
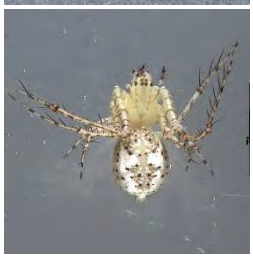





Ecological and socioeconomic **F**unctions of tropical lowland rain**For**est **T**ransformation **S**ystems (Sumatra, Indonesia)

A Guide to the Spiders of Jambi (Sumatra, Indonesia)

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Identification Key to Common Families and Images of the *EFForTS* collection

Daniel Ramos Gutierrez, Mayanda Lia, Stefan Scheu, Jochen Drescher

Version 1.0, Jun 2019

A Guide to the Spiders of Jambi (Sumatra, Indonesia) - Identification Key to Common Families and Images of the *EFForTS* collection

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Daniel Ramos Gutierrez[2], Mayanda Lia[1], Stefan Scheu[2], Jochen Drescher[2]

[1] Department of Plant Protection, Bogor Agricultural University, Jalan Kamper Kampus IPB Darmaga, Bogor 16680, Indonesia

[2] Animal Ecology, University of Göttingen, J.-F.-Blumenbach-Institute for Zoology and Anthropology, Untere Karspüle 2, 37073 Göttingen, Germany

Correspondence: d.ramosgutierrez@stud.uni-goettingen.de Funded by the German Research Foundation (DFG), ***EFForTS*** is a Collaborative Research Centre (CRC) involving the University of Göttingen (Germany) and Bogor Agricultural University, Jambi University and Tadulako University Palu (all Indonesia). ***EFForTS*** focuses on the ecological and socioeconomic dimensions of rainforest conversion to rubber and oil palm. For more information see www.uni-goettingen.de/EFForTS, and by the KAAD - Katholischer Akademischer Ausländer-Dienst.

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Contributions

Unless otherwise stated, all ant images were taken by Daniel Ramos and Mayanda Lia. Spider sorting by Daniel Ramos and Mayanda Lia under supervision of Nadine Depérré, Danilo Harms, Jochen Drescher and Stefan Scheu. Taxonomic revisions for selected groups by Peter Jäger and Danilo Harms coordinated by Daniel Ramos. Image compilation and text by Daniel Ramos and Jochen Drescher.

I. Introduction

Spiders (Arachnida: Aranae), are distributed all over the world, with only the exception of the air and the open sea. Almost all species are predators, but some few species feed on nectar too, and as top predators they are very important for the ecosystems, but as prey as well being preyed upon a vast range of vertebrates[1]. Worldwide there are currently 48248 accepted species, but this number is constantly increasing with new researches especially in the tropics[2]. Within the framework of *EFForTS*[3], we collected spiders from the canopy in a nested replicated design in four land-use systems in Jami Province, Sumatra, Indonesia: Old growth secondary lowland rainforest, jungle rubber (extensive rubber cultivation[4]), and monoculture plantations of rubber and oil palm (Fig. 1 a-d).

Fig. 1. The four land-use systems investigated in the framework of *EFForTS*: (a) Lowland old growth secondary rainforest (here: PT REKI), (b) jungle rubber, and monoculture plantations of (c) rubber and (d) oil palm.

The *EFForTS* study sites are located in and around two forest reserves, i.e. the Bukit Duabelas National Park and the lowland rainforest restoration concession of PT Restorasi Ekosistem Indonesia (PT REKI), also called Harapan Rainforest. In each of the two 'landscapes', we established a mirrored design of four plots of each land use type in each of the two landscapes, resulting in 4 × 4 × 2 = 32 'core plots' (Fig. 2). Each core plot measures 50 × 50 m. Canopy spiders were collected from three sites per core plot via canopy fogging (twelve 1 m² traps underneath each site) in the dry season 2013.

This guide provides a baseline for monitoring the largely undescribed spider community of the lowlands of Sumatra, especially with regard to the aforementioned land use systems. The guide includes a modified version of the book "Spider Families of the World and their Spinnerets" to identify spider at family level, and a glossary of the main terms used to the identification. The main body of this guide, however, consists of images of our collection of (morpho-). In the current version, we include 453 (morpho-) species from 35 families.

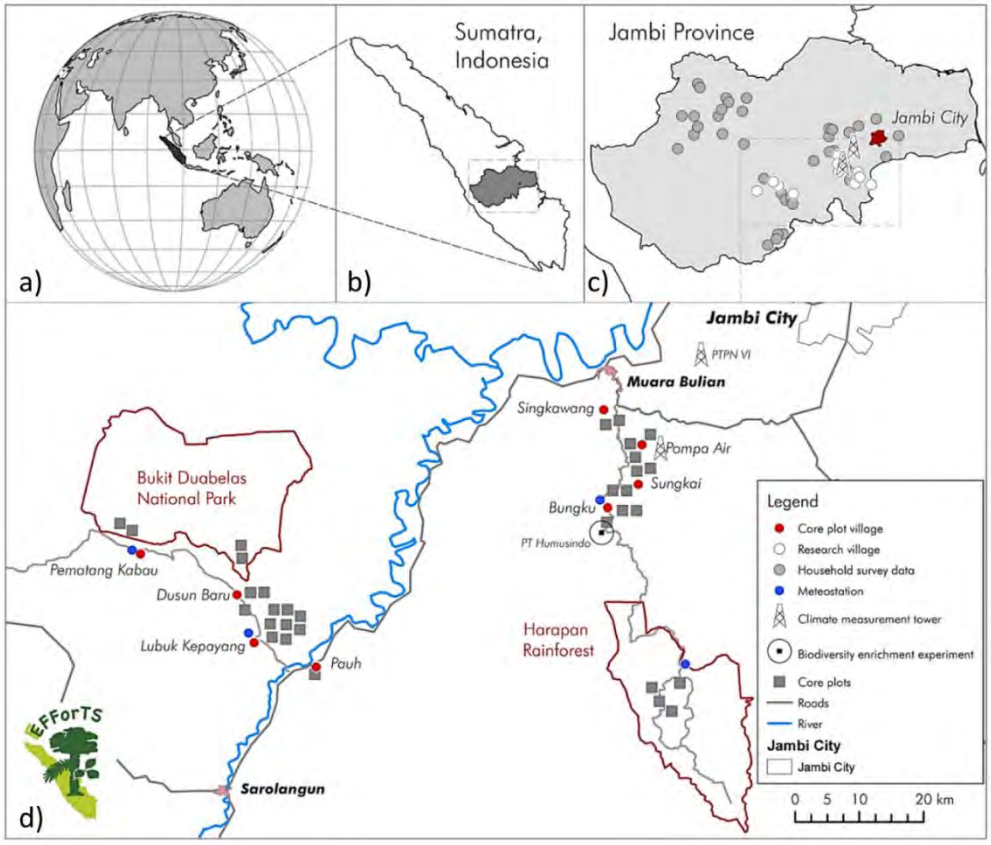

Figure 2. Location of EFForTS study sites in Sumatra (a, b) and Jambi Province (c, d). The core plot design (grey squares) is mirrored in two landscapes within and adjacent to two lowland rainforests, i.e. the Bukit Duabelas National Park and the Harapan Rainforest. Circles represent study villages and sites for the socioeconomic surveys also carried out in EFForTS (map from: Drescher et al., 2016)[5].

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II. Identification key to Spider families

(Key based on the taxonomy proposed by Murphy and Roberts 2015, illustrations by Murphy and Roberts 2015, Jocqué and Dippenaar-Schoeman 2007, Comstock J, 1920 and Hubert M, 1979)

Key to Neo cribellate families

1. Anal tubercle with enormous fringe of modified setae; cribellum rather small or relict. OECOBIIDAE

Not as above 2

2. Labium fused to sternum ..... FILISTATIDAE

Labium separate from sternum 3

3. Posterior median eyes enlarged, often hugely; anterior lateral eyes directed ventrally; calamistrum more or less straight in profile ..... DEINOPIDAE

Posterior median eyes not greatly enlarged; anterior lateral eyes directed anteriorly; calamistrum curved or straight in profile 4

4. Metatarsus IV and calamistrum distinctly curved in profile ..... ULOBORIDAE

Metatarsus IV and calamistrum more or less straight in profile 5

5. Anterior lateral and posterior lateral eyes widely separated and at least four times their diameter apart 6

Anterior lateral and posterior lateral eyes closer together and nowhere near four times their diameter apart 7

6. Anterior lateral spinnerets with 3 sclerites ..... ERESIDAE

Anterior lateral spinnerets with 2 sclerites ..... PENESTOMIDAE

7. Anterior lateral spinnerets with 4 sclerites (large proximal sclerite, 2 crescents and laqueus) ..... PHYXELIDIDAE

Anterior lateral spinnerets with 2 to 3 sclerites 8

8. Two tarsal claws and dense scopula 9

Three tarsal claws and no dense scopula 10

9. Posterior eye row strongly recurved when viewed from above ..... ZOROPSIDAE

Posterior eye row strongly procurved when viewed from above ..... ZOROCRATIDAE

10. Cribellum entire or divided by a faint ridge 11

Cribellum clearly divided 12

11. Small spiders (<4 mm); trichobothria short, thickened and setose; few multifilament and monofilament paracribellar spigots present on posterior median spinnerets ..... DICTYNIDAE

Larger spiders with normal trichobothria; large fringes of exclusively monofilament paracribellar spigots on the posterior median spinnerets ..... MATACHIIDAE

12. Large claw tufts present; particularly dense field of piriform gland spigots present on anterior lateral spinnerets; posterior lateral and posterior median spinnerets completely devoid of paracribellar spigots..... PSECHRIDAE

Key to colulates families

Group 1: two tarsal claws on leg I; six eyes, fewer, or none

1. Median and posterior lateral eyes closer together than their diameter (or all eyes absent in small subterranean species) 2

Median and posterior lateral eyes separated by their diameter or more 3

2. Chelicerae with 0-1 teeth; tarsal claws each with double row of teeth; labium without distinct notch anteriorly; female palp without a claw; body size 1-4 mm ..... OONOPIDAE

Group 2: two tarsal claws on leg I; eight eyes

1. Anterior median eyes relatively huge and occupying over half the width of the head .....SALTICIDAE

Eyes not like this 2

2. All eyes black or dark when each is viewed face-on..... 3

Only the anterior median eyes darker..... 4

3. Femora of legs I and II usually stouter than III and IV and usually laterigrade or crab-like; weak claw-tufts but no scopulae; males without epiandrous spigots ..... THOMISIDAE

Femora of legs I and II similar to those of III and IV; often less crab-like; claw-tufts and scopulae present; males have bunches of epiandrous spigots..... PHILODROMIDAE

4. Tracheal spiracle conspicuous and situated roughly halfway between the spinnerets and the epigastric

Fold ..... ANYPHAENIDAE

Tracheal spiracle often less conspicuous and situated just anterior to the spinnerets 5

5. ALS with a large proximal sclerite of variable size and shape, but no distal sclerite apart from a very small laqueus, crescent, annulus or cone around the MA..... 6

ALS with a large proximal sclerite and distal sclerites in the form of crescents/annuli and a laqueus/crescent around the MA..... 12

6. ALS with only MA spigots; PLS much longer than ALS..... AMMOXENIDAE

ALS with PI spigots as well as MA 7

7. PI relatively short, with a short base and narrow shaft and which can sometimes be retracted into the distal membrane of the ALS 8

PI relatively longer, with a broader base and shaft and which can be retracted into the distal membrane of the ALS 10

8. A pair of invaginated sclerites just behind the epigastric fold..... LAMPONIDAE

Not as above 9

9. Spider dorsoventrally flattened; coxa and trochanter IV usually elongated; legs laterigrade..... TROCHANTERIDAE

10. PMS broad, fused and, in the female, bearing a dense field of CY spigots on the dorsal surface..... CITHAERONIDAE

PMS narrower and separate 11

11. PI with an extremely long base and a very short shaft; often with plumose setae along their length; MA on a conical sclerite ..... PRODIDOMIDAE

PI shorter, with base and shaft roughly equal in length and without plumose setae; MA surrounded by a laqueus or crescent ..... GNAPHOSIDAE

12. Leg I stouter than the rest..... 13

Leg I not noticeably stouter 16

13. Leg I bearing stout setae; chelicerae with c. 7 large teeth and 6-10 smaller teeth; clavate setae in the vicinity of the trichobothria on tibiae, metatarsi and tarsi ..... BORBOROPACTIDAE

Not as above 14

14. Tibia and metatarsus I bearing strong prolateral scopulae; sternum enclosing coxae 15

Tibia and metatarsus I without strong prolateral scopulae; sternum not extending around coxae.... 16

15. Peg teeth present on chelicerae; no stridulating ridges; labium separate from sternum; ALS with proximal sclerite, distal crescent enclosing PI and annulus enclosing MA..... PALPIMANIDAE

No peg teeth on chelicerae; stridulating ridges present, opposed by setae on palpal femur; labium fused to sternum; carapace diamond-shaped; ALS with proximal sclerite and a distal annulus enclosing PI only..... STENOCHILIDAE

16. Tarsi longer than metatarsi; tarsus I and 11 with modified setae; tarsus III and IV with 3 claws; chelicerae long and slender, arising from a foramen in the raised cephalic region and having 2 weak teeth; body size c. 1.3 mm ..... HOLARCHAEIDAE

Tarsi shorter than metatarsi; much larger spiders 17

17. Tarsal claws without teeth..... 18

Tarsal claws with teeth 19

18. Large modified seta below claw tuft; chelicerae with no teeth (or rudiments); distal crescent of ALS a very narrow rim enclosing very long PI whose bases alone are longer than the thickness of this rim; no MA; body not flattened; legs pro grade ..... HOMALONYCHIDAE

No modified seta below claw tuft; chelicerae with distinct teeth; distal crescent of ALS broader and bearing PI which are scarcely longer than its width; MA present, within a separate crescent; body flattened; legs laterigrade.....SELENOPIDAE

19. Claw tufts replaced by lamellar setae; posterior median eyes irregular in shape or a flattened oval PLS and PMS each with just two spigots, or one ..... GALLIENIELLIDAE

Claw tufts may be present or absent, but not replaced by lamellar setae; posterior median eyes more or less circular; PLS and PMS each with more than two spigots 20

20. Flexible trilobate membrane present between metatarsi and tarsi; legs usually laterigrade..... SPARASSIDAE

Trilobate membrane absent; legs prograde 21

21. No CY on PLS or PMS of females; one or two mA present on PMS in both sexes; males of many species have retractile EP on the ALS in addition to the normal PI and MA .....CLUBIONIDAE

CY spigots present on PLS and PMS of females 22

22. Posterior row of eyes strongly recurved in dorsal view 23

Posterior row of eyes procurved, straight or very slightly recurved in dorsal view 24

23. Anterior lateral eyes much smaller than the rest and situated between the posterior median and posterior lateral eyes; base of the CY spigot in females roughly equal or greater in length relative to its Shaft .....CTENIDAE

Anterior lateral eyes similar in size to the anterior medians and closer to them; base of the CY spigot in females much shorter than its shaft.....ZORIDAE

24. Distal sclerite of PLS conical and longer than wide; tarsi with dense scopulae .....MITURGIDAE

Distal sclerite of PLS more rounded and roughly as long as wide; tarsi, although possibly having a claw-tuft, have only weak or absent scopulae 25

25. Distal sclerite of PLS in the form of a pala, with CY in the female originating from the proximal margin and all AC lying distal to them; some males have retractile EP on the ALS in addition to the normal PI and MA .....LIOCRANIDAE

Distal sclerite of PLS usually a crescent, with CY in the female originating near the centre of the tip and some AC lying proximal to them; males have only normal PI and MA on the ALS and no retractile EP ..... CORINNIDAE

Group 3: three tarsal claws on leg 1; six eyes, fewer, or none

1. Six eyes arranged roughly in a circle with median and posterior lateral eyes closer together than their diameter.....DYSDERIDAE (in part)

Six eyes arranged further apart, or only four which may be closer together 2

2. Proximal sclerite of ALS an entire cone; distally, with two additional discrete crescentic sclerites and a small sclerite around MA; prolateral paired tarsal claw of leg I with two rows of teeth; female palp with modified knobbed setae at the tip ..... SCYTODIDAE
Proximal sclerite of ALS a broad spiral; distally with two additional discrete crescentic sclerites; paired ALS of only two sclerites 3
3. Distal part of both PLS and PMS flattened in a longitudinal axis and pressed together, with a dense row of spigots between them (view from behind) ..... LEPTONETIDAE
Spinnerets not like this 4
4. PMS more or less level with and much wider than AMS, which are pushed out to the side; PLS even wider and longer ..... CAPONIIDAE (in part)
Spinnerets not like this 5
5. ALS with only two spigots, one wider than the other; PMS heavily sclerotized around the single AC and two fused mA and having a modified seta; PLS with a distal pala bearing AC; no CY present in females; chelicerae fused for a quarter to half of their length ..... DIGUETIIDAE
ALS with numerous spigots 6
6. Abdomen with a striking number of scuta: a large one dorsally, three or four ventrally, and three or four narrow ones laterally and posteriorly; tarsal claws on an onychium; chelicerae with a mesal keel and either no teeth or two or three very small ones; PLS without spigots; PMS with one mA and one AC; 0-6 eyes ..... TETRABLEMMIDAE

Group 4: three tarsal claws on leg I; eight eyes

1. Posterior row of eyes strongly recurved in dorsal view 2
Posterior row of eyes more or less straight or slightly procurved in dorsal view 7
2. Distal segment of PLS very much longer than proximal segment or at least as long ..... HERSILIIDAE
Distal segment of PLS shorter than proximal segment 3
3. Anterior lateral eyes widely separated from anterior median eyes and close to posterior median or posterior lateral eyes 4
Anterior lateral eyes close to anterior median eyes with which they form a transverse row above the clypeus 5
4. Anterior lateral eyes very close to posterior lateral eyes and much further away from posterior median eyes; small distal false segment on tarsi; abdomen elongate ..... SENOCULIDAE
Anterior lateral eyes close to both posterior lateral and posterior median eyes; no distal false segment on tarsi; abdomen oval ..... CYCLOCTENIDAE

