



<http://dx.doi.org/10.11646/zootaxa.3926.3.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:96CC7DD1-4B40-4F28-8125-5651DFC6CDE2>

The genus *Hippomedon* in Australian waters (Crustacea, Amphipoda, Lysianassidae, Tryphosinae)

N.M. KILGALLEN & J.K. LOWRY

Australian Museum Research Institute, 6 College Street, Sydney, New South Wales, 2010, Australia.

E-mail: niamh.kilgallen@austmus.gov.au, jim.lowry@austmus.gov.au

Abstract

Two new species of *Hippomedon*, *H. hippolyte* **sp. nov.** and *H. tourville* **sp. nov.** are described from Australian waters. The distribution of *H. rodericki* is extended from Tasmania northwards into New South Wales. The distribution of *Hippomedon geelongi* is also extended from Victoria northwards into New South Wales and southwards into Tasmania.

Key words: Australia, Crustacea, Amphipoda, Lysianassoidea, *Hippomedon*, new species

Introduction

The genus *Hippomedon* Boeck, 1871, is a large and common group of lysianassid amphipods with a worldwide distribution. There are currently more than 60 species and subspecies in the genus (Lowry & De Broyer 2014). Characters defining the species are subtle and many species have been incompletely described, resulting in taxonomic confusion. Four species of *Hippomedon* are currently described from Australian waters. However, we consider that two of these, *H. adentatus* Moore, 1989 and *H. denturus* Moore, 1989, have been incorrectly ascribed to this genus (Kilgallen & Lowry unpublished). Here we describe two new *Hippomedon* species, *H. hippolyte* **sp. nov.** and *H. tourville* **sp. nov.** and redescribe *H. geelongi* Stebbing, 1888 and *H. rodericki* Moore, 1989, extending the distribution of both species along the south-eastern coast of Australia.

Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2010) to the tryphosine (Lysianassidae) genera and species of the world. The **bold italic** parts of the descriptions are diagnostic characters that diagnose each taxon in at least two respects from every other tryphosine taxon. Material is lodged in the Australian Museum, Sydney (AM), the Natural History Museum, London (NHM) and Museum Victoria, Melbourne (NMV). Setal terminology follows Watling (1989). Standard abbreviations on the plates are: A, antenna; EP, epimeron; G, gnathopod; H, head; LM, labrum, MD, mandible; MX, maxilla; MP, maxilliped; P, pereopod; T, telson; U, uropod; l, left; r, right.

Systematics

Family Lysianassidae Dana, 1849

Subfamily Tryphosinae Lowry & Stoddart, 1997

Genus *Hippomedon* Boeck, 1871

***Hippomedon geelongi* Stebbing, 1888**

(Figs 1–4)

Hippomedon geelongi Stebbing, 1888: 635, pl. XI.—Stebbing, 1906: 61.—Sheard, 1937: 19 (catalogue).—P.G. Moore, 1989: 1459 (key).—Lowry & Stoddart, 12003: 166 (catalogue).

Types. Holotype, male, ~12.7 mm, NHM 1889.5.15.12.

Type locality. Off the entrance to Port Phillip Bay, Victoria (38°22.5'S 144°36.5'E), 60 m, trawl, sand, 1 April 1874, HMS *Challenger* [stn 161].

Material examined. *New South Wales.* 2 specimens, AM P.69731, east of Long Reef (33°43'S 151°46'E), 174 m, epibenthic sled, 20 December 1985, J.K. Lowry & R.T. Springthorpe, FRV *Kapala* [K85-21-08]; 1 specimen, AM P.22027, 28 km east of Malabar, Sydney (33°58.9'S 151°33.63'E), 187 m, 9 August 1973, Australian Museum Shelf Benthic Survey [Stn 44]; 3 specimens, AM P.47035, off Wollongong (34°32.08'S 151°12.55'E), 200 m, baited trap, 7–8 May 1993, P. Freewater & S.J. Keable & W. Vader, MV *Robin E* [NSW-797].

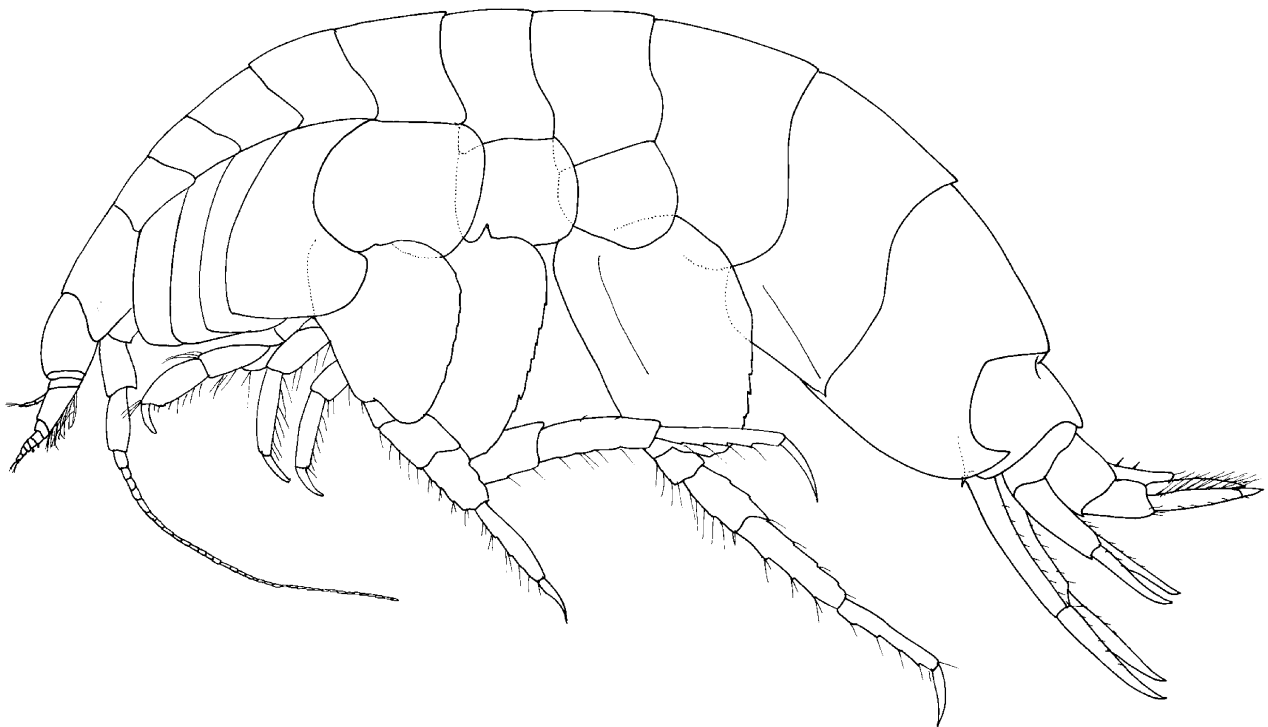


FIGURE 1. *Hippomedon geelongi* Stebbing, 1888, male, 11.8 mm, NMV J67811, from 54km west of Stokes Point, King Island, western Bass Strait.

Tasmania. 1 female, AM P.69734; 5 specimens, AM P.69733, east of Fortescue Bay, north of Hippolyte Rocks, (43°06.7'S 148°03.46'E), 100 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-390]; 1 male, AM P.69736; 21 specimens, AM P.69735, east of Fortescue Bay, north of Hippolyte Rocks, (43°06.7'S 148°03.46'E), 100 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-391]; 1 specimen, AM P.69732, mouth of Fortescue Bay, (43°07.76'S 147°59.46'E), 50 m, baited trap, 8–9 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-387]; 1 male, NMV J67811, western Bass Strait, King Island, 54 km west of Stokes Point (40°06'S 143°17'E), 158 m, medium sand, Smith-McIntyre grab, 11 October 1980, G.C.B. Poore, HMAS *Kimbla* [BSS-100G]; 1 specimen, NMV J67812, central Bass Strait, Three Hummock Island, 47 km east of Cape Rochon (40°23.8'S 145°32'E), 65 m, muddy sand, epibenthic sled, 3 November 1980, M. Gomon & G.C.B. Poore [BSS-113S]; 1 specimen, NMV J67813, central Bass Strait, 100 km south-south-east of Cape Liptrap (39°45.9'S 145°33.5'E), 74 m, muddy fine sand, epibenthic sled, 13 November 1981, R. Wilson, RV *Tangaroa* [BSS-156S]; 1 specimen, NMV J67814, central Bass Strait, 38 km south-west of Cape Paterson (38°55.5'S 145°17.0'E), 70 m, fine sand, epibenthic sled, 12 November 1981, R. Wilson, RV *Tangaroa* [BSS-155G]; 4 specimens, AM P.45745, mouth of Fortescue Bay (43°07.76'S 147°59.46'E), 50 m, baited trap, 16–17 April 1993, J.K. Lowry & P. Freewater, MV *Tasmanian Enterprise* [TAS-350]; 2 specimens, AM P.45778, east of

