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New records of the endemic Australian water mite genus *Australotiphys* Cook, with the description of one new species (Acari: Hydrachnidia: Pionidae)

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Abstract

A new species of the Australian endemic genus *Australotiphys* Cook, 1986 is described from the Northern Territory. i.e. *A. simplisetus* n. sp. The female of *A. magnisetus* Cook, 1986 is described for the first time. New records of *Australotiphys* from Australia are presented.

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https://zoobank.org/References/8BABC46E-ED5E-4B75-A6EB-79788EFBA802

Introduction

The endemic Australian water mite genus *Australotiphys* was erected by Cook (1986) for a single male from New South Wales. Harvey (1996) added two more species, i.e. *A. himonius* Harvey, 1996 from the Northern Territory and Queensland and *A. barmutai* Harvey, 1996 from southwestern Australia. In this paper a new *Australotiphys* species is described from the Northern Territory. Moreover, the female of *A. magnisetus* Cook, 1986 is described, and new records of the genus are presented from Australia.

Methods

All material is collected by the author. The material is fixed in Koenike-fluid (5 parts of glycerine, 2 parts of glacial acetic acid and 3 parts of water). Holotype and paratype material is lodged as indicated in the Museum and Art Gallery of the Northern Territory, Darwin (NTM) and Naturalis Biodiversity Center, Leiden (RMNH) while all other cited collections are lodged at RMNH. Numbers are given as male/female/deutonymph. The following abbreviations are used: a.s.l. – above sea level; Cx-I – Coxae I; Cxgl-4 – coxoglandularia 4; Dgl-5 – dorsoglandularia 5; Lgl-4 – lateroglandularia 4; NP – National Park; P1-5 – palp segments 1-5; I-IV-leg-4-6 – fourth to sixth segments of first to fourth legs; Vgl-4 – ventroglandularia 4. All measurements are in µm, measurements of palp and leg segments are of the dorsal margins, the length of the venter is measured from the tip of Cx-I till posterior idiosoma margin. Measurements of paratypes are given in parentheses. Coordinates are taken with a GPS, coordinates given as degrees, minutes and seconds are taken from Google Earth and are by approximation.

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Taxonomy

Family Pionidae Thor, 1900

Subfamily Tiphyinae Oudemans, 1941

Genus: *Australotiphys* Cook, 1986

Type species: *Australotiphys magnisetus* Cook, 1986.

Australotiphys himonius Harvey, 1996

Material examined

New records. AUSTRALIA: Northern Territory: 4/12/0, Wangi Creek, Litchfield NP, 13°09.832' S 130°41.166' E, 25 Sept. 2005. Queensland: 2/3/0, Lacey Creek, Mission Beach, 17° 51'2.5" S146°3'53.2" E, 17 Sept. 2000; 0/1/0, Babinda River, Wooroonooran NP, 17°20.484' S 145°52.113' E, 16 Oct. 2005.

Distribution

Northern Territory, Queensland (Harvey 1996).

Australotiphys magnisetus Cook, 1986

Figure 1A-C

Description

Female: Integument lineated. Idiosoma dorsally 474 long and 405 wide, ventrally 482 long. Dorsum with one pair of larger, elongate platelets, and one pair of small, rounded platelets (Figure 1A). Anterior large platelets, 64-68 long and 24-26 wide. Coxae fused into one plate. Posterior to Cx-IV an area of secondary sclerotization. Lateral of genital field a pair of small platelets (Figure 1B). Genital field with 6-7 pairs of acetabula. Near anterior margin of genital field a row of three pairs of small setae. Length of P1-5: 20, 73, 36, 99, 36. Ventral margin of P4 with a setal tubercle, P4 with a stout anteroventral seta (Figure 1C). Length of I-leg-4-6: 126, 144, 100. Length of IV-leg-4-6: 134, 144, 140. IV-leg-5 anteroventrally with four long setae which probably act as swimming setae.

Material examined

New record. AUSTRALIA: New South Wales: 0/1/0, Colo River at crossing with Putty Road, 33°25.959' S 150°49.699' E, 1 Dec. 2003.

Remarks

Thus far, the species is only known from the holotype male, and, therefore, the description of the female is preliminary. However, the female has similar anterior large platelets as in the male. The number of acetabula of the male (7-8) is a bit higher than in the female. Moreover, it is the only *Australotiphys* species occurring in New South Wales.

Australotiphys simplisetus n. sp.

Figures 2A-D, 3A-C

https://zoobank.org/NomenclaturalActs/DF7C7D2F-3D4D-47E1-9FA7-3550D07B39EF

Material examined

Holotype male, AUSTRALIA, Northern Territory, Umbrawarra Gorge, Umbrawarra Gorge Nature Park, 13°57.892' S 131°41.620' E, 1 Oct. 2005 (NTM).

