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A new species of the water mite genus *Austraturus* K.O. Viets, 1978 from Victoria, Australia (Acari: Aturidae: Notoaturinae)

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Abstract Smit, H. and Pešić, V. 2023. A new species of the water mite genus *Austraturus* K.O. Viets, 1978 from Victoria, Australia (Acari: Aturidae: Notoaturinae). *Memoirs of Museum Victoria* 82: 49–53.

A new species of the water mite genus *Austraturus* K.O. Viets (Acari: Aturidae: Notoaturinae) is described, and a list of successfully barcoded Australian water mites is provided.

Keywords Systematics, new species, barcoding, COI.

Introduction

The water mite genus *Austraturus* is an endemic genus for Australia, with 26 species known (Cook, 1986; Smit, 1996, 2007, 2010, 2018, 2021). Most species occur in the northern, eastern and southeastern parts of the country; only two species are found in Western Australia.

Carew et al. (2022) were the first to publish the results of the barcoded water mites of Australia, identifying them to genus level. The senior author of the current paper identified the barcoded Australian water mites of Carew et al. (2022) to species level and slide mounted the material (see Table 1). Table 1 includes only the successfully barcoded specimens; however, several successfully barcoded specimens were lost during the barcoding process so are not included. All material of Table 1 is lodged in the Melbourne Museum, Melbourne. One *Austraturus* specimen from Carew et al.'s (2022) material is a species new to science, and is described in this paper.

Material and methods

The holotype of the new *Austraturus* species is dissected and slide mounted in Faure's medium. The holotype will be lodged in the Melbourne Museum, Melbourne.

All measurements are given in µm. Photographs of selected structures were taken using a Samsung Galaxy smartphone camera. The following abbreviations are used: Cx-I–IV – first to fourth coxae; I-L-1–6 – first to sixth segments of first leg; IV-L-4-6 – fourth to sixth segments of fourth leg; NMV – Melbourne Museum; P-1– P-5 – palp segments 1 to 5.

Systematics

Family Aturidae Thor, 1900

Subfamily Notoaturinae Besch, 1964
Genus *Austraturus* K.O. Viets, 1978

Table 1. List of successfully barcoded Australian water mites. For information on data of locations and collecting data, see https://www.boldsystems.org/index.php/Public_BINSearch?searchtype=records

Family	Species	BOLD accession number
Limnocharidae	*Austrolimnochares womerslyi* (Lundblad, 1952)	AFWM005-21
	A. womerslyi (Lundblad, 1952)	AFWM095-21
Hydryphantidae	*Diplodontus haliki* Lundblad, 1947	AFWM105-21
Aturidae	*Austraturus carewae* **sp. nov.**	AFWM084-21

Hygrobatidae	*Aspidiobates aethes* Harvey and Cook, 1988	AFWM078-21
	Australiobates rudagus Cook, 1988	AFWM081-21
	Australiobates mutatus K.O. Viets, 1978	AFWM014-21
	Australiobates linderi Lundblad, 1941	AFWM103-21
	A. linderi Lundblad, 1941	AFWM066-21
	Australorivacarus multiscutatus K.O. Viets, 1978	AFWM113-21
	Caenobates acheronius K.O. Viets, 1978	AFWM060-21
	C. acheronius K.O. Viets, 1978	AFWM054-21
	C. acheronius K.O. Viets, 1978	AFWM056-21
	C. acheronius K.O. Viets, 1978	AFWM059-21
	C. acheronius K.O. Viets, 1978	AFWM080-21
	C. acheronius K.O. Viets, 1978	AFWM082-21
	Procorticacarus angulicoxalis (K.O. Viets, 1978)	AFWM027-21
	Procorticacarus victorianus (K.O. Viets, 1978)	AFWM092-21
	P. victorianus (K.O. Viets, 1978)	AFWM114-21
	Rhynchaustrobates victorianus Smit, 2015	AFWM091-21
	R. victorianus Smit, 2015	AFWM085-21
	R. victorianus Smit, 2015	AFWM086-21
Limnesiidae	*Limnesia corpulenta* K.O. Viets, 1984	AFWM012-21
	Limnesia solida Lundblad, 1947	AFWM107-21
	L. solida Lundblad, 1947	AFWM106-21
	L. solida Lundblad, 1947	AFWM109-21
	L. solida Lundblad, 1947	AFWM110-21
	Limnesia otruma Cook, 1986	AFWM089-21
	Limnesia tasmanica (Lundblad, 1941)	AFWM046-21
	L. tasmanica (Lundblad, 1941)	AFWM044-21
	L. tasmanica (Lundblad, 1941)	AFWM048-21
Oxidae	*Oxus tenuipes* Lundblad, 1947	AFWM043-21
	O. tenuipes Lundblad, 1947	AFWM041-21
	O. tenuipes Lundblad, 1947	AFWM042-21
	O. tenuipes Lundblad, 1947	AFWM045-21
	O. tenuipes Lundblad, 1947	AFWM047-21
Pionidae	*Acercella falcipes* Lundblad, 1941	AFWM116-21
	Piona cumberlandensis (Rainbow, 1906)	AFWM104-21
Unionicolidae	*Neumania nodosa* (Daday, 1898)	AFWM049-21

