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Revision of the new Australian genus *Artoriopsis* in a new subfamily of wolf spiders, Artoriinae (Araneae: Lycosidae)

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Abstract

The new Australian wolf spider genus *Artoriopsis* is established with *Artoriopsis expolita* (L. Koch, 1877), **comb. nov.** as type species. Six further species, *A. anacardium* **sp. nov.**, *A. eccentrica* **sp. nov.**, *A. joergi* **sp. nov**., *A. klausi* **sp. nov.**, *A. melissae* **sp. nov.** and *A. whitehouseae* **sp. nov.** complete the Australian fauna. *Artoriopsis* **gen. nov.** shows affinities with the Australasian genera *Artoria* Thorell, 1877 and *Anoteropsis* Koch, 1877, but differs by a distinct colour pattern of the opisthosoma (a dark diamond-shaped spot is cut in half by the light lanceolate cardiac mark). The basoembolic apophysis of the male pedipalp is narrowest at its base and comparatively weakly sclerotised, whereas it is widest at its base and strongly sclerotised in *Artoria* and inverted L-shaped in *Anoteropsis*. The median septum of the female epigyne forms a distinct plate that covers the atrium, although it is reduced in *A. eccentrica* **sp. nov.** and *A. joergi* **sp. nov.** Representatives of the genus *Artoriopsis* **gen. nov.** have so far only been found in Australia, where they are most diverse in the southern half of the country, although one species, *A. anacardium* **sp. nov.**, is known from the tropical north.

A new wolf spider subfamily, Artoriinae (type genus *Artoria* Thorell, 1877), is established to accommodate the following genera: *Anoteropsis* L. Koch, 1878, *Artoria* Thorell, 1877 (= *Lycosula* Roewer, 1960, **syn. nov.**), *Artoriopsis* **gen. nov.**, *Diahogna* Roewer, 1960, *Lycosella* Thorell 1890, *Notocosa* Vink, 2002, *Syroloma* Simon, 1900, *Tetralycosa* Roewer, 1960, and two unnamed genera. The new synonymy of *Lycosula* with *Artoria* places the following species into

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Artoria: *A. thorelli* (Berland, 1929) **comb. nov.**, *A. hebridisiana* (Berland, 1938), **comb. nov.** and *A. minima* (Berland, 1938) **comb. nov.** Artoriinae **subfam. nov.** are characterised by the presence of a basoembolic apophysis on the male pedipalp, unique within the Lycosidae. Artoriinae **subfam. nov.** are restricted to the Oriental, Australasian and Pacific regions with the centre of diversity in Australia and New Zealand.

Key words: taxonomy, systematics, new species, Australia, Gondwana

Introduction

The monophyly of the Lycosidae is well supported (Dondale 1986, Griswold 1993) but, despite some recent advances employing molecular techniques (Murphy *et al*. 2006), relationships within the family are poorly understood. Dondale (1986) presented the first phylogenetic hypothesis for Lycosidae based on male pedipalp morphology. He recognised five subfamilies: Allocosinae Dondale, 1986, Lycosinae Sundevall, 1833, Pardosinae Simon, 1898, Sosippinae Dondale, 1986 and Venoniinae Lehtinen & Hippa, 1979, although the validity of the Pardosinae was questioned earlier (Lehtinen 1978, Zyuzin 1985). By including *Hippasa* Simon, 1885 in the Lycosinae, Dondale (1986) rejected the Hippasinae Petrunkevitch, 1928 and likewise synonymised the Zoicinae Lehtinen & Hippa, 1979 with the Venoniinae. Subsequently, additional subfamilies were proposed without incorporating these into Dondale's (1986) preliminary phylogenetic framework: Evippinae Zyuzin, 1985, Wadicosinae Zyuzin, 1985, Piratinae Zyuzin, 1993 and Tricassinae Alderweireldt & Jocqué, 1993. Recent taxonomic and systematic studies focussing on wolf spiders of the Southern Hemisphere, in particular the Australasian region, provided new data for a re-evaluation of the current subfamily structure. For example, a phylogenetic study of *Venonia* Thorell, 1894 and allied genera led to a revalidation of the Zoicinae (Yoo & Framenau 2006).

A recent study of the Australasian wolf spider genus *Artoria* Thorell, 1877 could not place the genus into any of the subfamilies listed above and, for the first time, suggested the existence of a new wolf spider subfamily in Australasia (Framenau 2002). A unique structure at the base of the embolus ('basoembolic apophysis') was identified as putative synapomorphy for this group. Subsequent revisions of additional Australasian genera revealed that a basoembolic apophysis is not unique to *Artoria*. It is present, sometimes in genus-specific shape, in a number of other genera, for example *Anoteropsis* L. Koch, 1878 and *Notocosa* Vink, 2002 (Vink 2002), *Diahogna* Roewer, 1960 (Framenau 2006) and *Tetralycosa* Roewer, 1960 (Framenau *et al.* 2006). Molecular studies strongly supported a unique Australasian clade on subfamily level and suggested the Pardosinae and Lycosinae combined as sister group (Vink *et al.* 2002, Murphy *et al*. 2006).

The males of the Australian *Trochosa expolita* (L. Koch, 1877) also carry a basoembolic apophysis at their pedipalp identifying them as a member of the undescribed Australasian subfamily of wolf spiders. However, *T. expolita* and six related unnamed Australian species share morphological characters that differentiate them from all other members of this subfamily. The colour pattern of the spider, in particular its abdomen with a light lanceolate cardiac mark that cuts through a central dark diamond-shaped patch, is unique (Figs 1, 4A-E). In addition, male pedipalp morphology with distinctive shapes of basoembolic and tegular apophyses and the shape of the female epigyne with a large plate-like median septum separate the species from all other wolf spiders.

The purpose of this study is to establish a new genus, *Artoriopsis* **gen. nov.**, to accommodate *Artoriopsis expolita* **comb. nov.** as type species in addition to six new Australian species which are described here. A new subfamily, Artoriinae **subfam. nov.**, is proposed for wolf spider genera that are characterised by the presence of a basoembolic apophysis in the male pedipalp.

Methods

The treatment of *Artoriopsis* **gen. nov.** is based on an exhaustive examination of all major Australian museum collections as well as some type material deposited overseas. Descriptions are based on specimens preserved in 70% ethanol. Female epigynes were prepared for examination by submersion in lactic acid for 2hrs. For clarity, the illustrations of male pedipalps and female epigynes omit the setae. The morphological nomenclature follows Framenau (2006), with the exception of female genitalia (Sierwald 2000). All measurements are given in millimetres (mm).

Photographs were taken with a digital camera (G6; Canon Inc., Japan) that was connected to the optical tube of a stereo microscope (MZ6; Leica Microsystems GmbH, Wetzlar, Germany) with an optical adapter set (MaxView™ Plus; Scopetronix, Cape Coral, Florida, USA). Photographs were taken in different focal planes (ca. 10–15 images) and combined with the software package Helicon Focus 4.0.7 (Khmelik & Kozub 2006).

Abbreviations

Morphology

AE	anterior eyes
ALE	anterior lateral eyes
AME	anterior median eyes
OL	opisthosoma length
OW	opisthosoma width
PE	posterior eyes
PL	prosoma length
PLE	posterior lateral eyes
PME	posterior median eyes
PW	prosoma width
TL	total length

Collections

AM	Australian Museum, Sydney (Australia)
ANIC	Australian National Insect Collection, Canberra (Australia)
BMNH	Natural History Museum, London (England)
MAGNT	Museum and Art Gallery of the Northern Territory, Darwin (Australia)
MHNT	Museum National d'Histoire Naturelle, Troyes (France)
NMV	Museum Victoria, Melbourne (Australia)
QM	Queensland Museum, Brisbane (Australia)
QVMAG	Queen Victoria Museum and Art Gallery, Launceston (Australia)
SAM	South Australian Museum, Adelaide (Australia)
TMAG	Tasmanian Museum and Art Gallery, Hobart (Australia)
WAM	Western Australian Museum, Perth (Australia)
ZMB	Museum für Naturkunde, Zentralinstitut der Humboldt-Universität, Berlin (Germany)

Taxonomy

Family Lycosidae Sundevall, 1833
Artoriinae subfam. nov.

Type genus: *Artoria* Thorell, 1877. Here designated.

Diagnosis

Within the Lycosidae, the Artoriinae **subfam. nov.** are identified by the presence of a unique apophysis at the base of the embolus of the male pedipalp, the 'basoembolic apophysis', a term initially introduced by Framenau (2002). This apophysis can have a variety of shapes, for example thin and lamellar (e.g. in some *Diahogna* and *Tetralycosa*), very strongly sclerotised (e.g. *Artoria*), or it my have a finger-like protrusion (e.g. *Anoteropsis*). The function of this apophysis during copulation is currently unknown.

Description

Small (e.g. *Artoria*) to large (e.g. *Tetralycosa*) spiders, TL 2.5–25.0 mm. Females generally larger than males; dorsal prosoma profile horizontal in lateral view (Fig. 2A) (elevated cephalic area only in salt lake inhabiting, burrowing species of *Tetralycosa*); prosoma colouration very dark brown to very light brown; light median and marginal bands may be present; row of AME generally narrower than row of PME but in some genera (e.g. *Diahogna*, *Tetralycosa*) wider than row of PME; opisthosoma colouration variable, a light lanceolate cardiac mark is present but may be less distinct in light species (e.g. *Diahogna*); male pedipalp with basoembolic apophysis; median apophysis originating apically at tegulum and of varying genus-specific shape (e.g. spoon-shaped or bifurcate in *Artoria*, inverted L-shaped in *Anoteropsis*, hook-shaped in *Tetralycosa*); female epigyne very variable, a median septum absent (e.g. *Tetralycosa eyrei*-group) or very large (e.g. *Artoriopsis expolita* **comb. nov.**).

Distribution

Australasian, Oriental and Pacific regions. The area of distribution of the Artoriinae includes the Philippines and Hawaii in the North, from Hawaii southwards encompassing Samoa and New Zealand in the South and Australia with Western Australia as the westernmost outpost.

Remarks

The existence of a distinct Australasian/Pacific subfamily has been stressed in recent studies of Australasian wolf spiders (e.g. Framenau 2002, 2005, 2006, Framenau *et al.* 2006, Vink 2002, Vink *et al.* 2002, Vink & Paterson 2003). The monophyly of this clade on subfamily level was confirmed by a recent molecular phylogenetic analysis based on 12S rRNA, 28S rRNA and NADH1 genes including 70 world-wide wolf spider terminals (Murphy *et al.* 2006). This analysis placed the Artoriinae **subfam. nov.**, represented by nine species, as sister group to the Lycosinae and Pardosinae combined (Murphy *et al.* 2006).

The Artoriinae **subfam. nov.** are only found in the Australasian and neighbouring regions such as Southeast Asia and the Pacific. Their strong and diverse presence in Australia and New Zealand in combination with a presumed absence from South America, Africa and India suggest a post-Gondwanan origin after Australia, New Zealand and New Guinea separated from the other parts of the Gondwanan supercontinent in the early Paleocene (ca. 60 Mio years ago) (e.g. Sanmartín & Ronquist 2004).

Included genera

***Anoteropsis* L. Koch, 1878** (type species *A. flavescens* L. Koch, 1878). The genus *Anoteropsis* contains 24 species and is currently known from New Zealand only. The tegular apophysis is inverted L-shaped and the basoembolic apophysis may carry a finger-like apical protrusion (Vink 2002).

***Artoria* Thorell, 1877** (type species *A. parvula* Thorell, 1877). The genus *Artoria* has been reviewed for some Australian and South-East Asian species (Framenau 2002, 2004, 2005; Framenau & Hebets in press). However, it appears that the genus does not represent a monophyletic clade (Murphy *et al.* 2006). Recent examination of the holotype female of the type species of *Lycosula* Roewer, 1960, *L. thorelli* Berland, 1929 (BMNH1929.2.16.193, Samoa) and conspecific males revealed no significant differences in somatic and genital morphology to the type species of *Artoria*, *A. parvula*. In fact, both species are so similar that only a future detailed analysis incorporating additional material from other Pacific Islands to evaluate their morphological variability will show if they are indeed separate species. Roewer's (1960) diagnosis of *Lycosula* was based on ill-defined somatic characters, such as cheliceral dentition and eye pattern, which have been shown unreliable in many other cases. Consequently, *Lycosula* must be regarded as junior synonym of *Artoria* and all species included in *Lycosula* are here transferred to *Artoria*: *A. thorelli* (Berland, 1929), **comb. nov.**, *A. hebridisiana* (Berland, 1938), **comb. nov.** and *A. minima* (Berland, 1938) **comb. nov.**

***Artoriopsis* gen. nov.** (type species *Lycosa expolita* L. Koch, 1877). This Australian genus is revised here to include seven species.

***Diahogna* Roewer, 1960** (type species *Lycosa martensii* Karsch, 1878). The genus *Diahogna* is characterised by an apical extension of the tegulum and a V-shaped pattern on the dorsal shield of the prosoma. The genus is restricted to Australia and New Caledonia and includes four species (Framenau 2006).

***Lycosella* Thorell, 1890** (type species *L. tenera* Thorell, 1890). *Lycosella* currently includes four species and one subspecies from Sumatra and Hawaii (Platnick 2006). The inclusion of *Lycosella* in the Artoriinae is tentative, as I have not been able to examine the type species from Sumatra. However, the male genital morphology of recently examined Hawaiian *Lycosella* with a distinct basoembolic apophysis clearly places these species in the Artoriinae.

***Notocosa* Vink, 2003** (type species *Pardosa bellicosa* Goyen, 1888). The monotypic genus *Notocosa* is restricted to New Zealand (Vink 2002).

***Syroloma* Simon, 1900** (type species *S. major* Simon, 1900). The genus *Syroloma* currently includes two species from Hawaii, originally placed there by Simon (1900). The genus is characterised by unique lobe-like tarsal setae. Recent examination of a number of specimens of *S. major* from Hawaii revealed the presence of a basoembolic apophysis in the male pedipalp that undoubtedly places this genus in the Artoriinae.

***Tetralycosa* Roewer, 1960** (type species *Lycosa meracula* Simon, 1909). The genus *Tetralycosa* currently includes three species (Framenau *et al.* 2006). However, a forthcoming revision of this genus recognises a total of 13 species, all from Australia (unpublished data). The basoembolic apophysis is clearly present in all species of this genus, although it may be inconspicuous and thin. The tegular apophysis is hook-shaped. All species of *Tetralycosa* show a clear preference for environments with high salinity, such as seashores and salt lakes.

New Genus 1. An undescribed species of an unnamed genus was included in Murphy *et al.*'s (2006) molecular analysis as "New Genus 1 sp." Both molecular data and genital morphology place this genus that includes ca. ten unnamed species in the Artoriinae. A revision of this genus is forthcoming (J.-S. Yoo, personal communication).

New Genus 2. Three congeneric Australian species currently misplaced in *Trochosa* and *Lycosa* belong to the Artoriinae, *Trochosa alboguttulata* (L. Koch, 1878), *Trochosa tristicula* (L. Koch, 1877), and *Lycosa properipes* Simon, 1909. A further three undescribed Australian species complement this genus of which a revision is forthcoming.

***Artoriopsis* gen. nov.**

Type species: *Lycosa expolita* L. Koch, 1877. Designated here. Gender: feminine.

Etymology

The generic name combines the names *Artoria* and *Anoteropsis* representing the genera most closely related to *Artoriopsis* **gen. nov.**

Diagnosis

Artoriopsis **gen nov.** differs from all other genera within the Artoriinae by a combination of somatic and genitalic characters. The dorsal shield of the prosoma has distinct and wide median and marginal bands, and the opisthosoma has a unique colouration with a central black diamond divided by a light lanceolate cardiac mark (except in *A. whitehouseae* **sp. nov.**). The tegular apophysis terminates more or less straight and without widening (e.g. lobed or bifurcate in *Artoria*; hook-shaped in *Tetralycosa*; inverted L-shaped in *Anoteropsis*). The basoembolic apophysis is only weakly sclerotised and is narrowest at its base (e.g. strongly sclerotised and widest at the base in *Artoria*; round or triangular lamellar lobe in *Tetralycosa*; with apical finger in *Anoteropsis*). The median septum is a unique large plate covering the atrium of the epigyne (reduced in *A. eccentrica* **sp. nov.** and *A. joergi* **sp. nov.**).

Description

Small to medium-sized wolf spiders (TL 3.0–11.0 mm). Males smaller than females. Prosoma longer than wide, dorsal profile straight in lateral view (Fig. 2A). Head flanks in frontal view a gentle slope (Fig. 2B). Dorsal shield of prosoma dark brown with distinct light median and marginal bands. Anterior median eyes as large or slightly larger than anterior lateral eyes, row of anterior eyes narrower than row of posterior median eyes; row of anterior eyes slightly to strongly procurved. Chelicerae with three promarginal and three retromarginal teeth. Labium about as wide as long. Opisthosoma with light cardiac mark that cuts through a central diamond-shaped dark spot (except in *A. whitehouseae* **sp. nov.**). Leg formula IV>I>II>III (IV>I>III>II in *A. whitehouseae* **sp. nov.**). Spination of legs: Femur: generally 2 (*A. klausi* **sp. nov.**, *A. melissae* **sp. nov.**) or 3 dorsal, 1 apicoprolateral; patella: no spines (1 retrolateral in *A. whitehouseae* **sp. nov.**); tibia: 3 ventral pairs (apical pair rarely reduced), 0–2 prolateral; metatarsus: 3 ventral pairs, 1 apicoventral (prolateral and retrolateral spines in male *A. eccentrica* **sp. nov.** and *A. joergi* **sp. nov.**).