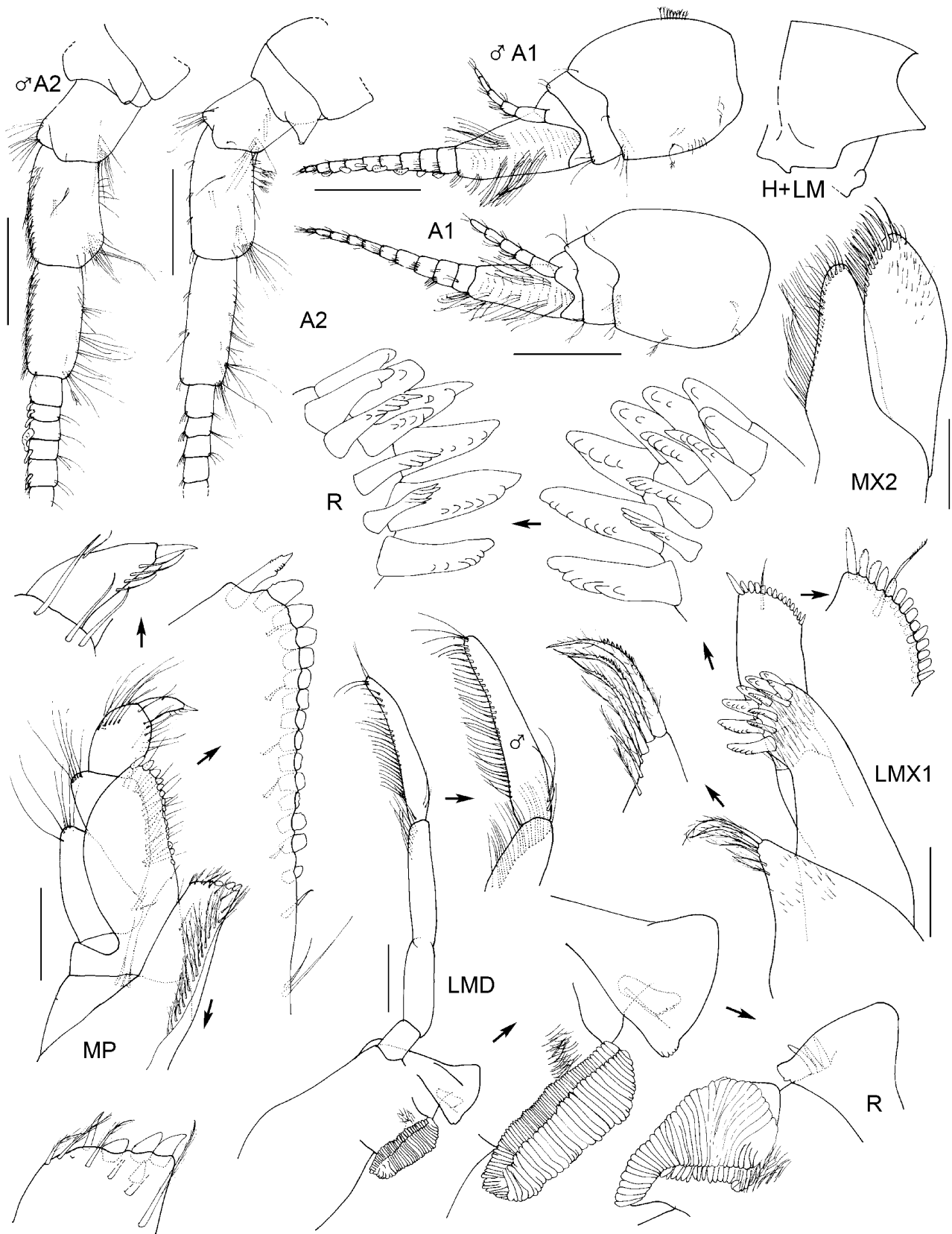


FIGURE 2. *Hippomedon geelongi* Stebbing, 1888, female, 15.1 mm, AM P.69734; male, 14.9 mm, AM P.69736, both from north of Hippolyte Rocks, Tasmania. Scale bars: antennae, 0.5 mm; remainder, 0.2 mm.

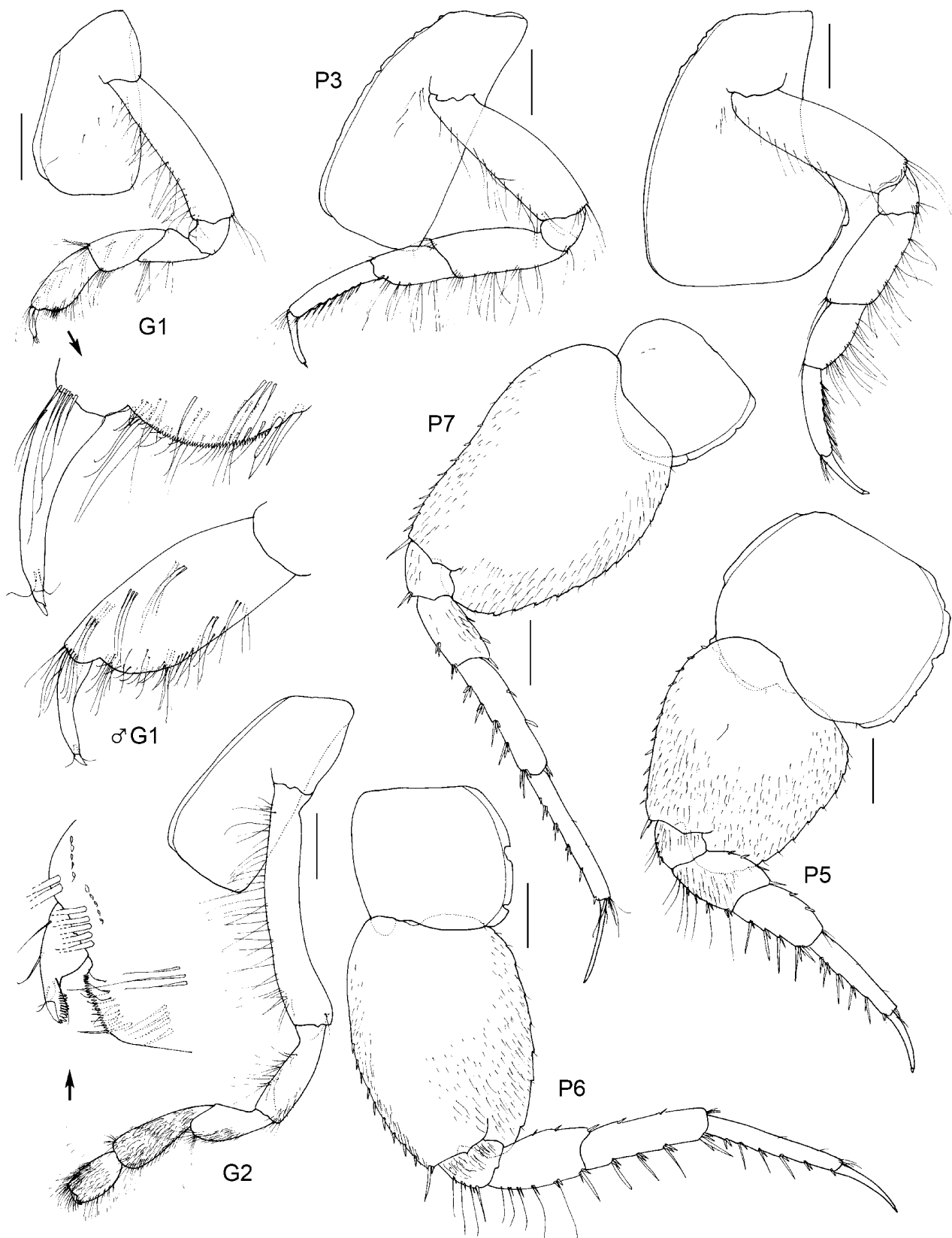


FIGURE 3. *Hippomedon geelongi* Stebbing, 1888, female, 15.1 mm, AM P.69734; male, 14.9 mm, AM P.69736, both from north of Hippolyte Rocks, Tasmania. Scale bars: 0.5 mm.

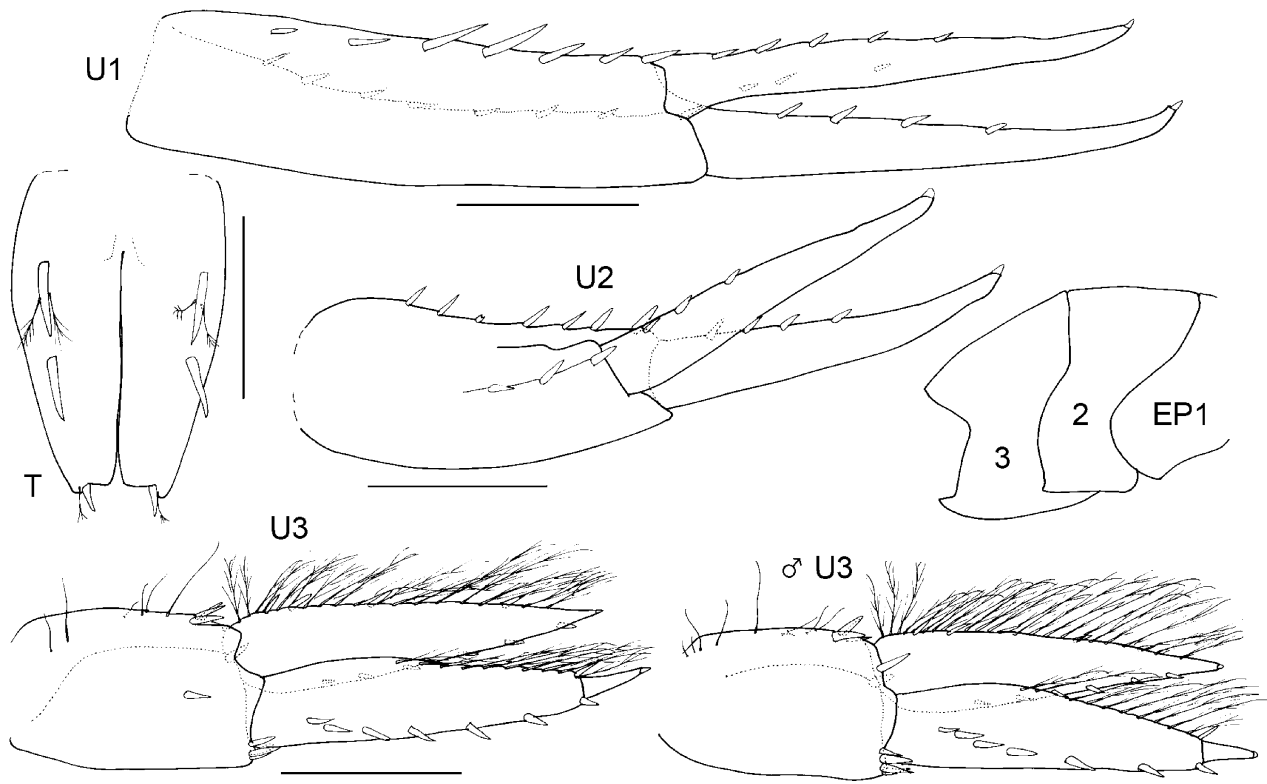


FIGURE 4. *Hippomedon geelongi* Stebbing, 1888, female, 15.1 mm, AM P.69734; male, 14.9 mm, AM P.69736, both from north of Hippolyte Rocks, Tasmania. Scale bars: 0.5 mm.

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]; 9 specimens, AM P.50824, 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.50895, 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]; 10 specimens, AM P.50925, mouth of Fortescue Bay (43°07.76'S 147°59.46'E), 50 m, baited trap, 9–10 April 1994, J.K. Lowry & K. Dempsey, MV *Martrudan* [TAS-406]; 7 specimens, AM P.51320, 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]; 177 specimens, AM P.51331, 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]; 4 specimens, AM P.58245, 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-389].

Description. Based on female, 15.1 mm, AM P.69734.

Head lateral cephalic lobes subtriangular, apically subacute. *Antenna 1* peduncular article 1 without anterodistal lobe; article 2 without anterodistal lobe; accessory flagellum present, not forming cap, 5-articulate, terminal article not offset; flagellum with strong 2-field callynophore; calceoli absent. *Antenna 2* peduncular article 3 short; articles 3–5 not enlarged; flagellum short, calceoli absent. *Labrum* (epistome and upper lip) separate; epistome produced equally with upper lip, straight; upper lip not produced. *Mandible* molar columnar, with oval fully triturating surface; palp attached extremely distally. *Maxilla 1 inner plate with 1 large apical pappose seta and 5 smaller pappose setae along inner margin*; outer plate setal-tooth 7 present, cuspidate distally along inner margin; palp distal margin with apical robust setae. *Maxilliped* outer plate with one slender and one broad, long, apical robust setae.

