

THREE NEW ENDEMIC GENERA OF THE *ASTERON*-COMPLEX (ARANEAE:
ZODARIIDAE) FROM AUSTRALIA:
BASASTERON, *EUASTERON* AND *SPINASTERON*

BARBARA BAEHR

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Three new genera are created for 19 new species in the *Asteron*-complex, a large group of Australian Zodariidae. *Basasteron* gen. nov. contains only *Basasteron leucosemum* (Rainbow, 1920) and is characterised by the straight retrolateral cymbial flange and the very short ventral and dorsal tibial apophysis. *Euasteron* gen. nov. includes the type species *E. enterprise* sp. nov. (♂, ♀) and *E. atriceps* sp. nov. (♂), *E. bartoni* sp. nov. (♂, ♀), *E. carnarvon* sp. nov. (♂, ♀), *E. churchillae* sp. nov. (♂), *E. gibsonae* sp. nov. (♂), *E. harveyi* sp. nov. (♂), *E. johanna* sp. nov. (♂, ♀), *E. juliannae* sp. nov. (♂, ♀), *E. krebsorum* sp. nov. (♂, ♀), *E. lorne* sp. nov. (♂), *E. milledgei* sp. nov. (♂, ♀), *E. monteithorum* sp. nov. (♂, ♀), *E. raveni* sp. nov. (♂), *E. ulrichi* sp. nov. (♂), *E. ursulae* sp. nov. (♂, ♀), *E. willeroo* sp. nov. (♂, ♀) and can be recognised by cymbial flange with rounded extension. *Spinasteron* gen. nov. is identified by barely developed retrolateral cymbial flange and represented by *S. sanford* sp. nov. (♂) and *S. nigriceps* sp. nov. (♂). □ *Basasteron*, *Euasteron*, *Spinasteron*, Australia, new genera.

Barbara Baehr, Queensland Museum, PO Box 3300, South Brisbane 4101, Australia (e-mail: BarbaraB@qm.qld.gov.au); 20 October 2002.

This is the fourth systematic paper, funded by the Australian Biological Resources Study Participatory Program, on the large *Asteron*-complex (Baehr & Jocqué, 1996). *Asteron* Jocqué 1991, has been revised (Jocqué & Baehr, 2001) and contains 8 species. From the different characters of all other species new genera were erected. So far, *Cavasteron*, *Leptasteron*, *Minasteron*, *Pentasteron*, *Phenasteron*, *Pseudasteron* and *Subasteron* (Baehr & Jocqué, 2000, 2001; Jocqué & Baehr, 2001) have been revised. This paper contains another 3 new genera with 19 new species. *Basasteron* shares the straight cymbial flange with the basic genera *Pentasteron*, *Phenasteron* and *Leptasteron* of the *Asteron*-complex and the semicircular DTA with folded distal part with the more derived genera *Cavasteron*, *Minasteron*, *Euasteron* and *Spinasteron*.

Euasteron and *Spinasteron* are closely related to *Cavasteron* and *Minasteron* sharing the special shape of tibial apophyses with 2 apophyses forming a deep concavity between them: the dorsal one divided in two parts connected by a ridge and the typical membranous semicircular DTA with folded distal part. *Euasteron* can be easily separated from both genera by the lack of a large terminal claw-like spine in male palps. *Spinasteron* is separated from these genera by the barely developed retrolateral cymbial flange

(Fig. 4A) on the palpal cymbium in contrast to flange with a well-developed extension (Fig. 4C).

Most species are named in honour of people who supported this paper.

MATERIAL AND METHODS

Descriptions are generated with the aid of Intkey (Dallwitz et al., 1998) and shortened where possible.

Drawings were done from body, right palp, epigyne and vulva. All measurements are in mm.

Detailed spination of legs were not done because there are normally no characters to separate the species. Obvious spination characters are mentioned when they are important for separation of species.

Colour pattern is described from preserved spiders in alcohol. The white abdominal patches can be yellow or orange in live spiders. If the specimens are not well preserved they can lose their colour pattern completely. That happened mainly both in specimens stored in vials with white lids and in specimens that were collected in long-term pitfall traps using ethylene glycol. In these cases, the colour pattern is useless and the species can be identified only by their genitalic characters.

Abbreviations of characters: ALE, anterior lateral eyes; AME, anterior median eyes; AS, anterior spinnerets; CD, copulatory duct; CO,

copulatory opening; Ceph, cephalothorax; DTA, dorsal tegular apophysis; DtiA dorsal tibial apophysis; E, embolus; EP, external prong on dorso-retrolateral tibial apophysis; F, flange on cymbium; FA, frontal appendage of embolus base = VTA (ventral tegular apophysis); Fe, femur; IP, internal prong on dorso-retrolateral tibial apophysis; MS, median spinnerets; MEG, median eye group; ML, membranous lamella on retrolateral part of DTA; MT, metatarsus; P, patella; PE, prolateral extension of DTA; PR, prong on retrolateral side of DTA; PLE, posterior lateral eyes; PME, posterior median eyes; PS, posterior spinnerets; RE, rounded extension on flange; S, spermatheca; sl/sw sternum length/sternum width; SP, sperm duct; T, tibia; Ta, tarsus; TBE, Trans basal area of embolus; TF, transparent field on embolus base; VtiA, ventral tibial apophysis.

Abbreviations of institutions where material was borrowed: AM, Australian Museum, Sydney (M. Gray); CSIRO, (T. Churchill); MAGNT, Museum & Art Gallery of the Northern Territory, Darwin; QM, Queensland Museum, Brisbane (R. Raven); SAMA, South Australian Museum, Adelaide (D. Hirst); VM, Melbourne Museum, Melbourne (C. McPhee); WAM, Western Australian Museum, Perth (M. Harvey).

SYSTEMATICS

KEY TO *BASASTERON*, *EUASTERON* AND *SPINASTERON*

1. Palp, cymbial flange, barely developed, AME big (Figs 2A-C, 3C, F) 2
Palp, cymbial flange, well developed either straight or with rounded extension RE (Figs 3D, F, 4C) 3
2. Carapace dark brown, SP only partly crossing TF (Figs 3C, D) *Spinasteron sanford*
Carapace yellow and dark cephalic area, SP crossing TF (Figs 2A-C, 3E, F) *Spinasteron nigriceps*
3. Cymbium with straight retrolateral flange, DTA short, AME small (Figs 1, 3A, B) *Basasteron leucosemum* (Rainbow, 1920)
Cymbial flange with rounded extension, DTA long, AME small, big or equal (Figs 4C, 5A-C, 6A-C) *Euasteron*

Basasteron gen. nov.

TYPE SPECIES. *Basasteron leucosemum* (Rainbow, 1920).

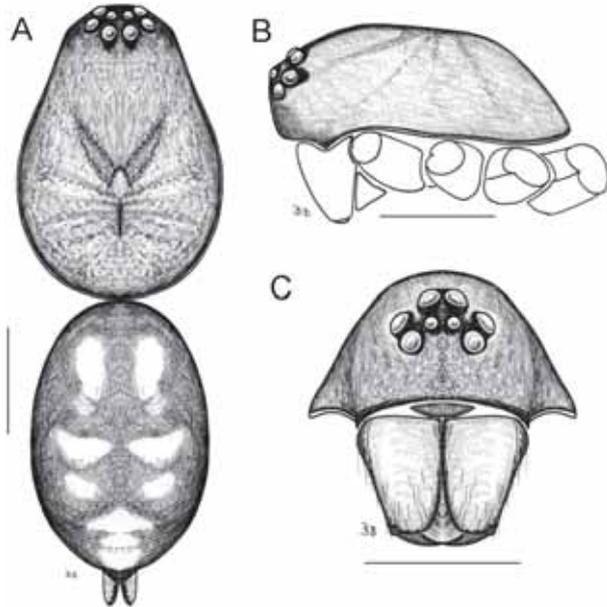


FIG. 1. *Basasteron leucosemum* (Rainbow, 1920). A, body dorsal, B, C, cephalothorax; B, lateral; C, frontal. Scale 1mm.

ETYMOLOGY. *Basasteron* refers to the fact that this genus is a link between the basic genera *Pentasteron*, *Phentasteron*, *Leptasteron* and *Euasteron*.

REMARKS. Jocqué (1995) tentatively added this species to *Nostera*. Because of the absence of the males he had no clue to which genus the species belonged. The newly described males from recently collected material show that the species belongs to the base of the *Asteron*-complex.

DIAGNOSIS. AME smallest; recognised mainly by characters from the male palp: tibia with short ventrolateral and dorsolateral apophysis cymbial flange straight, DTA short, semicircular, with distal part folded containing embolus; prolateral extension PE short, lying in cymbium; retrolaterally with membranous lamella; sperm duct S-shaped, partly crossing transparent field.

DESCRIPTION. Medium-sized (4.0-5.0), with finely reticulated tegument. Carapace widest at coxae II. Profile flat with highest point between fovea and PME (Fig. 1A).

Colour: carapace orange brown; sternum yellow; chelicerae orange; maxillae and labium yellow, distally white; abdomen dorsally sepia brown with 2-3 pairs of white patches on anterior part and 1-2 in front of spinnerets; laterally with 2 to 3

white patches; ventrally dark brown, mottled with white; legs yellow.

Eyes (Fig. 1A-C): in three rows (2-4-2). Only ALE in first row, AME (in the middle) and PLE in second, third only PME. AME smallest; eye group width about half of headwidth. MEG slightly longer than wide. Clypeus straight, about 3 times diameter of ALE high. Chilum single. Chelicerae as usual for family with a few hairs in front and dense row on distal promargin; no teeth. Maxillae and labium triangular; sparsely haired; maxillae with anteromesal scopula. Sternum flat; heart-shaped with straight anterior margin, shiny; with long setae around margin.

Legs: formula 4123. Spination: few spines on pairs I, II, more numerous on III, IV. Paired tarsal claws with numerous (ca. 10) teeth. Unpaired claw toothless, on very small onychium. Metatarsal preening brush on Mt II and III poorly developed.

Abdomen: oval; without sigilla. Spinnerets: AS short, conical, with very short distal segment; MS and PS tiny. Colulus represented by group of setae. Tracheal spiracle slit-like covered by posterior sclerotised lip with small stout spines.

Male palp (Fig. 3A,B): tibia with short dorsolateral and ventrolateral apophysis shallow concavity in between. Cymbium with simple unmodified straight flange, several spines near distal tip. DTA semicircular, distally folded with short prolateral extension. Embolus semicircular conducted by DTA.

Female lectotype described in Jocque, 1995.

Basasteron leucosemum (Rainbow, 1920)
(Figs 1, 3A,B, 18)

Storena leucosemum Rainbow, 1920: 237 (description of f)
Nostera leucosemum Jocque, 1995: 154 (comb. nov.)

MATERIAL. New South Wales: 3 ♂, Lord Howe I., North Bay West End, litt, 31°33'S, 159°05'E, 19 Dec 1979, GM (QM S47393); Lord Howe I., 31°33'S, 159°05'E (AM KS15672); ♂, Lord Howe I., southern end of Salmon Beach in vicinity of Little Island, 31°34'08"S, 159°04'28"E, 19-28 Febr 2001, pitfall (AM KS82348); ♀, Lord Howe I., W slope of Dawsons Point Ridge, closed rainforest, 31°31'12"S, 159°02'27"E, 20 Nov 2000 (AM KS75769); ♂, Lord Howe I., Stephens Reserve, New Settlement, 31°31'12"S, 159°02'27"E 4-14 Dec 2000, pitfall (AM KS76265); ♂, Lord Howe I., behind beach at Old Gulch, W footslopes, 31°30'53"S, 159°02'36"E, 2-11

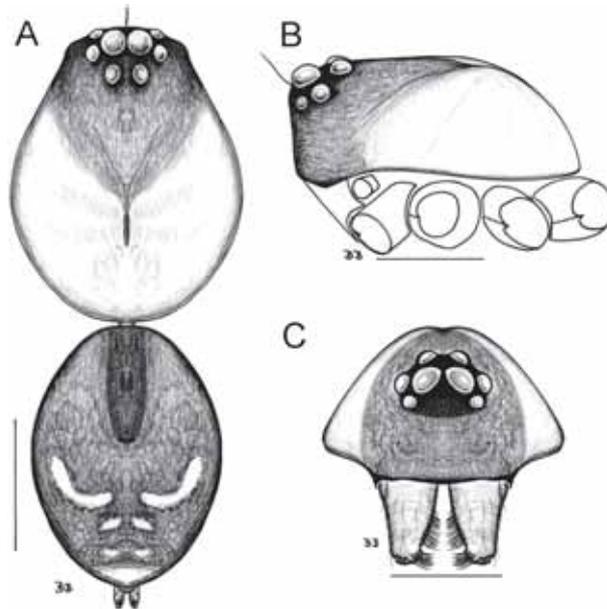


FIG. 2. *Spinasteron nigriceps*. A, body dorsal, B,C, cephalothorax; B, lateral; C, frontal. Scale 1mm.

Dec 2000, pitfall (AMKS75879); 2 ♀, Lord Howe I., Stn 9, SE slope of Kim's Lookout, 31°30'54"S, 159°03'06"E, 31 Jan 1971, M. Gray (AM KS15618); 2 ♀, Lord Howe I., Stn 8 summit of Kim's Lookout, 31°30'54"S, 159°03'00"E, M. Gray 31 Jan 1971 (AM KS15617).

DIAGNOSIS. AME small, carapace orange brown, abdomen with 3 pairs of white patches on anterior part and 1-2 in front of spinnerets, palp with straight flange, DTA short circular, distally part folded containing embolus. Dorsolateral and ventrolateral tibial apophysis short.

DESCRIPTION. *Male* (holotype). Total length 4.56; ceph 2.48 long, 1.6 wide, 1.04 high; cl/cw 1.55; sternum 1.12 long, 0.96 wide; sl/sw 1.17; abdomen 2.08 long, 1.4 wide.

Colour: carapace orange brown; sternum yellow; chelicerae orange; maxillae and labium yellow, distally white; abdomen sepia brown, dorsally with 3 pairs of white patches on anterior part and 1-2 in front of spinnerets; laterally with 2-3 elongate and broad white patches; ventrally mottled with white; legs yellow to orange-brown.

Eyes: in 3 rows (2-4-2); AME smallest; eye group width 0.53 of headwidth; AME 0.1; ALE 0.12; PME 0.12; PLE 0.12; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.04; PME-PLE 0.08; ALE-PLE 0.04; eye spaces AME-PME 0.3;

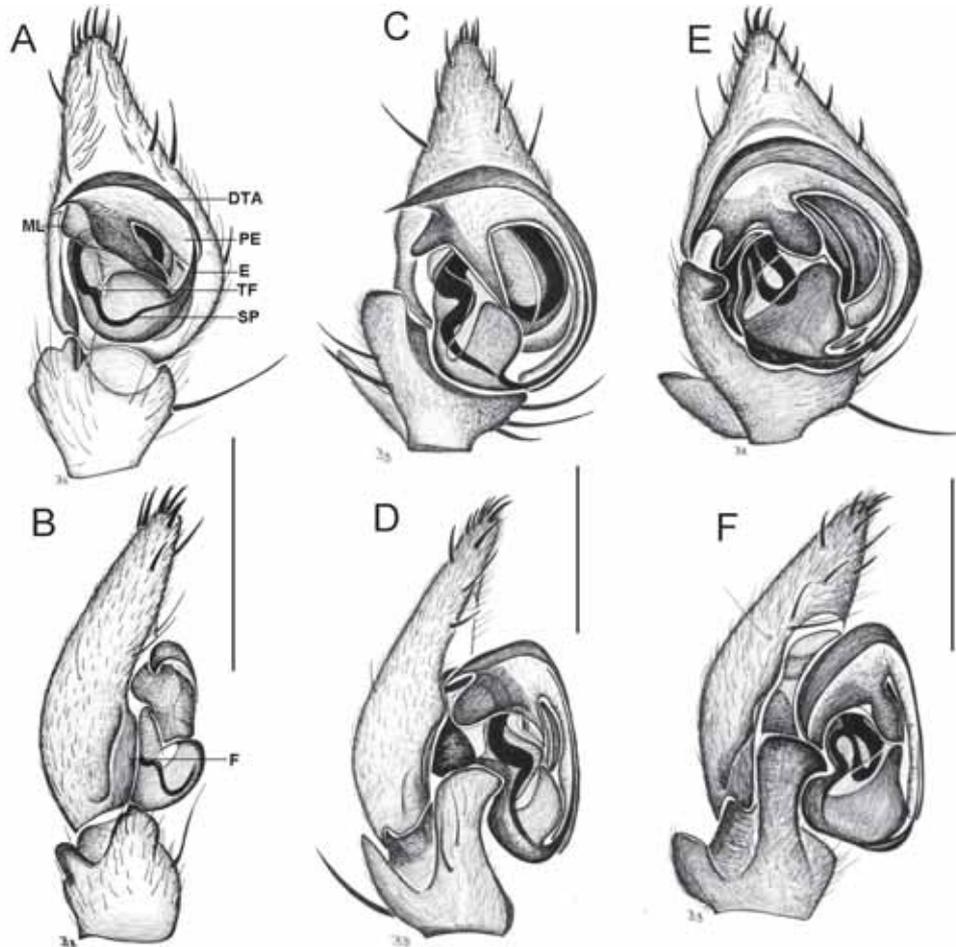


FIG. 3. *Basasteron*, *Spinasteron* spp. right male palps. A,B, *B. leucosemum*; A, ventral; B, retrolateral; C,D, *S. sanfordi*; C, ventral; D, retrolateral; E,F, *S. nigriceps*; E, ventral; F, retrolateral. Scale 0.5mm.

