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A new and unusual water mite species of the subgenus *Truncaturus* Thor, 1901 from Tasmania, Australia, and notes on other *Arrenurus* species from Australia (Acari: Hydrachnidia: Arrenuridae)

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Original research

ABSTRACT

Species of the subgenus *Truncaturus* are usually small, unmodified and with a yellowish or brownish colour. Here a new species of the subgenus is described from Tasmania, which is not only relatively large, but also coloured dark red, a combination not found before within the subgenus. Furthermore, some remarks are made on several other *Arrenurus* species from Australia.

Keywords new species; *Arrenurus*; distribution; biodiversity; morphology
Zoobank http://zoobank.org/9F4AA525-8899-4EA1-99BE-BF3B0BA63DC9

Introduction

The genus *Arrenurus* Dugès, 1834 is the most species-rich genus of the water mites with more than 1000 species known (Smit 2020a). The genus has a cosmopolitan distribution, and occurs on every continent except Antarctica. From Australia 63 species are known (Cook 1986; Halík 1940, 1941; Harvey 1998; Lundblad 1941, 1947; Smit 1992, 1997, 1999, 2002, 2003a,b, 2007, 2010, 2021; Smith & Harvey 1989; K. Viets 1955; K.O. Viets 1975, 1981, 1984). Within Australia, *Arrenurus* species are known from almost all states and territories, only from the Australian Capital Territory no species are known. Most species are known from tropical Australia (in brackets the number of species): Queensland (27), Western Australia (25), Northern Territory (17), New South Wales (14), Tasmania (11), Victoria (9), South Australia (4) and Australian Capital Territory (0).

Currently, 11 subgenera are known within the genus (Smit 2020b). The following subgenera occur in Australia: *Arrenurus* s.s., *Brevicaudaturus* Smit, 1997, *Dividuracarus* Smit, 1997, *Megaluracarus* K. Viets, 1911, *Micruracarus* K. Viets, 1991, *Rhinophoracarus* K. Viets, 1916 and *Truncaturus* Thor, 1901. The subgenus *Dividuracarus* is only known from Australia. However, the subgeneric classification is artificial. Cook (1974) stated that "the subgenera are poorly defined, undoubtedly polyphyletic and are almost meaningless in indicating true relationships for many of the species groups". Many authors still use the subgeneric subdivision to subdivide this large genus in smaller units.

Most species of the subgenus *Truncaturus* are small and with a yellowish or brownish idiosoma colour, not only in Australia but also in other bioregions of the world. Here an unusual new species is described, which is not only relatively large, but also dark red, a combination not found in any other *Truncaturus* species.

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Material and methods

The results presented in this paper are based on a collecting trip to New South Wales, Victoria, Tasmania and South Australia in the period November 2025-March 2026. Numbers are given as males/females/deutonymphs. Abbreviations used: asl = above sea level; Cx-I = first coxae; NP = National Park, TMAG = Tasmanian Museum and Art Gallery, Hobart.

Measurements of segments of palp and legs are of dorsal margins. All measurements are in µm. Ventral idiosoma length is measurand from tip of Cx-I to posterior idiosoma margin.

All material is collected by the author. Non-type material is lodged in Naturalis Biodiversity Center, Leiden. The data of common and widespread *Arrenurus*-species not treated in this paper will be uploaded to Gbif, and can be examined on the website of Atlas of Living Australia (https://www.ala.org.au) later on.

Results

Genus *Arrenurus* Dugès, 1834

Arrenurus (*Arrenurus*) *balladoniensis* Halík, 1940

Material examined — **Victoria**. 1 (not sclerotized)/2/0, pond along Tunnel Road, Pomonal, 37°09.103′ S 142°38.117′ E, 214 m asl, 6 Feb. 2026; 2/1/0, Lake Fyans, 37°08.592′ S 142°37.115′ E, 206 m asl, 7 Feb. 2026. **South Australia**. 4/3/0 (1 male and 2 females not sclerotized), pond Moyhall Road/Brighton Drive, Naracoorte, 36°57.850′ S 140°43.843′ E, 53 m asl, 3 Feb. 2026.

Remarks — Only Halík (1940) mentioned the colour of the idiosoma, being greenish. The colour of the specimens from this study is yellowish.

Distribution — Widespread in Australia, found in Western Australia, Queensland, Northern Territory, New South Wales and Victoria. Reported here for the first time from South Australia.

