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New records of the water mite family Hydryphantidae Piersig from Australia with the description of five new species (Acari: Hydrachnidia)

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Original research

ABSTRACT

New records of water mites of the family Hydryphantidae from Australia are reported. Five new species are described, i.e. *Mamersa neorouxi* **n. sp.**, *Pseudohydryphantes crenulatus* **n. sp.**, *Pseudohydryphantes pandanus* **n. sp.**, *Pseudohydryphantes corniculatus* **n. sp.** and *Tartarothyas gracilipes* **n. sp.** *Hydryphantes meridianus* Lundblad is raised to full species.

Keywords systematics; distribution; new records; new species records
Zoobank http://zoobank.org/3E121F5F-0586-4202-95CC-D08BA4F1DAB4

Introduction

The water mite family Hydryphantidae comprises in Australia of seven subfamilies (Harvey 1998) with the following genera: *Hydryphantes* Koch (Hydryphantinae), *Diplodontus* Dugès (Diplodontinae), *Austrotrombella* Southcott, *Notopanisus* Besch (Euthyadinae), *Mamersa* Koenike (Mamersinae), *Cyclohydryphantes* Lundblad, *Pseudohydryphantes* K. Viets (Pseudohydryphantinae), *Tartarothyas* K. Viets (Tartarothyasinae) and *Wandesia* Schechtel (Wandesiinae).

Relatively few studies have been conducted on the family Hydryphantidae in Australia. Lundblad (1947) was the first author to publish a number of new hydryphantid species, followed by Cook (1986), Harvey (1987, 1988a, b, 1996), Southcott (1991) and Smit (1992, 1998, 2012, 2013, 2021).

In this paper the results are given of collections made in 1997, 2000, 2001, 2003, 2005 and 2014.

Material and methods

The material was collected with a dip net, sorted in the field and fixed in so-called Koenike solution (5 parts glycerine, 2 parts glacial acetic and 3 parts water). All material from this study is collected by the senior author. Holotypes and paratypes will be lodged in the following museums: AMS - Australian Museum, Sydney; QM – Queensland Museum, Brisbane; SAM – South Australian Museum, Adelaide. Paratypes and all non-type material will be lodged in Naturalis Biodiversity Center, Leiden (RMNH). The following abbreviations are used: asl = above sea level; Cx-IV – fourth coxae; Cxgl-4 – coxoglandularia 4; Dgl-1-6 – dorsoglandularia 1-6; NP – National Park; P1-5 – palp segments 1-5; IV-leg-2 – second segment of fourth leg, vL – ventral length. All measurements are in µm, measurements of palp and leg segments are of the dorsal margins, measurements of paratypes are given in parentheses. Ventral idiosoma

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length is measured from the tip of Cx-I till posterior idiosoma margin. Numbers are given as male/female/deutonymph or adult/deutonymph. All coordinates are taken with a GPS. Coordinates given as degrees, minutes and seconds are taken from Google Earth and are by approximation.

Systematics

Family Hydryphantidae Piersig, 1896

Subfamily Hydryphantinae Piersig, 1896

Genus *Hydryphantes* Koch, 1841

A cosmopolitan genus with numerous species known worldwide.

Hydryphantes (*Polyhydryphantes*) *haliki* Cook, 1986

Material examined — **Victoria**. 0/1/0, Swamp at junction of Victoria Valley Road and Bundol Road, SW of Grampian National Park, 37°35′14.50″S, 142°18′58.36″E, 30 Sept. 1997; 1/7/0, Glenelg River at crossing with Henty Highway, 37°06.517′S 142°11.430′E, 327 m a.s.l., 16 March 2008. **New South Wales**. 1/0/0, Small ponds N of Lake Hiawatha, Yuragir NP, 29°47.315′S 153°15.171′E, 10 Nov. 2003. **Queensland**. 3/7/0, Mt Carbine Dam, Mt Carbine, 16°32.019′S 145°07.525′E, 358 m a.s.l., 14 Oct. 2005; 0/2/0, Small lake Hawkwood Road, 13 km S of Mundaburra, 25°39.910′S 151°13.941′E, 130 m a.s.l., 31 Oct. 2005; 0/1/0, Emu Creek at Clancy's Camping Area, Benarkin State Forest, 26°58.334′S 152°09.916′E, 162 m a.s.l., 3 Nov. 2005; 1/0/0, Ewen Maddock Dam, NE of Landsborough, 26°47.795′S 152°59.416′E, 29 m a.s.l., 1 Dec. 2014. **Northern Territory**. 7/5/2, Lake Jabiru, 12°40.264′S 132°50.436′E, 43 m a.s.l., 27 Sept. 2005.

Distribution — Previously known from Queensland, Northern Territory, New South Wales and Western Australia (Harvey 1998; Smit 1998), and here reported for the first time from Victoria. Furthermore, the species is known from New Caledonia (Smit 2002).

Hydryphantes (*Polyhydryphantes*) *meridianus* Lundblad, 1947 – nov. stat

Material examined — **Tasmania**. 1/1/0, Big Waterhouse lake, Waterhouse Protected Area, 21 Oct. 1997; 0/1/0, Little Waterhouse Lake, Waterhouse Protected Area, 21 Oct. 1997. **South Australia**. 3/2/0, Hacks Lagoon, Bool Lagoon Game Reserve, 11 Oct. 2001; 1/0/1, Bool Lagoon near Big Hill, Bool Lagoon Game Reserve, 12 Oct. 2001; 1/1/0, Hacks Lagoon (behind reed bed), Bool Lagoon Game Reserve, 13 Oct. 2001; 3/1/0, Big Swamp, 20 km W of Port Lincoln, 27 Oct. 2001.

Remarks — This taxon was originally described as a variety of *H. microphallus* by Lundblad (1947) but given the differences in the genital field with much less acetabula than *H. microphallus* it deserves ranking as a full species. Lundblad (1947) mentioned that the genital flap has 3-4 posterior acetabula, but often there are five pairs of posterior acetabula.

Distribution — Previously known from Victoria only, and reported here for the first time from Tasmania and South Australia.

Hydryphantes (*Polyhydryphantes*) *microphallus* Lundblad, 1941

Material examined — **Victoria**. 0/1/0, Pond 3 km N of Chiltern, 9 Oct. 1997. **South Australia**. 0/1/0, Hacks Lagoon, Bool Lagoon Game Reserve, 11 Oct. 2001.

Distribution — Previously known from Victoria, New South Wales and Western Australia, and here reported for the first time from South Australia.

Subfamily Diplodontinae K. Viets, 1936

Genus *Diplodontus* Dugès, 1834

A widespread genus with several species known from Europe, Asia, Africa and Australia (Smit 2020).

Diplodontus haliki Lundblad, 1947

Material examined — **Tasmania**. 0/1/0, Old river branch Coal River, N of Richmond, 17 Oct. 1997; 1/0/0, Little Waterhouse Lake, Waterhouse Protected Area, 21 Oct. 1997. **Victoria**. 1/0/0, Pond 3 km N of Chiltern, 9 Oct. 1997. **New South Wales**. 0/1/0, Moonmerri Creek, Nymboi-Binderay NP, 30°11.406′S 152°41.436′E, 446 m a.s.l., 9 Nov. 2003. **Queensland**. 1/0/0, South Mimosa Creek, Blackdown Tablelands NP, 23°47.714′S 149°04.270′E, 802 m a.s.l., 27 Oct. 2005; 5/1/1, Yabba Creek at Peach Trees Campground, Jimna, 26°38.251′S 152°26.924′E, 465 m a.s.l., 2 Nov. 2005; 0/2/0, West Gap Creek behind camping area, Main Range NP, 17 Nov. 2003; 0/1/0, West Gap Creek at Cunningham Picnic Area, Main Range NP, 28°03.239′S 152°22.736′E, 687 m a.s.l., 21 Nov. 2014; 1/0/0, Sandy Creek, W of Maleny, 26°42.241′S 152°41.120′E, 115 m a.s.l., 1 Dec. 2014.