AME-AME 0.24; PME-PME 0.28. Clypeus 0.32mm high.

Abdomen: tracheal spiracle small, slit-like, covered with small stout spines.

Legs: femur I-II with 1 row, III, IV with 2 rows of long thin setae ventrally.

Male palp (Fig. 3A,B): tibia with short dorsolateral and ventrolateral apophysis shallow concavity in between. Cymbium F straight; DTA semicircular, distal part folded, prolateral extension short, lying in cymbium, retrolaterally with membranous lamella; SP duct S-shaped, partly crossing TF.

Female. Lectotype described in Jocqué, 1995.

Variation: minor variation in the abdominal pattern as well as in size. Specimens from Kims Lookout and Old Gulch are slightly smaller and have 2 pairs of white dots on top of the abdomen. These specimens may belong to a second species but only further material will solve this problem.

DISTRIBUTION. Known only from Lord Howe Island (Fig. 18).

***Spinasteron* gen. nov.**

TYPE SPECIES. *Spinasteron nigriceps* sp. nov.

ETYMOLOGY. For the very long, spinuous prong or end on palpal DTA retrolaterally.

DIAGNOSIS. Apart from the characters typical for the *Asteron*-complex, representatives of *Spinasteron* are recognised by AME biggest (Fig. 2A-C), but mainly by characters from the male palp (Figs 3C-F, 4A): cymbial flange barely developed with small knob; tibia, DtiA with short IP and longer EP; VtiA normally longer than EP of DtiA. DTA semicircular, with distal part folded containing embolus; PE retrolateral with long spinuous end, and normally with strong spinuous prong; SP S-shaped, partly or totally crossing TF. Base of embolus broad, TBE thin or broadened.

DESCRIPTION. Medium-sized (4.00-5.00), with finely reticulated tegument. Carapace at frontal part broad, with edges widest at coxae II. Profile flat, with highest point between fovea and PME (Fig. 2A-C).

Colour: carapace yellow to sepia brown; sternum yellow to orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen dorsally with scutum sepia brown; with 1-3 pairs of white patches on anterior part and 1 in front of spinnerets or chevrons; legs yellow to medium brown with or without colour pattern.

Eyes (Fig. 1A-C) in three rows (2-4-2). Only ALE in first row, AME (in the middle) and PLE in second, third only PME. AME biggest; eye group width more than half of headwidth. Clypeus straight, between 2.5 and 3 times diameter of ALE high. Chilum single. Chelicerae as usual for family, with a few hairs in front and dense row on distal promargin; no teeth. Maxillae and labium triangular, sparsely haired; Maxillae with anteromesal scopula. Sternum heart-shaped, with straight anterior margin, shiny, with long setae around margin.

Legs: formula 4123. Spination: few spines on pairs I, II, more numerous on III, IV. Femur I, II with 1 row of long thin setae ventrally, Femur III, IV with 2 rows of long thin setae ventrally. Metatarsal preening brush on Mt II and III poorly developed. Paired tarsal claws with numerous (ca. 10) teeth. Unpaired claw toothless, on very small onychium.

Abdomen oval, with scutum, without sigilla. Spinnerets: AS short, conical, with very short distal segment; MS and PS tiny. Colulus represented by group of setae. Tracheal spiracle slit-like covered by posterior sclerotised lip.

Male palp (Fig. 3C-F): Cymbial flange barely developed, with small knob; tibia, DtiA with short IP and longer EP. DTA semicircular, with

distal part folded, containing embolus; PE long, not lying in cymbium, sometimes reaching tibia; retrolateral with long spinuous end, normally with strong spinuous prong; SP S-shaped, partly or totally crossing TF. Base of embolus broad, TBE with or without keel.

Female unknown.

***Spinasteron sanford* sp. nov.**
(Figs 3C,D, 21)

ETYMOLOGY. For the type locality, Mount Sanford Station, Northern Territory. Noun in apposition.

MATERIAL. HOLOTYPE: ♂, Mt Sanford Station, NATT, Clay site, pitfall traps, 17°18'25"S, 130°46'28"E, 3-9 Jul 96, T. Churchill (CSIRO A763ex). PARATYPES: Northern Territory: ♂, as for holotype (CSIRO A763ex); 9♂, same locality, Loam site, 17°18'29"S, 130°45'17"E, Apr 97 (CSIRO A3496); ♂, same locality, Oct 97 (CSIRO A1057); 2♂, same locality, 3-9 Jul 96 (CSIRO A754); ♂, same locality, Jul 96 (CSIRO A764), 25m, Mt Sanford Station, NATT, Sand site, 17°21'26"S, 130°49'36"E, Apr 97 (CSIRO A3499); 3♂, same locality, 3-9 Jul 96 (CSIRO A756); 3♂, same locality, Oct 97 (CSIRO A3502); 3♂, same locality, 3-9 Jul 96 (CSIRO A754); ♂, Daly R., Quadrat G4, PWCNT, 17°21'26"S, 130°49'36"E, Jun 99 (CSIRO A2539); ♂, Kidman Springs, Grazing Gradient, Site 3, pitfall traps, 16°07'29"S, 130°56'25"E, Apr 98 (CSIRO A1320).

DIAGNOSIS. Differs from *S. nigriceps* by carapace dark brown, abdomen dark brown with scutum and 1 pair of white spots on posterior part and 1 in front of spinnerets, SP S-shaped, crossing only partly TF.

DESCRIPTION. *Male* (holotype). Total length 4.76; ceph 2.36 long, 1.68 wide, 1.04 high; cl/cw 1.4; sternum 1.12 long, 1 wide; sl/sw 1.12; abdomen 2.4 long, 1.6 wide.

Colour: carapace sepia brown; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with scutum and 1 pair of white spots on posterior part and 1 in front of spinnerets; legs medium brown, with darker brown lateral stripes; with indistinct colour pattern; coxae I-IV pale; trochanter I-IV brown; femur I dark brown, distally white, II-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.71 of headwidth; AME 0.2; ALE 0.18; PME 0.18; PLE 0.18; AME-AME 0; AME-ALE 0.04; PME-PME 0.06; PME-PLP 0.08; ALE-PLP 0.04; eyes group AME-PME 0.46; AME-ALE 0.4; PME-PME 0.44. Clypeus: 0.48mm high.

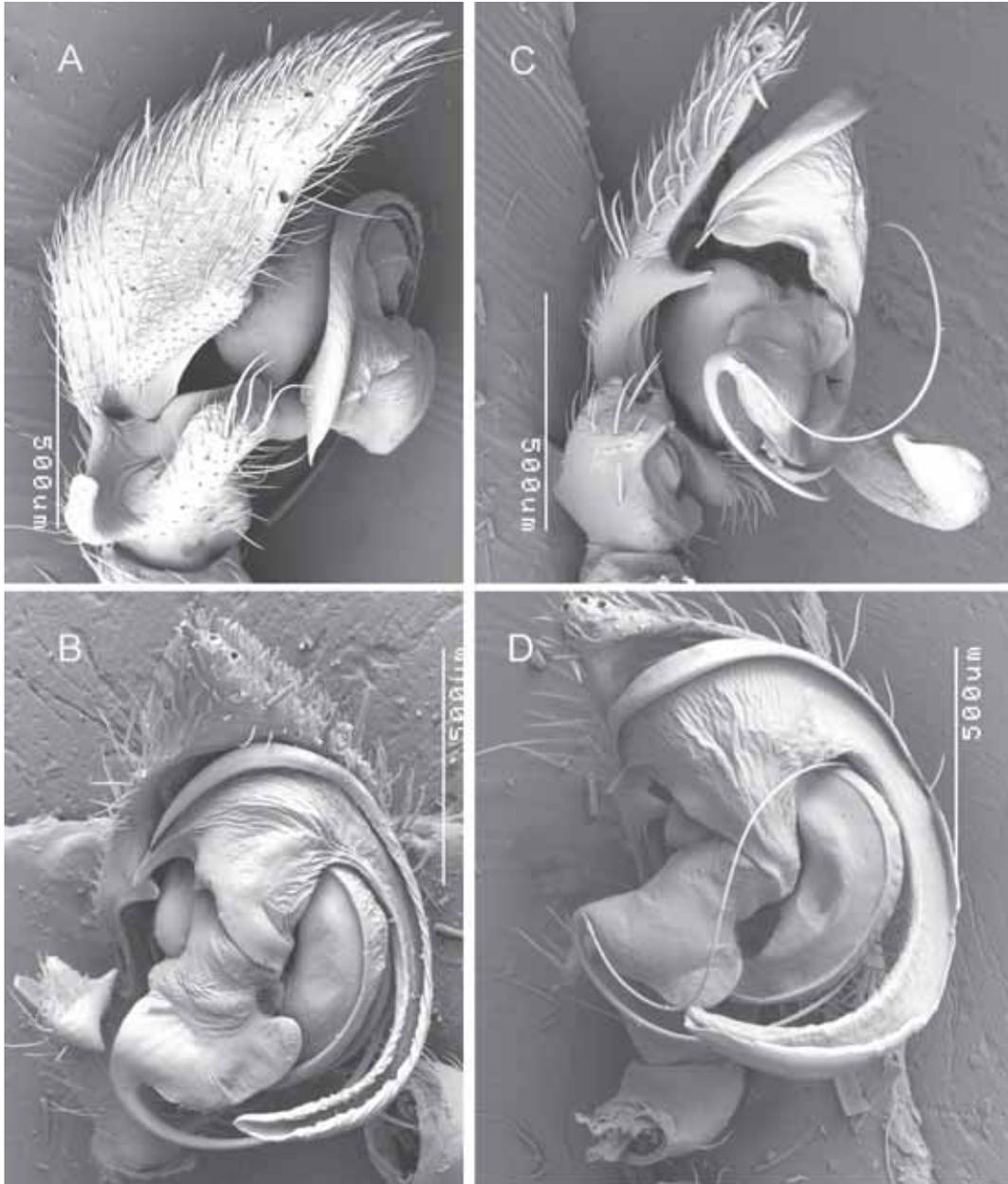


FIG. 4. *Euasteron*, *Spinasteron* spp. right male palps. A, *S. sanford*, retrolateral; B, *E. carnarvon* ventral; C, D, *E. enterprise*, C, retrolateral; D, ventral. Scale 0.5mm.

Male palp (Fig. 3C,D): DTA PE reaching tibia; SP S-shaped, partly crossing TF; DtiA IP much shorter than EP, both with sharp tip; VtiA long, straight, with blunt tip.

Female unknown.

DISTRIBUTION. Northern Territory, Mount Sanford Station (Fig. 21). Semi-arid grassland

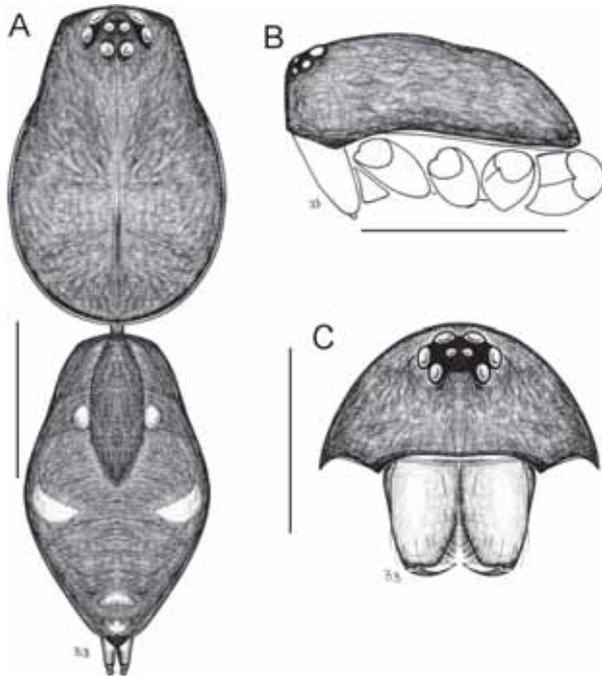


FIG. 5. *Euasteron enterprise*. A, body dorsal, B,C, cephalothorax; B, lateral; C, frontal. Scale 1mm.

and tropical savanna, with barley mitchell grass (*Astrebala pectinata*) and Vertisols soil.

***Spinasteron nigriceps* sp. nov.**
(Figs 3E,F, 21)

ETYMOLOGY. For the dark cephalic area. Latin *nigriceps*, black-headed.

MATERIAL. HOLOTYPE: ♂, Daly river, NT, Quadrat G4, PWCNT, pitfall traps, 17°21'26"S, 130°49'36"E, Jun 99, T. Churchill (CSIRO A2539ex). PARATYPES: Northern Territory: ♂, L10, PWCNT pitfall traps, 14°58'61"S, 132°01'60"E, 16 Jun 99, T. Churchill (CSIRO A3429); ♂, Douglas Daly, Sand Site, pitfall traps, 13°53'36"S, 131°15'55"E, 3-9 Jul 96 (CSIRO A0332); ♂, same locality, Grid 1 (CSIRO A177).

DIAGNOSIS. Differs from *S. sanford* by: carapace yellow with dark cephalic area, abdomen with scutum and 3 pairs of white spots on posterior part and 1 in front of spinnerets, SP crossing TF totally.

DESCRIPTION. *Male* (holotype). Total length 4.2; ceph 2.2 long, 1.68 wide, 0.96 high; cl/cw 1.31; sternum 0.96 long, 0.88 wide; sl/sw 109; abdomen 2 long, 1.28 wide.

Colour: carapace yellow with dark cephalic area; sternum yellow; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with scutum, 3 pairs of white patches on anterior part and 1 in front of spinnerets; laterally, ventrally pale brown; legs yellow.

Eyes: AME largest; eye group width 0.66 of headwidth; AME 0.18; ALE 0.14; PME 0.14; PLE 0.14; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.08; PME-PLA 0.08; ALE-PLA 0.02; eyes group AME-PME 0.4; AME-AME 0.4; PME-PME 0.36. Clypeus: 0.48mm high.

Male palp (Fig. 3E,F): DTA, PE reaching tibia; retrolaterally with strong prong; SP S-shaped, crossing transparent field totally; DtiA IP tiny, EP short blunt; VtiA long, straight, with rounded tip.

Female unknown.

DISTRIBUTION. Northern Territory (Fig. 21). Tropical savanna.

***Euasteron* gen. nov.**

TYPE SPECIES. *Euasteron enterprise* sp. nov.

ETYMOLOGY. Latin, Eu = real.

DIAGNOSIS. Cymbium with retrolateral extension or lobe. *Euasteron* differs from *Cavasteron* and *Minasteron* by the lack of the large terminal palpal claw in males. Females of *Euasteron* still have this huge terminal claw with 4-6 teeth. Epigyne copulatory ducts are more elongate and coiled than in *Cavasteron* and *Minasteron*.

