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A new species in the ground spider genus *Austrammo* from Barrow Island, Western Australia (Araneae, Gnaphosidae)

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Abstract

A new species in the ground spider genus *Austrammo* Platnick, 2002 is described from Barrow Island, *A. barbaramarksae* **sp. nov.**, making it the second ground spider species to be described that is endemic to the island in addition to *Barrowammo waldockae* Platnick, 2002. *Austrammo harveyi* Platnick, 2002 is here also reported for the first time from Barrow Island.

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Introduction

The Australian ground spider genera *Austrammo* Platnick, 2002 and *Barrowammo* Platnick, 2002 were initially described in the spider family Ammoxenidae Simon, 1893 (Platnick 2002). Azevedo *et al.* (2022) synonymised Ammoxenidae with Gnaphosidae Banks, 1892 where both genera are currently placed. *Austrammo* currently includes four species and *Barrowammo* is monophyletic (World Spider Catalog 2023). Of these, *A. harveyi* Platnick, 2002, *A. rossi* Platnick, 2002 and *B. waldockae* Platnick, 2002 are known from Western Australia with the latter only known from three specimens collected on Barrow Island in north-west Western Australia in 1993.

Barrow Island is the second largest island in Western Australia and originated approximately 7,000 years ago when increasing sea levels cut off its connection to Cape Range, located ca. 150 km to the south. Due to its unique fauna and flora Barrow Island was gazetted an A-class reserve in 1910. Against this conservation status, Chevron Australia committed to strict quarantine regulations when they commenced constructing a gas treatment plan on Barrow Island (Gorgon Project) (EPA 2006), resulting in the most comprehensive non-governmental quarantine operation world-wide. As part of the quarantine operations, baseline surveys of the islands fauna and flora were conducted prior to construction activities to evaluate the introduction of new species (for inverte-

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brates, see Callan et al. 2011, Majer et al. 2013). Quarantine surveys are ongoing and new species are detected on the island all the time. To this day, approximately 3,500 terrestrial invertebrate species have been recorded on Barrow Island (unpublished data).

Austrammo harveyi was found for the first time on Barrow Island in 2005 (see Fig. 3) and a new species of *Austrammo* was recorded. The aim of this paper is to describe this new species. With this, Barrow Island should be considered an important locality for *Austrammo* and *Barrowammo* in Australia, with three species of these two genera occurring on this comparatively small island. Two of these, the new *Austrammo* species and *B. waldockae* are currently only known from this island. Curiously, despite ongoing invertebrate surveys now dating back to 2005, *B. waldockae* has not been recollected on Barrow Island since its original description.

Methods

Descriptions and terminology follow Platnick (2002); however, detailed descriptions of the leg spination are omitted and internal genitalia of females were not examined as the external genitalia are highly diagnostic. Colour patterns are described based on specimens preserved in ca. 75% ethanol.

Microscopic images were taken in different focal planes (ca. 20–30 images) on a Leica DMC4500 digital camera mounted to a Leica M205C stereomicroscope and combined using the Leica Application Suite X, v. 3.6.0.20104. All measurements are given in millimetres.

The distribution map was compiled with the software package QGis v. 2.14.0 Girona (https://qgis.org/en/site/; accessed 02 February 2021).

Collections

DPIRD - Department of Primary Industries and Regional Development, Perth

HBI - Harry Butler Institute, Murdoch University, Perth

WAM - Western Australian Museum, Perth

Taxonomy

Order Araneae Clerck, 1757

Family Gnaphosidae Banks, 1892

Genus *Austrammo* Platnick, 2002

Type species

Austrammo monteithi Platnick, 2002 (by original designation).

Diagnosis

Both males and females of *Austrammo* can easily be distinguished from members of the similar *Barrowammo* by the presence of a distinct dorsal pad of setae near the tip of the pedipalp tarsus (Platnick 2002).

Description

See Platnick (2002).

Austrammo barbaramarksae sp. nov.