Distribution — Previously reported from Tasmania, Victoria, New South Wales and Western Australia (Harvey 1998) and here reported for the first time from Queensland. Furthermore, known from Papua New Guinea (Wiles 1997).

Diplodontus mandibulatus Lundblad, 1947

Material examined — **Victoria**. 2/0/0, Victoria Lagoon, SW of Grampians NP, 30 Sept. 1997; 1/0/0, Pond Hospice Plains, Mt Buffalo NP, 10 Oct. 1997. **South Australia**. 1/1/0, Temporary pool W of Mark Point, Coorong NP, 9 Oct. 2001.

Distribution — Known from Victoria, Tasmania and Western Australia (Lundblad 1947), and reported here for the first time from South Australia.

Subfamily Mamersinae K. Viets, 1931

Genus *Mamersa* Koenike, 1898

Several species known from the Afrotropical region, Asia and Australia (Smit 2020).

Mamersa neorouxi n. sp.

Zoobank: 66497E57-6E1B-4EB2-A250-62E78625948F

Figures 1-2

Type material

Holotype female — Queensland, Hasties Swamp, Hasties Swamp National Park, 17°17′55.35″S, 145°28′32.24″E, 16 Sept. 2000, dissected and slide mounted (QM).

Diagnosis (Male unknown)

Ventrolateralia divided; posterior margin of unpaired anteromedial dorsal plate convex, but not triangular; pregenital sclerite wider than long.

Description

Female — Dorsal and ventral shields present, dorsal shield L/W 869/738, ventral shield L/W 950/770; six pairs of dorsoglandularia, five pairs of lateroglandularia and five pairs of ventroglandularia arranged as illustrated in Figure 1A-B; Dgl-1 and preocularia situated on the anterior margin of ventral shield (not visible in Fig. 1A-B); anterior margin of unpaired anteromedial dorsal plate triangular, posterior margin convex, not triangular; lateral margin of

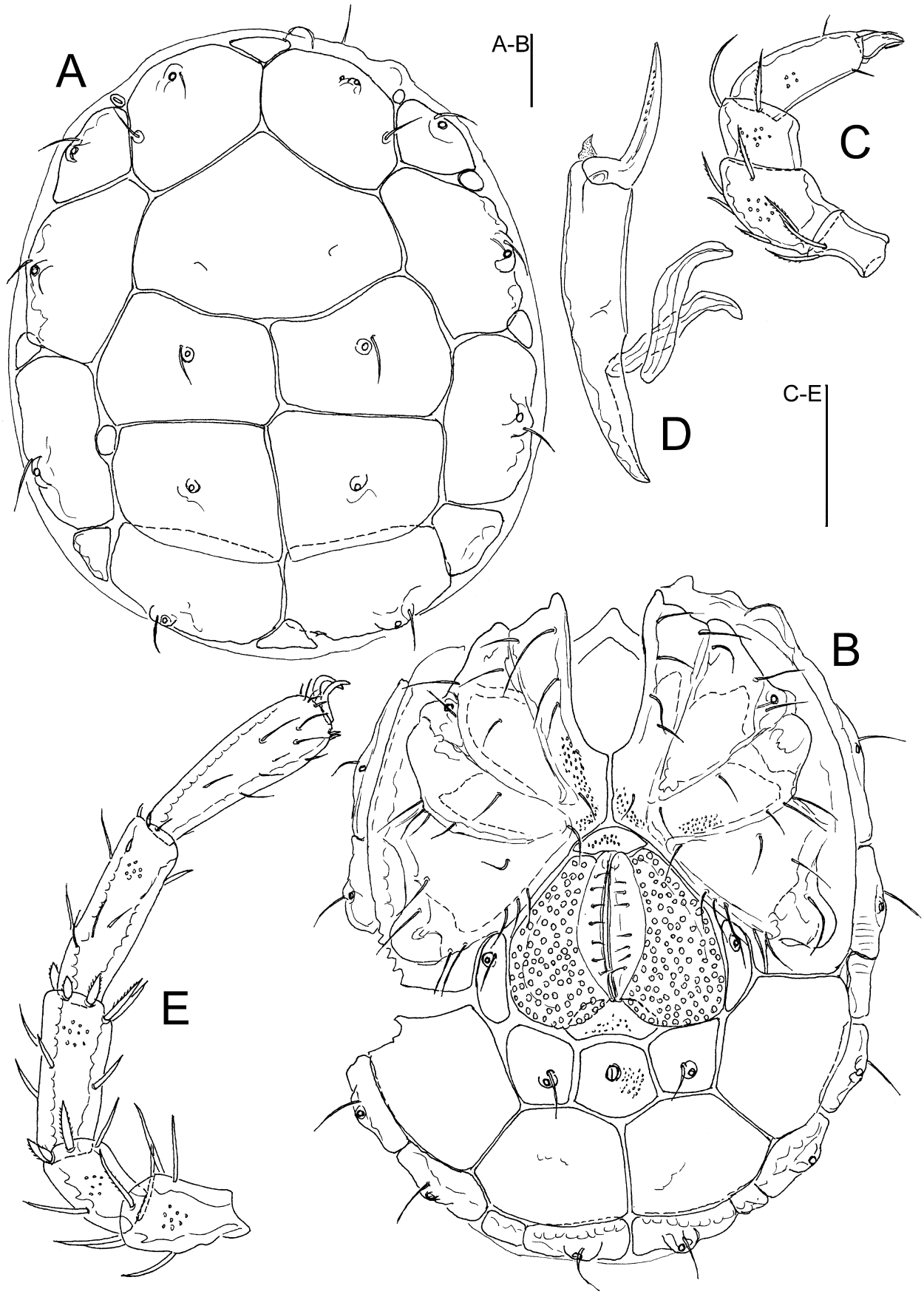

Figure 1 *Mamersa neorouxi* **n. sp.**, ♀ holotype: A – dorsal shield; B – ventral shield; C – palp; D – chelicera; E – I-L-2-6. Scale bar = 100 µm.

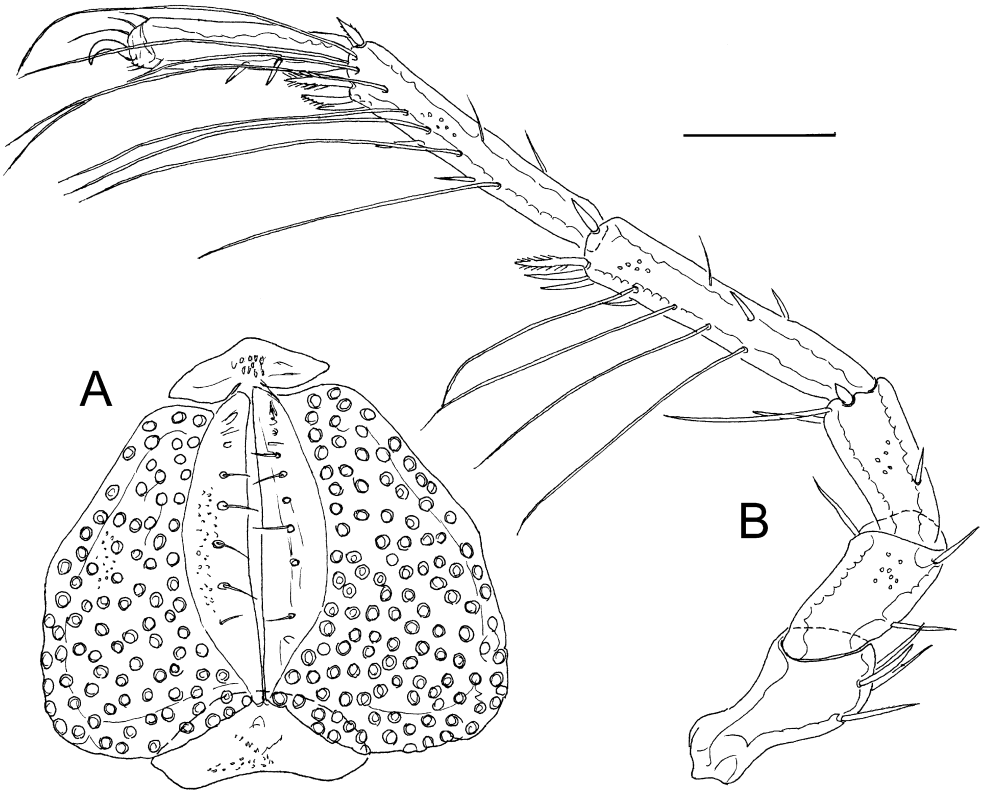

Figure 2 *Mamersa neorouxi* **n. sp.**, ♀ holotype: A – genital field; B – IV-leg. Scale bar = 100 µm.