DESCRIPTION. Medium-sized (3.4-6.2) with finely reticulated tegument. Carapace widest at coxae II. Profile flat with highest point between fovea and PME (Figs 5,6).

Colour: carapace yellow, orange or sepia brown; abdomen pale or sepia brown with or without scutum, with 1-3 pairs of white patches on anterior part and 1-3 in front of spinnerets, or with pale or dark chevrons; legs yellow to dark brown; clearly annulated or without colour pattern.

Eyes (Figs 5A-C, 6A-C) in three rows (2-4-2). Only ALE in first row, AME (in the middle) and PLE in second, third only PME. AME smallest, equal to others or largest; eye group width between 0.47 and 0.66 of head width. MEG slightly longer than wide, or as long as wide. Clypeus straight, about 3 times diameter of ALE

high. Chilum single. Chelicerae as usual for family, with a few hairs in front and dense row on distal promargin; no teeth. Maxillae and labium triangular; sparsely haired; maxillae with anteromesal scopula. Sternum heart-shaped, with straight anterior margin, shiny; with long setae around margin.

Legs: formula 4123. Spination: few spines on pairs I, II, more numerous on III, IV. Paired tarsal claws with numerous (ca. 12) teeth on inner side of paired claws (Fig. 7B). Unpaired claw toothless, on very small onychium. Metatarsal preening brush on Mt II and III poorly developed. Female palp with big claw and 4-6 teeth (Fig. 7D).

Abdomen: oval, with or without scutum. Spinnerets: AS short, conical, with very short distal segment; MS and PS tiny. Colulus represented by group of setae. Tracheal spiracle slit-like, covered by posterior sclerotised lip, with or without small stout spines.

Male palp (Figs 8-14): Tibia short, with 2 apophyses forming deep concavity between them, dorsally divided in two parts and connected by a ridge; internal prong (IP) long, short or absent; external prong (EP) long or short; ventrolateral tibial apophyses hooked or bird-head-shaped. Cymbial flange with rounded extension. DTA, semicircular, distally folded with prolateral extension (PE) not reaching or reaching tibia, retrolaterally, with membranous lamella or strong prong. Embolus thin, semicircular, conducted by DTA.

Epigyne (Figs 15-17): with 1 or 2 copulatory openings, with U- or V-shaped sclerotised tubes; copulatory ducts elongate, coiled, ending in small or bigger spermathecae.

KEY TO SPECIES GROUPS OF *EUASTERON*

- All eyes equal in size; base of embolus with extremely long semicircular FA; DTA with strong prong, epigyne with 2 big oval CO, not attached to epigastric fold, CO straight elongate coiled, ending in separated spermathecae. (Figs 12A,B, 16A,B) *E. willeroo*
AME smaller, or bigger than other eyes, FA shorter not semicircular, epigyne different (Figs 8-11, 13, 14, 15A-F, 16C-F, 17A-H) 2
- AME smaller than other eyes, eye group width > 0.55 (Fig. 5A-C) *E. enterprise*-group
AME bigger than other eyes, eye group width < 0.55 (Fig. 6A-C) *E. juliannae*-group

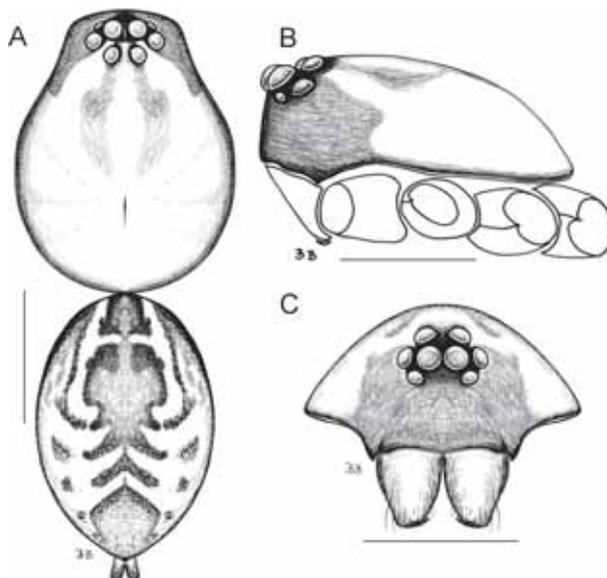


FIG. 6. *Euasteron carnarvon*. A, body dorsal, B,C, cephalothorax; B, lateral; C, frontal. Scale 1mm.

***Euasteron willeroo* sp. nov.** (Figs 12A,B, 16A,B, 19)

ETYMOLOGY. For the type locality.

MATERIAL. HOLOTYPE: ♂, Willeroo, NT, NAT, Clay site, pitfall traps, 15°11'26"S, 131°36'42"E, 3-9 Jul 96, T. Churchill (CSIRO A0343). PARATYPES: Northern Territory: ♀, as for holotype (CSIRO A0343); 4 ♀, same locality (CSIRO A3506); ♀, same locality (CSIRO A981); 11 ♂, same locality, Oct 97 (CSIRO A1173); 3 ♂, same locality, Apr 97 (CSIRO A983); 7 ♂, same locality, 15°11'26"S, 131°36'42"E, Oct 97 (CSIRO A1163); 2 ♂, Barkly Tablelands, Hayfield, Mitchel grassland, site 3, pitfall traps, Dec 95 (CSIRO A2116); ♂, Mt Sanford Station, Grazing, VRD, Site 2, pitfall traps, 17°18'25"S, 130°46'28"E, Apr 98 (CSIRO A1350); 7 ♂, Mt Sanford Station, NAT, Clay site, 17°18'25"S, 130°46'28"E, Oct 97 (CSIRO A3501); 4 ♂, same locality, Apr 97 (CSIRO A35030); 12 ♂, same locality, Jul 96 (CSIRO A762); 10 ♂, 1 ♀, same locality, Jul 96 (CSIRO A763); 8 ♂, same locality, 3-9 Jul 96 (CSIRO A761); 3 ♂, Kidman Springs, NAT, Clay site, pitfall traps, 16°06'39"S, 130°56'55"E, Oct 97 (CSIRO A1121); ♂, same locality, Apr 97 (CSIRO A3504); 3 ♂, same locality, Oct 97 (CSIRO A3505); 7 ♂, same locality, Jul 96 (CSIRO A752); 7 ♂, same locality, Grid 3, 3-9 Jul 96 (CSIRO A755).

DIAGNOSIS. Eyes equal sized. Carapace sepia brown, abdomen sepia brown with 1 pair of white patches on posterior part and 1 in front of spinnerets. Palp, base of embolus with extremely

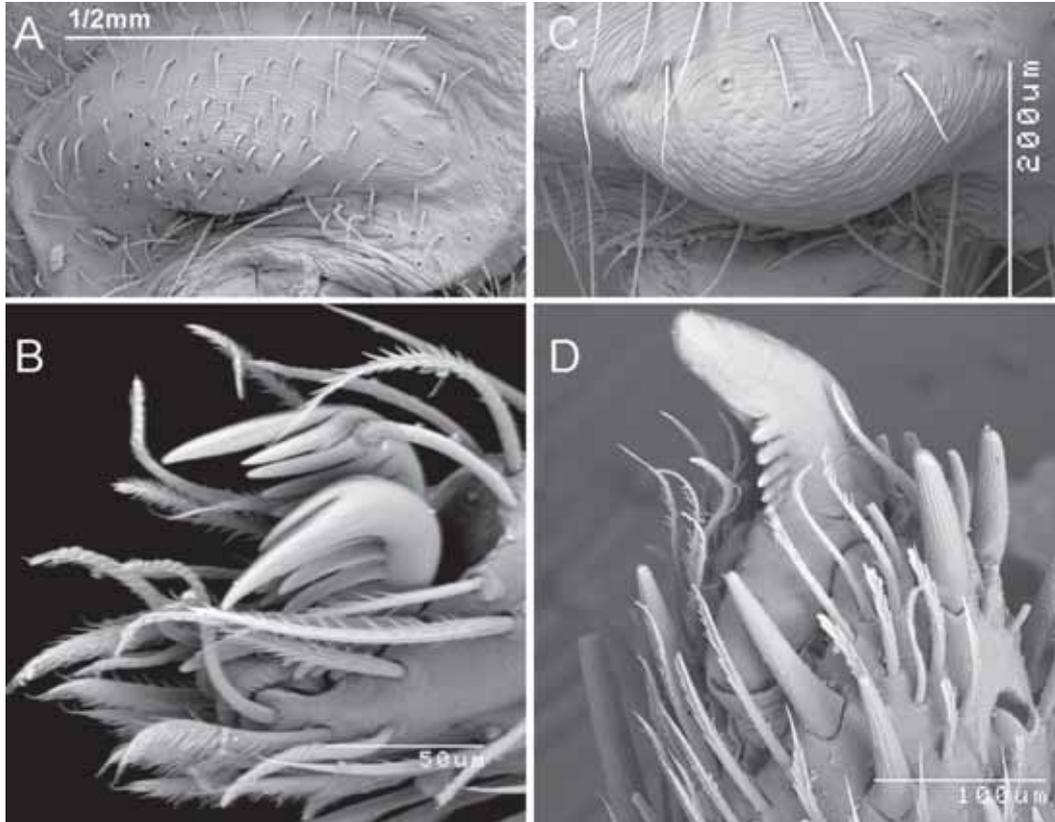


FIG. 7. *Euasteron*, spp. A,B,D, *E. carnarvon*; A, tracheal spiracle; B, tarsal claw 1 right leg; D, female palpal claw retrolateral; C, *E. enterprise*, tracheal spiracle.

long and bent FA. With 2 big oval CO, not attached to epigastric fold.

DESCRIPTION. *Male* (holotype). Total length 3.48; ceph 1.76 long, 1.28 wide, 0.72 high; cl/cw 1.37; sternum 0.92 long, 0.8 wide; sl/sw 1.15; abdomen 1.72 long, 1 wide.

Colour: carapace, sternum, chelicerae sepia to medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with 1 pair of white spots on posterior part and 1 in front of spinnerets; legs pale brown, darker brown lateral stripes; with indistinct colour pattern; coxae, trochanter I-IV pale; femur I dark brown, II-IV proximal part white, distal part dark brown.

Eyes: equal sized; eye group width 0.58 of headwidth; AME 0.1; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.04; PME-PLP 0.08; ALE-PLP

0.02; eyes group AME-PME 0.3; AME-AME 0.22; PME-PME 0.24. Clypeus: 0.36mm high.

Male palp (Fig. 12A,B): DTA, PE reaching tibia; retrolaterally with strong prong; VTA =FA elongate, sickleshaped; sperm duct S-shaped, not crossing TF; DtiA IP 3times as long as wide, EP long sticking out; VtiA bird-head-shaped.

Female (paratype) (Fig. 16A,B). Total length 4; ceph 2.04 long, 1.28 wide, 0.72 high; cl/cw 1.59; sternum 0.84 long, 0.8 wide; sl/sw 1.05; abdomen 1.96 long, 1.28 wide.

Colour: as in males, carapace sometimes orange brown.

Eyes: equal sized; eye group width 0.51 of headwidth; AME 0.1; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.04; PME-PLP 0.08; ALE-PLP 0.04; eyes group AME-PME 0.3; AME-AME 0.22; PME-PME 0.24.

Clypeus 0.36mm high.

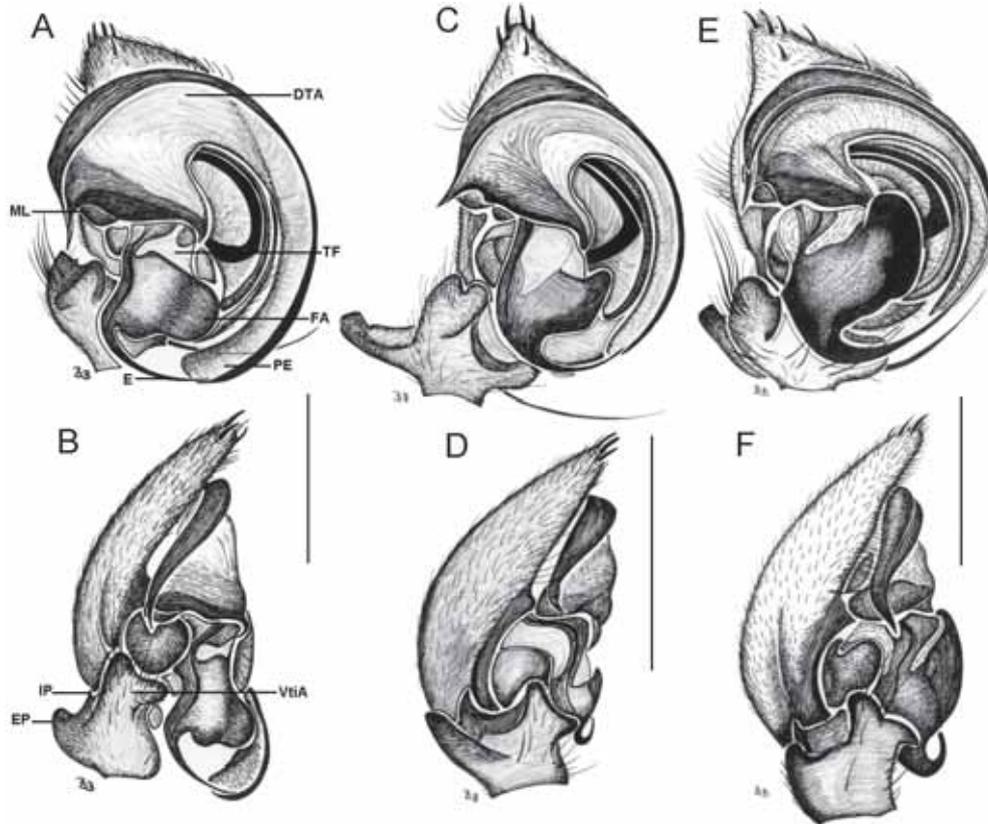


FIG. 8. *Euasteron* spp. right male palps. A,B, *E. enterprise*; A, ventral; B, retrolateral; C,D, *E. monteithorum*; C, ventral; D, retrolateral; E,F, *E. milledgei*; E, ventral; F, retrolateral. Scale 0.5mm. DTA = dorsal tegular apophysis; E = embolus; EP = external prong on dorso-retrolateral tibial apophysis (DtiA); FA = frontal appendage of embolus base = VTA (ventral tegular apophysis); IPML = internal prong on DtiA; membranous lamella on retrolateral part of DTA; PE = prolateral extension of DTA; TF = transparent field on embolus base; VtiA = ventral tibial apophysis.

Epigyne (Fig. 16A,B): with 2 big oval CO, not attached to epigastric fold; CD elongate, coiled about straight axis, ending in separated S.

DISTRIBUTION. Northern Territory (Fig. 19). Semi-arid, desert.