Gnathopod 1 subchelate; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis moderately setose along anterior margin; ischium short; *carpus long, subequal in length to propodus*, without posterior lobe; propodus small, margins weakly diverging distally, sparsely setose along posterior margin, palm slightly acute, entire, convex. *Gnathopod 2* propodus palm transverse to slightly acute, straight. *Pereopod 4*

coxa posteroventral lobe moderately developed. *Pereopod 5* coxa without distinct lateral ridge, basis about as long as broad, not posteroproximally excavate, posterior margin weakly serrate, posterior margin without mid-central spine, without posteroventral lobe or spine. *Pereopod 7* basis posterodistally produced less than halfway along merus, not posterodistally excavate.

Epimeron 2 posteroventral corner producing small spine. *Epimeron 3* posterior margin smooth, posteroventral corner forming a broad upwardly curved spine. *Urosomite 1* projecting over urosomite 2, dorsodistally acute. ***Uropod 2 rami subequal in length***, inner ramus without constriction. *Uropod 3* stout; peduncle without dorsolateral flange; inner and outer rami well developed, outer ramus article 2 short, with plumose setae on both rami. *Telson* deeply cleft, with 2 dorsal and 1 apical robust setae on each lobe.

Sexually dimorphic characters. Based on male, 14.9 mm, AM P.69736. *Antenna 1* flagellum with strong 2-field callynophore; calceoli present, small. *Antenna 2* calceoli present.

Depth range. 50–200 m.

Remarks. Until now, this species was only known from the unique holotype taken off the entrance to Port Phillip Bay, Victoria. We extend the distribution of *H. geelongi* from Victoria southwards into Tasmania, and northwards into New South Wales as far as Long Reef.

Distribution. *Australia.* Eastern and south-eastern coasts from east of Long Reef, New South Wales (33°43'S 151°46'E) to Fortescue Bay, Tasmania (this study), and the entrance to Port Phillip Bay, Victoria (Stebbing 1888).

***Hippomedon hippolyte* sp. nov.**

(Figs 5–7)

Types. Holotype, female, 13.4 mm, AM P.71653, Tasmania, 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]. Paratypes: 1 male, 11.8 mm, AM P.71654; 1 male, 8.5 mm, AM P.71655, both with same locality details as holotype.

Additional material examined. 226 specimens, AM P.51155; many specimens, AM P.71651; many specimens, AM P.71652, Tasmania, 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].

Etymology. Named for the Hippolyte Rocks, a small island off eastern Tasmania, close to the type locality. Used as a noun in apposition.

Description. Based on holotype female, 13.4 mm, AM P.71653.

Head, lateral cephalic lobe rounded, apically truncated; eyes round. *Antenna 1* peduncular article 1 without anterodistal lobe; article 2 without anterodistal lobe; accessory flagellum present, not forming cap, terminal article not offset; 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; calceoli absent. ***Labrum (epistome and upper lip) separate; epistome less produced than upper lip, straight; upper lip produced, rounded apically.*** *Mandible* molar columnar, with subcircular fully triturating surface. *Maxilla 1* inner plate with 2 apical pappose setae; outer plate setal-tooth 7 present, left and right symmetrical, cuspidate along most of straight inner margin; palp distal margin with apical robust setae. *Maxilliped* outer plate with 4 short, slender apical robust setae.

Gnathopod 1 subchelate; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis moderately setose along anterior margin; ischium short; carpus long, longer than propodus, without posterior lobe; propodus small, margins subparallel, sparsely setose along posterior margin, palm moderately acute, entire, straight. *Gnathopod 2* propodus palm slightly acute, straight. *Pereopod 4* coxa posteroventral lobe well-developed. *Pereopod 5* coxa without distinct lateral ridge, basis about as long as broad, not posteroproximally excavate, posterior margin weakly serrate, posterior margin without mid-central spine, without posteroventral lobe or spine. *Pereopod 7* basis posterodistally produced less than halfway along merus, not posterodistally excavate.

Epimeron 2 posteroventral corner producing small spine. ***Epimeron 3* posterior margin smooth, posteroventral corner subquadrate.** *Urosomite 1* not projecting over urosomite 2, with anterodorsal notch, straight posterodorsally. *Uropod 2* rami subequal in length, inner ramus without constriction. *Uropod 3* slender; peduncle without dorsolateral flange; inner and outer rami well developed, outer ramus article 2 short, with plumose setae on both rami. *Telson* deeply cleft, with 4 or 5 dorsal robust setae, and 1 apical robust seta on each lobe.

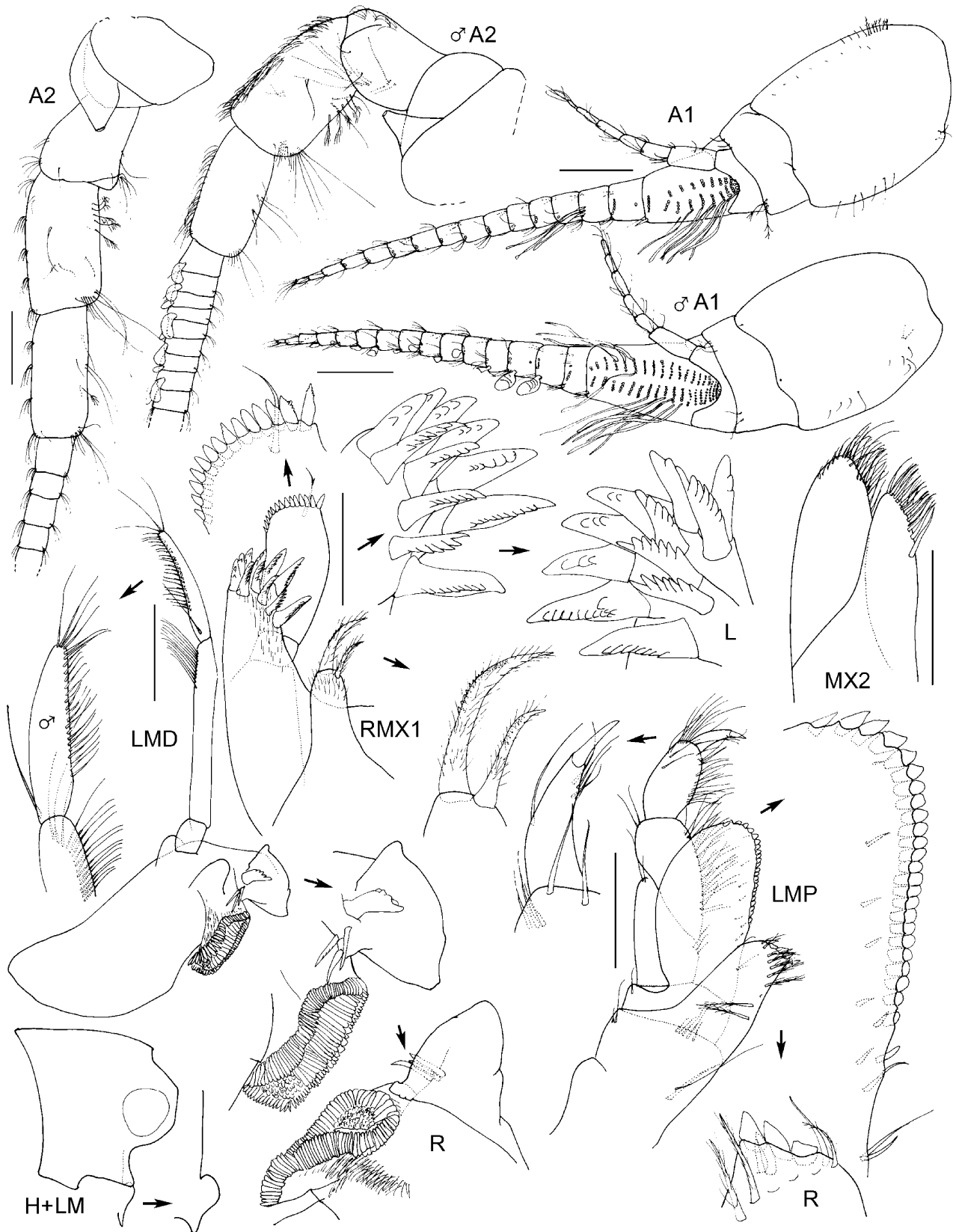


FIGURE 5. *Hippomedon hippolyte* sp. nov. female, 13.4 mm, AM P.71653; male, 11.8 mm, AM P.71654, both from east of Fortescue Bay, Tasmania. Scale bars: 0.2 mm.

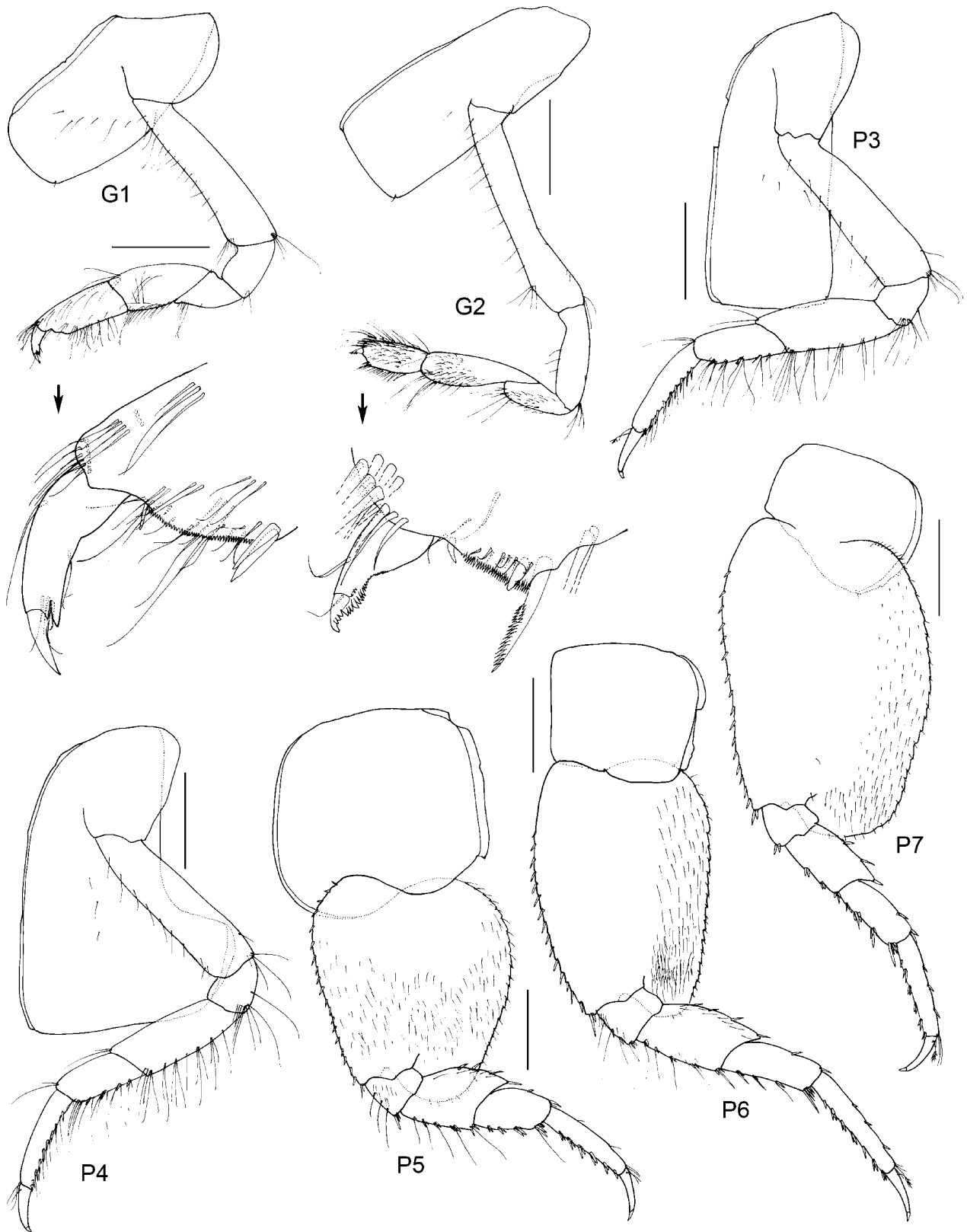


FIGURE 6. *Hippomedon hippolyte* sp. nov. female, 13.4 mm, AM P.71653, from east of Fortescue Bay, Tasmania. Scale bars: 0.5 mm.