Figs 1A–D, 2A–C, 3

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Type specimen

Male holotype, Barrow Island, Gas Treatment Plant/ QCC, 20°47'42.95''S, 115°26'24.25''E, 5 January 2021, T. Sachse, UV light trap (WAM T160691).

Diagnosis

Both males and females of *A. barbaramarksae* **sp. nov.** are most similar to those of *A. rossi*. The male pedipalp differs from that of *A. rossi* in a number of key sclerites; for example, the subtegulum is longer in *A. rossi* and the spermophor visible through the tegulum is bent tighter in *A. rossi* but at the same time reaches less far basally than that of *A. barbaramarksae* **sp. nov.**, and the embolus tip is much broader in the new species. The epigyne of females differs particularly in the shape of the anterior hood, which is U-shaped in *A. rossi* and in that species, its edges connect to the anterior parts of the epigyne. In contrast, the hood of *A. barbaramarksae* **sp. nov.** forms an obtuse angle and its edges do not connect to the anterior edges of the epigyne.

Description

Male (based on holotype, WAM T160691). Total length 3.2. Carapace brown, centrally somewhat lighter; indistinct dark streaky pattern and darker edges (Fig. 1A). Chelicerae dark brown. Legs brown, except femora which are olive grey with brown bands (Fig. 1A, B). Labium and maxillae brown (Fig. 1B). Sternum light brown (Fig. 1B). Abdomen dorsally olive grey, posteriorly lighter (Fig. 1A); venter light brown (Fig. 1B). Pedipalp retrolateral tibial apophysis apically waved with dorsal tip (Fig. 1D), cymbium tip with 8 macrosetae; subtegulum reaching past half the cymbium opening, embolus very broad (Fig. 1C).

Female (based on HBI N25572-1): Total length 3.9. Carapace brown with dark grey streaky pattern (Fig. 2A). Chelicerae dark brown. Legs femora, patellae and tibiae dark olive grey; metatarsi and tarsi brown (Figs 2A, B). Labium brown; maxillae light brown (Fig. 2B). Sternum light brown (Fig. 2B). Abdomen dorsally dark metallic grey (Fig. 2A); venter brown (Fig. 2B). Epigyne slightly longer than wide; anterior hood separated; large openings anteriorly with white rims (Fig. 2C).

Variation. The second male measured 3.4 total length; females total length 3.7 – 4.0 (n = 3).

Remarks. The median ocular quadrangle in *Austrammo barbaramarksae* **sp. nov.** is about as wide as long and as wide at the front as at the back and therefore varies from the pattern in the generic description of *Austram-*

mo by Platnick (2002, p. 12): 'wider than long, wider back than in front'.

Other material examined

AUSTRALIA: Western Australia: Barrow Island: 1 male, Butler Park, Cluster 3, room 3-0-65, 20°49'09.57''S, 115°26'23.99''E, 19 April 2015, A. Williams (DPIRD 14471); 1 female, 20°45'17.632''S, 115°22'05.315''E, T. Sachse, spotlighting, 5 January 2020 (WAM T160692); 1 female, 20°49'57.02''S, 115°25'35.25''E, F. Bokhari, spotlighting, 15 November 2020 (WAM T160693); 1 female, Butler Park, 20°49'07.45''S, 115°26'26.37''E, T. Sachse, UV light trap, 10 February 2021 (HBI N25572-1).

Etymology

This specific epithet is a matronym in honour of Barbara Marks, Senior HSE Specialist – Quarantine, Chevron Australia, on the occasion of her pending retirement.

Distribution

Austrammo barbaramarksae **sp. nov.** has so far only been found on Barrow Island, Western Australia (Fig. 3).