5. From above, a line produced through the lateral and median eyes of the posterior row crosses the midline ahead of the front of the carapace; adult females of most species with tentacular setae on the abdomen; no distal false segment on tarsi ..... LYCOSIDAE

From above, a line through the lateral and median eyes of the posterior row crosses the midline on or behind the front of the carapace; usually with a distal false segment on tarsi..... 6

6. PMS with a large sclerite enclosing the mA; no CY on the PLS; adult females with hamate setae (as well as aculeate and brachiate) on the abdomen which spiderlings cling on to; tarsi with a distal false segment .....TRECHALEIDAE

PMS with a much smaller sclerite enclosing the mA or none at all; CY present on PLS and PMS of female in EURYCHOERINAE and DOLOMEDINAE but not in PISAURINAE; PMS short and as wide as PLS in DOLOMEDINAE; narrower than PLS in EURYCHOERINAE and PISAURINAE; adult female abdomen with aculeate and brachiate setae only; tarsi with a distal false segment in EURYCHOERINAE and PISAURINAE, but not in DOLOMEDINAE .....PISAURIDAE

7. Spinnerets in a transverse row .....HAHNIIDAE

Spinnerets not like this 8

8. PMS more or less level with and wider than AMS, which are pushed out to the side; PLS even wider and longer .....CAPONIIDAE (in part)

Spinnerets not like this 9

9. PLS without spigots (but there are setae present which may obscure this fact); chelicerae fused for part of their length..... 10

PLS with spigots; chelicerae not fused..... 11

10. Anterior median eyes very small; legs usually extremely long, rarely shorter; tarsi flexible and with false joints; all legs furnished with fascicled aculeate setae; AMS with several small PI, one EP and one MA; PMS with one mA and one AC within a sclerotized ring ..... PHOLCIDAE

11. Chelicerae with peg teeth (thick setae arising from sockets); sometimes with a few small normal teeth as well..... 12

Chelicerae with normal teeth only 16

12. Entire head region of carapace greatly raised on a long neck; chelicerae very long .... ARCHAEIDAE

Not like this 13

13. Carapace slightly raised, projecting ahead of the mouthparts and folding around to form a completely sclerotized foramen from which the chelicerae originate..... 14

Carapace not forming a foramen anteriorly and simply extending laterally..... 15

14. PLS with two sclerites and bearing two spigots; PMS slender and bearing one spigot; a small colulus is present.....PARARCHAEIDAE

PLS and PMS reduced, unsclerotized and bearing two spigots each in female; completely absent in male; dense rows of setae around the dorsal base of the ALS and continuous in the midline; no colulus ..... MECYSMAUCHENIIDAE

15. Haplogyne; very few spines on legs; preening comb on metatarsus III; CY in female with a small base and a long, slender shaft ..... HUTTONIIDAE

Entelegyne; many long spines on legs, especially I and II; cylindrical gland spigots in female with a long, broad base and a short, domed distal segment - looking rather like a salt cellar ..... MIMETIDAE

16. Tarsi of legs I and II slightly swollen; paired claws on tarsi I and II very dissimilar in size, the mesal one being very much larger; the third claw is small, pressed against its base and easily overlooked; legs III and IV with three unmodified claws; two pairs of book lungs, posterior pair lying between epigastric fold and spinnerets; ALS of three sclerites and bearing a group of c. 15 MA and a field of PI; PLS broad and bearing only AC; PMS also only with AC ..... GRADUNGULIDAE

Not like this 17

17. AMS extended on a common base; PLS and PMS smaller and often much reduced ..... ZODARIIDAE

Not like this 18

18. Two widely separated tracheal spiracles in front of spinnerets, connected by a transverse slit which is slightly wider or much wider than the base of the spinnerets 19

Tracheal spiracles very rarely almost as wide as base of spinnerets, but usually much narrower 20

19. Tracheal spiracles slightly wider than spinnerets; tarsus IV with a weak comb of pectinate setae; chelicerae with one tooth; distal sclerite of PLS a conical annulus (or frustum) bearing a single mA, single AC and, in the female, a single CY ..... SYNAPHRIDAE

Tracheal spiracles much wider than spinnerets; no comb on tarsus IV; chelicerae with seven teeth; distal sclerite of PLS a crescent, bearing two or three AC, a CY in the female, and, unusually, AG+-FL in both sexes; PMS with AC and mA and one CY in females ..... CYATHOLIPIDAE

20. Distal sclerite of PLS a narrow annulus enclosing a broad, flat field of spigots which are small, densely packed, very large in number and appear more or less uniform 21

Distal sclerite of PLS usually either a pala (L.: shovel) or a crescent, with a number of different spigots which are less dense and directed mesoventrally 22

21. Chelicerae robust, long and projecting; labium elongate, as also are maxillae which are pointed distally; legs with short hairs; tracheal spiracle just ahead of colulus; ALS with one MA and many PI; PLS with many AC, one mA near the centre and, in females, two CY mesally; PMS broad, with a flat field of AC, one mA and, in females, four CY ..... DESIDAE

Chelicerae unremarkable; labium and maxillae short; legs III and IV with very long hairs; tracheal spiracles clearly visible just behind epigastric fold; no colulus; ALS with one MA and many PI; PLS with

a field of AC and, in the female, a row of CY; PMS much narrower and bearing AC and one mA; the female has a row of CY dorsally ..... ARGYRONETIDAE

22. Spider completely covered in earth and debris which becomes attached to terratenacious setae; only a tiny patch at the base of the tibiae and one at the junction of the metatarsi and tarsi remains clear, and this supports the trichobothria; chelicerae with a curious pit posteriorly; spinnerets covered in plumose setae and can be retracted so far as to be invisible; tracheal spiracles in slightly different positions on each side; spinnerets visible only after the setae are removed; on either side of them is a large *bucca* (L. cheek); the ALS are of two sclerites and bear only PI; the PLS, reduced to a nubbin in males, bear three AC and two CY; the PMS, absent in males, bear two AC and two CY .....CRYPTOTHELIDAE

Spider not like this 23

23. Very small spider (less than 3 mm) and with a pair of distinctive pit organs on the anterior margin of the sternum, each side of the labium; chelicerae with teeth; colulus present; ALS with three sclerites and bearing one MA and many PI; PLS bearing AG+FL, two CY and four or five AC in females; AC only in males; PMS with one CY and three AC in females; AC only in males .....THERIDIOSOMATIDAE

Spider not like this 24

24. Carapace diamond-shaped; tibiae and metatarsi with strong prolateral scopulae; sternum enclosing coxae; labium fused to sternum; stridulating ridges present on chelicerae, opposed by setae on palpal femur; distal sclerite on ALS an annulus bearing PI only (often has only two claws on tarsus I, but may have three, which is why it is included here) ..... STENOCHILIDAE

Spider not like this 25

25. PLS long; distal sclerite a long tapering pala bearing many long AC, the shafts of which are two to three times the length of the base; in the female, the PLS bears 0-5 shorter CY; legs and abdomen often furnished with brachiate or plumose setaee; males with well-developed epiandrous spigots ..... AGELENIDAE

PLS with a relatively much shorter distal sclerite, or none..... 26

26. PLS with no distal sclerite; AMS with a distal annulus bearing just a few PI; in the female, PLS with one CY and PMS with two CY; PLS and PMS reduced to nubbins in males; both sexes with a dorsal scutum ..... CHUMMIDAE

PLS with a distal sclerite..... 27

27. Spinnerets and colulus surrounded by a sclerotized ring 28

Spinnerets and colulus not surrounded by a sclerotized ring 30

28. Carapace rugose or pitted, with setose tubercles around margin; abdomen with strong setae on sclerotized bases and an anteroventral scutum; metatarsi I and 11 with a prolateral row of stout setae;

tarsus IV with a weak comb of pectinate setae; PLS with 2 large spigots; PMS with one large spigot ..... MALKARIDAE

Carapace not rugose; abdomen with normal setae, sclerotized spots and dorsal and ventral scuta; PLS and PMS with 2 or more smaller spigots 29

29. Female palp absent or much reduced; PLS with AC and, in the female only, AG+FL (sometimes absent) and a single CY; males with AC only; PMS with one mA, two AC and, in the female only, one CY ..... ANAPIDAE

Female palp present; PLS with AC in both sexes and one CY in females; no AG or FL spigots; PMS with one AC plus, in the female only, one mA..... MICROPHOLCOMMATIDAE

30. Distal sclerite of PLS a short pala or crescent, sometimes bearing only AC; usually there are CY in the female and occasionally mA; no accessory claws (cornuate setae) or sustentaculum or tarsal comb on tarsus IV (note: a very few Araneidae have only AC and CY on the PLS, e.g. *Cyrtophora, Chorizopes*, but do have the modified setae on tarsus IV; Nicodamidae also sometimes have a weak tarsal comb) 31

Distal sclerite of PLS a pala or crescent bearing AC, sometimes mA, and in the female, CY and AG+FL spigots; tarsus IV with accessory claws, a sustentaculum or a comb of pectinate setae..... 38

31. Tarsus I with a dense scopula; relict cribellum present in both sexes but extremely difficult to see (i.e. excribellate, which is why included here)..... TENGELLIDAE (in part)

Tarsus I without a scopula or, if rarely present, then with a large colulus..... 32

32. Clypeus very wide, about six times the diameter of anterior eyes; chelicerae with few teeth; most males with epiandrous spigots 33

Clypeus fairly narrow, barely twice the diameter of anterior eyes; chelicerae with several teeth plus denticles; males without epiandrous spigots, or rarely with rudiments..... 34

33. All legs with many long, stout spines; PMS with three types of spigot in females: AC, mA, and CY, the last being absent in males; the AC have a straight-sided cylindrical base ..... OXYOPIDAE

Legs with very few small spines; PMS with four types of spigot in females: AC, MAC, mA, and CY, the last being absent in males; the AC have a slightly tapering base; a weak tarsal comb is often present..... NICODAMIDAE

34. Distal sclerite of ALS usually a complete annulus with no laqueus 35

Distal sclerite of ALS a crescent, open mesally, and usually with a laqueus enclosing the MA (the laqueus may sometimes be absent or indiscernible) 36

35. Chilum present and bipartite; two very peculiar spigots on PLS in both sexes, in addition to the AC; those on the female of one species look like nub bins; those on the male of another species look like coolie hats..... CYBAEIDAE

Chilum usually absent; anterior median eyes usually smaller than the rest (but not in *Cicurina*) and sometimes extremely small or absent; spigots on PLS of more normal form, be they AC, mA, or CY; the CY on the PMS tend to be on the dorsal side ..... CICURINIDAE (new family)

36. Chilum present or absent; anterior median eyes usually a little smaller than the rest; PLS with AC and sometimes mA; CY present in female only; the CY on the PMS tend to be on the ventral or ventrolateral side; no brachiate setae present; the PIon the ALS are of the same size and distributed evenly; no stridulating organ ..... AMPHINECTIDAE

The PI on the ALS show a remarkable variation in size and unusual distribution; ectally they form a broad group of spigots which then funnel mesally to a narrow strip of progressively smaller spigots; colulus large, brachiate setae present on carapace, abdomen and legs; males with a strongly sclerotized stridulating organ between carapace and abdomen ..... CAMBRIDGEIDAE (new family)

37. Femora I and usually II with a distinct sclerotized spot ventrally near the distal end, usually in both sexes..... MYSMENIDAE

Femora I and II lacking a sclerotized spot ventrally..... 38

38. PLS of female with four types of spigot (fewer in Arkys , Chorizopes and Cyrtophora): AC, AG+FL, and CY; paracymbium of male palp a knob, a small hook, of two branches, a flat rectangle, a triangle or absent; chelicerae without stridulating ridges..... 39

PLS of female with five types of spigot: AC, AG+FL, mA, and CY; paracymbium of male palp a U- or J-shaped structure (Fig. 7i); some species with stridulating ridges on chelicerae opposed by teeth on the palpal femur..... 46

39. Tarsus IV with a ventral comb of pectinate setae (these may be difficult to see without high magnification and are occasionally absent in some species) 40

Tarsus IV without a ventral comb of pectinate setae 41

40. Cheliceral teeth few in number on the promargin, poorly sclerotized or completely absent; labium not rebordered; male palp lacking a large paracymbium, but sometimes there is a small hook ectally on the distal margin of the cymbium which could be regarded as a paracymbium (Fig. 7a) ..... THERIDIIDAE

Cheliceral teeth fairly robust and well-sclerotized on the promargin, with smaller teeth or denticles on the retromargin; labium rebordered (thickened and paler) distally; male palp with a paracymbium of two branches which can be quite large (Fig. 7b) ..... NESTICIDAE

41. Tarsi lacking a ventral comb and without auxiliary claws (cornuate setae) or a sustentaculum; all legs long and thin; leg I 3 x to 5 x the body length; spines only on patellae; male palpal paracymbium a small dorsally concave lobe (Fig. 7c)..... SYNOTAXIDAE

Tarsi usually with auxiliary foot claws (comuate setae) and a sustentaculum; legs sometimes fairly long but stouter and never more than 3.5x the body length; spines usually present on all leg segments apart from tarsi 42

42. Femora with a number of dorsal trichobothria proximally (two or many); female epigyne sometimes an unsclerotized plate, or may be sclerotized, but never with a scape; male palpal paracymbium with two branches, both of which bear setae (Fig. 7d)..... TETRAGNATHIDAE (Tetragnathinae)

Femora without trichobothria proximally 43

43. Female epigyne sclerotized but with no scape; male palpal paracymbium with two branches, but only the lower branch with setae (Fig. 7e) ..... TETRAGNATHIDAE (Metinae)

Male palpal paracymbium not branched; epigyne well-sclerotized and sometimes with a scape..... 44

44. Female epigyne usually with a scape; male palpal paracymbium a distinct knob or hook..... ARANEIDAE (Araneinae)

Female epigyne without a scape; male palpal paracymbium a flattish plate or a roughly triangular structure..... 45

45. Females are very large orb weavers (up to 40 mm body length) with males relatively minute (3-4 mm); tarsi with auxiliary claws, but no sustentaculum seen in species examined; male palp with a projecting embolus and a flattened, subrectangular paracymbium (Fig. 7g); epigyne without a scape, but heavily sclerotized and with a large pair of openings ..... ARANEIDAE (Nephilinae)

46. PLS of female usually with five types of spigot: AC, AG+FL, mA, and CY; adult males sometimes have AG+FL and AC, and sometimes mA and AC; or sometimes just AC or nothing; both sexes usually have a single stout setose seta distally on the mesal aspect of the ALS; this may be reduced or absent in some small species (e.g. Erigone) but is present in other small black-bodied species (e.g. Walckenaeria, Erigonella, Drepanotylus); female epigyne well-sclerotized; male palp with a U- or J-shaped paracymbium(Fig. 7i).....LINYPHIIDAE

III. Illustrations

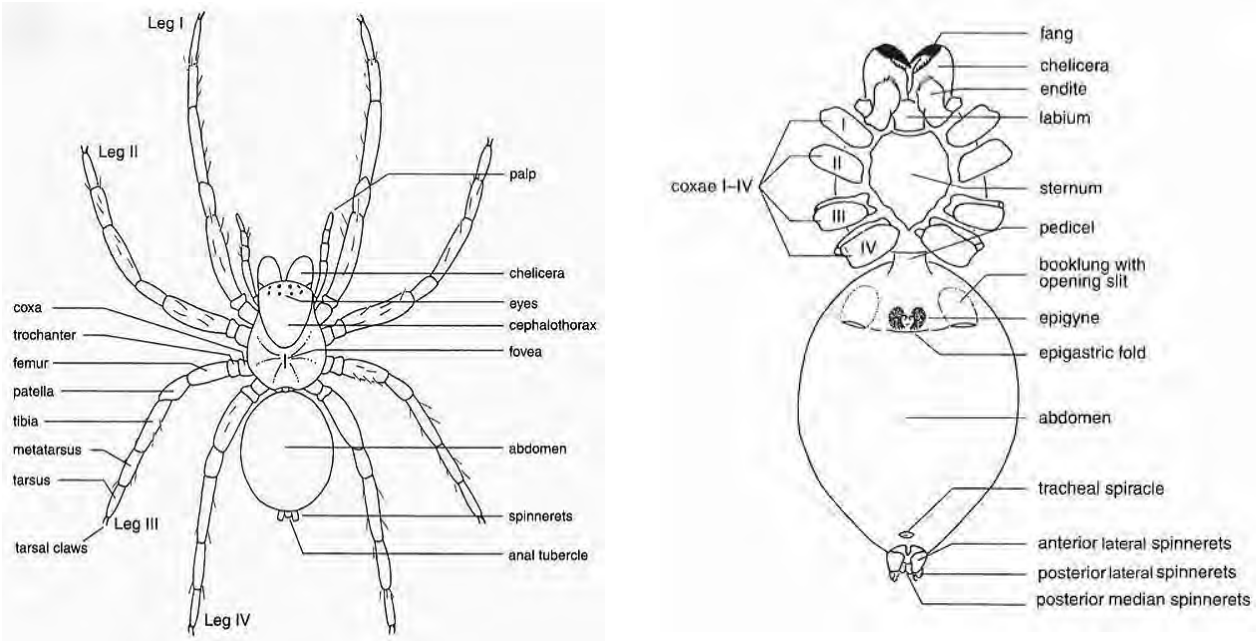


Fig. 3. External morphology. Dorsal and ventral view. (Jocqué & Dippenaar-Schoeman, 2007).

