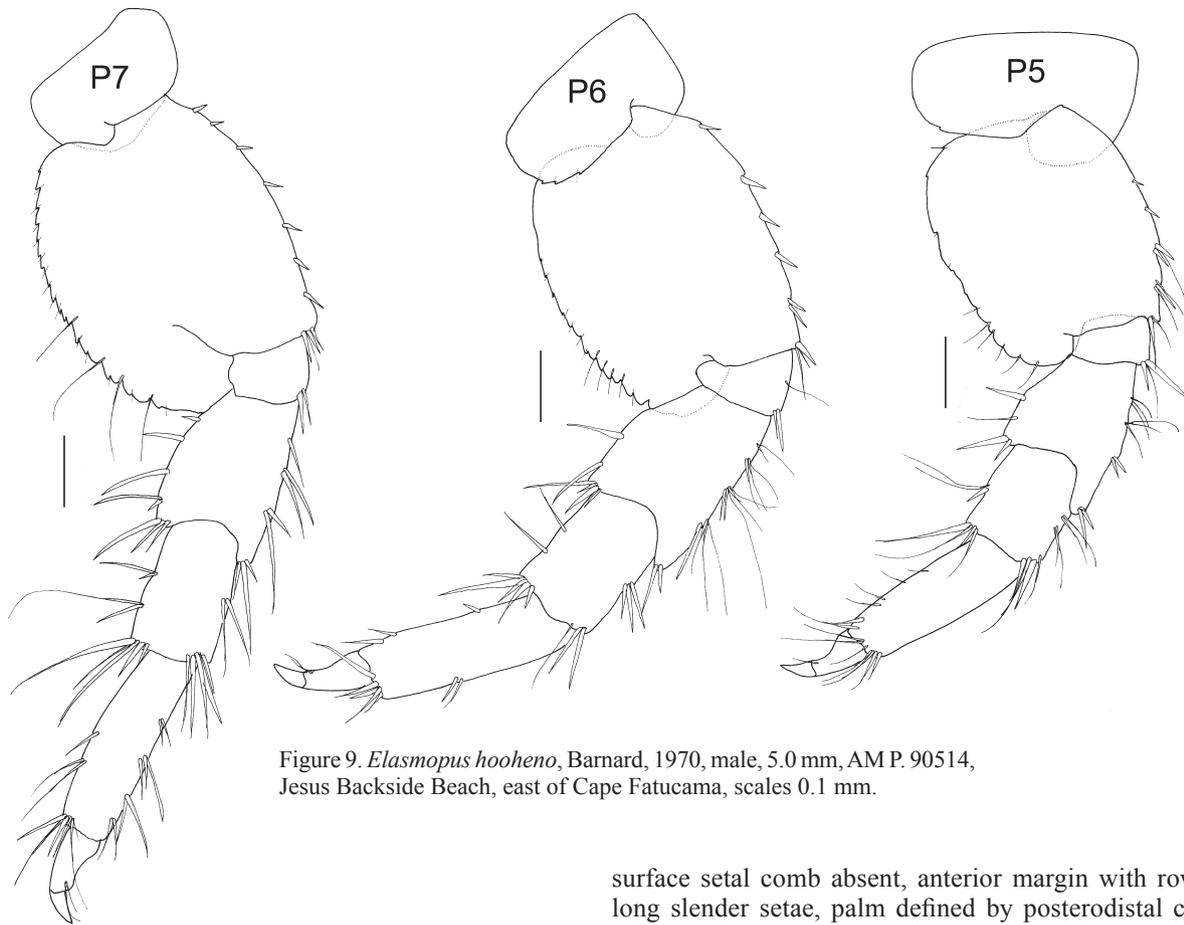


Figure 9. *Elasmopus hooheno*, Barnard, 1970, male, 5.0 mm, AM P. 90514, Jesus Backside Beach, east of Cape Fatucama, scales 0.1 mm.

***Elasmopus tibarensis* sp. nov.**

Figs 10–12

**Type material.** Holotype male, 8.0 mm, dissected, 4 slides, AM P.90521, off Tibar, west of Dili, (8°33'48"S 125°28'31"E), 10–12 m, on outer side of reef, rubble and sandy reef slope coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); paratype female, 5.0 mm, dissected slides, AM P.90522, off Tibar, west of Dili, (8°33'48"S 125°28'31"E), 10–12 m, on outer side of reef, rubble and sandy reef slope coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); paratype female, AM P.90520, off Tibar, west of Dili, (8°33'48"S 125°28'31"E), 10–12 m, on outer side of reef, rubble and sandy reef slope coral rubble and mixed algae, coll. A. Murray, 21 September 2012 (TM 2012-037); paratype male, AM P.90519, 300 m off Jesus Backside Beach, east of Cape Fatucama, (8°31'16"S 125°36'46"E), 12 m, red and green algae, coll. L.E. Hughes, 19 September 2012 (TM 2012-019).

**Type locality.** Off Tibar, west of Dili, Timor-Leste (8°33'48"S 125°28'31"E).

**Etymology.** Named from the type locality.

**Diagnosis.** *Antenna 1* peduncular article 1 with 1 robust seta on posterior margin; accessory flagellum minute, with 2 articles. *Mandible* accessory setal row with row 3 setae; palp, article 3 long, 4 times as long as broad. *Coxa 1–3* posteroventral corner with 1 robust seta; propodus medial

surface setal comb absent, anterior margin with rows of long slender setae, palm defined by posterodistal corner with 5 robust setae, posterior margin with row of large robust setae along. *Gnathopod 2* merus acutely produced distoventrally; propodus expanded, rectilinear, posterior margin with clusters of long, slender setae, without medial setal bunch, palm acute concave, sculptured, 0.4 times length of propodus, distomedial shelf subquadrate, with group of 2 robust setae on shelf, palmar margin with distal subquadrate tooth, sparse robust setae, broadly rounded corner with 1 robust seta; *Pereopods 5–6* basis slightly expanded, posterior margin straight, serrate without long slender setae. *Pereopod 7* basis posterior margin convex, serrate, without long slender setae, posteroventral corner broadly rounded. *Epimeron 2* ventral margin smooth with 3 robust setae, posteroventral corner with small acute tooth. *Epimeron 3* ventral margin smooth, lined with short robust setae, posteroventral corner with small acute tooth. *Uropod 3* rami distally truncated, with long and short apical robust setae; inner ramus long, length 2.5 times breadth, subequal in length to outer ramus. *Telson* as long as broad, moderately cleft (66%), lobes abutting, tapering distally, each lobe with long rounded inner and shorter subacute outer apical cusp, with 2 short apical robust setae, with 2 pair of lateral plumose setae.

**Description.** Based on holotype male, 8.0 mm, AM P. 90521.

Head. *Eyes* well developed, ovate; lateral cephalic lobe broad, truncated, anteroventral margin with notch/slit, anteroventral corner rounded. *Antenna 1* longer than antenna 2; peduncular article 1 subequal in length to article 2, with 1 robust seta on posterior margin; peduncular article 2 longer than article 3; primary flagellum articles as long as broad, with 20 articles; accessory flagellum minute, with 2 articles. *Antenna 2* peduncular article 2 cone gland not reaching to end

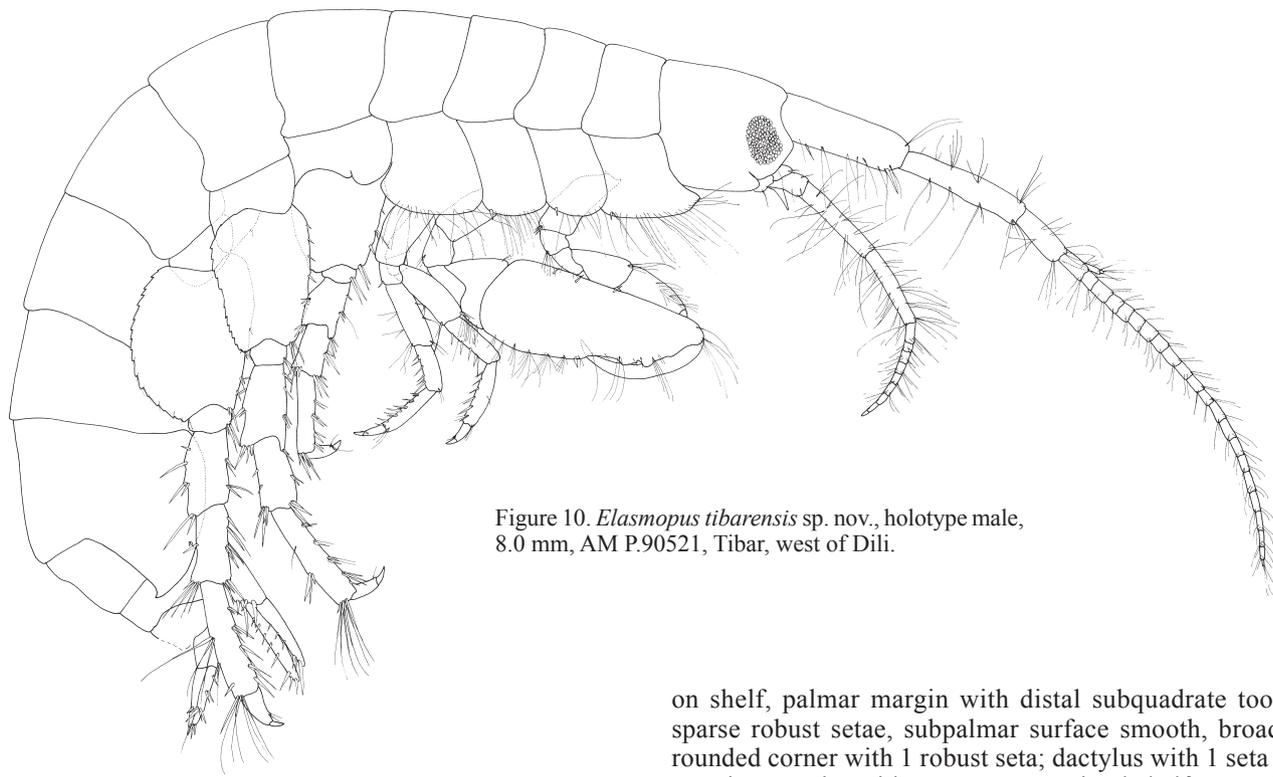


Figure 10. *Elasmopus tibarensis* sp. nov., holotype male, 8.0 mm, AM P.90521, Tibar, west of Dili.

of peduncular article 3; article 4 subequal in length to article 5; flagellum with 9 articles. *Mandible* incisor asymmetrical; cuspidate margin; accessory setal row with row 3 setae; molar well developed, triturative; palp, well developed, 3-articulate; article 1 twice as long as broad, shorter than article 2; article 2 subequal to article 3, with many slender setae; article 3 strongly falcate, long, 4 times as long as broad, with apical setae and a comb of short robust setae along anterodistal margin. *Lower lip* inner lobes present, outer lobes without ducts. *Maxilla 1* inner plate subquadrate, with 2 apical plumose setae. *Maxilliped* palp propodus with small distomedial flap.

