

New mynoglennine spiders from Ethiopia (Araneae: Linyphiidae: Mynogleninae)

Peter Merrett

6 Hillcrest,
Durlston Road,
Swanage, Dorset, BH19 2HS

and

A. Russell-Smith

1 Bailiffs Cottage,
Sharsted Park,
Doddington,
Sittingbourne, Kent, ME9 0JU

Summary

Five new species of mynoglennine spiders are described from Ethiopia. Four are included in the genus *Afroneta* Holm (*A. millidgei*, sp. n., *A. locketi*, sp. n., *A. blesti*, sp. n. and *A. snazelli*, sp. n.) and the fifth is placed in a new genus as *Afromynoglenes parkeri*, sp. n.

Introduction

Spiders of the subfamily Mynogleninae are of Gondwanan origin, and are especially numerous in New Zealand, from where 64 species in 12 genera were described by Blest (1979). Mynoglenines also appear to be common, especially in montane habitats, in eastern and central Africa, but hitherto only 10 species of *Afroneta* Holm and one of *Trachyneta* Holm have been described by Holm (1968) and one further *Afroneta* species by Bosmans (1988). Considerably more undescribed species are known to exist in museum collections. In this paper we describe 5 new species of mynoglennines collected by one of us (A.R.-S.) in Ethiopia between 1982 and 1988. Four are included in the genus *Afroneta* and the fifth in a new genus, *Afromynoglenes*.

All of the holotypes and most of the paratypes have been deposited in the Natural History Museum, London (NHM), and a few paratypes are retained in the Merrett collection (PM) and the Russell-Smith collection (ARS). The male palpal morphology of mynoglennines has recently been described by Hormiga (1994), and his terminology is followed here. The structure of mynoglennine epigynes and vulvae has been described by Millidge (1984, 1993). All measurements are in mm.

Genus *Afroneta* Holm, 1968

There is considerable diversity in male palpal structure and somatic characters among the species currently included in *Afroneta*, and it is likely that eventually the genus will have to be split into several genera. However, since 8 of the 15 described species are known only from females, and the female genitalia are all very similar, it would not be possible to split the genus satisfactorily until more species are described from both sexes. Four of the new species are therefore included in *Afroneta*, and only the fifth, which is strikingly different from

all other African mynoglennines, is included in a new genus.

Afroneta millidgei, new species (Figs. 1–4)

Types: Holotype ♂, Ethiopia, Sidamo province, between Awasa and Dilla, grassy bottomland, c. 1700 m, 25 June 1988. Paratype 1♀, same data. Deposited in NHM.

Etymology: The specific name is a patronym in honour of our friend Dr A. F. Millidge, in recognition of his important contributions to the taxonomy of Linyphiidae.

Diagnosis: The male is easily distinguished from all other described species of *Afroneta* by the palp; its general form is closest to that of *A. immaculata* Holm and *A. subfusca* Holm, but the long, ribbon-like tegular apophysis of *A. millidgei* is clearly different. *A. immaculata* also has a much longer palpal tibia, and more spines on all leg femora. *A. subfusca* is also a much darker and smaller species. The female is diagnosed by the epigyne, body colour and chaetotaxy. The epigyne is closest to that of *A. basilewskyi* Holm and *A. guttata* Holm, but in *A. basilewskyi* the posterior border of the dorsal plate is much broader in relation to its length, and in *A. guttata* the median ducts extend further anteriorly. In *A. basilewskyi* the abdomen is also much darker, and the ventral tibial spines more numerous and longer. In *A. guttata* the abdomen is pale ventrally and the carapace strongly mottled.

Holotype male: Total length 3.2. Carapace length 1.6, width 1.1. Abdomen length 1.5. Sternum length 0.85, width 0.7. Carapace yellow-brown, suffused with grey in broad irregular band laterally on thoracic part. Chelicerae and legs yellow-brown. Sternum yellow-brown suffused with grey. Abdomen dorsally pale grey, marked posteriorly with 7 pairs of distinct dark grey chevrons, the four anterior pairs broader and more widely separated and with 3 pairs of white spots between them. With a prominent wide dark grey stripe posterolaterally. Venter grey with narrow, broken, paired light stripe laterally. Eyes: AME small, c. 0.3 diam. apart and c. 1 diam. from ALE. PME large, c. 0.3 diam. apart and c. 0.4 diam. from PLE. With a few long hairs in ocular area. Clypeus with a pair of sulci below lateral eyes. Chelicerae with 4 large promarginal teeth and 3 small retromarginal denticles. Legs: All femora with 1 short dorsal spine, femur I also with 1 prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral spine, all except tibia III with a retrolateral spine. Tibiae I–II with 2 or 3 ventral spines and a pair of ventral apical spines, III–IV with 1 ventral spine and 4 apical spines (ventral and lateral). Metatarsus IV with 1 dorsal spine. TmI 0.65, TmIV 0.69. Palp (Figs. 1–2): Palpal organ occupies only about half of alveolus, except for long, slightly curved, ribbon-like tegular apophysis which lies along distal half of alveolus. Embolus terminates in a short, curved point, closely associated with a short, pointed embolic membrane.

Paratype female: Total length 3.9. Carapace length 1.7, width 1.13. Abdomen length 2.1. Sternum length

grass and litter under *Juniperus*, c. 3100 m, 30 December 1982. Paratypes: 12♀ 1 subadult ♂, same data. Deposited in NHM.

Etymology: The specific name is a patronym in honour of our friend and colleague, Mr R. G. Snazell.