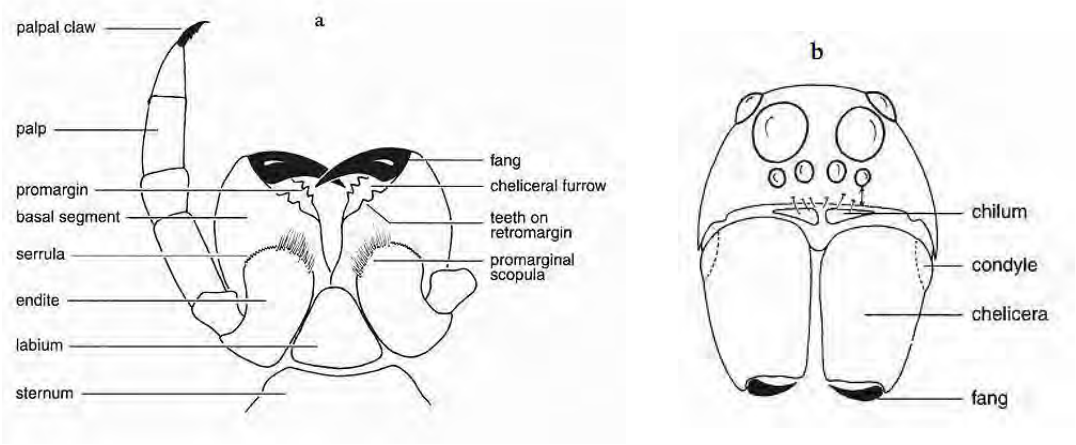


Fig. 4. External Morphology. A. Mouthparts and palps in ventral view. B. Chelicerae and eyes in frontal view (Jocqué & Dippenaar-Schoeman, 2007).

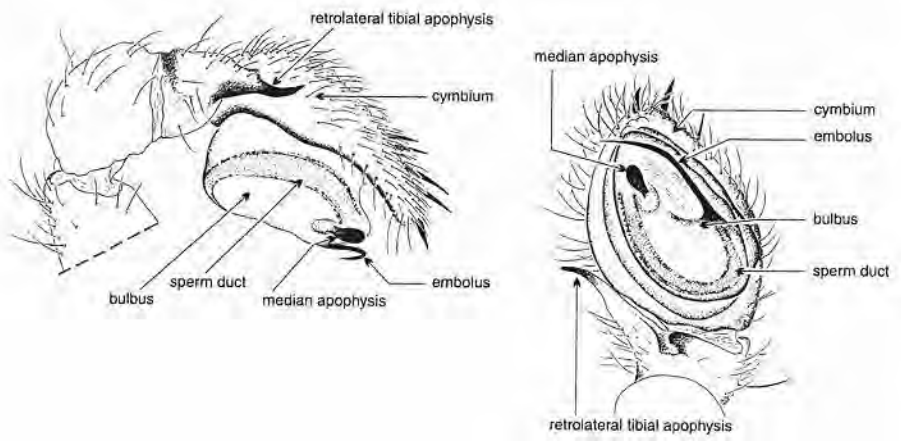


Fig. 5. Male pedipalp. Retrolateral and ventral view (Jocqué & Dippenaar-Schoeman, 2007).

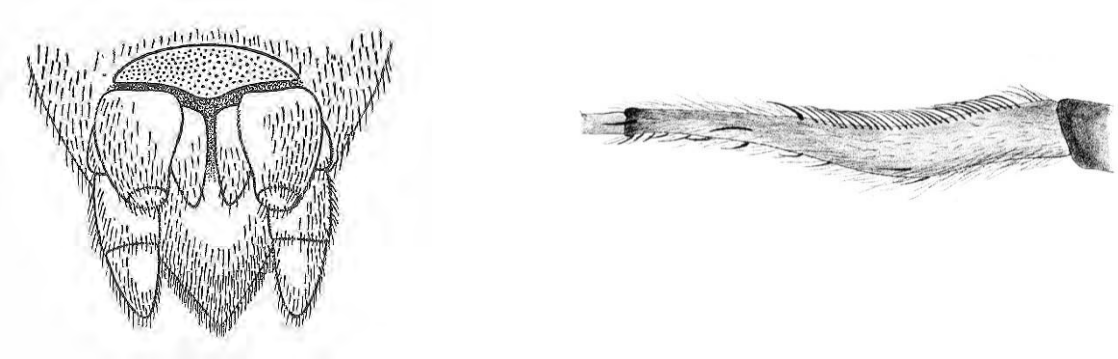


Fig. 6. Cribellum (Hubert M, 1979) and Calamistrum (Henry J, 1920)

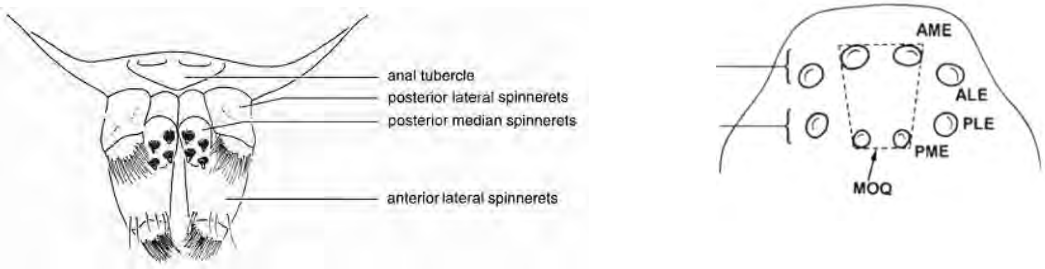


Fig. 7. Spinnerets in ventral view. Eye pattern in dorsal view (Jocqué & Dippenaar-Schoeman, 2007).

IV. Abbreviations

AC	Aciniform gland spigot
AG	Aggregate gland spigot
ALE	Anterior lateral eye
ALS	Anterior lateral spinneret
AME	Anterior median eye
AMS	Anterior median spinneret
AV	Anterior view
C	Cribellar spigots
CY	Cylindrical gland spigot(s)
DV	Dorsal view
EP	Enlarged piriform gland spigot(s)
ER	Epiandrous region (of male, just anterior to epigastric fold)
ES	Epiandrous spigot(s)
EV	Ectal view
FL	Flagelliform gland spigot
MA	Major Ampullate gland spigot(s)
mA	Minor ampullate gland spigot(s)
MAC	Modified aciniform gland spigot(s)
MMA	Modified major ampullate gland spigot(s)
MmA	Modified minor ampullate gland spigot(s)
MS	Modified spigot(s)
MV	Mesal view (sometimes in combination e.g. M-VV)
n	Nubbin of spigot(s) or spinnerets
PC	Paracribellar spigot(s)
PI	Piriform gland spigot(s)

PLE	Posterior lateral eye
PLS	Posterior lateral spinneret
PM	Pro margin of chelicera
PME	Posterior median eye
PMS	Posterior median spinneret
PV	Posterior view
RM	Retromargin of chelicera
S	Setae (e)
SEM	Scanning electron micrograph
T	Trichobothrium
VV	Ventral view

1. Araneidae

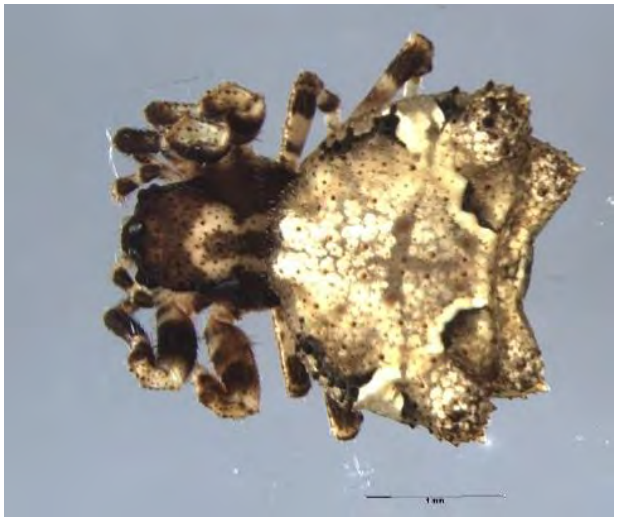


Fig. 1, 2. AraAran001 dorsal and ventral view

Fig. 3, 4. AraAran002 dorsal and ventral view

Fig. 5, 6. AraAran003 dorsal and ventral view

Fig. 7, 8. AraAran004 dorsal and ventral view

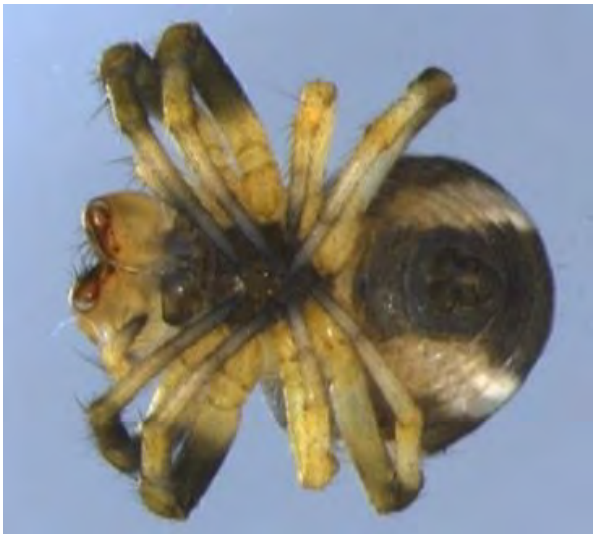


Fig. 9, 10. AraAran005 dorsal and ventral view

Fig. 11, 12. AraAran006 dorsal and ventral view


Fig. 13, 14. AraAran008 dorsal and ventral view


Fig. 15, 16. AraAran010 dorsal and ventral view


Fig. 17, 18. AraAran012 dorsal and ventral view

Fig. 19, 20. AraAran014 dorsal and ventral view

Fig. 21, 22. AraAran015 dorsal and ventral view

Fig. 23, 24. AraAran016 dorsal and ventral view

Fig. 25, 26. AraAran020 dorsal and ventral view

Fig. 27, 28. AraAran021 dorsal and ventral view

Fig. 29, 30. AraAran023 dorsal and ventral view

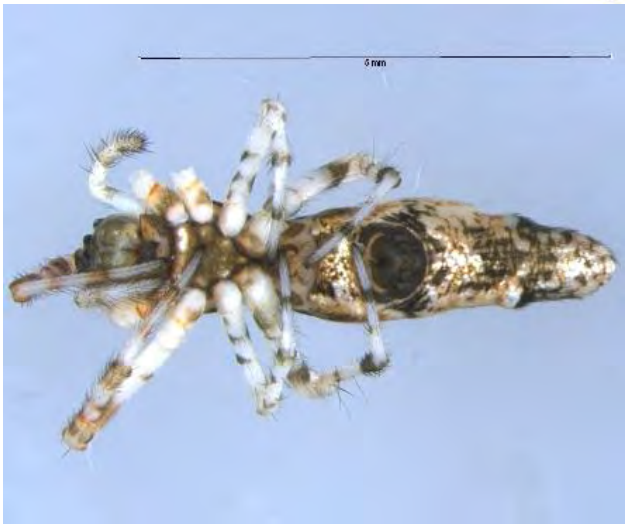


Fig. 31, 32. AraAran024 dorsal and ventral view

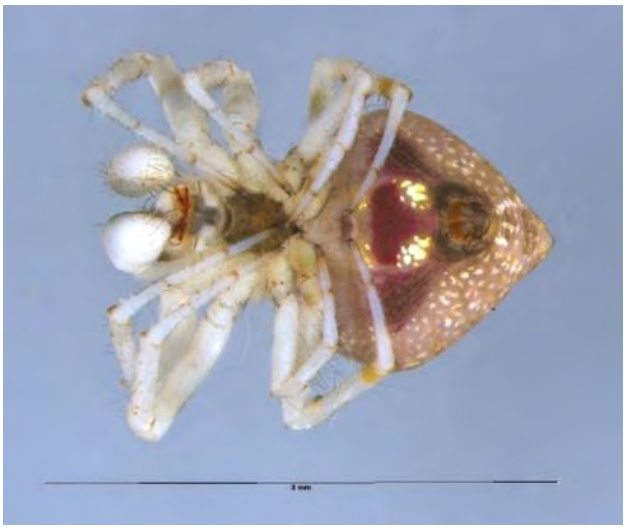


Fig. 33, 34. AraAran025 dorsal and ventral view

Fig. 35, 36. AraAran027 dorsal and ventral view

Fig. 37, 38. AraAran028 dorsal and ventral view

Fig. 39, 40. AraAran029 dorsal and ventral view

Fig. 41, 42. AraAran030 dorsal and ventral view


Fig. 43, 44. AraAran031 dorsal and ventral view

Fig. 45, 46. AraAran034 dorsal and ventral view

Fig. 47, 48. AraAran035 dorsal and ventral view

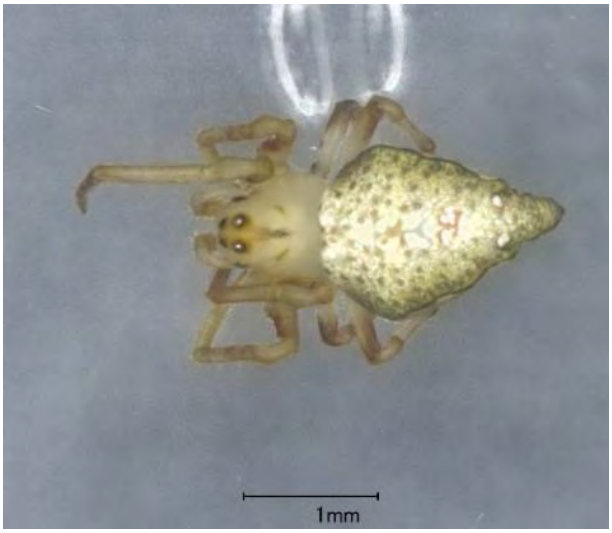


Fig. 49. 50. AraAran037 dorsal and ventral view

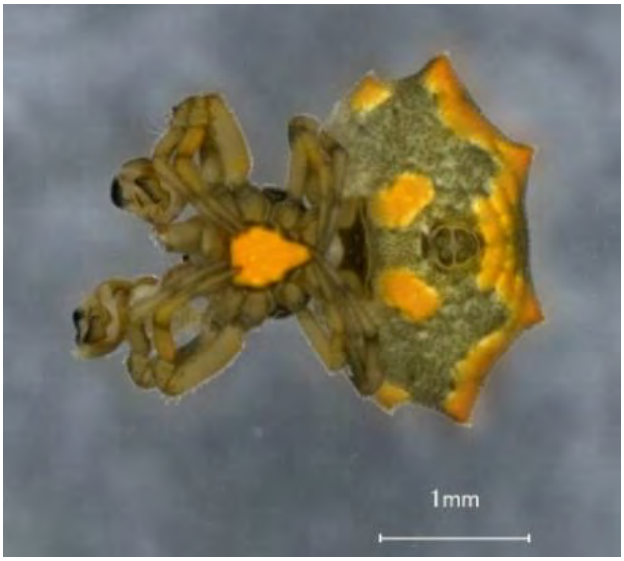


Fig. 51, 52. AraAran038 dorsal and ventral view

Fig. 53, 54. AraAran039 dorsal and ventral view

Fig. 55, 56. AraAran040 dorsal and ventral view

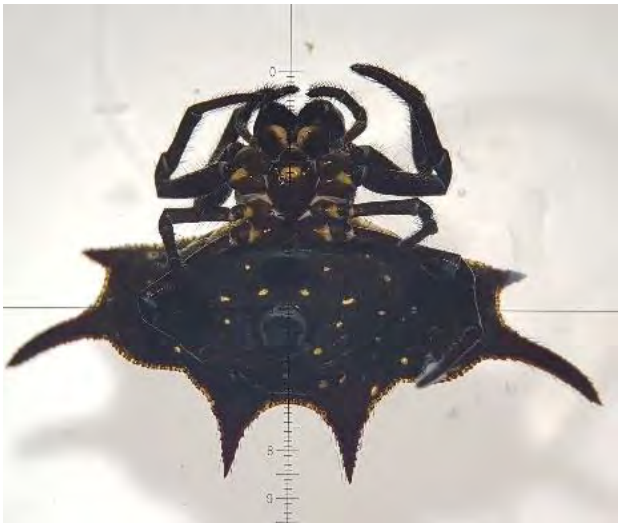


Fig. 57, 58. AraAran041 dorsal and ventral view

Fig. 59, 60. AraAran042 dorsal and ventral view

Fig. 61, 62. AraAran043 dorsal and ventral view

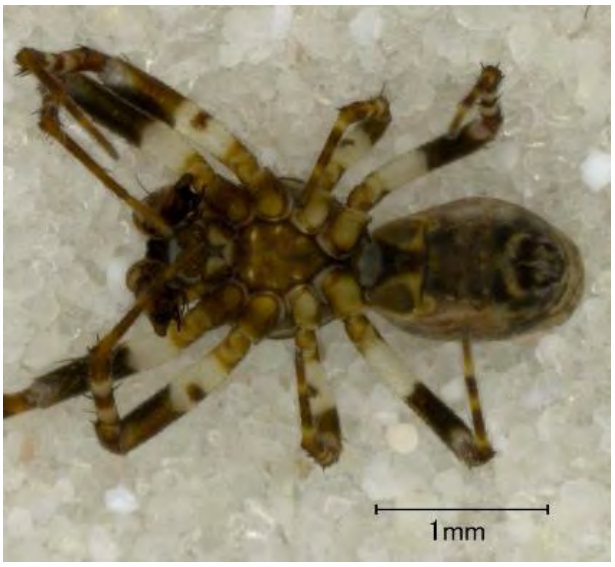
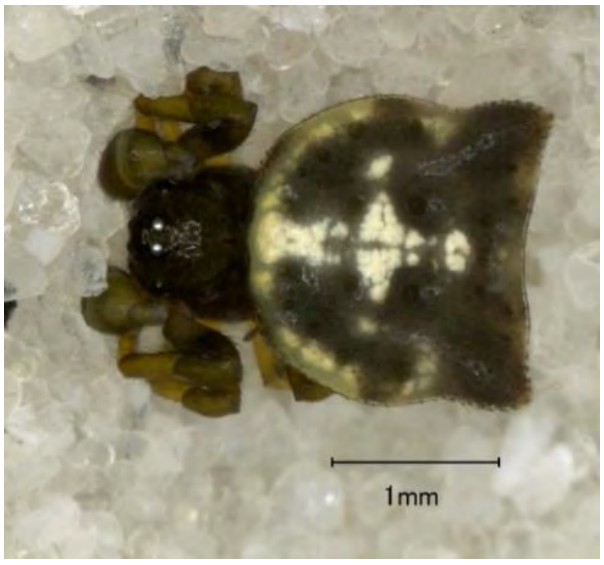