**Pereon.** *Gnathopod 1* coxa anterior margin concave, anteroventral corner slightly produced, rounded, posteroventral corner with 1 robust seta, without notch; merus without posterodistal tooth; carpus twice as long as broad, subequal in length to propodus; propodus subchelate, medial surface setal comb absent, anterior margin with rows of long slender setae, palm subacute, convex, entire, minutely serrate, lined with robust setae, defined by posterodistal corner with 2 robust setae, posterior margin with row of large robust setae along; dactylus closing along and reaching end of palm. *Gnathopod 2* coxa posteroventral corner with 1 robust seta, notch absent; basis slender, anterior margin without setae, basis anterodistal corner subquadrate, without robust setae; ischium without lobes; merus acutely produced distoventrally; carpus compressed, lobate, projecting between merus and propodus, length subequal to breadth, anterior margin without setae; propodus expanded, rectilinear, anterior margin with several short robust setae, posterior margin with clusters of long, slender setae, without medial setal bunch, palm acute concave, sculptured, 0.4 times length of propodus, distomedial shelf subquadrate, with group of 5 robust setae

on shelf, palmar margin with distal subquadrate tooth, sparse robust setae, subpalmar surface smooth, broadly rounded corner with 1 robust seta; dactylus with 1 seta on anterior margin, without posteroproximal shelf, posterior margin smooth, closing along and reaching end of palm, apically subacute. *Pereopod 3* coxa posteroventral corner with 1 robust seta. *Pereopods 5–6* basis slightly expanded, posterior margin straight, serrate without long slender setae, posteroventral corner subquadrate; carpus and propodus without long, slender setae along anterior margin; dactylus unguis simple. *Pereopod 7* basis posterior margin convex, serrate, without long slender setae, posteroventral corner broadly rounded; carpus and propodus with a few long slender setae along posterior margin.

**Pleon.** *Epimeron 1* ventral margin smooth, posteroventral corner with small acute tooth. *Epimeron 2* ventral margin smooth with 3 robust setae, posteroventral corner with small acute tooth. *Epimeron 3* ventral margin smooth, lined with short robust setae, posteroventral corner with small acute tooth. *Uropod 1* peduncle with 1 basofacial seta; inner ramus slightly longer than outer ramus. *Uropod 2* inner ramus slightly longer than outer ramus. *Uropod 3* rami distally truncated, with long and short apical robust setae; inner ramus long, length 2.5 times breadth, subequal in length to outer ramus, longer than peduncle. *Telson* as long as broad, moderately cleft (66%), lobes abutting, tapering distally, each lobe with long rounded inner and shorter subacute outer apical cusp, with 2 short apical robust setae, with 2 pair of lateral plumose setae.

**Remarks.** The presence of a robust setae on the ventral margin of coxa 1 to 3 is presently unique to *E. tibarensis* sp. nov. The only other *Elasmopus* species known to have robust setae on the coxae is *E. pseudaffinis* Schellenberg, 1938, which has 3 robust setae on the posterior margin of coxa 1.

The elongate article 3 of the mandibular palp aligns *E. tibarensis* sp. nov. with the pragmatic *E. delaplata* group (Hughes, 2011) which includes 15 species: *E. aduncus* Myers, 1995; *E. alalo* Myers, 1986; *E. balkomanus* Thomas and Barnard, 1988; *E. bollonsi* Chilton, 1915; *E. delaplata*

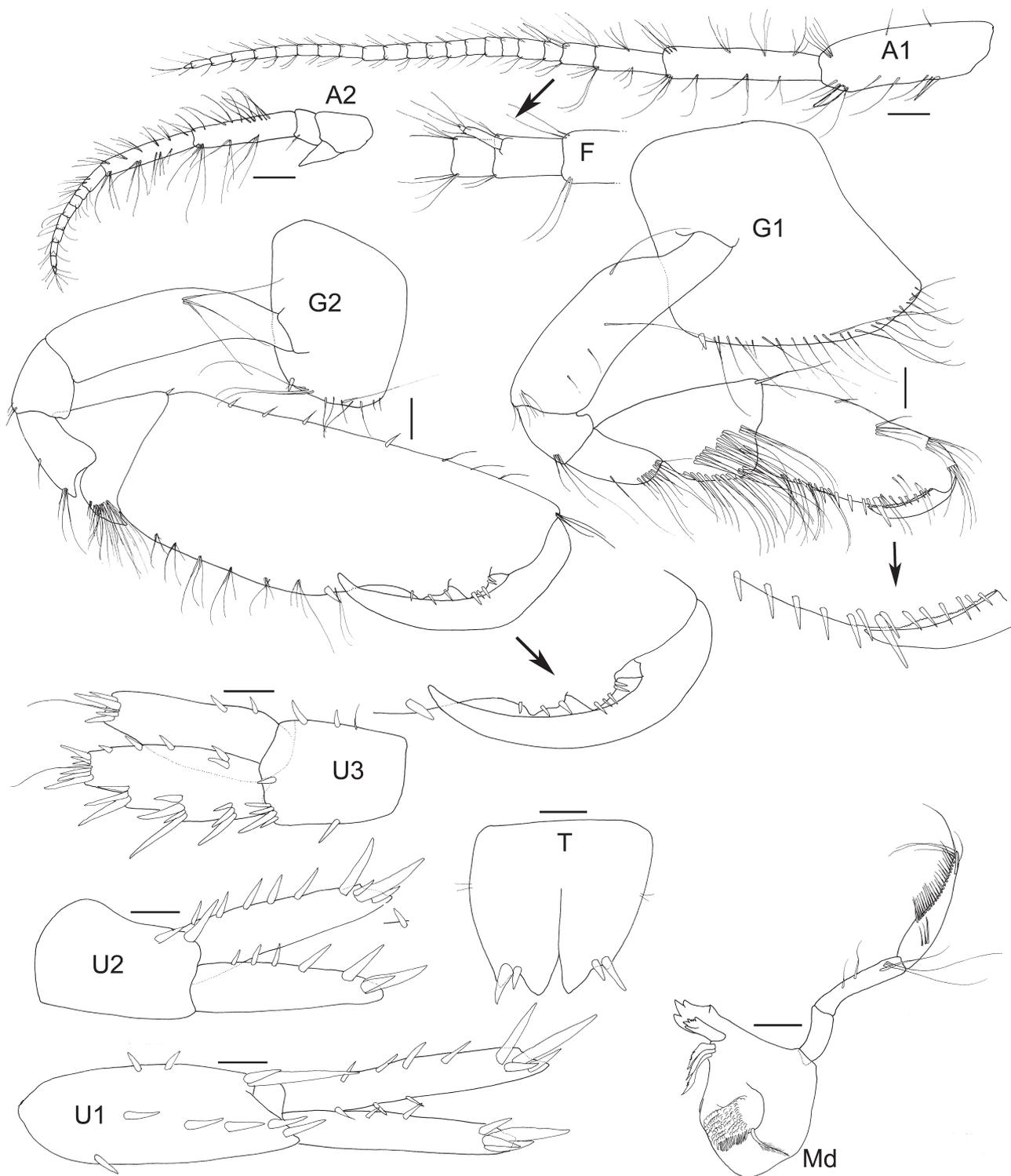


Figure 11. *Elasmopus tibarensis* sp. nov., holotype male, 8.0 mm, AM P.90521, Tibar, west of Dili, scales 0.1 mm.

Stebbing, 1888; *E. hawaiiensis* Schellenberg, 1938; *E. karamani* Souza-Filho and Senna, 2009; *E. neglectus* Chilton, 1915; *E. piikoi* J. L. Barnard, 1970; *E. shepherdii* sp. nov.; *E. slatyeri* Lowry & Hughes, 2009; *E. thomasi* Ortiz and Lalana, 1994; *E. varanocephalensis* Lowry & Hughes, 2009; *E. wahine* J. L. Barnard, 1972b and *E. woodjonesi* Hughes, 2011. Of these species, in only *E. alalo* and *E. tibarensis* sp. nov. the gnathopod 2 propodus palm of males lack a dense brush of setae.

*Elasmopus tibarensis* sp. nov. is most similar to *E. alalo* in the sculpturing and setation of the male gnathopod 2 palm. *Elasmopus tibarensis* sp. nov. has short rami on uropod 3 and pereopods 5 to 7 with serrate posterior margins, these character states separate it from *E. alalo* (which has elongate uropod 3 rami and smooth pereopod margins).