KEY TO SPECIES OF *EUASTERON*
ENTERPRISE GROUP

Males

1. Carapace orange or orange brown 2
Carapace dark brown. 4
2. Abdomen laterally with 2 pairs of white spots. Palp, tibial apophyses dorsolaterally, with external prong long sticking out (Fig. 8C,D) *E. monteithorum*
Abdomen laterally with 1 white spot. Palp, tibial apophyses dorsolaterally, with external prong short not sticking out (Figs 9A,B, 10A,B) 3

3. Palp; DTA retrolaterally with folded, retrolateral directed prong (Fig. 9A,B) *E. lorne*
Palp; DTA retrolaterally with sharp basal directed prong (Fig. 10A,B) *E. bartoni*
4. Palp without or with short FA directed prolaterally on base of embolus (Figs 8A,B, 10C,D) 5
Palp with big FA directed distally (Figs 8E,F, 9C,D) . . . 6
5. Abdomen with 1 big pair of white patches on anterior part and 1 elongate white stripe in front of spinnerets; palp without FA; DTA retrolaterally with big prong (Fig. 10C,D) *E. gibsonae*
Abdomen with scutum, 2 pairs of white spots on anterior part and 2-3 white spots in front of spinnerets; palp with short rounded FA directed prolaterally; DTA retrolaterally with lamella (Fig. 8A,B) . . . *E. enterprise*
6. Palp, DTA retrolaterally with lamella and small prong; FA big, wider than long; dorsolateral tibial apophysis internal prong short (Fig. 8E,F) *E. milledgei*

Palp, DTA retrolaterally with big prong; FA big longer than wide; dorsolateral tibial apophysis internal prong 3 times long as wide (Fig. 9C,D) *E. krebsorum*

Females

1. Carapace orange or orange brown 2
Carapace dark brown. 3
2. Epigyne with 2 small, semicircular CO (Fig. 15C,D); abdomen laterally with 2 pairs of white spots *E. monteithorum*
Epigyne with 1 broadly oval CO and long U-shaped sclerotised tubes (Fig. 16C,D); abdomen laterally with 1 big white spot and pale booklungs *E. bartoni*
3. Epigyne SP touching; CO broadly oval internal (Fig. 16E,F) *E. krebsorum*
Epigyne SP separated at least 1 diameter apart; CO very small or inverted flask-shaped (Fig. 15A,B,E,F) 4
4. Epigyne with 1 small oval CO and long thin V-shaped sclerotised tubes; CD, inverted V-shaped, SP about 1 of their diameter apart (Fig. 15A,B) *E. enterprise*
Epigyne, CO inverted flask-shaped, wide U-shaped sclerotised tubes, CO straight; SP twice their diameter apart (Fig. 15E,F) *E. milledgei*

500m, PYKN, 17°16'S, 145°51'E, 17-24 Oct 1981 (QM S27615); ♂, NE Qld O'Donogue's Falls, 150m on tree, 16°26'S, 145°20'E, 15 May 1995, G. Monteith, Pyretrum (QM S43294); ♂, ME Qld, Crediton, Complex Notophyl vine forest, 950m, on tree trunk, 21°13'S, 148°34'E, 14-21 Sep 75, R.Kohout & V.Davies (QM S4451); ♂, Millstream Conservation Pk., PYKN, 17°32'S, 145°30'E, 6 Dec 98, G& S. Monteith (QM S47574).

DIAGNOSIS. AME smallest. Carapace sepia brown, abdomen sepia brown with scutum and 2 pairs of white patches on anterior part and 2-3 in front of spinnerets. Palp DTA retrolaterally with membranous lamella only. Epigyne, copulatory ducts elongate coiled, inverted V-shaped.

DESCRIPTION. *Male* (holotype). Total length 4.16; ceph 2.08 long, 1.04 wide, 0.76 high; cl/cw 1.48; sternum 1.04 long, 0.92 wide; sl/sw 1.13; abdomen 2.08 long, 1.28 wide.

***Euasteron enterprise* sp. nov.**
(Figs 5, 4 C,D, 7C,D 8A,B 15A,B, 18)

ETYMOLOGY. From type locality, a proposed mine site on North Stradbroke Island. Noun in apposition.

MATERIAL. HOLOTYPE: ♂, SE Qld, N. Stradbroke I, Enterprise, Blackbutt 2, 60m, night coll, 27°34'S, 153°27'E, 7-14 Jan 2002, R.Raven & B.Baehr (QM S55531). PARATYPES: Queensland: ♂ SE Qld, Mt Cotton, 200m, rainforest, intercept trap G. Monteith (QM S44277); ♀ SE Qld, N. Stradbroke I, Enterprise, Blackbutt 1, 90m, night coll, 27°33'S, 153°28'E, 7 -14 Jan 2002, R.Raven & B.Baehr (QM S55596); ♂, Mt Cotton, upper gully, Flight/Int, 27°36'S, 153°13'E, 12 Dec 97-7 Mar 98, G. Monteith (QM S47571); ♂, Kenilworth State Forest, Sunday Ck Rd, 9.8km W of Charlie Moreland Park, wet sclerophyll, 26°40'11"S, 152°36'35"E, 7 May 1998, G. Milledge (AM KS55660); ♀, same locality, Junction with Gigher Creek Rd, 26°41'54"S, 152°33'5"E, 7.5.1998, G. Milledge (AM KS55661); ♂, Little Yabba Ck, rainforest, 26°37'S, 152°41'E, 30 Nov 91-7 Jan 92, D.J. Cook (QM S25198); ♂, SE Qld, Mt Tamborine, 670m, rainforest, UNLO, 27°56'S, 153°12'E, 10 Jul 74, V.Davies, R.Raven, C.L. Wilton (QM S4357); ♂, NE Qld, Maalan Rd, 2km S Palmerston H'way, PYKN, 17°36'S, 145°42'E, 18 May 1995, G. Monteith (QM S41058); ♂, NE Qld, Bellenden Ker Ra, 1/2km S Cabletower 7, Earthwatch Expedition & Qld Museum, rainforest,

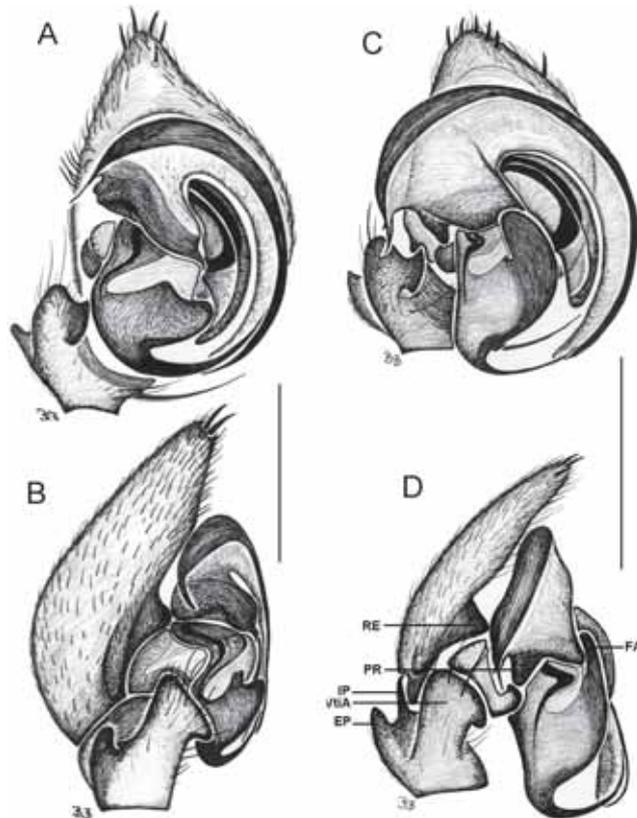


FIG. 9. *Euasteron* spp. right male palps. A,B, *E. lorne*; A, ventral; B, retrolateral; C,D, *E. krebsorum*; C, ventral; D, retrolateral. Scale 0.5mm. PR = prong on retrolateral side of DTA; RE = rounded extension on flange.

Colour: carapace, sternum and chelicerae sepia brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with scutum, with 2 pairs of white patches on anterior part, with 2 in front of spinnerets; laterally with 1 white patch; ventrally pale brown to dark brown; legs medium brown, annulated; coxae I-IV white or pale; trochanter I-IV brown; femur I dark brown, with proximal white patch, II-IV proximal part white, distal part dark brown; tibia I distally white.

Eyes (Fig. 5A-C): AME smallest; eye group width 0.51 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.04; PME-PLE 0.08; ALE-PLE 0.02; eyes group AME-PME 0.26; AME-AME 0.16; PME-PME 0.24. Clypeus: 0.36mm high.

Abdomen: tracheal spiracle small slit-like, with sclerotised cover.

Male palp (Fig. 8A,B): DTA: PE not reaching tibia, retrolaterally with membranous lamella; VTA =FA short, rounded, SP not crossing TF; tibia short; IP tiny, EP short, blunt; VtiA bird-head-shaped.

Female (paratype). Total length 4.24; cephalon 2.08 long, 1.28 wide, 0.84 high; cl/cw 1.62; sternum 0.92 long, 0.84 wide; sl/sw 1.09; abdomen 2.16 long, 1.32 wide.

Colour: as in male but abdomen without scutum.

Eyes: In rows (2-4-2); AME smallest; eye group width 0.5 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.04; PME-PLE 0.08; ALE-PLE 0.02; eyes group AME-PME 0.26; AME-AME 0.16; PME-PME 0.24. Clypeus: 0.36mm high.

Epigyne (Fig. 15A,B): With 1 small, oval CO, with long, V-shaped, sclerotised tubes; CD elongate coiled, inverted V-shaped, ending in small, separated S. Female palpal claw strong with more than 4 teeth.

Variation: Some specimens are slightly smaller than HT. Variation in colour: Carapace with or without dark fovea and bifurcate stripes, abdomen with 1 or 2 white spots in front of spinnerets and on femur I the proximal part can be white.

DISTRIBUTION. Wet Tropics to Southern Queensland (Fig. 18). Rainforest.

***Euasteron bartoni* sp. nov.**

(Figs 10A,B, 16C,D, 21)

ETYMOLOGY. For N. Barton, the collector of the types.

MATERIAL. HOLOTYPE: ♂, Lucknow area, Vic., Oct 1979, 37°49'S, 147°39'E, 10.1979, N. Barton (AM KS83927). PARATYPES: Victoria: ♀, as for holotype (AM KS84124).

DIAGNOSIS. Similar to *E. krebsorum* with AME smallest; abdomen with 2 pairs of white patches and 1 patch in front of spinnerets; booklungs pale. Palp DTA retrolaterally with strong prong. Epigyne with 1 broadly oval semicircular CO and long, U-shaped, sclerotised tubes; CD elongate, coiled, straight, ending in small, separated spermathecae. Separated from *E. krebsorum* by abdomen with only 1 spot in front of spinnerets and FA short, not bent.

DESCRIPTION. *Male* (holotype). Total length 3.6; cephalon 1.68 long, 1.2 wide, 0.68 high; cl/cw 1.4; sternum 0.8 long, 0.72 wide; sl/sw 1.11; abdomen 1.48 long, 0.92 wide.

Colour: carapace orange brown; with dark fovea and dark bifurcate patches in front; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown, with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets; laterally with 1 big white patch and pale booklungs; ventrally dark brown; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV medium to dark brown; femur I, II dark brown, III, IV proximal part white, distal part dark brown.

Eyes: AME smallest; eye group width 0.54 of headwidth; AME 0.06; ALE 0.08; PME 0.08; PLE 0.08; AME-AME 0.04; AME-ALE 0.03; PME-PME 0.04; PME-PLE 0.06; ALE-PLE 0.02; eyes group AME-PME 0.24; AME-AME 0.16; PME-PME 0.2. Clypeus: 0.28mm high.

Male palp (Fig. 10A,B): DTA, PE not reaching tibia; retrolaterally with strong prong; SP S-shaped, not crossing TF; tibia, IP as long as EP, blunt, VtiA short, hooked.

Female (paratype). Total length 3.8; cephalon 1.88 long, 1.2 wide, 0.68 high; cl/cw 1.57; sternum 0.84 long, 0.76 wide; sl/sw 1.11; abdomen 1.92 long, 1.24 wide.

Colour: as in males.

Eyes: AME smallest; eye group width 0.52 of headwidth; AME 0.06; ALE 0.08; PME 0.08; PLE 0.08; AME-AME 0.04; AME-ALE 0.03; PME-PME 0.04; PME-PLE 0.08; ALE-PLE

0.02; eyes group AME-PME 0.28; AME-AME 0.16; PME-PME 0.2. Clypeus 0.3mm high.

Epigyne (Fig. 16C,D): with 1 broadly oval CO attached to epigastric fold and long, U-shaped, sclerotised tubes; CD elongate, coiled about straight axis, ending in small separated S.

DISTRIBUTION. Victoria (Fig. 21).

***Euasteron gibsonae* sp. nov.**
(Figs 10C,D, 21)

ETYMOLOGY. For Leslie Gibson, the collector of the types.

MATERIAL. HOLOTYPE. ♂, SW Qld, Astraleba Downs NP., pitfall traps, 24°13'05"S, 140°34'48"E, Sep.1997, L.Gibson (QM S55533). PARATYPES: Queensland: ♂, as for holotype (QM S55532). Northern Territory: 8♂, Barkly Tablelands, Connells Lagoon, Mitchell grassland, Quadrat 1, pitfall traps, 18°52'S, 136°32'E, Mar 96, T.B. Churchill, A. Fisher (CSIRO A643); 3♂, same locality, Helen Springs Stn., Quadrat 1, 28°24'S, 133°52'E (CSIRO A0431); ♂, same locality, Birrindudu, site 4, 18°24'S, 129°26'E, Apr 96, T.B. Churchill, A. Fisher (CSIRO A1449); ♂, same locality, Kirkimbie, site 4, 17°44'S, 129°14'E, Jun 95, T.B. Churchill, A. Fisher (CSIRO A1465); ♂, same locality (CSIRO A1460).

DIAGNOSIS. AME small. Carapace sepia brown, abdomen sepia brown with 1 big pair of white patches on anterior part and 1 elongate in front of spinnerets. Tibial apophysis, IP short EP short blunt.

DESCRIPTION. *Male* (holotype). Total length 4.16; cephalon 2.04 long, 1.56 wide, 0.8 high; cl/cw 1.31; sternum 0.92 long, 0.84 wide; sl/sw 1.09; abdomen 2.12 long, 1.28 wide.

Colour: carapace, sternum and chelicerae sepia brown; maxillae and labium medium brown, distally white; abdomen sepia brown, dorsally with 1 big pair of white patches on anterior part and 1 elongate white stripe in front of spinnerets; laterally sepia brown; ventrally dark brown; legs medium brown.

Eyes: AME smallest; eye group width 0.47 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.02; PME-PME 0.04; PME-PL 0.08; ALE-PL 0.04; eyes group AME-PME 0.3; AME-AME 0.16; PME-PME 0.24. Clypeus: 0.4mm high.

Male palp (Fig. 10CD): DTA, PE not reaching tibia; retrolaterally with strong prong; SP not crossing transparent field; tibia short; IP short, EP short blunt; VtiA bird-head-shaped.

Female unknown.

DISTRIBUTION. SW Queensland to Barkly Tableland (Fig. 21). Grassland.

***Euasteron krebsorum* sp. nov.**
(Figs 9C,D, 16E,F 18)

ETYMOLOGY. For K. & D. Krebs, collectors of the types.

MATERIAL. HOLOTYPE. ♂, Hay, NSW, 8km West of irrigation channel, grassland, pitfall traps, 33°3'S, 144°45'E, 19 Dec 97-9 Jan 98, K. & D. Krebs (QM S460984). PARATYPES: New South Wales: 2♂, as for holotype (QM S46736). South Australia: 50♂, 2♀, Gawler, 16km, Open grassland, pitfall traps, 34°36'S, 138°55'E, 19 Dec 97-9 Jan 98, K. & D. Krebs (QM S46710); ♂, ♀, same locality (AM KS84125).

DIAGNOSIS. Carapace sepia brown, abdomen sepia brown with 2 pairs of white spots on anterior part and 2 in front of spinnerets. AME small. DTA retrolaterally with prong. FA long directed distally.

DESCRIPTION. *Male* (holotype). Total length 3.56; cephalon 1.84 long, 1.24 wide, 0.68 high; cl/cw 1.48; sternum 0.8 long, 0.72 wide; sl/sw 1.11; abdomen 1.72 long, 1 wide.

Colour: carapace sepia brown; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown, dorsally with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets; laterally with 1 white patch; ventrally dark brown; legs medium brown; with indistinct colour pattern; coxae I-IV white; femur I dark brown, II-IV proximal part white, distal part dark brown.

Eyes: AME smallest; eye group width 0.54 of headwidth; AME 0.08; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.04; PME-PL 0.06; ALE-PL 0.02; eyes group AME-PME 0.26; AME-AME 0.18; PME-PME 0.24. Clypeus: 0.28mm high.

Male palp (Fig. 9C,D): DTA, PE not reaching tibia; retrolaterally with strong prong; VTA = FA elongate directed distally, SP, not crossing TF; tibia short; IP longer than EP, sharp, EP blunt; VtiA hooked.

Female (paratype). Total length 3.56; cephalon 1.84 long, 1.24 wide, 0.68 high; cl/cw 1.48; sternum 0.8 long, 0.72 wide; sl/sw 1.11; abdomen 1.72 long, 1 wide.

Colour: as in male.

Eyes: nearly equal sized, or AME smallest; eye group width 0.54 of headwidth; AME 0.08; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.04; PME-PL 0.06; ALE-PL 0.02.

0.06; ALE-PLE 0.02; eyes group AME-PME 0.26; AME-AME 0.18; PME-PME 0.24. Clypeus: 0.28mm high.

