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New data on the jumping spiders of the subfamily Spartaeinae (Araneae: Salticidae) from Africa

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ABSTRACT

Twelve species of the Spartaeinae from Africa are considered. Previously unknown sexes are described for three species: *Cyrba nigrimana* Simon, 1900 (♂); *Meleon raharizonina* Logunov & Azarkina, 2007 (♀); and *Meleon russata* (Simon, 1900) (♂). Three species, *Cyrba lineata* Wanless, 1984, *Meleon madagascarensis* (Wanless, 1978) and *M. guineensis* (Berland & Millot, 1941), are redescribed and illustrated on the basis of the type and newly collected specimens. New faunistic records are provided for seven species: *Cyrba lineata* Wanless, 1984 (South Africa); *C. nigrimana* Simon, 1900 (South Africa); *C. simoni* Wijesinghe, 1993 (Burundi); *Holcolaetis zuluensis* Lawrence, 1937 (South Africa); *Meleon guineensis* (Berland & Millot, 1941) (Congo); *Portia africana* (Simon, 1885) (Ivory Coast and Ghana); and *P. schultzi* Karsch, 1878 (Madagascar). One species, *Meleon* sp. (♀ from Uganda), remains undetermined.

KEY WORDS: Araneae, Salticidae, Spartaeinae, jumping spiders, Africa, redescriptions, new records.

INTRODUCTION

The subfamily Spartaeinae (Salticidae) currently includes 19 extant and five fossil genera (Wanless 1984*a*; Rodrigo & Jackson 1992; Żabka & Kovac 1996; Zhang *et al*. 2006), all being confined to the Old World. The majority of the 130 spartaeine species described to date (see Platnick 2009) remain known from a few specimens and from one or two localities. The aims of this study are: (1) to (re)describe three poorly known sparateine species from tropical Africa; (2) to describe previously unknown sexes for three species; and (3) to provide additional faunistic records for seven other species.

MATERIAL AND METHODS

This work is based mainly on specimens of jumping spiders recently collected from various regions of Africa. A total of 70 specimens belonging to 12 species has been (re)examined. All specimens were studied in ethanol and thus the given description of colours refers to the preserved specimens. All drawings were made with the aid of a reticular eyepiece attached to an MBS-10 stereomicroscope. All digital images were taken with the aid of a Zeiss microscope and combined using the Helicon Focus software. Both drawings and digital images were then edited in Adobe Photoshop and arranged in figure plates.

Material is housed in the Musée Royal de l'Afrique Centrale, Tervuren, Belgium (MRAC, curator Dr R. Jocqué), the Alexander Koenig Research Museum, Bonn, Germany (ZFMK, Dr B. Huber), and the ARC-Plant Protection Research Institute, National Collection of Arachnida, Pretoria, South Africa (NCA, Ms P. Marais).

The following abbreviations are used in the text:
Eyes: AME – anterior median eye, PLE – posterior lateral eye(s).

Leg segments: Fm – femur, Pt – patella, Tb – tibia, Mt – metatarsus.
Position of spines on legs (following Ono 1988): ap – apical, d – dorsal, pr – prolateral, rt – retrolateral, v – ventral.

The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. For the leg spination the system adopted is that used by Ono (1988). All measurements are in mm. Only references to the original descriptions and/or to reliable sources of identification are provided. For a complete set of taxonomic references, see Platnick (2009).

TAXONOMY

Genus *Cyrba* Simon, 1876

Cyrba is a small genus consisting of 11 valid species (Platnick 2009), of which the majority (nine species) are known from the Afrotropical region (Wanless 1984*b*; Platnick 2009). Here we provide additional faunistic records for four species, redescribe *C. lineata* and describe the unknown male for *C. nigrimana*.

Cyrba legendrei Wanless, 1984

Cyrba legendrei: Wanless 1984*b*: 458–461, figs 9A–J.

Material examined: MADAGASCAR: 1♂ 2♀ (MRAC, 201543), Tamatave [= Toamasina], Foulpointe [= Mahavelona], *ca* 17°40'S:49°31'E , forest on clay, ix.1994, A. Pauly; 1♀ (MRAC, 200308), same locality, 'forest on sand, sieved moss', 25.xi.1993, A. Pauly; 1♀ (MRAC, 207108), same locality, forest on sand, x.2004, A. Pauly; 1♂ (MRAC, 177786), same locality, forest on sand, 17.xi.1993, A. Pauly; 1♂ (MRAC, 201678), same locality, forest on sand, vii.1994, A. Pauly; 3♀ (MRAC, 207058), same locality, forest on sand, litter, xi.1994, A. Pauly; 2♂ (MRAC, 201773), same locality, forest on clay, vii.1994, A. Pauly; 2♀ (MRAC, 177897), same locality, *Asplenium* forest, xii.1993, A. Pauly; 1♀ (MRAC, 206482), Tamatave [= Toamasina], Manakambahiny nr Vavaténe [= Vavatenina], *ca* 17°27'S:49°21'E, forest, ii.1995, A. Pauly; 1♀ (MRAC, 209091), Ambatolampy, *ca* 19°23'S:47°26'E, iv.1999, Van Esbroeck.

Distribution: To date, the species has been known from Madagascar and the Comoros only (Wanless 1984*b*). New records clarify the species' distribution in Madagascar.

Cyrba lineata Wanless, 1984

Figs 1–13

Cyrba lineata: Wanless 1984*b*: 465–468, figs 13A–H; Wesołowska 2006: 618, figs 1–5 (sub *C. armata*); Wesołowska & Haddad 2009: 26–27, figs 24, 25, 239.

Description:

Male (from Blyderivier Canyon, Botanic Reserve).

Measurements: Carapace: length 2.80, width 1.70, height at PLE 1.40. Ocular area: length 1.00, width anteriorly 1.20, width posteriorly 1.10. Diameter of AME 0.45. Abdomen: length 2.90, width 1.70. Clypeal height: 0.15. Cheliceral length: 0.80. Length of leg segments: I 1.65+0.85+1.20+1.10+0.65; II 1.45+0.80+1.05+1.05+0.60; III 1.50+0.70+1.00+1.00+0.60; IV 1.85+0.85+1.60+1.85+0.70.