***Austraturus carewae* sp. nov. (figs. 1–2)**

Zoobank: https://zoobank.org/urn:lsid:zoobank.org:act:F18549BB-864A-4461-936A-233948312903

Material examined. Holotype male (NMV), McCrae Creek, Victoria, Australia, 37.81729219 S, 145.5059157 E, 14 November 2018, leg. C. Kellar and K. Stevenson (sequenced; BOLD: AFWM084-21).

Diagnosis. A pair of enlarged setae on the dorsal posteromedial plate placed close and laterally to the anterior pair of glandularia, posterior margin of posteromedial plate with a rounded extension; tips of Cx-I bluntly pointed; P-2 with three stout denticles; IV-L-4 ventral margin with a rounded extension in the proximal part, bearing six setae of which the anterior is long and stout.

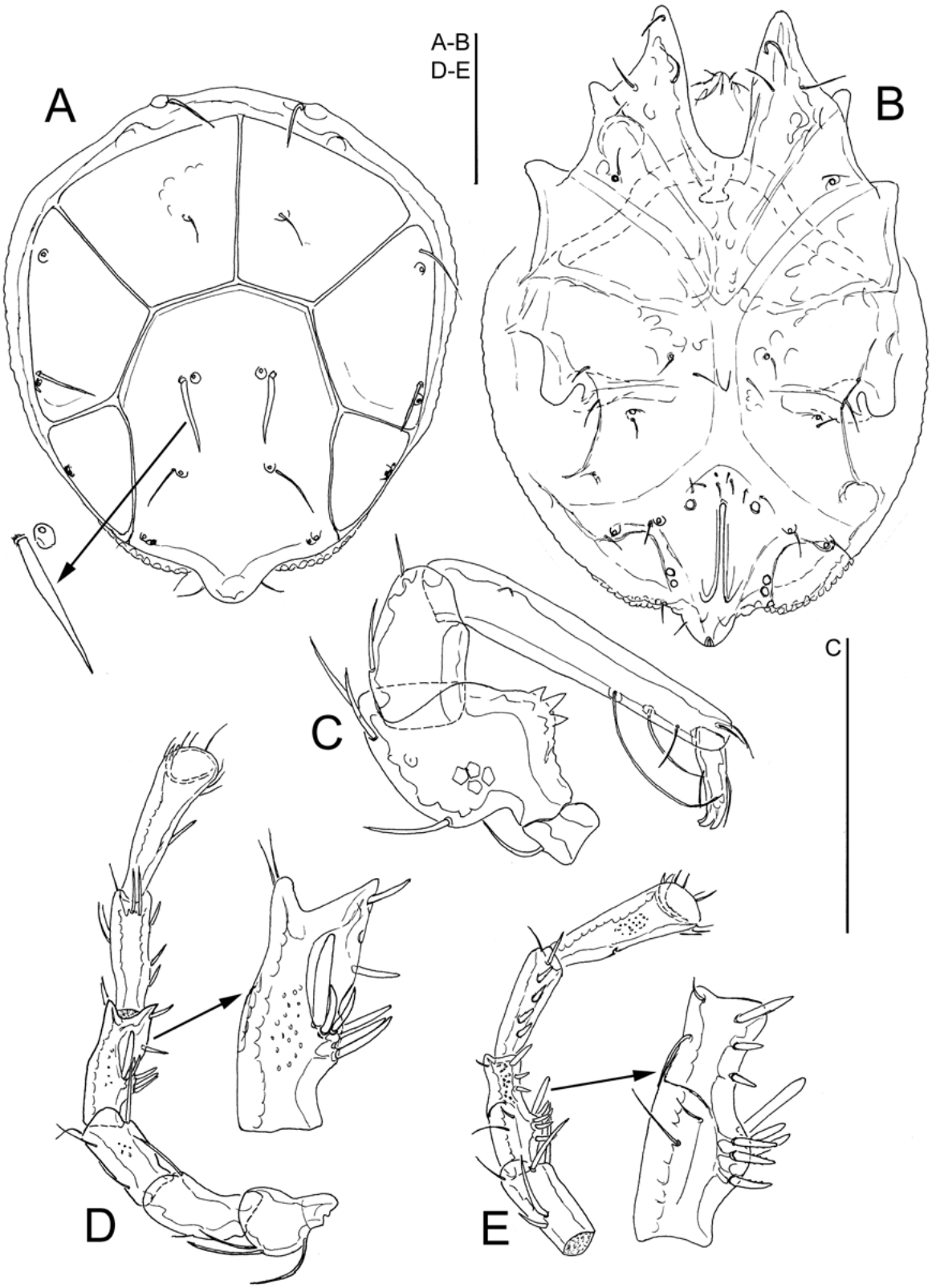

Figure 1. *Austraturus carewae* sp. nov, ♂ holotype: A, idiosoma, dorsal view; B, idiosoma, ventral view; C, palp; D, right IV-leg (inset: IV-L-4, 2x enlarged); E, left IV-L-3-6 (inset: IV-L-4, 2x enlarged). Scale bars = 100 μm.