Paratypes: AUSTRALIA: Northern Territory: One male, two females, same location as holotype (NTM); five males, four females, Wangi Creek upstream Wangi falls, Litchfield NP, 13°09.832' S 130°41.166' E, 25 Sept. 2005 (RMNH); 1/2/0, pools upstream of Waterfall Creek, Kakadu NP, 13°25.762' S 132°25.089' E, 25 Jul. 1994 (RMNH).

Other material: AUSTRALIA: Northern Territory: 2/0/0, Radon Springs, Kakadu National Park, 19 Jul. 1994; 1/0/0, Walker Creek, Litchfield NP, 13°04.694' S 130°41.929' E, 161 m a.s.l., 25 Sept. 2005; 0/1/0, Moline Bottom Rockhole, Kakadu NP, 13°34.418' S 132°15.290' E, 175 m a.s.l., 1 Oct. 2005; 0/2/0, Pools Waterfall Creek, upstream of falls, Kakadu NP, 13°25.762' S 132°25.089' E, 143 m a.s.l., 1 Oct 2005.

Diagnosis

Male: Posterior dorsal glandularia setae (Dgl-5, Lgl-4 and Vgl-4) very long; near anterior margin of genital field four small setae in two groups; IV-leg without enlarged setae. *Female*: Setal tubercles of P4 proximal to middle of segment.

Description

Adult: Integument lineated. Glandularia setae of Dgl-5, Lgl-4 and Vgl-4 very long. Coxae fused into one plate. Apodemes of Cx-I extending onto Cx-III. Cxgl-4 fused with Cx-IV and situated near posterior margin of Cx-IV. IV-leg-5 with three thin long setae which probably act as swimming setae.

Male: Idiosoma dorsally 348 (332-343) long and 292 (259-308) wide, ventrally 356 (332-349) long. Dorsum with two pairs of platelets (Figure 2A), anterior platelets 68 long and 40-42 wide. Posterior to Cx-IV an area of extensive secondary sclerotization, which incorporates the genital field, and may or may not incorporate the excretory pore (Figure 2B). Genital field 114 wide, with 11 (8-11) pairs of acetabula. Near anterior margin of genital field two pairs of small setae in two groups. Length of P1-5: 20, 62, 26, 67, 28. Dorsal margins of P2 an P3 with three (one lost) and two long setae, respectively. P4 ventrally with a large setal tubercle and a small, stout anteroventral seta (Figure 2C, not visible in illustrated palp). Length of I-leg-4-6: 116, 130, 110. Length of IV-leg-4-6: 84, 106, 110. IV-leg-6 slightly bowed (but not well visible in holotype due to its position in the slide), ventrally with three slightly bowed long setae and