Epigyne (Fig. 16EF): with 1 oval semicircular CO attached to epigastric fold and long V-shaped sclerotised tubes, CD elongate coiled, V-shaped. S touching.

DISTRIBUTION. South Australia, New South Wales (Fig. 18). Open forest and grassland.

***Euasteron lorne* sp. nov.**
(Figs 9A,B, 18)

ETYMOLOGY. The species name is taken from the type locality. A noun in apposition.

MATERIAL. HOLOTYPE: ♂, Lorne State Forest near Taree, NSW, site 86(1) in litter, 29 Oct 78-10 Dec 79, 31°35'S, 150°23'E, 17.11.1978, D Milledge (AM KS15971). PARATYPES: New South Wales: 2♂, Lorne SF near Lorne site 86 (5), in litter, 29 Oct 78-10 Dec 79, 31°35'S, 152°57'E, 12.11.1978, D Milledge (AM KS16059); ♂, Lorne SF near Lorne site 86 (5), in litter, 29 Oct 78-10 Dec 79, 31°35'S, 152°57'E, 12.11.1978, D Milledge (QM S60817).

DIAGNOSIS. AME small. Carapace orange, legs yellow orange, abdomen sepia brown, with 2 pairs of white patches on anterior part and 3 in front of spinnerets. Palp DTA with folded prong.

DESCRIPTION. *Male* (holotype). Total length 4.16; ceph 2.12 long, 1.6 wide, 1 high; cl/cw 1.32; sternum 1.0 long, 0.96 wide; sl/sw 1.04; abdomen 2.04 long, 1.32 wide.

Colour: carapace, sternum and chelicerae orange; maxillae and labium orange, distally white; abdomen sepia brown, dorsally with 2 pairs of white patches on anterior part and 3 in front of spinnerets, laterally with 1 white patch; ventrally dark brown; legs yellow.

Eyes: AME smallest; eye group width 0.48 of headwidth; AME 0.06; ALE 0.12; PME 0.12; PLE 0.12; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.04; PME-PLE 0.1; ALE-PLE 0.04; eyes group AME-PME 0.3; AME-AME 0.16; PME-PME 0.28. Clypeus: 0.4mm high.

Male palp (Fig. 9A,B): DTA PE not reaching tibia; retrolaterally with folded prong; FA short,

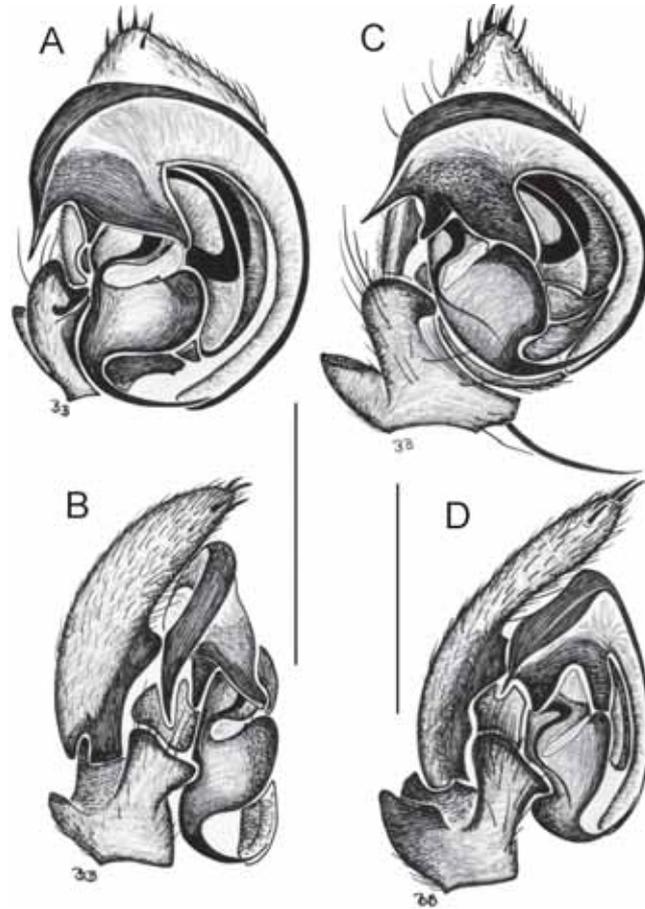


FIG. 10. *Euasteron* spp. right male palps. A,B, *E. bartoni*; A, ventral; B, retrolateral; C,D, *E. gibsonae*; C, ventral; D, retrolateral. Scale 0.5mm.

directed prolaterally; SP S-shaped, not crossing TF; tibia short; IP absent, EP short blunt; VtiA hooked.

Female unknown.

DISTRIBUTION. Lorne State Forest, New South Wales (Fig. 18). Coastal forest.

***Euasteron milledgei* sp. nov.**
(Figs 8E,F, 15E,F, 18)

ETYMOLOGY. For D. Milledge, one of the collectors of the types.

MATERIAL. HOLOTYPE: ♂, Gibraltar Ra, NSW, lower rainforest, 450m, pitfall traps 29°35'S, 152°13'E, 30 Mar-10 Nov 1980, G. & S. Monteith (QM S4261). PARATYPES: New South Wales: ♂, Bruxner Pk, via Coffs Harbour, rainforest, 150m, pitfall traps, 30°14'S,

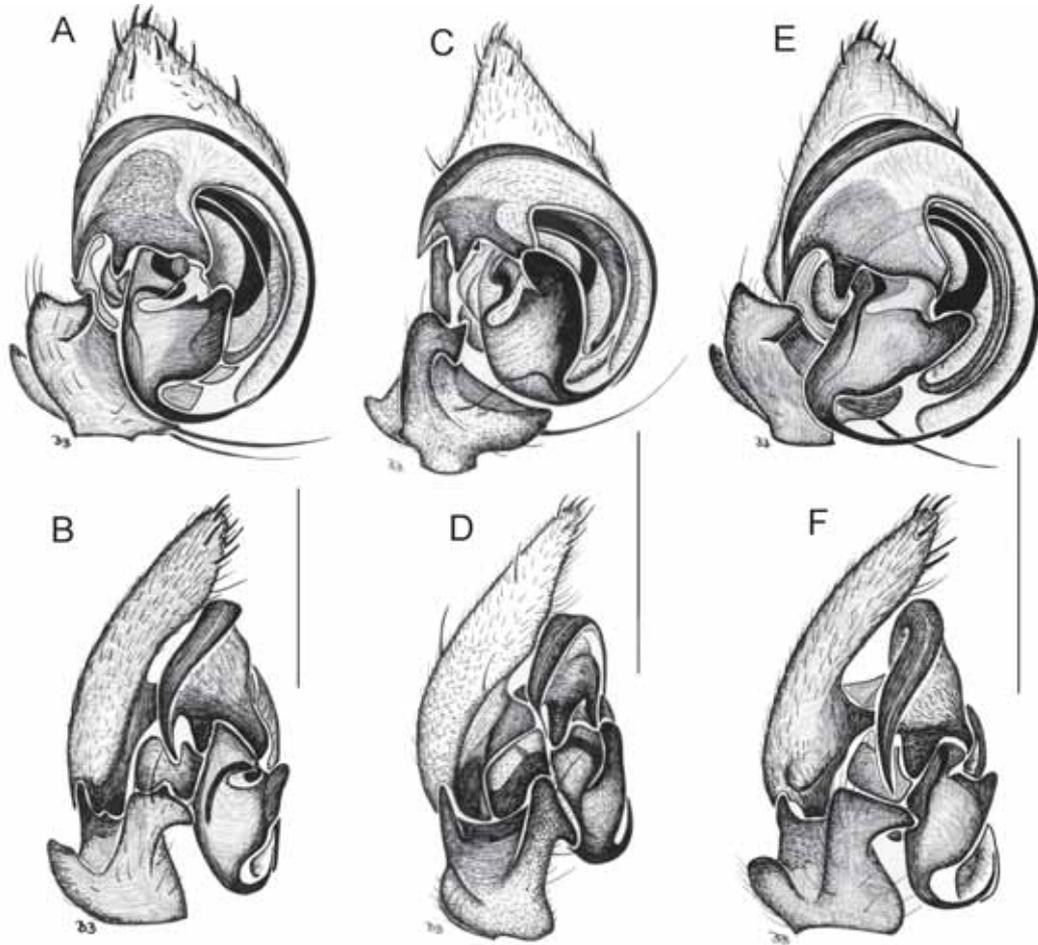


FIG. 11. *Euasteron* spp. right male palps. A,B, *E. raveni*; A, ventral; B, retrolateral; C,D, *E. harveyi*; C, ventral; D, retrolateral; E,F, *E. churchillae*; E, ventral; F, retrolateral. Scales 0.5mm.

153°06'E, 22 Mar-13 Nov 80, G. & S. Monteith (QM S3744); ♂, Dorrigo Nat Pk, Never Never area, Sassafras Ck, wet temperate rainforest, 30°22'S, 152°45'E, 7 Dec 92, D.J. Bickel, (AM KS35052); ♂, Lorne SF near Lorne site 86(1), litter, 29 Oct 78-10 Dec 79, 31°35'S, 152°57'E, 4.11.1979, D. Milledge (AM KS5607); ♂, ♀ same locality, 4 Nov 79 (AM KS5633); ♂, same locality, 12 Nov 78 (AM KS16060).

DIAGNOSIS. AME small. Carapace sepia brown, abdomen sepia brown with 2 pairs of white spots on anterior part and 3-4 in front of spinnerets. Palp, DTA retrolaterally with small lamella and short prong. Epigyne, CO inverted flask-shaped

DESCRIPTION. *Male* (holotype). Total length 4.28; ceph 2.24 long, 1.68 wide, 1.08 high; cl/cw

1.33; sternum 0.88 long, 0.84 wide; sl/sw 1.04; abdomen 2.04 long, 1.4 wide.

Colour: carapace sepia brown; with dark fovea and dark bifurcate patches in front; sternum orange brown; chelicerae medium brown; maxillae and labium orange, distally white; abdomen sepia brown, dorsally with 2 pairs of white patches on anterior part and 3 in front of spinnerets, laterally with 3 elongate and broad white patches; ventrally with 1 longitudinal white stripe from epigastric fold to near tracheal spiracle; legs yellow; clearly annulated; coxae I-IV white or pale; trochanter I-IV medium to dark brown; femur I-IV proximal part white, distal part dark brown.

Eyes: AME smallest; eye group width 0.53 of headwidth; AME 0.08; ALE 0.12; PME 0.12; PLE 0.12; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.04; PME-PLA 0.1; ALE-PLA 0.04; eyes group AME-PME 0.36; AME-AME 0.2; PME-PME 0.28. Clypeus: 0.44mm high.

Male palp (Fig. 8E,F): DTA, PE not reaching tibia; retrolaterally with membranous lamella and short prong; FA big, flat, with rounded tip, directed distally, SP not crossing TF; tibia short; IP tiny, EP short, VtiA hooked.

Female (paratype). Total length 4.8; cephalic 1.96 long, 1.38 wide, 1 high; cl/cw 1.44; sternum 0.84 long, 0.8 wide; sl/sw 1.05; abdomen 2.84 long, 2 wide.

Colour: as in male.

Eyes: AME smallest; eye group width 0.53 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.06; PME-PLA 0.1; ALE-PLA 0.04; eyes group AME-PME 0.3; AME-AME 0.16; PME-PME 0.26.

Epigyne (Fig. 15E,F): CO inverted flask-shaped, with U-shaped sclerotised tubes, copulatory ducts elongate coiled. Spermathecae twice their diameter apart.

DISTRIBUTION. NE New South Wales (Fig. 18).

HABITAT. Rainforest.

***Euasteron monteithorum* sp. nov.**
(Figs 8C,D, 15B,E, 18)

ETYMOLOGY. For Dr Geoff and Sybil Monteith of the Queensland Museum, the collectors of the holotype.

MATERIAL. HOLOTYPE: ♂, Poverty Point, NSW, 20km SE Tenterfield, rainforest, 945m, 29°08'S, 152°07'E, 3 Oct 78-21 Feb 79 G.&S. Monteith (QM S12149). PARATYPES: New South Wales: ♂, as for holotype (QM S3772); ♂, Whian Whian SF, rainforest, 210m pitfall traps, 28°41'S, 153°19'E, 19 Aug-16 Nov 74, G. & S. Monteith (QM S12135); ♂, same locality but 28°14'S, 153°19'E, 19 Aug-16 Nov 78, G. & S. Monteith (QM S3774); ♂ Victoria Pk, via Alstonville, rainforest, 250m, pitfall traps, 28°53'S, 153°23'E, 16 Nov-26 Dec 74, G. & S. Monteith (QM S12142); ♂, same locality but 26 Dec 1974-23 Mar 75, G. & S. Monteith (QM S12141); ♂, ♀, same locality but (QM S12144). Queensland: ♂, ♀, SE Qld, Kroombit Tops, rainforest, 1000m, pitfall traps, 24°22'S, 151°01'E, 22-26 Feb 82, G. Monteith, D. Yeates, G. Thompson (QM S3730).

DIAGNOSIS. AME small. Carapace orange brown, abdomen with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets. Palp, DTA retrolaterally with lamella; tibia IP short,

sharp, EP blunt, sticking out. Epigyne with 2 small, semicircular CO.

DESCRIPTION. *Male* (holotype). Total length 3.76; cephalic 1.96 long, 1.48 wide, 0.96 high; cl/cw 1.32; sternum 1.0 long, 0.88 wide; sl/sw 1.13; abdomen 1.8 long, 1.2 wide.

Colour: carapace orange brown; with dark fovea and dark bifurcate patches in front; sternum orange brown; chelicerae orange; maxillae and labium pale brown, distally white; abdomen sepia brown, dorsally with 2 pairs of big white patches on anterior part and 2-4 in front of spinnerets, laterally with 2 elongate white patches, first one larger; ventrally with 1 longitudinal white stripe from epigastric fold to near tracheal spiracle and 1 pair of white patches near tracheal spiracle; legs pale brown; with indistinct colour pattern; coxae I-IV white; trochanter I-IV white; femur I-IV proximal part white, distal part dark brown.

Eyes: AME smallest; eye group width 0.5 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.06; PME-PME 0.08; PME-PLA 0.04; ALE-PLA 0.04; eyes group AME-PME 0.24; AME-AME 0.16; PME-PME 0.24. Clypeus: 0.36mm high.

Male palp (Fig. 8C,D): DTA PE not reaching tibia; retrolaterally with membranous lamella; FA short, straight, with rounded tip; SP not crossing TF; tibia short; IP short, sharp; EP blunt sticking out; VtiA short, hooked.

Female (paratype). Total length 3.72; cephalic 1.8 long, 1.28 wide, 0.84 high; cl/cw 1.4; sternum 0.88 long, 0.8 wide; sl/sw 1.1; abdomen 1.92 long, 1.48 wide.

Colour: as in males.

Eyes: AME smallest; eye group width 0.5 of headwidth; AME 0.06; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.08; PME-PLA 0.04; ALE-PLA 0.04; eyes group AME-PME 0.26; AME-AME 0.16; PME-PME 0.24. Clypeus: 0.36mm high.

Epigyne (Fig. 15B,E): With 2 small, semi-circular copulatory openings, copulatory ducts elongate coiled, ending in small spermathecae.

DISTRIBUTION. Northeastern New South Wales and southern Queensland (Fig. 18). Rainforest.