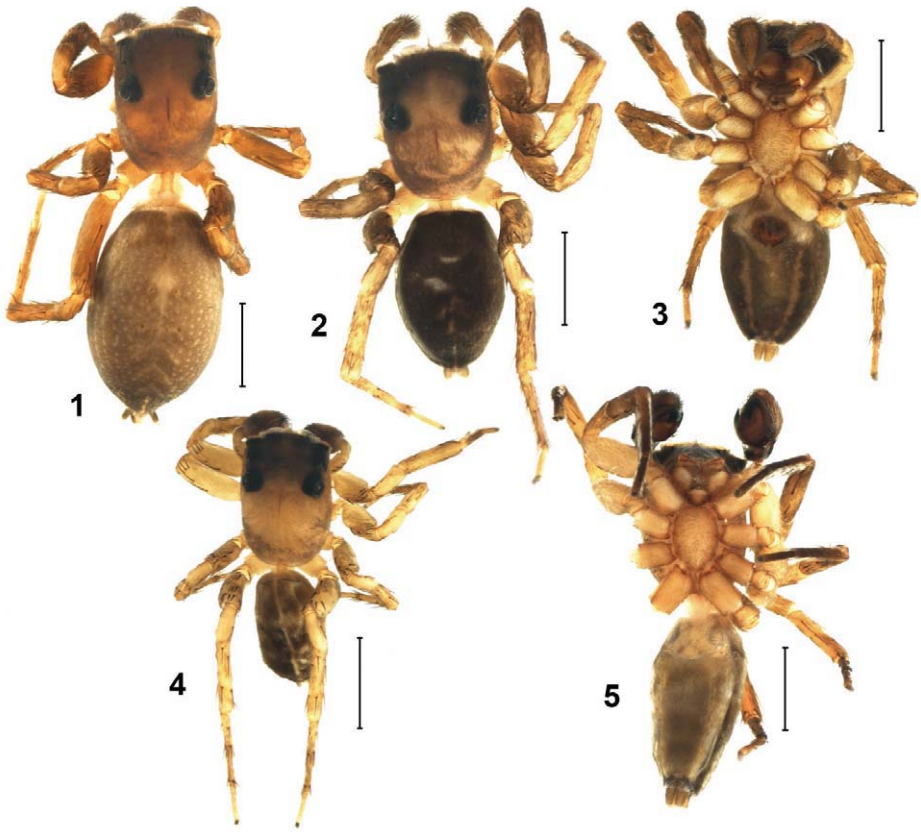
Leg spination: I Fm d 1-1-4, Pt pr and rt 1, Tb pr 1-1 v 2-2-2ap, Mt pr and rt 0-1-0 v 2-2ap; II Fm d 1-1-4, Pt pr and rt 1, Tb d 0-1-0 pr and rt 1-1 v 1-2-2ap, Mt pr and rt 0-1-1ap v 2-2ap; III Fm d 1-1-5, Pt pr and rt 1, Tb d 1-1 pr and rt 1-1 v 2-2-2ap, Mt pr 0-1-2ap rt 1-1-2ap v 2-0-2ap; IV Fm d 1-1-4, Pt pr and rt 1, Tb d 1-1 pr and rt 1-1 v 1-2-2ap, Mt pr and rt 1-1-1 v 2-0-2ap or 1-1-2ap.

Colouration (Figs 4, 5): Carapace yellow-brown, with yellow-white ocular area and black around eyes, covered with brown narrow scales. White scales above anterior row of eyes. Sternum yellow. Clypeus yellow, covered with white hairs. Chelicerae yellow, covered with short brown hairs. Abdomen: dorsum brown, covered with brown hairs and scales, and with a narrow medial yellow stripe (Figs 4, 10); sides and venter yellow. All legs yellow, but metatarsi and tarsi dark brown; all segments covered with brown scales. Palpal femora and patella yellow, covered with white hairs; tibia and cymbium brown, covered with dark brown hairs. Palpal structure as in Figs 6–9.

Female (from Blyderivier Canyon, Botanic Reserve).

Measurements: Carapace: length 2.90, width 2.00, height at PLE 1.45. Ocular area: length 1.20, width anteriorly 1.90, width posteriorly 1.80. Diameter of AME 0.65. Abdomen: length 2.90–4.40, width 2.1–2.60. Clypeal height: 0.15. Cheliceral length: 0.90. Length of leg segments: I 1.60+0.95+1.15+1.10+0.65; II 1.50+1.00+1.05+1.00+0.45; III 1.50+0.85+1.10+1.15+0.60; IV 1.90+0.90+1.75+1.90+0.70.