Fig. 63, 64. AraAran044 dorsal and ventral view

Fig. 65, 66. AraAran045 dorsal and ventral view

Fig. 67, 68. AraAran046 dorsal and ventral view



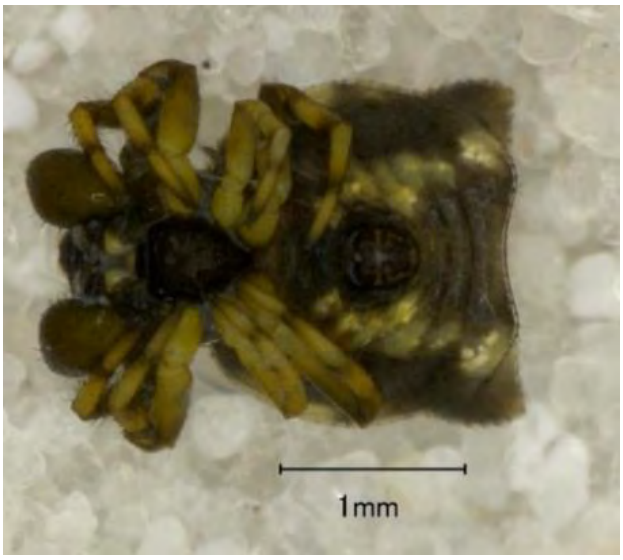


Fig. 69, 70. AraAran047 dorsal and ventral view

Fig. 71, 72. AraAran048 dorsal and ventral view

Fig. 73, 74. AraAran049 dorsal and ventral view

Fig. 75, 76. AraAran050 dorsal and ventral view

Fig. 77, 78. AraAran051 dorsal and ventral view

Fig. 79, 80. AraAran053 dorsal and ventral view

Fig. 81, 82. AraAran054 dorsal and ventral view

Fig. 83, 84. AraAran055 dorsal and ventral view

Fig. 85, 86. AraAran056 dorsal and ventral view

Fig. 87, 88. AraAran057 dorsal and ventral view

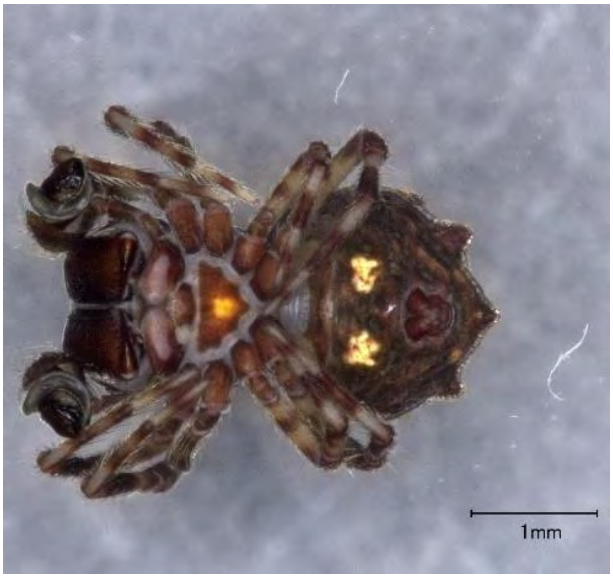


Fig. 89, 90. AraAran058 dorsal and ventral view

Fig. 91, 92. AraAran059 dorsal and ventral view

Fig. 93, 94. AraAran060 dorsal and ventral view

Fig. 95, 96. AraAran061 dorsal and ventral view

Fig. 97, 98. AraAran062 dorsal and ventral view

Fig. 99. 100. AraAran063 dorsal and ventral view

Fig. 101, 102. AraAran064 dorsal and ventral view

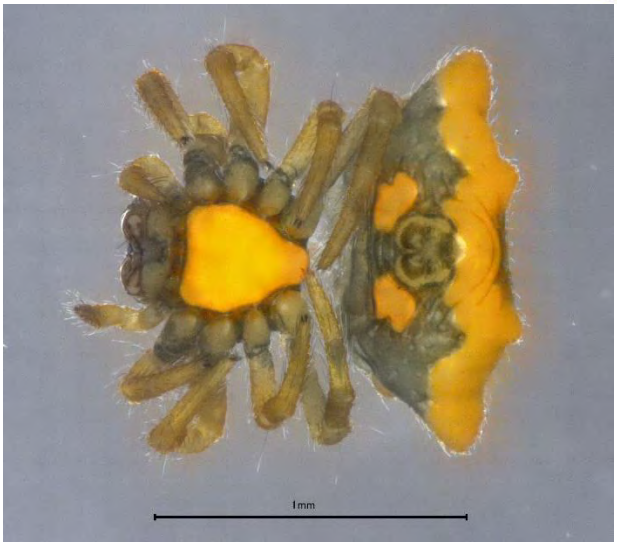


Fig. 103, 104. AraAran065 dorsal and ventral view

2. Cheiracanthidae


Fig. 105, 106. AraChei001 dorsal and ventral view

Fig. 107, 108. AraChei002 dorsal and ventral view

Fig. 109, 110. AraChei003 dorsal and ventral view

Morph 04

Morph 04

Fig. 111, 112. AraChei004 dorsal and ventral view

Fig. 113, 114. AraChei005 dorsal and ventral view

3. Clubionidae


Fig. 115, 116. AraClub001 dorsal and ventral view


Fig. 117, 118. AraClub002 dorsal and ventral view


Fig. 119, 120. Araclub003 dorsal and ventral view

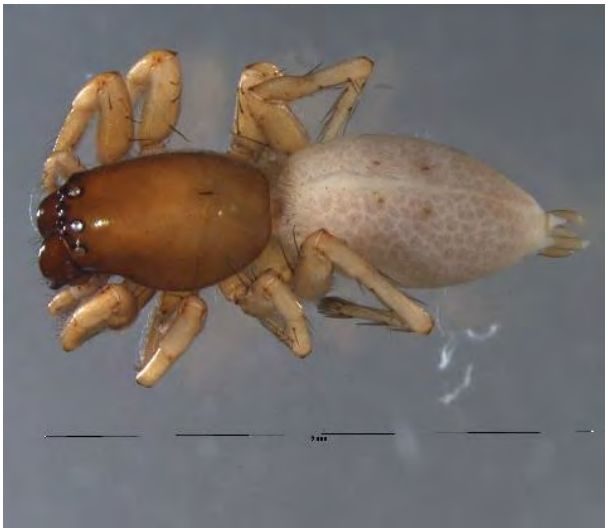



Fig. 121, 122. AraClub003 dorsal and ventral view

Morph 04


Fig. 123, 124. AraClub004 dorsal and ventral view


Fig. 125, 126. AraClub005 dorsal and ventral view

Fig. 127, 128. AraClub006 dorsal and ventral view

Fig. 129, 130. AraClub007 dorsal and ventral view

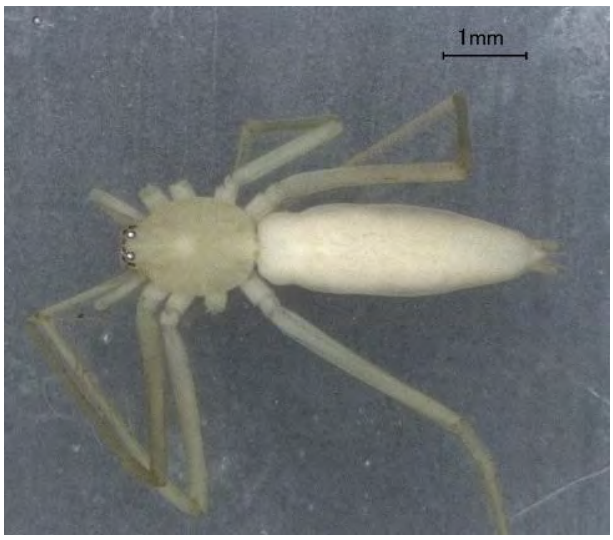


Fig. 131, 132. AraClub008 dorsal and ventral view

Fig. 133, 134. AraClub009 dorsal and ventral view

Fig. 135, 136. AraClub010 dorsal and ventral view

Fig. 137, 138. AraClub011 dorsal and ventral view

Fig. 139, 140. AraClub012 dorsal and ventral view

Fig. 141, 142. AraClub013 dorsal and ventral view

Fig. 143, 144. AraClub014 dorsal and ventral view

Fig. 145, 146. AraClub015 dorsal and ventral view

Fig. 147, 148. AraClub016 dorsal and ventral view

Fig. 149, 150. AraClub017 dorsal and ventral view

Fig. 151, 152. AraClub018 dorsal and ventral view

Fig. 153, 154. AraClub019 dorsal and ventral view

Fig. 155, 156. AraClub020 dorsal and ventral view

Fig. 157, 158. AraClub021 dorsal and ventral view

Fig. 159, 160. AraClub022 dorsal and ventral view

Fig. 161, 162. AraClub023 dorsal and ventral view

Fig. 163, 164. AraClub024 dorsal and ventral view

Fig. 165, 166. AraClub025 dorsal and ventral view

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Fig. 169, 170. AraCori004 dorsal and ventral view


Fig. 171, 172. AraCori005 dorsal and ventral view


Fig. 173, 174. AraCori006 dorsal and ventral view

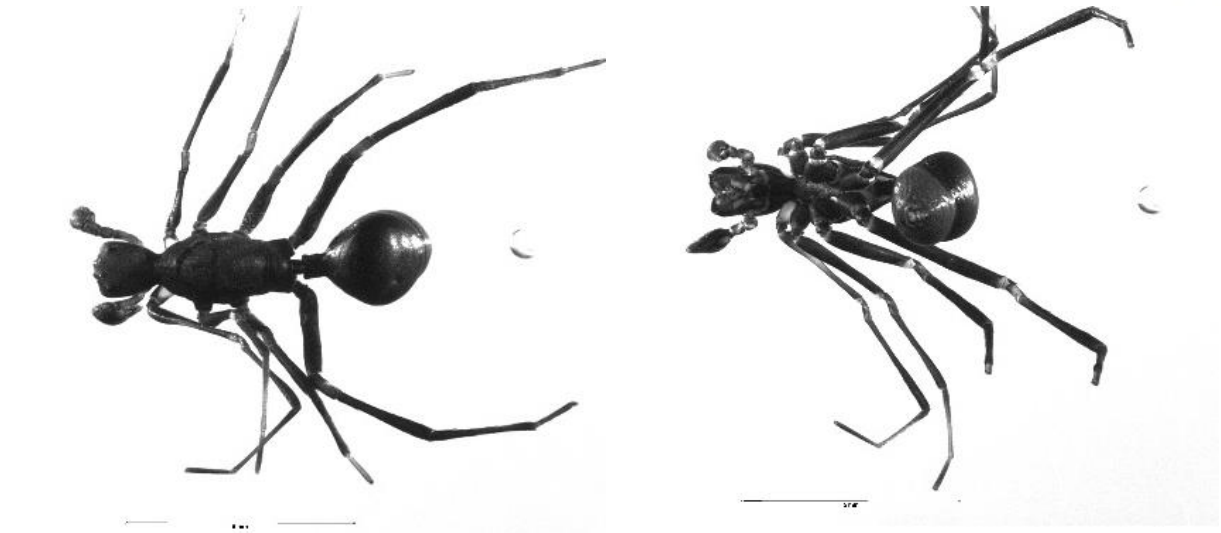


Fig. 175, 176. AraCori009 dorsal and ventral view

Fig. 177, 178. AraCori010 dorsal and ventral view

Fig. 179, 180. AraCori011 dorsal and ventral view


Fig. 181, 182. AraCori012 dorsal and ventral view


Fig. 183, 184. AraCori014 dorsal and ventral view


Fig. 185, 186. AraCori015 dorsal and ventral view


Fig. 187, 188. AraCori016 dorsal and ventral view


Fig. 189, 190. AraCori017 dorsal and ventral view


Fig. 191, 192. AraCori018 dorsal and ventral view

Fig. 193, 194. AraCori021 dorsal and ventral view

Fig. 195, 196. AraCori024 dorsal and ventral view

Fig. 197, 198. AraCori025 dorsal and ventral view

Fig. 199, 200. AraCori026 dorsal and ventral view

Fig. 201, 202. AraCori027 dorsal and ventral view

5. Ctenidae

Fig. 203, 204. AraCten001 dorsal and ventral view


Fig. 205, 206. AraCten002 dorsal and ventral view

Fig. 207, 208. AraCten003 dorsal and ventral view

6. Deinopidae

Fig. 209, 210. AraDein001 dorsal and ventral view

7. Dictynidae


Fig. 211, 212. AraDict001 dorsal and ventral view

8. Gnaphosidae


Fig. 213, 214. AraGnap001 dorsal and ventral view

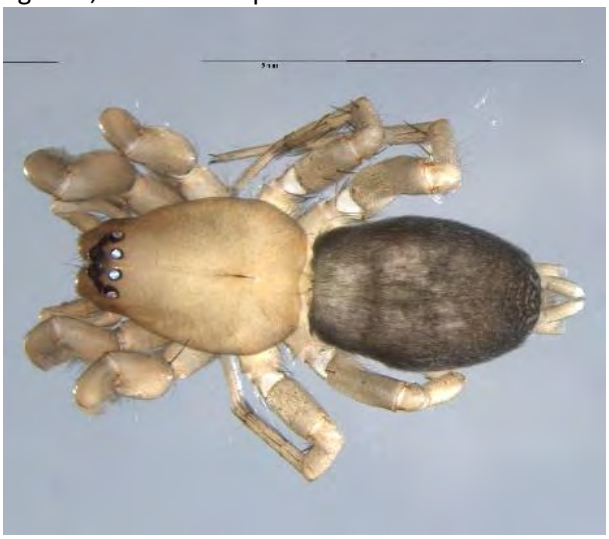
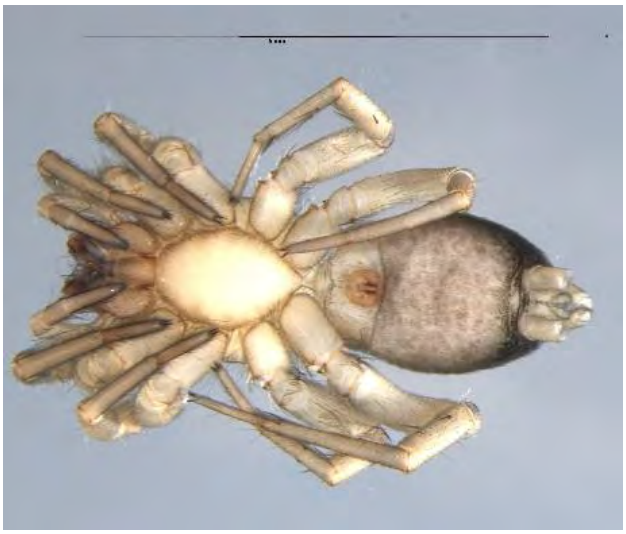
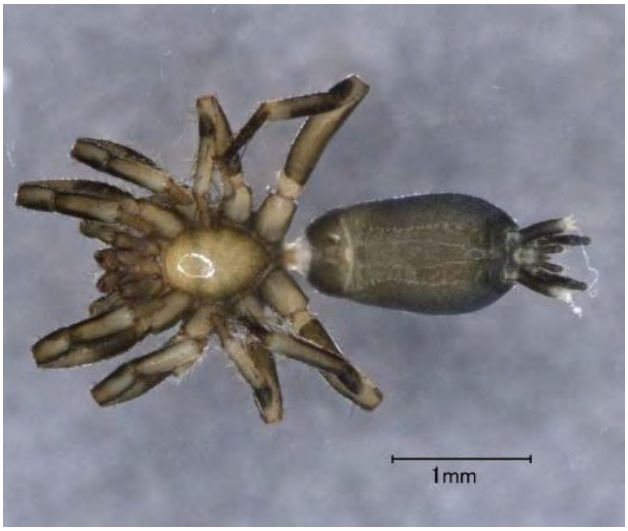



Fig. 215, 216. AraGnap002 dorsal and ventral view

Fig. 217, 218. AraGnap003 dorsal and ventral view



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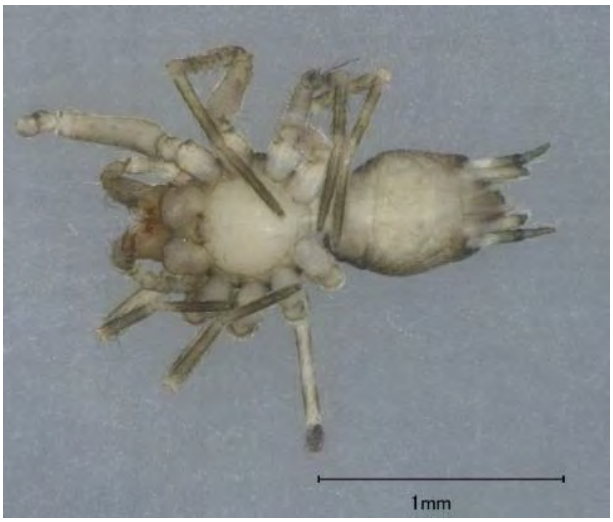