Diagnosis: The female is diagnosed by the epigyne, coloration and chaetotaxy. The epigyne is closest to that of *A. basilewskyi*, which it resembles in general form of the dorsal plate and broad scape, but in *A. snazelli* the median ducts extend further anteriorly in relation to the spermathecae. *A. basilewskyi* is also much darker in colour, and its tibial spines are much stronger and more numerous. The adult male is unknown.

Female: Total length 2.9–4.1 (holotype 3.6). Carapace length 1.3–1.65 (holotype 1.6), width 0.9–1.1. Abdomen length 1.5–2.2. Sternum length 0.75–0.9, width 0.65–0.75. Carapace yellow-brown, slightly darker in head region and on thoracic striae. Chelicerae and legs yellow-brown. Sternum yellow-brown, suffused with grey, especially towards margins. Abdomen dorsally pale grey, with grey median stripe (sometimes rather weak), and posteriorly 5 pairs of ill-defined grey chevrons which merge with uniform grey area laterally. Venter slightly darker grey, sometimes with ill-defined narrow pale paired line laterally. Epigastric region pale grey. Eyes: AME small, c. 0.5 diam. apart and c. 1 diam. from ALE. PME c. 0.5 diam. apart and c. 0.7 diam. from PLE. Clypeus with a pair of shallow sulci diagonally below lateral eyes. Chelicerae with 5 or 6 large promarginal teeth and 4 or 5 small retromarginal denticles. Legs: All femora usually with 1 short dorsal spine, but sometimes missing on femur III or IV, or occasionally 2 on femur IV or I. Femur I also with a prolateral spine. All tibiae with 2 dorsal spines, tibiae III–IV and occasionally tibia II also with 1 prolateral spine. No retrolateral spines. All tibiae with 1 median ventral spine, tibia I or IV occasionally with a basal ventral spine. Tibiae III–IV with 2–4 apical spines, none on I–II. Metatarsus IV with 3 or 4 spines, variable in position (dorsal, ventral, pro- and retrolateral). Spines on legs I–II very thin, especially dorsals. TmI 0.85, TmIV 0.82–0.87. Trichobothria long and bent. Epigyne (Figs. 13–14): Dorsal plate with a broad median scape, laterally with wide curved grooves leading to genital openings. Median ducts usually extend anteriorly well beyond spermathecae, but sometimes less so than shown in Figs. 13–14. Epigynal area covered with numerous fine hairs.

Male: Adult unknown, but subadult ♂ measured: Total length 3.85. Carapace length 1.75, width 1.2. Abdomen length 2.0. Sternum length 0.95, width 0.78. Coloration and chaetotaxy similar to female. Palpal tarsi swollen but small and thin.

Distribution: Known only from the type locality, Ethiopia.

Genus *Afromynoglenes*, new genus

Types species: *Afromynoglenes parkeri*, new species.

Etymology: The generic name refers to the occurrence

in Africa of a species which resembles the New Zealand genera *Promynoglenes* Blest, *Metamynoglenes* Blest and *Haplinis* Simon (= *Mynoglenes* Simon). Gender feminine.

Diagnosis: The male is diagnosed by the palp (Figs. 15–16). The very long embolus which forms a wide loop around the proximal end of the bulbus is different from all other African mynoglennines. The shape of the embolic membrane, tegular apophysis and paracymbium is also characteristic. The female is diagnosed mainly by the shape of the genital ducts (Fig. 19) which curve around the lateral side of the spermathecae; this is unique among mynoglennines. The external epigyne is characterised by a large, partially sclerotised ventral scape carrying a prominent socket; this is much more strongly developed than in other African species, but resembles that seen in some New Zealand genera. Both sexes can also be distinguished from other African mynoglennines by the presence of a row of subsidiary trichobothria on all metatarsi; this has also been reported in *Haplinis* (Lehtinen, 1967).

Description: The single known species has total length c. 3–4 mm. Carapace unmodified. Eyes typical of mynoglennines, with AME small and other eyes large. Clypeus with a pair of sulci below lateral eyes. Abdomen grey to black dorsally, with a pair of light bands anterodorsally and a pattern of white spots posteriorly. Legs: All femora with 1 dorsal spine and femur I with 1 prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral spine; no retrolateral spines. All tibiae also with 1 median ventral spine, I–II with 2 weak ventral apical spines, III–IV with 4 strong apical spines. Metatarsus IV with 1 dorsal spine. All metatarsi with 1 long trichobothrium and a row of shorter, more proximal, subsidiary trichobothria (2–6 in ♂, 1–4 in ♀). Position of principal trichobothrium: TmI 0.63–0.75, TmIV 0.67–0.8. Male palp (Figs. 15–16): Embolus very long, forming wide loop around proximal end of bulbus, distally in close association with a large, flattened, partially sclerotised embolic membrane, which protrudes slightly beyond mesal edge of alveolus. Proximal end of embolus forms a distinct, small radical part. Tegular apophysis large, hooked distally. Paracymbium large, with well-developed distal branch. Palpal tibia short, with 2 retrolateral trichobothria. Epigyne (Figs. 17–18): Small and simple in form, with a prominent sclerotised ventral scape carrying a large socket. Vulva (Fig. 19): Spermathecae large and very heavily sclerotised; the long genital ducts curve round them anteriorly and laterally, unlike any other described mynoglennine.

Included species: Only the type species.

Distribution: Ethiopia.