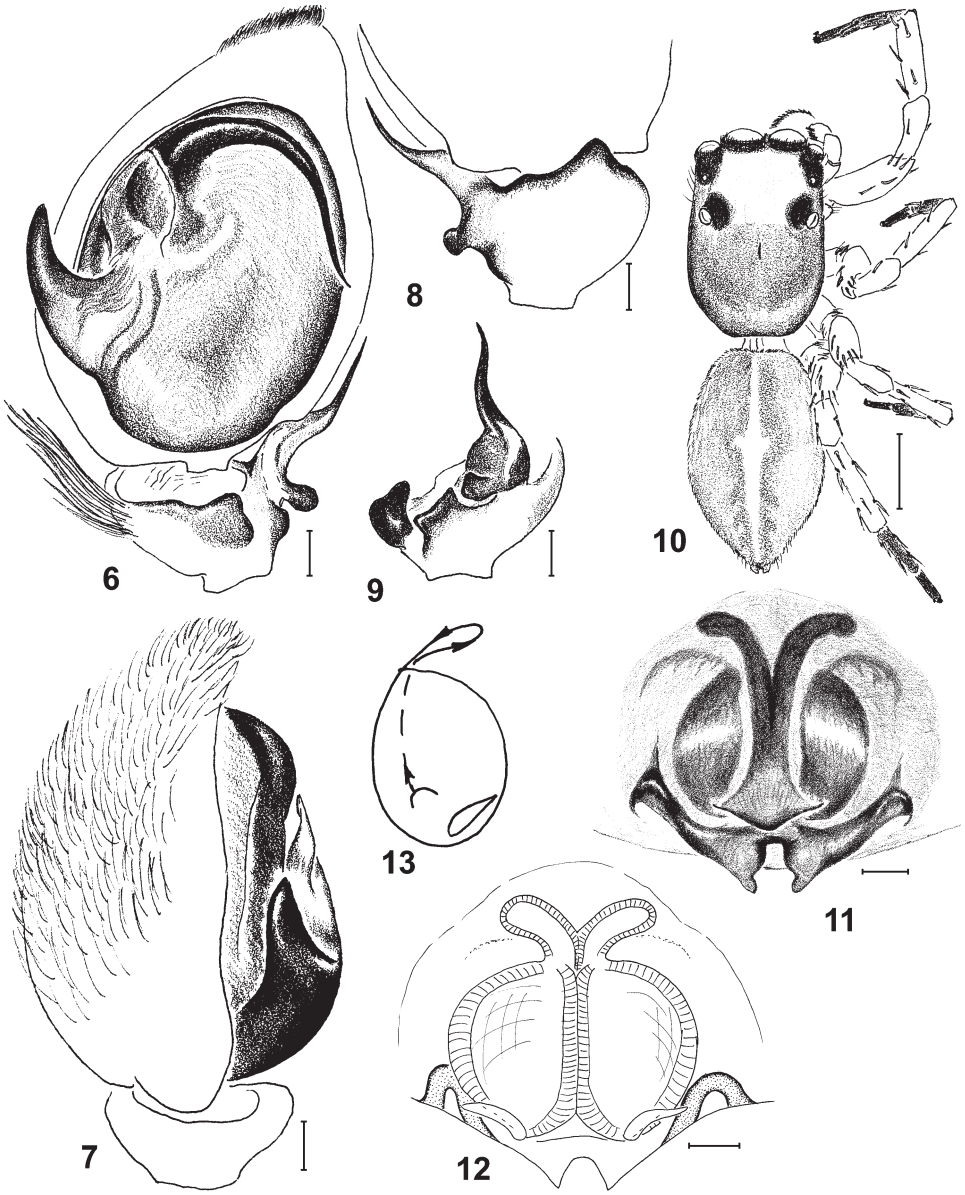
Leg spination: I Fm d 1-1-4, Tb v 2-2-2ap, Mt v 2-2ap; II Fm d 1-1-4, Tb v 1-2-2ap, Mt v 2-2ap; III Fm d 1-1-4, Pt pr & rt 1, Tb d 0-1 pr and rt 1-1 v 1-2-2ap, Mt d 1-0 pr and



Figs 1–5. *Cyrba lineata* Wanless, 1984 from South Africa (Limpopo, Little Leigh), general appearance: (1, 2) female, dorsal view; (3) ditto, ventral view; (4, 5) male, dorsal view and ventral views. Scale bars: 1 mm.

rt 0-1-2ap v 2-2ap; IV Fm d 1-1-4, Pt pr and rt 1, Tb d 1-0-1 pr and rt 1-1 v 1-2-2ap, Mt pr and rt 1-2-2ap v 2-0-2ap.

Colouration (Figs 1–3): Carapace yellow-brown, with black around eyes, covered with brown narrow scales. White scales above anterior row of eyes. Sternum yellow



Figs 6–13. *Cyrba lineata* Wanless, 1984 from South Africa (Blyderivier Canyon, Botanic Reserve): (6) male palp, ventral view; (7) ditto, median view; (8) tibial apophysis, dorsal view; (9) ditto, retrolateral view; (10), male, dorsal view; (11) epigyne, ventral view; (12) spermathecae, dorsal view; (13) diagrammatic course of the insemination ducts. Scale bars: (6–9, 11, 12) 0.1mm, (10) 1 mm.

to brown-yellow. Clypeus yellow-brown to brown, covered with short white hairs. Chelicerae yellow-brown. Abdomen yellow-grey, but dorsum dark brown, covered with brown hairs and scales and with narrow medial yellow stripe (Figs 1, 2). Book lungs grey. Spinnerets brown. All legs yellow-brown, but tibiae and metatarsi brown; all segments covered with brown scales. Palpal femora and patellae yellow; tibiae and cymbium brown. Epigyne and spermathecae as in Figs 11–13.

Holotype (examined): ♀ (without the epigyne) SOUTH AFRICA: *KwaZulu-Natal*: Pinetown (Durban), *ca* 29°48'S:30°54'E, iii.1979, M.E. Baddeley (MRAC, 152164).

Other material examined: SOUTH AFRICA: *Limpopo*: 2♀ (NCA, 2009/2167, 2009/2164), Little Leigh, 22°94'S:29°86'E, leaf litter sifting, gallery forest, 19.iii.2006, N. Hahn; 1♂ 1♀ (NCA, 2009/2165), same locality, 22°93'S:29°88'E, leaf litter sifting, *Pterocarpus rotundifolius*, 22.iii.2006, S. Foord; 1♂ (NCA, 2009/2169), same locality, 22°94'S:29°86'E, below the knee, gallery forest, 19.iii.2006, S. Foord; 3♂ 2♀ (NCA, 2009/2168, 2009/2170, 2009/2166), same locality, 22°94'S:29°86'E, leaf litter sifting, gallery forest, 19.iii.2006, E. Stam & N. Hahn; 1♂ (NCA, 2009/2163), same locality, 22°93'S:29°89'E, below the knee, *Burkea africana*, 20.iii.2006, S. Foord; 1♂ (NCA, 2009/2162), same locality, 22°94'S:29°86'E, sifting, gallery forest, 38795, S. Spengler; 1♀ (MRAC, 210122), Blyderivier Canyon, Botanic Reserve, 24°16'S:30°50'E, dry river bed, under stones, 7.iv.2001, R. Jocqué; 1♂ (MRAC, 210136), same locality, swampy woodland, sieved litter, 9.iv.2001, R. Jocqué; 1♂ (MRAC, 210156), same locality, on outside wall of house, 5.iv.2001, R. Jocqué.

Distribution: To date, the species has been known only from South Africa (Wanless 1984*b*; Wesołowska & Haddad 2009; present work).