**Distribution.** Timor-Leste: Tibar, Cape Fatucama (current study).

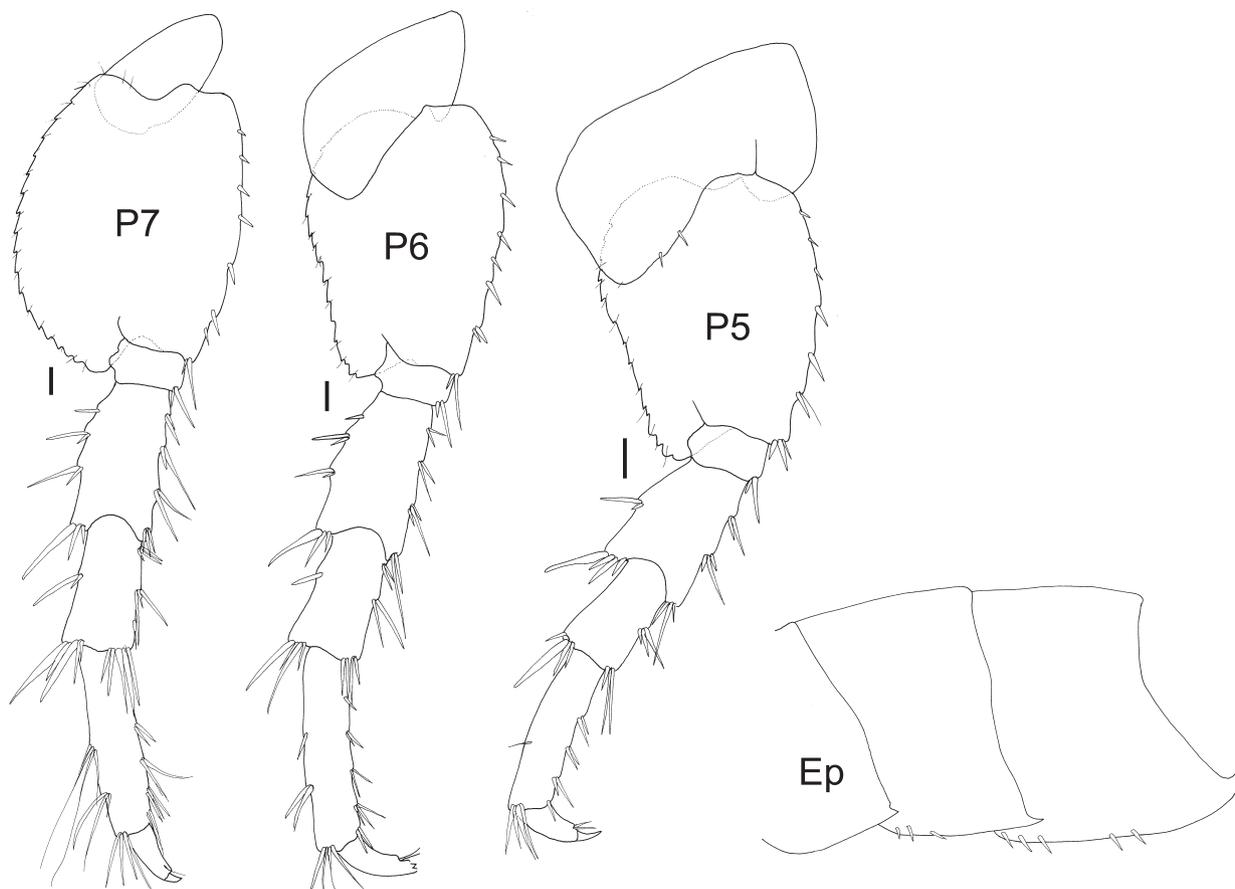


Figure 12. *Elasmopus tibarensis* sp. nov., holotype male, 8.0 mm, AM P.90521; paratype female, 5.0 mm, AM P.90522, west of Dili, scales 0.1 mm.

**Linguimaera Pirlot, 1936**

***Linguimaera christorei* sp. nov.**

Figs 13–15

**Type material.** Holotype male, 5.0 mm, dissected, 5 slides, AM P.90576, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth and sponges, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); paratype female, 5.0 mm, AM P.90564, south side off Christo Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 5–10 m, coral slope, dead coral rubble, coll. L.E. Hughes, 23 September 2012 (TM 2012-088); paratype female, AM P.90565, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth and sponges, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014).

**Type locality.** 300 m off Jesus Backside Beach, east of Cape Fatucama, Timor-Leste (8°31'16"S 125°36'46"E).

**Etymology.** Named for the statue which overlooks the type locality.

**Diagnosis.** *Antenna 1* peduncular article 1 with 1 robust seta on posterior margin; accessory flagellum short, with 4 articles. *Antenna 2* peduncular article 2 cone gland not reaching to end of peduncular article 3; peduncular article

4 longer in length than article 5. *Mandible* accessory setal row with 4 setae; *Maxilla 1* inner plate with 3 plumose setae; outer plate palp article 2 slender with apical fine setae only. *Gnathopod 2* significantly enlarged in male, not in female, left and right gnathopods unequal in size. *Gnathopod 2* larger gnathopod; propodus anterior and posterior margins with rows of long slender comb setae, propodus palm subacute, straight, distal shelf with group of 6 robust setae, with 2 evenly spaced subacute teeth, palm margin with sparse robust setae, posterodistal corner produced, straight, defined by tooth, with robust seta; dactylus closing along and reaching end of palm, with anterior margin with slender seta, posterior margin smooth, apically acute. *Gnathopod 2* smaller gnathopod subchelate; merus with acute posteroventral corner; carpus long, length 1.1 times propodus. *Pereopods 5–7* basis posterior margin straight, weakly serrate posteroventral corner subquadrate; carpus and propodus without long, slender setae along margins. *Epimeron 2* posterior margin smooth, ventral margin smooth with 3 robust setae, posteroventral corner with notch. *Epimeron 3* ventral margin smooth, with 2 robust setae, posteroventral corner serrate distally. *Uropod 3* rami distally truncated, with long and short apical robust setae; inner ramus long, length 4 times breadth. *Telson* each lobe with subequal or longer outer apical cusps, apical margins concave, apical cusps subacute, reaching scarcely one third along longest seta, each lobe with 1 long apical robust seta, and 1 lateral short robust setae.

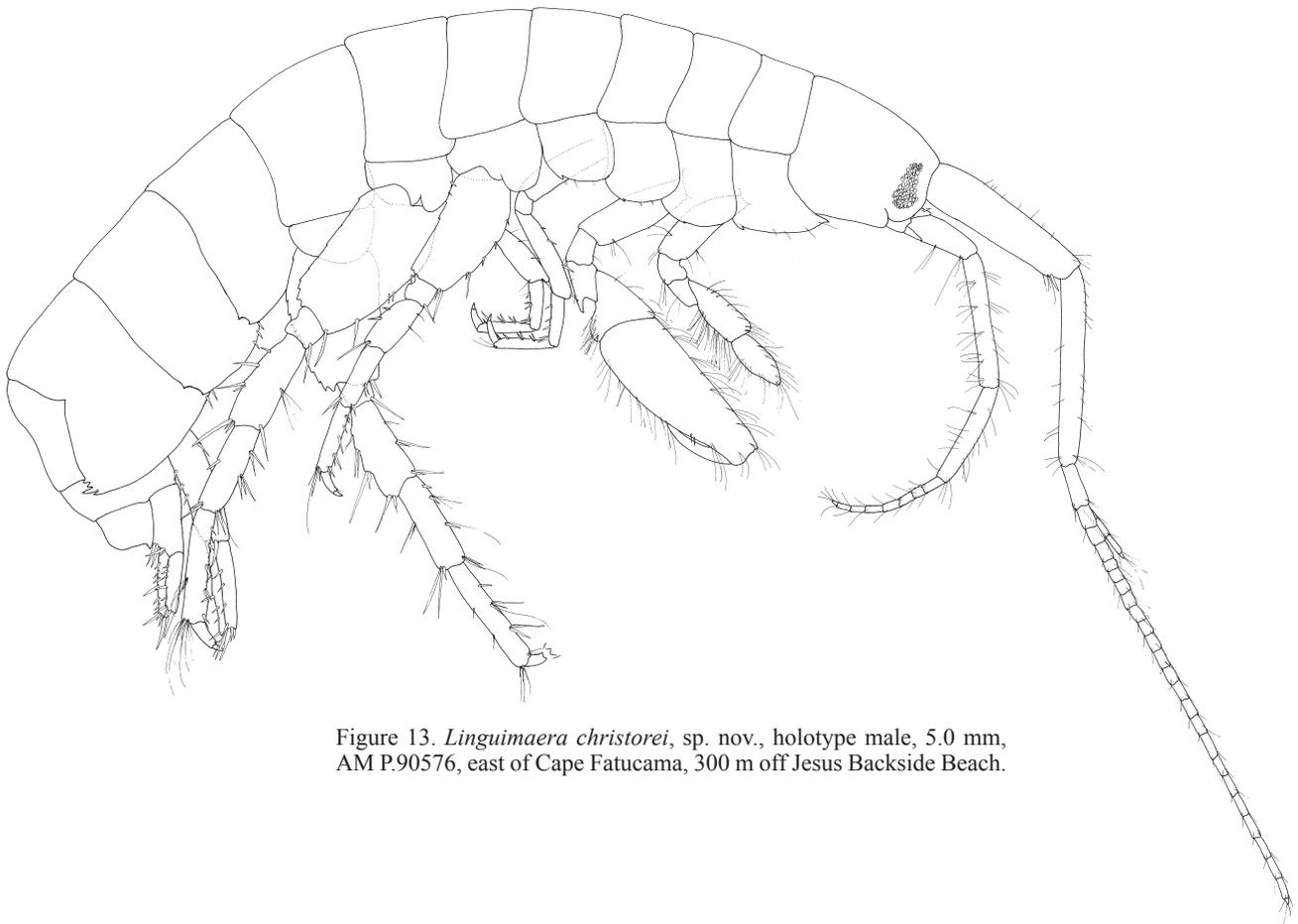


Figure 13. *Linguimaera christorei*, sp. nov., holotype male, 5.0 mm, AM P.90576, east of Cape Fatucama, 300 m off Jesus Backside Beach.

**Description.** Based on holotype male 5 mm, AM P.90576.

**Head.** *Eyes* well developed, reniform; lateral cephalic lobe broad, rounded, anteroventral margin with notch/slit, corner rounded. *Antenna 1* longer than antenna 2; peduncular article 1 shorter than article 2, with 1 robust seta on posterior margin; peduncular article 2 longer than article 3; primary flagellum articles as long as broad with 24 articles; accessory flagellum short, significantly less than half length of primary flagellum, with 4 articles. *Antenna 2* peduncular article 2 cone gland not reaching to end of peduncular article 3; peduncular article 4 longer in length than article 5; flagellum with 8 articles. *Mandible* accessory setal row with 4 setae; molar enlarged; palp, well developed, 3-articulate; article 1 as long as broad, shorter than article 2, inner margin not produced distally; article 2 longer than article 3 with few slender setae; article 3 rectilinear, long, 3 times as long as broad, longer than article 1 with 4 subapical slender setae. *Lower lip* inner lobes present, outer lobes without ducts. *Maxilla 1* inner plate with 3 plumose setae; outer plate palp article 2 slender with apical fine setae only.

**Pereon.** *Gnathopod 1* coxa anterior margin concave, anteroventral corner produced, subacute, posteroventral corner with notch; merus without posterodistal tooth; carpus twice as long as broad, subequal in length to propodus, with a few slender setae; propodus palm subacute, convex, entire, defined by posterodistal corner with 1 robust seta. *Gnathopod 2* sexually dimorphic, significantly enlarged in male, not in female, left and right gnathopods unequal in size. *Gnathopod 2* larger gnathopod; subchelate; coxa posteroventral corner notched; basis slender, anterodistal

corner subquadrate; ischium without lobes; merus with subquadrate posteroventral corner; carpus compressed, length 0.2 times propodus; propodus subchelate, expanded, rectilinear, anterior and posterior margins with rows of long slender comb setae, propodus palm subacute, straight, distal shelf with group of 6 robust setae, with 2 evenly spaced subacute teeth, palm margin with sparse robust setae, posterodistal corner produced, straight, defined by tooth, with robust seta; dactylus closing along and reaching end of palm, with anterior margin with slender seta, posterior margin smooth, apically acute. *Gnathopod 2* smaller gnathopod subchelate; merus with acute posteroventral corner; carpus long, length 1.1 times propodus; propodus linear, palm subacute, convex, defined by posteroventral corner, with 1 robust seta; dactylus closing along and reaching end of palm, anterior margin with 1 slender seta, apically subacute. *Pereopods 3–7* dactylus without accessory posterodistal spine, ungues simple. *Pereopods 5–7* basis posterior margin straight, weakly serrate posteroventral corner subquadrate; carpus and propodus without long, slender setae along margins.