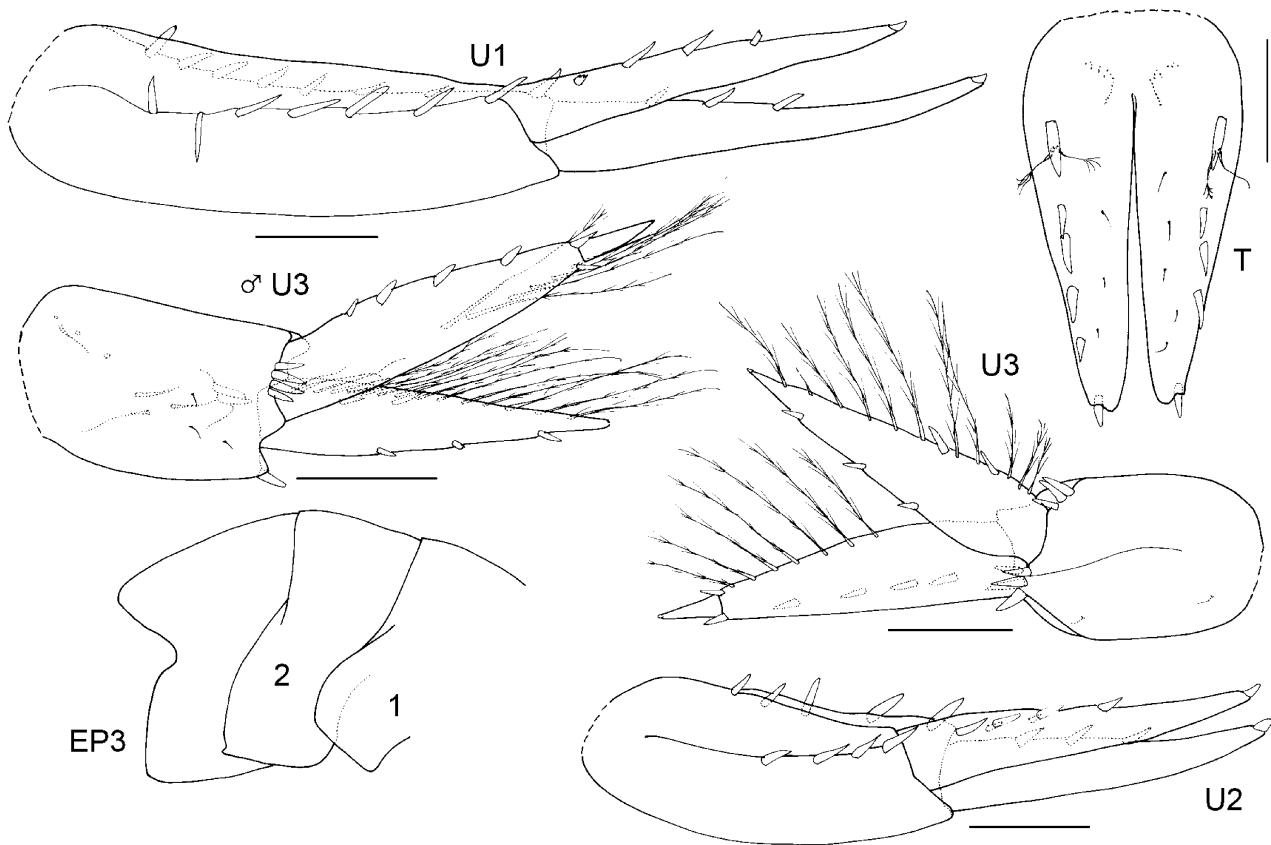


FIGURE 7. *Hippomedon hippolyte* sp. nov. female, 13.4 mm, AM P.71653; male, 11.8 mm, AM P.71654, both from east of Fortescue Bay, Tasmania. Scale bars: 0.2 mm.

Sexually dimorphic characters. Based on paratypes, male, 11.8 mm, AM P.71654. *Antenna 1* flagellum with strong 2-field callynophore (stronger than female), robust setae present on proximal articles; calceoli present, small. *Antenna 2* flagellum long, calceoli present.

Depth range. 100 m.

Remarks. Only two other species of *Hippomedon* have an epimeron 3 posteroventral corner that is not produced into a spine of some form. Of those species, *Hippomedon normalis* (K.H. Barnard, 1955), known from South Africa and Madagascar (as *H. rotundipleura* Ledoyer, 1986), differs from *H. hippolyte* sp. nov. in having a rounded and protruding epistome, and subtriangular lateral cephalic lobes (epistome straight, lateral cephalic lobes truncated in *H. hippolyte*). *Hippomedon onoconotus* (Stebbing, 1908), also from South Africa, is easily distinguished by having a vertically produced acute spine on urosomite 1.

Distribution. *Australia.* Known only from the type locality, near the Hippolyte Rocks, east of Fortescue Bay, Tasmania.

***Hippomedon rodericki* Moore, 1989**

(Figs 8–10)

Hippomedon rodericki Moore, 1989: 1444, figs 1–3.—Lowry & Stoddart, 2003: 166.

Types. Holotype male, 8.5 mm, AM P.39389.

Type locality. Tasmania, off Burnie (41°02'S 146°00'E), circa 15 m, stones & sand, April 1986, Marine Ecological Surveys Ltd, Faversham, Kent, sample no. 29.

Additional material examined. *New South Wales.* 1 female, AM P.69717, Botany Bay (33°59.33'S 151°12.66'E), 10 m, 16 January 1975, NSW State Fisheries [BB-817]; 1 male, AM P.69718, Botany Bay

(33°58.83'S 151°11.75'E), 6 m, 12 February 1975, NSW State Fisheries [BB-864]; 1 specimen, AM P.41957, Botany Bay, south of airport runway extension (33°58.13'S 151°11.16'E), 5 m, Smith-McIntyre Grab, 6–7 April 1992, Australian Museum party [NSW-767]; 2 specimens, AM P.44302, off Wollongong (34°26.53'S 150°57.98'E), 50 m, baited trap, *Globigerina* ooze, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-939]; 3 specimens, AM P.44314, off Wollongong (34°26.53'S 150°57.98'E), 50 m, baited trap, *Globigerina* ooze, 27–28 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-940]; 2 specimens, AM P.44332, off Wollongong (34°26.53'S 150°57.98'E), 50 m, baited trap, *Globigerina* ooze, 28–29 March 1994, J.K. Lowry & K. Dempsey, MV *Robin E* [NSW-958]; 5 specimens, AM P.48426, 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]; 2 specimens, AM P.55973, 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]; 1 male, AM P.69712, east of Long Reef Point (33°46'S 151°43'E), 176 m, dredge, 5 December 1977, FRV *Kapala* [K77-23-01]; 4 specimens, AM P.69713, east of Long Reef Point (33°46'S 151°43'E), 176 m, dredge, 05 December 1977, FRV *Kapala* [K77-23-01]; 2 specimens, AM P.69714, east of Broken Bay (33°35–34'S 151°41'E), 135 m, 10 February 1986, FRV *Kapala* [K86-01-03]; 1 female, AM P.69715, east of Long Reef (33°43–44'S 151°46'E), 174 m, epibenthic sled, 20 December 1985, J.K. Lowry & R.T. Springthorpe, FRV *Kapala* [K85-21-08]; 7 specimens, AM P.69716, east of Long Reef (33°43–44'S 151°46'E), 174 m, epibenthic sled, 20 December 1985, J.K. Lowry & R.T. Springthorpe, FRV *Kapala* [K85-21-08]; 1 specimen, AM P.69719, off coast (33°50', 151°20'E), 73–183 m, from stomach of Jackass Fish (*Nemadactylus macropterus*), July 1939, A.C.S.; 1 female, AM P.69720, Bass Point (34°36'S 150°54'E), 45–50 m, Smith-McIntyre Grab, 29 October 1990 –14 Nov 1990, The Ecology Lab for RMI/Pioneer Project [3-27]; 1 specimen, AM P.69721, Bass Point (34°36'S 150°54'E), 35–40 m, Smith-McIntyre Grab, 3–18 January 1991, The Ecology Lab for RMI/Pioneer Project [4-213]; 1 specimen, AM P.69722, Bass Point (34°36'S 150°54'E), 25–30 m, Smith-McIntyre Grab, 1 February 1990, The Ecology Lab for RMI/Pioneer Project [S1R1]; 1 specimen, AM P.69723, Wattamolla, off Providential Head (34°08'S 151°08.5'E), 35–40 m, Smith-McIntyre Grab, 15 January 1990, The Ecology Lab for RMI/Pioneer Project [W 9]; 1 specimen, AM P.83395, Jervis Bay (35°01.13'S 150°45.6'E), 14 m, Van Veen Grab, 24 June 2008, Geoscience Australia, M. McArthur, HMAS *Kimbla* [GA0312/JB_45]; 1 specimen, AM P.22007, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 24 January 1973, Australian Museum Shelf Benthic Survey [III]; 4 specimen, AM P.22008, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 26 June 1973, Australian Museum Shelf Benthic Survey [III]; 1 specimen, AM P.22009, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 26 March 1973, Australian Museum Shelf Benthic Survey [Stn III]; 1 specimen, AM P.22010, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 31 July 1973, Australian Museum Shelf Benthic Survey [Stn. III]; 2 specimen, AM P.22011, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 23 May 1973, Australian Museum Shelf Benthic Survey [III]; 1 specimen, AM P.22012, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 19 April 1973, Australian Museum Shelf Benthic Survey [III]; 1 specimen, AM P.22013, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 26 March 1973, Australian Museum Shelf Benthic Survey [Stn III]; 5 specimen, AM P.22014, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 30 August 1973, Australian Museum Shelf Benthic Survey [Stn. III]; 1 specimen, AM P.22015, 1.6 km east of Malabar sewage outlet (33°58.25'S 151°17'E), 66 m, 24 September 1973, Australian Museum Shelf Benthic Survey [III]; 2 specimen, AM P.22016, 2 km east of Long Bay (33°58.33'S 151°17.82'E), 127 m, 24 April 1973, Australian Museum Shelf Benthic Survey [IV]; 1 specimen, AM P.22017, 2 km east of Long Bay (33°58.33'S 151°17.82'E), 127 m, 27 September 1973, Australian Museum Shelf Benthic Survey [IV]; 1 specimen, AM P.22018, 2 km east of Long Bay (33°58.33'S 151°17.82'E), 127 m, 22 August 1973, Australian Museum Shelf Benthic Survey [IV]; 1 specimen, AM P.22019, 2 km east of Long Bay (33°58.33'S 151°17.82'E), 127 m, 5 December 1973, Australian Museum Shelf Benthic Survey [IV]; 1 specimen, AM P.22020, 2.3 km south-east of Malabar (33°58.45'S 151°18.68'E), 134 m, 26 January 1974, Australian Museum Shelf Benthic Survey [V]; 1 specimen, AM P.22021, 2.3 km south-east of Malabar (33°58.45'S 151°18.68'E), 134 m, 26 April 1973, Australian Museum Shelf Benthic Survey [V]; 1 specimen, AM P.22022, 2.3 km south-east of Malabar (33°58.45'S 151°18.68'E), 134 m, 24 Oct 1973, Australian Museum Shelf Benthic Survey [V]; 3 specimen, AM P.22023, 2.3 km south-east of Malabar (33°58.45'S 151°18.68'E), 134 m, August 1973, Australian Museum Shelf Benthic Survey [V]; 1 specimen, AM P.22024, 2.3 km south-east of Malabar (33°58.45'S 151°18.68'E), 134 m, 30 March 1973, Australian Museum Shelf Benthic Survey [V]; 2 specimen, AM P.22025, east of Malabar (33°58.76'S 151°17.05'E), 66 m, 19 February