Comments: The species has an easily recognizable epigyne, particularly the acute lobes of its rear edge and a pair of well-marked epigynal pockets (see Wanless 1984*b*, figs 13F, G). The samples examined by us contain both sexes collected together and therefore we are able to confirm the synonymy of *C. armata* Wesołowska, 2006 with *C. lineata* proposed by Wesołowska & Haddad (2009; cf. Figs 6–9 and figs 3–5 in Wesołowska 2006).

Cyrba nigrimana Simon, 1900

Figs 14–23

Cyrba nigrimana: Simon 1900: 389; Wanless 1984*b*: 465, figs 12A–G; Wesołowska & Haddad 2009: 27–28, figs 26–28.

Description:

Male (MRAC, 169807).

Measurements: Carapace: length 2.05, width 1.45, height at PLE 1.10. Ocular area: length 0.90, width anteriorly 1.35, width posteriorly 1.25. Diameter of AME 0.42. Abdomen: length 2.45, width 1.25. Clypeal height: 0.15. Cheliceral length: 0.65. Length of leg segments: I 1.30+0.75+0.90+0.90+0.50; II 1.30+0.70+0.90+0.80+0.50; III; 1.00+0.50+0.85+0.90+0.45; IV 1.50+0.65+1.15+1.40+0.60.

Leg spination: I Fm d 1-1-4; Pt pr and rt 1, Tb pr and rt 1-1 v 2-2-2ap, Mt pr & rt 1-1 v 2-2ap; II Fm d 1-1-4, Pt pr and rt 1, Tb pr and rt 1-1 v 2-2-2ap, Mt pr and rt 1-1 v 2-2ap; III Fm d 1-1-5, Pt pr and rt 1, Tb d 1-0-0 pr and rt 1-1 v 1-2-2ap, Mt d 1-0-0 pr and rt 1-1-2ap v 2-0-2ap; IV Fm d 1-1-5 or 1-1-1-5, Pt pr and rt 1, Tb d 1-0-0 pr and rt 1-1 v 1-2-2ap, Mt d 1-0-0 pr 1-2-2ap rt 1-1-2ap, v 1-0-2ap.

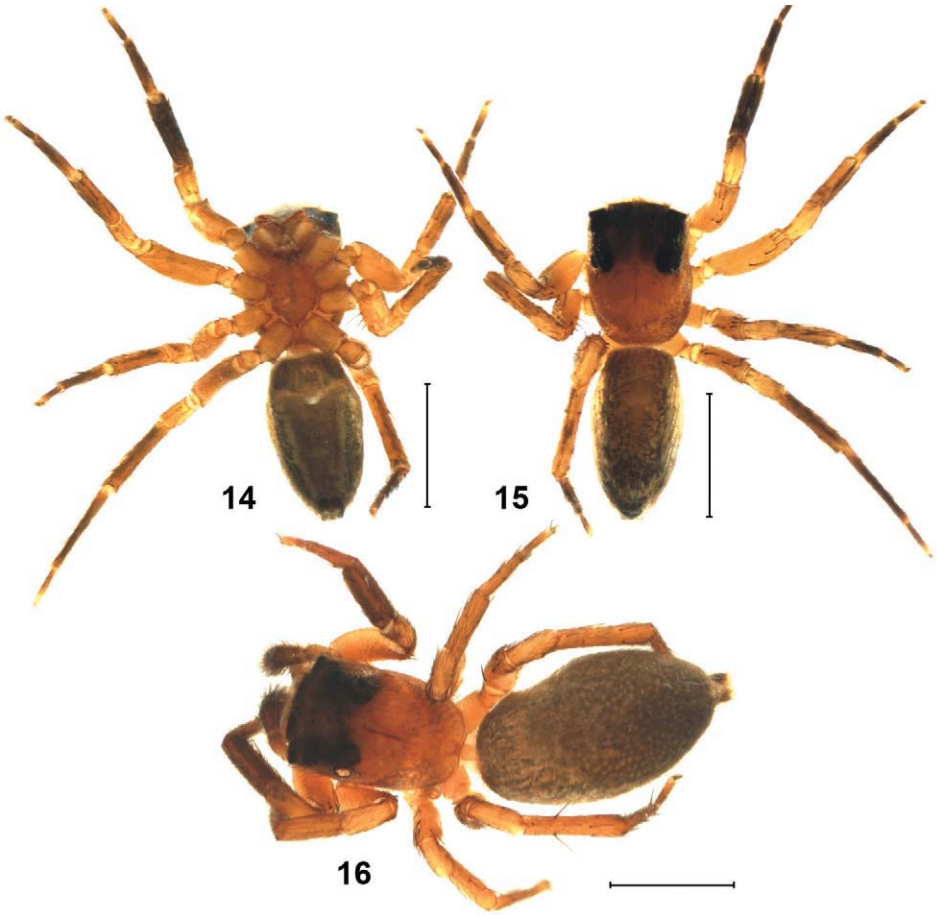
Colouration (Figs 14, 15): Carapace yellow-brown, with brown eye field and black around eyes, covered with white scales and brown hairs. Sternum yellow-brown. Clypeus and cheeks yellow, densely covered with white hairs. Chelicerae brown-yellow. Abdomen: dorsum brown, but medially yellow; sides and venter grey-brown. Book-

lungs yellow. Spinnerets brown. All legs yellow, but tibiae, metatarsi and tarsi brown. Palpus yellow, with brown cymbium. Palpal structure as in Figs 17–20.

Female. For description see Wanless (1984*b*; Figs 16, 21–23).

Material examined: SOUTH AFRICA: *Limpopo*: 1♀ (NCA, 2009/2172), Little Leigh, 22°93'S:29°85'E, pitfall (10 days), *Pterocarpus rotundifolius*, collector and date unknown; 1♀ (NCA, 2009/2171), same locality, 22°93'S:29°88'E, bk, *Pterocarpus rotundifolius*, 38798, [no date], V. Gelebe. *Eastern Cape*: 1♀ (MRAC, 169636), Ecca Pass Nature Reserve, *ca* 13 km N of Grahamstown, direction Fort Beaufort, 33°18'S:26°32'E, 16.i.1989, R. Jocqué; 1♀ (MRAC, 169721), same locality, under stones, 16.i.1989, R. Jocqué; 2♂ (MRAC, 169807), *ca* 30 km E of Port Elisabeth, sieved litter of dune scrub, 17.i.1989, R. Jocqué.