Tegulum deeply divided. Tegular apophysis located apically at tegulum, straight and pointing apically. Tegular apophysis without a basal lobe. Embolus originating prolaterally on palea and curving ventrally around it, long and slim (fairly stout in *A. eccentrica* **sp. nov.** and *A. whitehouseae* **sp. nov.**). Basoembolic apophysis sclerotised, basally narrower or as narrow as apically. Terminal apophysis of variable shape, generally with apical hook and connected by a thin lamella to the palea over its whole length. Base of terminal apophysis forms a groove for the resting embolus. Epigyne with a distinct, plate-shaped median septum that generally covers the atrium (reduced in *A. eccentrica* **sp. nov.** and *A. joergi* **sp. nov.**). Small, round or oval spermathecal heads. Spermathecal stalks narrower than heads of spermathecae.

Remarks

Species of the genus *Artoriopsis* **gen. nov.** can be found in mainland Australia and Tasmania, with the exception of the dry interior. Spiders in this genus appear to prefer open, vegetated (grassy, open forest) or sandy areas of moderate humidity.

Relationships

Phylogenetic relationships of *Artoriopsis* **gen. nov.** to the other artoriine genera are unclear. Molecular data place it either as sister group to a clade currently containing *Artoria*, *Anoteropsis* and *Notocosa* (Bayesian analysis), or to the above New Genus 1, both of which form the sister group to *Artoria*/*Anoteropsis/Notocosa* (parsimony) (Murphy *et al.* 2006). A close relationship of *Artoriopsis* **gen. nov.** to *Artoria* is supported by a similar structure of the basoembolic apophysis in comparison to all other Artoriinae. However, a comprehen-

sive phylogenetic analysis incorporating representatives of all genera of the Artoriinae **subfam. nov.** is required to resolve artoriine relationships including the paraphyly of *Artoria*.

Within the genus, *A. whitehouseae* **sp. nov.** has an unusual body colouration and an atypical shape of the terminal apophysis. It appears to be the most derived species, but without knowing the morphology of the female it is difficult to establish its position within this genus. The remaining six species fall into two groups, of which one group (*A. expolita* **comb. nov.**, *A. anacardium* **sp. nov.**, *A. klausi* **sp. nov.**, *A. melissae* **sp. nov.**) is characterised by the large, plate-like median septum of the epigyne. In the remaining group (*A. eccentrica* **sp. nov.**, *A. joergi* **sp. nov.**), the median septum is reduced to form a narrow central ridge. These two groups reflect some differences in somatic characters, for example the length of the light marginal bands on the prosoma. In the first group, they reach under the posterior lateral eyes (Fig. 1), whereas they are much shorter in *A. eccentrica* **sp. nov.** and *A. joergi* **sp. nov.** (Figs 4B–C).

Key to the species of *Artoriopsis* gen. nov.

Males

1 Abdomen uniformly dark olive grey with a single, irregular light median band (Fig. 4F); TL 4.8–6.1 .... *A. whitehouseae* **sp. nov.**
- Abdomen with light lanceolate cardiac mark that cuts through a dark more or less diamond-shaped patch centrally (Figs 1, 4A–E) 2
2 Tegular apophysis with hook-shaped terminal structure (Fig. 2C)..... *A. expolita* (L. Koch) **comb. nov.**
- Tegular apophysis without hook-shaped terminal structure 3
3 Tegular apophysis straight with a sharp, pointy tip and its apical edge with small tooth-like protrusion (Fig. 5A); TL 4.9–7.7 ..... *A. anacardium* **sp. nov.**
- Tegular apophysis without sharp, pointy tip and no protrusion on apical edge..... 4
4 Tegular apophysis massive, ca. half the cymbium length, in ventral view with parallel lateral borders over most of its length, tip bent dorsally i.e. towards the cymbium (Figs 6A–B); TL 4.0–5.30 .... *A. eccentrica*, **sp. nov.**
- Tegular apophysis much shorter than half the cymbium lengths, its lateral borders not parallel over most of its length 5
5 Tegular apophysis short, in ventral view with a distinct triangular tip (Fig. 8A), in lateral view there are two small ventral tips visible (Fig. 8B); TL 3.3–4.8 ..... *A. joergi*, **sp. nov.**
- Tip of tegular apophysis not triangular in ventral view 6
6 Tegular apophysis straight, narrowest at ca. two-thirds of its length and ending with blunt tip (Fig. 11A); 4.5–7.5 ..... *A. melissae*, **sp. nov.**
- Tegular apophysis slightly bent retrolaterally (i.e. towards the cymbium) in lateral view, narrowest basally (Figs 9A– B); TL 4.8–7.2 ..... *A. klausi*, **sp. nov.**

Females

(The female of *A. whitehouseae* **sp. nov.** is not known.)

1 Median septum a wide plate that covers most of the epigyne (Figs 2F&H; 5D; 9D; 11D)..... 2
- Median septum narrow, not completely covering epigyne (Figs 6D, 8D)..... 5
2 Median septum triangular or trapezoid, i.e. much wider posteriorly than anteriorly (Figs 2F, H); TL 5.0–10.5 ..... *A. expolita* (L. Koch) **comb. nov.**
- Median septum rectangular or oval 3
3 Median septum oval, with rounded posterior corners (Fig. 5D); TL 5.2–6.6..... *A. anacardium* **sp. nov.**
- Median septum rectangular (Figs 9D, 11D) 4

4 Lateral borders of median septum constricting anteriorly and running parallel to anterior border of epigyne (Fig. 9D); TL 6.6–9.0.....*A. klausi* **sp. nov.**
- Lateral borders of median septum diverging anteriorly (Fig. 11D); 5.2–9.0.....*A. melissae* **sp. nov.**
5 Median septum short, not reaching posterior border of epigyne (Fig. 8D); TL 4.2–6.3 ....*A. joergi* **sp. nov.**
- Median septum long, reaching posterior border of epigyne and widening centrally (Fig. 6D); TL 5.1–6.2.. .....*A eccentrica* **sp. nov.**

***Artoriopsis expolita* (L. Koch, 1877) comb. nov.**
(Figs 1–3)

Lycosa expolita L. Koch, 1877: 917–918, plate 79, figs 4, 4A. Hogg 1900: 77; Rainbow 1911: 267; Bonnet 1957: 2641.
Avicosa expolita (L. Koch). Roewer 1955: 236.
Schizocosa expolita (L. Koch). McKay 1973: 381.
Trochosa expolita expolita (L. Koch). McKay 1979: 286–288 (ad part), figs 3C–E.
Trochosa expolita impedita (Simon, 1909). McKay 1979: 288–289, figs 3G–I, N, O. (misidentification, not *Lycosa impedita sensu* Simon, 1909) (see Framenau 2005).
Trochosa expolita (L. Koch). McKay 1985: 86; Platnick 1989: 391.

Material examined

Lectotype (designated here). ♂, Brisbane [27°28'S, 153°01'E, Queensland] (MHNT AR0824).

Paralectotypes. 2♀, data as lectotype (MHNT AR0824); 1 ♀, Brisbane [27°28'S, 153°01'E, Queensland] (MHNT AR0825) [misidentification, the specimen labelled '*Lycosa expolita*' by L. Koch is *Artoria albopilata* (Urquhart, 1893) (see Framenau 2005)].

Other material examined. **AUSTRALIA Australian Capital Territory**: 1♀, Black Mountain, 35°16'S, 149°06'E (QM S64497); 3♀, 1juv., Cook, 23 Grylls Crs, 35°16'S, 149°04'E (WAM T553164–5). **New South Wales**: 1♀, Armidale, 10km N of, 30°23'S, 151°39'E (QM S64488); 1♀, Boona State Forest, 34°45'17"S, 145°58'01"E (AM KS67800); 2♀, Broken Hill, 31°58'S, 141°27'E (SAM NN16796–7); 1♀, Caringa Station, 18km SW Nevertire, 32°00'27"S, 147°37'26"E (AM KS76711); 5♂, 4♀, Coleambally irrigation area, 34°54'01"S, 145°59'53"E (AM KS67151, KS67156, KS67381, KS68390, KS67570); 1♀, Griffith, 15km SW, Flanagan's Farm, 34°24'34"S, 145°55'33"E (WAM T73502); 1♂, Gubatta, 33°34'27"S, 146°34'20"E (QM S50910); 4♂, 1♀, Hunter Valley, 32°44'S, 151°34'E (AM KS7321, KS7323); 1♀, Moorebank, Sydney, 33°56'S, 150°56'E (QM S29756); 2♂, 1♀, Pulletop, site 7P, 34°00'26"S, 146°03'08"E (QM S53685, S52896); 2♂, 1♀, Pulletop, site 9P, 34°01'07"S, 146°04'43"E (QM S52734, S52915); 1♂, 3juv., Pulletop, site 10P, 33°55'52"S, 146°06'20"E (QM S52818); 5♂, 1♀, Taleeban, site 7T, 33°57'39"S, 146°26'27"E (QM S52956, S53064, S53536); 1♀, Taleeban, site 4T, 33°57'42"S, 146°26'52"E (QM S53044); 1♂, Three Mile Dam, Mt Kosciuszko National Park, 35°53'S, 148°27'E (AM KS27958); 1♀, Wambianna Station, 7.5km NW of Gin Gin, 31°52'27"S, 148°01'36"E (AM KS76615); 1♀, Warrambungles National Park, turnoff to park, 39km NNW of Gilgandra, 31°25'09"S, 148°31'19"E (AM KS76614); 1♀, Yathong Nature Reserve, 32°35'58"S, 145°32'28"E (AM KS78970). **Queensland**: 1♀, Almaden, Chillagoe District, 17°21'S, 144°41'E (AM KS85141) (doubtful record, see Remark section below); 1♂, Brisbane, 27°28'S, 153°01'E, (BMNH 1919.9.18.337). **South Australia**: 1♀, Adelaide, 34°55'S, 138°36'E (SAM NN17386); 1♂, Athelstone, 34°54'S, 138°42'E (SAM NN16837); 4♂, 2♀, Adelaide, Cudlee Creek, 34°55'S, 138°36'E (WAM T6476–7, T6479–82); 4♂, 2♀, Bald Hill, 5.5km SSW, West Avenue Range Survey, 36°33'43"S, 140°00'20"E (SAM NN16936–41); 1♀, Banksia Park, 34°48'S, 138°44'E (SAM NN16832); 3♂, Belair National Park, 35°01'S, 138°39'E (SAM NN16810, NN16824–5); 1♀, Belalie Creek, Jamestown, 33°12'S, 138°36'E (SAM NN16819); 1♂, Bolivar, 34°46'S, 138°36'E (AM KS32125); 1♀, Carrieton, E side of township, 32°26'S, 138°32'E (SAM NN16872); 1♀, Charleston Conservation Park, 34°55'13"S, 138°56'49"E (SAM NN17387); 1♂, 1juv., Claremont Orchard, Waite Institute, 34°58'S, 138°37'E (SAM NN511–2); 1♀, 6juv., Clovercrest

(now Modbury North), 34°48'S, 138°40'E (SAM NN16818); 2♂, Collinsfield, 33°36'S, 138°13'E (SAM); 5♂, 3♀, Coromandel Valley, 1km S PO, 35°02'S, 138°38'E (SAM NN16809, NN16834–5, NN16861–5); 1♂, 1♀, Cox Scrub Conservation Park, 2km S of S tip, 35°22'02"S, 138°43'52"E (SAM NN16867–8); 65♂, 43♀, 81juv., Culburra, 35°48'S, 139°57'E (QM S64498, S64502); 1♂, 3♀, 1♀ with eggsac, 2juv., Currency Creek, 35°26'S, 138°45'E (SAM NN16814–7); 1♂, Darlington, 35°02'S, 138°33'E (SAM NN16839); 2♂, 1♀, Eckerts Creek, 34°19'27”S, 140°33'49”E (ANIC); 1♀, Gilberton, 34°54'S, 138°36'E (SAM NN16866); 1♀ with spiderlings, Kingscote, 35°39'S, 137°38'E (SAM NN16836); 1♂, 1♀, Kybybolite, 1.5km SE, 36°53'46"S, 140°56'16"E (SAM NN16857–8); 3♂, Loxton, Murray River National Park (Katarapko), 34°24'30"S, 140°34'10"E (SAM NN16821–3); 1♀ with spiderlings, Magill, 34°54'S, 138°40'E (SAM NN16820); 1♂, Marino, 35°02'30"S, 138°31'00"E (SAM NN16811); 4♀, Monarto Zoo, 35°06'54"S, 139°08'09"E (SAM NN17780–3); 2♂, 1♀, Mt Compass, 7km E, 35°20'43"S, 138°41'56"E (SAM NN16870, NN16924–5); 1♀, 12juv., Mt Gambier, SW of; unnamed cave on `Bernoolut` property, 37°58'S, 140°42'E (SAM); 1♂, 3juv., Mt Pleasant (no exact locality) (QM S64492); 1♀, Mundulla, 5.6km SSW, 36°24'38"S, 140°40'37"E (SAM NN16859); 1♂, 1♀, Nappyalla, 35°20'S, 139°07'E (SAM NN16829–30); 1♀, Naracoorte, 37°00'S, 140°38'E (SAM NN16813); 22♂, 3♀, Parawa, 2km WNW, 35°33'16"S, 138°20'5"E (SAM NN16712–20, NN16841–56); 1♀, Penola, 37°22'S, 140°50'E (SAM NN16860); 1♂, 2♀, Reny Island, 34°02'59"S, 140°42'53"E (ANIC); 1♀ with spiderlings, Salisbury East, 34°46'S, 138°39'E (AM KS32123); 1♀, Snug Cove, 5.5km SW, Kangaroo Island, 35°44'29"S, 136°48'45"E (SAM); 1♂, Valley View, Adelaide, `Dry Creek`, 34°55'S, 138°36'E (QM S64492); 1♀, Waite Institute, Urrbrae, 34°58'S, 138°37'E (SAM NN16812); 1♀, West Island, 35°36'S, 138°35'E (SAM NN16831); 3♂, 2juv., Whyalla, 33°02'S, 137°35'E (NMV K7801, K7797); 1♀, Windsor Gardens, 34°52'S, 138°39'E (SAM NN16838). **Tasmania**: 3♂, 3juv., Cleveland, Diprose Lagoon, 41°48'S, 147°22'E (QVMAG 13:44944–5); 1♂, Edgar Dam Campground, near Lake Peddar, 43°02'S, 146°21'E (QVMAG 13:43575); 1♀, Evandale, 41°34'S, 147°14'E (SAM NN16803); 1♀, Flinders Island, 39°52'S, 148°01'E (NMV K7802); 1♀, Georgetown, 41°06'S, 146°49'E (SAM NN16804); 2♂, 3♀, 6juv., Lake St Clair, Pump House Point, 42°06'S, 146°12'E (QVMAG 13:16722, 13:23789, 13:44349); 2♀, Launceston, 41°26'S, 147°08'E (QM S64499); 1♀, Launceston, 43 High St, 41°26'S, 147°08'E (QVMAG 13:44348); 1♂, Maggs Mountain, 41°45'S, 146°11'E (QVMAG 13:42193); 1♀, Margate, 43°01'S, 147°15'E (TMAG J2930); 2♂, 2♀, New Town, 42°51'S, 147°18'E (QM S64491); 1♀, Oatlands, 42°18'S, 147°22'E (TMAG J2932); 1♂, Risdon, 42°49'S, 147°19'E (QM S64495); 1♀, Sandy Bay, Churchill Avenue, 42°54'S, 147°19'E (TMAG J1920). **Victoria**: 1♂, labelled “Camp 3” (Victoria?) (NMV K7804); 1♂, 1♀, Victoria (no exact location) (SAM NN16798, NMV K7723); 1♂, 2♀, Avon River near Valencia Creek, 37°48'S, 146°57'E (NMV K7744–6); 2♂, Balwyn, 24 Yandilla St, 37°49'S, 145°04'E (NMV K7807–8); 16♂, 6♀, 6juv., Basin Road, 6km N of Baddaginnie, 36°32'27"S, 145°49'21"E (WAM T56451, T56455, T56462, T58403, T58432, T58441–2); 1♂, 1♀, Bendigo, 36°46'S, 144°17'E (NMV K7800); 1♂, 1♀ with spiderlings, 3juv., Booths Road, 0.2km S Murray Valley Hwy, 36°08'S, 145°11'E (NMV K9042); 1♀, Burromytis, Water Hole, Little Desert, 36°33'S, 141°38'E (QM S64500); 1♂, Carrol Road, 9km W of Benalla, site 15, 36°33'28"S, 145°53'05"E (WAM T56452); 1♂, 1♀, Eltham, 37°43'S, 145°08'E (NMV K7798); 1♀, 2♀ with eggsac, Glen Waverley, 37°53'S, 145°09'E (SAM NN16800–2); 2♂, 7juv., Goulburn River, 12km SSE Nathalia, 36°10'S, 145°14'E (NMV K9047); 1♀, Healesville, Coranderrk Reserve, 37°39'S, 145°32'E (NMV K7795); 1♀, Kotupna Barmah Road at Ellingtons Bridge, 36°05'S, 145°03'E (NMV K8721); 1♂, 1♀, Macedon (Hogg collection), 37°25'S, 144°34'E (BMNH 1924.3.1.1004–5); 1♂, 1♀, 4juv., McDonalds Road, 1.8km S Shepparton-Barmah Road, 36°04'S, 145°02'E (NMV K8716, K8732); 1♀, McLellands Road, 0.1km N Rathbones Road, 36°09'S, 145°14'E (NMV K8711); 1♂, Merbein, 34°10'S, 142°04'E (AM KS32464); 3♀, Metropolitan Farm, Werribee, Ryans Swamp, 37°59'S, 144°33'E (NMV K9094); 1♂, Mitchell Link Track, 200m W of Mitchell Track, 36°45'36"S, 144°49'23"E (NMV K9275); 2♂, Mitta Mitta River, 36°55'S, 147°37'E (NMV K7794); 1♂, Mt Ida Flora Reserve, 2.3km NW along Rodney Track from Dargile Track, 36°51'59"S, 144°43'09"E (NMV K9315); 1♀, 6juv., Murray Valley Hwy, 0.3km NNW Walshs Bridge, 36°06'S, 145°12'E (NMV K8693); 4♀,