the platelet bearing Lgl-4 approximately same length as lateral margin of platelet bearing Lgl-5; Lgl-1, -2, -3, Vgl-4 and -5 situated on small platelets on lateral margin of body; Vgl-2 situated on small sclerite lateral to genital field; Vgl-3 on the same level to excretory pore, Vgl-2 and Vgl-3 adjacent, not separated by genital field; ventrolateralia divided (Fig. 1B). Genital field (incl. pregenital sclerite) L/W 277/306, 90-110 pairs of acetabula situated on flaps, medial edge of genital flaps with a row of small setae, pregenital sclerite W 106, wider than long (Fig. 2A).

Gnathosoma – vL 231; palp (Fig. 1C): total L 345; dL/H, dL/H ratio: P-1, 53/31, 1.7; P-2, 88/59, 1.47; P-3, 48/56, 0.85; P-4, 118/42, 2.8; P-5, 38/22, 1.71; L ratio P-2/P-4, 0.74. P-4 without a thickened seta on medial surface (Fig. 1C). Chelicera (Fig. 1D) total L 315, claw L 108, basal segment L 209, L basal segment/claw ratio 1.94.

Legs – dL of I-L-2-6 (Fig. 1E): 91, 78, 122, 141, 150; dL of IV-L-6: 134, 91, 119, 206, 203, 148; third and fourth legs with swimming setae (Fig. 2B), number of swimming setae: III-L-4, 5; III-L-5, 6; IV-L-3, 1; IV-L-4, 4; IV-L-5, 8.

Male — Unknown.

Etymology

Named for its similarity with *M. rouxi*.

Discussion

In regard to divided ventrolateralia the new species resembles *Mamersa rouxi* Walter, 1911, a species originally described by Walter (1911) from the Aru Islands, and later on reported from Sumatra, Sulawesi, China and Thailand (Viets 1935; Savatenalinton & Smit 2017). The new species differs by the shape of the unpaired anteromedial dorsal plate, which has a convex posterior margin, but in *M. rouxi* this posterior margin is triangular. Moreover, the pregenital

sclerite of *M. rouxi* is distinctly triangular in shape, while in the new species it is more elongate. The palp of the new species is stockier compared to *M. rouxi*.

Subfamily Pseudohydryphantinae K. Viets, 1926

Genus *Cyclohydryphantes* Lundblad, 1941

An endemic genus of Australia, with three species known.

Cyclohydryphantes mutarnee Harvey, 1987

Material examined — **New South Wales**. 1/4/0, Moonmerri Creek, Nymboi-Binderay NP, 30°11.406′S 152°41.436′E, 446 m a.s.l., 9 Nov. 2003; 0/2/0, Bombala River, at crossing with New Line Road, 36°42.402′S 149°23.688′E, 782 m a.s.l., 11 Dec. 2003. **Queensland**. 1/0/0, Fruit Bat Falls, Cape York Peninsula, 11 Sept. 2000; 0/3/0, Peter's Creek, at crossing with road Kenilworth-Jimna, 26°40.911′S 152°36.577′E, 3 Nov. 2005.

Remarks — A species known previously from the holotype male only. The females of this study are larger than the male, measuring dorsally 985-1327 long and 804-1105 wide. The holotype male is 765 long and 555 wide (Harvey 1987), males of this study are 932-1015 long and 729-794 wide. The latter author based the description on the smaller size of *C. mutarnee* compared to *C. trabeculiferus*. However, young specimens of *C. mutarnee* overlap in size with *C. trabeculiferus*. A better character to separate the two species is the diameter of the posterior acetabula. The posterior acetabula of *trabeculiferus* measure 80-90 (female) and 59-62 (male), those of the female of *mutarnee* measure 38-48 and those of the male 38-42.

Distribution — Previously known from Queensland (Harvey 1998), and reported here for the first time from New South Wales.

Cyclohydryphantes trabeculiferus Lundblad, 1941

Material examined — **Tasmania**. 1/0/0, Swamp 12 km S of Gladstone, along road B82, 20 Oct. 1997; 5/2/4, Pool near crossing of roads A5 and B51, 42°01.209′S 146°49.533′E, 922 m a.s.l., 28 March 2008.

Distribution — Known from Victoria and Tasmania (Harvey 1998).

Genus *Pseudohydryphantes* K. Viets, 1907

Several species known from the Holarctic, Australia and New Zealand (Smit 2020).

Pseudohydryphantes cooki Harvey, 1987

Material examined — **New South Wales**. 1/0/0, Mumbulla Creek at Mumbulla Creek Picnic Area, Biamanga NP, 36°34′32.92″S, 149°53′37.93″E, 12 Dec. 2003; 1/0/0, Cabbage Tree Creek at crossing with Kings Highway, 35°34.367′S 150°02.537′E, 260 m a.s.l., 16 Dec. 2003. **Victoria**. 2/2/0, Betka River at crossing with Stony Creek Road, SW of Genoa, 24 Oct. 1997; 0/1/0, Shipwreck Creek, Mallacoota, Croajingolong NP, 23 Oct. 1997. **Queensland**. 0/1/0, Cockatoo Creek, Cape York, 11 Sep. 2000; 1/0/0, Peter's Creek at crossing with road Kenilworth-Jimna, 26°46.911′S 152°36.577′E, 3 Nov. 2005; 0/1[juvenile]/0 (dissected and slide mounted), Wenlock River at crossing with road to Iron Range NP, 13°05.734′S 142°56.526′E, 108 m a.s.l., 25 Oct. 2014.

Distribution — Known from Victoria, and reported here for the first time from New South Wales and Queensland.

Pseudohydryphantes mataranka Harvey, 1988

Pseudohydryphantes aroona – Smit 1992 (erroneous, non Harvey, 1988)
Pseudohydryphantes aroona – Smit 2021 (erroneous, non Harvey, 1988)

Material examined — **Queensland**. 0/1/0, Fruit Bat Falls, Cape York Peninsula, 11 Sept. 2000; 1/1/0, Cascades, Lawn Hill Creek, Lawn Hill NP, 18°41.806′S 138°29.138′E, 10 Oct. 2005; 0/1/0, Elliot Creek at Fruit Bat Falls, Cape York Peninsula, 11°26.370′S 142°26.086′E, alt. 72 m, 19 Oct. 2014. **Northern Territory**. 0/1/0, Plunge pool Gunlom, Kakadu NP, 13°25.917′S 132°24.989′E, 30 Sept. 2005; 0/1/0, Umbrawarra Gorge, Umbrawarra Gorge Nature Park, 13°57.892′S 131°41.620′E, 1 Oct. 2005. **New South Wales**. 0/2/0 (0/1/0 dissected and slide mounted), Waterfall Creek at Gunjulla Flat, Royal NP, 8 Nov. 2001.

Remarks — The stellate or crenulate glandularia sclerites are not always obvious, and the specimens are then easily mistaken for *P. aroona*. The median eye of *P. mataranka*, however, is always crenulate and the sclerites are larger compared to *P. aroona*.

Distribution — Previously reported from Western Australian and the Northern Territory (Harvey 1998; Smit 1998, 2021). This species has been reported previously as *P. aroona* Harvey, 1988 (Smit 1992, 2021). It is reported here for the first time from Queensland.