KEY TO SPECIES OF *EUASTERON*
JULIANNAE GROUP, MALES

1. DTA retrolaterally with strong prong (Figs 11, 12CD) . 2

- DTA retrolaterally with lamella and without or only tiny prong (Figs 13, 14) 5
2. Carapace dark brown, abdomen with scutum, palp, FA long, straight, directed prolatero-distally (Fig. 11E,F) *E. churchillae*
Carapace orange brown with dark fovea and bifurcate patches, abdomen without scutum, palp, FA short or long, bent and directed distally (Figs 11A-D, 12C,D) 3
3. Abdomen laterally with 1 white patch, palp; DtiA EP long (Fig. 12C,D) *E. ulrichi*
Abdomen laterally without any colour pattern, palp; DtiA EP short (Fig. 11A-D) 4
4. Femur I dark brown, palp, SP partly crossing TF, FA short (Fig. 11A,B) *E. raveni*
Femur I proximally white, palp, SP partly crossing TF, FA long bent (Fig. 11C,D) *E. harveyi*
5. Carapace yellow with dark margin and dark cephalic area; abdomen pale with dark chevrons (Figs 6A-C, 13C,F) 6
Carapace sepia or orange brown, abdomen sepia brown with 2 or 3 pairs of white spots on anterior part and 1-3 in front of spinnerets, or pale chevrons 7
6. Palp, SP not crossing TF; FA wider than long; (Fig. 13C,D) *E. atriceps*
Palp, SP partly crossing TF, FA as long as wide (Fig. 13E,F) *E. carnarvon*
7. Abdomen with pale chevrons; DtiA EP with deep incision, palp, SP not crossing TF (Fig. 13A,B) *E. juliannae*
Abdomen with 2-3 pairs of white spots on anterior part and 3 in front of spinnerets; DtiA EP without deep incision, palp SP crossing TF completely (Fig. 4A-D) 8
8. Abdomen with 3 pairs of white spots on anterior part and 3 in front of spinnerets, palp, SP broad (Fig. 14A,B) *E. johanna*
Abdomen with 2 pairs of white spots on anterior part and 3 in front of spinnerets; palp, SP narrow (Fig. 14C,D) *E. ursulae*

***Euasteron churchillae* sp. nov.**
(Figs 11E,F, 19)

ETYMOLOGY. In honour of Dr Tracey Churchill, the collector of the types and in esteem for her important ecological work on Australian spiders.

MATERIAL. HOLOTYPE: ♂, Daly River, NT, Quadrat C6, PWCNT, pitfall traps, 13°55'23"S, 131°24'06"E, 21.6.99, T. Churchill (CSIRO A2545). PARATYPES: Northern Territory: ♂, Daly R., Quadrat K10, PWCNT, 14°43'61"S, 132°37'03"E, 30 Aug 98 (CSIRO A3431).

DIAGNOSIS. AME biggest, carapace sepia brown, abdomen with scutum, with 2 pairs of white patches on anterior part and 2 in front of spinnerets. Palp, DTA with big prong, base of embolus with big straight FA.

DESCRIPTION. *Male* (holotype). Total length 3.24; carapace 1.64 long, 1.2 wide, 0.8 high; cl/cw 1.36; sternum 0.8 long, 0.72 wide; sl/sw 1.11; abdomen 1.6 long, 0.88 wide.

Colour: carapace sepia brown; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with scutum and 2 pairs of white patches on anterior part and 2 in front of spinnerets; laterally with 1 white patch; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV brown; femur I-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.6 of headwidth; AME 0.13; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0; AME-ALE 0.02; PME-PME 0.04; PME-PL 0.08; ALE-PL 0.02; eyes group AME-PME 0.3; AME-AME 0.26; PME-PME 0.24. Clypeus: 0.32mm high.

Male palp (Fig. 11E,F): DTA, PE not reaching tibia; retrolaterally with strong prong; FA elongate, straight, with rounded tip; SP not crossing TF; DtiA IP shorter than EP, Ep with blunt tip; VtiA birdhead-shaped.

Variation: the only other examined male (A3431) is about 1/3 longer than the HT with body length of 4.24mm and ceph length of 2.24mm. Body shape colour and palp shape are the same.

Female unknown.

DISTRIBUTION. Daly River area, Northern Territory (Fig. 19). Semi-arid area, desert.

***Euasteron harveyi* sp. nov.**
(Figs 11C,D, 19)

ETYMOLOGY. In honour of Dr Mark Harvey of the Western Australian Museum, in esteem for his important work on Australian arachnids.

MATERIAL. HOLOTYPE: ♂, Marun CALM Site 8/4, 3.4km SW of Manning Ck, Prince Frederic Harbour 6, WA, malaise trap, 15°00'S, 125°21'E, 125°21'E, 11 Jun 88, I.D. Naumann (WAM T51851). PARATYPES: Western Australia: ♂, Marun CALM Site 8/4, 3.4km SW of Manning Ck, Prince Frederic Harbour 6, Malaise trap, 15°00'S, 125°21'E, 125°21'E, 11 Jun 88, I.D. Naumann (WAM T51852).

DIAGNOSIS. AME biggest, carapace orange brown, abdomen with with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets, differs from *E. raveni* in palp with long bent FA, SP not crossing TF.

DESCRIPTION. *Male* (holotype). Total length 3.4; ceph 1.6 long, 1.28 wide, 0.72 high; cl/cw 1.25; sternum 0.76 long, 0.72 wide; sl/sw 1.05; abdomen 1.8 long, 1.08 wide.

Colour: carapace orange brown; with dark fovea and dark bifurcate patches in front; sternum, chelicerae, maxillae and labium white to yellow; abdomen sepia brown; dorsally with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets; legs pale to white; clearly annulated; coxae I-IV white; trochanter I-IV white; femur I-IV proximal part white, distal part dark brown; tibia I-IV proximal and distal part brown, medial part white.

Eyes: AME largest; eye group width 0.55 of headwidth; AME 0.12; ALE 0.1; PME 0.1; PLE 0.1; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.04; PME-PLA 0.08; ALE-PLA 0.04; eyes group AME-PME 0.32; AME-AME 0.26; PME-PME 0.24. Clypeus 0.32mm high.

Male palp (Fig. 11C,D): DTA, PE not reaching tibia; retrolaterally with strong prong; FA elongate, sickleshaped, with rounded tip; SP S-shaped, not crossing TF; DtiA IP about 3 times longer than wide, sharp, EP short, blunt; VtiA bird-head-shaped.

Female unknown.

DISTRIBUTION. Known only from type locality (Fig. 19).

***Euasteron raveni* sp. nov.**
(Figs 11A,B, 19)

ETYMOLOGY. In honour of Dr Robert Raven of the Queensland Museum, in esteem for his important work on Australian spiders.

MATERIAL. HOLOTYPE: ♂, NW Qld, Mount Isa, 20°44'S, 139°29'E, Jan 1981, W. Myers (AM KS6448).

DIAGNOSIS. AME biggest, carapace orange brown, abdomen with with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets, palp with strong prong and short FE, SP partly crossing TF.

DESCRIPTION. *Male* (holotype). Total length 4.00; carapace 2.04 long, 1.52 wide, 0.8 high; cl/cw 1.34; sternum 0.96 long, 0.84 wide; sl/sw 1.14; abdomen 1.96 long, 1.24 wide.

Colour: carapace orange brown; with dark fovea and dark bifurcate patches in front; sternum

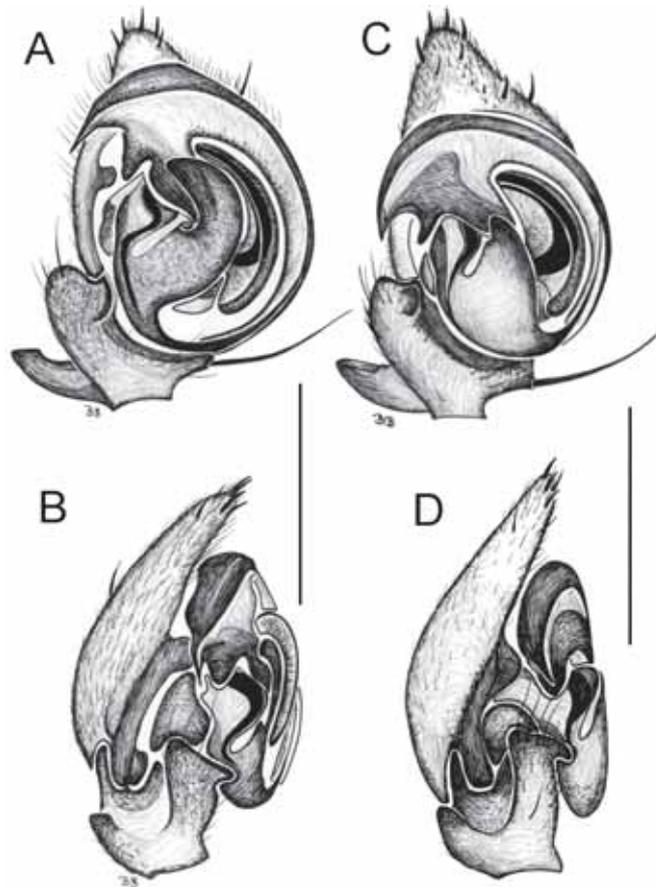


FIG. 12. *Euasteron* spp. right male palps. A,B, *E. willerooi*; A, ventral; B, retrolateral; C,D, *E. ulrichi*; C, ventral; D, retrolateral. Scales 0.5mm.

orange brown; chelicerae orange; maxillae and labium orange, distally white; abdomen sepia brown; dorsally with 2 pairs of white patches on anterior part and 2-3 in front of spinnerets; ventrally pale brown; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV brown; femur I dark brown, II-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.61 of headwidth; AME 0.14; ALE 0.12; PME 0.12; PLE 0.12; AME-AME 0; AME-ALE 0.02; PME-PME 0.04; PME-PLA 0.08; ALE-PLA 0.02; eyes group AME-PME 0.38; AME-AME 0.28; PME-PME 0.28. Clypeus: 0.4mm high.

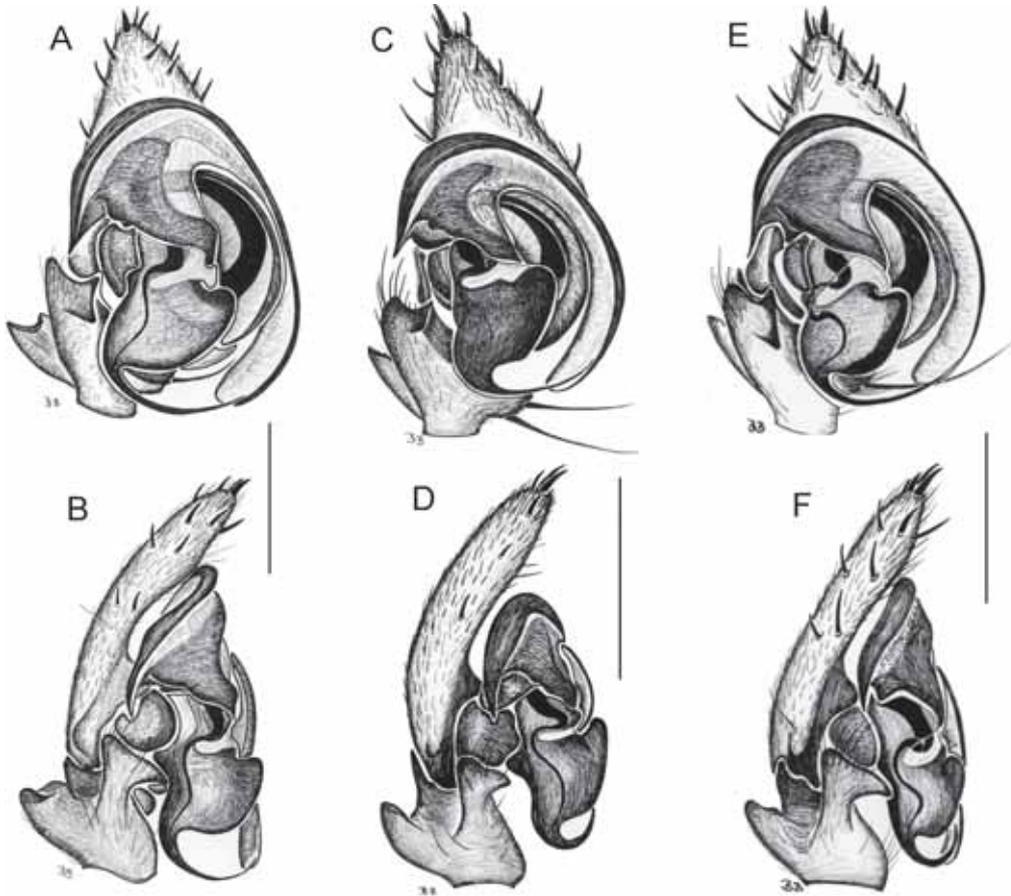


FIG. 13. *Euasteron* spp. right male palps. A,B, *E. juliannae*; A, ventral; B, retrolateral; C,D, *E. atriceps*; C, ventral; D, retrolateral; E,F, *E. carnarvon*; E, ventral; F, retrolateral. Scales 0.5mm.

Abdomen: tracheal spiracle small, slit-like, covered with small stout spines.

Male palp (Fig.11A,B): DTA, PE not reaching tibia; retrolaterally with strong prong; FA short, straight; SP S-shaped, partly crossing TF; DtiA, IP 3 times as long as wide, sharp, EP blunt; VtiA bird-head-shaped.

Female unknown.

DISTRIBUTION. Known only from Mt Isa, NW Queensland (Fig. 19).

***Euasteron ulrichi* sp. nov.**
(Figs 12C,D, 19)

ETYMOLOGY. For Ulrich Baehr, the author's son.

MATERIAL. HOLOTYPE: ♂, 26km E Napier Downs, WA, 17°15'S, 124°44'E, 24 Nov 1984, B. & M. Baehr (QM S55907).

DIAGNOSIS. AME biggest, carapace orange brown, abdomen with 2 pairs of white patches on anterior part and 1 in front of spinnerets. Palp DTA retrolaterally with strong prong, base of embolus with short straight FA directed distally.

DESCRIPTION. *Male* (holotype). Total length 3.6; ceph 1.84 long, 1.24 wide, 0.72 high; cl/cw 1.48; sternum 0.8 long, 0.8 wide; sl/sw 1; abdomen 1.76 long, 1.04 wide.

Colour: carapace orange brown; with dark fovea and dark bifurcate patches in front; sternum orange brown; chelicerae orange; maxillae and labium yellow, distally white; abdomen sepia brown; with dorsally 2 pairs of white patches on anterior part and 1 in front of spinnerets; laterally with 1 white patch; ventrally pale brown; legs yellow; clearly annulated; coxae I-IV white;

trochanter I-IV brown; femur I-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.62 of headwidth; AME 0.14; ALE 0.12; PME 0.12; PLE 0.12; AME-AME 0; AME-ALE 0.04; PME-PME 0.04; PME-PLA 0.08; ALE-PLA 0.04; eyes group AME-PME 0.32; AME-AME 0.28; PME-PME 0.28. Clypeus: 0.36mm high.

Male palp (Fig. 12C,D): DTA, PE not reaching tibia; retrolaterally with strong PR; FA short, straight, directed distally; SP not crossing TF; DtiA IP 3 times as long as wide, sharp, EP blunt sticking out; VtiA bird-head-shaped.

Female unknown.

DISTRIBUTION. Known only from Napier Downs (Fig. 19).

KEY TO SPECIES OF *EUASTERON* *JULIANNAE* GROUP, FEMALES

1. Carapace yellow with dark margin and dark cephalic area; abdomen pale with dark chevrons (Figs 6, 17E,F) *E. carnarvon*
Carapace sepia or orange brown, abdomen sepia brown with 2 or 3 pairs of white spots on anterior part and 1-3 in front of spinnerets, or pale chevrons 2
2. Abdomen with pale chevrons; epigyne, CD extremely long straight (Fig. 17G,H) *E. juliannae*
Abdomen with 2-3 pairs of white spots on anterior part and 3 in front of spinnerets; epigyne, CD long V-shaped (Fig. 17A-D) 3
3. Abdomen with 3 pairs of white spots on anterior part and 3 in front of spinnerets; CO not attached to epigastric fold (Fig. 17A,B) *E. johannae*
Abdomen with 2 pairs of white spots on anterior part and 3 in front of spinnerets; CO attached to epigastric fold (Fig. 17C,D) *E. ursulae*

Euasteron johannae sp. nov. (Figs 14A,B, 17A,B, 20)

ETYMOLOGY. For Johanna Baehr, the author's elder daughter.