11juv., Murray Valley Hwy, Deep Creek Crossing, 36°08'S, 145°11'E (NMV K8678, K8776, K9017); 1♀, Murray Valley Hwy, Skeleton Creek Crossing, 36°07'S, 145°11'E (NMV K9027); 1♂, 1♀, 1juv., Nunawading, 37°49'S, 145°11'E (NMV K7799, K7805); 1♂, 1♀, Point Cook, 37°54'S, 144°45'E (NMV K9092, K9100); 1♂, Point Cook, opposite carpark 1, 37°54'S, 144°45'E (NMV K9090); 1♀, 2juv., Pomfrets Road, 0.6km S Picola-Katunga Road, 36°00'S, 145°14'E (NMV K8764); 2♀, Rathbones Road, 3.0km E Booths Road, 36°09'S, 145°13'E (NMV K8728); 1♀, Rutherglen, caravan park, 36°03'28"S, 146°27'20'E (WAM T70200), 1♂, Rye, 9 Yolland St, 38°22'S, 144°50'E (NMV K7806); 1♀, Shepparton/Bendigo area, 36°22'S, 145°24'E (NMV K7803); 2♂, 1♀, Snake Gully (no exact location) (QM S64501); 1♀, St Arnaud, S of, 0.3km W along Boundary Road from Stoney Creek Track, 36°41'07"S, 143°13'17"E (NMV K9222); 2♀, 5juv., State Forest 1km SE Yambuna, 36°09'S, 145°01'E (NMV K8704); 1♀, Stony Creek, 38°36'S, 146°01'E (NMV K8259); 2♂, Werribee, 37°54'S, 144°39'E (QM S64490, S64496); 2♂, 2♀, Werribee Treatment farm, Ryans Swamp, 37°59'S, 144°33'E (NMV K9093); 1♀, Yarragon South, 38°13'S, 146°04'E (SAM NN16799). **Western Australia**: 1♀, Bunbury Hwy, 47 mile peg (WAM 71/1565); 4♂, 2♀, 1juv., Camel Lake Nature Reserve, site ST8, 34°15'50"S, 117°57'49"E (WAM T47213, T47698); 3♂, 1 juv., Chillmoney Road, N of Northampton, 28°06'11"S, 114°33'19"E (WAM T47703, T47705); 1♂, 1♀, "Chilwell", 120km E of Esperance, 33°45'S, 123°10'E (WAM T57561–2); 2♂, 2♀, 1juv., City Beach Primary School, 31°56'S, 115°45'E (WAM 69/857–61); 1♀, Collie, 33°22'S, 116°09'E (WAM 71/1566); 1♂, 2♀, Coolinup Nature Reserve, North, 33°34'2"S, 122°17'55"E (WAM T47700); 5♂, 2♀, Crowea, 34°28'S, 116°10'E (WAM T55250, T62420, T62425, T62428); 8♂, 3♀, Darlington, 31°54'S, 116°04'E (WAM T53537, T53688, T53696, T55324, T55326); 1♂, Dianella, 31°53'S, 115°52'E (WAM T51487); 5♂, 1♀, 1juv., Duke of Orleans Bay, 33°55'S, 122°35'E (WAM T56526–7, T57559, T57566, T65081, T71615); 1♂, Dumbleyung Lake, North, 33°21'29"S, 117°38'40"E (WAM T47704); 1♂, Grassmor, 29°53'S, 115°24'E (WAM T56198); 3♂, 1♀, 1♀ with spiderlings, Grass Patch, "Sieda", Fitzgerald Loc. 41, 33°14'S, 121°46'E (WAM T47244–5, T57577, T58363, T62457, T62460, T62487, T67915–6); 1♂, 1♀, Greenmount, 31°54'S, 116°03'E (WAM T53681); 1♂, Guildford, 31°54'S, 115°58'E (WAM T56442); 1♂, Hamersley, 31°51'S, 115°47'E (WAM T55336); 1♂, Karrinyup, 12 Pascoe St, 31°53'S, 115°46'E (WAM 99/83); 6♂, 5♀, Lake Bryde East Nature Reserve, Lake Bryde Road, 33°21'20"S, 118°54'26"E (WAM T47204); 1♂, Lake Bryde West Nature Reserve, Lake Bryde Road, 33°21'40"S, 118°48'14"E (WAM T47699); 1♂, Laverton, 28°37'S, 122°24'E (WAM T55298); 1♂, Manjimup, 34°14'S, 116°08'E (WAM T55229); WA, 1♀, Margaret River, 33°57'S, 115°04'E (AM KS87133) (listed in Isbister and Framenau 2004); 1♂, Miling-Moora Road near Great Northern Highway junction, 30°31'59"S, 116°20'16"E (WAM T65652); 1♀, Mt Hawthorn, 144 Matlock St, 31°55'S, 115°50'E (WAM T51243); 5♂, 4♀, 2♀ with eggsac, 2juv., Nedlands, Edward St, 31°59'S, 115°48'E (WAM 98/2172–5, T62331, T62331, T62651, T65084, T65099, T65596); 1♂, 1juv., Nindilbillup Road, SE of Lake King, 33°17'16"S, 120°06'18"E (WAM T47702); 1♀, Ogalvie Road West, 27°59'29"S, 114°11'40"E (WAM T47706); 3♂, 1♀, Parmelia, 32°15'S, 115°47'E (WAM T55255–6, T55428, T55492); 1♀, 2juv., Pinjarra, 32°38'S, 115°52'E (WAM 71/1567–9); 27♂, 16♀, 4juv., Rossmoyne, 32°02'22"S, 115°45'39"E (WAM 69/846, 69/862–4, 69/866, 69/870, 71/99–105, 71/131, 71/141–2, 71/147–50, 71/259–62, 71/423–36, 71/548–9, W5781, T47696, QM S64489); 1♂, South Griffith, North, W of Scaddan, 33°27'13"S, 121°15'01"E (WAM T47697); 1♀, Salter Point, 32°01'S, 115°52'E (WAM T55254); 1♂, Stirling Range National Park, East, 34°17'57"S, 118°04'19"E (WAM T47701); 1♀, Thomas River, 23km NW by W of Mt Arid, Cape Arid National Park, 33°51'S, 123°01'E (ANIC); 1♂, Tinglewood Lodge, 35°00'S, 116°39'E (WAM T48099); 1♂, 1♀ with eggsac, Woogenilup, 7.5km North of, 34°32'S, 117°50'E (WAM 98/2200–1); 1♂, 1♀, Yallingup Brook catchment, Reid's property, head S arm of brook, 33°38'16"S, 115°04'03"E (WAM T55253).

Diagnosis

Males of *A. expolita* **comb. nov.** are easily distinguished by the unique, hook-shaped apical section of the tegular apophysis of the male pedipalp. The female epigyne is similar to that of *A. anacardium* **sp. nov.**, *A.*

klausi **sp. nov.**, and *A. melissae* **sp. nov.**, however, the median septum is distinctly wider posteriorly giving it a triangular or trapezoid shape.

Redescription

Male (based on NN16841).

Prosoma, dorsal shield (Fig. 1). Dorsal profile in lateral view straight (Fig. 2A); brown, head flanks darker; indistinct dark radial pattern; very distinct light brown median and submarginal bands, the latter extending under the PLE; dense white setae in median and submarginal bands and in anterior prosoma half behind dark head flanks; otherwise a cover of less dense black setae; numerous black bristles in eye region, lateral of PE and in median band anteriorly of fovea; six long bristles below AE in two groups of three; one long black bristle between AME.

Eyes (Fig. 2B). Row of AE procurved, narrower than row of PME.

Sternum. Dark brown, shiny; grey setae and black bristles that are longer towards margins.

Labium. Dark brown, shiny; front end truncated and white.

Chelicerae. Brown-black; black macrosetae that are longest medially in basal half; three promarginal teeth, the basal smallest; three retromarginal teeth of similar size, the median slightly smaller.

Pedipalp (Figs 2C–E). Tegular apophysis with a distinct terminal hook, sperm duct forms numerous serpentines in prolateral half of tegulum (Fig. 2C); embolus long and slender, terminal apophysis with an apical hook (Fig. 2E).

Opisthosoma (Fig. 1). Olive-grey; distinct yellow lanceolate cardiac mark in anterior half, which bisects a black diamond-shaped patch in the centre of the opisthosoma; a wider, less distinct light-brown median band in posterior half is outlined with narrow, black pigmented lines; colouration of setae corresponds to the colour of the animal, some black macrosetae over whole opisthosoma. Venter light olive-grey, with indistinct lateral stripes; dense yellow-white setae, fewer black macrosetae. Spinnerets dark brown.

Legs. Leg formula IV>I>II>III; brown, dark pigmented areas form annulations in particular laterally. Spination of leg I: Femur: 3 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs, 1 prolateral in apical half; metatarsus: 3 ventral pairs, 1 apicoventral.

Female (based on SAM NN16838).

Prosoma, dorsal shield. As male, slightly lighter, dark areas of dorsal shield of prosoma are, in contrast to the male, also covered with white setae, including the head and posterior flanks.

Eyes, sternum and *labium*. As male.

Chelicerae. Dark brown, basally with white setae; few black bristles; dentition as male.

Opisthosoma. As male, venter somewhat darker centrally. Spinnerets brown, not as dark as in male.

Epigyne, ventral view (Figs 2F, H). Median septum forms a trapezoid plate that widens posteriorly.

Epigyne, dorsal view (Fig. 2G). Spermathecal stalks twisted, spermathecal heads elongated bowls.

Legs. Leg formula IV>I>II>III; light brown, laterally some darker annulations. Spination of leg I: Femur: 3 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs; metatarsus: 3 ventral pairs, 1 apicoventral

Measurements. ♂, SAM NN16841 (♀, SAM NN16838): TL 9.0 (8.1), PL 4.8 (3.8), PW 3.6 (2.7). Eyes: AME 0.11 (0.11), ALE 0.11 (0.08), PME 0.29 (0.27), PLE 0.26 (0.22). Row of eyes: AE 0.72 (0.72), PME 0.80 (0.77), PLE 1.09 (0.93). Sternum (length/width) 2.1/1.65 (1.65/1.35). Labium (length/width) 0.69/0.80 (0.57/0.60). OL 4.7 (4.5), OW 2.7 (3.3). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 1.58 + 1.42 + – + 1.35 = 4.35, I 3.30 + 3.98 + 2.25 + 1.73 = 11.26, II 3.00 + 3.60 + 2.25 + 1.65 = 10.50, III 2.70 + 3.15 + 2.25 + 1.50 = 9.60, IV 3.75 + 3.25 + 4.35 + 1.95 = 13.30 (Pedipalp 1.28 + 1.20 + – + 0.98 = 3.46, I 2.33 + 2.78 + 1.58 + 1.28 = 7.97, II 2.10 + 2.70 + 1.50 + 1.13 = 7.43, III 2.10 + 2.25 + 1.43 + 1.13 = 6.91, IV 2.70 + 3.15 + 2.70 + 1.35 = 9.90).

Variation. ♂(♀) (range, mean ± s.d.): TL 4.50–10.50, 7.22 ± 1.31; PL 2.55–4.80, 3.88 ± 0.61; PW 1.88–3.60, 2.83 ± 0.46; *n* = 23 (TL 5.10–10.05, 7.58 ± 1.35, *n* = 27; CL 2.55–4.80, 3.65 ± 0.44, *n* = 28; CW 1.80–3.45, 2.68 ± 0.41; *n* = 28).

FIGURE 1. Male of *Artoriopsis expolita* comb. nov., the type species of *Artoriopsis* gen. nov., from Miling-Moora Road near Great Northern Highway junction, Western Australia (WAM T65652). TL 8.75 mm.

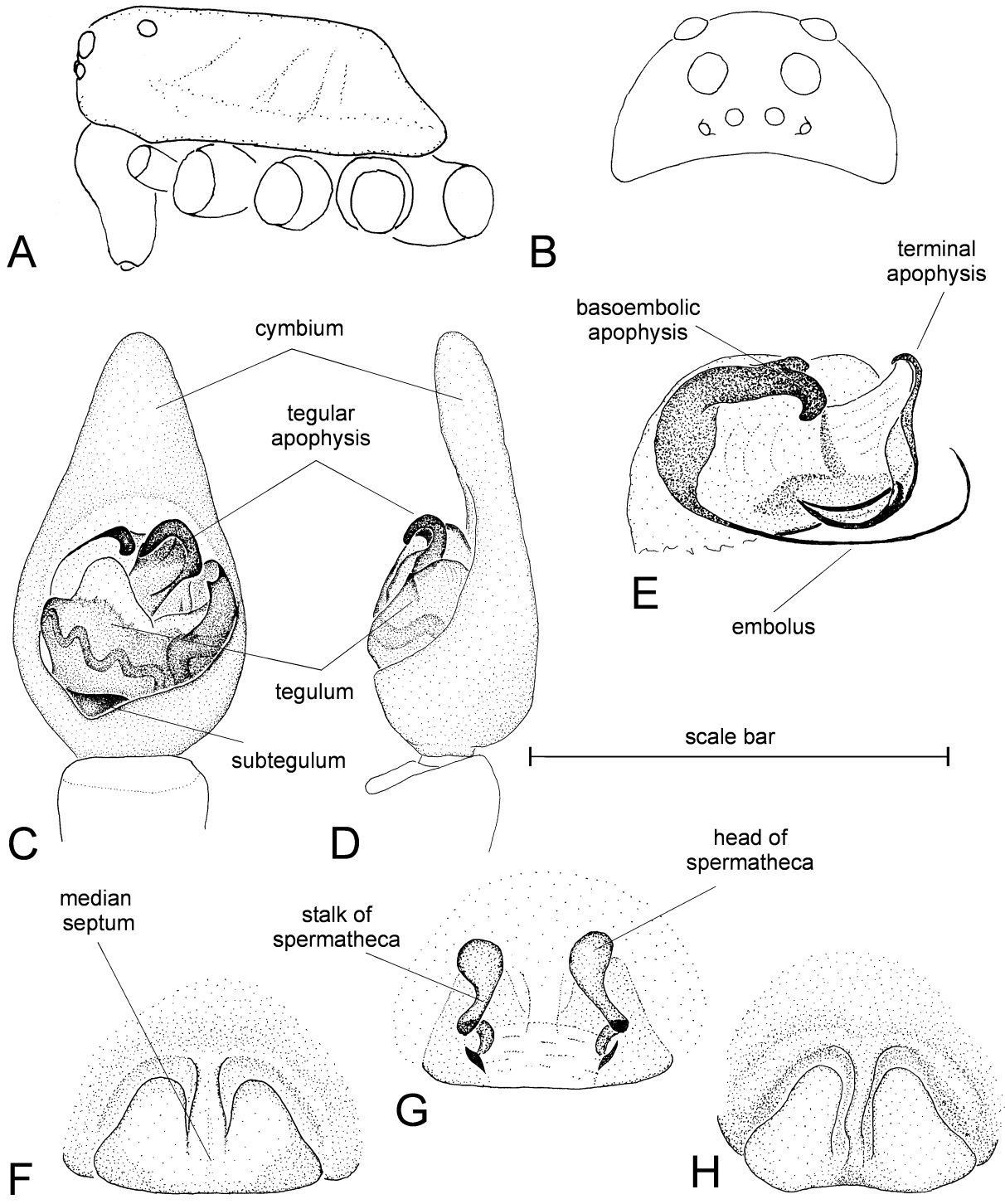

FIGURE 2. *Artoriopsis expolita* L. Koch. Male (SAM NN16841 from 2km WNW of Parawa, South Australia) and females (lectotype MHNT AR824 from Brisbane, Queensland, and SAM NN16838 from Windsor Gardens, South Australia); *A* male, prosoma profile in lateral view; B male eye pattern in frontal view; C, D left male pedipalp, ventral and lateral view; E left male pedipalp, apical part of bulb; F female epigyne, ventral view (MHNT AR824); G, H female epigyne, ventral and dorsal view (SAM NN16838). Scale bar: A 5.05 mm; B 2.40 mm; C, D 0.40 mm; E–H 0.30 mm.

Distribution

Mainland Australia south of 25ºS latitude, and Tasmania (Fig. 3). The record from Almaden, near Chillagoe (North Queensland, AM KS85141) is very doubtful. The material from Almaden also contains specimens

of *Lycosa godeffroyi* (L. Koch, 1865) (AM KS85608) and an undescribed *Tasmanicosa* Roewer, 1959 (AM KS 86198), both of which, as *A. expolita*, have never been found that far North (unpublished data).