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Fig. 235, 236. AraHahn004 dorsal and ventral view

10.Hersiliidae


Fig. 237, 238. AraHers001 dorsal and ventral view


Fig. 239, 240. AraHers002 dorsal and ventral view

11.Lamponidae

Fig. 241, 242. AraLamp001 dorsal and ventral view

12.Linyphiidae


Fig. 243, 244. AraLiny001 dorsal and ventral view


Fig. 245, 246. AraLiny002 dorsal and ventral view

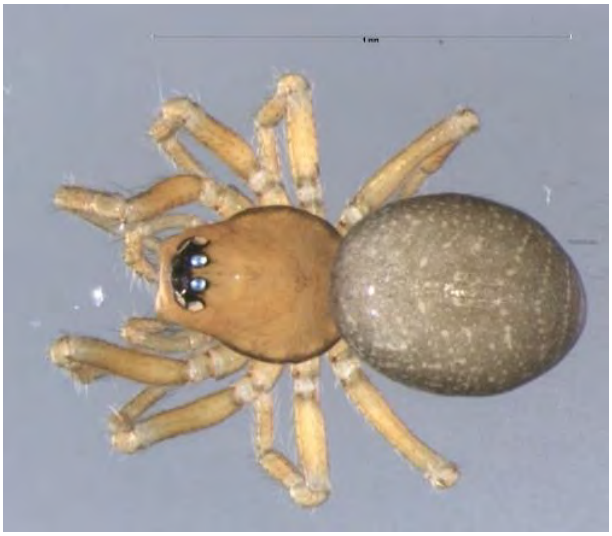

Fig. 247, 248. AraLiny003 dorsal and ventral view

Fig. 249, 250. AraLiny004. dorsal and ventral view

Fig. 251, 252. AraLiny005 dorsal and ventral view

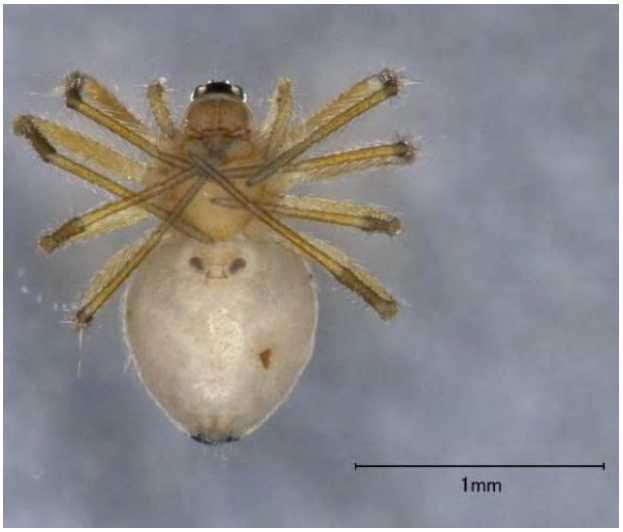

Fig. 253, 254. AraLiny006 dorsal and ventral view

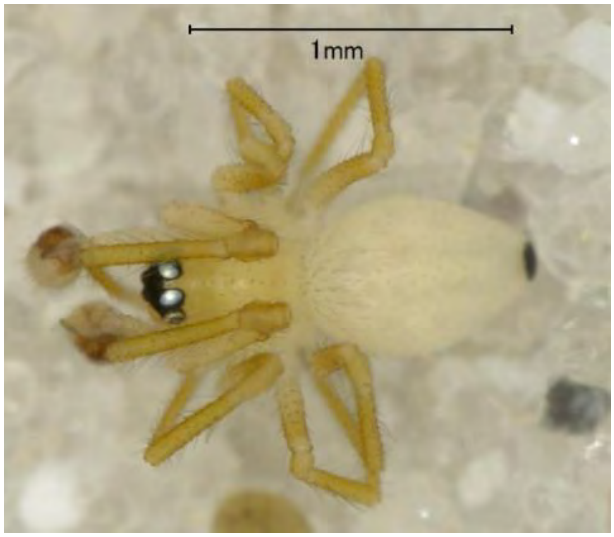

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Fig. 257, 258. AraLiny008 dorsal and ventral view

Fig. 259, 260. AraLiny009 dorsal and ventral view

Fig. 261, 262. AraLiny010 dorsal and ventral view

Fig. 263, 264. AraLiny011 dorsal and ventral view

Fig. 265, 266. AraLiny012 dorsal and ventral view

13. Liocranidae

Fig. 267, 268. AraLioc001 dorsal and ventral view

14.Mimetidae

Fig. 269, 270. AraMime001 dorsal and ventral view


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15.Miturgidae


Fig. 273, 274. AraMitu001 dorsal and ventral view

16.Mysmenidae


Fig. 275, 276. AraMysm001 dorsal and ventral view

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17.Nephilidae

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Fig. 281, 282. AraNeph003 dorsal and ventral view

18.Oonopidae

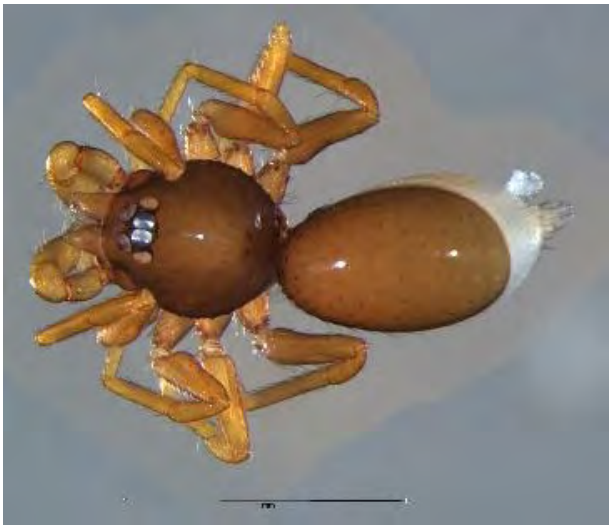



Fig. 283, 284. AraOono001 dorsal and ventral view

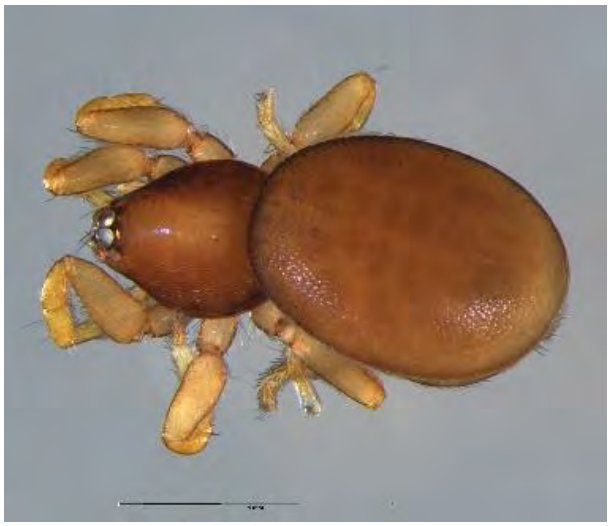


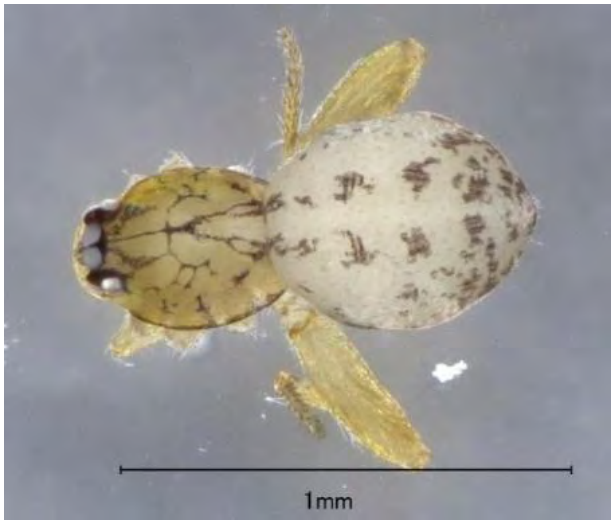

Fig. 285, 286. AraOono002 dorsal and ventral view


Fig. 287, 288. AraOono003 dorsal and ventral view

Fig. 289, 290. AraOono005 dorsal and ventral view

Fig. 291, 292. AraOono006 dorsal and ventral view

Fig. 293, 294. AraOono007 dorsal and ventral view



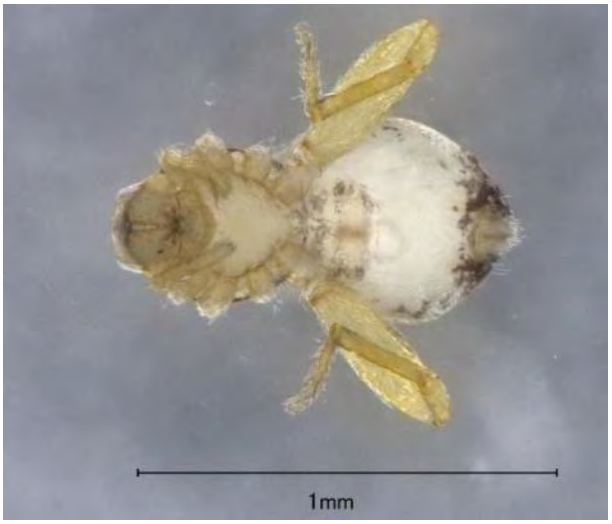


Fig. 295, 296. AraOono008 dorsal and ventral view

19.Oxyopidae

Fig. 297, 298. AraOxyo001 dorsal and ventral view

Fig. 299, 300. AraOxyo002 dorsal and ventral view


Fig. 301, 302. AraOxyo004 dorsal and ventral view


Fig. 303, 304. AraOxyo005 dorsal and ventral view


Fig. 305, 306. AraOxyo006 dorsal and ventral view

Fig. 307, 308. AraOxyo007 dorsal and ventral view

Fig. 309, 310. AraOxyo008 dorsal and ventral view

Fig. 311, 312. AraOxyo009 dorsal and ventral view

Fig. 313, 314. AraOxyo010 dorsal and ventral view

Fig. 315, 316. AraOxyo011 dorsal and ventral view

Fig. 317, 318. AraOxyo012 dorsal and ventral view

Fig. 319, 320. AraOxyo013 dorsal and ventral view

Fig. 321, 322. AraOxyo014 dorsal and ventral view

Fig. 323, 324. AraOxyo015 dorsal and ventral view

Fig. 325, 326. AraOxyo016 dorsal and ventral view

Fig. 327, 328. AraOxyo017 dorsal and ventral view

20.Philodromidae

Fig. 329, 330. AraPhil001 dorsal and ventral view

Fig. 331, 332. AraPhil002 dorsal and ventral view

Fig. 333, 334. AraPhil003 dorsal and ventral view

21. Pholcidae

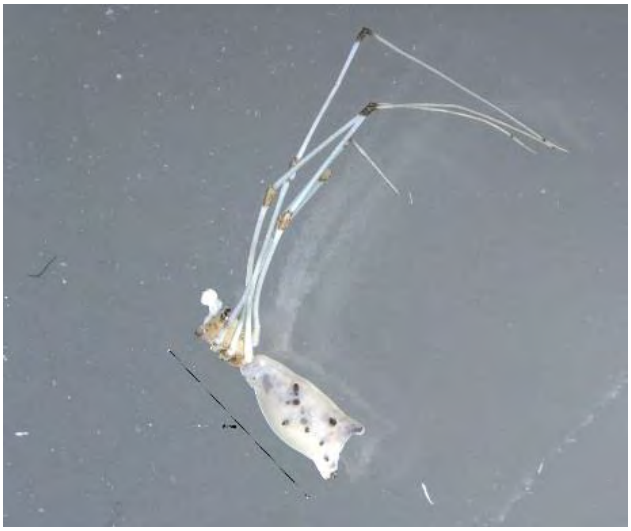


Fig. 335, 336. AraPhol001 dorsal and ventral view


Fig. 337, 338. AraPhol002 dorsal and ventral view

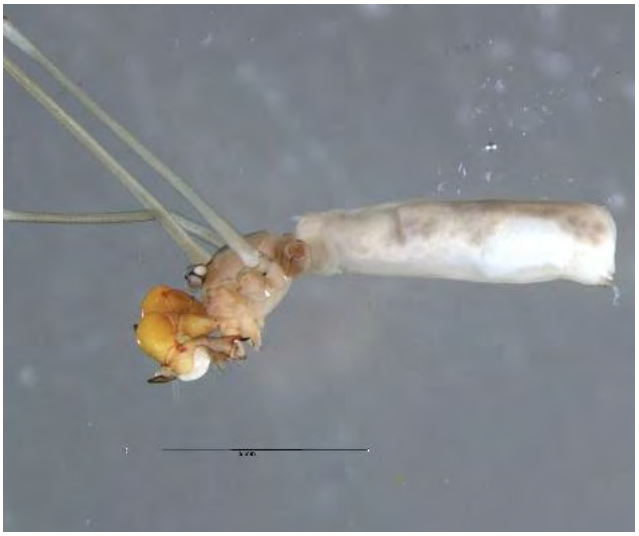



Fig. 339, 340. AraPhol003 dorsal and ventral view


Fig. 341, 342. AraPhol004 dorsal and ventral view

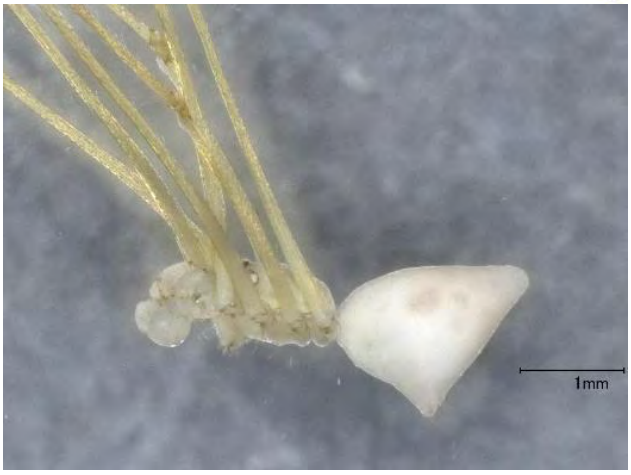


Fig. 343, 344. AraPhol005 dorsal and ventral view

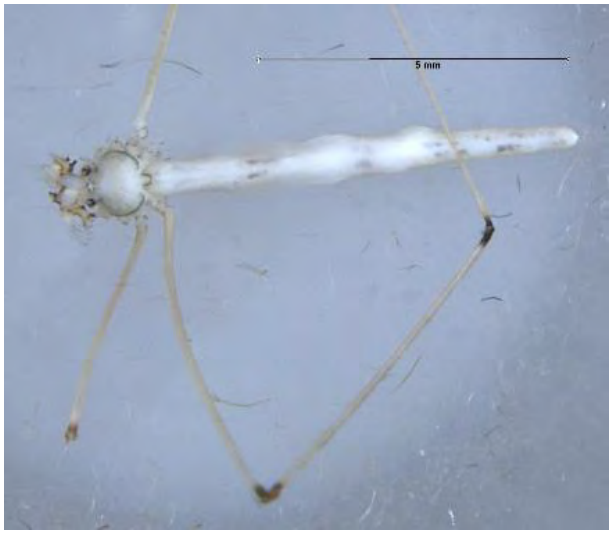
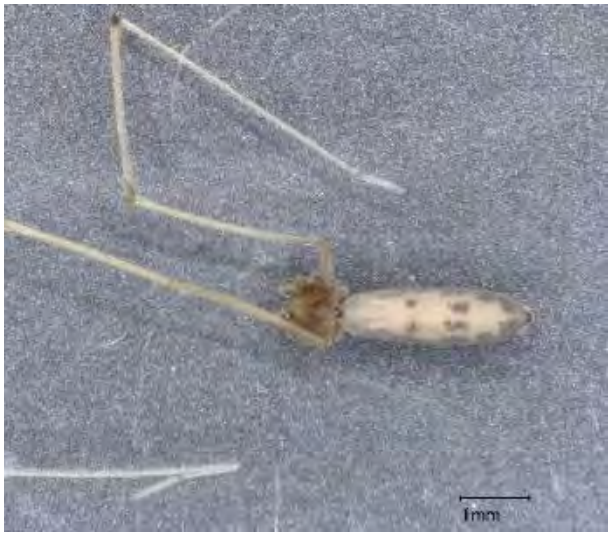