Taxonomic position: *Afromynoglenes* differs strikingly from all other African mynoglennines in the structure of the male palp and epigyne, and in the presence of subsidiary trichobothria on all metatarsi, but resembles more closely some New Zealand genera in these characters. Similar metatarsal trichobothria have been reported in *Haplinis* (Lehtinen, 1967: 250). The well-developed scape with its large socket also resembles that of some *Haplinis* species, but the shape of the sperma-

thecae and internal ducts is very different. The shape of the paracymbium is similar to that of some *Haplisis* species, but the embolus and embolic membrane are closer to those of *Promynoglenes* and *Metamynoglenes*. The tegular apophysis is possibly closest to that of some *Haplisis* species. This indicates that *Afromynoglenes* is more closely related to these New Zealand genera than to *Afroneta*, but its precise relationship remains unclear.

Afromynoglenes parkeri, new species (Figs. 15–19)

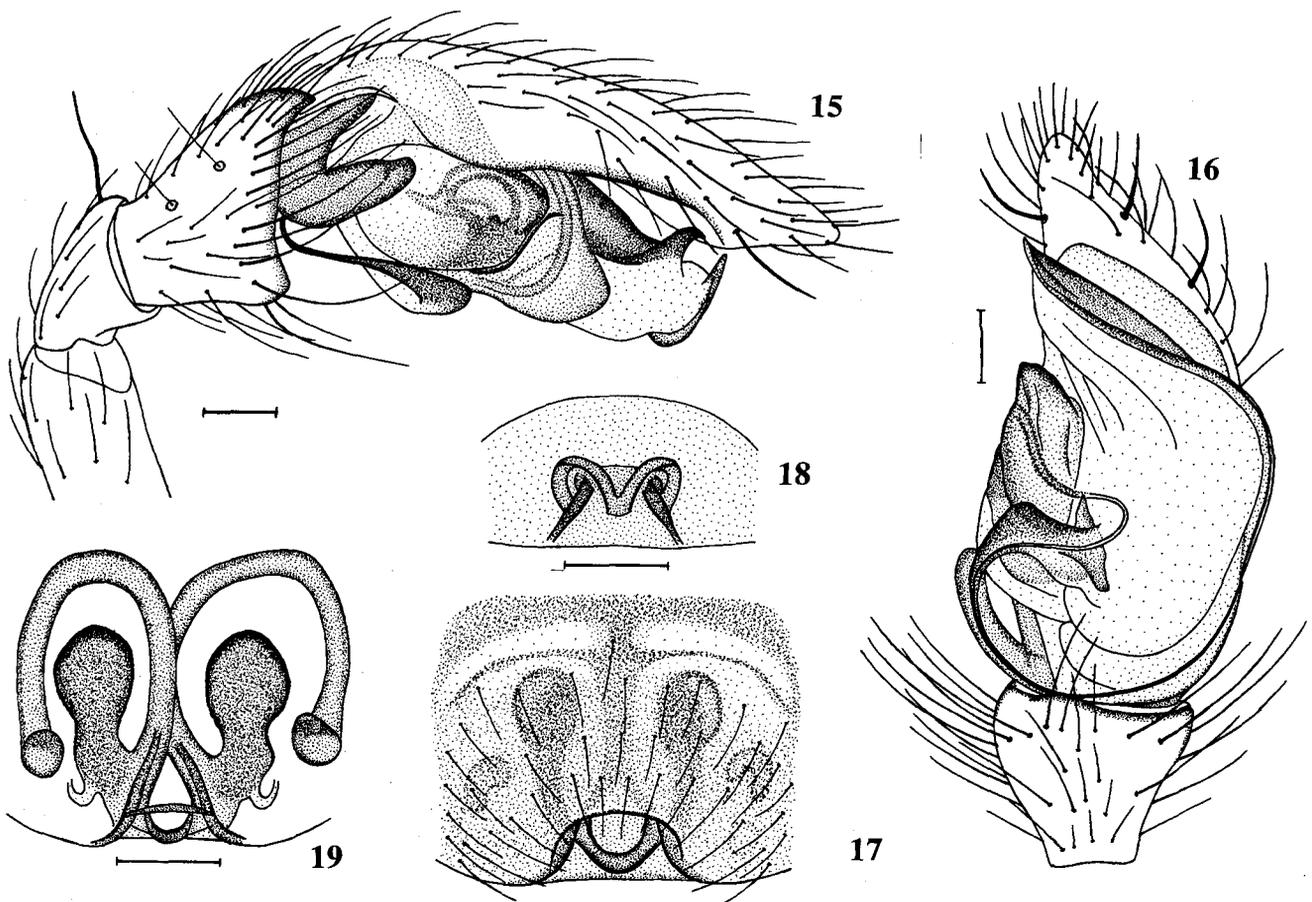
Types: Holotype ♂, Ethiopia, Arusi province, Munessa State Forest, stream valley, in grass and under logs, c. 2300 m, 28 March 1988 (NHM). Paratypes: same data, 3♂ 25♀ 2 subad. ♀ (NHM); same locality, in litter, *Podocarpus/Juniperus* forest, 8 March 1983, 1♀ (ARS); same locality, under logs, mature *Podocarpus/Croton* forest, 14 March 1986, 2♂ 2♀ (PM). Shewa province: 30 km west of Addis Ababa, on Ambo road, in *Acacia abyssinica* woodland, c. 2500 m, 22 October 1986, 1♀ (PM); 35 km west of Addis Ababa, on Ambo road, in swampy area, c. 2500 m, 19 May 1987, 2♂ 7♀ (ARS); same locality, in grass in evergreen montane bush, 2 June 1987, 1♂ 2♀ (ARS); 10 km west of Gafersa reservoir, on Ambo road, in *Acacia negrii* woodland, c. 2400 m, 21 June 1986, 3♀ (PM); 13 km south of Ambo, on road to Wonchi, c. 2500 m, 3 November 1987, 4♂ 2♀ (NHM); Djemdjem forest, north of Ginchi, in grass and litter, mixed *Juniperus/deciduous* forest, c. 2600 m, 4

April 1987, 9♂ 4♀ 1 subad. ♀ (NHM); same locality, in grass and herbs, mixed *Juniperus/deciduous* forest, 22 September 1987, 8♂ 8♀ (NHM). Sidamo province: Wendo Genet, in swampy area near hot springs, c. 1900 m, 6 November 1988, 1♂ 2♀ (PM).