Pseudohydryphantes occabus Harvey, 1987

Material examined — **Tasmania**. 0/2/0, Apsley River at crossing with Tasmania Highway, 19 Oct. 1997. **New South Wales**. 0/1/0, Bugong Creek near Morton NP, 5 Nov. 2001.

Distribution — Previously reported from Victoria, and reported here for the first time from Tasmania and New South Wales.

Pseudohydryphantes vepres Harvey, 1987

Material examined — **Victoria**. 0/1/0, Wannon River at crossing with Serra Road, Grampians NP, 37°20.918′S 142°30.386′E, 331 m a.s.l., 15 Mar. 2008; 1/0/0, Jimmy Creek at campground, Grampians NP, 37°22.339′S 142°30.203′E, 379 m a.s.l., 15 Mar. 2008; 3/1/0, Moleside Creek, Lower Glenelg National Park, 38°04.336′S 141°17.507′E, 25 m a.s.l., 3 Apr. 2008. **New South Wales**. 1/0/0, Bugong Creek near Morton NP, 5 Nov. 2001; 0/1/0, Urumbilum River, Bindarri NP, 30°15.966′S 152°57.042′E, 137 m a.s.l., 7 Nov. 2003; 0/1/0, Carters Creek at crossing with Western Distributor Road, 35°30.914′S 150°03.546′E, 187 m a.s.l., 16 Dec. 2003. **South Australia**. 4/6/0, Mambray Creek upstream of confluence with Alligator Creek, 32°49′14.74″S, 138°03′48.44″E, 17 Oct. 2001.

Distribution — Previously reported from Victoria and New South Wales (Harvey 1998) and here reported for the first time from South Australia.

Pseudohydryphantes wangai Harvey, 1998

Material examined — **Queensland**. 1/2/0, Mango Lagoon, Oyala Thumotang NP, 13°37.838′S 142°34.627′E, 73 m a.s.l., 24 Oct. 2014. **Northern Territory**. 0/1/0, Wangi Creek upstream of Wangi Falls, Litchfield NP, 13°09.832′S 130°41.166′E, 25 Sept. 2005; 6/18/2, Plunge pool Gunlom, Kakadu NP, 13°25.917′S 132°24.989′E, 30 Sept. 2005; 1/0/0, Edith River downstream of plunge pool, Nitmiluk NP, 14°10.885′S 132°11.271′E, 149 m a.s.l., 2 Oct. 2005; 3/11/0, Plunge pool Edith Falls, Nitmiluk NP, 14°10.899′S 132°11.342′E, 149 m a.s.l., 2 Oct. 2005.

Distribution — Previously known from Western Australia and the Northern Territory (Harvey 1998; Smit 1998, 2021) and reported here for the first time from Queensland.

Pseudohydryphantes crenulatus n. sp.

Zoobank: C38E80D0-577F-43E2-BA60-4FB5B5BABD53

Figure 3

Type material

Holotype female — Queensland, Crediton Creek, Eungella NP, 18 Sep. 2000, dissected and slide mounted (QM). Paratypes: 0/2/0, Queensland, Broken River, Eungella NP, 21°10.069′S

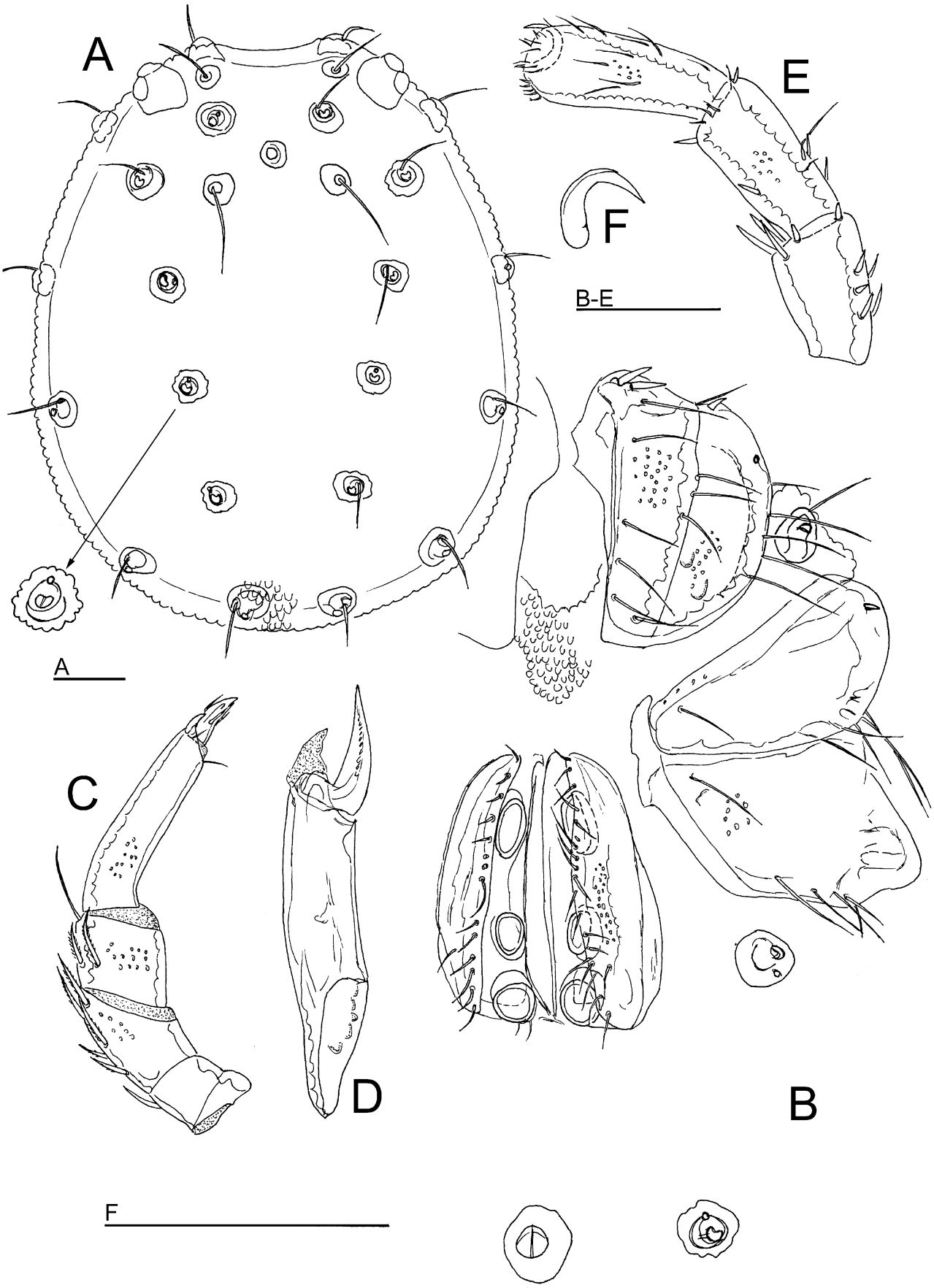

Figure 3 *Pseudohydryphantes crenulatus* **n. sp.**, ♀ holotype: A – idiosoma, dorsal view; B – ventral sclerites, partial view; C – palp, lateral view; D – chelicera; E – I-L-4-6; F – tarsal claw of I-leg. Scale bar = 100 µm.

148°30.676′E, 25 Oct. 2005 (RMNH), in one female one palp dissected and slide mounted (RMNH).

Diagnosis (Male unknown)

Glandularia crenulate, completely surrounded by sclerotized rings; chelicerae not elongate; gnathosoma without extension.

Description

Female (holotype in parentheses some measurements of paratype specimen from Broken River, n = 1).

Idiosoma – L 845 (881), W 694 (719); integument papillate; lateral eyes in capsules; median eye located slightly anterior to the postocularia platelets; glandularia completely surrounded by sclerotized rings (Fig. 3A). Coxal field: Cx-I antero-medially rounded, bearing two short, thick, flattened setae, Cx-II antero-medially with one short, thick, flattened seta (Fig. 3B), distance between anterior tips of Cx-I and posterior margin of Cx-IV, 386. Genital field L/W 191/159, posteriorly extending beyond Cx-field, three pairs of acetabula, first two pairs elliptical, third pair roundish, interspace between Ac-1 and Ac-2 larger than Ac-2 diameter, L Ac-1-3: 44, 31, 28-31. Excretory pore sclerotized, Vgl-3 nearly in the line with excretory pore (Fig. 3B).