MATERIAL. HOLOTYPE: ♂, Barlee Range Nature Reserve, quadrat 5, WA, dry pitfall traps, 23°24'41"S 115°53'39"E, /6/1994, S. van Leeuwen, B. Bromilow (WAM T44458). PARATYPES: WA: ♂, ♀, same locality (WAM T51853); 2♂, ♀, same locality, quadrat 1, 23°02'39"S 115°48'44"E (WAM T44457); ♂, same locality, quadrat 10, 23°05'45"S, 116°00'35"E (WAM T44460); 18♂, ♀, same locality, quadrat 1, 23°02'39"S, 115°48'44"E, /8/1993 (WAM T44453); 5♂, ♀, same locality, quadrat 5, 23°24'41"S, 115°53'39"E (WAM T44454); ♂, same locality, quadrat 9, 23°06'06"S, 116°00'28"E (WAM T44455); ♂, same locality, quadrat 12, 23°06'47"S, 116°00'42"E (WAM T44456); 12♂, same locality, site BR5, 23°24'41"S, 115°53'39"E, 11-14 Jun 94, P.G. & G.W. Kendrick (WAM T44461); 23♂, same locality, site BR9, 23°06'06"S, 16°00'28"E, 19-22 Jun 94

(WAM T44463); ♂, same locality, site BR12, 23°06'47"S, 116°00'42"E (WAM T44464); 2♂, ♀, same locality, quadrat 5, 23°24'41"S, 115°53'39"E, /9/1995, S. van Leeuwen, B. Bromilow (WAM T44465); ♂, ♀, same locality, quadrat 10, 23°05'45"S 116°00'35"E (WAM T44466); 2♂, ♀, same locality, quadrat 11, 23°06'21"S, 115°59'52"E (WAM T44467); ♂, same locality, site BR10, 23°05'45"S, 116°00'35"E, 19/6/1994, P.G. & G.W. Kendrick (WAM T44468); ♂ (palp drawing) same locality, site BR11, 23°06'21"S, 115°59'52"E, 19-22 Jun 94 (WAM T44469).

DIAGNOSIS. Differs from *E. atriceps* and *E. carnarvon* by the sepia brown ceph, from *E. ursulae* and *E. juliannae* by femur I, dark brown, II, IV proximal part white, distal part dark brown and by abdomen with 3 pairs of white patches on anterior part and 3 in front of spinnerets.

DESCRIPTION. *Male* (holotype). Total length 4.12; ceph 2.04 long, 1.44 wide, 0.84 high; cl/cw 1.42; sternum 0.96 long, 0.92 wide; sl/sw 1.04; abdomen 2.08 long, 1.4 wide.

Colour: carapace sepia brown; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with 3 pairs of white patches on anterior part and 3 in front of spinnerets; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV white; femur I dark brown, II-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.65 of headwidth; AME 0.14; ALE 0.1; PME 0.12; PLE 0.12; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.06; PME-PLA 0.06; ALE-PLA 0.04; eyes group AME-PME 0.32; AME-AME 0.3; PME-PME 0.3. Clypeus: 0.32mm high.

Male palp (Fig. 14A,B): DTA, PE reaching tibia; retrolaterally with membranous lamella; FA short, rounded; SP broad, S-shaped, crossing TF totally; DtiA IP as long as EP, sharp, EP blunt; VtiA hooked.

Female (paratype). Total length 5.8; ceph 2.28 long, 1.52 wide, 0.84 high; cl/cw 1.5; sternum 1.04 long, 0.96 wide; sl/sw 1.08; abdomen 2.8 long, 2 wide.

Colour: as in male.

Eyes: AME largest; eye group width 0.66 of headwidth; AME 0.14; ALE 0.12; PME 0.14; PLE 0.14; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.04; PME-PLA 0.04; ALE-PLA 0.08; eyes group AME-PME 0.42; AME-AME 0.3; PME-PME 0.34. Clypeus: 0.4mm high.

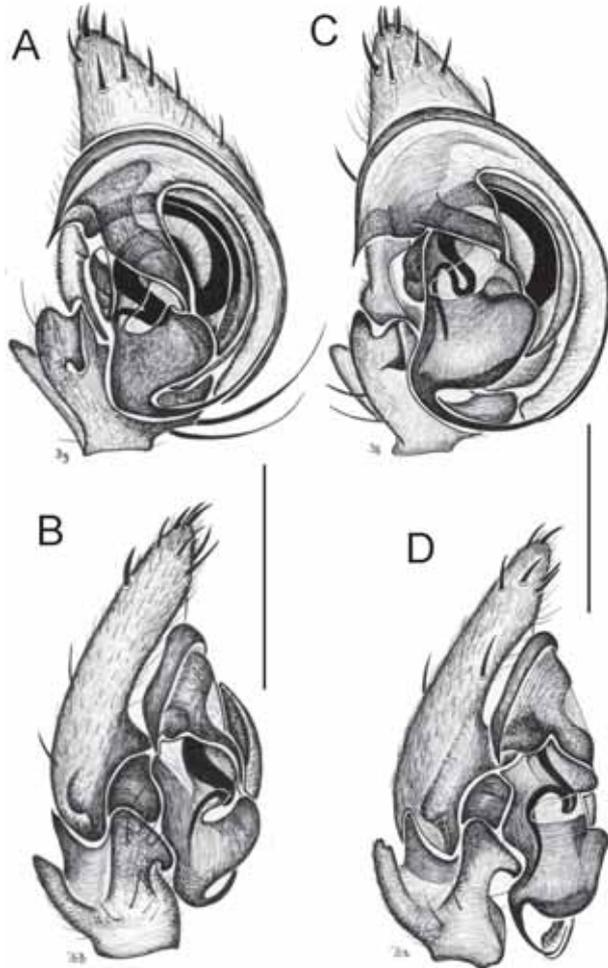


FIG. 14. *Euasteron* spp. right male palps. A,B, *E. johannae*; A, ventral; B, retrolateral; C,D, *E. ursulae*; C, ventral; D, retrolateral. Scale 0.5mm.

Epigyne (Fig. 17A,B): oval CO not attached to epigastric fold, with short, V-shaped sclerotised tubes, CD elongate coiled, axis in V-shaped position. S touching.

DISTRIBUTION. Barlee Range, Western Australia (Fig. 20).

***Euasteron ursulae* sp. nov.**
(Figs 14C,D, 17C,D, 20)

ETYMOLOGY. For Ursula Baehr, the author's younger daughter.

MATERIAL. HOLOTYPE: ♂, Barlee Range Nature Reserve, WA, site BR6, dry pitfall traps 23°23'21"S,

115°53'12"E, 11-14 Jun 94, P.G. & G.W. Kendrick (WAM T44462). PARATYPES: Western Australia: 4♂, ♀, Barlee Range Nature Reserve, site BR6, dry pitfall traps 23°23'21"S, 115°53'12"E, 11-14 Jun 94, P.G. & G.W. Kendrick (WAM T52337); 2♂, same locality, (QM S60818); ♂, same locality, quadrat 7, 23°22'45"S, 115°52'50"E, Jun 94, S. van Leeuwen, B. Bromilow (WAM T44459); ♂, same locality, quadrat 7, 23°22'S 115°52'50"E, /6/1994 (WAM 95/164); 2♂, Cape Range, site TL-1, pitfall traps, 22 15'S, 114 03'E, 16 May-5 June 90, J.M. Waldock (WAM 93/1030-3); ♂, same locality, site TL-7, 22 15'S, 114 04'E, 20 May-5 June 90 (WAM 93/1073-4); ♂, N-W Cape Penin Site TL-10, 22°08'S, 114°05'E, 21 May-5 June 90, J.M. Waldock (WAM 93/1087-8); ♂, Cape Range, camp, 22°15'S, 114°03'E, 27 May 90, J.M. Waldock (WAM 93/1104).

DIAGNOSIS. Differs from *E. atriceps* and *E. carnarvon* by carapace sepia brown, from *E. johannae* and *E. juliannae* by femur I,II dark brown, III,IV proximal part white, distal part dark brown and by abdomen with 2 pairs of white patches on anterior part and 3 in front of spinnerets.

DESCRIPTION. *Male* (holotype). Total length 4.84; ceph 2.24 long, 1.56 wide, 1 high; cl/cw 1.43; sternum 1.12 long, 0.96 wide; sl/sw 1.16; abdomen 2.6 long, 1.44 wide.

Colour: carapace sepia brown; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with 2 pairs of white patches on anterior part and 3 in front of spinnerets; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV brown; femur I,II dark brown, III,IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.64 of headwidth; AME 0.16; ALE 0.12; PME 0.14; PLE 0.14; AME-AME 0; AME-ALE 0.04; PME-PME 0.04; PME-PLP 0.08; ALE-PLP 0.04; eyes group AME-PME 0.04; AME-AME 0.32; PME-PME 0.32. Clypeus: 0.4mm high.

Male palp (Fig. 14C,D): DTA, PE reaching tibia; retrolaterally with membranous lamella; FA short, rounded; SPS-shaped, narrow, crossing TF totally; DtiA IP as long as EP, sharp, EP blunt; VtiA bird-head-shaped.

Female (paratype). Total length 5.8; ceph 2.6 long, 1.68 wide, 1.04 high; cl/cw 1.54; sternum 1.12 long, 1 wide; sl/sw 1.12; abdomen 3.2 long, 2.2 wide.

Colour: same as males.

Eyes: AME largest; eye group width 0.66 of headwidth; AME 0.16; ALE 0.14; PME 0.15; PLE 0.15; AME-AME 0.04; AME-ALE 0.04; PME-PME 0.06; PME-PLP 0.08; ALE-PLP 0.04; eyes group AME-PME 0.04; AME-AME 0.36; PME-PME 0.36. Clypeus: 0.52mm high.

Epigyne (Fig. 17C,D): Oval CO attached to the epigastric fold, with V-shaped sclerotised tubes, CD elongate coiled, axis in V-shaped position. S touching.

DISTRIBUTION. Western Australia (Fig. 20).

***Euasteron juliannae* sp. nov.**
(Figs 13A,B, 17G,H, 20)

ETYMOLOGY. For Ms Julianne Waldock of the Western Australian Museum, the collector of some of the types.

MATERIAL. HOLOTYPE: ♂, Nerren Nerren Station, WA, site NE 4, dry pitfall traps, 27°07'22"S, 114°47'58"E, 15-20 Oct 94, J.M. Waldock et al. (WAM T44500). PARATYPES: Western Australia: ♂, Nerren Nerren Station, site NE 3, wet pitfall traps, 27°07'24"S, 114°46'41"E, 25 Aug-17 Oct 94, J.M. Waldock et al. (WAM T44499); ♂, ♀, near Wicherina Dam, vehicle vibration, 28°43'49"S, 115°00'17"E, 2 Nov 98, J.M. Waldock (WAM T44432); ♂, ♀, same locality (QM S60815); 6♂, Nanga Station, site NA 2, wet pitfall traps 26°29'23"S, 114°03'21"E, 23 Aug-16 Oct 94, P. West et al. (WAM T44488); 3♂, same locality, dry pitfall traps, 15-20 Oct 94 (WAM ex T44490); ♀, R.G.C. Mine, 10km S of Eneabba, site 3, 29°56'S, 115°17'E, 31 Oct 97, R.P. McMillan, pitfall traps (WAM T44413).

DIAGNOSIS. Differs from *E. atriceps* and *E. carnarvon* by sepia brown ceph, from *E. johanna* and *E. ursulae* by proximal part white, distal part dark brown femur I-IV. Abdomen dark with pale chevrons. Palp, SP not crossing transparent field. DTA retrolaterally with lamellae and tiny prong. Epigyne copulatory ducts extremely elongate, coiled about straight axis.

DESCRIPTION. *Male* (holotype). Total length 4.68; ceph 2.36 long, 1.8 wide, 1.04 high; cl/cw

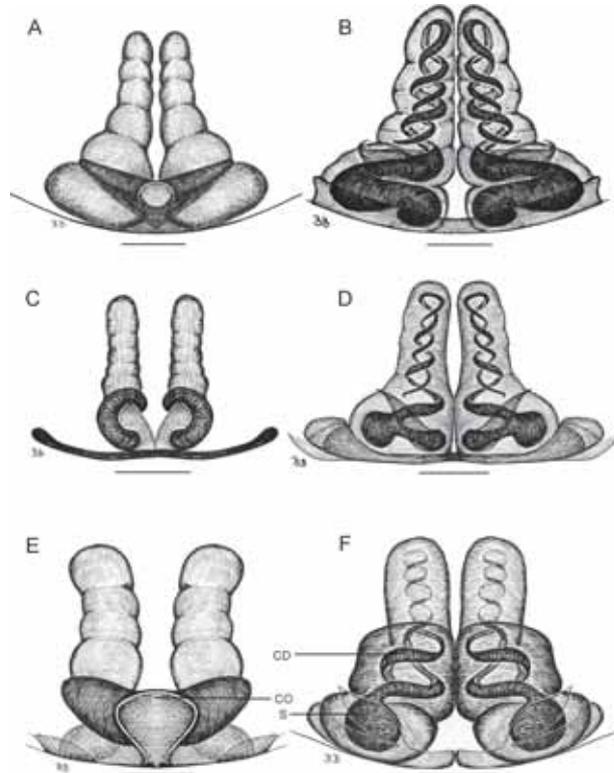


FIG. 15. *Euasteron* spp. epigynes. A,B, *E. enterprise*; A, ventral; B, dorsal (cleared). C,D, *E. monteithorum*; C, ventral; D, dorsal. E,F, *E. milledgei*; E, ventral; F, dorsal. Scales 0.1mm. CO = copulatory opening; CD = copulatory duct; S = spermatheca.

1.31; sternum 1.08 long, 1 wide; sl/sw 1.08; abdomen 2.32 long, 1.68 wide.

Colour: carapace sepia brown; with dark fovea and dark bifurcate patches in front; sternum orange brown; chelicerae medium brown; maxillae and labium medium brown, distally white; abdomen sepia brown; dorsally with pale chevrons; laterally with 1 white patch; legs medium brown, with darker brown lateral stripes; clearly annulated; coxae I-IV white; trochanter I-IV white; femur I-IV proximal part white, distal part dark brown.

Eyes: AME largest; eye group width 0.57 of headwidth; AME 0.16; ALE 0.14; PME 0.14; PLE 0.14; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.06; PME-PLP 0.08; ALE-PLP 0.04; eyes group AME-PME 0.4; AME-AME 0.34; PME-PME 0.34. Clypeus: 0.48mm high.

Male palp (Fig. 13A,B): DTA, PE not reaching tibia; retrolaterally with membranous lamella

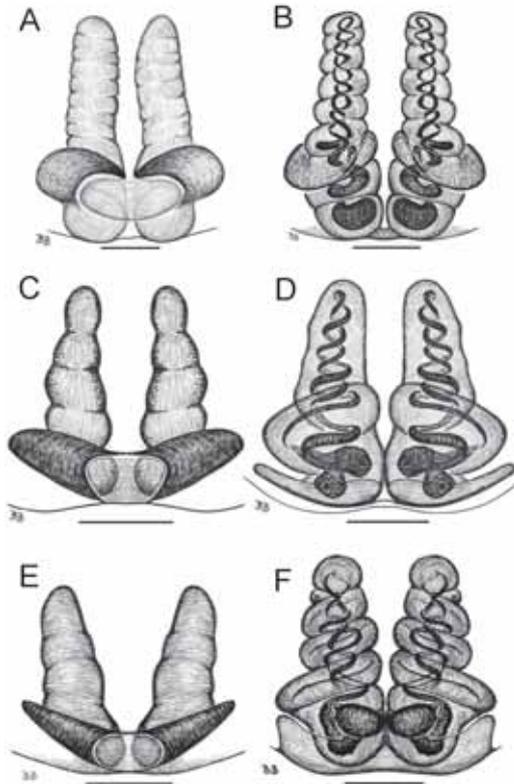


FIG. 16. *Euasteron* spp. epigynes. A,B, *E. willerooi*; A, ventral; B, dorsal (cleared). C,D, *E. bartoni*; C, ventral; D, dorsal. E,F, *E. krebsorum*; E, ventral; F, dorsal. Scales 0.1mm.

and tiny prong; FA short, with rounded tip; SP not crossing TF; tibia short; IP short, EP blunt with incision; VtiA hooked.

Female (paratype). Total length 6.2; ceph 2.6 long, 1.8 wide, 1.04 high; cl/cw 1.44; sternum 1.16 long, 1 wide; sl/sw 1.16; abdomen 3.6 long, 2.2 wide.

Colour: as in males.