Arrenurus (*Arrenurus*) *hyalinus* Smit, 2010

Material examined — **South Australia**. 2/3/0, Brownhill Creek, pool at picnic site, Brownhill Creek Recreation Park, 34°59.312′ S 138°38.359′ E, 29 Jan. 2026; 6/4/0, Okaparinga River, waterhole, Okaparinga NP, 35°08.897′ S 138°35.220′ E, 92 m asl, 30 Jan. 2026; 1/2/0, plunge pool The Deep Creek, Deep Creek NP, 35°38.574′ S 138°13.872′ E, 97 m asl, 1 Feb. 2026.

Distribution — A species thus far restricted to South Australia.

Arrenurus (*Truncaturus*) *haswelli* Cook, 1986

Material examined — **Tasmania**. 1/4/0, Big Waterhouse Lake, 40°53.553′ S 147°36.875′ E, 8 m asl, 23 Dec. 2025.

Remarks — Smit (1999) pointed on the variation in shape of the female genital plates. The females of Smit had much narrower genital plates compared to the females illustrated by Cook (1986). The females of this study show the same variation in shape of the genital plates. Moreover, there is a considerable variation in size of the females. The females of this study are 1015-1668 long and 804-1055 wide, the females of Smit (1999) were 960-1140 long and 757-883 wide. The paratype females of Cook (1986) were 1125-1155 long and 881-897 wide

Distribution — Only known from Tasmania.

Arrenurus (*Truncaturus*) *insolitus* n. sp

Zoobank: 77C47C5C-D337-4911-AD22-9EF03DFD03BF

(Figure 1)