Fig. 345, 346. AraPhol006 dorsal and ventral view

Fig. 347, 348. AraPhol007 dorsal and ventral view



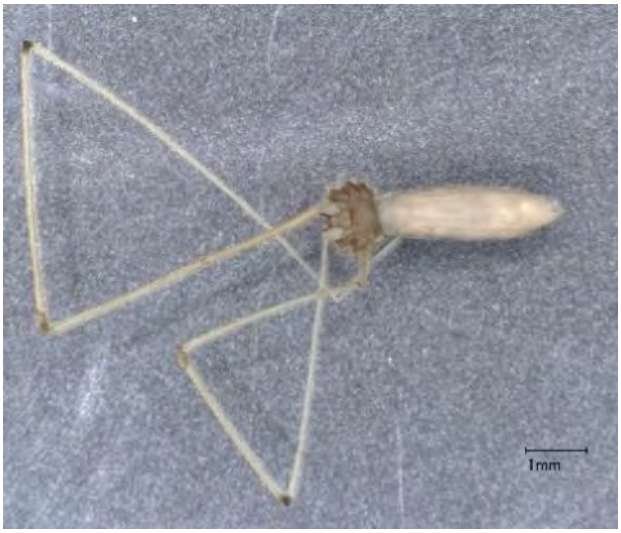


Fig. 349, 350. AraPhol008 dorsal and ventral view

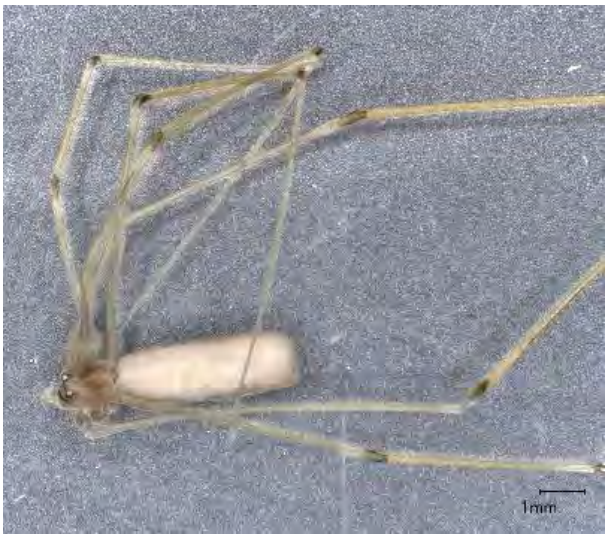


Fig. 351, 352. AraPhol009 dorsal and ventral view

Fig. 353, 354. AraPhol010 dorsal and ventral view

Fig. 355, 356. AraPhol011 dorsal and ventral view

22.Pisauridae


Fig. 357, 358. AraPisa001 dorsal and ventral view


Fig. 359, 360. AraPisa002 dorsal and ventral view

Fig. 361, 362. AraPisa003 dorsal and ventral view

Fig. 363, 364. AraPisa004 dorsal and ventral view

23.Psechridae

Fig. 365, 366. AraPsec001 dorsal and ventral view

Fig. 367, 368. AraPsec002 dorsal and ventral view

24.Salticidae

Fig. 369, 370. AraSalt001 dorsal and ventral view

Fig. 371, 372. AraSalt002 dorsal and ventral view


Fig. 373, 374. AraSalt003 dorsal and ventral view


Fig. 375, 376. AraSalt004 dorsal and ventral view


Fig. 377, 378. AraSalt005 dorsal and ventral view

Fig. 379, 380. AraSalt006 dorsal and ventral view

Fig. 381, 382. AraSalt007 dorsal and ventral view

Fig. 383, 384. AraSalt008 dorsal and ventral view


Fig. 385, 386. AraSalt009 dorsal and ventral view

Fig. 387, 388. AraSalt010 dorsal and ventral view


Fig. 389, 390. AraSalt011 dorsal and ventral view


Fig. 391, 392. AraSalt013 dorsal and ventral view


Fig. 393, 394. AraSalt014 dorsal and ventral view

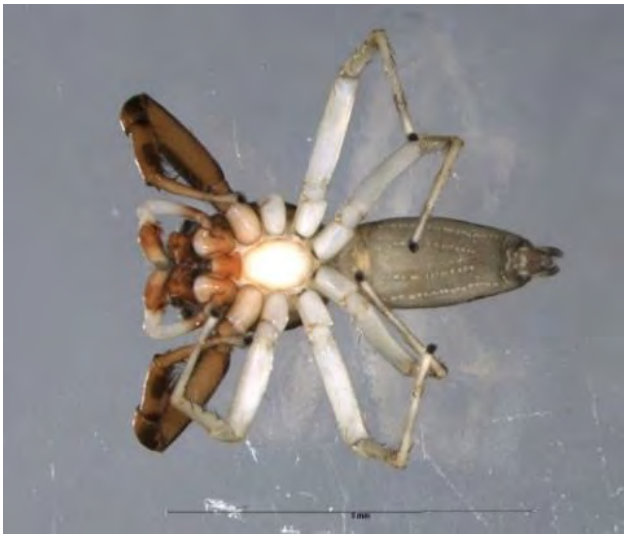



Fig. 395, 396. AraSalt015 dorsal and ventral view


Fig. 397, 398. AraSalt017 dorsal and ventral view


Fig. 399, 400. AraSalt018 dorsal and ventral view


Fig. 401, 402. AraSalt019 dorsal and ventral view


Fig. 403, 404. AraSalt021 dorsal and ventral view


Fig. 405, 406. AraSalt021 dorsal and ventral view


Fig. 407, 408. AraSalt022 dorsal and ventral view


Fig. 409, 410. AraSalt023 dorsal and ventral view

Fig. 411, 412. AraSalt024 dorsal and ventral view


Fig. 413, 414. AraSalt025 dorsal and ventral view

Fig. 415, 416. AraSalt025 dorsal and ventral view

Fig. 417, 418. AraSalt026 dorsal and ventral view

Fig. 419, 420. AraSalt027 dorsal and ventral view


Fig. 421, 422. AraSalt028 dorsal and ventral view


Fig. 423, 424. AraSalt029 dorsal and ventral view


Fig. 425, 426. AraSalt030 dorsal and ventral view

Fig. 427, 428. AraSalt032 dorsal and ventral view

Fig. 429, 430. AraSalt034 dorsal and ventral view

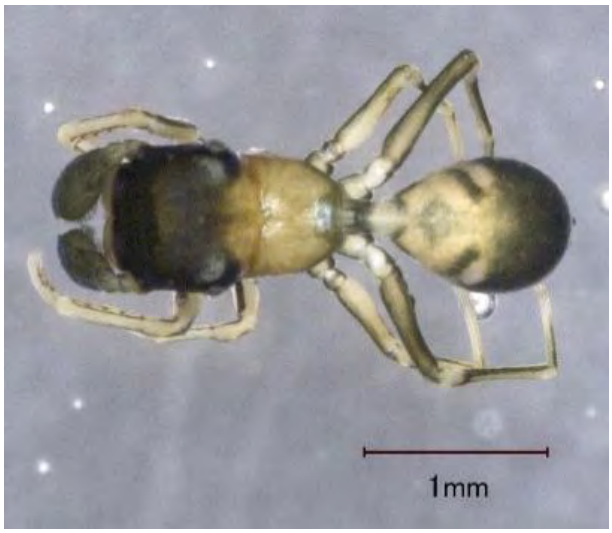


Fig. 431, 432. AraSalt037 dorsal and ventral view


Fig. 433, 434. AraSalt039 dorsal and ventral view

Fig. 435, 436. AraSalt040 dorsal and ventral view

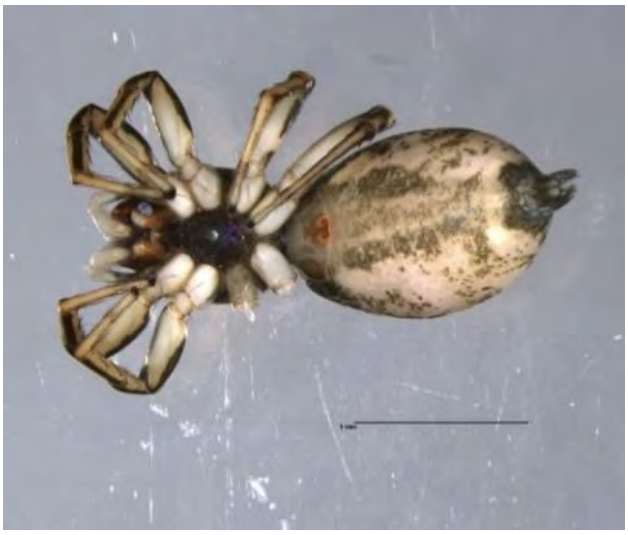



Fig. 437, 438. AraSalt042 dorsal and ventral view


Fig. 439, 440. AraSalt043 dorsal and ventral view


Fig. 441, 442. AraSalt044 dorsal and ventral view


Fig. 443, 444. AraSalt045 dorsal and ventral view


Fig. 445, 446. AraSalt046 dorsal and ventral view


Fig. 447, 448. AraSalt047 dorsal and ventral view


Fig. 449, 450. AraSalt048 dorsal and ventral view


Fig. 451, 452. AraSalt049 dorsal and ventral view


Fig. 453, 454. AraSalt050 dorsal and ventral view


Fig. 455, 456. AraSalt051 dorsal and ventral view


Fig. 457, 458. AraSalt052 dorsal and ventral view


Fig. 459, 460. AraSalt053 dorsal and ventral view


Fig. 461, 462. AraSalt054 dorsal and ventral view


Fig. 463, 464. AraSalt055 dorsal and ventral view


Fig. 465, 466. AraSalt056 dorsal and ventral view


Fig. 467, 468. AraSalt058 dorsal and ventral view


Fig. 469, 470. AraSalt059 dorsal and ventral view


Fig. 471, 472. AraSalt060 dorsal and ventral view


Fig. 473, 474. AraSalt061 dorsal and ventral view

Fig. 475, 476. AraSalt062 dorsal and ventral view

Fig. 477, 478. AraSalt063 dorsal and ventral view

Fig. 479, 480. AraSalt064 dorsal and ventral view

Fig. 481, 482. AraSalt065 dorsal and ventral view

Fig. 483. 484. AraSalt066 dorsal and ventral view

Fig. 485, 486. AraSalt067 dorsal and ventral view

Fig. 487, 488. AraSalt068 dorsal and ventral view

Fig. 489, 490. AraSalt069 dorsal and ventral view

Fig. 491, 492. AraSalt070 dorsal and ventral view

Fig. 493, 494. AraSalt071 dorsal and ventral view

Fig. 495, 496. AraSalt072 dorsal and ventral view

Fig. 497, 498. AraSalt073 dorsal and ventral view

Fig. 499, 500. AraSalt074 dorsal and ventral view

Fig. 501, 502. AraSalt075 dorsal and ventral view

Fig. 503, 504. AraSalt076 dorsal and ventral view

Fig. 505, 506. AraSalt077 dorsal and ventral view

Fig. 507, 508. AraSalt078 dorsal and ventral view

Fig. 509, 510. AraSalt079 dorsal and ventral view

Fig. 511, 512. AraSalt080 dorsal and ventral view

Fig. 513, 514. AraSalt081 dorsal and ventral view

Fig. 515, 516. AraSalt082 dorsal and ventral view

Fig. 517, 518. AraSalt083 dorsal and ventral view

Fig. 519, 520. AraSalt084 dorsal and ventral view

Fig. 521, 522. AraSalt085 dorsal and ventral view

Fig. 523, 524. AraSalt086 dorsal and ventral view

Fig. 525, 526. AraSalt087 dorsal and ventral view

Fig. 527, 528. AraSalt088 dorsal and ventral view

Fig. 529, 530. AraSalt089 dorsal and ventral view

Fig. 531, 532. AraSalt090 dorsal and ventral view

Fig. 533, 534. AraSalt091 dorsal and ventral view

Fig. 535, 536. AraSalt092 dorsal and ventral view

Fig. 537, 538. AraSalt093 dorsal and ventral view

Fig. 539, 540. AraSalt094 dorsal and ventral view

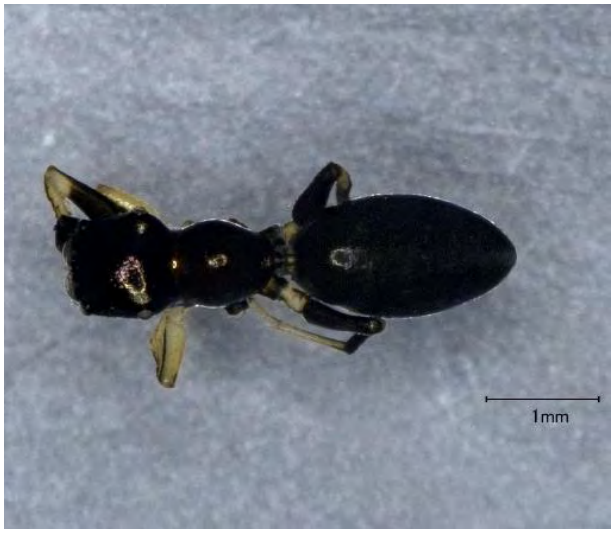


Fig. 541, 542. AraSalt095 dorsal and ventral view

Fig. 543, 544. AraSalt097 dorsal and ventral view

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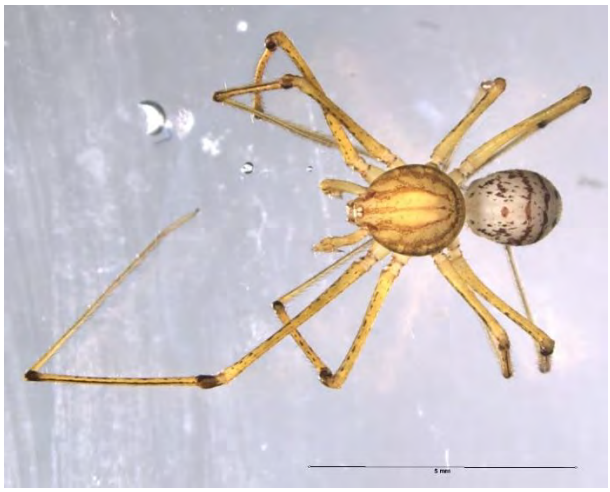
Fig. 547, 548. AraSalt099 dorsal and ventral view