1973, Australian Museum Shelf Benthic Survey [Stn. 26]; 1 specimen, AM P.22026, east of Malabar (33°57.92'S 151°18.06'E), 75 m, 20 February 1973, Australian Museum Shelf Benthic Survey [Stn. 31]; 1 specimen, AM P.22031, 2 km east of Magic Point (33°57.66'S 151°16.86'E), 39 m, medium sand bottom with shell fragments, 17 May 1972, Australian Museum Shelf Benthic Survey [D2]; 1 specimen, AM P.22032, east of Malabar (33°58.16'S 151°17.16'E), 68 m, 21 February 1973, Australian Museum Shelf Benthic Survey [Stn. 32]; 1 specimen, AM P.24046, 1.5 km east of Belmont Beach (33°02.6'S 151°40.93'E), 23 m, 18 March 1975, Australian Museum Hunter District Water Board Survey [HDWBS09010301]; 1 specimen, AM P.24047, 1.5 km east of Burwood Beach (32°57.52'S 151°44.72'E), 28 m, mud with gravel, 16 December 1975, Australian Museum Hunter District Water Board Survey [HDWBS06010304].

Tasmania. 1 specimen, AM P.51087, 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]; 5 specimens, AM P.69635, off Babel Island (39°55'S 148°31'E), 25 m over bottom depth 51 m, horizontal plankton haul, 20 January 1939, CSIRO, FRV *Warreen* [29/39]; 1 specimen, NMV J67795, central Bass Strait, 6 km north-east of Stanley (40°48.8'S 145°22'E), 22 m, fine sand, 4 November 1980, M. Gomon & G.C.B. Poore, FRV *Sarda* [BSS-114]; 1 specimen, NMV J2431, Robbins Island, 5 km east of Cape Edie (40°41.8'S 145°07'E), 16 m, fine shelly sand, epibenthic sled, 3 November 1980, M. Gomon & G.C.B. Poore, FRV *Sarda* [BSS-110S].

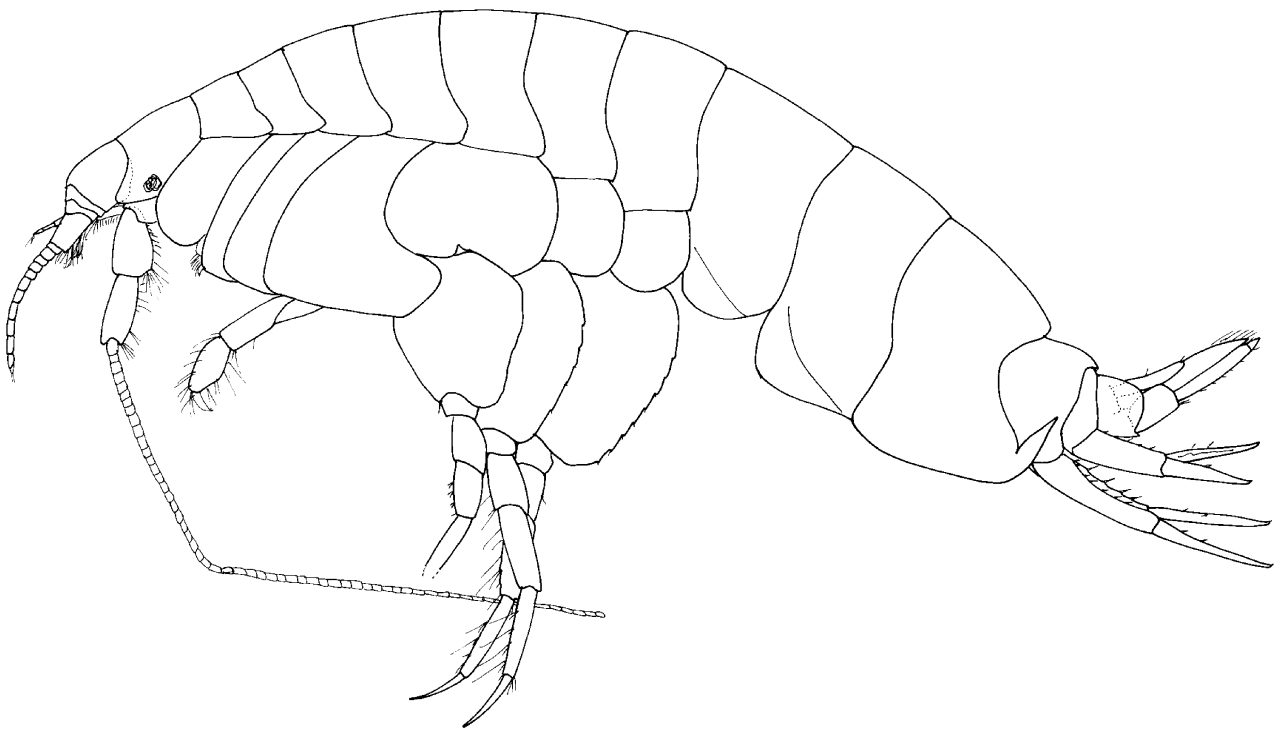


FIGURE 8. *Hippomedon rodericki* P.G. Moore, 1989, male, 13.5 mm, AM P.69718, from Botany Bay, New South Wales.

Victoria. 1 specimen, NMV J3297, Port Phillip Bay, Hobsons Bay (37°51'S 144°56'E), 10.3 m, Smith-McIntyre grab, February 1975–January 1986, G.C.B. Poore & S.F. Rainer [PBES 137]; 1 male, NMV J67796, western Bass Strait, 32 km south-south-west of Cape Otway, (39°09'S 143°26'E), 85 m, coarse carbonate sand, dredge, 8 October 1980, G.C.B. Poore, HMAS *Kimbla* [BSS-55D]; 1 specimen, NMV J67797, central Bass Strait, 100 km south-south-east of Cape Liptrap (39°45.9'S 145°33.5'E), 74 m, muddy fine sand, epibenthic sled, 13 November 1981, R. Wilson, RV *Tangaroa* [BSS-156S]; 2 specimens, NMV J67798, eastern Bass Strait, 50 km south-west of Lakes Entrance (38°03'S 147°50'E), 45 m, epibenthic sled, 31 July 1983, M. Gomon & R. Wilson, FV *Silver Gull* [BSS-212S]; 1 male, NMV J67799, western Bass Strait, 31 km south-south-west of Cape Otway (39°08'S 143°24'E), 77 m, medium sand, 8 October 1980, Smith-McIntyre grab, G.C.B. Poore, HMAS *Kimbla* [stn BSS-56G]; 16 specimens, NMV J67800, western Bass Strait, 26 km south-west of Cape Otway (39°01.0'S 143°22.1'E), 84 m, medium sand, dredge, 31 January 1981, M. Gomon et al., FRV *Hai Kung* [BSS-120D]; 1 specimen, NMV J67801, western Bass Strait, 25 km east-south-east of Cape Otway (39°59'S 143°47'E), 81 m,