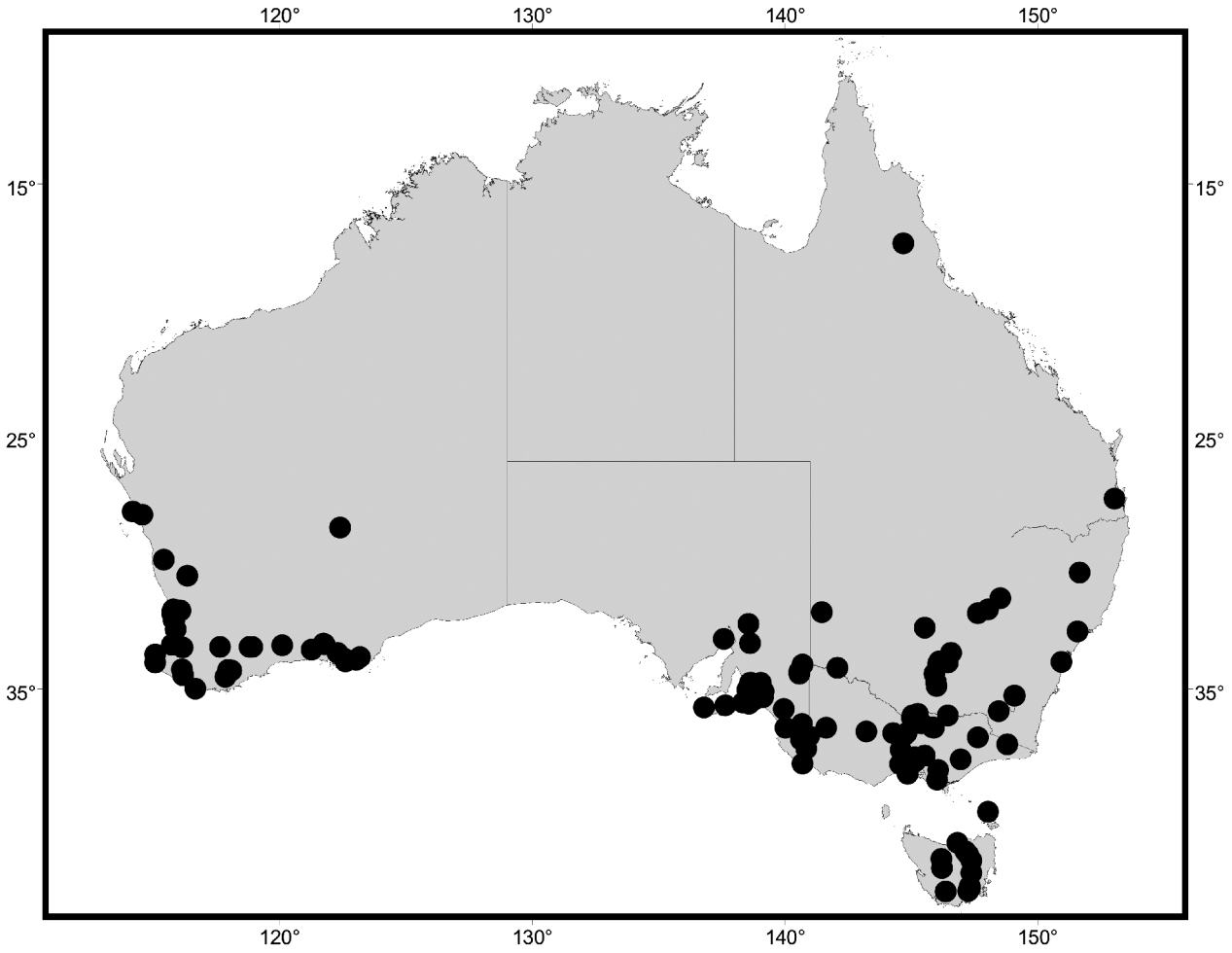

FIGURE 3. Records of *Artoriopsis expolita* (L. Koch) **comb. nov.** in Australia. The record from northern Queensland is very doubtful. It was found with other species, e.g. *Lycosa godeffroyi* L. Koch, 1865, which also never have been found that far North.

Life history and habitat preferences

Most adult spiders have been found between October and January, females with eggsac in November and December and females carrying spiderlings in December and January. Adult spiders are rarely found between March and August (see also McKay 1979).

Artoriopsis expolita **comb. nov.** is a common spider in open, moderately moist environments and can frequently be found near creeks and rivers, in fore dunes, on pasture and suburban lawns.

Since *A. expolita* **comb. nov.** is a common spider in disturbed, open, environments such as suburban lawns and pasture, contacts with humans are likely. A number of bites of this species have been reported (TMAG J2932, SAM NN16832, SAM NN16837, WAM T55336) but in all cases reactions were only minor, with swelling and redness around the bite area, if any reaction was recorded at all (see also Isbister and Framenau 2004).

Remarks

McKay (1979) revised *Artoriopsis expolita* **comb. nov.** to then include two subspecies, *Trochosa expolita expolita* based on a syntype male of *Lycosa expolita* from Brisbane, Queensland (BMNH 1919.9.18.337) and *T. expolita impedita* (Simon, 1909) based on the holotype of *Lycosa impedita* from Gooseberry Hill, Western Australia (ZMB 11076). *Trochosa expolita impedita* has since been transferred to *Artoria* Thorell, 1877 (Framenau 2005). The material illustrated for both subspecies can only partly be attributed to the true *A. expolita*; the reminder (McKay 1979, figs 3B, F, J–M) represents *A. melissae* **sp. nov.** (see below).

There are some inconsistencies between the type material listed by L. Koch (1877) in the original species description of *Lycosa expolita* and the material present in European collections. L. Koch (1877) lists under the description of the male: 'From Port Denison; kindly passed on to me by Mr. Eugène Simon' (from German, p. 918). Under the description of the female he noted: 'Three specimens from Brisbane in the museum of Troyes, kindly passed on to me by Mr. Jules' (from German, p. 919) not clearly indicating if all these three 'specimens' represented females. The collection of the MHNT (Troyes) contains two vials, both originally labelled *Lycosa expolita*. One (AR0824) holds one female and two males of *A. expolita* **comb. nov.** and the locality seems to be Brisbane, as the fragment '…is…', is still recognizable on the label. The second vial (AR0825), also labelled '*Lycosa expolita*, Brisbane' holds a female of *Artoria albopilata* (Urquhart, 1893), indicating that L. Koch misidentified this specimen. McKay (1979) regarded a male from Brisbane in the BMNH (1919.9.18.337) as syntype, however, this is doubtful as L. Koch (1877) would possibly have labelled this specimen 'Port Denison' as stated in his species description. Therefore, the whereabouts of the male syntype described by L. Koch (1877) is unclear.

To fix the taxonomic concept of *A. expolita* **comb. nov.**, the female syntype from the MHNT is here designated as lectotype as its description and depository undoubtedly agree with L. Koch's (1877) original description of *A. expolita* **comb. nov**.

Due to the fragile and bleached condition of the type material, *A. expolita* **comb nov.** is here redescribed based on two representative specimens from the SAM.

***Artoriopsis anacardium* sp. nov.**
(Figs 4A, 5, 7)

Material examined

Holotype. ♂, Wildman River Cashew Plantation, `86 area [12°18'S, 132°03'E, Northern Territory], 10 August 1989, pitlight, M. Malipatil, W. Houston (MAGNT A846).

Paratypes. 1♂, Wildman River Cashew Plantation, `85 area [12°18'S, 132°03'E, Northern Territory], 12–13 July 1989, pitlight, M. Malipatil, W. Houston (MAGNT A844); 1♀, Wildman River Cashew Plantation [12°18'S, 132°03'E, Northern Territory], 7 December 1988, pitlight, M. Malipatil, W. Houston (MAGNT A845).

Other material examined. **AUSTRALIA. Northern Territory:** 3♂, 2♀, Wildman River Cashew Plantation, 12°18'S, 132°03'E (MAGNT A841–3). **Queensland**: 1♂, 1♀, Mt Molloy, 16°42'S, 145°23'E (QM S61933).

Etymology

The specific epithet is derived from the generic name of the Cashew, *Anacardium occidentale*, as the holotype was found in a Cashew plantation. It is a noun in apposition.

Diagnosis

The tegular apophysis of the male pedipalp of *A. anacardium* **sp. nov.** is similar to that of *A. melissae* **sp.**

nov.. However, in *A. anacardium* **sp. nov.** it continuously narrows to end in a sharp tip, whereas it is constricted at two thirds of its length in *A. melissae* **sp. nov.**, widens again and terminates in a blunt tip. The female epigyne is very similar to that of *A. klausi* **sp. nov.** and *A. melissae* **sp. nov.**, however the median septum appears much rounder than in the latter two species in which it forms a rectangle.

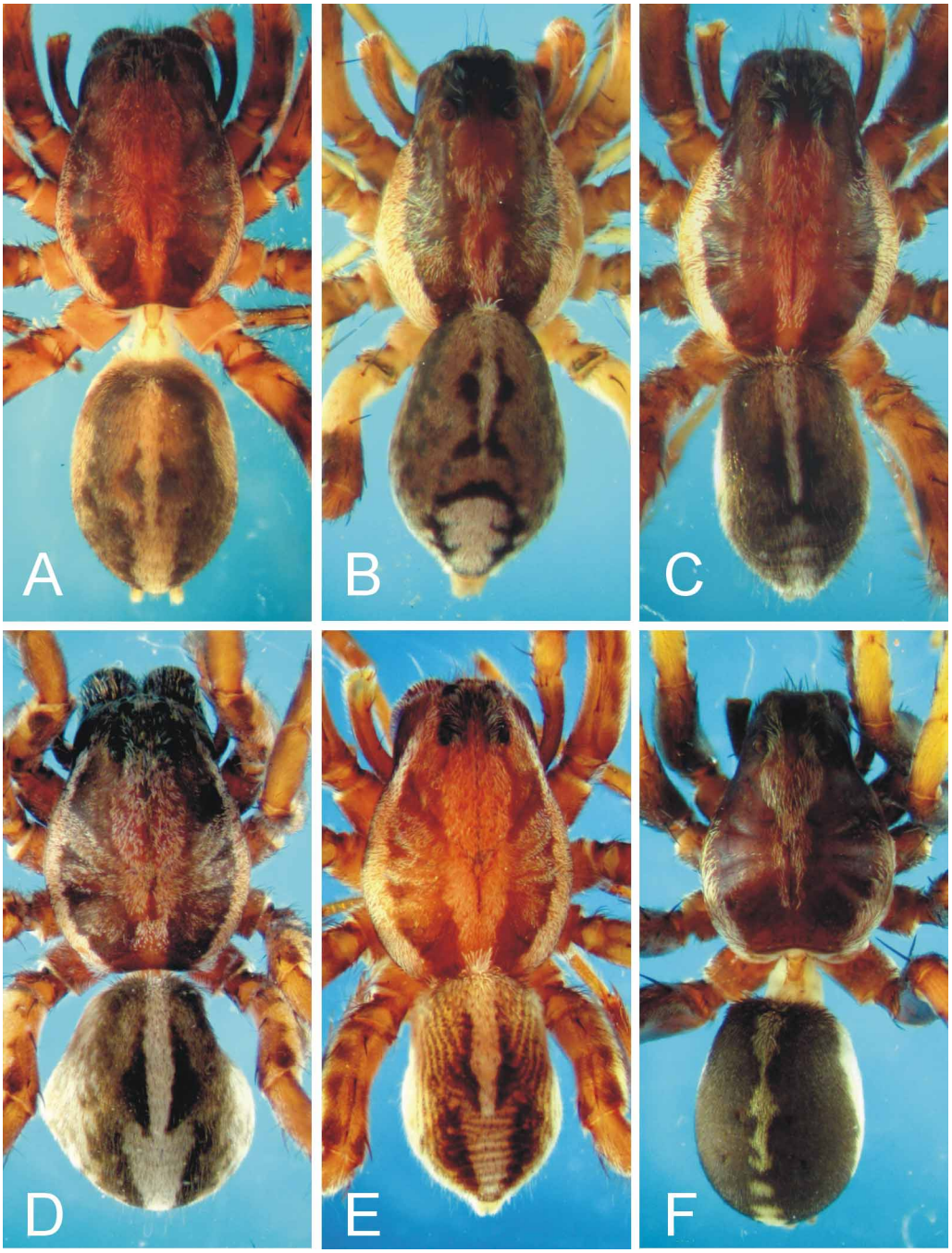

FIGURE 4. *Artoriopsis* **gen nov.:** A *A. anacardium* **sp. nov.**, holotype male (MAGNT A846, from Wildman River Cashew Plantation, Northern Territory); B *A. eccentrica* **sp. nov.**, holotype male (WAM 99/48, from Torndirrup National Park, Western Australia); C *A. joergi* **sp. nov.**, holotype male (SAM NN13529, from Albany, Western Australia); D *A. klausi* **sp. nov.**, holotype male (SAM NN14222, from Monarto Zoological Gardens, South Australia); E *A. melissae* **sp. nov.**, male paratype (AM KS16960, from Newnes Plateau, New South Wales); F *A. whitehouseae*, **sp. nov.**, male holotype (QM S74132, from Jimbour, Kents Refuge, Queensland). TL A 7.50 mm, B 4.35 mm, C 4.65 mm, D 6.45 mm, E 6.70 mm, F 5.83 mm.

Description

Male (based on holotype; MAGNT A846).

Prosoma, dorsal shield (Fig. 4A). Dark brown, darker indistinct radial pattern; yellow-brown median band in particular distinct in posterior half; distinct yellow-brown submarginal bands; white setae on whole dorsal shield of the prosoma, in particular dense in median and submarginal bands; few black bristles in median band; one long bristle below AME, six long bristles below AME.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Shiny yellow; grey pigmentation in particular towards margins.

Labium. Dark brown, front end truncated and white.

Chelicerae. Very dark brown; silver-white setae in particular in basal half; few longer black bristles medially; three promarginal teeth with the median largest, three retromarginal teeth with the apical smallest.

Pedipalps (Figs. 5A–C). Tegular apophysis straight with sharp tip and apical protrusion along half its length (Fig. 5A); embolus long and slender, curved apically; terminal apophysis with basal groove in which the embolus rests (Fig. 5C).

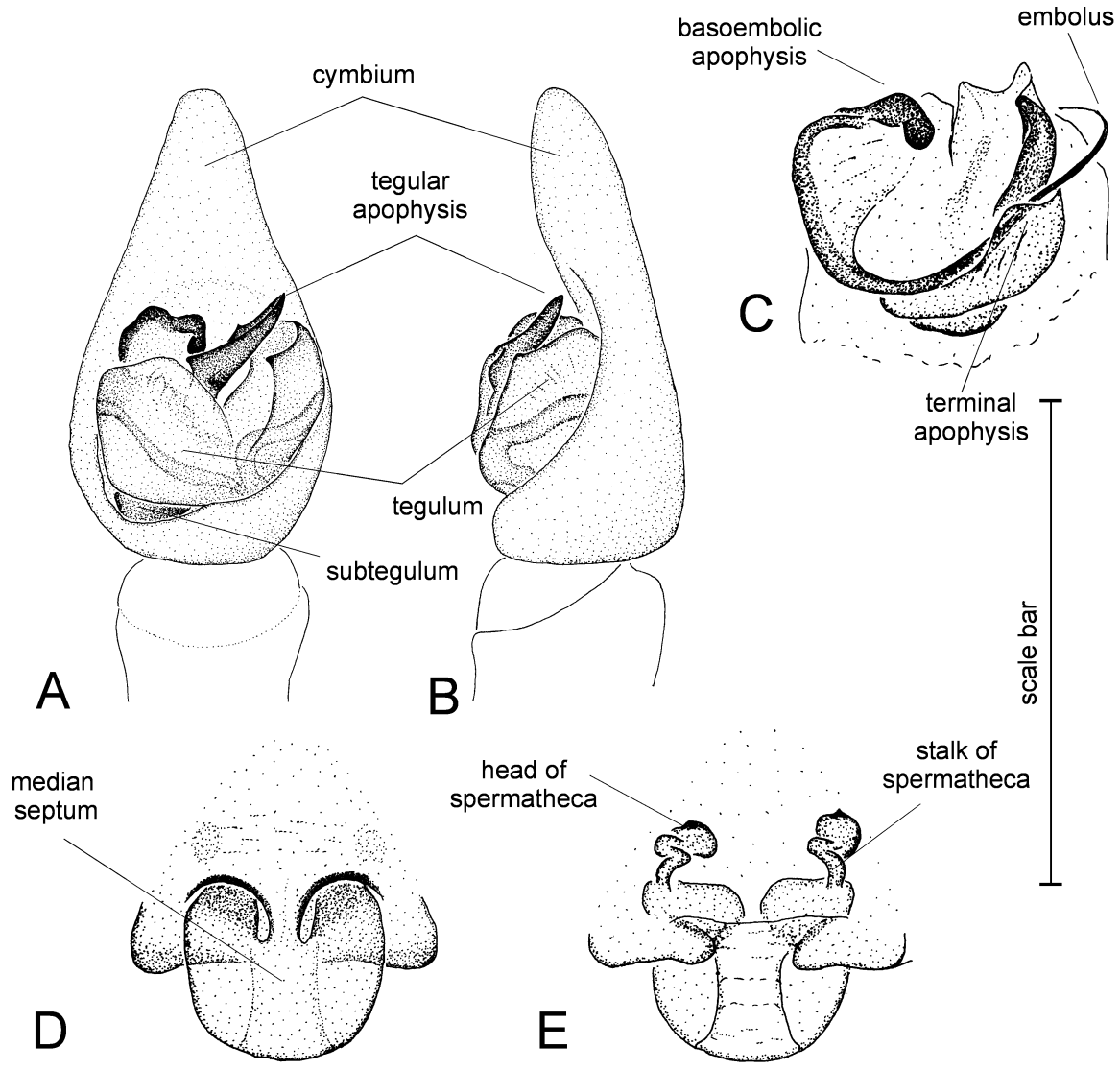

FIGURE 5. *Artoriopsis anacardium* **sp. nov.** Male holotype (MAGNT A846, from Wildman River Cashew Plantation, Northern Territory) and female paratype (MAGNT A845, same location); A, B left male pedipalp, ventral and lateral view; C left male pedipalp (paratype MAGNT A844), apical part of bulb; D, E female epigyne, ventral and dorsal view. Scale bar: A, B 0.40 mm; C 0.20 mm; D, E 0.30 mm.

Opisthosoma (Fig. 4A). Dark olive-grey; yellow lanceolate cardiac mark cutting through black diamond-shaped patch, both in a wider dark yellow median band that continues into posterior half of opisthosoma; covered with silver-white setae and fewer black bristles; white setae in lanceolate cardiac mark; black setae in diamond-shaped patch. Venter: yellow, with two indistinct darker longitudinal bands; white setae and fewer black bristles. Spinnerets: Yellow, the anterior pair basally darker.

Legs. Leg formula IV>I>II>III; brown, with dark patchy annulations that are in particular distinct on leg III and IV; spination of leg I: Femur: 3 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs, metatarsus: 3 ventral pairs, 1 apicoventral.

Female (based on paratype; MAGNT A845).

Prosoma, dorsal shield. Brown, with indistinct darker radial pattern; indistinct light brown median band; distinct but narrow yellow-brown submarginal bands; very sparse cover of short black setae; white setae in median and submarginal bands; short black bristles in and close to median band; one long bristle below AME, six long bristles below AME.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Yellow-brown; indistinct radial pattern of darker pigmentation; margins with grey pigmentation; long brown bristles in particular towards margins.