25. Scytodidae

Fig. 549, 550. AraScyt001 dorsal and ventral view



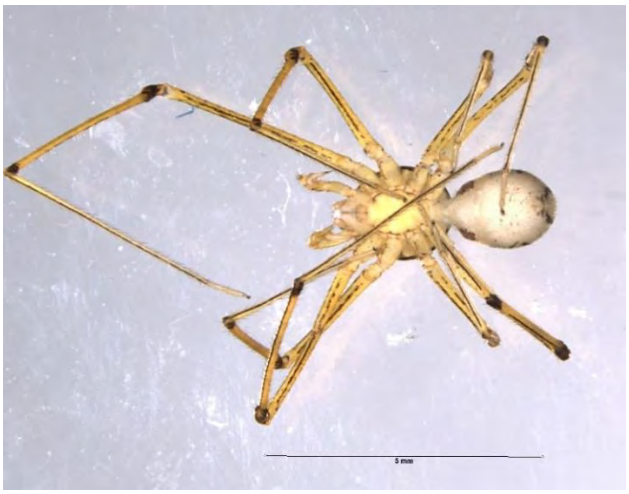


Fig. 551, 552. AraScyt002 dorsal and ventral view

26. Selenopidae


Fig. 553, 554. AraSele001 dorsal and ventral view

27. Sparassidae


Fig. 555, 556. AraSpar001 dorsal and ventral view


Fig. 557, 558. AraSpar002 dorsal and ventral view


Fig. 559, 560. AraSpar003 dorsal and ventral view


Fig. 561, 562. AraSpar004 dorsal and ventral view


Fig. 563, 564. AraSpar005 dorsal and ventral view


Fig. 565, 566. AraSpar007 dorsal and ventral view


Fig. 567, 568. AraSpar008 dorsal and ventral view


Fig. 569, 570. AraSpar009 dorsal and ventral view


Fig. 571, 572. AraSpar010 dorsal and ventral view


Fig. 573, 574. AraSpar011 dorsal and ventral view


Fig. 575, 576. AraSpar012 dorsal and ventral view


Fig. 577, 578. AraSpar013 dorsal and ventral view

Fig. 579, 580. AraSpar014 dorsal and ventral view

Fig. 581, 582. AraSpar015 dorsal and ventral view


Fig. 583, 584. AraSpar016 dorsal and ventral view

Fig. 585, 586. AraSpar017 dorsal and ventral view

Fig. 587, 588. AraSpar018 dorsal and ventral view


Fig. 589, 590. AraSpar019 dorsal and ventral view

Fig. 591, 592. AraSpar020 dorsal and ventral view

Fig. 593, 594. AraSpar021 dorsal and ventral view

Fig. 595, 596. AraSpar022 dorsal and ventral view

Fig. 597, 598. AraSpar023 dorsal and ventral view

28. Tetrablemmidae

Fig. 599, 600. AraTble001 dorsal and ventral view

29. Tetragnathidae

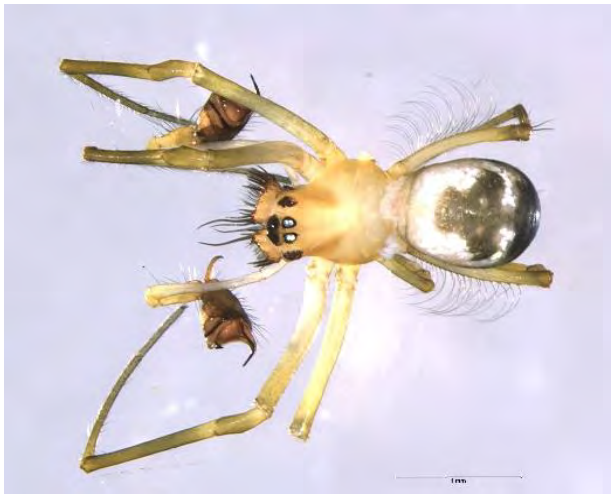



Fig. 601, 602. AraTtra001 dorsal and ventral view

Fig. 603, 604. AraTtra001 dorsal and ventral view

Fig. 605, 606. AraTtra002 dorsal and ventral view


Fig. 607, 608. AraTtra004 dorsal and ventral view

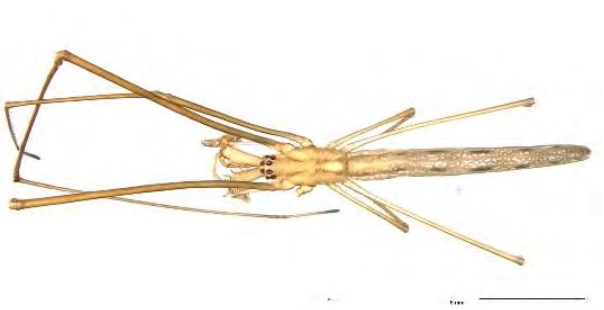



Fig. 609, 610. AraTtra005 dorsal and ventral view

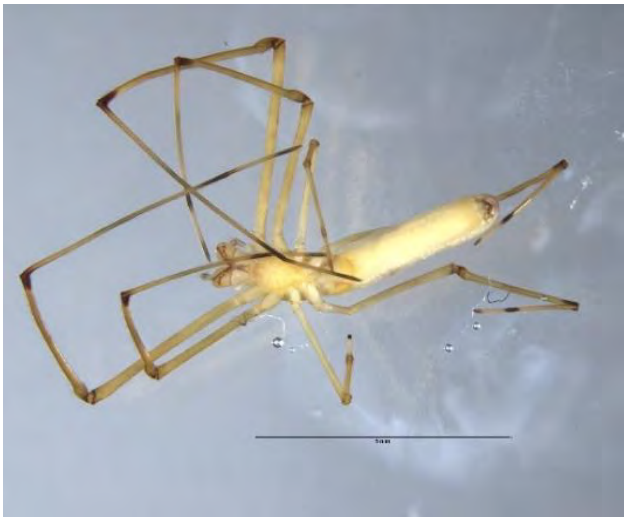



Fig. 611, 612. AraTtra006 dorsal and ventral view

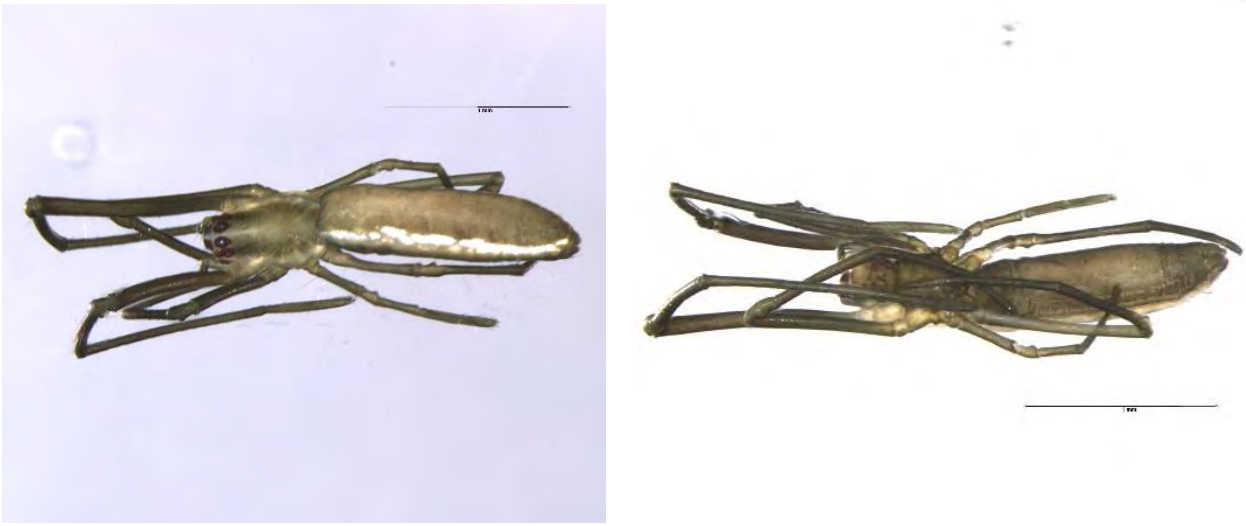


Fig. 613, 614. AraTtra007 dorsal and ventral view

Fig. 615, 616. AraTtra008 dorsal and ventral view

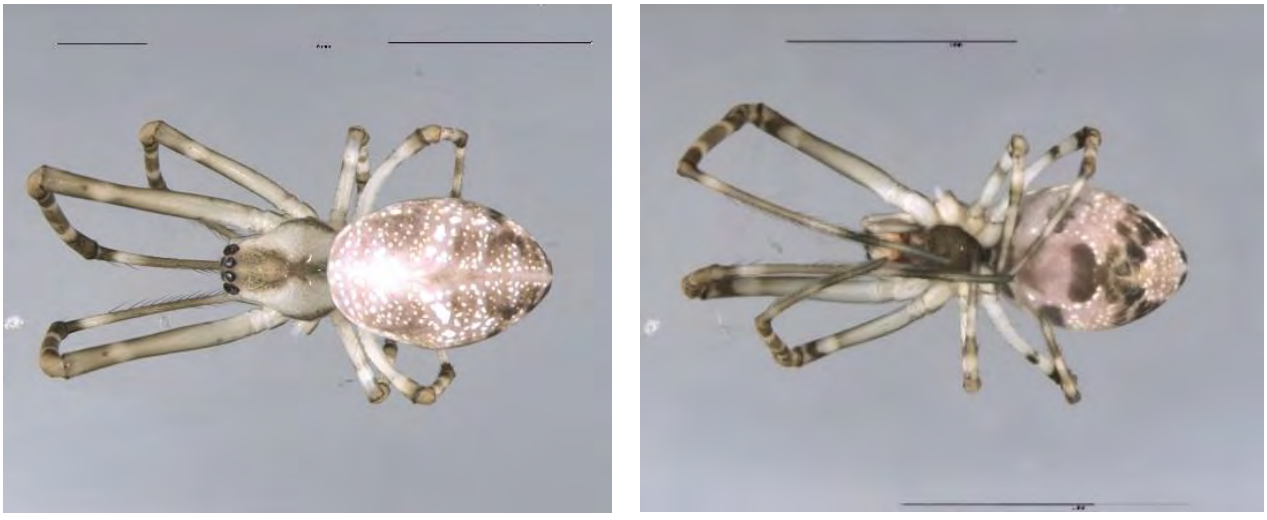


Fig. 617, 618. AraTtra009 dorsal and ventral view


Fig. 619, 620. AraTtra011 dorsal and ventral view

Fig. 621, 622. AraTtra012 dorsal and ventral view


Fig. 623, 624. AraTtra013 dorsal and ventral view

Fig. 625, 626. AraTtra014 dorsal and ventral view

Fig. 627, 628. AraTtra015 dorsal and ventral view

30. Theridiidae

Fig. 629, 630. AraTrid001 dorsal and lateral view

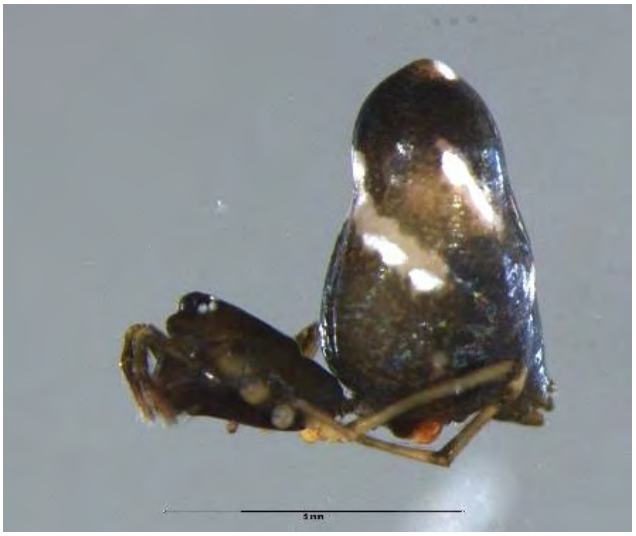



Fig. 631, 632. AraTrid002 lateral and lateral view


Fig. 633, 634. AraTrid003 dorsal and ventral view


Fig. 635, 636. AraTrid004 dorsal and ventral view


Fig. 637, 638. AraTrid005 dorsal and ventral view


Fig. 639, 640. AraTrid006 dorsal and ventral view


Fig. 641, 642. AraTrid007 dorsal and ventral view

Fig. 643, 644. AraTrid008 dorsal and lateral view

Fig. 645, 646. AraTrid010 dorsal and ventral view

Fig. 647, 648. AraTrid011 dorsal and ventral view


Fig. 649, 650. AraTrid012 dorsal and ventral view


Fig. 651, 652. AraTrid013 dorsal and ventral view


Fig. 653, 654. AraTrid014 dorsal and ventral view


Fig. 655, 656. AraTrid015 dorsal and ventral view


Fig. 657, 658. AraTrid018 dorsal and ventral view


Fig. 659, 660. AraTrid020 dorsal and ventral view


Fig. 661, 662. AraTrid021 dorsal and ventral view

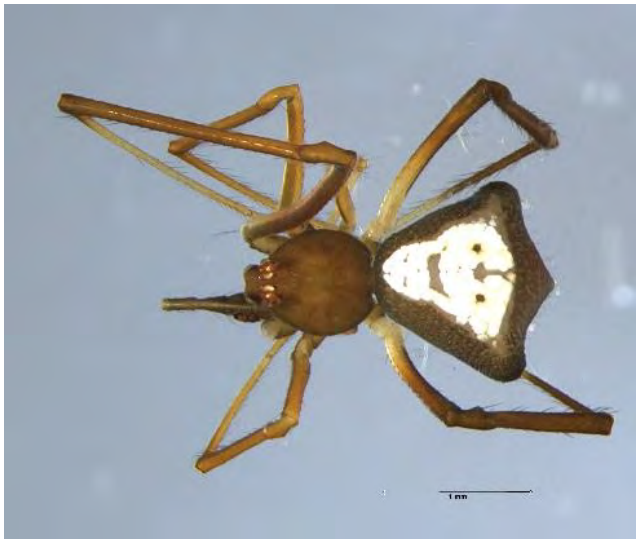



Fig. 663,664. AraTrid023 dorsal and ventral view


Fig. 665,666. AraTrid024 dorsal and lateral view

Fig. 667, 668. AraTrid025 dorsal and lateral view

Fig. 669, 670. AraTrid026 dorsal and ventral view

Fig. 671, 672. AraTrid027 dorsal and ventral view


Fig. 673, 674. AraTrid028 dorsal and ventral view


Fig. 675, 676. AraTrid029 dorsal and ventral view


Fig. 677, 678. AraTrid030 dorsal and ventral view


Fig. 679, 680. AraTrid030 dorsal and ventral view


Fig. 681, 682. AraTrid031 dorsal and ventral view

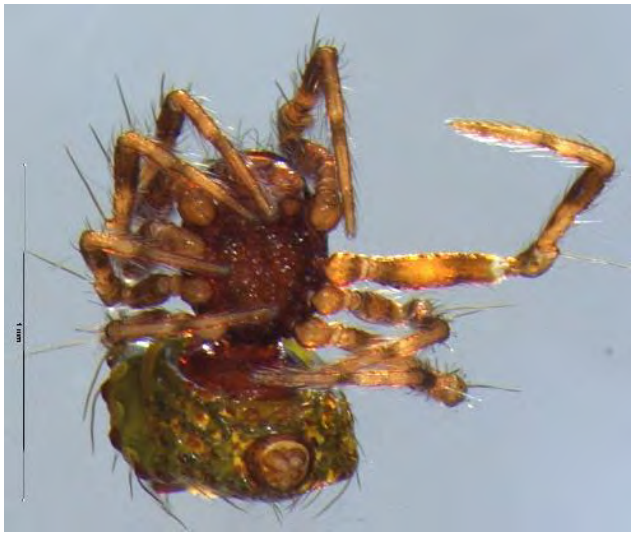



Fig. 683, 684. AraTrid032 dorsal and ventral view


Fig. 685, 686. AraTrid033 dorsal and ventral view


Fig. 687, 688. AraTrid034 dorsal and ventral view


Fig. 689, 690. AraTrid035 dorsal and ventral view


Fig. 691, 692. AraTrid038 dorsal and lateral view


Fig. 693, 694. AraTrid039 dorsal and ventral view


Fig. 695, 696. AraTrid043 dorsal and ventral view


Fig. 697, 698. AraTrid044 lateral and ventral view


Fig. 699, 700. AraTrid045 dorsal and ventral view


Fig. 701, 702. AraTrid047 dorsal and ventral view


Fig. 703, 704. AraTrid048 dorsal and ventral view

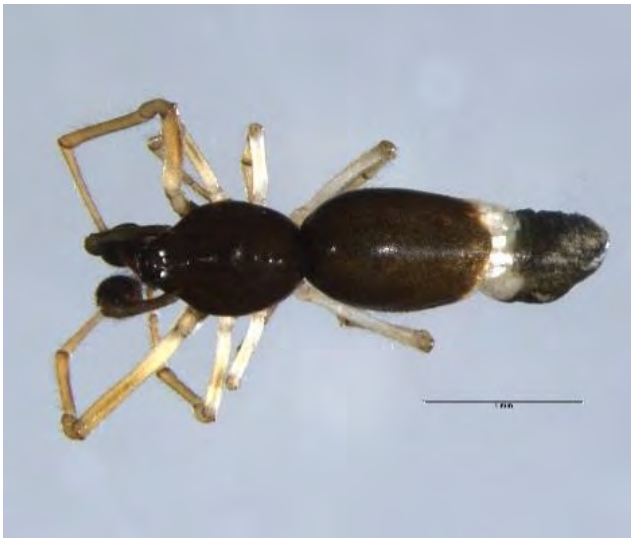



Fig. 705, 706. AraTrid049 dorsal and ventral view


Fig. 707, 708. AraTrid050 dorsal and ventral view

Fig. 709, 710. AraTrid051 dorsal and lateral view

Fig. 711, 712. AraTrid052 dorsal and ventral view

Fig. 713, 714. AraTrid053 dorsal and ventral view


Fig. 715, 716. AraTrid054 dorsal and ventral view


Fig. 717, 718. AraTrid055 dorsal and ventral view

Fig. 719, 720. AraTrid056 dorsal and ventral view

Fig. 721, 722. AraTrid058 dorsal and ventral view

Fig. 723, 724. AraTrid059 dorsal and ventral view

Fig. 725, 726. AraTrid060 dorsal and ventral view


Fig. 727, 728. AraTrid061 dorsal and ventral view

Fig. 729, 730. AraTrid062 dorsal and ventral view

Fig. 731, 732. AraTrid062 dorsal and ventral view

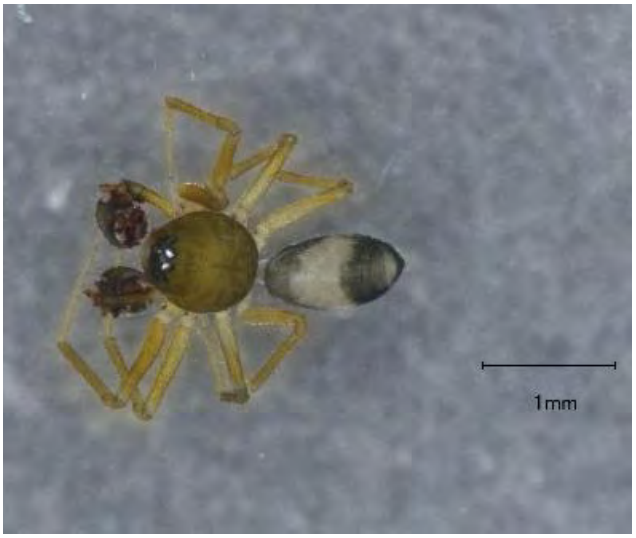


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Fig. 739, 740. AraTrid066 dorsal and ventral view

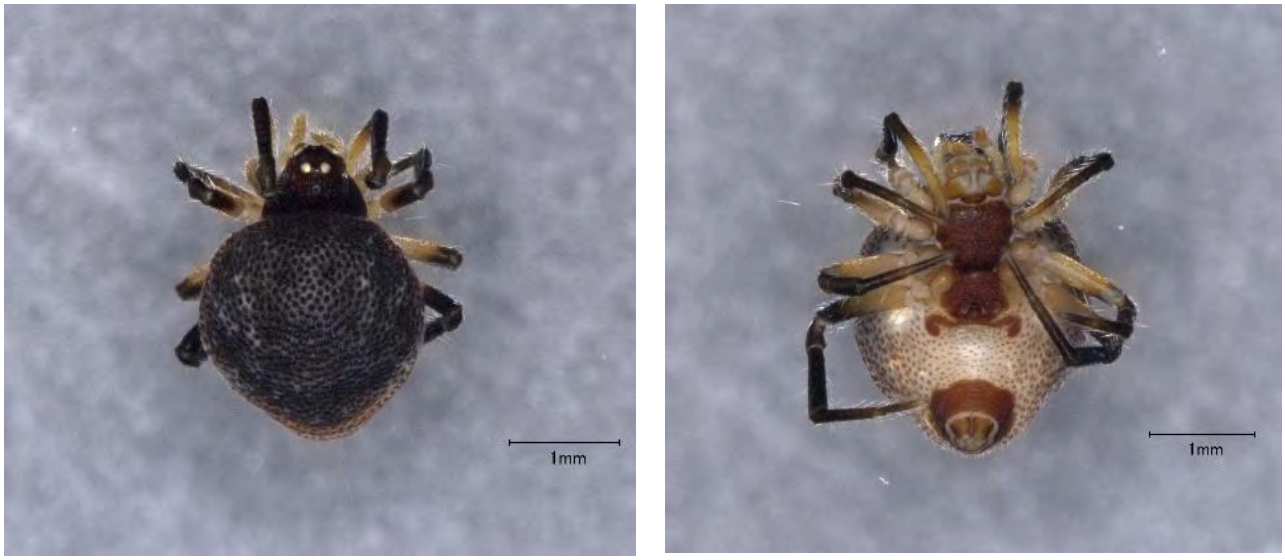

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Fig. 743, 744. AraTrid067 dorsal and ventral view