**Pleon.** *Pleonites 1–3* dorsally smooth. *Epimeron 1* posterior and ventral margins smooth, posteroventral corner with notch. *Epimeron 2* posterior margin smooth, with 2 robust setae ventral margin smooth with 3 robust setae, posteroventral corner with notch. *Epimeron 3* ventral margin smooth, posteroventral corner serrate distally. *Uropod 1* peduncle with 1 basofacial seta; rami slender, inner ramus slightly shorter than outer ramus. *Uropod 2* rami slender, inner ramus slightly shorter than outer ramus. *Uropod 3* rami

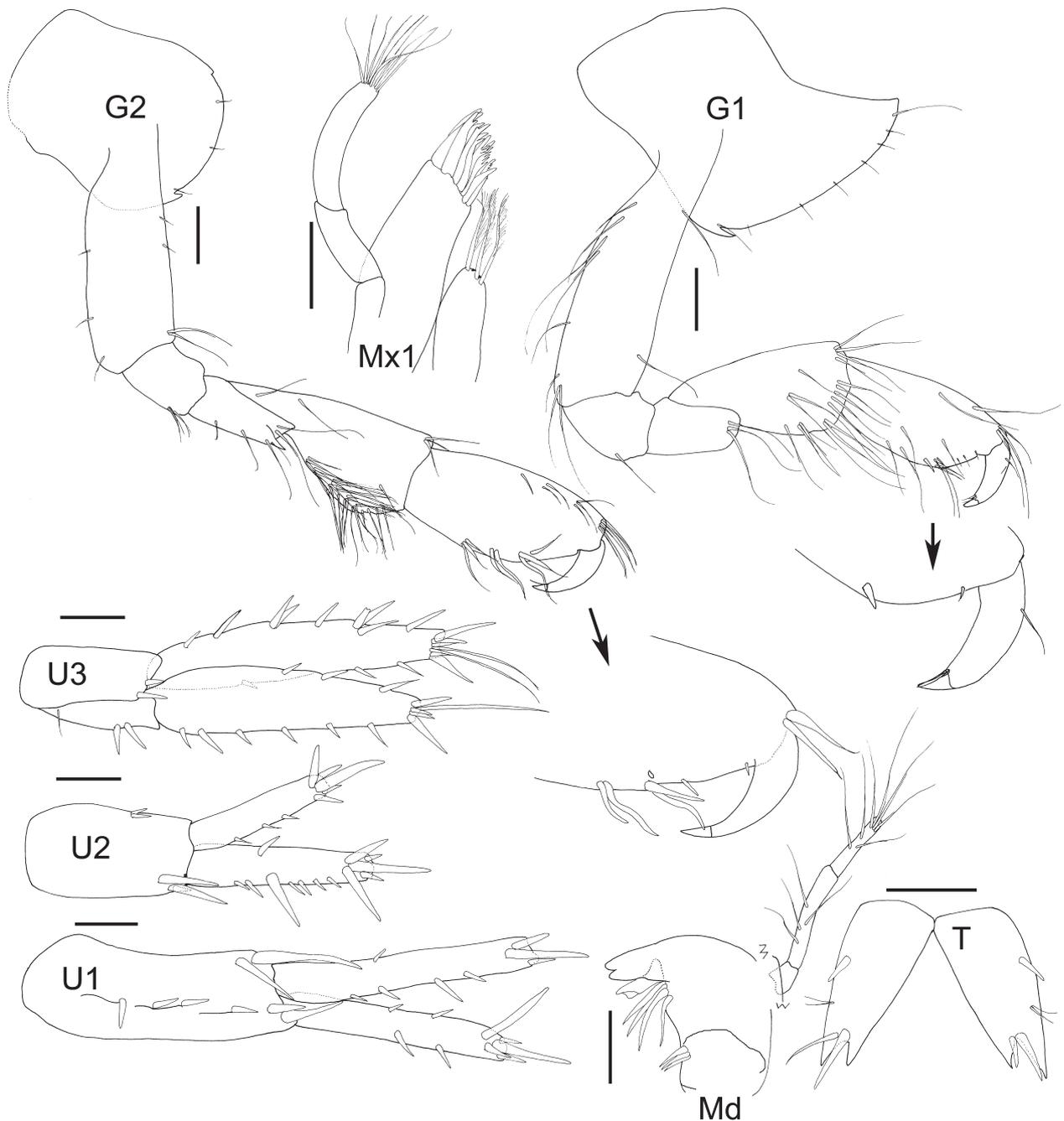


Figure 14. *Linguimaera christorei*, sp. nov., holotype male, 5.0 mm, AMP.90576, east of Cape Fatucama, 300 m off Jesus Backside Beach, scales 0.1 mm.

distally truncated, with long and short apical robust setae; inner ramus long, length 4 times breadth, much longer than peduncle, subequal in length to outer ramus. *Telson* longer than broad, deeply cleft (more than 66%), lobes divergent, tapering distally, each lobe with subequal or longer outer apical cusps, apical margins concave, apical cusps subacute, reaching scarcely one third along longest seta, each lobe with 1 long apical robust seta, and 1 lateral short robust seta.

**Remarks.** In *Linguimaera christorei* sp. nov. the larger male gnathopod 2 propodus palm has a distal shelf and two evenly spaced teeth which distinguish it from all other

*Linguimaera* species. Males of *Linguimaera boeckii* Lowry & Springthorpe, 2005 and *L. mannarensis* Sivaprakasam, 1970 have a similar gnathopod 2 palm with two teeth but this differs in the shape and the position of the teeth.

Examination under high power compound microscope confirms that the setae projecting from the mandibular molar surface are attached and not a misinterpretation, these structures are unusual within the group. Limited material and damage during dissection prevented a more detailed inspection under a scanning microscope.

**Distribution.** Timor-Leste (current study).

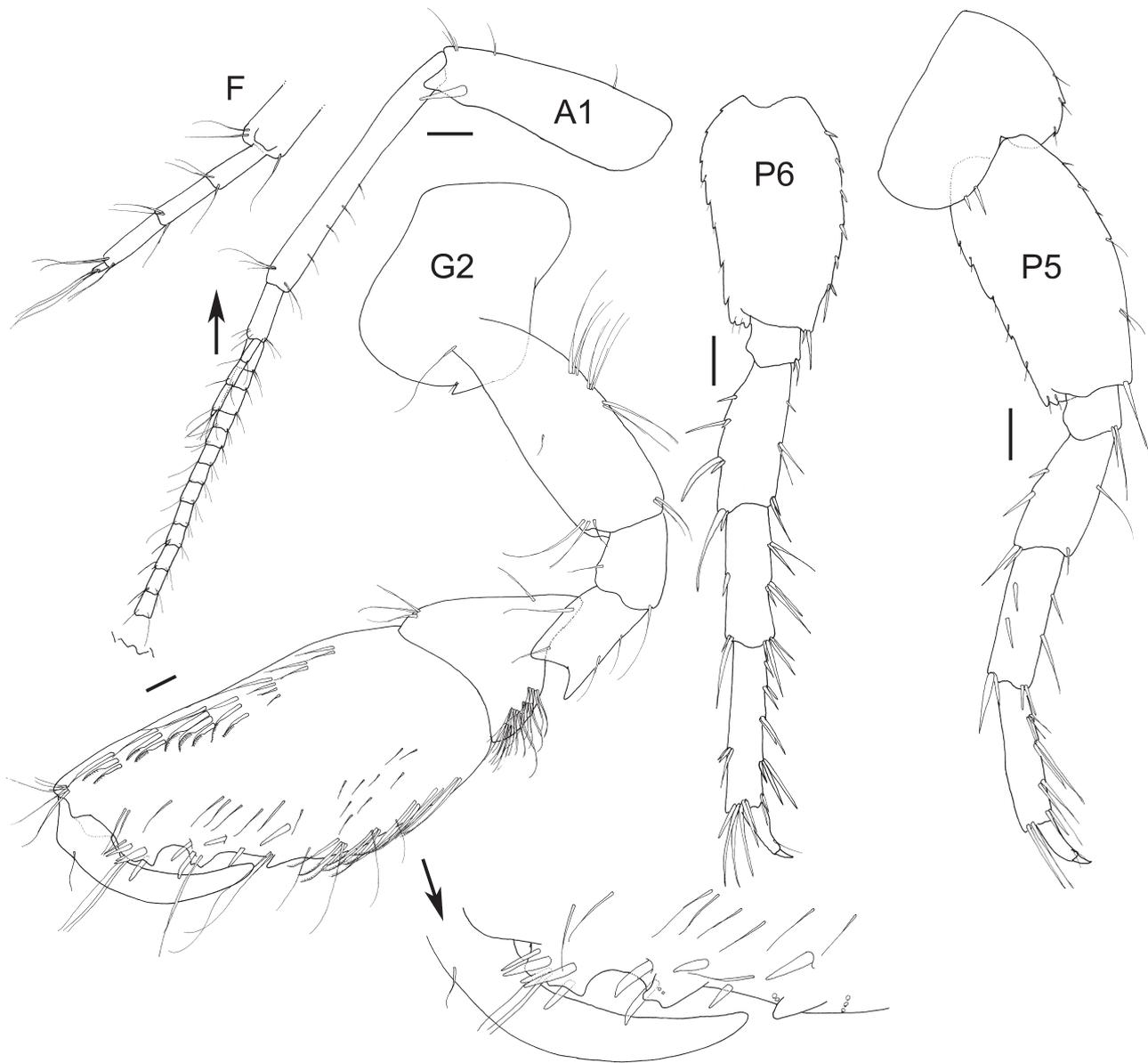


Figure 15. *Linguimaera christorei*, sp. nov., holotype male, 5.0 mm, AM P.90576, east of Cape Fatucama, 300 m off Jesus Backside Beach, scales 0.1 mm.