Acknowledgments

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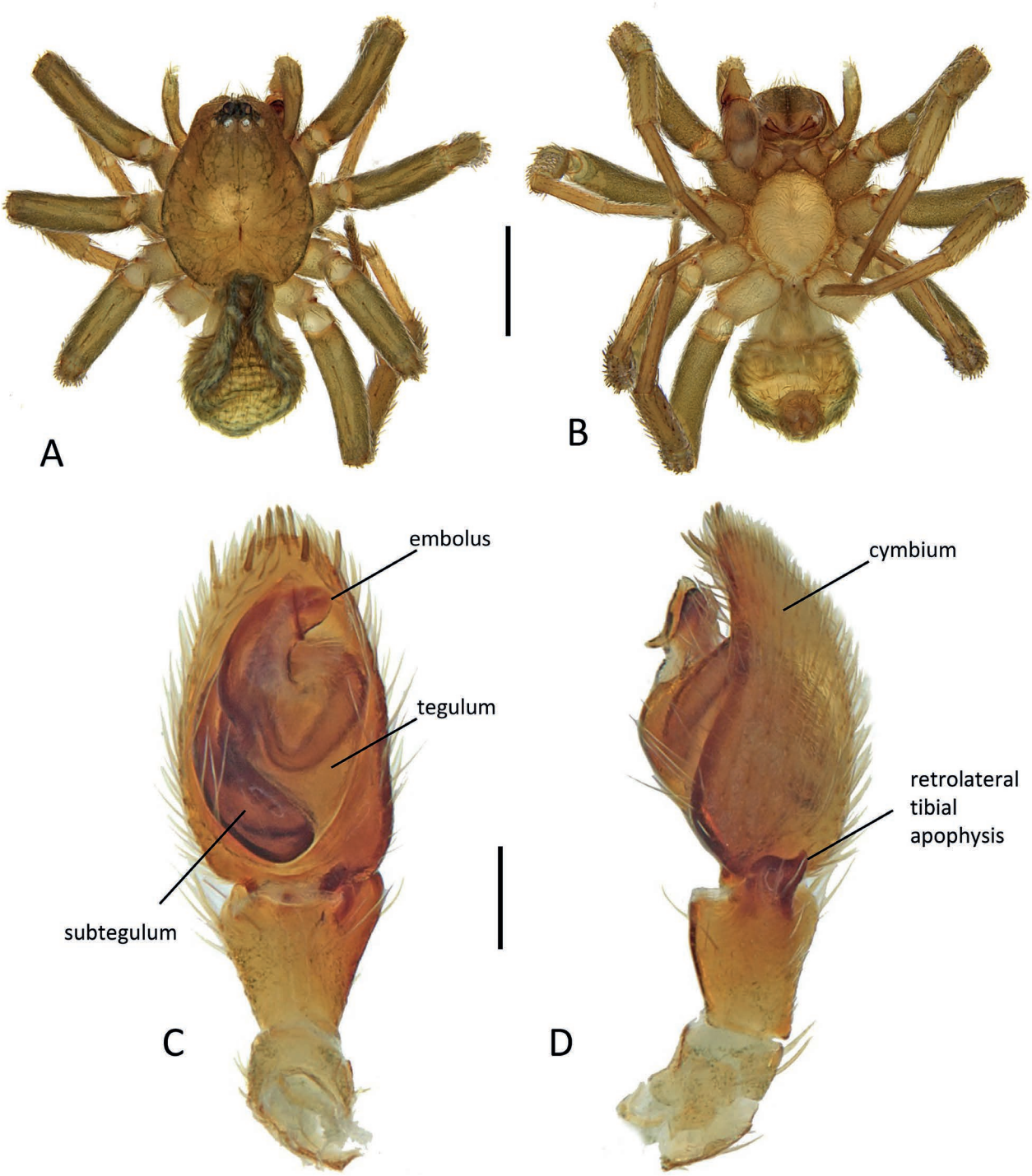

Figure 1. *Austrammo barbaramarksae* **sp. nov.**, holotype male (WAM T160691). A, dorsal habitus; B, ventral habitus; C, left pedipalp, ventral view; D, left pedipalp, retrolateral view. Scale bars: A, B, 1 mm; C, D, 0.2 mm.