Eyes: AME largest; eye group width 0.6 of headwidth; AME 0.16; ALE 0.14; PME 0.14; PLE 0.14; AME-AME 0.02; AME-ALE 0.04; PME-PME 0.06; PME-PLE 0.08; ALE-PLE 0.04; eyes group AME-PME 0.42; AME-AME 0.34; PME-PME 0.34. Clypeus: 0.52mm high.

Epigyne (Fig. 17G,H): Oval CO, attached to epigastric fold, U-shaped sclerotised tubes, CD extremely elongate, about 4 × as long as wide, coiled, axis straight. S touching.

DISTRIBUTION. Western Australia (Fig. 20).

***Euasteron atriceps* sp. nov.**
(Figs 13C,D, 20)

ETYMOLOGY. Latin *atriceps* meaning dark-headed; refers to the dark cephalic area.

MATERIAL. HOLOTYPE: ♂, Nerren Nerren Station, WA, site NE2, 27°03'24"S, 114°35'21"E, 25 Aug-16 Oct 94, J.M. Waldock et al., wet pitfall traps (WAM T44495). PARATYPES: Western Australia: 18♂, same as holotype (WAM T52336); 42♂, Nanga Station, site NA4, 26°32'47"S, 113°57'49"E, 16 Oct 94-19 Jan 95, N. McKenzie, J. Rolfe, wet pitfall traps (WAM T44592); 2♀, same locality (QM S60814); 15♂, Nanga Station, site NA5, 26°35'34"S, 113°53'23"E, 16 Oct 94-19 Jan 95, N. McKenzie, J. Rolfe, wet pitfall traps (WAM T44593).

DIAGNOSIS. Differs from *E. johannae*, *E. ursulae* and *E. juliannae* in carapace yellow with dark brown cephalic area, abdomen with dark margin and chevrons on top; from *E. carnarvon* in smaller size and SP not crossing TF.

DESCRIPTION. *Male* (holotype). Total length 3.48; ceph 1.8 long, 1.44 wide, 0.84 high; cl/cw 1.25; sternum 0.84 long, 0.72 wide; sl/sw 1.17; abdomen 1.68 long, 1.16 wide.

Colour: carapace yellow; with dark brown cephalic area, with dark margin and chevrons on top; sternum yellow; chelicerae medium brown; maxillae and labium yellow, distally white; abdomen pale; dorsally with dark chevrons; ventrally mottled with white; legs pale brown; with indistinct colour pattern; coxae I-IV pale; trochanter I-IV pale; femur I-IV pale with brown ring distally; tibia I-IV proximally and distally part with brown spot.

Eyes: AME largest; eye group width 0.62 of headwidth; AME 0.13; ALE 0.1; PME 0.11; PLE 0.12; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.04; PME-PLE 0.06; ALE-PLE 0.04; eyes group AME-PME 0.3; AME-AME 0.28; PME-PME 0.26. Clypeus: 0.36mm high.

Male palp (Fig. 13C,D): DTA, PE not reaching tibia; retrolaterally with ML; FA wider than long, rounded; SP S-shaped, not crossing TF; DtiA IP as long as EP sharp, EP blunt, VtiA bird-head-shaped.

Female unknown.

DISTRIBUTION. Yamarna Station, WA (Fig. 20).

***Euasteron carnarvon* sp. nov.**
(Figs 6, 13E,F, 17E,F, 20)

ETYMOLOGY. From the type locality. A noun in apposition.

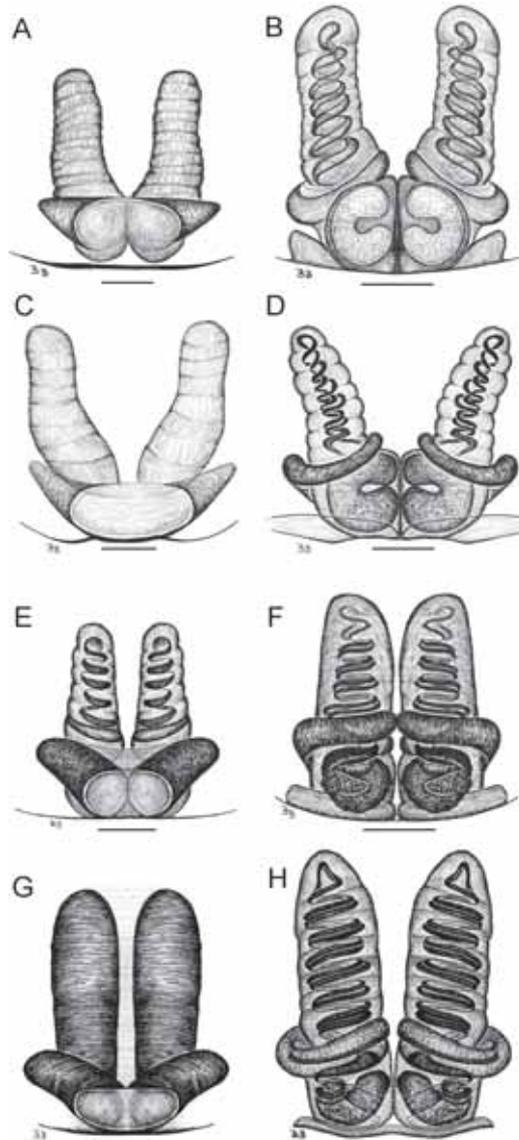


FIG. 17. *Euasteron* spp. epigynes. A,B, *E. johannae*; A, ventral; B, dorsal (cleared). C,D, *E. ursulae*; C, ventral; D, dorsal. E,F, *E. carnarvon*; E, ventral; F, dorsal. G,H, *E. juliannae*; G, ventral; H, dorsal. Scale 0.1mm.

MATERIAL. HOLOTYPE: ♂, Nanga Station, WA, site NA 1, dry pitfall traps, 26°28'40"S, 114°04'34"E, 15-20 Oct 94, P. West et al. (WAM T44575). **PARATYPES:** Western Australia: 2♂, 1♀, Nanga Station, site NA 1, dry pitfall traps, 26°28'40"S, 114°04'34"E, 15-20 Oct 94, P. West et al. (WAM T51854); ♂, ♀, same locality, site NA1,



FIG. 18. Records of *Basasteron* and *Euasteron* species in Australia.

11 May-3 Aug 95, N. Hall (QM S60831); ♂, same locality, site NA 5, 26°35'34"S, 113°53'23"E, P. West et al. (WAM T44577); ♂, Zuytdorp, site ZU 1 wet pitfall traps, 27°15'42"S, 114°01'09"E, 26 Aug-15 Oct 94, A. Sampey et al. (WAM T44511); 2♂, Zuytdorp, site ZU 1, wet pitfall traps, 27°15'42"S, 114°01'09"E, 15 Oct 94-11 Jan 95, N. McKenzie, J. Rolfe (WAM T44512); 2♂, Zuytdorp, site ZU 2, wet pitfall traps, 27°15'41"S, 114°01'48"E, 26 Aug-15 Oct 94, A. Sampey et al. (WAM T44514); 2♂, same locality, 15 Oct 94-11 Jan 95, N. McKenzie, J. Rolfe (WAM T44515); ♂, same locality, site ZU 3, 27°15'34"S, 114°04'03"E, 26 Aug-17 Oct 94, A. Sampey et al. (WAM T44518); ♂, same locality, site ZU 4, dry pitfall traps, 27°15'28"S, 114°09'02"E, 14-19 Oct 94, A. Sampey et al. (WAM T44520); ♂, ♀, Barlee Range Nature Reserve, quadrat 2, wet pitfall traps, 23°03'41"S, 115°47'15"E, Jun 94, S. van Leeuwen, B. Bromilo (QM S60831).

DIAGNOSIS. Differs from *E. johannae*, *E. ursulae* and *E. juliannae* in carapace yellow, dark brown cephalic area and dark margin and chevrons on top. From *E. atriceps* in bigger size and SP partly crossing TF.

DESCRIPTION. Male (holotype). Total length 4.04; ceph 2.12 long, 1.64 wide, 0.92 high; cl/cw 1.29; sternum 1 long, 0.96 wide; sl/sw 1.04; abdomen 1.92 long, 1.4 wide.

Colour: carapace yellow; with dark brown cephalic area, with dark margin and chevrons on top; sternum yellow; chelicerae medium brown; maxillae; labium yellow, distally white; abdomen pale; dorsally with dark chevrons; ventrally mottled with white; legs pale brown; with

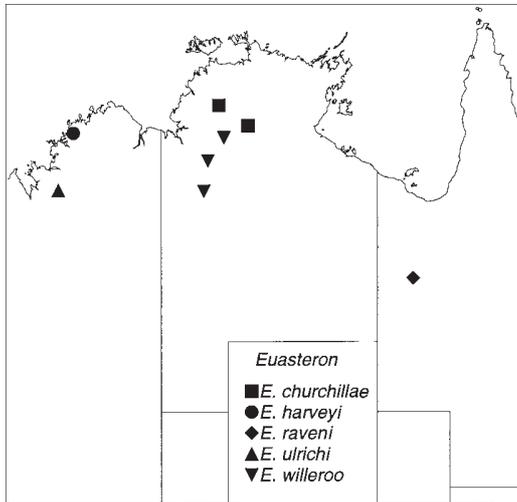


FIG. 19. Records of *Euasteron* species in Australia.

indistinct colour pattern; coxae I-IV pale; trochanter I-IV pale; femur I-IV pale with brown ring distally; tibia I-IV proximally and distally with brown spot.

Eyes: AME largest; eye group width 0.62 of headwidth; AME 0.15; ALE 0.12; PME 0.13; PLE 0.13; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.06; PME-PLA 0.08; ALE-PLA 0.04; eyes group AME-PME 0.36; AME-AME 0.32; PME-PME 0.32. Clypeus: 0.4mm high.

Male palp (Fig. 13E,F): DTA, PE not reaching tibia; retrolaterally with ML and short prong; FA short, rounded tip; SP S-shaped, partly crossing TF; tibia short; DtiA IP as long as EP, tapered, EP blunt, pale brown; VtiA bird-head-shaped.

Female (paratype). Total length 4.04; ceph 2.12 long, 1.64 wide, 0.92 high; cl/cw 1.29; sternum 1 long, 0.96 wide; sl/sw 1.04; abdomen 1.92 long, 1.4 wide.

Colour: as in males.

Eyes: AME largest; eye group width 0.62 of headwidth; AME 0.15; ALE 0.12; PME 0.13; PLE 0.13; AME-AME 0.02; AME-ALE 0.02; PME-PME 0.06; PME-PLA 0.08; ALE-PLA 0.04; eyes group AME-PME 0.36; AME-AME 0.32; PME-PME 0.32. Clypeus: 0.4mm high.

Epigyne (Fig. 17E,F): Oval CO attached to the epigastric fold, with U-shaped sclerotised tubes, CD elongate 3 times as long as wide, coiled, axis more or less straight. S touching.

DISTRIBUTION. Western Australia (Fig. 20).

DISCUSSION

The *Asteron*-complex now contains 11 genera with 57 species. *Asteron* originally included only *A. reticulatum* and *A. mas* Jocqué, 1991. However, *A. mas* is still not correctly placed in any of the described genera. The first overview of *Euasteron* indicated that *A. mas* should be a member of this genus. A more careful examination showed that *A. mas* is more derived in palpal structure and in the epigyne than any *Euasteron* species.

In *Basasteron*, *Euasteron* and *Spinasteron*, the abdominal pattern is an excellent character to separate species if the spiders are well preserved. The most common pattern is a dark abdomen with 2-5 pairs of white patches on top, and 1-3 in front of spinnerets. It occurs also in all other described genera in the *Asteron*-complex as well as in *Habronestes* and *Storena* (Jocqué & Baehr, 1992).

As in *Habronestes*, the relative size of AME is a very stable character to separate species-groups in *Euasteron*. Using the eye pattern, *Euasteron* can be divided into the *E. enterprise*-group (7 species) the AME are the smallest; *E. willeroo* has equal-sized eyes; and the *E. juliannae*-group (7 species) have AME the largest.

Nevertheless, the definition of genera in Australian zodariids has been mainly based on genital characters (Baehr & Jocqué, 1996, 2000, 2001; Jocqué & Baehr, 2001).

During this work it became obvious that the retrolateral structure of the cymbium is a good synapomorphic character to separate taxa of the *Asteron*-complex.

Basasteron shares the straight retrolateral cymbial flange with (Fig. 3B) with more basic *Pentasteron*, *Phenasteron* and *Leptasteron*. But the general bulb structure of *Basasteron* — a circular shape of the DTA and the shape of the embolus — is basically the same as in *Cavasteron*, *Minasteron*, *Euasteron* and *Spinasteron*. Whereas in *Basasteron*, the embolus originates prolaterally, in *Cavasteron*, *Minasteron*, *Euasteron* and *Spinasteron*, the origin is basal.

The special type of tibial apophysis — with 2 apophyses forming a deep concavity in between, dorsal one divided in two parts, the internal prong (IP) and the external prong (EP) connected by a ridge; ventro-lateral tibial apophysis hooked or bird-head-shaped — is obviously a synapomorphy of *Cavasteron*, *Euasteron*, *Minasteron* and

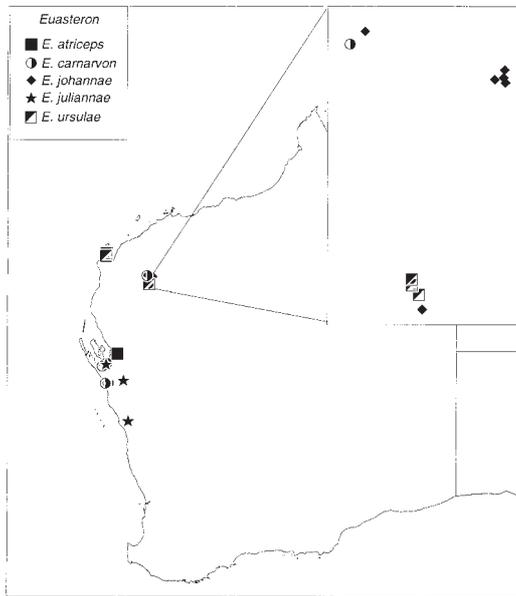


FIG. 20. Records of *Euasteron* species in Western Australia.

Spinasteron. It is not developed in *Basasteron*, which has only 2 small apophyses and a beginning of a ridge. All these preliminary data indicate that *Basasteron* is the sister genus of *Cavasteron*, *Euasteron*, *Minasteron*, and *Spinasteron*.

Euasteron can be easily separated from *Cavasteron* and *Minasteron* by the lack of a large terminal claw in male palps and by the more elongate and curled copulatory ducts in the epigynes.

Spinasteron shares the special tibial apophysis structures and the special bulb characters with *Cavasteron*, *Euasteron* and *Minasteron*. The barely developed retrolateral cymbial flange with only a tiny knob seems to be a reduction of the flange with a well-developed rounded extension (RE) (Fig. 4B,C) occurring in *Cavasteron*, *Euasteron*, *Minasteron*. *Spinasteron* could be a more derived sister genus to *Euasteron*. *Spinasteron* is not fully revised yet. All these species have very complicated palps.

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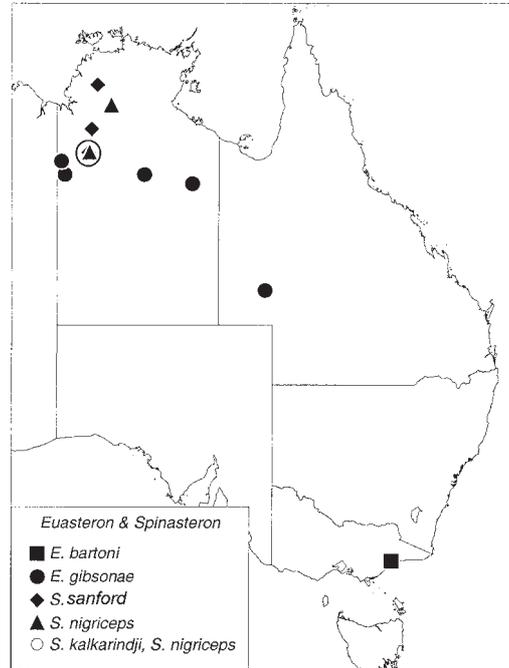


FIG. 21. Records of *Spinasteron* and *Euasteron* species in Australia.

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