Egg – maximum diameter (n=1) 169.

Gnathosoma – without extension, vL 231; palp (Fig. 3C): total L 404; dL/H, dL/H ratio: P-1, 47/47, 0.99; P-2, 93/53, 1.75 (97/56, 1.73); P-3, 53/64, 0.83 (55/66, 0.83); P-4, 167/39, 4.28 (164/40, 4.12); P-5, 44/19, 2.32 (44/18, 2.4); L ratio P-2/P-4, 0.56 (0.59); medial seta on P-4 thin, subdistal. Chelicerae not elongate (Fig. 3D), total L 309, claw L 92, basal segment L 213, L basal segment/claw ratio 2.3.

Legs – dL of I-L-2-6 (Fig. 3E): 72, 83, 109, 131, 153; dL of IV-L-6: 113, 91, 119, 178, 178, 147; third and fourth legs with swimming setae, number of swimming setae: III-L-3, 2 (2); III-L-4, 7 (8); III-L-5, 9 (9); IV-L-3, 1 (1); IV-L-4, 6 (7); IV-L-5, 7 (7); tarsal claws without serrations but with a dorsal tooth (Fig. 3F).

Male – Unknown.

Etymology

Named for the crenulate-shaped glandularia.

Discussion

The new species resembles *Pseudohydryphantes occabus* Harvey, 1987 in the possession of complete ring surrounding the glandularia and by lacking serrate tarsal claws. The latter species can easily be distinguished in having elongate chelicerae, and a gnathosoma with long, down-turned anterior extension to accommodate the chelicerae (Harvey 1987).

Pseudohydryphantes pandanus n. sp.

Zoobank: 69728119-6E15-444B-A319-4C3AE6396BF5

Figure 4

Type material

Holotype female — Queensland, Pandanus Creek, Cathu State Forest, 20°47.843′S 148°32.598′E, 16 Nov. 2014, dissected and slide mounted (QM).

Other material — 0/1/0, Queensland, Tooloma Creek downstream of Tooloma Falls, Lamington NP, 16 Nov. 2003.

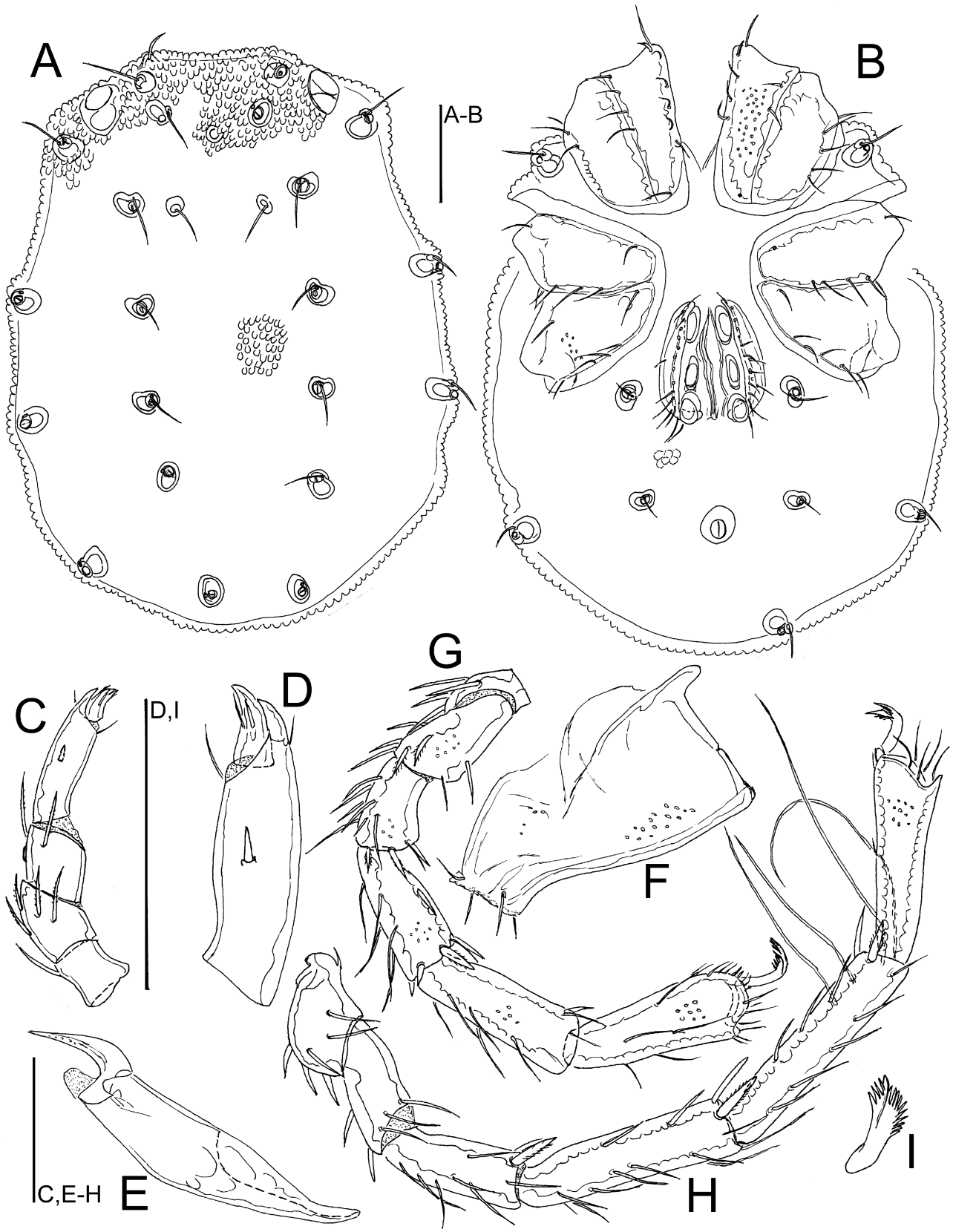

Figure 4 *Pseudohydryphantes pandanus* **n. sp.**, ♀ holotype: A – idiosoma, dorsal view; B – idiosoma, ventral view; C – palp, lateral view; D – P-4, medial view; E – chelicera; F – gnathosoma, lateral view; G – I-leg; H – IV-leg; I – tarsal claws of III-leg. Scale bar = 100 µm.

Diagnosis (Male unknown)

Glandularia completely surrounded by sclerotized rings; medial thickened seta on P-4 placed more or less near the middle of the segment; tarsal claws with large, ventral serrations; third and fourth legs without reduced number of swimming setae.

Description

Female (holotype; in parentheses some measurements of specimen from Tooloma Creek).

Idiosoma – L 630 (719), W 478 (605); integument papillate, lateral eyes in capsules; median eye located far anterior to the postocularia platelets, glandularia completely surrounded by sclerotized rings (Fig. 4A). Coxal field: distance between anterior tips of Cx-I and posterior margin of Cx-IV, 353 (625). Genital field L/W 126 (205)/109 (192), anteriorly laying between Cx-IV, posteriorly extending beyond Cx-field, three pairs of acetabula, interspace between Ac smaller than Ac diameter, L Ac-1-3: 38 (71), 34 (69), 25-27 (54). Excretory pore sclerotized, Vgl-3 slightly anterior to excretory pore (Fig. 4B). Egg maximum diameter (125; n=2)

Gnathosoma – without extension (Fig. 4F), vL 187; palp: total L 283; dL/H, dL/H ratio: P-1, 41/31, 1.3; P-2, 63/42, 1.49; P-3, 41/42, 0.96; P-4, 109/30, 3.66; P-5, 29/13, 2.3; L ratio P-2/P-4, 0.58; medial thickened seta on P-4 placed more or less near the middle of the segment (Fig. 4C-D). Chelicerae not elongate (Fig. 4E), total L 261, claw L 77, basal segment L 184, L basal segment/claw ratio 2.4.