Labium. Brown, front end truncated and white.

Chelicerae. Dark reddish-brown; few silver-white setae and some black bristles medially; three promarginal teeth with the median largest, three retromarginal teeth of similar size.

Opisthosoma. Colour pattern less distinct than in males; olive grey; yellow lanceolate cardiac mark cutting through a diamond-shaped patch; wide lighter median band in posterior half; brown setae; yellow setae in heart mark; black setae in diamond-shaped patch. Venter: Yellow, with two indistinct grey longitudinal bands; white setae and fewer black bristles. Spinnerets: Light brown.

Epigyne, ventral view. Oval median septum (Fig. 5D).

Epigyne, dorsal view. Small, globular spermathecal heads; stalks of spermathecae sharply kinked and attached posteriorly to spermathecae (Fig. 5F).

Legs. Leg formula IV>I>II>III; femora brown with grey pigmentation; tibiae and metatarsi in particular of leg IV with two dark annulations; spination of leg I: Femur: 2 dorsal, 1 apicoprolateral; tibia: 2 ventral pairs, of apical pair only the prolateral present; metatarsus: 3 ventral pairs, 1 apicoventral.

Measurements. ♂ holotype, MAGNT A846 (♀ paratype, MAGNT A845): TL 7.5 (4.9), PL 3.75 (2.55), PW 2.55 (1.95). Eyes: AME 0.09 (0.07), ALE 0.09 (0.07), PME 0.26 (0.20), PLE 0.20 (0.17). Row of eyes: AE 0.59 (0.47), PME 0.69 (0.54), PLE 0.86 (0.69). Sternum (length/width) 1.73/1.35 (1.2/0.9). Labium (length/width) 0.4/0.4 (0.4/0.4). OL 3.0 (2.55), OW 1.35 (1.86). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 0.80 + 1.58 + – + 0.94 = 3.32, I 2.06 + 2.69 + 1.46 + 1.12 = 7.33, II 1.95 + 2.40 + 1.40 + 1.06 = 6.81, III 1.86 + 2.03 + 1.69 + 0.92 = 6.50, IV 2.43 + 3.15 + 2.72 + 1.23 = 9.53 (Pedipalp 0.83 + 0.83 + – + 0.63 = 2.29, I 1.66 + 1.95 + 1.12 + 0.80 = 5.53, II 1.46 + 1.77 + 1.03 + 0.77 = 5.03, III 1.34 + 1.40 + 1.20 + 0.69 = 4.63, IV 2.00 + 2.29 + 2.03 + 0.92 = 7.24).

Variation. ♂(♀) (range, mean ± s.d.): TL 4.95–7.65, 6.25 ± 0.93; CL 3.00–3.75, 3.30 ± 0.32; CW 2.10–2.55, 2.25 ± 0.16; *n* = 6 (TL 5.25–6.60, 5.80 ± 0.71, CL 2.55–2.85, 2.65 ± 0.17, CW 1.80–2.10, 1.95 ± 0.15; *n* = 3).

Distribution

Tropical Northern Territory and Queensland (Fig. 7).

Life history and habitat preferences

Most adults of *A. anacardium* **sp. nov.** have been found between March and August suggesting that adults are most active at the end of the wet season.

***Artoriopsis eccentrica* sp. nov.**
(Figs 4B, 6, 7)

Material examined

Holotype. ♂, Torndirrup National Park [35°10'S, 117°50'E, Western Australia], 13–20 July 1983, pitfall trap, P.H. Dyer, J. Lyon, 2-year-burn (WAM 99/48).

Paratypes. 5♂, same data as holotype (WAM 99/49–53); 1♀, Burma Road Reserve, 30km E Walkaway [28°56'S, 115°05'E, Western Australia], 15 September 1986, R.P. McMillan (WAM T58394).

Other material examined. **AUSTRALIA. South Australia**: 1♀, Cortina and Pitlochry Stations, Coorong, 36°19'S, 139°44'E (SAM NN13494); 1♂, Franklin Island, West, 32°27'S, 133°39'E (SAM NN16805); 6♂, 2♀, Keilira Station, 13km N, 36°37'S, 140°11'E (SAM NN13555–62); 4♂, Loxton, 22.5km SW of, 34°33'S, 140°22'E (SAM NN13489–92); 2♂, Loxton, 22km SW of, 34°33'45"S, 140°22'00"E (SAM NN13487–88); 1♂, Loxton, 20km S of, 34°37'50"S, 140°36'017"E (SAM NN13486); 1♂, Ngarkat Conservation Park, 35°47'S, 140°36'E (SAM NN13493); 2♀, Three Mile Beach, N of Beachport, 37°29'S, 140°00'E (SAM NN13495). **Victoria**: 2♂, Phillip Island, 38°28'S, 145°13'E (QM S61936). **Western Australia**: 1♀, Brentwood, 32°02'S, 115°51'E (T55205); 1♀, Burma Road Reserve, 30km E Walkaway, 28°56'S, 115°05'E (WAM T58428); 1♂, Garden Island, 32°12"S, 115°40"E (QM S61935); 1♂, Holland Rock Nature Reserve, adjacent to, 33°21'35"S, 118°44'50"E (WAM T58422); 1♂, Perth Airport, 31°58'05"S, 115°58'05"E (WAM T56404); 11♂, 2♀, Torndirrup National Park, 35°10'S, 117°50'E (WAM 99/49–61).

Etymology

The specific epithet is an adjective in apposition derived from *eccentricus* (Latin – unusual), and refers to the unusual shape of the tegular apophysis of the male pedipalp.

Diagnosis

The massive tegular apophysis of *A. eccentrica* **sp. nov.** is unique within the genus. In ventral view, it is of the same width along its whole length and its apical tip bends dorsally towards the cymbium. Likewise, the median septum of the female is very distinctive within the genus. It is very narrow with a diamond shaped centre.

Description

Male (based on holotype; WAM 99/48).

Prosoma, dorsal shield (Fig. 4B). Brown with distinct light brown median and submarginal bands; median band widest behind the eyes, continuously narrowing posteriorly; covered with white setae that are in particular dense in median and submarginal bands and between eyes; few black setae mainly in posterior half; few black bristles medially in front of fovea; black bristles between eyes; one long black bristle between AME, two long black bristles below AME.

Eyes. Row of AE < row of PME; row of AE procurved.

Sternum. Dark shiny brown with darker pigmentation; few black bristles of increasing length towards margins.

Labium. Brown; front end truncated and white.

Chelicerae. Brown, apically with dark pigmentation; few silver-grey setae basally and some longer black bristles mainly medially; three promarginal teeth with the median largest, three retromarginal teeth of similar size.

Pedipalp (Figs 6A–C). Massive tegular apophysis with tip that bends dorsally into the cymbium (Fig. 6A); embolus stout with apically bent and sharp tip; terminal apophysis drawn out apically with a twisted tip (Fig. 6C).

Opisthosoma (Fig. 4B). Light brown, laterally dark olive-grey; distinct yellow lanceolate cardiac mark in

anterior half cutting through a long diamond-shaped black patch and a triangle at its posterior end; light yellow pear-shaped patch in posterior half that is bordered with a black frame; covered with silver-grey setae, except in yellow cardiac mark (white setae) and black patches (black setae); few black macrosetae. Venter: Light brown with few small irregular dark patches laterally; silver-white setae. Spinnerets: Yellow-brown.

Legs. Leg formula IV>I>II>III; very light brown; femora apically dark grey annulated and indistinctly annulated basally; other segments irregularly annulated; spination of leg I: Femur: 3 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs, 2 prolateral; metatarsus: 3 ventral pairs, 2 prolateral; 1 apicoretrolateral.

Female (based on paratype; WAM T58394).

Prosoma, dorsal shield and *eyes*. As male.

Sternum. Shiny grey-brown with yellow pigmentation; black macrosetae of increasing length towards margins.

Labium. Dark brown; front end truncated and white.

Chelicerae. Very dark brown; few silverish setae in basal half; black bristles medially; three promarginal teeth with the median one largest, three retromarginal teeth of similar size.

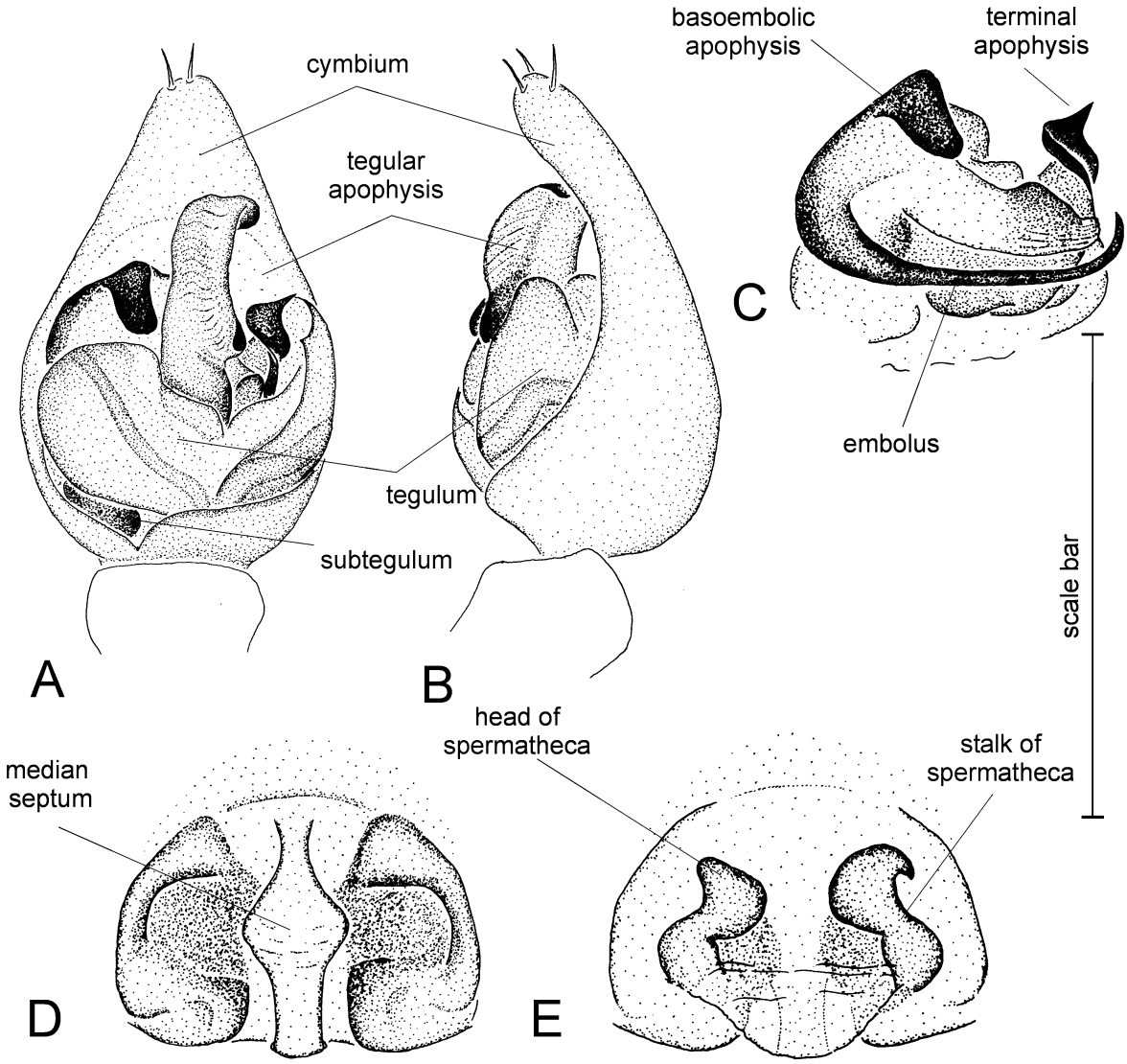

FIGURE 6. *Artoriopsis eccentrica* **sp. nov.** Male holotype (WAM 99/48, from Torndirrup National Park, Western Australia) and female paratype (WAM T58394, from Burma Road Reserve, Western Australia)**;** A, B left male pedipalp, ventral and lateral view; C left male pedipalp, apical part of bulb; D, E female epigyne, ventral and dorsal view. Scale bar: A, B 0.35 mm; C 0.30 mm; D, E 0.35 mm.

Opisthosoma. Dark olive-grey with distinct yellow lanceolate cardiac mark in anterior half cutting through two black narrow triangles; yellow wide band in posterior half bordered by black frame and laterally by four to five light spots; covered with silver-white setae, yellow setae in yellow mark and bands, black setae on black patches; fewer black setae. Venter: Dirty dark yellow; covered with yellow setae and fewer black macrosetae. Spinnerets: Dark yellow.

Epigyne, ventral view. Median septum narrow widening centrally into a diamond (Fig. 6D).

Epigyne, dorsal view. Spermathecal heads with a curved and/or pointy anterior tip; spermathecal stalks very wide, only constricted near spermathecal heads (Fig. 6E).

Legs. Leg formula IV>I>II>III; light brown; femora and tibiae basally and apically dark grey; spination of leg I: Femur: 2 dorsal, 1 apicoprolateral; tibia: 2 ventral pairs, of apical pair only the prolateral present; metatarsus: 3 ventral pairs, 1 apicoventral.

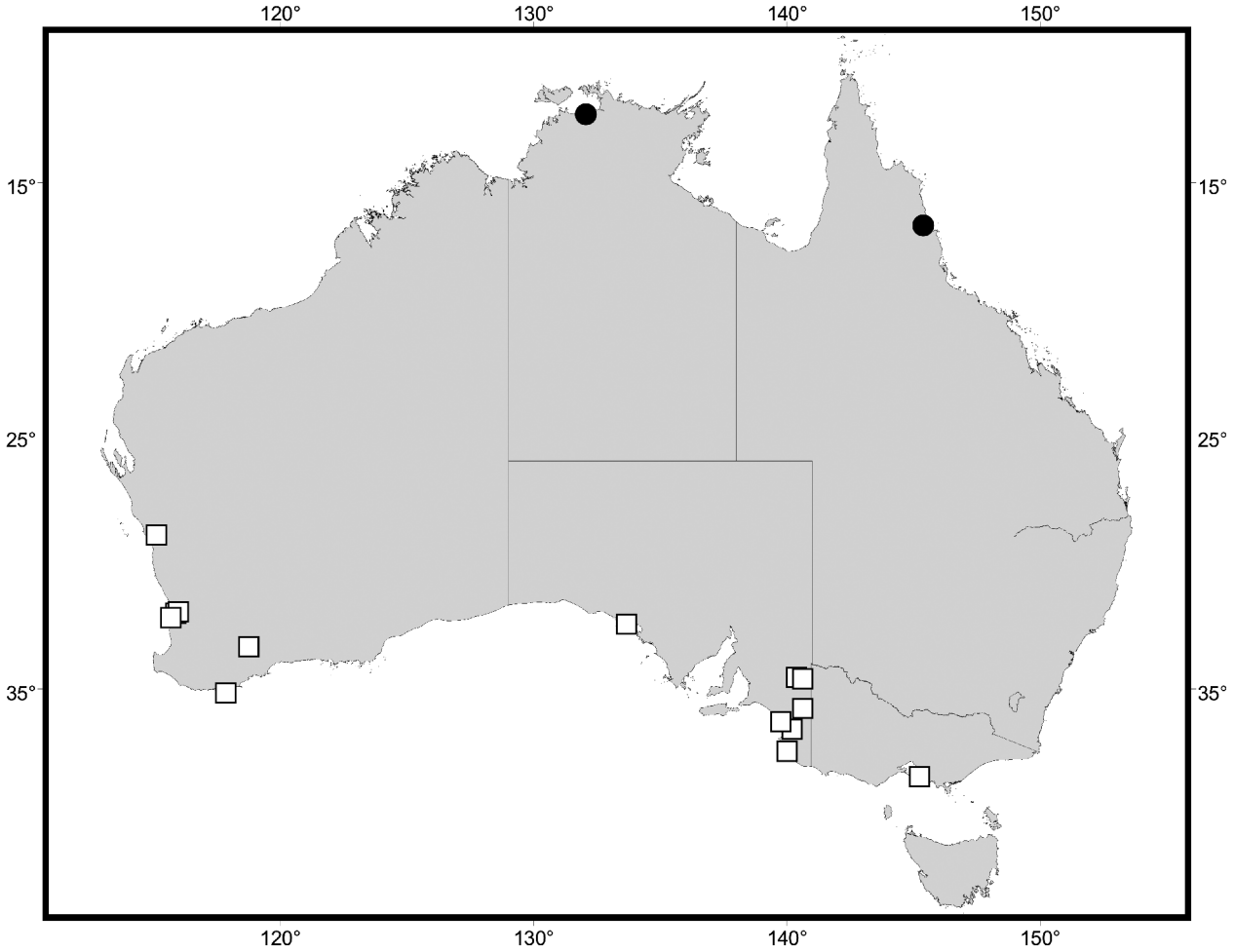

FIGURE 7. Records of *Artoriopsis anacardium* **sp. nov.** (●) and *Artoriopsis eccentrica* **sp. nov.** (□) in Australia.

Measurements. ♂ holotype, WAM 99/48 (♀ paratype, WAM T58394): TL 4.35 (5.25), PL 2.25 (2.70), PW 1.80 (1.80). Eyes: AME 0.09 (0.09), ALE 0.07 (0.07), PME 0.20 (0.22), PLE 0.19 (0.20). Row of eyes: AE 0.24 (0.27), PME 0.60 (0.67), PLE 0.70 (0.80). Sternum (length/width) 1.28/1.05 (1.35/1.05). Labium (length/width) 0.32/0.34 (0.04/0.04). OL 2.25 (3.00), OW 1.50 (1.95). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 0.86 + 0.60 + – + 0.94 = 2.40, I 1.57 + 1.92 + 1.20 + 0.86 = 5.55, II 1.52 + 1.75 + 1.17 + 0.77 = 5.21, III 1.40 + 1.49 + 1.26 + 0.69 = 4.84, IV 1.86 + 2.15 + 1.86 + 0.89 = 6.76 (Pedipalp 0.86 + 0.89 + – + 0.69 = 2.44, I 1.60 + 1.89 + 1.17 + 0.77 = 5.43, II 1.49 + 1.72 + 1.12 + 0.74 = 5.07, III 1.37 + 1.49 + 1.23 + 0.66 = 4.75, IV 1.86 + 2.20 + 1.89 + 0.89 = 6.84).