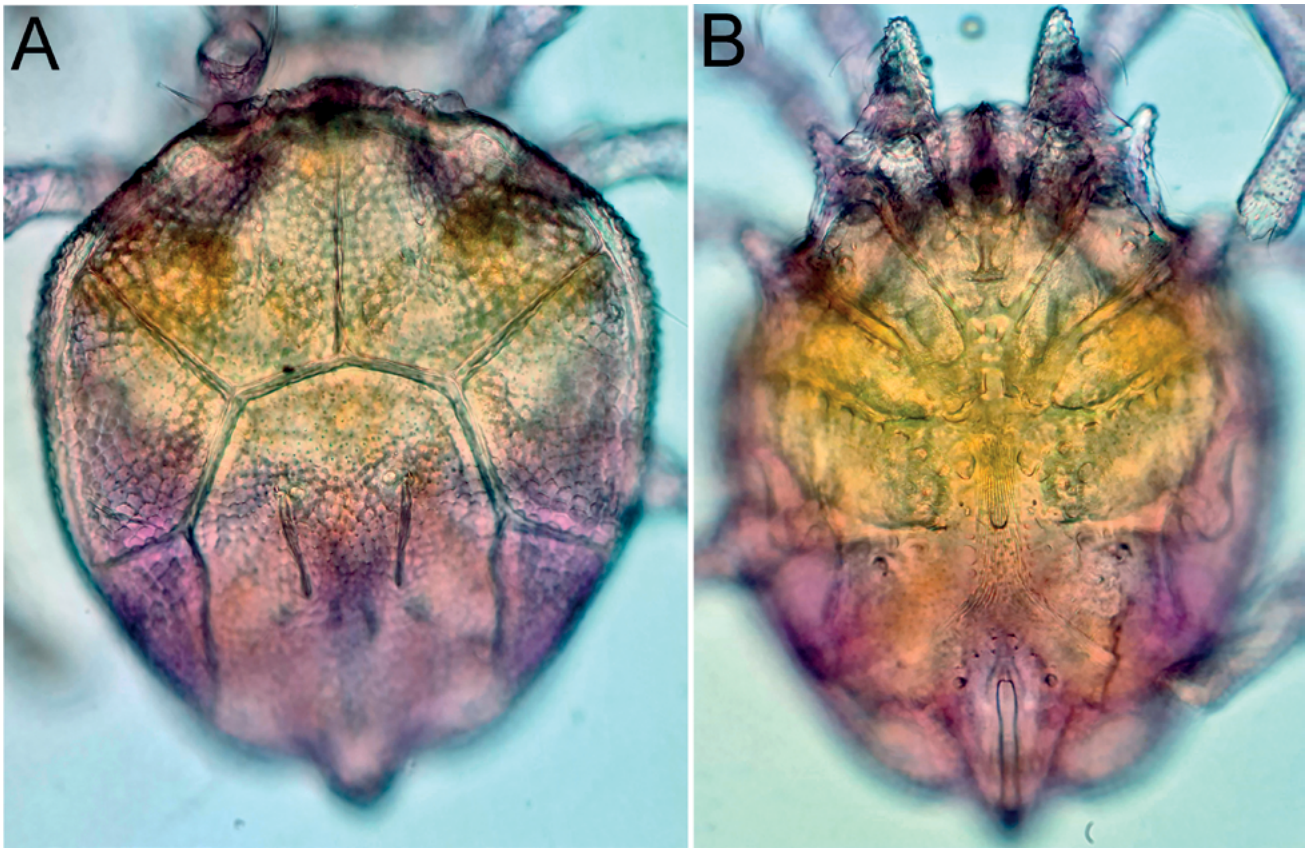

Figure 2. Photographs of *Austraturus carewae* sp. nov, ♂ holotype: A, idiosoma, dorsal view; B, idiosoma, ventral view.

Description. Male: idiosoma dorsally 347 long and 305 wide, ventrally 430 long. Ventral and dorsal shield with a colour pattern as illustrated in fig. 2A–B. Frontal margin rounded; dorsum with paired anteromedial plates, an unpaired posteromedial plate and two paired lateral plates. Anterolateral dorsal platelets with two pairs of glandularia, posterolateral dorsal plates with one pair of glandularia without enlarged setae. Posteromedial plate with only the anterior pair of glandularia with enlarged setae; posterior margin with a somewhat broad and rounded extension. Gnathosomal bay 101 long, tips of Cx-I bluntly pointed, coxae fused to ventral shield, suture lines lightly visible. Glandularia of Cx-IV closer to posterior margin than to anterior margin. Near anterior end of gonopore two pairs of glandularia, the anterior pair closer to each other than posterior pair. Genital field with numerous acetabula, poorly visible in ventral view. Gonopore narrow, 72 long. Palp: dorsal length/height, ratio: P-1, 20/22, 0.9; P-2, 70/64, 1.1; P-3, 55/32, 1.73; P-4, 117/21, 5.5; P-5, 31/10, 3.1; P-2/P-4 length ratio 0.6. P-2 with three stout ventral denticles, P-4 slender (fig. 1C).