Legs – dL of I-L-2-6 (Fig. 4G): 55, 52, 100, 122, 134; dL of IV-L-6: 88, 66, 103, 159, 169, 147 (Fig. 4H); III and IV-legs with a reduced number of swimming setae, number of swimming setae: III-L-4, 2 (1 short); III-L-5, 3-4 (1 short); IV-L-5, 4 (1 short); tarsal claws with large serrations on internal margins and with fewer serrations on the external margins that are restricted to distal end, without a dorsal tooth (Fig. 4I).

Male — Unknown.

Etymology

Named after the type locality. The name is a noun in apposition.

Discussion

The presence of tarsus claws with large ventral serrations makes the new species similar to *Pseudohydryphantes bebelus* Cook, 1983 from New Zealand (Cook 1983) and *P. vepres* Harvey, 1987, known from Victoria, Australia (Harvey 1987). The latter species differs in possessing an incomplete ring surrounding the glandularia (Harvey 1987). From *P. bebelus*, a species similar in having complete rings surrounding the glandularia, the new species differs in reduced number of swimming setae and the medial thickened seta on P-4 placed more or less near the middle of the segment (subdistal in *P. bebelus*, see Cook 1983).

Remarks

The ovigerous female from Tooloma Creek differs in its larger size and decreased number of swimming setae reduced to a single shortened seta at III-L-4, III-L-5 and IV-L-5 each.

Pseudohydryphantes corniculatus n. sp.

Zoobank: 65F34D5B-81C9-4866-8923-1681690CBF24

Figures 5-6

Type material

Holotype male — New South Wales, unnamed creek at crossing with Wyndham-Candelo road, South East Forests NP, 11 Dec. 2003, dissected and slide mounted (AMS). Paratype: same data as holotype: one female, dissected and slide mounted (RMNH).

Other material — New South Wales, School Creek near Morton NP, 5 Nov. 2001, 1[juvenile]/0/0.

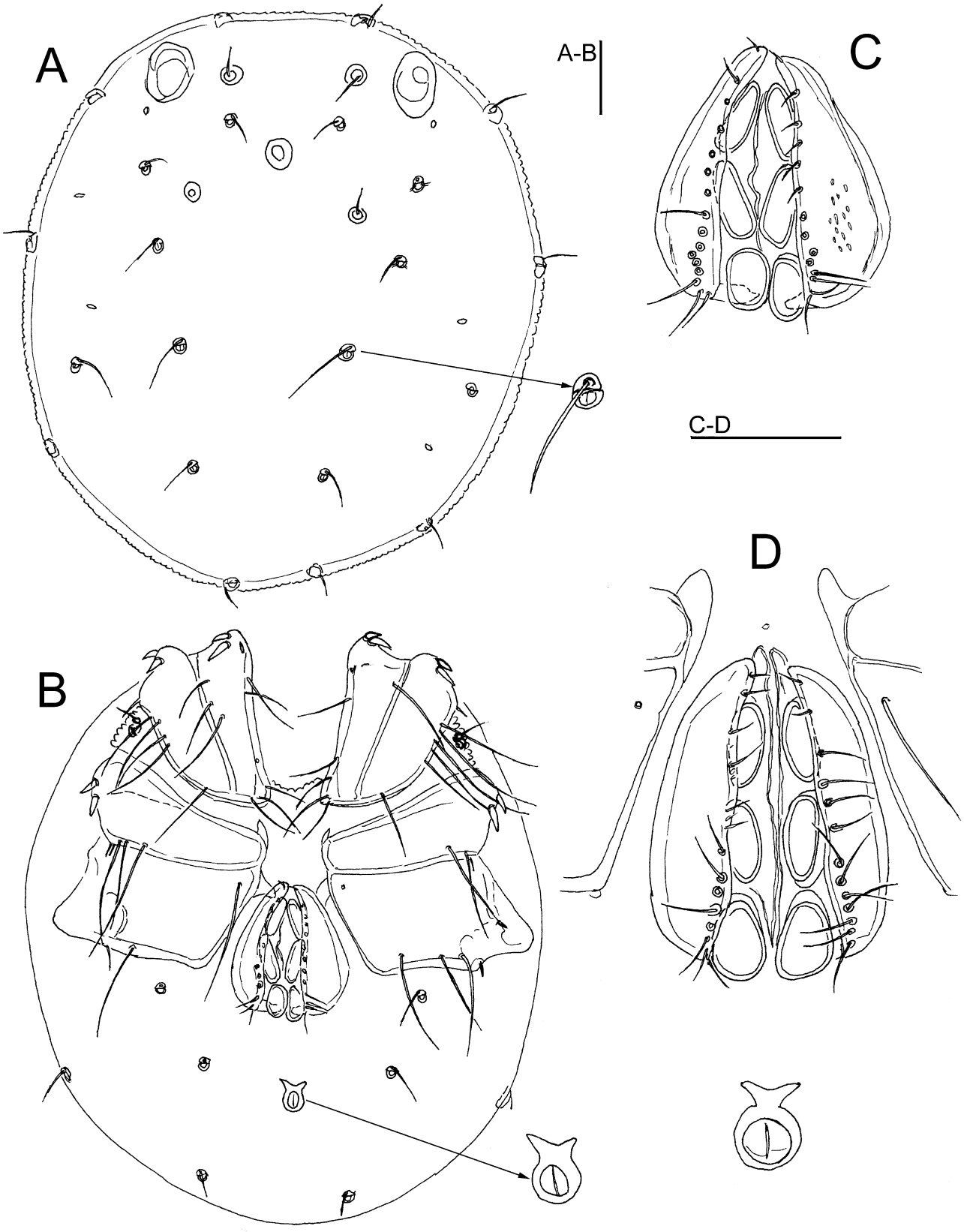

Figure 5 *Pseudohydryphantes corniculatus* **n. sp.** (A-C, ♂ holotype; D, ♀ paratype): A – idiosoma, dorsal view; B – idiosoma, ventral view (inset: excretory pore enlarged by 2X); C – genital field; D – genital field and excretory pore. Scale bar = 100 µm.