Etymology: The specific name is a patronym in honour of Mr J. R. Parker, in recognition of his services to the British Arachnological Society.

Diagnosis: The male is diagnosed by the palp, which with its embolus forming a long wide loop is different from all other African mynogenines. The multiple metatarsal trichobothria are also distinctive. The female is easily recognised by the long copulatory ducts which curve around the outside of the spermathecae, and the prominent sclerotised ventral scape. It also has multiple metatarsal trichobothria.

Male: Total length 2.95–4.1 (holotype 3.7). Carapace length 1.45–2.1 (holotype 1.75), width 1.05–1.4. Abdomen length 1.45–1.9. Sternum length 0.85–1.15, width 0.7–0.9. Carapace yellow-brown to dark yellow-brown, heavily suffused with grey towards margins and on striae and fovea. Chelicerae and legs yellow-brown, tibiae sometimes with faint grey annulations at proximal and distal ends. Sternum dark yellow-brown suffused with grey. Abdomen dorsally grey to black with a pair of lateral longitudinal pale stripes anteriorly and 4–6 pairs of white spots posteriorly, anteriors largest. Venter grey to black, usually with a paired, thin light stripe laterally. Eyes: AME small, c. 0.6 diam. apart and c. 1.2



Figs. 15–19: *Afromynoglenes parkeri*, n. sp. 15 Male palp, ectal view; 16 Ditto, ventral view; 17 Epigyne, ventral view; 18 Ditto, caudal view; 19 Vulva, ventral view. Scale lines=0.1 mm.

diam. from ALE, PME *c.* 0.5 diam. apart and *c.* 0.5 diam. from PLE. With a few short hairs in ocular area. Clypeus with a pair of sulci below lateral eyes. Chelicerae with 5 large promarginal teeth (the proximal one on a prominent boss) and 3 small retromarginal denticles. Legs: All femora usually with 1 dorsal spine and femur I with 1 prolateral spine, I, II or IV occasionally with a second dorsal spine and femur I occasionally with a second prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral spine. No retrolateral spines. All tibiae with 1 median ventral spine, I–II also with 2 ventral apical spines (sometimes weak or absent), III–IV with 4 strong apical spines (ventral and lateral). Metatarsus IV with 1 dorsal spine and occasionally 1 prolateral spine. All metatarsi with 1 long trichobothrium and a row of 2–6 shorter trichobothria proximal to main one. Position of principal trichobothrium: TmI 0.68–0.75, TmIV 0.72–0.8. Palp (Figs. 15–16): Embolus very long, forming a wide loop around proximal end of bulb and terminating in close association with a partially sclerotised lamellar embolic membrane. Strong hooked tegular apophysis visible in lateral view but obscured by embolic membrane in ventral view. Distal branch of paracymbium longer than in most other mynoglennines.

Female: Total length 2.95–4.2. Carapace length 1.4–1.8, width 0.95–1.25. Abdomen length 1.55–2.4. Sternum length 0.85–1.0, width 0.7–0.85. Colour, eyes and leg spination similar to male. Chelicerae sometimes with only 4 promarginal teeth, and boss less pronounced than in male. One specimen had 2 dorsal spines on femora II–IV, and femora sometimes streaked with grey. TmI 0.63–0.72, TmIV 0.67–0.77. Subsidiary trichobothria present but usually less numerous (1–4) than in male; the number is possibly correlated with metatarsus length, and the metatarsi are shorter in females on average. Epigyne/vulva (Figs. 17–19): With a prominent sclerotised, U-shaped ventral scape carrying a large socket. The long copulatory ducts extend around the lateral side of the large heavily sclerotised spermathecae.

Distribution: Apparently fairly widespread in Ethiopia, at altitudes from 1900–2600 m, in a variety of forest, woodland and open grassland habitats. Adults of both sexes have been collected from March to June and between September and November.

Discussion

All of the species described here are endemic to Ethiopia so far as is currently known. If any occur elsewhere in the afrotropical region it is most likely in Kenya or, just possibly, Uganda. However, the montane areas of Kenya have been relatively well collected for linyphiids and it seems probable that at least the more widespread species described here would already have been found if they occur there. Judging from the extensive collections made by one of us (A.R.-S.) in Ethiopia,

levels of endemism for linyphiids in general are likely to be of the same magnitude as those enumerated by Scharff (1992) for the forest faunas of the base-ment complex mountains of Tanzania, i.e. in the range 75–85% endemic species.

The habitat distribution of mynoglennine spiders in Africa has hitherto been poorly recorded. Of the 10 species described by Holm (1968) five, *Afoneta altivaga*, *A. basilewskyi*, *A. longispinosa*, *A. bidentata* and *A. brevistyla* are known from forest habitats and one, *A. praticola*, from montane grassland. *Afoneta bamilekei* from Cameroon (Bosmans, 1988) is recorded from both montane forest and montane grassland. The two widespread species described here, *Afoneta locketi* and *Afromynoglenes parkeri*, are recorded from a wide variety of forest, woodland and open grassland or wetland habitats. It is possible that this is a partially relict distribution resulting from the relatively recent deforestation of much of the montane plateau of Ethiopia, but only more intensive collecting in montane areas of the afrotropical region will resolve the matter. All of the Ethiopian specimens were collected either in litter or grass tussocks in damp areas (forests or wetland grassland) and no webs were observed.