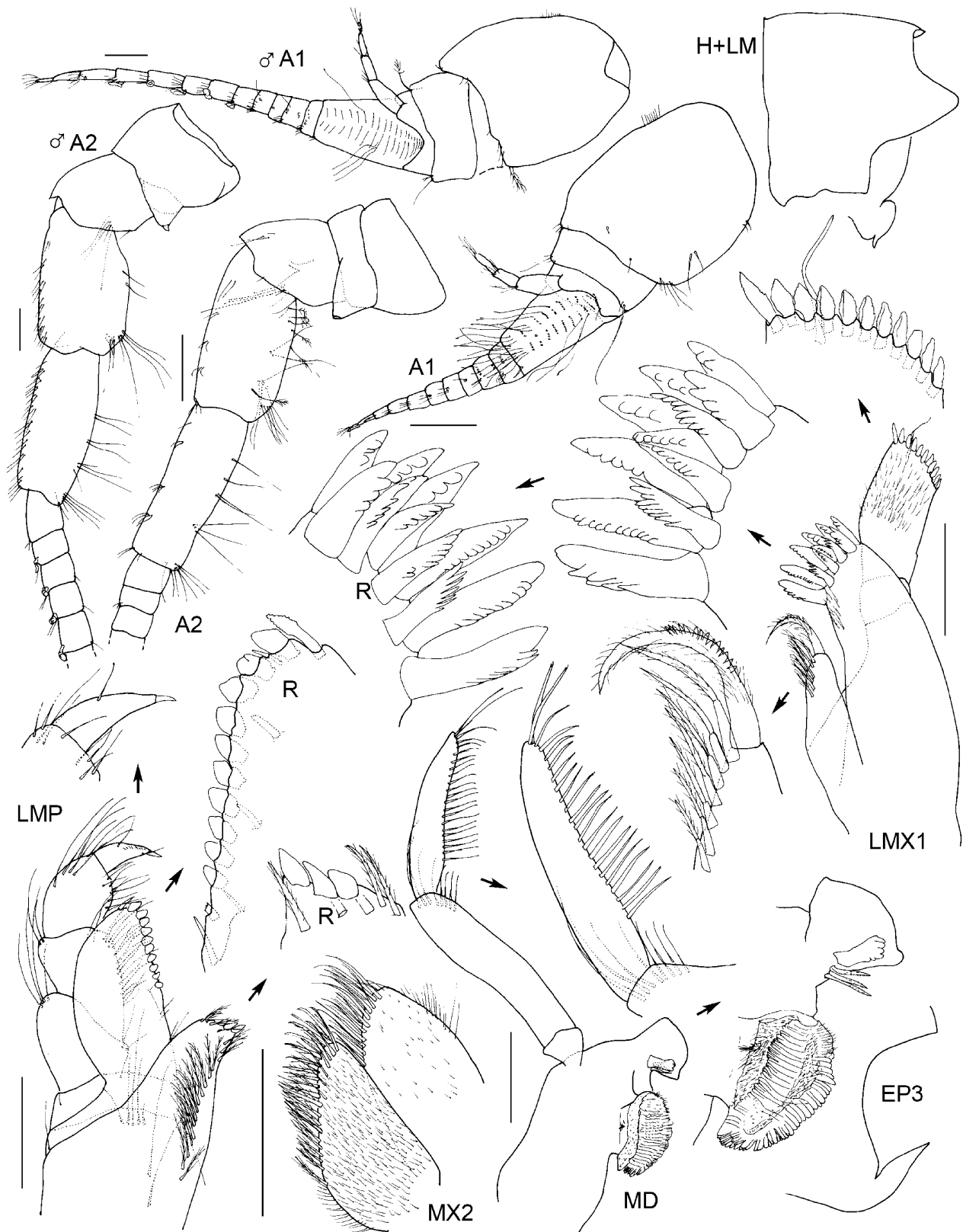


FIGURE 9. *Hippomedon rodericki* P.G. Moore, 1989, ovigerous female, 15.2 mm, AM P.69717; male, 13.5 mm, AM P.69718, both from Botany Bay, New South Wales. Scale bars: 0.2 mm.

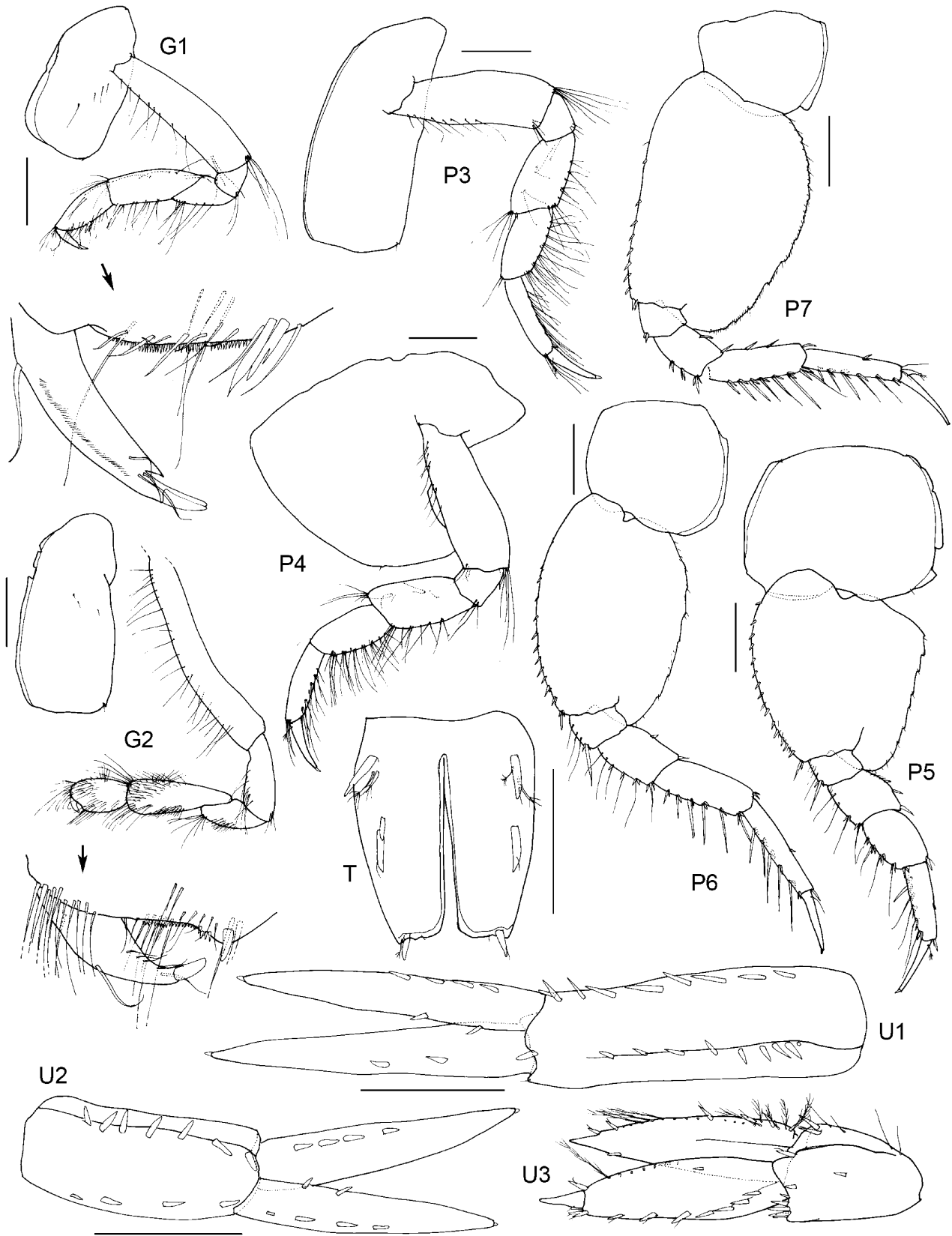


FIGURE 10. *Hippomedon rodericki* P.G. Moore, 1989, ovigerous female, 15.2 mm, AM P.69717, from Botany Bay, New South Wales. Scale bars: 0.5 mm.

sand, Smith-McIntyre grab, 7 October 1980, G.C.B. Poore, HMAS *Kimbla* [BSS-49G]; 1 specimen, NMV J67802, central Bass Strait, 25 km south of Aireys Inlet (38°44.6'S 144°09.0'E), 77 m, fine sand, Smith-McIntyre grab, 19 November 1981, R. Wilson, RV *Tangaroa* [BSS-182G]; 1 specimen, NMV J67803, western Bass Strait, 15 km south-west of Point Reginald (38°50.0'S 143°07.5'E), 69 m, fine sand, 20 November 1981, R. Wilson, RV *Tangaroa* [BSS-186]; 3 specimens, NMV J67804, western Bass Strait, 70 km south-west of Cape Otway (39°26.3'S 143°06.8'E), 115 m, sand, epibenthic sled, 21 November 1981, R. Wilson, RV *Tangaroa* [BSS-194S]; 8 specimens, NMV J2432, western Bass Strait, 25 km south of Cape Otway (39°06'S 143°35.8'E), 95 m, fine sand, 31 January 1981, M. Gomon et al., FRV *Hai Kung* [BSS-118].

Description. Based on ovigerous female, 15.2 mm, AM P.69717. *Head*, lateral cephalic lobe subtriangular, apically subacute. *Antenna 1* peduncular article 1 without anterodistal lobe; article 2 without anterodistal lobe; accessory flagellum present, not forming cap, terminal article not offset; 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 long, calceoli absent. *Labrum* (epistome and upper lip) separate; epistome produced equally with upper lip, slightly rounded; upper lip not produced. *Mandible* molar columnar, with subcircular fully triturating surface. *Maxilla 1* inner plate with 1 large apical pappose seta and 7 smaller pappose setae along inner margin; 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 1 long, slender apical robust setae.

Gnathopod 1 subchelate; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis moderately setose along anterior margin; ischium short; carpus long (length 3.0 × width), longer than propodus, without posterior lobe; propodus small, margins subparallel, sparsely setose along posterior margin, palm moderately acute, entire, straight. *Gnathopod 2 propodus palm slightly acute and concave*. *Pereopod 4* coxa posteroventral lobe well-developed. *Pereopod 5* coxa without distinct lateral ridge, basis about as long as broad, not posteroproximally excavate, posterior margin weakly serrate, posterior margin without mid-central spine, without posteroventral lobe or spine. *Pereopod 7* basis posterodistally produced less than halfway along merus, not posterodistally excavate.

Epimeron 2 posteroventral corner producing small spine. *Epimeron 3 posterior margin smooth, posteroventral corner produced into strong spine with notch at base*. *Urosomite 1* not projecting over urosomite 2, dorsally straight. *Uropod 2* rami subequal in length, inner ramus without constriction. *Uropod 3* slender; peduncle without dorsolateral flange; inner and outer rami well developed, outer ramus article 2 short, *with plumose setae on both rami*. *Telson* deeply cleft, *with 2 or 3 dorsal robust setae per lobe, and 1 apical robust seta on each lobe*.

Sexually dimorphic characters. Based on male, 13.5 mm, AM P.69718. *Antenna 1* flagellum calceoli present, small. *Antenna 2* peduncular article 3 short; articles 3 to 5 not enlarged; flagellum long, calceoli present. *Uropod 3* slender; peduncle without dorsolateral flange; inner and outer rami well developed, outer ramus article 2 short, with plumose setae on both rami, more developed than the female.

Depth range. 5–200 m.

Remarks. Moore (1989) described the male holotype as lacking calceoli on the antennae. With more material available to us, we confirm that males do have small calceoli on both antenna 1 and 2. The extent of the excavation on the palm of gnathopod 2 seems to be variable from weakly to strongly concave.

Distribution. *Australia*. Eastern and south-eastern coasts from Coffs Harbour, New South Wales, to Fortescue Bay, Tasmania, and Bass Strait.

***Hippomedon tourville* sp. nov.**

(Figs 11–14)

Types. Holotype, female, 12.0 mm, NMV J15796, 54 km east-north-east of Cape Tourville, Tasmania, Australia (41°57.30'S 148°58.54'E), 1770 m, coarse biogenic rubble, WHOI epibenthic sled, 30 October 1988, G.C.B. Poore et al., RV *Franklin* [SLOPE 82]. Paratype, male, 11.2 mm, NMV J67805, same collection details as holotype.

Additional material examined. *Tasmania*. 2 specimens, NMV J67806; 1 specimen, NMV J67807, 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]; 2 specimens, AM P.75735, 11 specimens, AM P.75589, North of Hill U Seamount (44°17.53'S 147°11.6'E), 1350 m, baited trap, 7 April 2007, S.J. Keable, RV *Southern Surveyor* [SS02/2007/27].