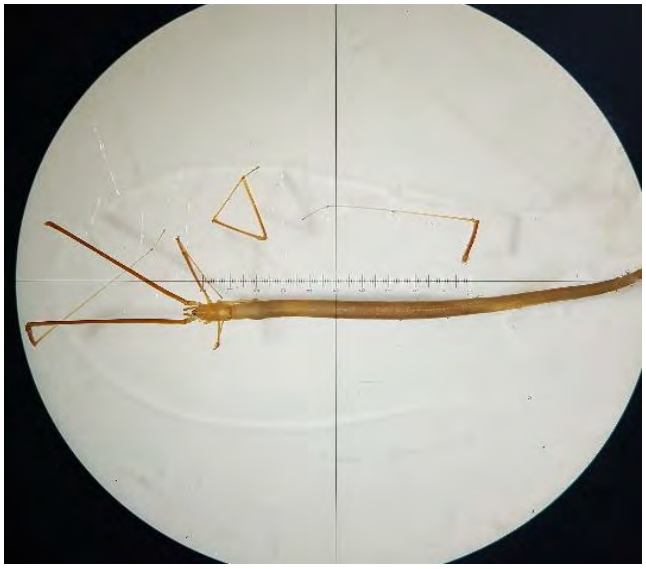
Fig. 745, 746. AraTrid068 dorsal and ventral view

Fig. 747, 748. AraTrid069 dorsal and ventral view

Fig. 749, 750. AraTrid069 dorsal and ventral view

Fig. 751, 752. AraTrid070 dorsal and ventral view

Fig. 753, 754. AraTrid071 dorsal and ventral view



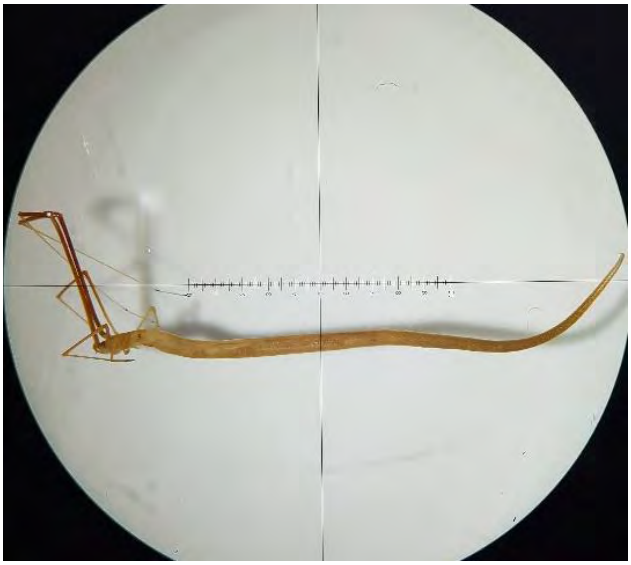


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Fig. 757, 758. AraTrid073 dorsal and ventral view

Fig. 759, 760. AraTrid074 dorsal and ventral view

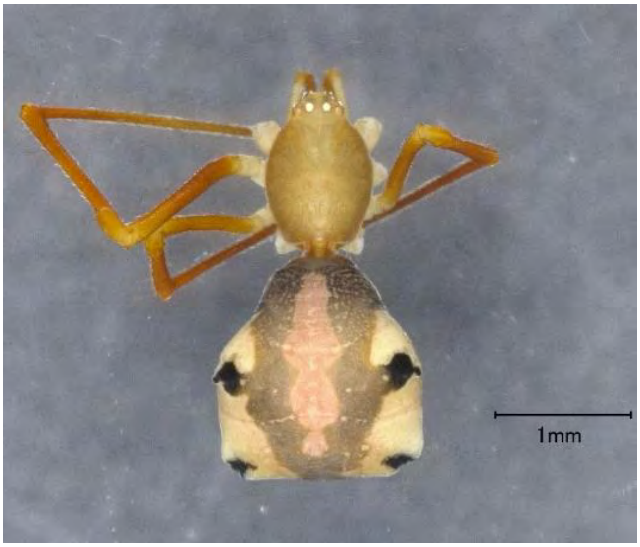

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Fig. 763, 764. AraTrid076 dorsal and ventral view

Fig. 765, 766. AraTrid076 dorsal and ventral view

Fig. 767, 768. AraTrid077 dorsal and ventral view

Fig. 769, 770. AraTrid078 dorsal and ventral view

Fig. 771, 772. AraTrid079 dorsal and ventral view

Fig. 773, 774. AraTrid080 dorsal and ventral view

Fig. 775, 776. AraTrid081 dorsal and ventral view

Fig. 777, 778. AraTrid082 dorsal and ventral view

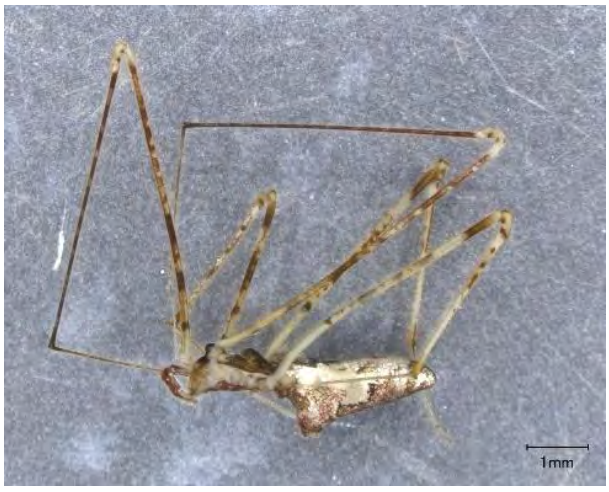

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Fig. 781, 782. AraTrid084 dorsal and ventral view

Fig. 783, 784. AraTrid085 dorsal and ventral view

Fig. 785, 786. AraTrid086 dorsal and ventral view

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Fig. 789, 790. AraTrid089 dorsal and ventral view

Fig. 791, 792. AraTrid090 dorsal and ventral view

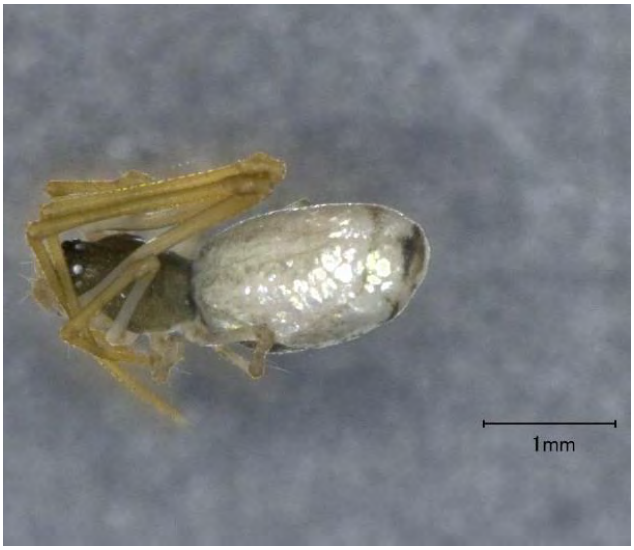

Fig. 793, 794. AraTrid091 dorsal and ventral view

Fig. 795, 796. AraTrid092 dorsal and ventral view

Fig. 797, 798. AraTrid093 dorsal and ventral view

Fig. 799, 800. AraTrid094 dorsal and ventral view

Fig. 801, 802. AraTrid095 dorsal and ventral view

Fig. 803, 804. AraTrid096 dorsal and lateral view

Fig. 805, 806. AraTrid097 dorsal and ventral view

Fig. 807, 808. AraTrid098 dorsal and ventral view

Fig. 809, 810. AraTrid099 dorsal and ventral view

31. Theridiosomatidae


Fig. 811, 812. AraTsom001 dorsal and ventral view

32. Thomisidae


Fig. 813, 814. AraThom001 dorsal and ventral view


Fig. 815, 816. AraThom002 dorsal and ventral view


Fig. 817, 818. AraThom004 dorsal and ventral view


Fig. 819, 820. AraThom005 dorsal and ventral view


Fig. 821, 822. AraThom006 dorsal and ventral view


Fig. 823, 824. AraThom007 dorsal and ventral view


Fig. 825, 826. AraThom008 dorsal and ventral view

Fig. 827, 828. AraThom008 dorsal and ventral view


Fig. 829, 830. AraThom009 dorsal and ventral view


Fig. 831, 832. AraThom010 dorsal and ventral view


Fig. 833, 834. AraThom011 dorsal and ventral view

Fig. 835, 836. AraThom012 dorsal and ventral view


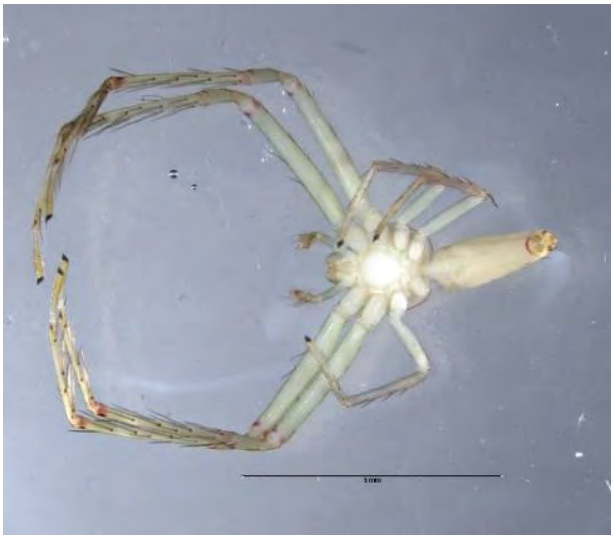

Fig. 837, 838. AraThom015 dorsal and ventral view


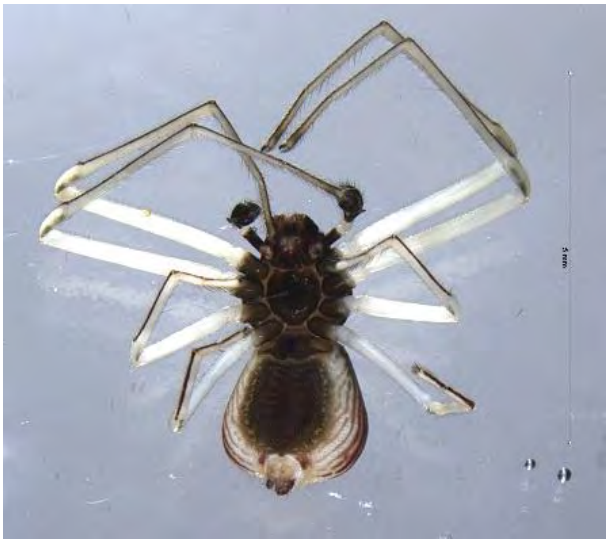

Fig. 839, 840. AraThom016 dorsal and ventral view


Fig. 841, 842. AraThom017 dorsal and ventral view


Fig. 843, 844. AraThom018 dorsal and ventral view


Fig. 845, 846. AraThom019 dorsal and ventral view


Fig. 847, 848. AraThom021 dorsal and ventral view


Fig. 849, 850. AraThom025 dorsal and ventral view

Fig. 851, 852. AraThom026 dorsal and ventral view

Fig. 853, 854. AraThom026 dorsal and ventral view

Fig. 855, 856. AraThom027 dorsal and ventral view

Fig. 857, 858. AraThom028 dorsal and ventral view

Fig. 859, 860. AraThom029 dorsal and ventral view

Fig. 861, 862. AraThom030 dorsal and ventral view

Fig. 863, 864. AraThom031 dorsal and ventral view

Fig. 865, 866. AraThom032 dorsal and ventral view

Fig. 867, 868. AraThom033 dorsal and ventral view

Fig. 869, 870. AraThom034 dorsal and ventral view

Fig. 871, 872. AraThom035 dorsal and ventral view

Fig. 873, 874. AraThom036 dorsal and ventral view

Fig. 875, 876. AraThom037 dorsal and ventral view

Fig. 877, 878. AraThom038 dorsal and ventral view

Fig. 879, 880. AraThom039 dorsal and ventral view

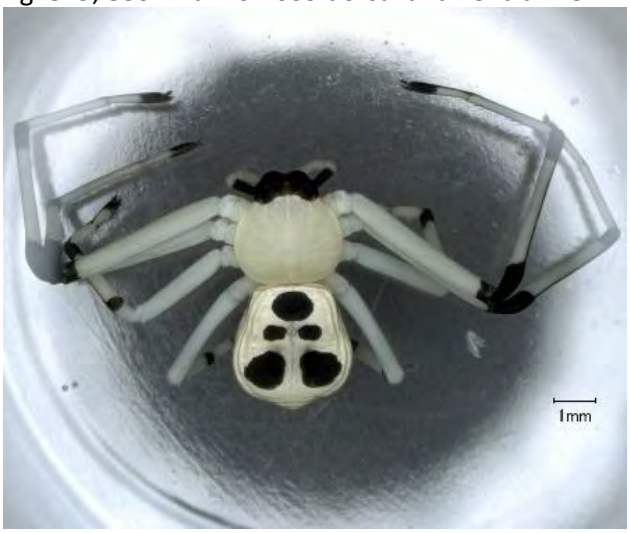

Fig. 881, 882. AraThom040 dorsal and ventral view

Fig. 883, 884. AraThom041 dorsal and ventral view

Fig. 885, 886. AraThom042 dorsal and ventral view

Fig. 887, 888. AraThom043 dorsal and ventral view

Fig. 889, 890. AraThom044 dorsal and ventral view


Fig. 891, 892. AraThom045 dorsal and ventral view

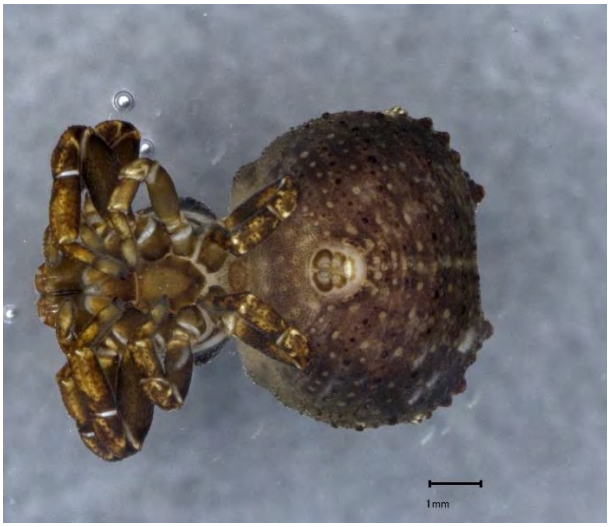

Fig. 893, 894. AraThom046 dorsal and ventral view

33. Trachelidae


Fig. 895, 896. AraTrac001 dorsal and ventral view


Fig. 897, 898. AraTrac002 dorsal and ventral view

Fig. 899, 900. AraTrac003 dorsal and ventral view

34. Uloboridae

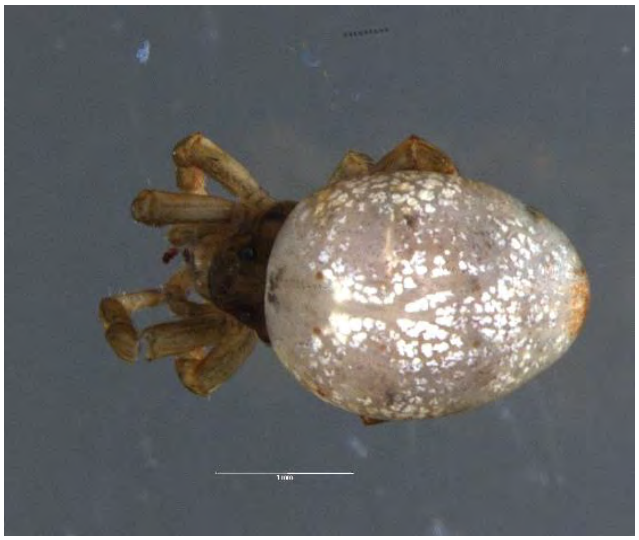


Fig. 901, 902. AraUlob001 dorsal and ventral view

Fig. 903, 904. AraUlob002 dorsal and ventral view


Fig. 905, 906. AraUlob003 dorsal and ventral view

Fig. 907, 908. AraUlob003 dorsal and ventral view

Fig. 909, 910. AraUlob004 dorsal and ventral view

Fig. 911, 912. AraUlob005 dorsal and ventral view


Fig. 913, 914. AraUlob006 dorsal and lateral view

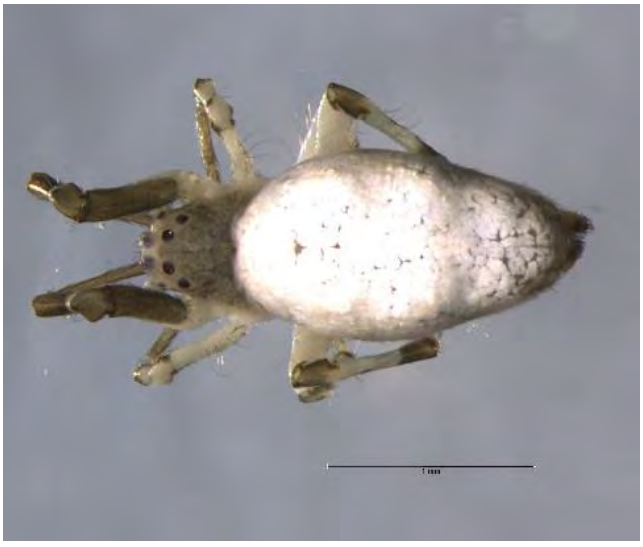


Fig. 915, 916 AraUlob007 dorsal and ventral view

Fig. 917, 918. AraUlob008 dorsal and ventral view

Fig. 919, 920. AraUlob009 dorsal and ventral view

Fig. 921, 922. AraUlob010 dorsal and ventral view

Fig. 923, 924. AraUlob011 dorsal and ventral view

Fig. 925, 926. AraUlob012 dorsal and ventral view

Fig. 927, 928. AraUlob013 dorsal and ventral view

35.Zodariidae

Fig. 929, 930. AraZoda001 dorsal and ventral view

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