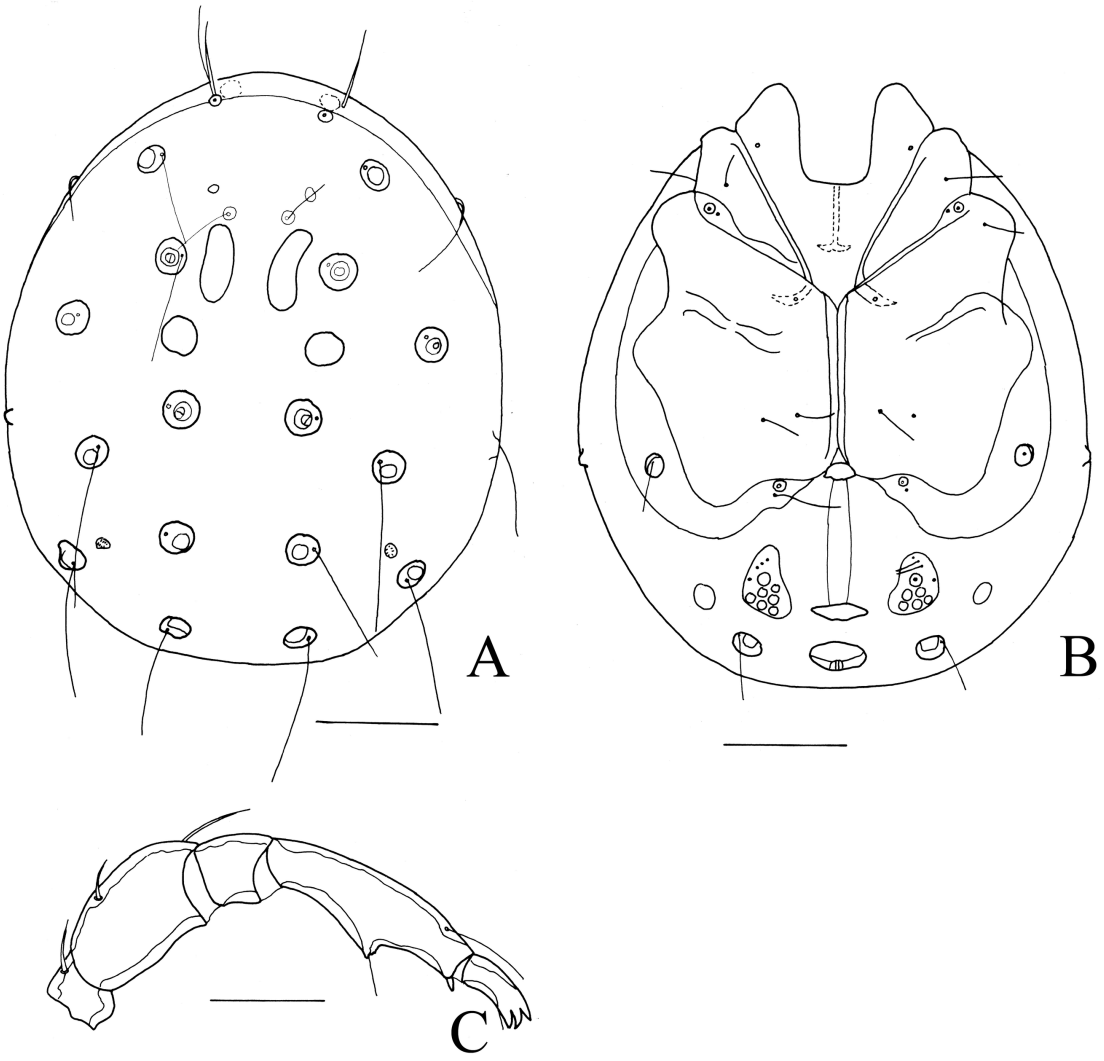

Figure 1. *Australotiphys magnisetus* Cook, female. A = dorsum; B = venter; C = palp. Scale bars: A-B = 100 µm, C = 50 µm.

two small peg-like setae. IV-leg-5 with seven long setae with an enlarged base. IV-leg-4 with four long setae with an enlarged base (Figure 2D).

Female: Idiosoma dorsally 389 (365-389) long and 332 (292-316) wide, ventrally 405 (381-389) long. Dorsum with one pair of large platelets and one pair of small platelets (Figure 3A). Anterior large dorsal platelets 64-74 long and 36 wide. Secondary sclerotization posteriorly of Cx-IV extending to or beyond posterior margin of genital plates. Gonopore 112 long, pre-genital sclerite 25 wide. Genital plates with 10-15 acetabula. Near anterior margin of genital plate three small setae, lying in a triangle (Figure 3B). Length of P1-5: 20, 63, 30, 71, 30; palp as in male (Figure 3C). Length of I-leg-4-6: 108, 110, 96. Length of IV-leg-4-6: 106, 122, 114.

Remarks

The only other *Australotiphys* species with the fourth leg of the male with simple setae is *A. barmutai* Harvey, 1996. The latter species differs in a much lower number of acetabula (four versus 8-15 in the new species), the presence of two pairs of small dorsal platelets in the male and three pairs of small dorsal platelets in the female (two pairs of large platelets in both sexes in the new species) and the absence of three bowed seta on the ventral margin of IV-leg-6 of the male. Females of the new species are very similar to *A. himonius*. They differ in the palp, in *A. himonius* the setal tubercle of P4 is more or less in the middle of the segment, in *A. simplisetus* n. sp. this setal tubercle is proximal to the middle of the segment. Moreover, the P4 of the female of the new species is stockier compared to *A. himonius*.

Etymology

Named for the simple setae of the fourth leg.