**Mallacoota J. L. Barnard, 1972a**

***Mallacoota latibrachium* (Walker, 1905)**

Figs 16–19

*Elasmopus latibrachium* Walker, 1905: 928, pl. 88, figs 6–10.

?*Pareiasmopus suluensis*. —Nayar, 1966: 153, fig. 11a–c.

*Maera latibrachium*. —Sivaprakasam, 1969: 41, fig. 3.

*Mallacoota latibrachium*. —Barnard & Barnard, 1983: 632.

**Type localities.** Maldives and Laccadive Archipelago (Hulule and Minikoi).

**Material examined.** Male, 6.5 mm, dissected, 4 slides, AM P.90586, south side off Christo Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 5.5 m, coral slope, broad-leaf green alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-074); female specimen, 6.0 mm, dissected, 1 slide, AM P.90587, south side off Christo Rei Beach, east of

Dili (8°31'46"S 125°36'21"E), 5.5 m, coral slope, broad-leaf green alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-074); 2 specimens (1 male and 1 female), AM P.90585, south side off Christo Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 5.5 m, coral slope, broad-leaf green alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-074); 1 male, AM P.90601, south side off Christo Rei Beach, east of Dili (8°31'46"S 125°36'21"E), 9 m, coral slope, sand and short-leaf green alga *Halimeda* sp., coll. L.E. Hughes, 23 September 2012 (TM 2012-077); 1 male, AM P.90600, 300 m off Jesus Backside Beach, east of Cape Fatucama (8°31'16"S 125°36'46"E), 12 m, red and green algae, coll. L.E. Hughes, 19 September 2012 (TM 2012-019); 3 specimens (1 male and 2 female), AM P.90602, east of Atauro Island (8°14'30"S 125°36'49"E), 14 m, inner reef, reef slope, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034).

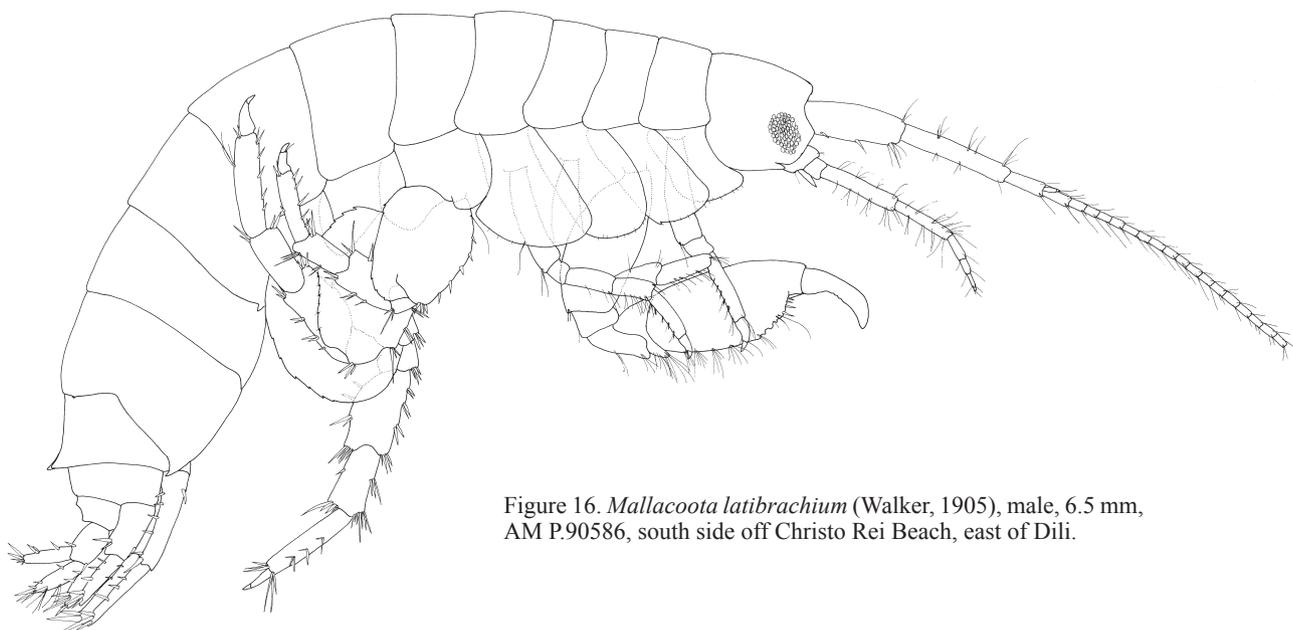


Figure 16. *Mallacoota latibrachium* (Walker, 1905), male, 6.5 mm, AM P.90586, south side off Cristo Rei Beach, east of Dili.

### *Pareiasmopus* Stebbing, 1888

#### *Pareiasmopus cymatilis* Lowry & Hughes, 2009

Figs 20–21

*Pareiasmopus echo*. —Berents, 1983: 136, fig. 27. —Lowry & Stoddart, 2003: 186 (in part).

*Pareiasmopus cymatilis* Lowry & Hughes, 2009: 691–695, figs. 27, 28. —Hughes, 2011: 71, 72.

not *Pareiasmopus echo* J. L. Barnard, 1972a.

**Type locality.** Fringing reef between Bird Islet and South Island, Lizard Island, Queensland, Australia (14°40'S 145°28'E).

**Material examined.** 1 male, 6.5 mm, dissected, 4 slides, AM P.90580, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 1 male, 6.0 mm, dissected, 1 slide, AM P.90581, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 1 female, 9.0 mm, dissected, 1 slide, AM P.90582, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 1 female, 6.5 mm, dissected, 1 slide, AM P.90583, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); many specimens, AM P.90569, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E),

12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 2 specimens, AM P.90579, east of Dili, halfway between Hera and Metinaro, 150 m off shore, (8°31'01"S 125°42'05"E), 12–13 m, coral rubble bank, dead coral rubble, coll. L.E. Hughes & P.A. Hutchings, 23 September 2012 (TM 2012-082); 4 specimens, AM P.90572, east of Dili, south side off Christu Rei Beach, coral slope (8°31'46"S 125°36'21"E), 5–10 m, dead coral rubble, coll. L.E. Hughes, 23 September 2012 (TM 2012-088); 2 females, AM P.90599, east of Dili, south side off Cristo Rei Beach, coral slope (8°31'46"S 125°36'21"E), 5–10 m, dead coral rubble, coll. L.E. Hughes, 23 September 2012 (TM 2012-088); 4 specimens, AM P.90571, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 19–21 m, coral rubble, coll. L.E. Hughes, 22 September 2012 (TM 2012-057); 1 specimen, AM P.90566, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 11.9 m, dead coral head, coll. L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-020); 2 specimens, AM P.90570, east of Cape Fatucama, 300 m off Jesus Backside Beach (8°31'16"S 125°36'46"E), 12–15 m, dead coral rubble with epiphytic growth and sponges, coll. A. Murray, P.A. Hutchings, L.E. Hughes & A. Reid, 19 September 2012 (TM 2012-014); 4 specimens, AM P.90567, east of Atauro Island, outer reef, dense coral reef slope (8°13'48"S 125°36'57"E), 17 m, green alga *Halimeda* sp., coll. L.E. Hughes, 20 September 2012 (TM 2012-087); 2 specimens, AM P.90568, east of Atauro Island, inner reef, reef slope (8°14'30"S 125°36'49"E), 14 m, mixed turfing algae, coll. L.E. Hughes, 20 September 2012 (TM 2012-034).

**Distribution.** Timor-Leste (current study). Australia: Queensland (Berents, 1983; Lowry & Hughes, 2009); Northern Territory and Western Australia (Hughes, 2011).

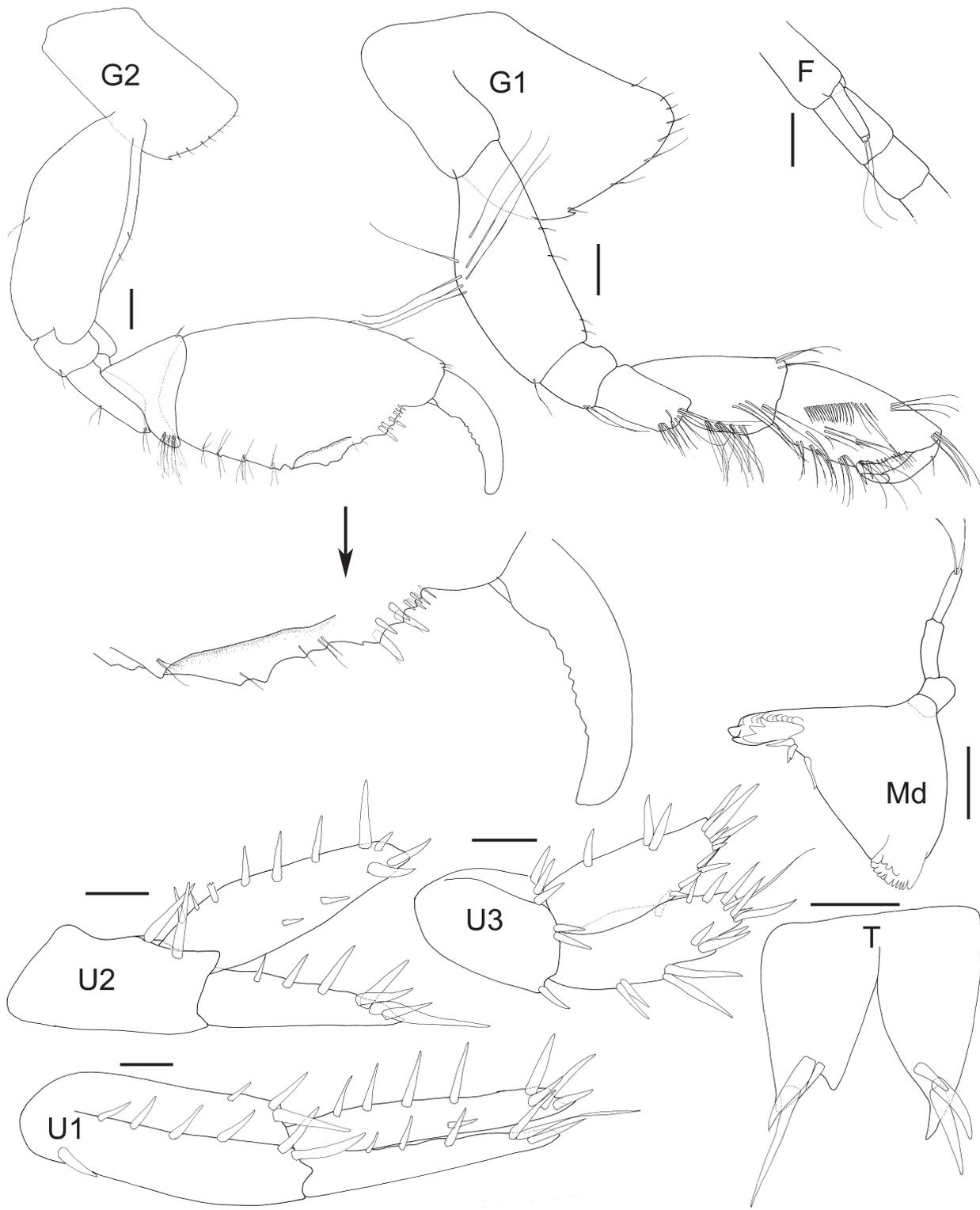


Figure 17. *Mallacoota latibrachium* (Walker, 1905), female, 6.0 mm, AM P.90587, south side off Christo Rei Beach, east of Dili, scales 0.1 mm.