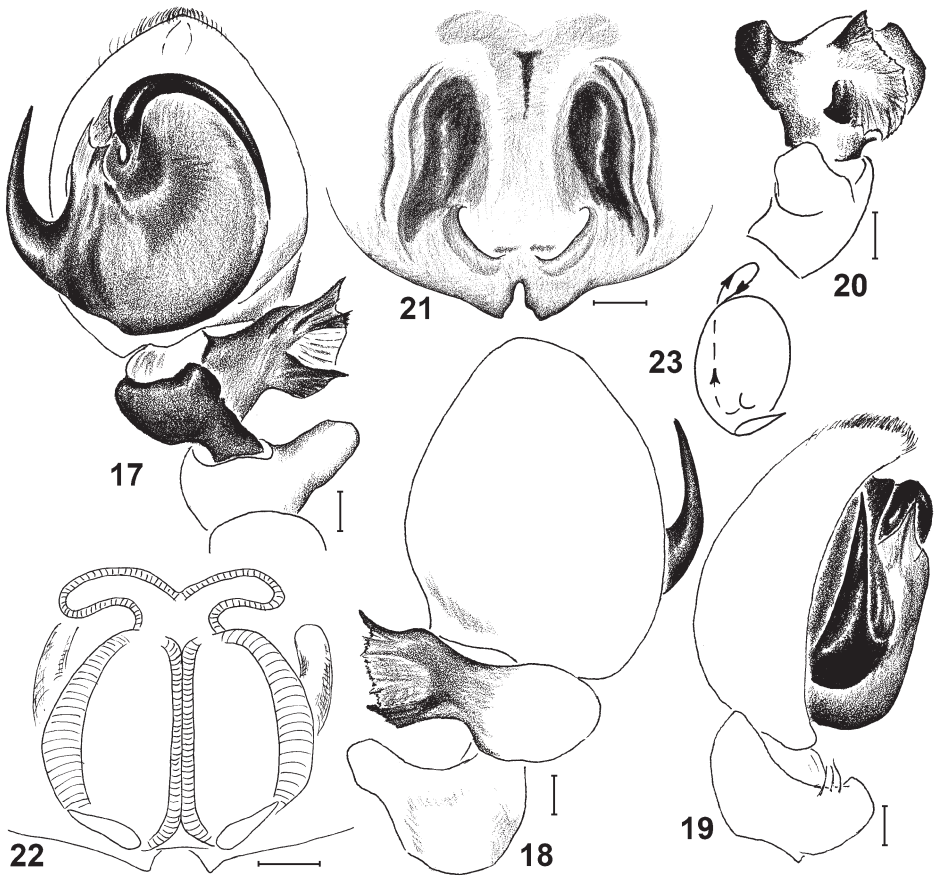
Comments: Until now, this species has been reported as being known from the female only and from a few localities in South Africa (Wanless 1984*b*; Wesołowska & Haddad 2009). Caporiacco (1947) reported a single male of *C. nigrimana* collected from East Africa (Pangani), but provided no illustration or description of this male. It remains unclear how the latter author could match the single male he studied with *C. nigrimana* described from a single female by Simon (1900). The problem of what



Figs 14–16. *Cyrba nigrimana* Simon, 1900 from South Africa (♂ – Port Elisabeth; ♀ – Limpopo, Little Leigh), general appearance: (14, 15) male, ventral and dorsal views; (16) female, dorsal view. Scale bars: 1 mm.

species was reported by Caporiacco under the name *C. nigrimana* requires further attention.

The male of *C. nigrimana* (Figs 17–20) is most similar (almost identical) to that of *Cyrba boveyi*, described by Lessert (1933) from a single male and redescribed on the basis of both sexes by Wanless (1984*b*, figs 10A–L). The latter author only provisionally matched the male of *C. boveyi* with the female from Kenya, which was selected because of its 'most unusual epigyne' (Wanless 1984*b*: 465). The males of both species seem to differ in the slightly different shape of the tibial apophysis and of the sclerotied lobe M_2 (*sensu* Wanless 1984*a*). Furthermore, the male of *C. boveyi* has its body covered with bright orange hairs (see Wesołowska & Haddad 2009, fig. 238), as in *C. simoni*, whereas the male of *C. nigrimana* is otherwise (Figs 14, 15). We have matched the male and females of *C. nigrimana* on the basis of their virtually identical body colouration (Figs 14–16). However, this matching must be considered provisional until a sample containing both sexes has been collected.



Figs 17–23. *Cyrba nigrimana* Simon, 1900 from South Africa (♂ – Port Elisabeth; ♀ – Ecca pass Nature Reserve): (17) male palp, ventral view; (18) ditto, dorsal view; (19) ditto, median view; (20) tibial apophyses, retrolateral view; (21) epigyne, ventral view; (22) spermathecae, dorsal view; (23) diagrammatic course of the insemination ducts. Scale bars: 0.1 mm.

Cyrba simoni Wijesinghe, 1993

Cyrba simoni: Wijesinghe 1993: 136; Wanless 1984*b*: 461–463, figs 10A–L (sub *C. bimaculata*); Wesołowska & Russell-Smith 2000: 20–21, figs 20–24.

Material examined: BURUNDI: 1♀ (MRAC, 213879), Cabara, miombo woodland with *Brachystegia*, by hand, *ca* 850 m, 23.iv.2002, N. Benoit; 1♂ (MRAC, 213828), Nkayamba, miombo woodland with *Brachystegia*, by hand, *ca* 850 m, 23.v.2002, N. Benoit.

Distribution: This is a widespread Afrotropical species, known from Nigeria and Cameroon to Tanzania and Angola in the south (Wanless 1984*b*; Wesołowska & Russell-Smith 2000).