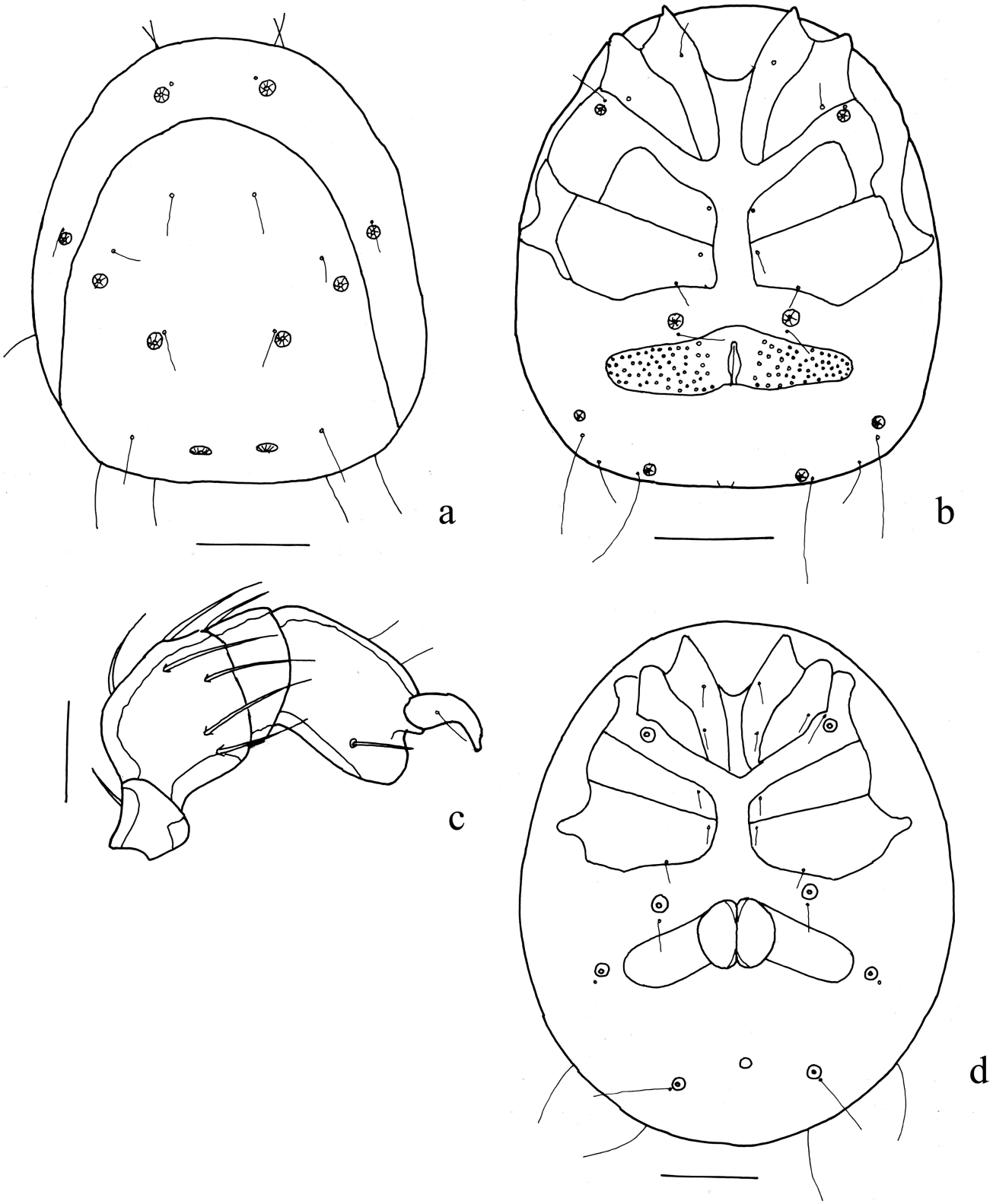


Figure 1 *Arrenurus insolitus* **n. sp.** a – holotype male, dorsum; b – holotype male, venter; c – holotype male, palp; d – paratype female, venter. Scale bars: a-b, d = 200 µm, c = 50 µm.

Material examined

Holotype male, Little Pine Lagoon, Little Pine Lagoon Conservation Area, Tasmania, Australia, 41°59.883′ S 146°36.685′ E, 1009 m asl, 12 Jan. 2026 (TMAG). Paratype: one female, same data as holotype (TMAG).

Diagnosis

Male: Male and female relatively large, colour of the idiosoma dark red; dorsal shield of male incomplete, dorsal shield of female complete; male idiosoma with a straight posterior margin.

Description

Male holotype — Idiosoma colour dark red, 778 long and 672 wide, ventrally 794 long. Idiosoma posteriorly straight, anteriorly convex (fig. 1a). Dorsal shield incomplete. All glandularia striated; associated setae of Dgl-4 distanced from glandularia. Cx-I extending slightly beyond anterior idiosoma margin. Medial margin of Cx-IV longer than medial margin of Cx-III. Genital plates longer than wide, straight (fig. 1b), genital field 405 long; gonopore70 long. Excretory pore near posterior idiosoma margin. Length of P1-5: 32, 80, 48, 78, 64. P2 medially with four stout setae (fig. 1c), dorsally with two stout setae; P1 dorsally with one stout seta, P3 dorsally with one seta, P4 dorsally with two fine setae. Length of I-leg-4-6: 154, 164, 150. Length of IV-leg-4-6: 186, 162, 178; IV-leg-4 without spur. Legs with many swimming setae.

Female paratype — Idiosoma colour dark red, dorsally 1077 long and 859 wide, ventrally 1021 long. Due to its very dark colour it's not visible if the glandularia are striated as in the male. Dorsal shield complete, 883 long and 705 wide. Cx-I not extending beyond anterior idiosoma margin. Medial margin of Cx-IV longer than idiosoma margin of Cx-III. Gonopore 138 long, with small sclerotized areas anteriorly and posteriorly. Genital field 462 long, genital plates straight, directed obliquely towards lateral idiosoma margin, longer than broad (fig. 1d). Length of P1-5: 34, 80, 68, 84, 44; palp as in male but P2 medially with five setae. Length of I-leg-4-6: 166, 178, 170. Length of IV-leg-4-6: 235, 211, 203. Legs with many swimming setae.

Etymology

Named for its unusual shape and colour for a *Truncaturus* species (Latin: *insolitus* = unusual, strange, uncommon, odd).

Remarks

The new species is the sixth *Truncaturus* species from Australia. Species of the subgenus *Truncaturus* are usually small and coloured yellowish or brownish. The new species is an exception, it is relatively large and the colour is dark red. Three other Australian *Truncaturus* are also large, i.e. *A. haswelli* Cook, 1986, *A. indentatus* Smit, 2010 and *A. novaecambricus* Smit, 2010. *Arrenurus haswelli* and *A. indentatus* differ from the new species in having the posterior idiosoma margin with a median cleft. The male of *Arrenurus novaecambricus* is larger (850-907), the posterior idiosoma margin is concave, the genital plates are shorter and slightly bowed and the idiosoma colour is yellowish brown.

Arrenurus (*Megaluracarus*) *maria* Smit, 1999

Material examined — **Tasmania**. 0/17/0 (palp of one female mounted), Big Waterhouse Lake, 40°53.553′ S 147°36.875′ E, 8 m asl, 23 Dec. 2025; 1/1/0, roadside pond Argonaut Road, St Helens, 41°19.191′ S 148°12.748′ E, 11 m asl, 30 Dec. 2025. **Victoria**. 5/0/0, small lake in Caledonian Creek, Ross Creek State Forest, 37°40.368′ S 143°42.269′ E, 401 m asl, 9 Feb. 2026.