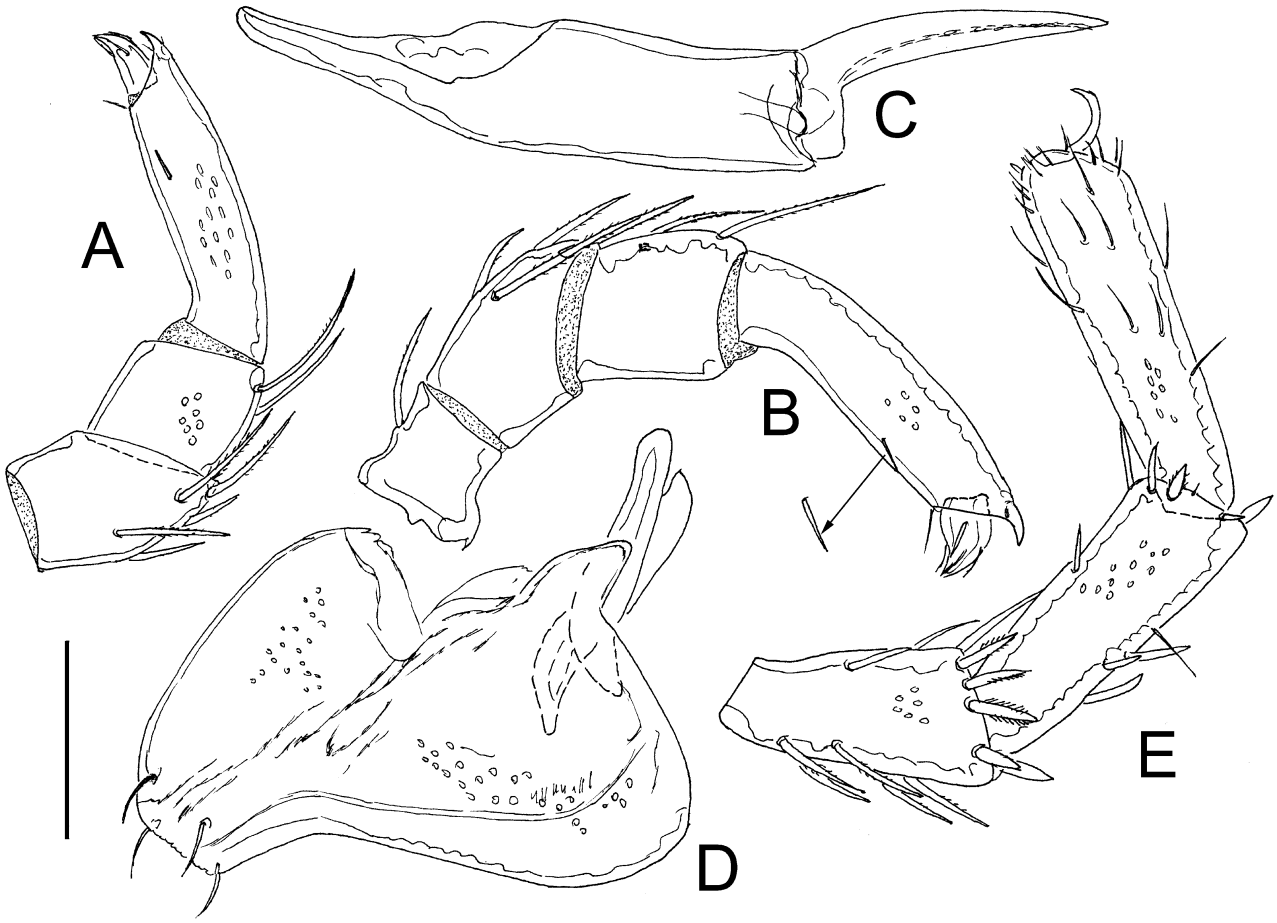

Figure 6 *Pseudohydryphantes corniculatus* **n. sp.** (A, C-E, ♂ holotype; B, ♀ paratype): A – palp, medial view (P-1 lacking); B – palp, medial view (inset: P-4 medial seta enlarged by 2X); C – chelicera; D – gnathosoma, lateral view; E – I-L-4-6. Scale bar = 100 µm.

Diagnosis

Glandularia sclerites small, not crescent-shaped; excretory pore surrounded by a sclerotized ring, anteriorly with a pair of angular extensions; I-L-6 relatively slender, L/H ratio 3.4-3.8.

Description

General features — Integument papillate; lateral eyes in capsules; median eye located anterior to the postocularia platelets, glandularia sclerites small, not crescent-shaped (Fig. 5A). Coxal field: Cx-I-III antero-medially rounded, bearing two short, thick, flattened setae (Fig. 5B). Genital field anteriorly laying between Cx-IV, posteriorly extending far beyond Cx-field, three pairs of acetabula, interspace between Ac smaller than Ac diameter. Excretory pore surrounded by a sclerotized ring, anteriorly with a pair of angular extensions (Fig. 5C), Vgl-3 slightly anterior to excretory pore.

Gnathosoma without extension (Fig. 6D); chelicera slender, cheliceral claw elongated (Fig. 6C); P-4 slender, medial seta thin, a hair-like, placed in the anterior part of the segment (Fig. 6A-B). Terminal segments of first leg relatively slender (Fig. 6E); third and fourth legs with swimming setae, number of swimming setae: III-L-3, 2; III-L-4, 10-13; III-L-5, 8-9; IV-L-3, 1-3; IV-L-4, 11-12; IV-L-5, 11-12; tarsal claws without serrations but with a dorsal tooth.

Measurements — Male — Idiosoma L 803, W 700; distance between anterior tips of Cx-I and posterior margin of Cx-IV, 459. Genital field L/W 175/159, L Ac-1-3: 53, 56, 43.

Gnathosoma – vL 244; palp: total L 429; dL/H, dL/H ratio: P-1, 56/48, 1.17; P-2, 94/63, 1.49; P-3, 66/66, 1.0; P-4, 175/50, 3.52; P-5, 38/19, 2.04; L ratio P-2/P-4, 0.54; chelicera total L 441, claw L 159, basal segment L 284, L basal segment/claw ratio 1.79.

Legs — dL of I-L-2-6: 84, 100, 147, 179, 213; I-L-6 H 56, dL/H I-L-6 ratio 3.77; dL of IV-L-6: 138, 119, 153, 241, 269, 222.

Female — Idiosoma L 834, W 767; distance between anterior tips of Cx-I and posterior margin of Cx-IV, 491. Genital field (Fig. 5D) L/W 203/163, L Ac-1-3: 58, 59, 55.

Palp – (Fig. 6B) total L 505; dL/H, dL/H ratio: P-1, 61/54, 1.13; P-2, 114/75, 1.52; P-3, 78/79, 0.99; P-4, 204/48, 4.2; P-5, 48/24, 2.03; L ratio P-2/P-4, 0.56; chelicera total L 470, claw L 187, basal segment L 284, L basal segment/claw ratio 1.52.

Legs – dL of I-L-6: 77, 81, 113, 163, 192, 227; I-L-6 H 67, dL/H I-L-6 ratio 3.4; dL of IV-L-6: 153, 125, 166, 269, 300, 253.

Etymology

Named after the horn-shaped excretory pore.

Discussion

In regard to the presence of a small, not crescent-shaped glandularia sclerites the new species resembles *Pseudohydryphantes crassipes* Cook, 1986, a species known from a single male collected in the Gordon River in Tasmania (Cook 1986). The latter species can be separated from the new species by the relatively stocky segments of the first leg, especially I-L-6 (L/H ratio 2.7, calculated from Figure 58 in Cook 1986).

Subfamily Tartarothyasinae K. Viets, 1934

Genus *Tartarothyas* K. Viets, 1934

Several species known from the Holarctic and Australia (Smit 2020).

Tartarothyas gracilipes n. sp.

Zoobank: 6F562201-734C-460B-B121-A4DD581D242C

Figures 7-8

Material examined

Holotype female — South Australia, Mambray Creek upstream of junction with Alligator Creek, Mt Remarkable NP, 32°49′14.74″S, 138°3′48.44″E, 17 Oct. 2001, dissected and slide mounted (SAM).

Diagnosis (Male unknown)

Postoculare clearly anterior to the Dgl-3; interspace between Ac smaller than Ac diameter.

Description Female (holotype)

Idiosoma – L 1469; integument papillate, lateral eyes in capsules; no dorsal platelets; postoculare clearly anterior to the Dgl-3 (Fig. 7B); Coxal field: Cx-I/II trapezoid, laterally narrowed, posterior margin straight, Cx-I antero-medially rounded, bearing two short, thick setae, Cx-II antero-medially with one short, thick seta, Cx-III/IV triangular, with a border of secondary sclerotization; distance between anterior tips of Cx-I and posterior margin of Cx-IV, 738. Genital field W 156, genital flaps L 134, anteriorly laying between Cx-IV, posteriorly extending beyond Cx-field, three pairs of acetabula, Ac-1-2 with very flat sockets, Ac-3 roundish on short stalks, interspace between Ac smaller than Ac diameter, L Ac-1-3: 78-84, 70-78, 48-56. Cxgl-4 laterally to genital field, beside Ac-2, excretory pore smooth, Vgl-1 anterior to excretory pore (Fig. 7A).