Genus *Holcolaetis* Simon, 1886

This is a small Afrotropical genus of eight described species (Platnick 2009), confined to the Afrotropical region except for the single species *H. dyali* Roewer, 1951, known from Pakistan (Lahor: Gol Bagh; see Dyal 1935). According to Wanless (1985: 255), the record by Dyal (1935: 222, sub *H. vidua* Lessert, 1927) was based on misidentification. Yet the taxonomic status and validity of the species name *H. dyali* remain obscure and require further attention. The genus *Holcolaetis* was included in the Spartaeinae by Rodrigo and Jackson (1992).

Holcolaetis zuluensis Lawrence, 1937

Figs 24, 25

Holcolaetis zuluensis: Lawrence 1937: 255, fig. 23; Wanless 1985: 259–260, figs 6A–G, 16C; Wesołowska & Haddad 2009: 47–49, figs 83–86, 240, 241.

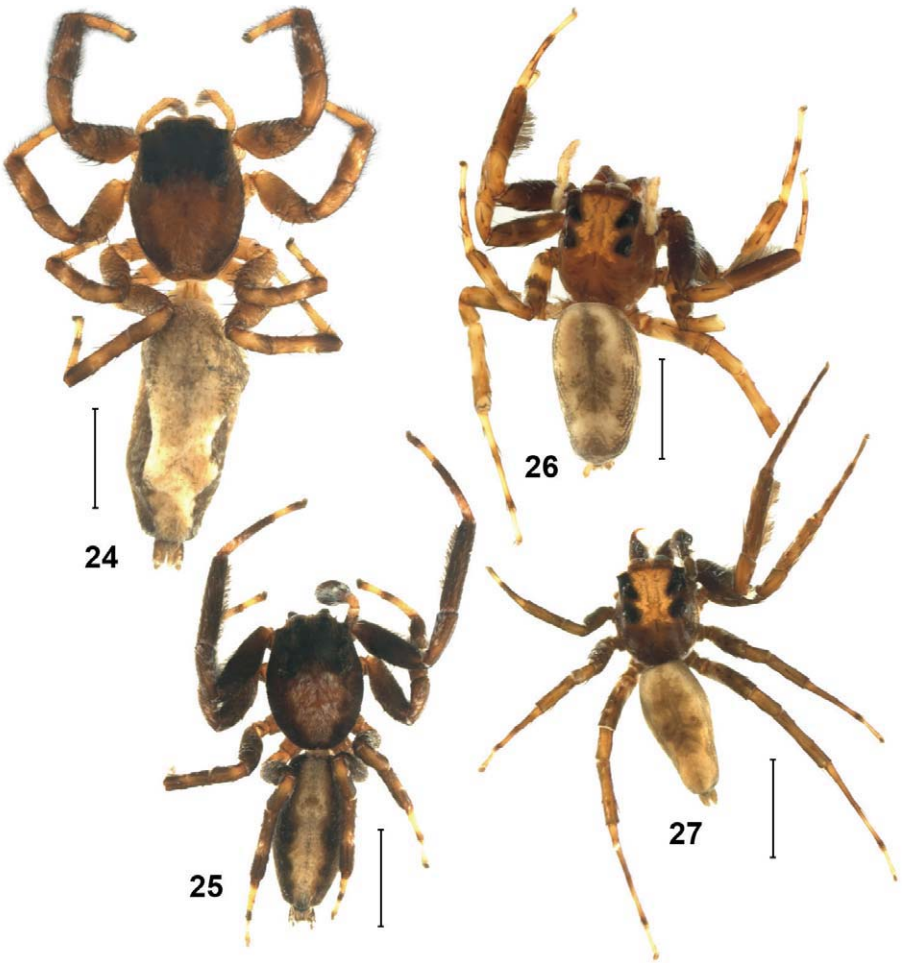
Material examined: SOUTH AFRICA: *Limpopo*: 1♂ (NCA, 2009/2185), Little Leigh, 22°94'S:29°87'E, above the knee, *Kirkia wilmsi*, 21.iii.2006, I. Sinthumule; 1♀ (NCA, 2009/2187), same locality, 22°93'S:29°89'E, above the knee, *Burkea africana*, 23.xi.2005, B. van der Waal; 1♂ (NCA, 2009/2186), same locality, 22°94'S:29°86'E, above the knee, gallery forest, 19.iii.2006, S. Foord; 1♂ (NCA, 2009/2184), same locality and habitat, 22.xi.2005, I. Sinthumule. *Gauteng*: 1♂ (MRAC, 210144), Roodeplaat Dam, house, 25°38'S:28°21'E, 3.iv.2001, R. Jocqué. *KwaZulu-Natal*: 1♀ (MRAC, 171714), St Lucia, Fanies Island, 28°32'S:32°24'E, by hand, 22.vii.1990, M. Alderweireldt & R. Jocqué.

Distribution: The species is known from South Africa northwards to Tanzania (Wanless 1985; Wesołowska & Haddad 2009; present data).

Genus *Meleon* Wanless, 1984

This Afrotropical genus currently consists of eight described species (Platnick 2009), occurring from Guinea in the west to Madagascar in the east.

The composition of *Meleon* requires further study, as the genus seems to be a paraphyletic taxon. According to Wijesinghe (1994), *Meleon* should consist of only three species: *M. guineensis* (Berland & Millot, 1941), *M. solitaria* (Lessert, 1927) and *M. kenti* (Lessert, 1925); the last is the type species. *M. madagascarensis* and *M. russata*, as stated by Wijesinghe (1994), belong elsewhere. The same seems to hold true for two new *Meleon* species recently described by Logunov and Azarkina (2008), viz. *M. insularis* and *M. raharisonina*, as both are closely related to *M. madagascarensis*. The problem of the taxonomic status and composition of *Meleon* is outside the scope of the present work and will be considered properly elsewhere by one of us (DL).



Figs 24–27. *Holcolaetis zuluensis* Lawrence, 1937 (24, 25) from South Africa (Limpopo, Little Leigh) and *Meleon russata* (Simon, 1900) (26, 27) from Madagascar (Tamatave), general appearance: (24, 27) male, dorsal views; (25, 26) female, dorsal view. Scale bars: 1 mm.