Legs: dorsal length of I-L-2-5: 48, 58, 81, 81; dorsal length of IV-L-1-6: 59, 77, 72, 84, 83, 108. IV-L-4 ventral margin with a rounded extension in the proximal part, bearing six setae of which the anterior seta is longer and stouter (Figures 1D-E), dorsal sector concave, here with three setae; IV-L-5 ventrally with four setae.

Etymology. Named after Melissa E. Carew, University of Melbourne.

Discussion. The new species is most similar to *Austraturus sagittalis* Smit, 2018. The latter species, known from a male collected in a small creek in Queensland, differs from the new species in a broad arrow-shaped posterior extension of the posteromedial plate. While the new species' anterior pair of glandularia of the posteromedial plate are more distanced from the associated setae, the latter's setae are comparatively more slender. Other differences can be found in the shape of IV-L-4 and -5 (IV-L-4 ventrally with eight setae and an anteroventral extension, and more medially three setae of which the most anterior seta is the longest; IV-L-5 ventrally with six setae). Moreover, in *A. sagittalis* the tips of Cx-I are truncated and P-2 possesses only two stout ventral denticles (see Smit 2018). *Austraturus projectus* Cook, 1986, a species known from Tasmania, is somewhat similar in the shape of the posteromedial dorsal plate and its setae, but the anteromedial dorsal plates are projecting, the tips of Cx-I are truncated and P-2 has two rather stout, short ventral setae.

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