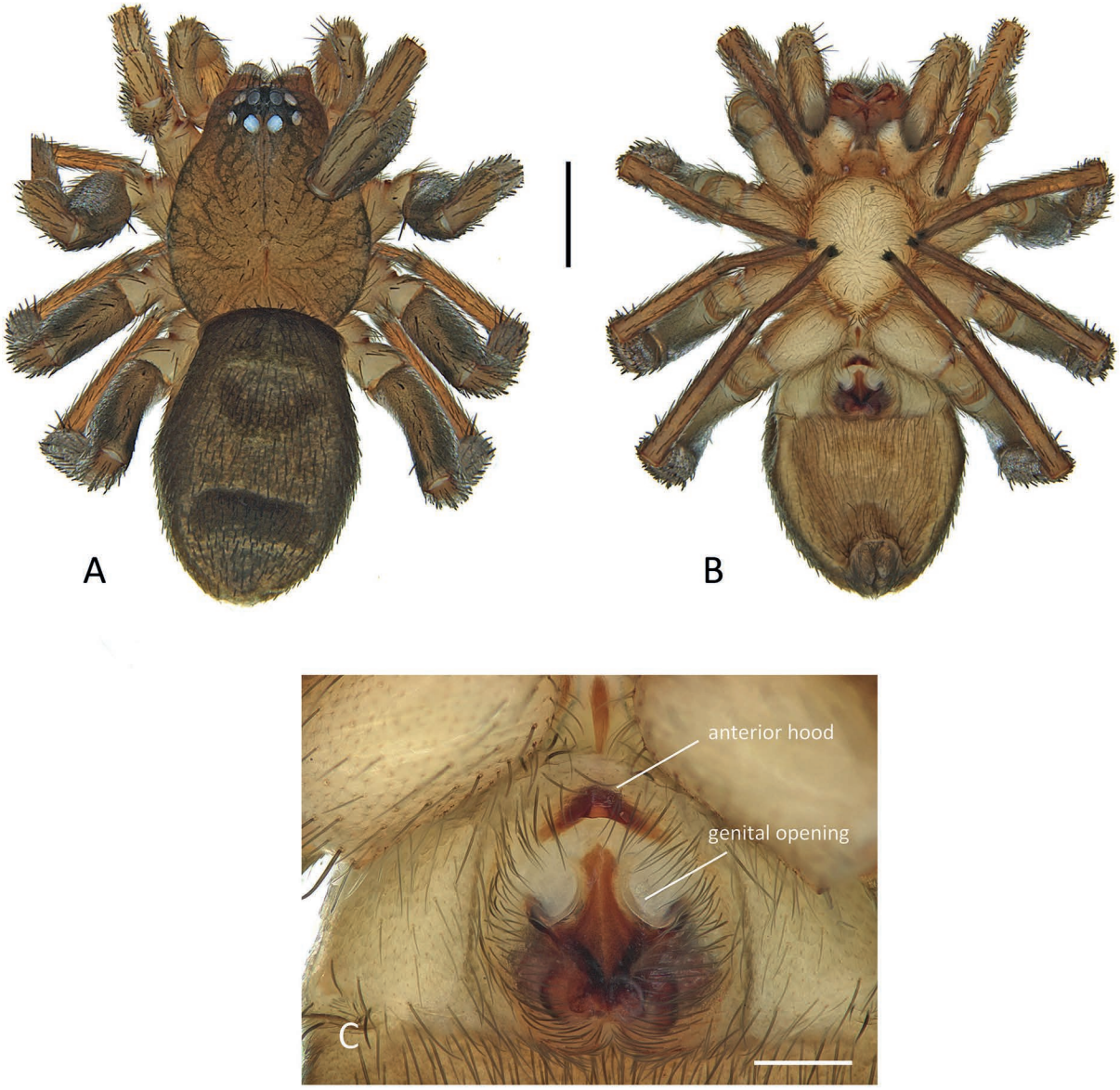

Figure 2. *Austrammo barbaramarksae* **sp. nov.**, female (HBI N25572-1). A, dorsal habitus; B, ventral habitus; C, epigyne, ventral view. Scale bars: 0.2 mm.