Meleon guineensis (Berland & Millot, 1941)

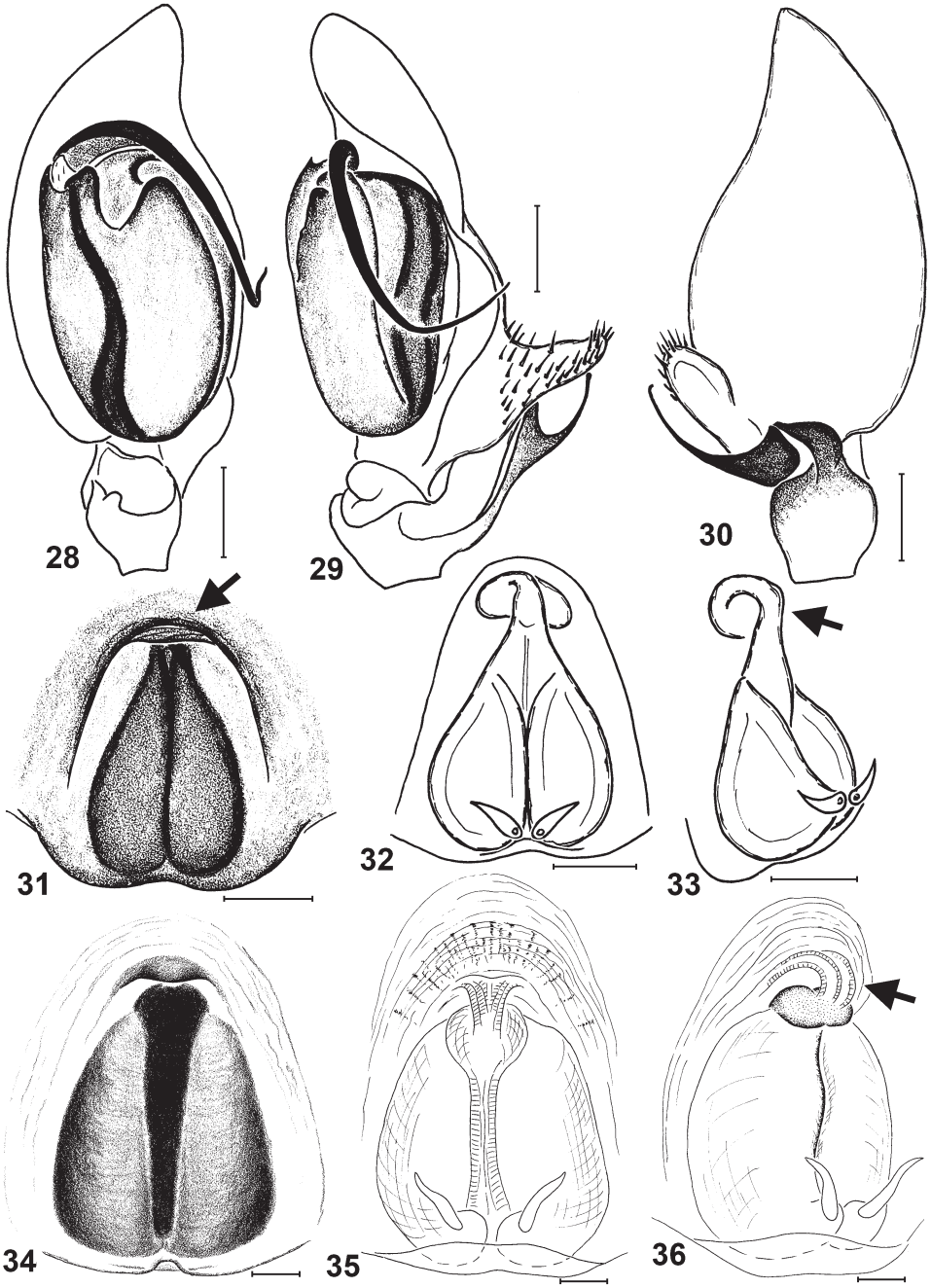
Figs 28–36, 38, 39

Linus guineensis: Berland & Millot 1941: 399, fig. 92.
Meleon guineensis (Berland & Millot): Roewer 1965: 14, fig. 12; Wijesinghe 1994: 59, figs 1–3, 7.

Description:

Male (MRAC, 225861).

Measurements: Carapace: length 2.75, width 2.13, height at PLE 1.58. Ocular area: length 1.38, width anteriorly 1.58, width posteriorly 1.35. Diameter of AME 0.54. Abdomen: length 2.93, width 1.73. Clypeal height: 0.18. Cheliceral length: 1.33. Length of leg segments: I 3.00+1.15+3.00+2.55+1.00; II 2.30+0.90+1.80+2.00+0.85; III 2.40+0.75+1.55+2.00+0.80; IV 2.55+0.83+2.00+2.85+0.90.



Figs 28–36. *Meleon guineensis* (Berland & Millot, 1941) from Congo (Mayombe, Luki Forest Reserve): (28) male palp, ventral view; (29) ditto, retrolateral view; (30) ditto, dorsal view; (31, 34) epigyne, ventral view; (32, 35) spermathecae, dorsal view; (33, 36) ditto, lateral view. Scale bars: 0.1 mm.

Leg spination: I Fm d 0-1-3 pr 0-0-1-1 rt 0-0-1, Pt pr and rt 1, Tb d, pr and rt 1-1 v 2-2, Mt d 1-1 pr 2-0-1-1-1ap rt 1-1-0-1ap v 2-0-2ap; II Fm d 0-1-1-3 pr 1-1-1 rt 0-1-1, Pt pr and rt 1, Tb d pr and pr 1-1 v 2-2-2ap, Mt d 0-1-0 pr and rt 1-1-2ap v 2-0-2ap; III Fm d 1-1-1-3, pr 0-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-2ap, Mt d 0-1-0 pr and rt 1-1-1ap v 2-0-2ap; IV Fm d 0-1-1-3 pr 0-1-1, Pt pr and rt 1, Tb d pr and rt 1-0-1 v 2-0-1-2ap, Mt pr and rt 1-1-2ap v 0-1-1ap.