Victoria. 1 male, NMV J67808, 96 km south of Point Hicks (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]; 1 specimen, NMV J67809, 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]; 2 specimens, NMV J67810, 76 km south of Point Hicks (38°29.33'S 149°19.98'E), 1840 m, sandy mud, fine shell, WHOI epibenthic sled, 26 October 1988, G.C.B. Poore *et al.*, RV *Franklin* [SLOPE 69].

Etymology. Named for the type locality. The name is used here as a noun in apposition.

Description. Based on holotype female, 12.0 mm, NMV J15796.

Head, lateral cephalic lobe subtriangular, apically acute. *Antenna 1* peduncular article 1 without anterodistal lobe; article 2 without anterodistal lobe; accessory flagellum present, not forming cap, terminal article not offset; flagellum with strong 2-field calynophore, robust setae absent from proximal articles; calceoli absent. *Antenna 2* peduncular article 3 short; articles 3–5 not enlarged; flagellum long, calceoli absent. ***Labrum (epistome and upper lip) separate; epistome produced beyond upper lip, forming thin, broadly rounded lamina;*** upper lip not produced. *Mandible* molar columnar, with oval fully triturating surface. ***Maxilla 1 inner plate with 1 large apical pappose seta and 6 smaller pappose setae along inner margin;*** 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 subchelate; coxa large, about as long as coxa 2, subrectangular with straight anterior margin; basis densely setose along anterior margin; ischium short; carpus long, longer than propodus, without posterior lobe; propodus small, margins subparallel, sparsely setose along posterior margin, palm moderately acute, entire, straight. *Gnathopod 2* propodus palm transverse to slightly acute, straight. *Pereopod 4* coxa posteroventral lobe moderately developed. *Pereopod 5* coxa without distinct lateral ridge; basis about as long as broad, not posteroproximally excavate, posterior margin weakly serrate, posterior margin without mid-central spine, without posteroventral lobe or spine. *Pereopod 7* basis posterodistally produced less than halfway along merus, not posterodistally excavate.

Epimeron 2 subquadrate. ***Epimeron 3* posterior margin smooth, posteroventral corner forming broad, upwardly curved spine.** *Urosomite 1* not projecting over urosomite 2, ***dorsally straight.*** *Uropod 2* rami subequal in length, inner ramus without constriction. *Uropod 3* slender; peduncle without dorsolateral flange; inner and outer rami well developed, outer ramus article 2 short, with plumose setae on both rami. *Telson* moderately to deeply cleft, with 2 or 3 dorsal robust setae and 1 apical robust seta on each lobe (setae apparently lost on holotype).

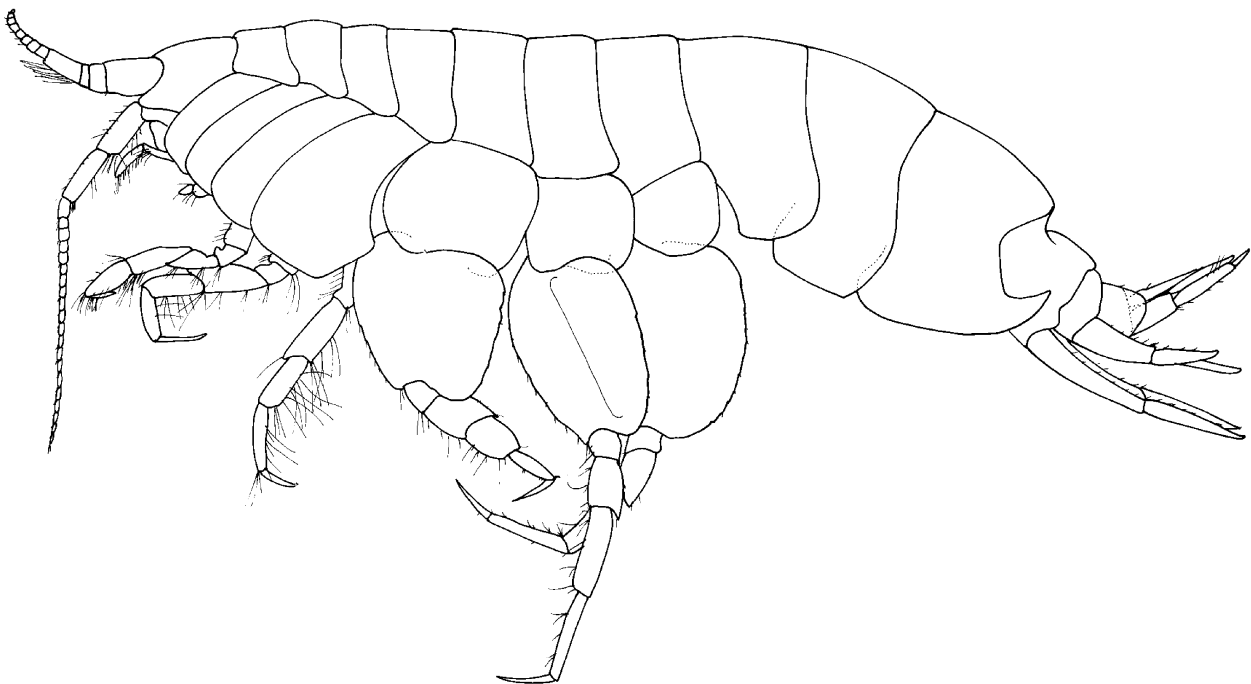


FIGURE 11. *Hippomedon tourville* sp. nov., male, 14.2 mm, NMV J67808, from 96 km south of Point Hicks, Victoria.

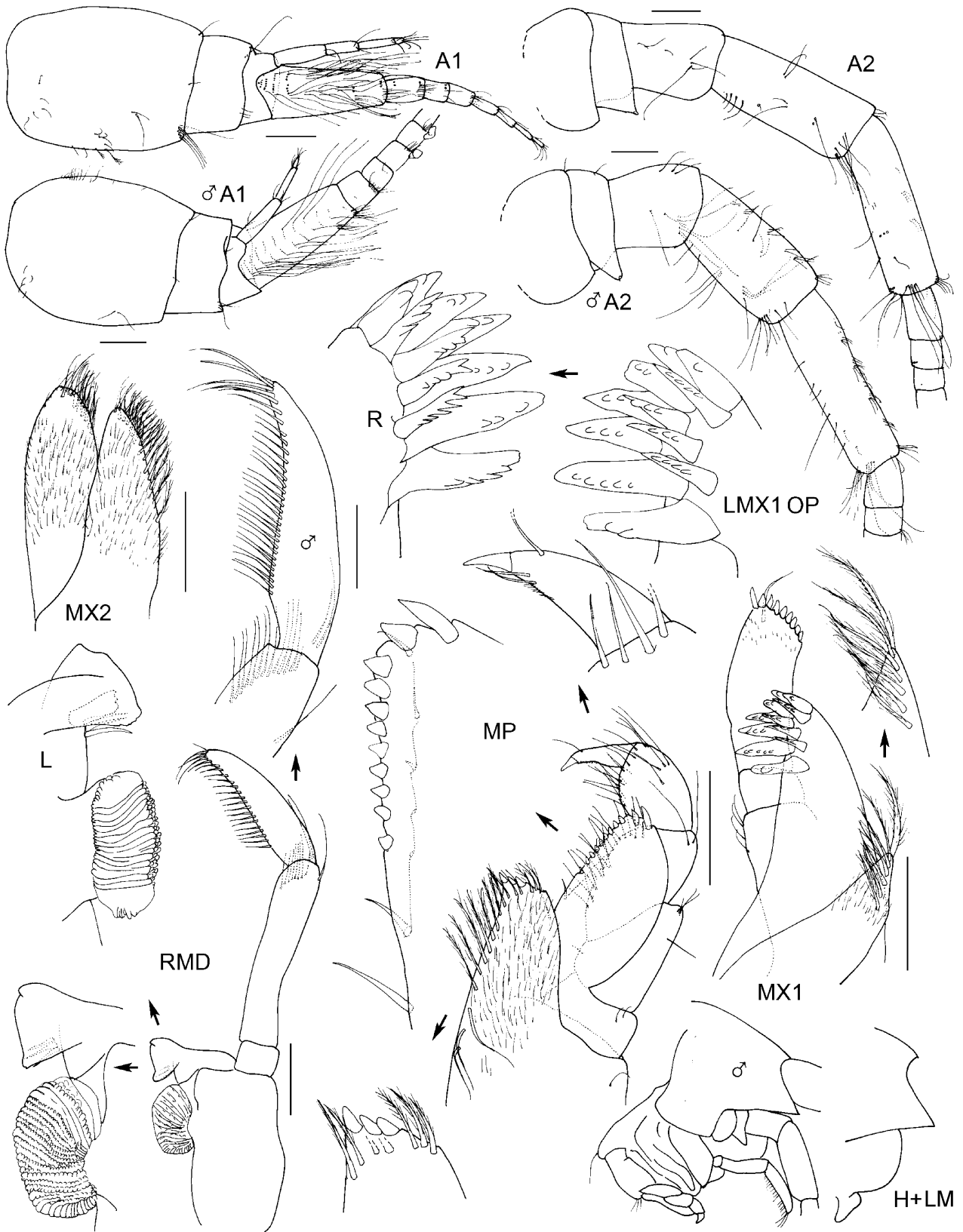


FIGURE 12. *Hippomedon tourville* sp. nov., holotype female, 12.0 mm, NMV J15796, from 54 km east-north-east of Cape Tourville, Tasmania; male, 14.2 mm, NMV J67808, from 96 km south of Point Hicks, Victoria. Scale bars: 0.2 mm.