Acknowledgements

We wish to thank Dr R. Jocqué (Koninklijk Museum voor Midden-Afrika, Tervuren, Belgium) and Dr T. Jaenson (Zoological Museum, Uppsala, Sweden) for the loan of type specimens of *Afoneta* species, and Dr A. F. Millidge and Dr A. D. Blest for comments on an earlier draft of the manuscript.

References

- BLEST, A. D. 1979: Linyphiidae-Mynogleninae. In *The spiders of New Zealand. Part V*: 95–173. *Otago Mus. Bull.* **5**: 1–173.
- BOSMANS, R. 1988: Scientific report of the Belgian Cameroon Expeditions 1981 and 1983. No. 18. Further Erigoninae and Mynogleninae (Araneae: Linyphiidae) from Cameroonian highlands. *Revue Zool. afr.* **102**: 5–32.
- HOLM, Å. 1968: Spiders of the families Erigonidae and Linyphiidae from East and Central Africa. *Annls Mus. r. Afr. cent. (Zool.)* **171**: 1–49.
- HORMIGA, G. 1994: Cladistics and the comparative morphology of linyphiid spiders and their relatives (Araneae, Araneioidea, Linyphiidae). *Zool. J. Linn. Soc.* **111**: 1–71.
- LEHTINEN, P. T. 1967: Classification of the cribellate spiders and some allied families, with notes on the evolution of the suborder Araneomorpha. *Annls zool. fenn.* **4**: 199–468.
- MILLIDGE, A. F. 1984: The taxonomy of the Linyphiidae, based chiefly on the epigynal and tracheal characters (Araneae: Linyphiidae). *Bull. Br. arachnol. Soc.* **6**(6): 229–267.
- MILLIDGE, A. F. 1993: Further remarks on the taxonomy and relationships of the Linyphiidae, based on the epigynal duct conformations and other characters (Araneae). *Bull. Br. arachnol. Soc.* **9**(5): 145–156.
- SCHARFF, N. 1992: The linyphiid fauna of eastern Africa (Araneae: Linyphiidae) — distribution patterns, diversity and endemism. *Biol. J. Linn. Soc.* **45**: 117–154.

0.9, width 0.75. Carapace dark yellow-brown, suffused with grey in broad lateral bands extending anteriorly to just behind eyes, and with median grey band from fovea half-way towards eyes. Chelicerae dark yellow-brown, suffused with grey in broad diagonal band anteriorly. Legs dark yellow-brown, femora suffused with grey, tibiae with broad grey medial and distal annulations, metatarsi with faint distal annulation. Sternum dark yellow-brown, heavily suffused with grey. Abdomen as male, but only 5 pairs of dorsal grey chevrons, paler and more diffuse. Anterior pale area larger. Eyes: AME small, *c.* 0.5 diam. apart and *c.* 1.2 diam. from ALE. PME not so large as in male, *c.* 0.4 diam. apart and *c.* 0.5 diam. from PLE. Clypeus, cheliceral teeth and leg spination as male, but left tibia IV with extra basal ventral spine. TmI 0.66, TmIV 0.71. Epigyne/vulva (Figs. 3–4): Dorsal plate roughly triangular, with posterior edge thickened in middle, but no true scape. Genital openings at anterior end of lateral curved grooves, with no atrium. Median ducts extending anteriorly about level with spermathecae.

Distribution: Known only from the type locality, Ethiopia.

Afroneta locketi, new species (Figs. 5–8)

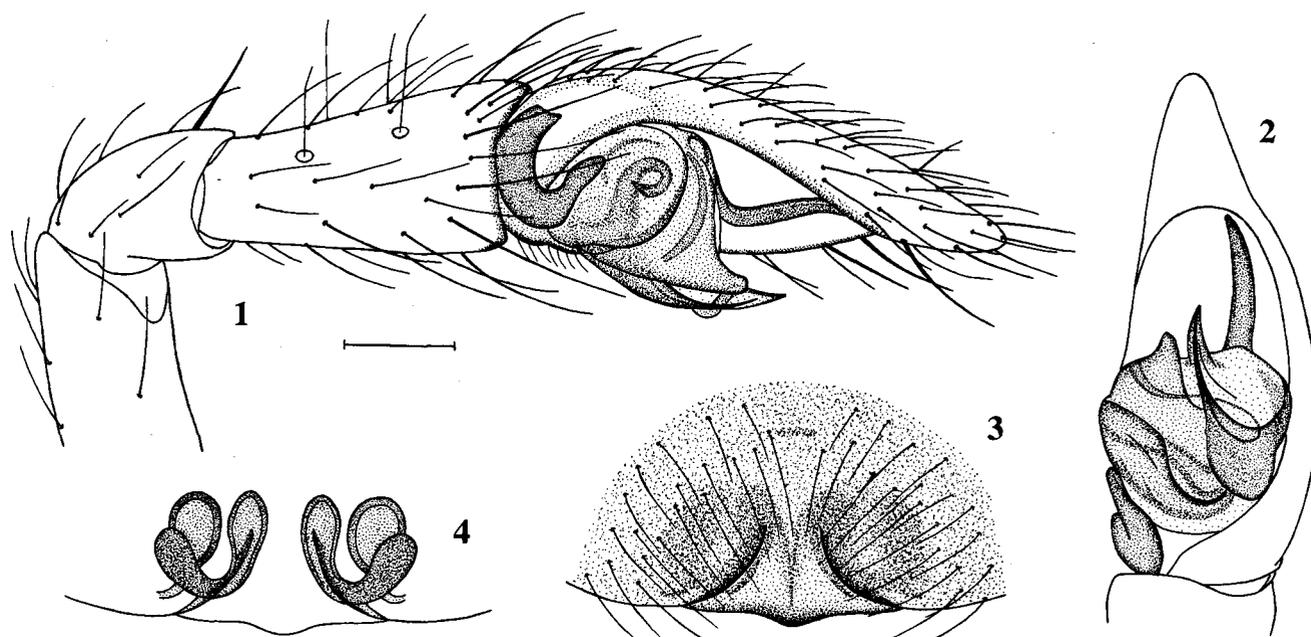
Types: Holotype ♂, Ethiopia, Shewa province, *c.* 10 km west of Debre Sina, in wet flush, ditch beside track, *c.* 3200 m, 19 June 1988 (NHM). Paratypes: Same data, 10♂ 7♀ (NHM); same locality, in grass tussocks in *Eucalyptus* plantation, 19 June 1988, 4♂ 8♀ (NHM), 29 October 1988, 3♂ 4♀ (NHM). Shewa province: 35 km west of Addis Ababa, on Ambo road, in swampy area, *c.* 2500 m, 19 May 1987, 12♂ 8♀ 1 subad. ♀ (NHM); 40 km west of Addis Ababa, Menagesha State Forest, in grass in mature *Juniperus* forest, *c.* 2570 m, 25 March 1986, 1♂ (ARS); Djemdjem forest, 10 km north of Ginchi, in