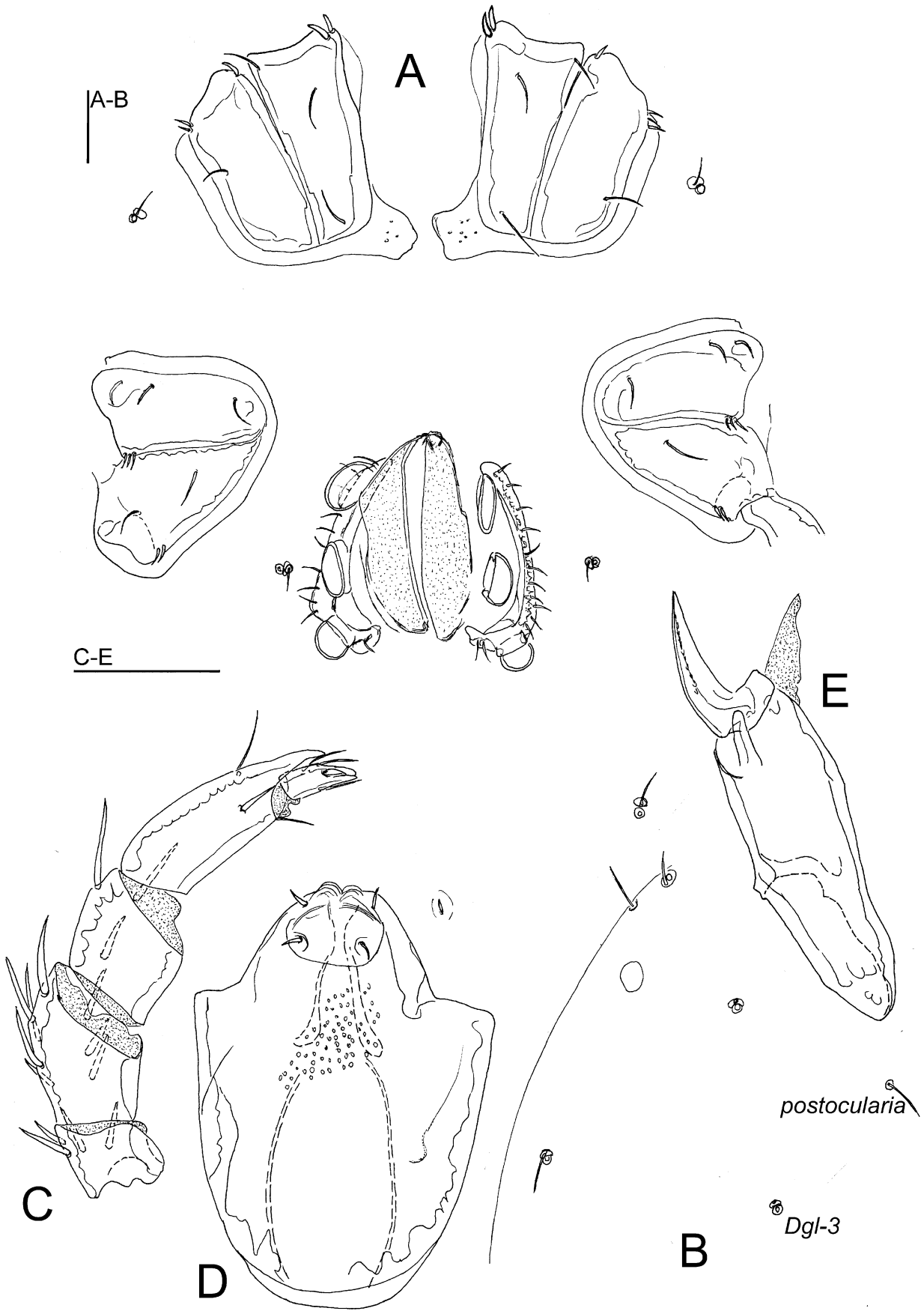

Figure 7 *Tartarothyas gracilipes* **n. sp.**, ♀ holotype: A – Idiosoma, ventral view; B – detail idiosoma antero-dorsal, partial view; C – palp, medial view; D – gnathosoma, dorsal view; E – chelicera. Scale bars = 100 µm.

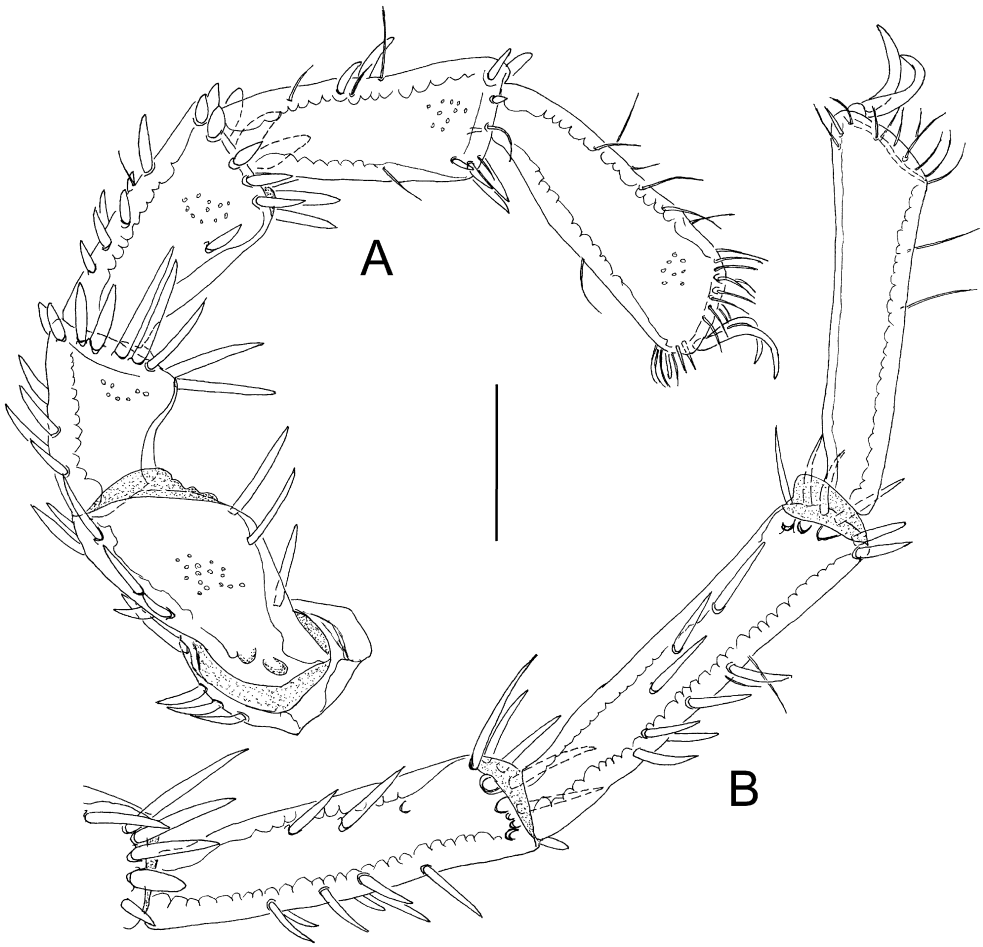

Figure 8 *Tartarothyas gracilipes* **n. sp.**, ♀ holotype: A – I-leg; B - IV-L-4-6. Scale bar = 100 µm.

Gnathosomal rostrum short and broad (Fig. 7D), vL 291; palp: total L; dL/H, dL/H ratio: P-1, 56/59, 0.95; P-2, 111/75, 1.48; P-3, 75/78, 0.96; P-4, 162/52, 3.14; P-5, 53/22, 2.42; L ratio P-2/P-4, 0.69; medial seta on P-4 placed laterally sub-distal (Fig. 7C). Chelicera stout, claw thick (Fig. 7E), total L 328, claw L 106, basal segment L 222, L basal segment/claw ratio 2.09.

Legs — strong and compact, all with large setae especially at distal margins of segments 2-5, claws large and curved, simple without clawlets (Fig. 8A-B); dL of I-L: 99, 119, 128, 166, 194, 213; dL of IV-L-4-6: 259, 286, 262.

Male — Unknown.

Etymology

Named for the relatively slender first leg.

Discussion

In regard to the relatively slender I-L-6 and globular Ac-3, the new species resembles *Tartarothyas boultoni* Harvey, 1987, a species originally described from Werribee River in Victoria, Australia (Harvey 1987). The latter species differs in the acetabula Ac-1 and -2 lying more distant from each other, and Dgl-3 is located approximately at the same level as the postocularia (Harvey 1987).

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