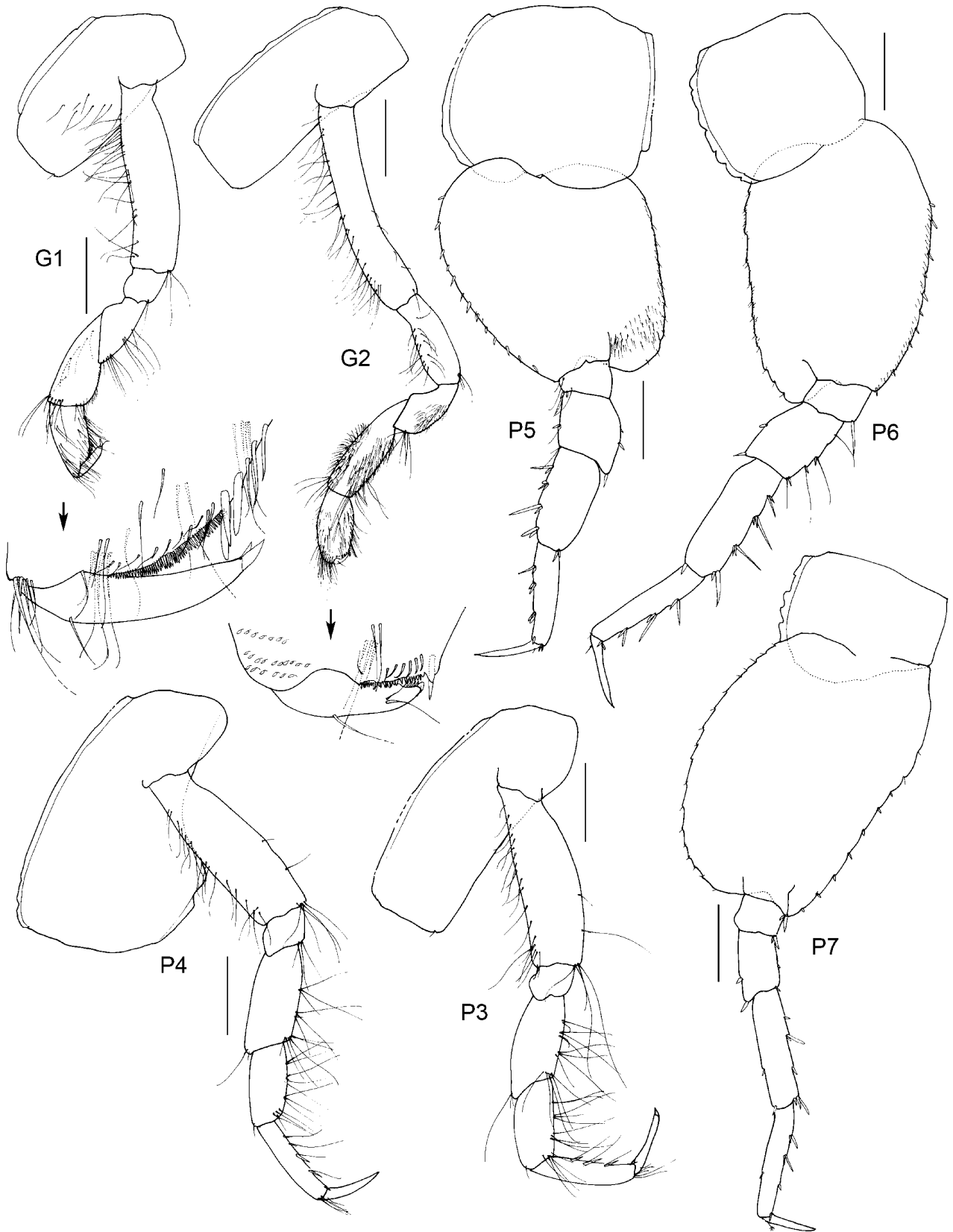


FIGURE 13. *Hippomedon tourville* sp. nov., holotype female, 12.0 mm, NMV J15796, from 54 km east-north-east of Cape Tourville, Tasmania. Scale bars: 0.5 mm.

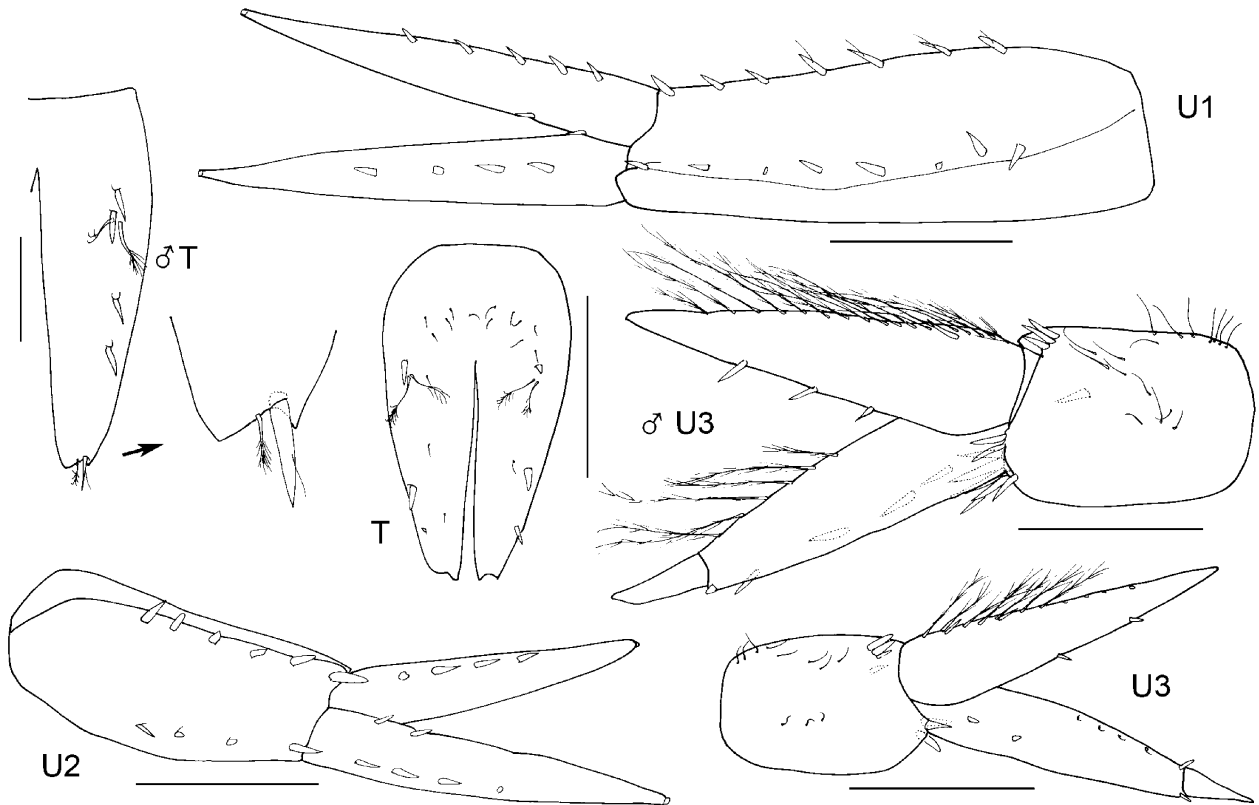


FIGURE 14. *Hippomedon tourville* sp. nov., holotype female, 12.0 mm, NMV J15796, from 54 km east-north-east of Cape Tourville, Tasmania; male, 14.2 mm, NMV J67808, from 96 km south of Point Hicks, Victoria. Scale bars: 0.5 mm.

Sexually dimorphic characters. Based on male, 14.2 mm, NMV J67808. *Antenna 1* flagellum with strong 2-field callynophore, robust setae absent from proximal articles; calceoli present, small. *Antenna 2* peduncular article 3 short; articles 3–5 not enlarged; flagellum long, calceoli present.

Depth range. 1108–2900 m.

Remarks. Morphologically, this species most closely resembles *Hippomedon major* (K.H. Barnard, 1932) from South Georgia and the South Shetland Islands. Both species have a broadly rounded epistome that protrudes strongly beyond the upper lip, plumose setae lining the inner margin of the maxilla 1 inner plate, and an epimeron 3 posteroventral corner produced into a long, slender spine. The description of *H. major* provided by K.H. Barnard (1932) lacks detail, but from the illustrations it is noted that the posteroventral spine of the third epimeron is much broader in *H. tourville* sp. nov., while the urosomite 1 is dorsodistally straight, compared with the slightly rounded urosomite of *H. major*.

Hippomedon tourville sp. nov. is also similar to *H. tasmanicus* J.L. Barnard, 1961, from the Tasman Sea, off the coast of New Zealand. However, the epistome of that species is not produced, nor is the epimeron 3 spine as strongly produced as it is in *H. tourville*; the carpus of gnathopod 1 is much longer than the propodus (only slightly longer in *H. tourville*); and the telson is more deeply cleft than that of *H. tourville*.

Distribution. *Australia.* Bass Strait, and eastern coast of Tasmania.

Acknowledgements

Thanks to Helen Stoddart for preliminary work on the taxa in this paper, Lauren Hughes for inking the plates, Stephen Keable and the Australian Museum collection management team, and Jo Taylor for making the Museum Victoria collections available for study. This study was funded by an ABRS grant (RF212-13).

References

- Barnard, J.L. (1961) Gammaridean Amphipoda from depths of 400 to 6000 meters. *Galathea Report*, 5, 23–128.
- Barnard, K.H. (1932) Amphipoda. *Discovery Reports*, 5, 1–326, pl. 321.
- Barnard, K.H. (1955) Additions to the fauna-list of South African Crustacea and Pycnogonida. *Annals of the South African Museum*, 43, 1–107.
- Boeck, A. (1871) Crustacea Amphipoda borealia et arctica. *Forhandlinger i Videnskabs-Selskabet i Christiania*, 1870, 81–280, i–viii (index).
- Dallwitz, M.J. (2010) Overview of the DELTA system. Available from: <http://www.delta-intkey.com/www/overview.htm> (accessed 25 June 2013)
- Dana, J.D. (1849) Synopsis of the genera of Gammaracea. *American Journal of Science and Arts*, Series 2, 8, 135–140.
- Ledoyer, M. (1986) Crustacés Amphipodes Gammariens. Familles des Haustoriidae à Vitjazianidae. *Faune de Madagascar*, 59, 599–1112.
- Lowry, J.K. & Stoddart, H.E. (1997) Amphipoda Crustacea IV. Families Aristiidae, Cyphocarididae, Endeavouridae, Lysianassidae, Scopelocheiridae, Uristidae. *Memoirs of the Hourglass Cruises*, 10, 1–148.
- Lowry, J.K. & Stoddart, H.E. (2003) *Crustacea: Malacostraca: Peracarida: Amphipoda, Cumacea, Mysidacea. Vol. 19. 2B*. CSIRO Publishing, Melbourne, i–xii, 1–531.
- Lowry, J.K. & De Broyer, C. (2014) *Hippomedon* Boeck, 1871. In: Horton, T., Lowry, J.K. & De Broyer, C. (Eds.) (2013 onwards) World Amphipoda Database. Available from the World Register of Marine Species. Available from: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=101610> (accessed 3 October 2014)
- Moore, P.G. (1989) Three new amphipod species related to *Hippomedon* (Crustacea; Amphipoda; Lysianassoidea) from Tasmanian inshore waters. *Journal of Natural History*, 23, 1443–1460.
<http://dx.doi.org/10.1080/00222938900770781>
- Sheard, K. (1937) A catalogue of Australian Gammaridea. *Transactions and Proceedings of the Royal Society of South Australia*, 61, 17–29.
- Stebbing, T.R.R. (1888) Report on the Amphipoda collected by H.M.S. Challenger during the years 1873–1876. *Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76, Zoology*, 29, 1–1737, pls. 1731–1210.
- Stebbing, T.R.R. (1906) Amphipoda. I. Gammaridea. *Das Tierreich*, 21, 1–806.
- Stebbing, T.T.R. (1908) South African Crustacea. (Part IV). *Annals of the South African Museum*, 6, 1–96, pls 91–15.
- Watling, L. (1989) A classification system for crustacean setae based on the homology concept. *Crustacean Issues*, 6, 15–27.