litter, degraded *Podocarpus/Juniperus* forest, *c.* 2600 m, 21 May 1986, 1♂ 1♀ (ARS); same locality, in grass and litter, mixed *Juniperus*/deciduous forest, 4 April 1987, 1♂ (ARS); same locality, in grass and herbs, mixed *Juniperus*/deciduous forest, 22 September 1987, 1♂ 1♀ with abnormal epigyne (PM). Bale province, Bale Mountains National Park, near park lodge at Dinshu, in grass and litter beneath *Juniperus*, *c.* 3100 m, 30 December 1982, 4♀ (PM). Sidamo province, Sassenago Ridge, south of Fiseha Genet on road to Yabelo, *c.* 2800 m, 25 June 1988, 3♂ 5♀ 1 subad. ♀ (PM).

Etymology: The specific name is a patronym in honour of our late friend Mr G. H. Locket, in recognition of his valuable contributions to British arachnology.

Diagnosis: The male is diagnosed by the palp. It is close to that of *A. bidentata* Holm and *A. brevistyla* Holm, but in *A. locketi* the tegular apophysis is longer and directed more dorsally, the tegulum is less projecting distally in lateral view, and the embolic membrane has a distinct kink near its distal end. The distal end of the cymbium is also shorter in relation to the length of the alveolus. The coloration and chaetotaxy are similar. The female is distinguished with some difficulty by the epigyne, which is close to that of *A. brevistyla* in general form. In *A. brevistyla* the median ducts usually come close together at their anterior ends, whereas in *A. locketi* they are further apart. When viewed anteriorly the epigyne of *A. brevistyla* also gives the appearance of having a broad ventral scape (as shown in Holm, 1968: fig. 61), but this is absent in *A. locketi*. The spermathecae also tend to be wider apart in *A. locketi*, but there is some variation. Size, coloration and chaetotaxy are similar, except that *A. locketi* usually has a ventral spine on metatarsus IV, which is usually absent in females of *A. brevistyla*.

Male: Total length 2.5–3.05 (holotype 2.8). Carapace length 1.25–1.65 (holotype 1.45), width 0.9–1.15.



Figs. 1–4: *Afroneta millidgei*, n. sp. 1 Male palp, ectal view; 2 Ditto, ventral view, hairs omitted; 3 Epigyne, ventral view; 4 Vulva, ventral view. Scale line=0.1 mm.

Abdomen length 1.2–1.65. Sternum length 0.75–1.0, width 0.62–0.83. Carapace yellow-brown to dark yellow-brown, suffused with grey towards margins and in midline, sometimes also in striae. Chelicerae and legs yellow-brown, tibiae sometimes with faint darker annulations at proximal and distal ends. Sternum dark yellow-brown, suffused with grey. Abdomen dorsally pale grey with median longitudinal black stripe (sometimes weaker anteriorly) and 5 or 6 pairs of black chevrons posteriorly, sometimes rather ill-defined, joined together laterally and in midline. Occasionally much darker, appearing black with pale patches dorsally. With a broad black stripe laterally. Venter pale grey to grey, sometimes with a paired light stripe laterally. Eyes: AME small, *c.* 0.5 diam. apart and *c.* 1.5 diam. from ALE. PME *c.* 0.5 diam. apart and *c.* 0.6 diam. from PLE. With a few short hairs in ocular area. Clypeus with a pair of sulci below lateral eyes. Chelicerae with 4 large promarginal teeth (and sometimes a small 5th one) and 3 or 4 small retromarginal denticles. Legs: Femora I–II with 2 dorsal spines, III–IV with 1 dorsal spine (occasionally 2 on IV), femur I also with 1 (occasionally 2) prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral spine, I, II and IV (and occasionally III) with 1 retrolateral spine. Tibiae I–II usually with 2 or 3 ventral spines and a pair of ventral apical spines, III–IV usually with 1 ventral spine (occasionally 2) and 4 apical spines (ventral and lateral). Metatarsus IV usually with 1 dorsal and 1 ventral spine, but one may be missing, or occasionally 2 ventral. Metatarsus III sometimes with 1 dorsal spine, occasionally also 1 ventral spine. TmI 0.71–0.78, TmIV 0.72–0.78. Trichobothria long and slightly bent. Palp (Figs. 5–6): With a long, curved, dorsally directed tegular apophysis. Tegulum only slightly projected distally in lateral view. Pointed end of embolus closely associated with embolic membrane which has a distinct kink near its distal end.