Variation. ♂(♀) (range, mean ± s.d.): TL 4.05–5.25, 5.51 ± 0.35; CL 2.25–2.70, 2.39 0.14; CW 1.50–1.80, 1.68 ± 0.09; *n* = 15 (TL 5.10–6.15, 5.50 ± 0.57; CL 2.55–2.70, 2.60 ± 0.09; CW 1.65–1.80, 1.75 ± 0.09; *n* = 3).

Distribution

South Australia, Victoria, and Western Australia (Fig. 7).

Life history and habitat preferences

Artoriopsis eccentrica **sp. nov.** has been found in open, disturbed (e.g. burnt) habitats, and records from beaches suggest a preference for sandy environments. The species appears to be mature in winter, as males and females have only been found between July and October.

***Artoriopsis joergi* sp. nov.**
(Figs 4C, 8, 10)

Material examined

Holotype. ♂, King River, Albany [34°56'S, 117°54'E, Western Australia], 11–25 October 1981, D. Hirst, DH870 (SAM NN13529).

Paratypes. ♂, data as holotype (SAM NN13530); 1♂, 1♀ with eggsac, Cape Gantheaume, 1km N Point Tinline, Kangaroo Island [35°59'S, 137°37'E, South Australia], 10 November 1987, D. Hirst (SAM NN13511–2).

Other material examined. AUSTRALIA. South Australia: 1♂, 2♀, Coolatoo Homestead, 33°19'S, 138°40'E (ANIC); 2♂, 2♀, Tilley Swamp telephone exchange, 1.4km ENE, Tilley Swamp Survey, 36°24'13"S, 139°49'43"E (SAM NN13374–7). **Western Australia**: 40♂, 13♀, 5juv. Attadale, 32°01'S, 115°48'E (WAM T55183, T55450–2, T55453, T55458–60); 1♂, Crowea, 34°28'S, 116°10'E (WAM T42126); 1♂, Brentwood, 32°02'S, 115°51'E (T58423); 1♂, Helms Arboretum, N of Brockmans Road, near Esperance, 33°43'12"S, 121°49'39"E (WAM T51273); 1♂, 1♀, Kunulinup Nature Reserve, East, 34°20'00"S, 116°48'03"E (WAM T55218); 1♂, 1♀, Kunulinup Nature Reserve, West, 34°20'56"S, 116°46'21"E (WAM T55217); 1♂, Lake Austin, 27°36'S, 118°03'E (QM S64503); 4♂, 3♀, Muir Highway, N of, near Red Lake Road, 34°25'14"S, 116°40'06"E (WAM T55214); 1♀, Mumballup, 33°31'S, 116°06'E (T55448); 1♂, Northcliffe, 34°37'S, 116°07'E (WAM T56093); 1♂, Wansbrough Nature Reserve, North, 34°09'08"S, 117°40'09"E (WAM T55215); 1♂, Wittenoom Road, near junction with Dempster Road, 33°38'18"S, 122°00'50"E (WAM T55216).

Etymology. The specific epithet is a patronym in honour of my older brother, Jörg, for his support and fatherly advice during my studies of the wolf spiders of Australia.

Diagnosis. The male pedipalp of *A. joergi* **sp. nov.** has the shortest tegular apophysis within the genus. Viewed from ventrally, it has a triangular sclerotised tip. The median septum of the female epigyne is the only one in the genus that does not reach the posterior margin of the epigyne.

Description

Male (based on holotype; SAM NN13529).

Prosoma, dorsal shield (Fig. 4C). Dark brown with indistinct darker radial pattern; distinct light median and very distinct wide submarginal bands; covered with black setae in dark parts; white setae in median and submarginal bands and also anteriorly above submarginal bands; black bristles anteriorly of fovea in median band; one long black bristle between AME, two long black bristles below AME.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Shiny light brown with dark grey pigmentation that is denser towards margins; black bristles that increase in length towards margins.

Labium. Dark brown; front end truncated and white.

Chelicerae. Very dark brown; silver-white setae in particular in basal half; few long black bristles medially; three promarginal teeth with the median considerably larger, three retromarginal teeth with the apical smallest.

Pedipalp (Figs 8A–C). Tegular apophysis short with triangular, strongly sclerotised tip (Fig. 8A), two little ventral tips in lateral view (Fig. 8B); embolus long and slender, tip bent apically; terminal apophysis only narrowly sclerotised (Fig. 8C).

Opisthosoma (Fig. 4C). Dark olive grey with thin lanceolate cardiac mark in anterior half cutting through a long diamond-shaped black patch; distinct light median band and crosswise dark pattern in posterior half; silverish setae, white setae in cardiac mark and black setae in black patches; few black bristles. Venter: Yellow-brown; white setae and fewer black bristles. Spinnerets: Yellow-brown

Legs. Leg formula IV>I>II>III; brown with distinct dark annulations; spination of leg I: Femur: 3 dorsal, 2 (left leg: 1) apicoprolateral, 1 dorsoretrolateral; tibia: 3 ventral pairs, 1 prolateral; metatarsus: 3 ventral pairs, 1 apicoventral, 1 apicoprolateral, 1 apicoretrolateral.

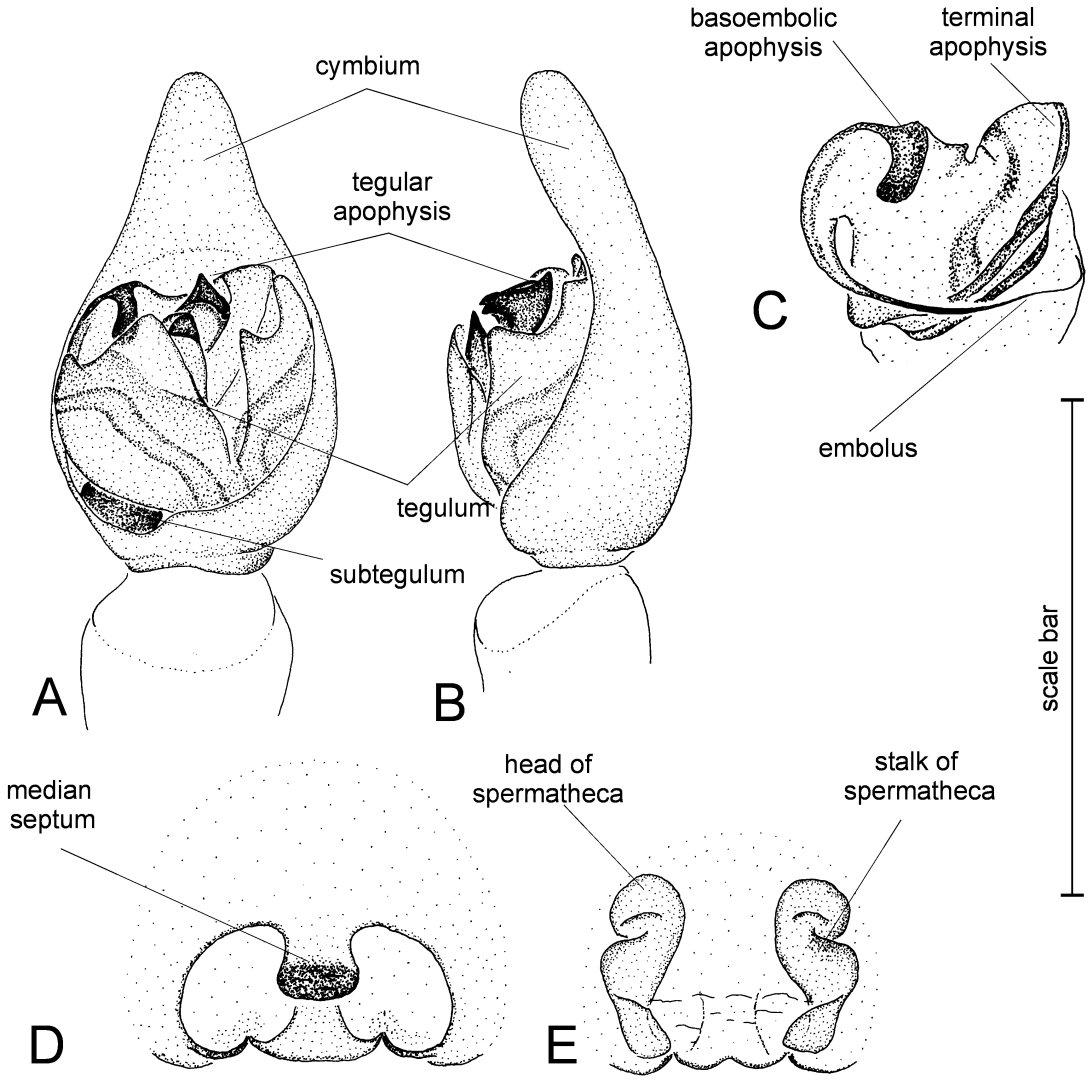

FIGURE 8. *Artoriopsis joergi* **sp. nov.** Male holotype (SAM NN13529, from Albany, Western Australia) and female paratype (SAM NN13912, Cape Gantheaume, Kangaroo Island, South Australia); A, B left male pedipalp, ventral and lateral view; C left male pedipalp (paratype SAM NN13530 from Albany, Western Australia), apical part of bulb; D, E female epigyne, ventral and dorsal view. Scale bar: A, B, D, E 0.25 mm; C 0.15 mm.

Female (based on paratype; SAM NN13512).

Prosoma, dorsal shield and s*ternum*. As male.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Labium. Light brown; front end truncated and white.

Chelicerae. As male; teeth similar to male, but larger.

Opisthosoma. As male, but no crosswise pattern in posterior half, but posterior median band bordered by black margin. Venter and spinnerets: As male.

Epigyne, ventral view. Median septum very short, not reaching posterior border of epigyne, its tip darker (Fig. 8D).

Epigyne, dorsal view. Spermathecal heads globular with a semicircular rim; spermathecal stalks bulging laterally, connected to spermathecae posteriorly (Fig. 8E).

Legs. Leg formula IV>I>II>III; colouration as male; spination of leg I: Femur: 3 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs; metatarsus: 3 ventral pairs, 1 apicoventral.

Measurements. ♂ holotype, SAM NN13529 (♀ paratype, SAM NN13512): TL 4.65 (4.95), PL 2.70 (2.70), PW 1.88 (1.95). Eyes: AME 0.09 (0.09), ALE 0.09 (0.07), PME 0.24 (0.22), PLE 0.19 (0.17). Row of eyes: AE 0.26 (0.27), PME 0.57 (0.63), PLE 0.70 (0.79). Sternum (length/width) 1.43/1.05 (1.28/0.98). Labium (length/width) 0.34/0.32 (0.34/0.37). OL 2.03 (2.40), OW 1.28 (1.95). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 0.80 + 0.66 + – + 0.74 = 2.20, I 1.57 + 1.97 + 1.29 + 0.80 = 5.63, II 1.46 + 1.83 + 1.23 + 0.74 = 5.26, III 1.43 + 1.66 + 1.32 + 0.74 = 5.15, IV 1.80 + 2.17 + 2.12 + 1.00 = 7.09 (Pedipalp 0.83 + 0.54 + – + 0.63 = 2.00, I 1.57 + 1.89 + 1.17 + 0.79 = 5.42, II 1.49 + 1.72 + 1.12 + 0.70 = 5.03, III 1.40 + 1.52 + 1.26 + 0.66 = 4.84, IV 1.89 + 2.15 + 1.97 + 0.92 = 6.93.

Variation. ♂(♀) (range, mean ± s.d.): TL 3.30–4.80, 3.95 ± 0.44, *n* = 14; CL 1.95–3.00, 2.31 ± 0.26, *n* = 16; CW 1.43–2.18, 1.71 ± 0.17; *n* = 16 (TL 4.20–6.30, 5.12 ± 0.72; CL 2.25–2.85, 2.45± 0.22; CW 1.65–2.03, 1.86 ± 0.13; *n* = 7).

Distribution

South Australia and Western Australia (Fig. 10).

Life history and habitat preferences

Adults of *A. joergi* **sp. nov.** were found from September to January, peaking in October and November. Limited information is available on the habitat of this species that was found on ‘river flats’ and in ‘open (uncleared) forest’.

***Artoriopsis klausi* sp. nov.**

(Figs 4D, 9, 10)

Material examined

Holotype. ♂, Monarto Zoological Gardens, Adelaide [35°06’54”S, 139°08’09”E, South Australia], 21 November–5 December 2001, A.J. McArthur (SAM NN14222).

Paratypes. 2♂, 10♀, 2juv., data as holotype (SAM NN14223–34).

Other material examined. **AUSTRALIA. New South Wales**: 1♂, Caringa Station, 18km SW of Nevertire, 32°00'27"S, 147°37'26"E (AM KS76710); 1♂, Gubatta, 33°34'33"S, 146°34'36"E (QM S53111); 2♂, Taleeban, 33°57'39"S, 146°26'27"E (QM S52591, S53786). **South Australia**: 1♂, Belair National Park, 35°01'S, 138°39'E (SAM NN16826–7; NN16942); 3♂, Bretag Scrub, Monarto Zoological Gardens, 35°07'S, 139°10'E (SAM NN16806–8); 2♂, Melville Gully, Belair National Park, 34°59'S, 138°37'E (SAM NN16840, NN16943); 1♀ with spiderlings, Mitcham, 34°58'S, 138°37'E (SAM NN16833). **Victoria**: 1♂, Victoria (no

exact location) (NMV K2273); 1♂, 1juv., Baddaginnie, 7km N of, Apple Box Lane, 36°31'46"S, 145°50'26"E (WAM T56460, T58431, T58443); 1♂, 1♀, Carrol Road, 9km W of Benalla, 36°33'28"S, 145°53'05"E (WAM T56453, T58408, T58410); 1♀, Mt Bolangum Forest Reserve, Mt Bolangum Road, 5.7km N Andersons Road, then 800m S along minor Track, 36°44'13"S, 143°00'41"E (NMV K9223); 1♂, Mt Ida Flora Reserve, 2.3km NW along Rodney Track from Dargile Track, 36°51'59"S, 144°43'09"E (NMV K9316); 1♂, Violet Town, 13km N of, 36°31'25"S, 145°43'36"E (WAM T56454); 2♂, Violet Town, 11km N, Paynters Road 36°31'35"S, 145°43'16"E (WAM T58437).

Etymology. This specific epithet is a patronym in honour of my younger brother, Klaus, for his support during my studies of wolf spiders.

Diagnosis. The tegular apophysis of the male pedipalp of *A. klausi* **sp. nov.** is unique within *Artoriopsis* **gen. nov**. It has a rounded ventral bulge and its tip points dorsally into the cymbium. The rectangular median septum of the female epigyne is very similar to *A. melissae* **sp. nov.**, however, the lateral borders constrict sharply just before and parallel to the anterior borders of the epigyne in *A. klausi* **sp. nov.**, whereas they diverge in *A. melissae* **sp. nov.**

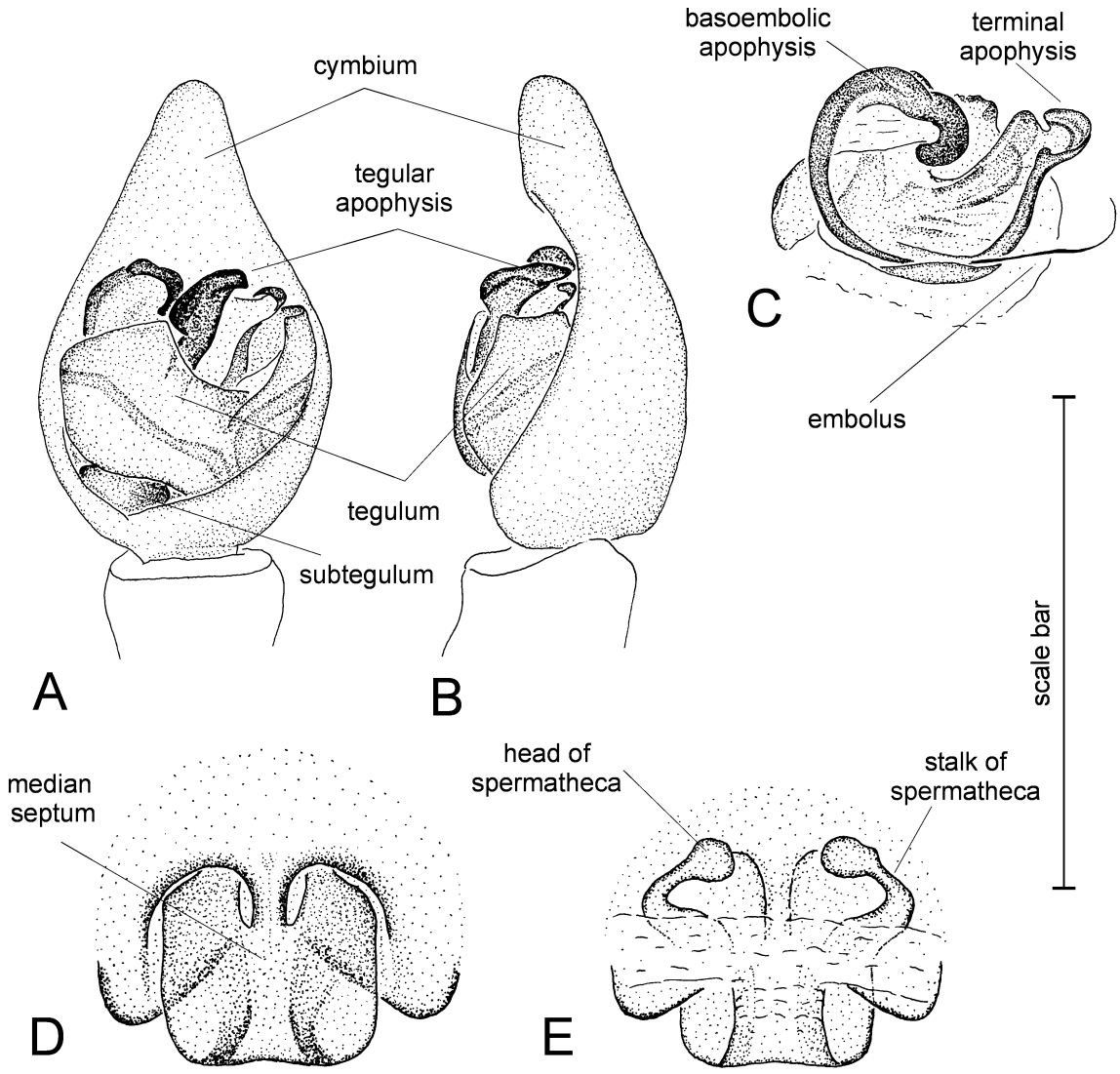

FIGURE 9. *Artoriopsis klausi* **sp. nov.** Male holotype (SAM NN14222, from Monarto Zoological Gardens, South Australia) and female paratype (SAM NN14225, same location); A, B left male pedipalp, ventral and lateral view; C left male pedipalp (paratype SAM NN14223, same location), apical part of bulb; D, E female epigyne, ventral and dorsal view. Scale bar: A, B 0.35 mm; C–E 0.40 mm.