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

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References

Cook D.R. 1974.Water mite genera and subgenera. Mem. Amer. Ent. Inst., 21: 1-860.
Cook D.R. 1986. Water mites from Australia. Mem. Amer. Ent. Inst., 40: 1-568.
Halík L. 1940. Neue Wassermilben aus dem indoaustralischen Faunengebiete. Zool. Anz., 132: 279-284.
Halík L. 1941. Beitrag zur Kenntnis der Wassermilbenfauna Australiens. Sbroník entom. odd. Zemského Musea Praze, 19: 103-118.
Harvey M.S. 1998. The Australian water mites. A guide to families and genera. Monogr. Invert. Taxon., 4: 1-150. https://doi.org/10.1071/9780643105188
Lundblad O. 1941. Neue Wassermilben aus Amerika, Afrika, Asien und Australien. Zool. Anz., 133: 155-160.
Lundblad O. 1947. Zur Kenntnis australischer Wassermilben. Ark. Zool., 40A(2): 1-82.
Smit H. 1992. Water mites from New South Wales and Queensland, Australia (Acari: Hydrachnellae). Tijdschr. Entom., 135(1): 91-112.
Smit H. 1997. Australian water mites of the genus *Arrenurus*, with the description of twelve new species from northern and western Australia (Acari: Hydrachnellae: Arrenuridae). Rec. West. Austr. Mus.,18: 233-261.
Smit H. 1999. New species of the water mite genus *Arrenurus* from eastern Australia (Acari: Hydrachnidia: Arrenuridae). Mem. Mus. Vict., 57(2): 225-236. https://doi.org/10.24199/j.mmv.1999.57.10
Smit H. 2002. New records of the water mite *Arrenurus* from Australia, with description of three new species and one new subspecies (Acari: Hydrachnidia: Arrenuridae). Mem. Queensl. Mus., 48(1): 221-232. https://doi.org/10.11646/zootaxa.103.1.1
Smit H. 2003a. A new and unusual *Arrenurus* species from northern Australia (Arachnida, Acari, Hydrachnidia, Arrenuridae). Senck. biol., 82(1/2): 59-61.
Smit H. 2003b. A review of the subgenus *Brevicaudaturus* (Acari: Hydrachnidia: Arrenuridae: *Arrenurus*) from the Indo-Australian and Pacific region, with description of a new species. In: Smith I.M. (Ed.), An acarological tribute to David R. Cook (from Yankee Springs to Wheeny Creek): 223-237. Indira Publishing House, West Bloomfield.
Smit H. 2007. New records of hyporheic water mites from Australia, with a description of two new genera and ten new species (Acari: Hydrachnidia). Rec. Austr. Mus., 59: 97-116. https://doi.org/10.3853/j.0067-1975.59.2007.1486
Smit H. 2010. Australian *Arrenurus* (Acari, Hydrachnidia) with the description of eleven new species. Zootaxa, 2541: 1-26. https://doi.org/10.11646/zootaxa.2541.1.1
Smit H. 2020a. New records of the water mite genus *Arrenurus* Dugès, 1834 from South America (Acari: Hydrachnidia: Arrenuridae), with the description of five new species and one new subspecies. Acarologia, 60(2): 371-389. https://doi.org/10.24349/acarologia/20204374
Smit H. 2020b. Water mites of the world with keys to the families, subfamilies, genera and subgenera (Acari: Hydrachnidia). Monogr. Ned. Ent. Ver., 12: 1-774.
Smit H. 2021. The water mites of Western Australia (Acari: Hydrachnidia), with the description of 13 new species. Acarologia, 61(4): 928-966. https://doi.org/10.24349/2ew3-Djkg
Smith I.M., Harvey M.S. 1989. Description of adults of *Arrenurus* (?*Micruracarus*) *kitchingi* sp. nov. (Acarina: Arrenuridae) from water-filled tree holes in Australia. Can. Ent., 121: 283-289. https://doi.org/10.4039/Ent121283-3
Viets K. 1955. Kleine Sammlungen europäischer und außereuropäischer Wassermilben (Hydrachnellae, Acari). Abh. naturw. Ver. Bremen, 34(1): 1-26.
Viets K.O. 1975. Neue Wassermilben aus Australien. Zool. Scripta, 4: 93-100. https://doi.org/10.1111/j.1463-6409.1975.tb00721.x
Viets K.O. 1981. Wassermilben (Acari, Hydrachnellae) aus dem Northern Territory, Australia. Ent. Scand. Suppl., 15: 333-336.
Viets K.O. 1984. Über Wassermilben (Acari, Hydrachnellae) aus Australien. Arch. Hydrobiol., 101: 413-436.