Female: Total length 3.0–4.3. Carapace length 1.5–1.95, width 1.0–1.35. Abdomen length 1.4–2.5. Sternum length 0.9–1.15, width 0.7–0.9. Colour as male. Specimens from Bale Mountains have much darker carapaces, but otherwise similar. Eyes: AME *c.* 0.5 diam. apart, *c.* 1.7 diam. from ALE. PME *c.* 0.5 diam. apart and *c.* 0.7 diam. from PLE. Clypeus, chelicerae and leg spination as male. TmI 0.73–0.80, TmIV 0.72–0.80. Epigyne/vulva (Figs. 6–7): Dorsal plate sometimes slightly convex in middle of posterior margin, but no scape. Lateral grooves lead into a pair of large circular atria anteriorly. Median ducts short and well separated.

Occasional specimens have greatly in excess of the normal number of spines on some leg segments, e.g. one female had 8 ventral spines on one tibia IV (in addition to the apical spines), and a few had 3 dorsal spines on femur I.

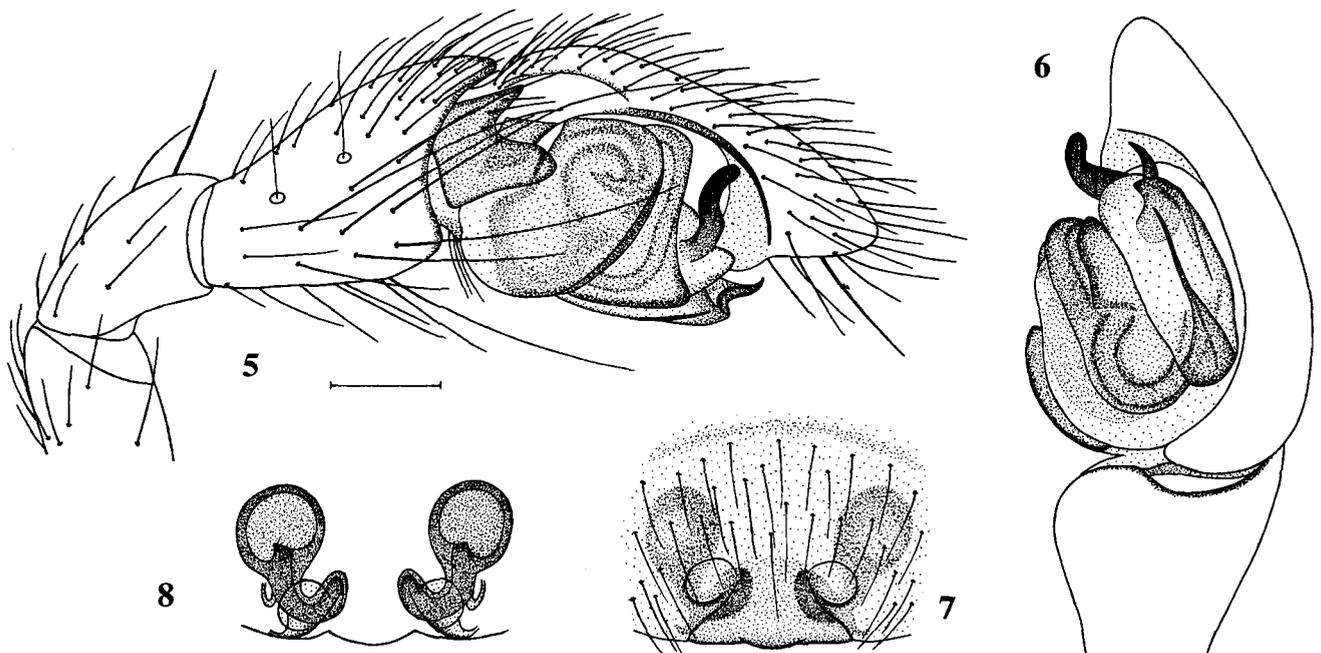
Distribution: Apparently fairly widespread in Ethiopia, at altitudes from 2500–3200 m, in a variety of both forested and open grassland or marshy habitats, in the litter layer. Adult males have been collected in most months between March and October, and females from May to December.

Afroneta blesti, new species (Figs. 9–12)

Types: Holotype ♀, Ethiopia, Bale province, Bale Mountains National Park, near park lodge at Dinshu, in grass and litter under *Juniperus*, *c.* 3100 m, 30 December 1982. Paratype 1♀, same data. Deposited in NHM.

Etymology: The specific name is a patronym in honour of Dr A. D. Blest, in recognition of his valuable work on the mynogenines of New Zealand.

Diagnosis: The female is diagnosed by the epigyne, coloration and chaetotaxy. The epigyne is closest to that of *A. bidentata* Holm. The shape of the dorsal plate is similar, but *A. bidentata* has a prominent median ventral



Figs. 5–8: *Afroneta locketi*, n. sp. 5 Male palp, ectal view; 6 Ditto, ventromesal view, hairs omitted; 7 Epigyne, ventral view; 8 Vulva, ventral view. Scale line=0.1 mm.

lobe or "scape", which is much less developed in *A. blesti*. The median ducts also extend further anteriorly in *A. blesti* than in *A. bidentata*. *A. bidentata* is also larger than *A. blesti*, and the carapace and abdomen much darker in colour. Although there is variation in the number of tibial spines, *A. bidentata* consistently has more ventral spines and a retrolateral spine on all except sometimes tibia III, whereas only one retrolateral spine was found on left tibia I in *A. blesti*.