Disclosures

None

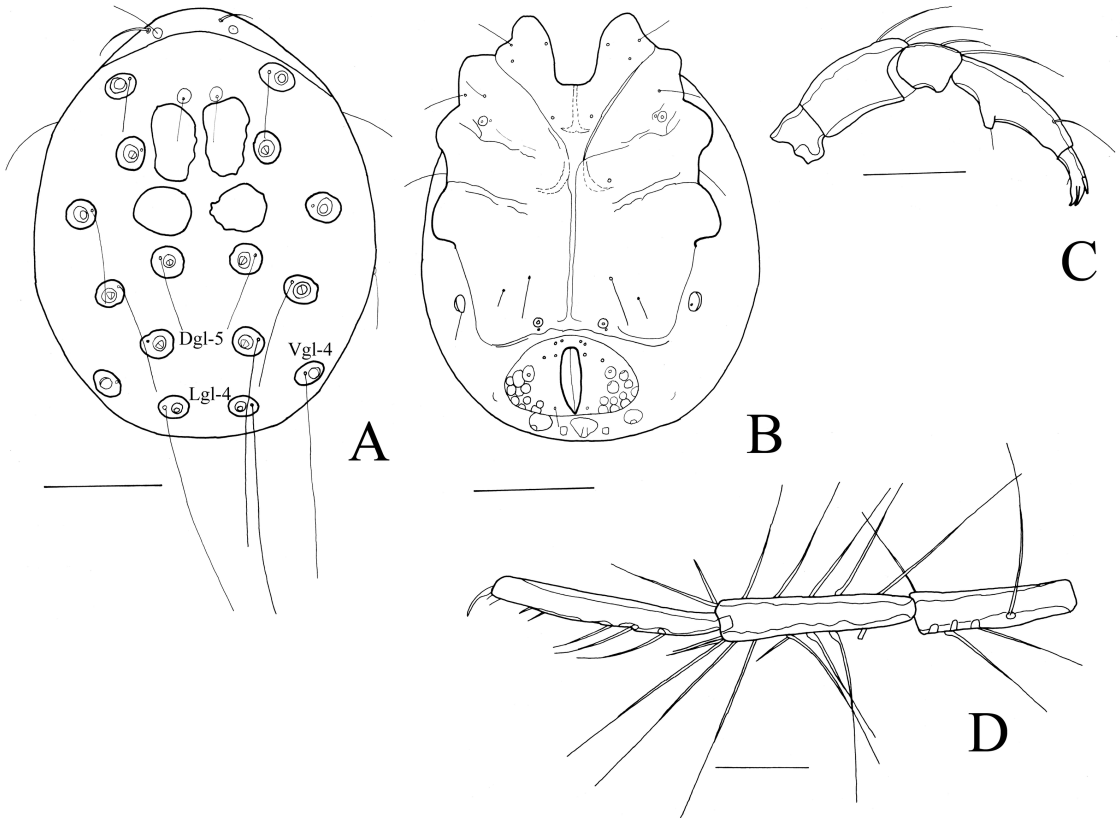

Figure 2. *Australotiphys simplisetus* n. sp., holotype male. A = dorsum; B = venter; C = palp; D = IV-leg-4-6. Scale bars: A-B = 100 µm, C-D = 50 µm. NB One dorsal seta of P2 lacking, one seta of IV-leg-4 broken off.

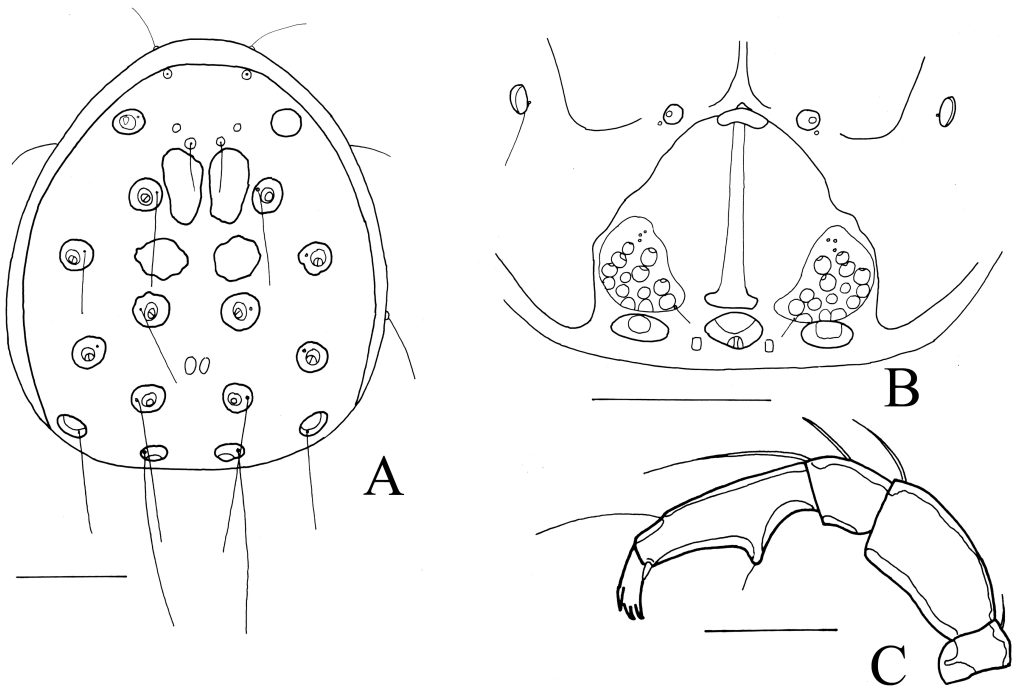

Figure 3. *Australotiphys simplisetus* n. sp., paratype female. A = dorsum; B = venter; C = palp. Scale bars: A-B = 100 µm, C = 50 µm.

Acknowledgments

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