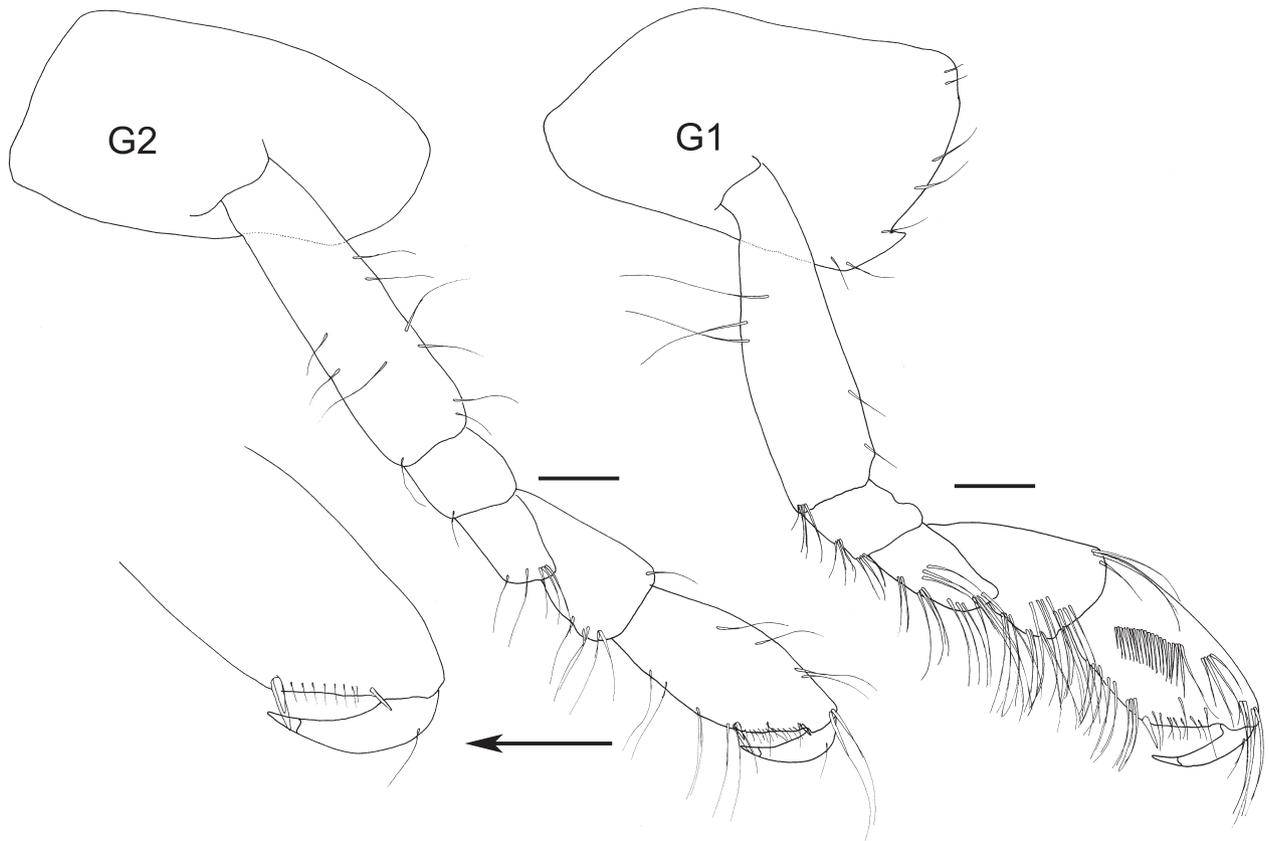


Figure 18. *Mallacoota latibrachium* (Walker, 1905), male, 6.5 mm, AM P.90586, south side off Christo Rei Beach, east of Dili, scales 0.1 mm.

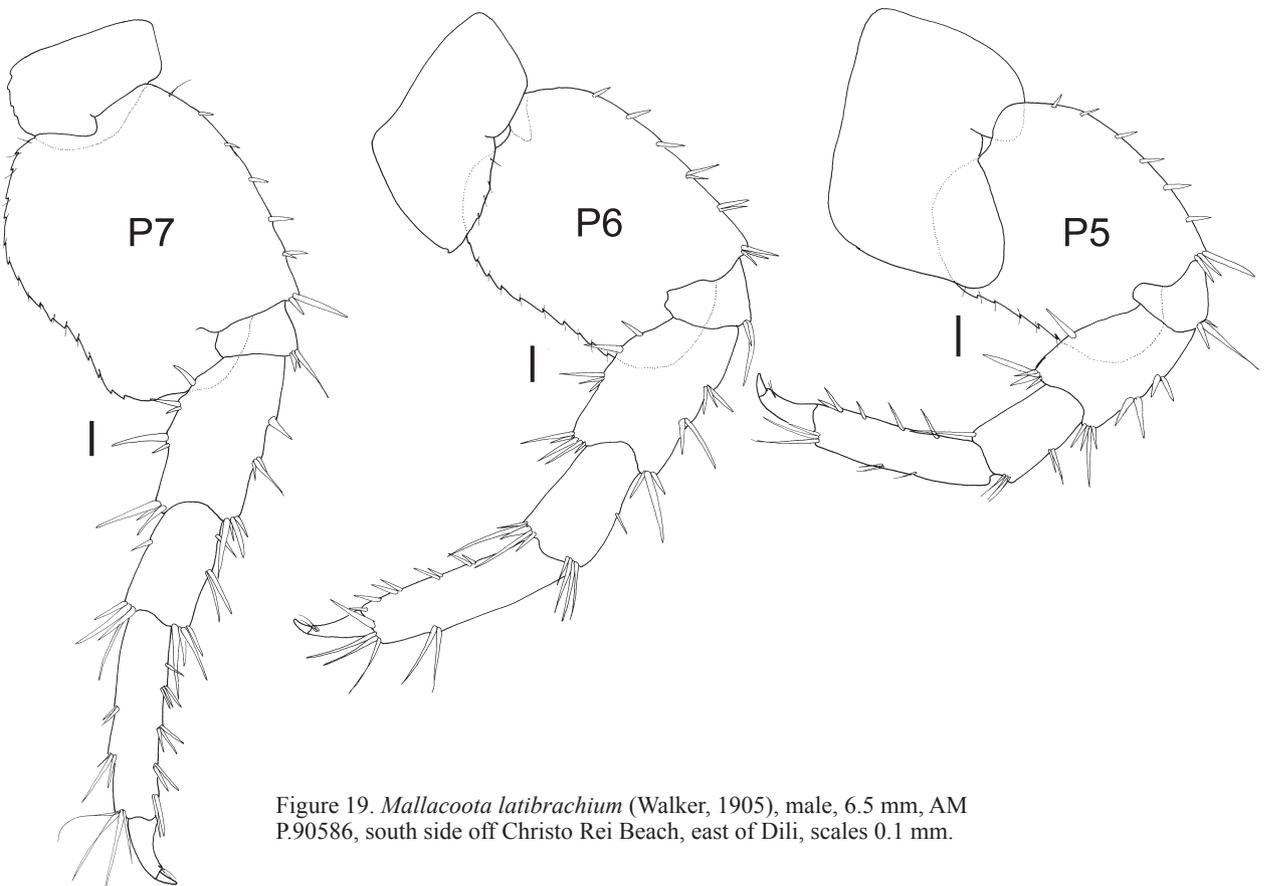


Figure 19. *Mallacoota latibrachium* (Walker, 1905), male, 6.5 mm, AM P.90586, south side off Christo Rei Beach, east of Dili, scales 0.1 mm.