The holotype and paratype female of *A. blesti* are described and figured separately because of slight differences in their epigynes, but as they came from the same locality and are similar in other characters it seems best to regard them as conspecific at present. The male is unknown.

Holotype female: Total length 3.1. Carapace length 1.5, width 1.0. Abdomen length 1.6. Sternum length 0.75, width 0.68. Carapace yellow-brown, lightly suffused with grey in midline near fovea and towards margins. Chelicerae and legs yellow-brown. Sternum yellow-brown suffused with grey. Abdomen dorsally pale grey, posterior half with 5 pairs of lateral dark grey blotches, all except anterior pair partly joined, and faint grey marks in midline. Laterally with broad grey band. Venter grey with pair of narrow pale stripes laterally. Eyes: AME small, *c.* 0.5 diam. apart and *c.* 1.5 diam. from ALE. PME *c.* 0.6 diam. apart and *c.* 0.7 diam. from PLE. With a few short hairs in ocular area. Clypeus with a pair of sulci below lateral eyes. Chelicerae with 4 large promarginal teeth and 4 small retromarginal denticles. Legs: All femora with 1 short dorsal spine, femur I also with 1 prolateral spine. All tibiae with 2 dorsal spines and 1 prolateral spine, left tibia I also with a retrolateral spine (some spines have been knocked off, but their bases are clear). All tibiae with 1 median ventral spine, and left tibia I and right tibia II with an additional basal spine. Tibiae I–II with a pair of

ventral apical spines, III–IV with 4 apical spines (ventral and lateral). Right metatarsus IV and left metatarsus III with a dorsal spine. TmI 0.73, TmIV 0.67. Epigyne/vulva (Figs. 9–11): With a pointed projection at each side of dorsal plate, forming posterior margin of atrium leading to genital opening. Median ducts extending anteriorly almost level with spermathecae.

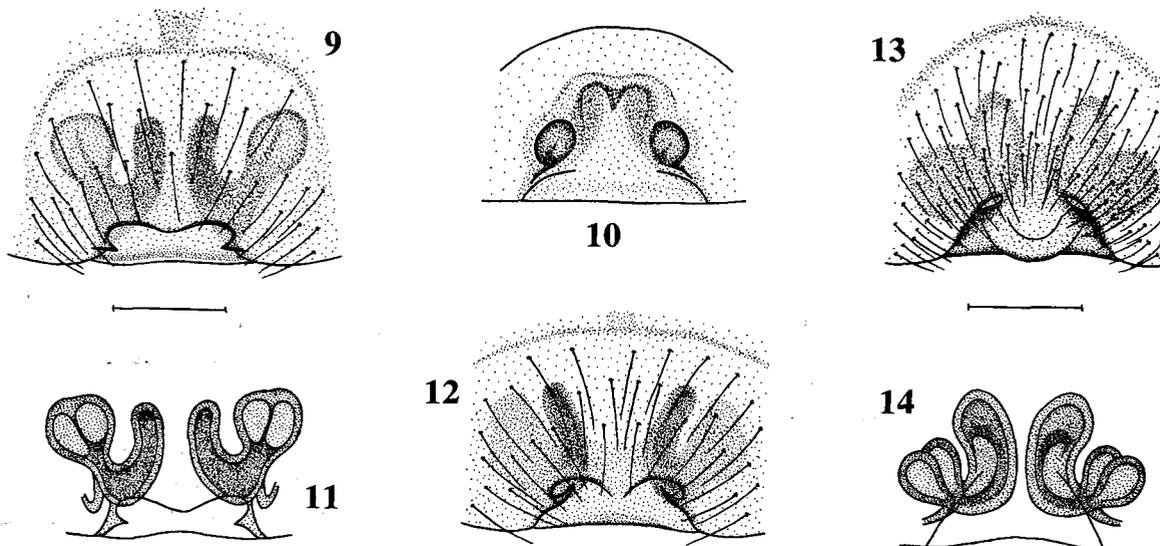
Paratype female: Total length 3.55. Carapace length 1.5, width 1.0. Abdomen length 2.1. Sternum length 0.8, width 0.7. Carapace dark yellow-brown, slightly more heavily suffused with grey than holotype. Chelicerae and legs dark yellow-brown, tibiae lightly annulated with grey proximally and distally. Abdomen similar to holotype, but grey markings slightly larger, and median faint dorsal grey marks extend to anterior end. Eyes and cheliceral teeth as holotype. Leg spines as holotype except: right femur I with second small prolateral spine, no retrolateral tibial spines, both tibiae I and left tibia II with a basal ventral spine, both metatarsi IV with a dorsal spine, but none on metatarsi III. TmI 0.73, TmIV 0.73. Epigyne (Fig. 12): With lateral pointed projections directed more anteriorly than in holotype, and with median ducts more widely divergent, but basic structure similar. It seems likely that these differences, and the slight difference in coloration, may be related to the fact that the paratype is heavily gravid, whereas the holotype appears fairly newly moulted.

Male: Unknown.

Distribution: Known only from the type locality, Ethiopia.

Afroneta snazelli, new species (Figs. 13–14)

Types: Holotype ♀, Ethiopia, Bale province, Bale Mountains National Park, near park lodge at Dinshu, in



Figs. 9–12: *Afroneta blesti*, n. sp. **9** Epigyne, holotype, ventral view; **10** Ditto, caudal view; **11** Vulva, holotype, ventral view; **12** Epigyne, paratype, ventral view.

Figs. 13–14: *Afroneta snazelli*, n. sp. **13** Epigyne, ventral view; **14** Vulva, ventral view. Scale lines=0.1 mm.