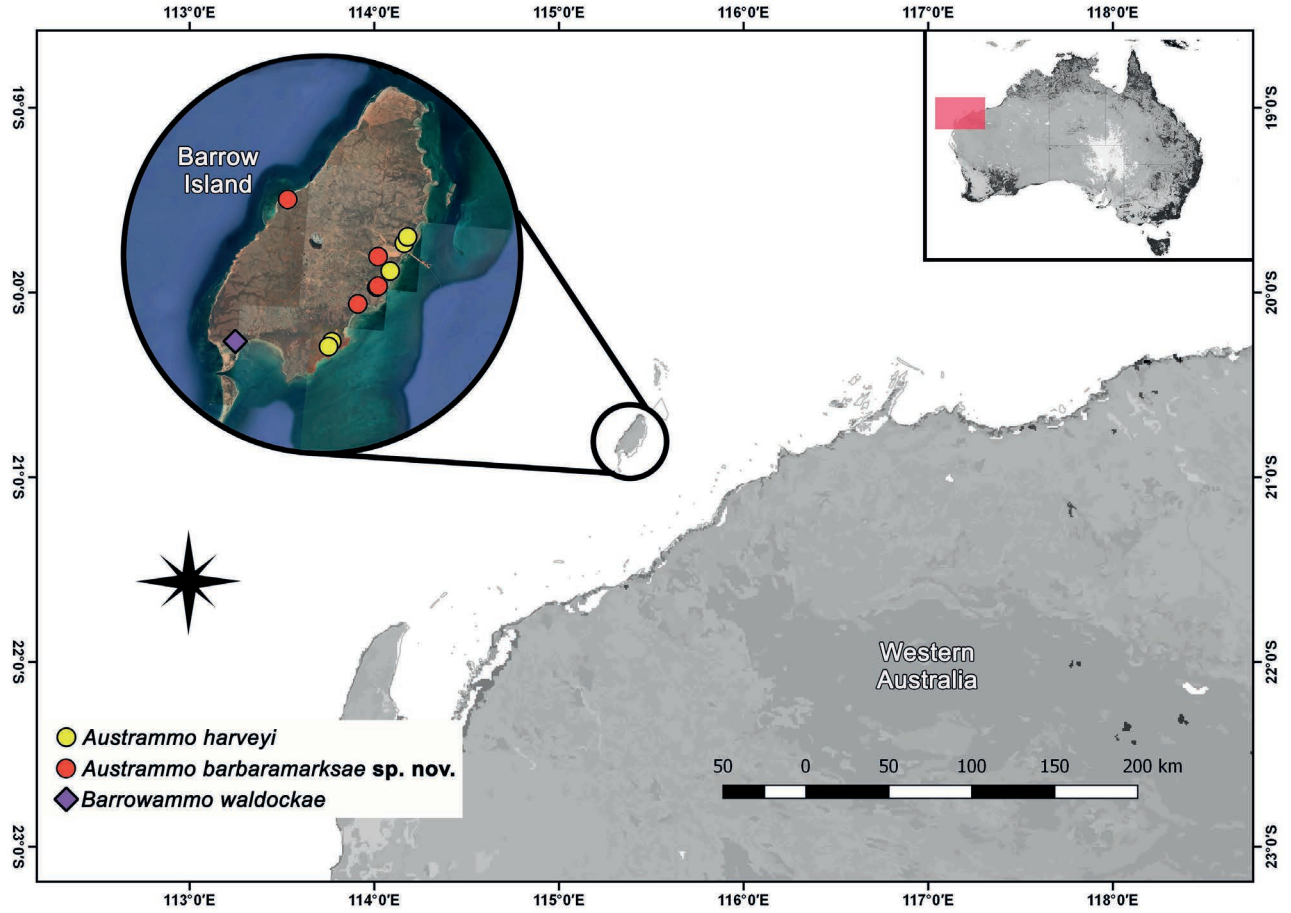

Figure 3. Distribution records of *Austrammo* and *Barrowammo* on Barrow Island. *Austrammo barbaramarksae* **sp. nov.** and *B. waldockae* are endemic to the island. *Austrammo harveyi* is widespread in Western Australia and into South Australia.