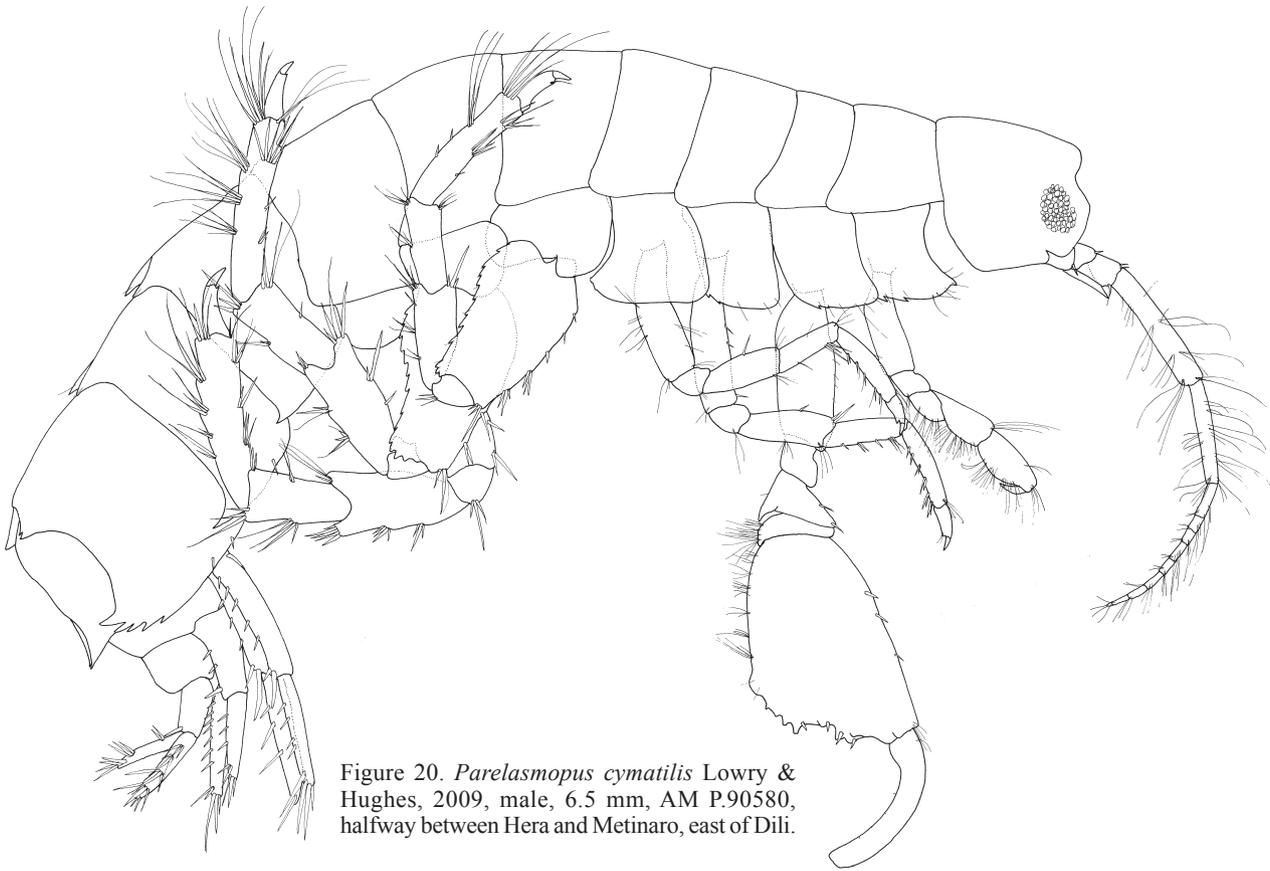


Figure 20. *Parelasmopus cymatilis* Lowry & Hughes, 2009, male, 6.5 mm, AM P.90580, halfway between Hera and Metinaro, east of Dili.

### *Quadrimaera* Krapp-Schickel & Ruffo, 2000

#### *Quadrimaera metinaro* sp. nov.

Figs 22–24

**Type material.** Holotype male, 3.5 mm, dissected, 4 slides, AM P.90577, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 20 m, tufts of red algae, coll. L.E. Hughes, 22 September 2012 (TM 2012-060); paratype female, 5.0 mm, dissected, 1 slide, AM P.90578, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 20 m, tufts of red algae, coll. L.E. Hughes, 22 September 2012 (TM 2012-060); paratypes 10 specimens, AM P.90595, east of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E), 20 m, tufts of red algae, coll. L.E. Hughes, 22 September 2012 (TM 2012-060).

**Type locality.** East of Metinaro, Secret Garden Reef (8°29'15"S 125°49'53"E).

**Etymology.** Named from the type locality, applied as a noun in apposition.

**Diagnosis.** *Gnathopod 2* propodus palm with subacute distal shelf, convex sinus and long rectangular tooth, distal shelf elevation higher than proximal tooth, palm defined by corner with well-developed tooth extending beyond palm margin; dactylus closing along palm with medial bulge. *Epimera 1–3* with small acute tooth. *Telson* lobes distally concave with 4 long robust setae, setae subequal to telson length.

**Description.** Head lateral cephalic lobe subquadrate, anteroventral corner produced into a sharp cusp, lacking

anteroventral slit. *Antenna 1* peduncular article 2 subequal to article 1; accessory flagellum with 7 articles. *Antenna 2* gland cone reaching end of short article 3. *Mandible* palp article 3 longer than article 2.

**Pereon.** *Gnathopod 1* coxa subquadrate; carpus rectilinear, length 1.1 times propodus; propodus subovate, palm convex, defined by rounded corner with one robust seta. *Gnathopod 2* basis with anterodistal lobe well developed; ischium anterior margin with well-developed lobes; propodus rectangular with parallel margins, palm with subacute distal shelf, convex sinus and long rectangular tooth, distal shelf elevation higher than proximal tooth, palm defined by corner with well-developed tooth extending beyond palm margin; dactylus closing along palm with medial bulge. *Pereopods 3–7* with bifid dactylus. *Pereopods 5–7* basis narrow, proximally broader.

**Pleon.** *Epimera 1–3* with small acute tooth. *Uropod 3* peduncle 0.9 times rami length; inner ramus 1.1 times outer ramus; rami apically truncate with many long robust setae. *Telson* deeply cleft (80%), lobes distally concave with 4 long robust setae, setae subequal to telson length.

**Female** (sexually dimorphic characters). Based on 5.0 mm, AM P.90578.

*Gnathopod 2* propodus palm with subacute distal shelf, convex sinus and long rectangular tooth, distal shelf elevation higher than proximal tooth, palm defined by corner with well-developed tooth extending beyond palm margin.

**Remarks.** *Quadrimaera metinaro* sp. nov. is similar to *Q. serrata* (Schellenberg, 1938) and *Q. reishi* (Barnard, 1970), these species have the gnathopod 2 propodus palm with a concave sinus in mature male specimens. In *Q. metinaro*

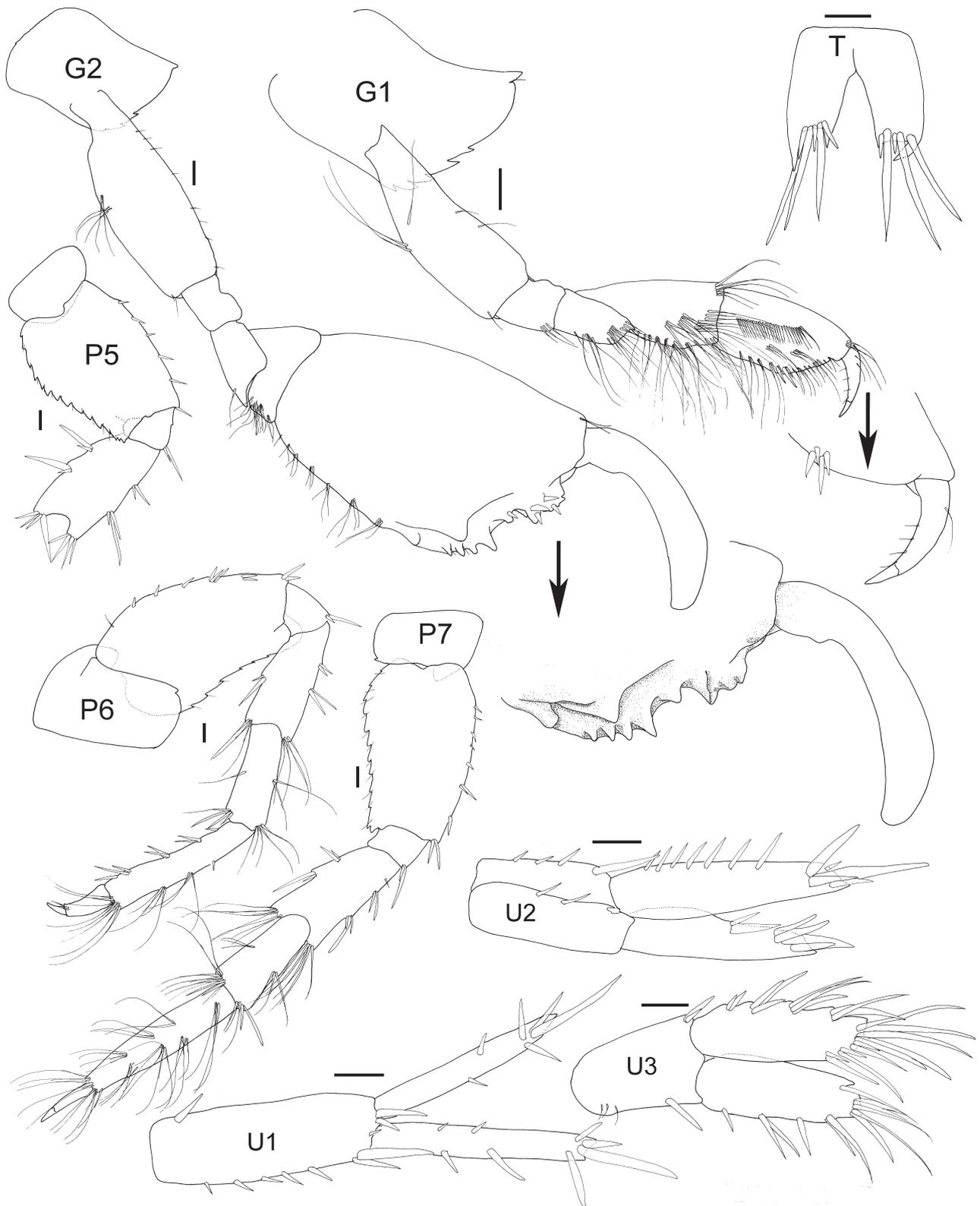


Figure 21. *Parelasmopus cymatilis* Lowry & Hughes, 2009, male, 6.5 mm, AM P.90580, halfway between Hera and Metinaro, east of Dili, scales 0.1 mm.

and *Q. reishi* the telson apical margin lobes have 4 long robust setae, while only 3 setae are present in *Q. serrata*. In *Q. metinaro* and *Q. reishi* the epimeron 3 posterior margin is smooth, whereas it is serrate in *Q. serrata*.

*Quadrimaera metinaro* sp. nov. can be separated from *Q. reishi* by the gnathopod 2 palm margin. The proximal palm margin is raised higher in *Q. metinaro* than the distal margin, while the opposite is seen in *Q. reishi*.