Description

Male (based on holotype; SAM NN14222).

Prosoma, dorsal shield (Fig. 4D). Dark reddish-brown with distinct brown median and submarginal bands; black setae in brown areas, white setae in median and submarginal bands; white setae in three radial bands behind head region; brown bristles in median band; black bristles in head region; three long black bristles below AME.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Shiny dark brown, marginally with setae and black bristles.

Labium. Dark brown; front end truncated and white.

Chelicerae. Very dark reddish-brown; silverish-white setae frontally; three promarginal teeth with the median largest, three retromarginal teeth with the basal largest.

Pedipalp. Tegular apophysis pointing dorsally into cymbium (Figs 9A, B); embolus long and slender, resting basally in a grove formed by the terminal apophysis; terminal apophysis with a broad and curved tip (Fig. 9C).

Opisthosoma (Fig. 4D). Olive brown with light median cardiac mark cutting through a diamond-shaped black patch; median band continues posteriorly, wider than cardiac mark but narrowing posteriorly; black setae in dark areas; silverish-white setae in cardiac mark and posterior band; fewer short black bristles. Venter: Light olive brown with two darker longitudinal bands; silverish-white setae and some black bristles. Spinnerets: Anterior pair dark olive-grey; posterior pair light olive-brown.

Legs. Leg formula IV>I>II>III; brown; leg I and II with lateral light bands that are dissolved in patches; leg II and IV with patchily annulated femora; spination of leg I: Femur: 2 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs, 1 prolateral; metatarsus: 3 ventral pairs, 1 apicoventral.

Female (based on paratype; SAM NN14225).

Prosoma, dorsal shield. As male but no radial bands of white setae behind head region.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Shiny dark brown; black setae and bristles of increasing length and density towards margins.

Labium. Dark brown; front end truncated and white.

Chelicerae. Very dark brown; silverish-white setae frontally and some long bristles centrally; three promarginal teeth with the median largest, three retromarginal teeth with the basal largest and the apical smallest.

Opisthosoma. Dorsally as male. Venter: Light olive-brown, centrally darker; silverish-white setae. Spinnerets: Light olive-brown with darker pigmentation.

Epigyne, ventral view. Median septum rectangular; lateral border abruptly constricting before anterior border and running parallel to it (Fig. 9D).

Epigyne, dorsal view. Small globular spermathecal heads; stalks of spermathecae with 90 degree bend half-way, connecting to spermathecae posterolaterally (Fig. 9E).

Legs. Leg formula IV>I>II>III; brown; all femora with two darker spots apicopro- and apicoretrolateral; spination of leg I: Femur: 2 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs; metatarsus: 3 ventral pairs, 1 apicoventral.

Measurements. ♂ holotype, SAM NN14222 (♀ paratype, SAM NN114225): TL 6.45 (7.20), PL 3.45 (2.85), PW 2.55 (2.10). Eyes: AME 0.10 (0.09), ALE 0.11 (0.10), PME 0.23 (0.22), PLE 0.19 (0.17). Row of eyes: AE 0.29 (0.26), PME 0.70 (0.63), PLE 0.89 (0.77). Sternum (length/width) 1.73/1.35 (1.28/1.13). Labium (length/width) 0.57/0.54 (0.46/0.46). OL 3.00 (3.83), OW 1.80 (2.55). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 1.20 + 0.94 + – + 1.20 = 3.23, I 2.12 + 2.52 + 1.43 + 1.14 = 7.21, II 1.86 + 2.32 + 1.37 + 1.00 = 6.55, III 1.72 + 2.06 + 1.52 + 0.86 = 6.16, IV 2.43 + 2.97 + 2.43 + 1.17 = 9.00 (Pedipalp 1.00 + 0.86 + – + 0.69 = 2.55, I 1.66 + 2.06 + 1.09 + 0.86 = 5.67, II 1.60 + 1.92 + 1.09 + 0.80 = 5.41, III 1.49 + 1.46 + 1.32 + 0.74 = 5.01, IV 2.03 + 2.52 + 2.09 + 1.09 = 7.73.

Variation. ♂(♀) (range, mean ± s.d.): TL 4.80–7.20, 6.24 ± 0.78, *n* = 12; CL 2.40–4.50, 3.43 ± 0.51, *n* = 14;

CW 1.65–3.15, 2.42 ± 0.37; *n* = 14 (TL 6.60–8.85, 7.47 ± 0.76; CL 2.85–3.75, 3.20 ± 0.26; CW 2.10– 2.70, 2.38 ± 0.18; *n* = 11).

Distribution

New South Wales, South Australia, Victoria (Fig. 10).

Life history and habitat preferences

Artoriopsis klausi **sp. nov.** appears to mature in summer as most adult spiders were found between October and February with a peak in December. The species seems to prefer open, areas with low vegetation. Habitat descriptions include 'grazed pasture', 'grazed strip' and 'paddock without spinifex'.

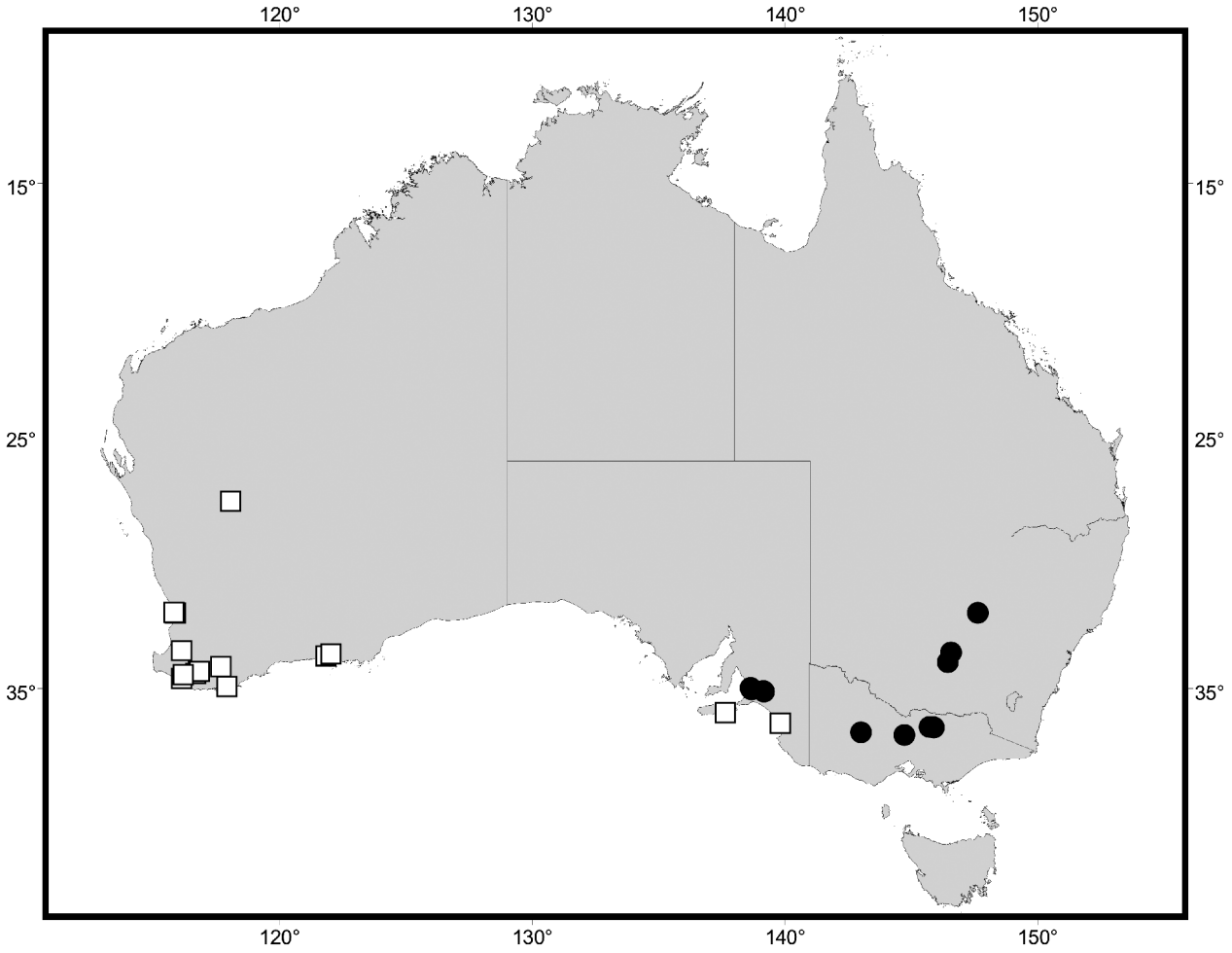

FIGURE 10. Records of *Artoriopsis klausi* **sp. nov.** (●) and *Artoriopsis joergi* **sp. nov.** (□) in Australia.

***Artoriopsis melissae* sp. nov.**
(Figs 4E, 11, 13)

Trochosa expolita expolita L. Koch. McKay 1979: 286–288, figs. 3*B*, *F*, *J–M* (misidentification, not *Lycosa expolita sensu* L. Koch, 1877).

Material examined

Holotype. ♂, Cook, 23 Grylls Crescent [35°16'S, 149°04'E, Australian Capital Territory], 21 October 1984, M.S. Harvey (WAM T55366).

Paratypes. 1♀ with eggsac, Mt Colah [33°40'S, 151°07'E, New South Wales], 8 December 1980, M.R. Gray, among grass (AM KS6166). 1♂, Newnes Plateau [33°10'S, 150°15'E, New South Wales], 13 January 1979, survey reference site W, dry sclerophyll creek, Pulsford (AM KS16960).

Other material examined. **AUSTRALIA. New South Wales**: 1♀, Ambarvale, 34°04'S, 150°48'E (AM KS87230) (listed in Isbister and Framenau, 2004 as *Artoria* sp. nov. 1); 1♂, 1♀, Bondi State Forest, South of Bombala, Woodlot 1, WL ref collection WL1 Div 6, 37°08'S, 149°09'E (AM KS18060–1); 1♀, Botany, 33°57'S, 151°12'E (AM KS86233); 1♂, Boyd River Crossing, Kanangra-Boyd National Park, 34°03'S, 150°05'E (AM KS30313); 1♂, Carrai State Forest, `Heydonville`, 31°04'S, 152°20'E (AM KS45270); 2♂, Clarence River, Copmanhurst, 29°34'S, 152°47'E (SAM NN16794–5); 1♂, 1♀, Coonabarabran, `Smoky Hollow`, 31°16'S, 149°17'E (AM KS7551, KS7556); 1♀, 5juv., East Maitland, 32°44'S, 151°35'E (AM KS50188); 2♂, 2♀, Hunter Valley, 32°44'S, 151°34'E (AM KS84059, KS86234); 1♂, Moorebank, Sydney, 33°56'S, 150°56'E (QM S64509); 1♀ with eggsac, Mt Colah, 33°40'S, 151°07'E (AM KS6166); 1♂, Mt Wilson, Cathedral of Ferns, 33°30'S, 150°23'E (AM KS819); 1♂, Saw Pit Creek, Mt Kosciusko, 32°33'S, 149°29'E (QM W6160); 1♂, 1juv., Tubrabucca, 31°53'S, 151°25'E (NMV K7698). **Queensland**: 1♀, Blunder Creek, Brisbane, 27°34'S, 152°59'E (QM S2737); 3♂, Bowen Hills, Brisbane, Qld Museum grounds, 27°26'S, 153°02'E (QM W5732, S45); 1♀ with eggsac, Brisbane, 27°28'S, 153°01'E (QM W6514); 3♂, 3♀, 11juv., Brisbane, Gregory Terrace, Library Museum, 27°28'S, 153°01'E (QM S64512, S64514); 1♀, 5juv., Brookfield, 27°29'S, 152°53'E (QM); 1♂, 1♀, Brookfield, 85 Savages Road, 27°29'S, 152°53'E (QM S24656); 1♀, Burnett River, Goodnight Scrub, 24°45'S, 152°24'E (QM S52424); 2♂, 2♀, 29juv., Cabbage Tree Creek, Sandgate, 27°19'S, 153°03'E (QM W5726); 1♂, 2♀, Caloundra, House Dickey Beach, 26°48'S, 153°08'E (QM S64510); 1♂, Camira, 27°38'S, 152°55'E (QM S42714); 1♀, Consuelo Peak, 7.7km W, 24°56'S, 148°05'E (QM S58085); 2♂, 3juv., Dutton Park, 27°29'S, 153°01'E (QM S51481); 1♀ with spiderlings, East Nanango, 26°40'S, 152°03'E (QM S21660); 1♀, Emu Park, near Rockhampton, 23°15'S, 150°48'E (QM W5724); 1♀, Gatton, Queensland Agricultural College, 27°33'S, 152°16'E (QM S64504); 1♂, Kroombit Tops, 45km SSW Calliope, 24°22'S, 151°02'E (QM S64511); 1♂, Mt Archer, via Kilcoy, 26°59'S, 152°39'E (QM S64508); 1♀, 1♀ with eggsac, Mt Coot-Tha, Brisbane, 27°28'S, 152°57'E (QM S18655); 1♂, Mt Gravatt, 27°32'S, 153°04'E (QM S64513); 1♀, Mt Tamborine, 27°58'S, 153°11'E (QM S64506); 1♀, North Stradbroke Island, Enterprise Blackbutt #3, 27°35'S, 153°28'E (QM S56496); 1♀, O'Reillys, Lamington National Park, 28°13'S, 153°07'E (QM S64507); 3♂, 4♀, 6juv., Samford (CSIRO), near Brisbane, 27°22'S, 152°53'E (QM S18651, S18656–7); 1♂, 2♀, The Gap, Brisbane, 27°26'S, 152°56'E (QM W5734 S21–2); 1♀, Widgee, NW Gympie, 26°13'S, 152°25'E (QM S64505); 1♂, Wolfdene, 27°47'S, 153°11'E (WAM T55344). **Tasmania**: 6♀, 8♂, 1juv., Lake St Clair, Pump House Point, PF 19, DP342 379, 42°06'S, 146°12'E (QVMAG 13:23673, 13:44350–4).

Etymology

The specific epithet is a matronym in honour of my partner and 'best buddy' Melissa Thomas. Thank you for all your help during the past years; I would not be where I am without you!

Diagnosis

The tegular apophysis of *A. melissae* **sp. nov.** is unique within the genus. It is straight with a constriction at about three quarters of its length and ending in a blunt tip. The rectangular median septum of the female epigyne is very similar to the median septum of *A. klausi* **sp. nov.** but the lateral borders diverge anteriorly in *A. melissae* **sp. nov.**, whereas they constrict in *A. klausi* **sp. nov.**.

Description

Male (based on holotype; WAM T55366).

Prosoma, dorsal shield (Fig. 4E). Brown with dark radial pattern and distinct light brown median and submarginal bands; median band narrowing posteriorly, submarginal bands reaching anteriorly below PLE; white setae in median and submarginal bands, centrally on the flanks of the dorsal shield of the prosoma and in head region; black bristles in median band anteriorly of fovea and between eyes; one long black bristle between AME; four black bristles below AME in two groups of two with the lateral ones shorter.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum. Shiny brown; brown bristles of increasing length and density towards margins.

Labium. Dark brown; front end truncated and white.

Chelicerae. Dark brown; silverish-white setae that are longer medially; three promarginal teeth with the median largest; three retromarginal teeth with the median slightly smaller.

Pedipalp. Tegular apophysis straight with constriction at two-thirds of its length and ending in a blunt tip (Fig. 11A, B); embolus long and slender; terminal apophysis ending in a hook (Fig. 11C).