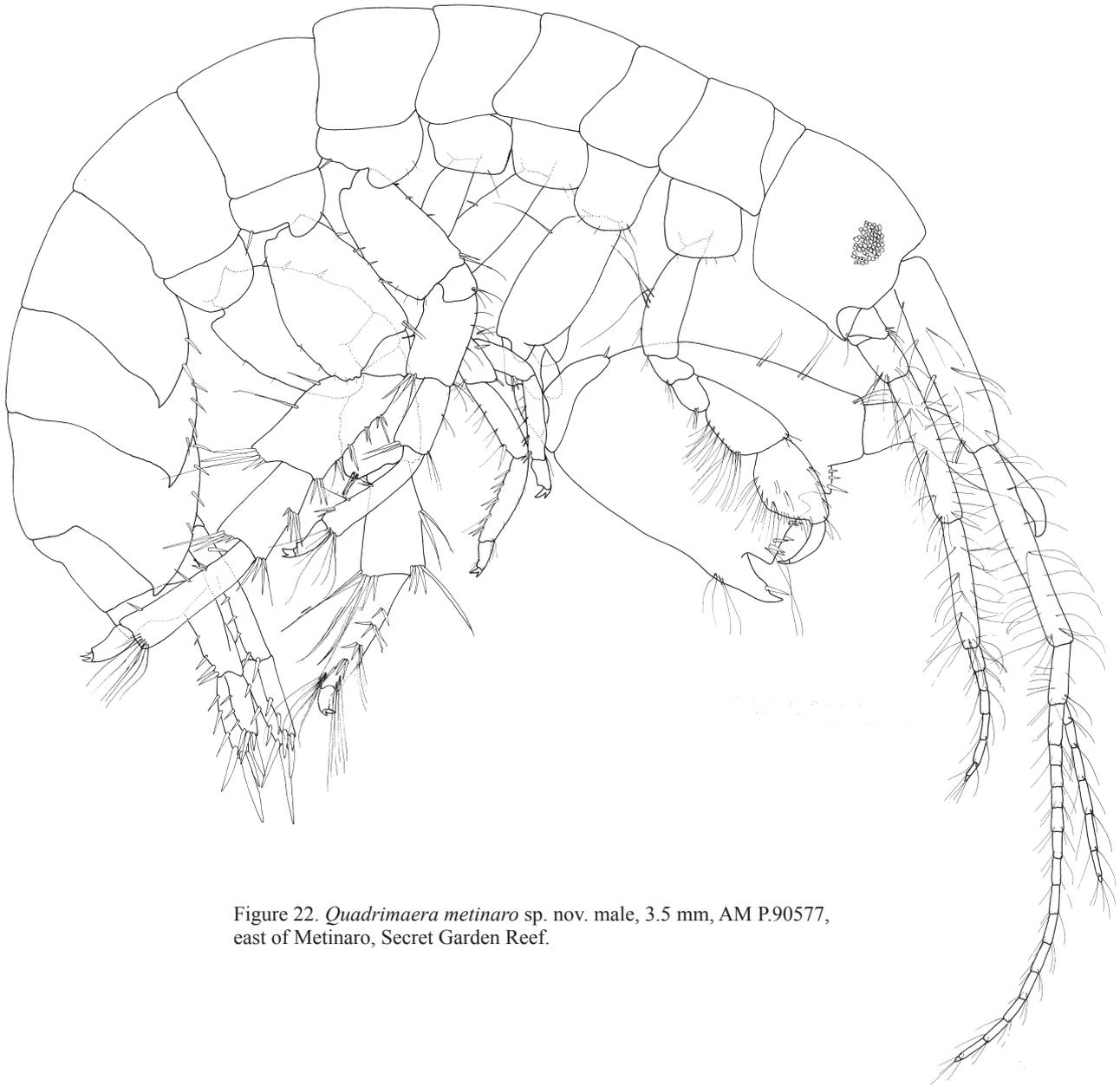


Figure 22. *Quadrimaera metinaro* sp. nov. male, 3.5 mm, AM P.90577, east of Metinaro, Secret Garden Reef.

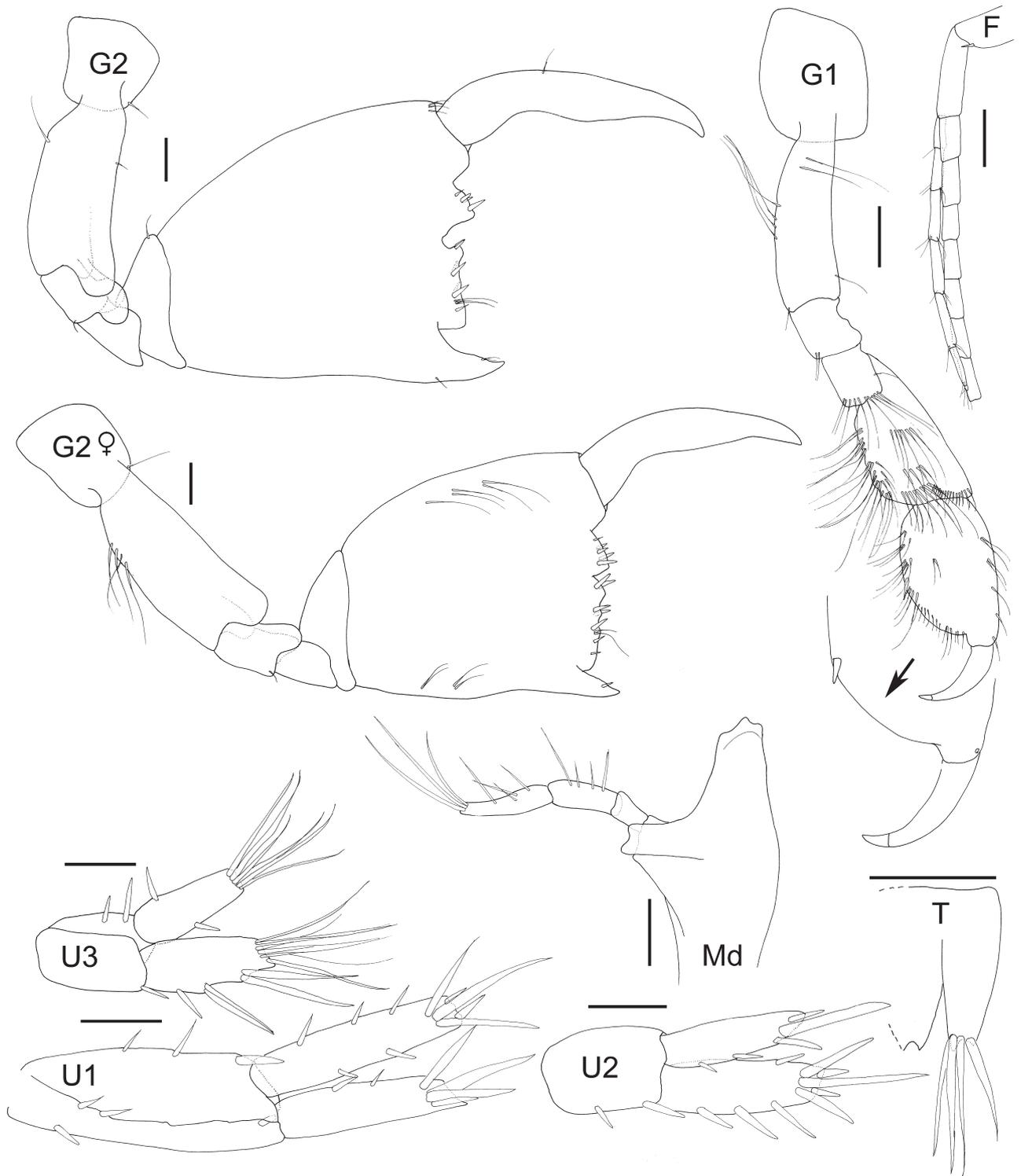


Figure 23. *Quadrimaera metinara* sp. nov. male, 3.5 mm, AM P.90577; female, 5.0 mm, AM P.90578, east of Metinaro, Secret Garden Reef, scales 0.1 mm.

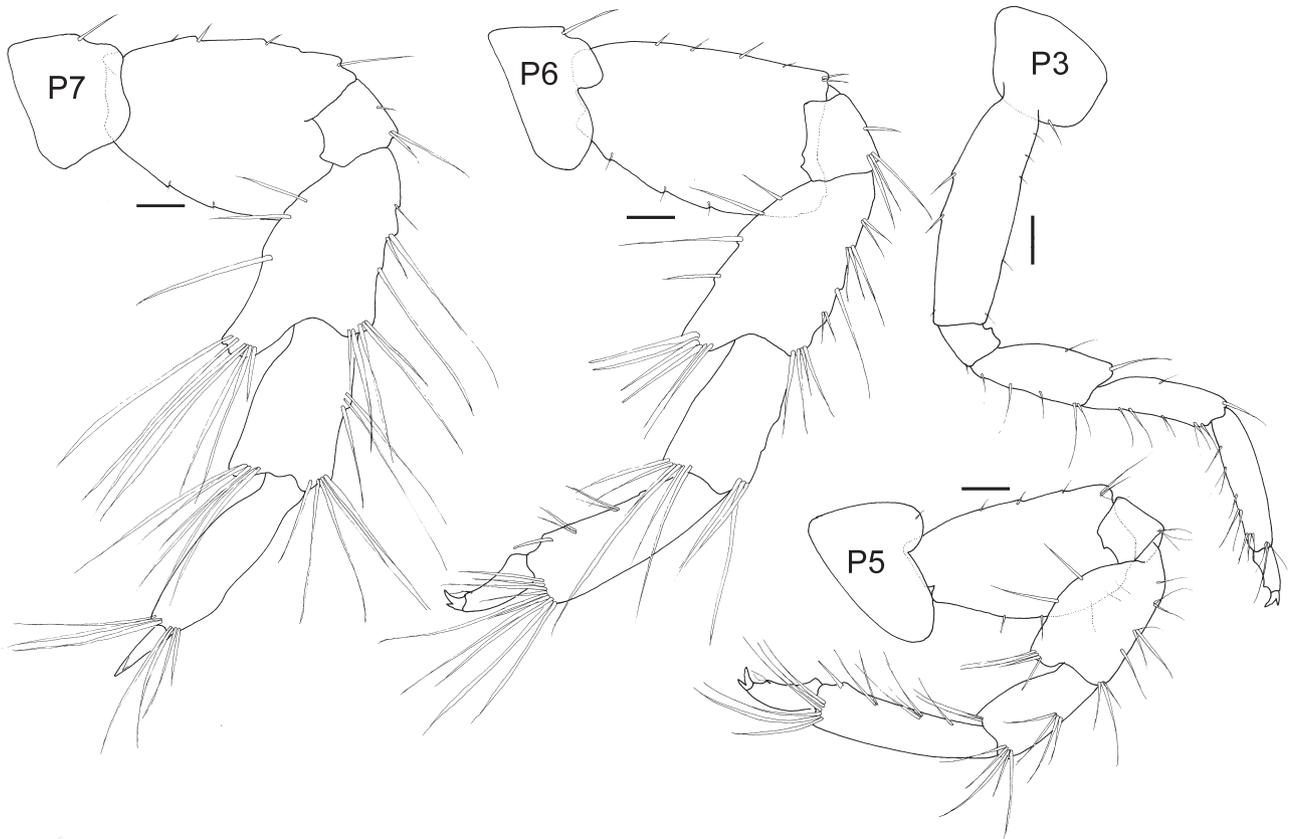


Figure 24. *Quadrimaera metinara* sp. nov. male, 3.5 mm, AM P.90577, east of Metinaro, Secret Garden Reef, scales 0.1 mm.

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