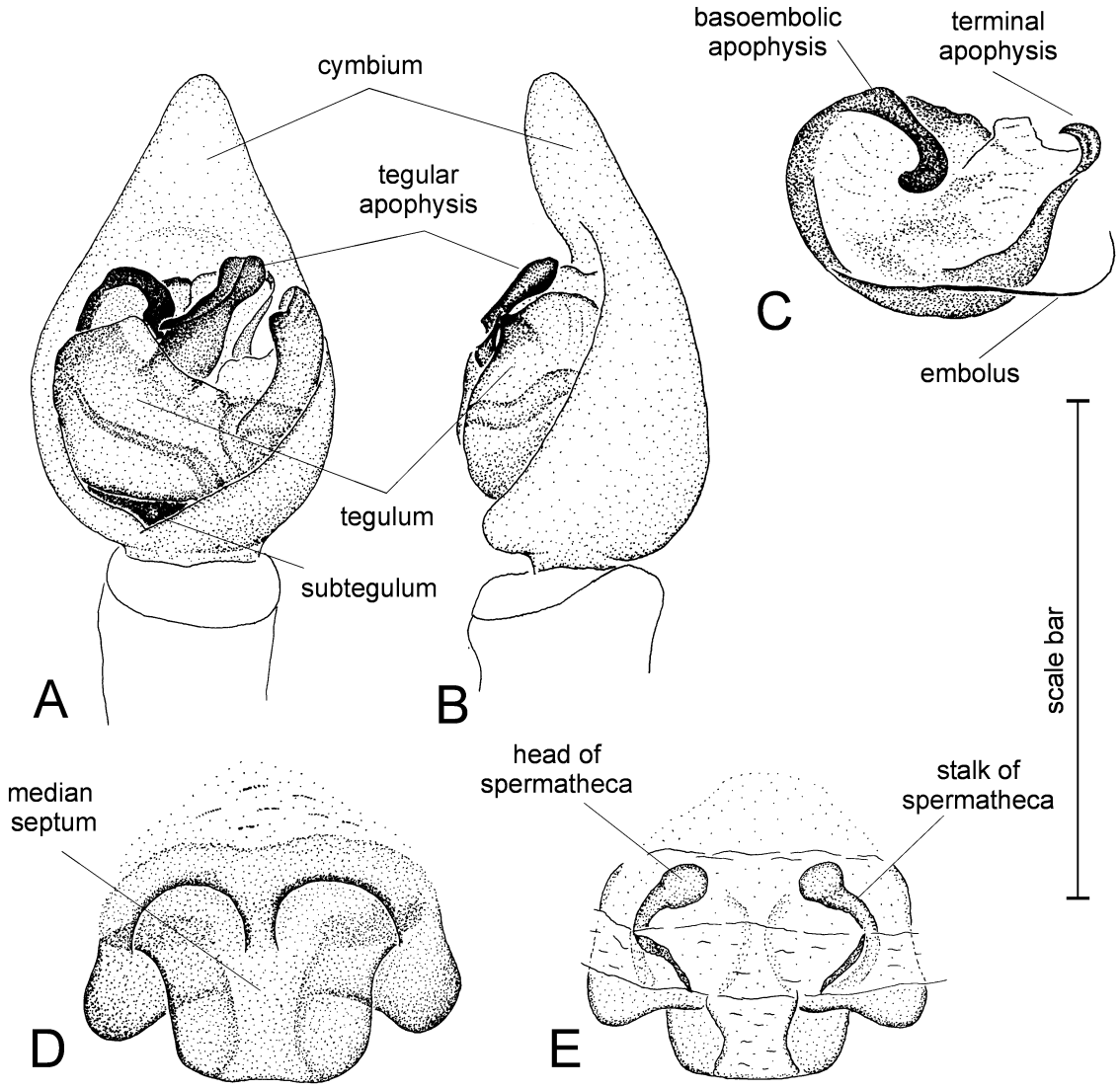

FIGURE 11. *Artoriopsis melissae* **sp. nov.** Male holotype (WAM T55366, from Cook, Australian Capital Territory) and female paratype (AM KS6166, from Mt Colah, New South Wales); A, B left male pedipalp, ventral and lateral view; C left male pedipalp (paratype AM KS16960, from Newnes Plateau, New South Wales), apical part of bulb; D, E female epigyne, ventral and dorsal view. Scale bar: A, B 0.40 mm; C 0.30 mm; D, E 0.25 mm.

Opisthosoma (Fig. 4E). Olive brown with distinct yellow median cardiac mark cutting through and oblonged diamond-shaped black patch; wider median band posteriorly laterally bordered by a black rim; covered with silverish-white setae, but white setae in cardiac mark and black setae in black patches and rims; few brown bristles. Venter: Yellowish-brown with two indistinct lighter longitudinal bands; white setae and fewer brown bristles. Spinnerets: Light brown.

Legs. Leg formula IV>I>II>III; brown with dark annulations, lateral light bands on femora; spination of leg I: Femur: 2 dorsal, 1 apicoprolateral; tibia: 3 ventral pairs; metatarsus: 3 ventral pairs, 1 apicoventral.

Female (based on paratype; AM KS6166).

Prosoma, dorsal shield. As male but with less white setae on flanks.

Eyes. Row of AE < row of PME; row of AE slightly procurved.

Sternum, *labium* and *chelicerae*. As male.

Opisthosoma. General colouration light brown, otherwise as male.

Epigyne, ventral view. Median septum a rectangular plate with the lateral borders diverging anteriorly (Fig. 11D).

Epigyne, dorsal view. Spermathecae small and globular; copulatory duct arching laterally and connecting to the spermathecae posterolaterally (Fig. 11E).

Legs. As male.

Measurements. ♂ holotype, WAM T55366 (♀ paratype, AM KS6166): TL 7.20 (7.35), PL 3.90 (3.60), PW 2.70 (2.55). Eyes: AME 0.10(0.09), ALE 0.07 (0.09), PME 0.29 (0.27), PLE 0.22 (0.23). Row of eyes: AE 0.32 (0.26), PME 0.76 (0.69), PLE 0.97 (0.92). Sternum (length/width) 1.65/1.43 (1.50/1.28). Labium (length/width) 0.60/0.57 (0.57/0.57). PL 3.60 (3.75), PW 2.10 (2.85). Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 1.35 + 1.20 + – + 1.12 = 3.67, I 2.25 + 2.85 + 1.58 + 1.21 = 7.89, II 2.10 + 2.63 + 1.50 + 1.20 = 7.43, III 2.03 + 2.10 + 1.65 + 1.05 = 6.83, IV 2.63 + 3.15 + 2.85 + 1.35 = 9.98 (Pedipalp 1.05 + 1.13 + – + 0.75 = 2.93, I 2.18 + 2.70 + 1.43 + 1.05 = 7.36, II 2.03 + 2.33 + 1.35 + 0.98 = 6.69, III 1.80 + 2.03 + 1.65 + 0.90 = 6.38, IV 2.48 + 2.93 + 2.55 + 1.28 = 9.24.

Variation. ♂(♀) (range, mean ± s.d.): TL 4.50–7.35, 6.15 ± 0.92; CL 2.70–3.90, 3.30 ± 0.34; CW 1.88–2.78, 2.33 ± 0.25; *n* = 19 (TL 5.25–9.00, 6.62 ± 1.05; CL 2.55–3.75, 3.17 ± 0.41; CW 1.80–2.70, 2.26 ± 0.28; *n* = 14).

Distribution

New South Wales, Queensland, Australian Capital Territory, Tasmania (Fig. 13). These records suggest that the species also occurs in Victoria, but no specimens from this state are present in Australian collections.

Life history and habitat preferences

Adult spiders have been found all year round, but numbers peak between October and January suggesting that this spider mainly matures in summer. *Artoriopsis melissae* **sp. nov.** appears to occupy similar habitats as *A. expolita* **comb. nov.**, i.e. open areas such as lawns, grassland and pasture. Some specimens have also been found in open woodlands and near creeks. A number of independent records from Queensland imply that these spiders fall regular prey to wasps: QM S2737: ‘ex wasp nest, *Fabriogenia* sp.’; QM S64510: ‘ex mud wasp nest’; QM S64514 ‘ex wasp nest’; QM W5726 ‘wasp nest on board boat’.

Remarks

A re-examination of some of the specimens illustrated in McKay (1979) as *Trochosa expolita expolita* (L. Koch) (McKay 1979; figs 3B, F, J–M) clearly showed that they actually represent *A. melissae* **sp. nov**.

***Artoriopsis whitehouseae* sp. nov.**
(Figs 4F, 12, 13)

Material examined

Holotype. ♂, Jimbour, Kents Refuge, Coondarra farm [26°57'S, 151°13'E, Queensland], 14 February 2002, pitfall trap, M.E.A. Whitehouse, CSIRO cotton survey (QM S74132).

Other material examined. **AUSTRALIA. New South Wales**: 1♂, Boggabilla, Morella farm, 28º35'S, 150º21'E (ANIC); 1♂, Murrumbidgee, Brooklyn farm, 33°32'S, 145°23'E, 5♂, Murrumbidgee, Merowie farm, 33°28'S, 145°32'E, (ANIC); 2♂, Pillaga, Lowana farm, 30°20'S, 149°48'E (ANIC). **Queensland**: 2♂, Jimbour, Coondarra farm, 26°57'S, 151°13'E (ANIC).

Etymology. The specific name is a matronym in honour of Mary Whitehouse (CSIRO Narrabri), the collector of all specimens known of this species. The name also acknowledges her contributions to the behavioural ecology and ecology of spiders. Life's a dance!

Diagnosis. The body colouration of *A. whitehouseae* **sp. nov.** is unique within the genus, in particular the pattern on the abdomen. The typical *Artoriopsis* **gen. nov.** pattern is here reduced to a single, irregular light band on a dark grey surface. The light band is interrupted twice about half way along the abdomen to form a single spot (Fig. 4F). The shape of the tegular apophysis is unique within the genus with a ventrally directed tip. *Artoriopsis whitehouseae* **sp. nov.** is also the only species with a leg formula of IV>I>III>II and a retrolateral spine on the patellae of the first legs.

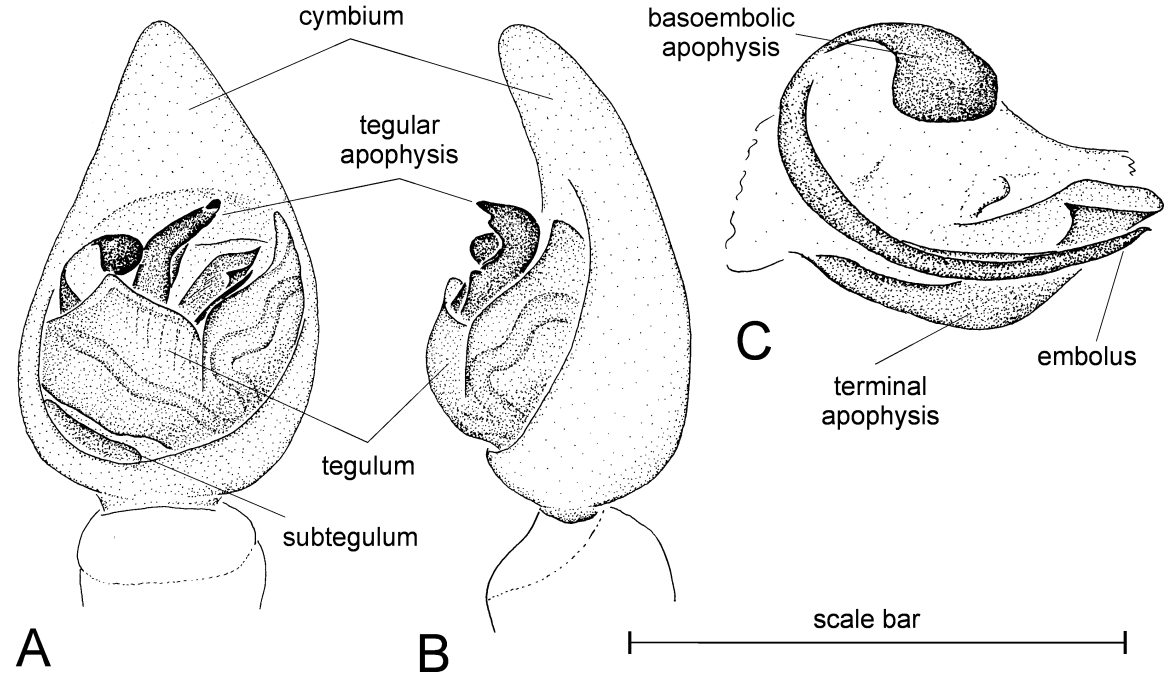

FIGURE 12. *Artoriopsis whitehouseae* **sp. nov.** Male holotype (QM S74132, from Jimbour, Kents Refuge, Queensland); A, B left male pedipalp, ventral and lateral view; C left male pedipalp, apical part of bulb. Scale bar: A, B 0.80 mm; C 0.45 mm.

Description

Male (based on holotype; QM S74132).

Eyes. Row of AE < row of PME; row of AE strongly procurved.

Prosoma, dorsal shield. Dark reddish-brown with indistinct darker radial pattern; distinct median and marginal bands formed by dense white setae; median band as wide as PLE anteriorly and narrowing posteriorly, not reaching posterior margin of prosoma; covered with black setae, except in median and submarginal bands; black macrosetae around PE; one long black bristle below AME; two long black bristles below ALE.

Sternum. Shiny brown with some dark grey pigmentation; short black setae mainly towards margins.

Labium. Dark brown; front end truncated and white.

Chelicerae. Brown; few black setae mainly basally; three promarginal teeth with the median one largest; three retromarginal teeth with the apical smallest.

Pedipalp. Tegular apophysis with a ventrally bent double-tip (Figs 12A, B); embolus stout and sickle-shaped; terminal apophysis trough-shaped with an apical pointy protrusion (Fig. 12C).

Opisthosoma. Uniformly dark olive-grey; distinct, irregular narrow median band that is interrupted twice halfway along abdomen to form a single spot; dense dark brown to grey setae, light grey setae in median band (Fig. 4F). Spinnerets: Grey.

Legs. Leg formula IV<I<III<II; femora dark brown; patellae, tibia, metatarsi and tarsi of leg I–III yellow-brown and of leg IV reddish-brown; spination of leg I: Femur: 3 dorsal (the most apical very small), 1 apicoprolateral; patella: 1 retrolateral; tibia: 3 ventral pairs, 1 prolateral; metatarsus: 3 ventral pairs, 1 apicoventral.

Female unknown.

Measurements. ♂ holotype, QM S74132: TL 5.83, PL 2.98, PW 2.5. Eyes: AME 0.08, ALE 0.08, PME 0.24, PLE 0.21. Row of eyes: AE 0.29, PME 0.74, PLE 0.84. Sternum (length/width) 1.31/1.12. Labium (length/width) 0.38/0.36. OL 2.23, OW 1.86. Legs: Lengths of segments (femur + patella/tibia + metatarsus + tarsus = total length): Pedipalp 0.76 + 0.76 + – + 0.80 = 1.80, I 1.75 + 2.28 + 1.44 + 0.99 = 6.46, II 1.63 + 2.13 + 1.44 + 1.09 = 6.29, III 1.52 + 2.05 + 1.82 + 1.09 = 6.48, IV 2.36 + 3.19 + 2.66 + 1.29 = 9.50.

Variation. ♂ (range, mean ± s.d.): TL 4.84–6.08, 5.26 ± 0.37; PL 2.36–3.22, 2.80 ± 0.24; PW 1.74– 2.36, 2.08 ± 0.16; *n* = 11.

Distribution

New South Wales and Queensland (Fig. 13).

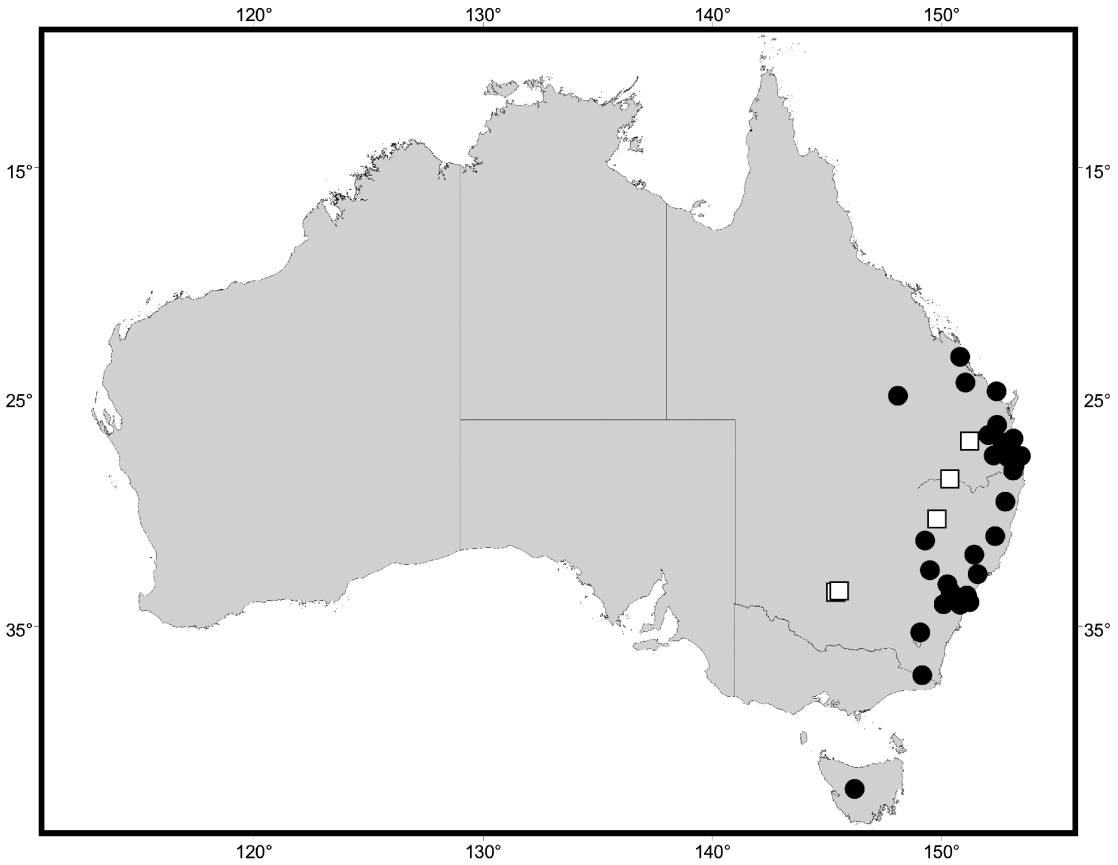

FIGURE 13. Records of *Artoriopsis melissae* **sp. nov.** (●) and *Artoriopsis whitehouseae* **sp. nov.** (□) in Australia.

Life history and habitat preferences

Most adult males were found in December, with few records from February and March. At this stage, this species has solely been found in cotton crops. The natural habitat of *A. whitehouseae* **sp. nov.** is unknown.

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