Colouration: Carapace greyish yellow, with brown veins in thoracic region and patches of white scales. Black around eyes. Clypeus brownish yellow, without hair/scale cover. Sternum, maxillae, labium and chelicerae yellow, tinged brown. Entire abdomen yellow, with irregularly-shaped brownish patches (with no clear pattern). Book-lung covers and spinnerets yellow, tinged brown. Leg I light brown, with pale yellow tarsi; femora I ventrally and dorsally, and patellae and tibiae ventrally, with fringes of long black hairs. Legs II–IV yellow, with brownish patches and rings. Palps yellow, tinged brown. Palpal structure as in Figs 28–30.

Female (MRAC, 225861).

Measurements: Carapace: length 2.40, width 2.00, height at PLE 1.30. Ocular area: length 1.38, width anteriorly 1.38, width posteriorly 1.25. Diameter of AME 0.48. Abdomen: length 2.80, width 1.75. Clypeal height: 0.18. Cheliceral length: 1.00. Length of leg segments: I 2.50+1.03+2.30+1.80+0.85; II 2.60+0.85+1.50+1.55+0.75; III 1.75+0.78+1.30+1.65+0.70; IV 2.30+0.78+1.80+2.50+0.80.

Leg spination: I Fm d 1-1-3 pr and rt 1-1, Pt pr and rt 1, Tb d, pr and rt 1-1 v 2-2, Mt d 0-1-0 pr and rt 1-1-1ap v 2-2ap; II Fm d 1-1-3 pr and rt 0-1-1, Pt pr and rt 1, Tb d, pr and pr 1-1 v 2-2, Mt d 0-1-0 pr and rt 1-1-2ap v 2-0-2ap; III Fm d 1-1-3 pr and rt 0-0-1, Pt pr and rt 1, Tb d, pr and rt 1-1 v 2-1-2ap, Mt d 0-1-0 pr and rt 1-1-2ap v 2-0-1ap; IV Fm d 1-1-3, Pt pr and rt 1, Tb d pr and rt 1-0-1 v 2-1-2ap, Mt pr and rt 1-1-1ap v 2-0-2ap.

Colouration: As in male (Figs 38, 39), but differs as follows: palps contrastingly pale yellow; tibiae IV ventrally-distally with fringes of black hairs. Epigyne and spermathecae as in Figs 31–36.

Material examined: D.R. CONGO: 3♂ 1♀ (MRAC, 225861), Bas Congo, Mayombe, Luki Forest Reserve, *ca* 5°37'S:13°05'E, primary rainforest, fogging-2, 7.x.2006, De Bakker D. & Michiels J.P.; 1♂ (MRAC, 220938), same locality, fogging-1bis, 5.xii.2006, De Bakker D. & Michiels J.P.; 1♀ (MRAC, 219978; det. earlier as *M. solitaria*), same locality, beating along trail in primary rainforest, nr fogging sites 1 and 2, 5.xi.2006, De Bakker D. & Michiels J.P.; 1♀ (MRAC, 220952; det. earlier as *M. solitaria*), same locality, fogging in primary rainforest, fogging-3, 10.xi.2006, De Bakker D. & Michiels J.P.

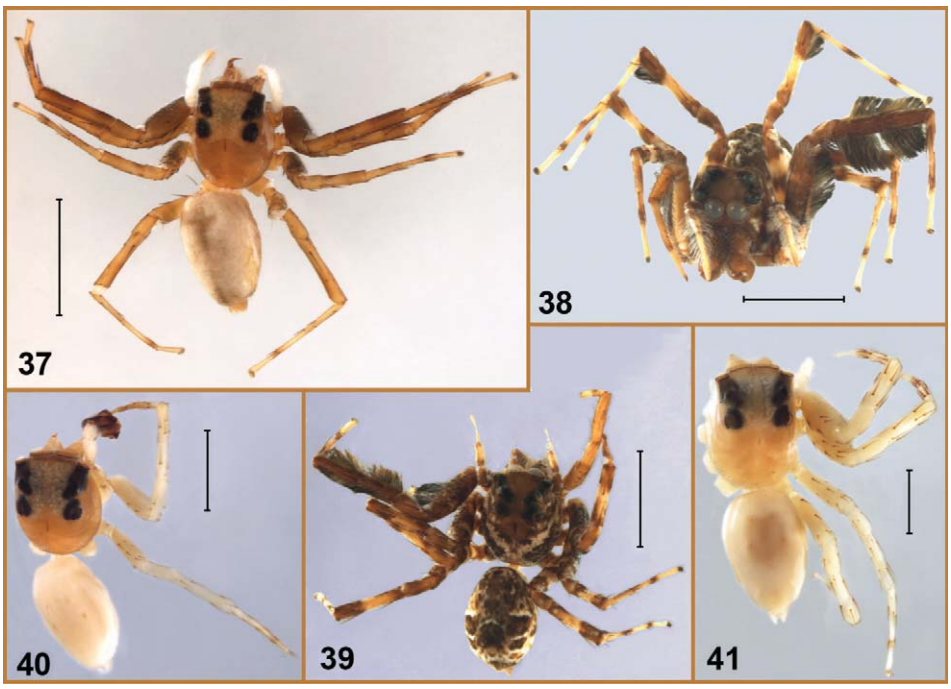
Distribution: This species has been recorded from tropical West Africa: Guinea, Ivory Coast, Congo (Wijesinghe 1994; present data).

Comments: Wijesinghe (1994: 59) only provisionally matched the ♀ holotype of *M. guineensis* and the ♂ reported by Wanless (1984*a*: 187–189) as *Meleon solitaria*. We have examined the sample containing both sexes, and therefore this sex association can be confirmed.

Meleon madagascarensis (Wanless, 1978)

Figs 40, 41, 42–47, 53–56

Portia madagascarensis: Wanless 1978: 114–116, figs 16A–D.
Portia oreophila Wanless, 1978: 116, figs 17A–D.
Meleon madagascarensis (Wanless): Wijesinghe 1994: 57.



Figs 37–41. *Meleon raharizonina* Logunov & Azarkina, 2008 (37) from Madagascar (Tamatave), *M. guineensis* (Berland & Millot, 1941) (38, 39) from Congo (Mayombe, Luki Forest Reserve), and *M. madagascarensis* (Wanless, 1978) (40 – ♂ holotype of *Portia madagascarensis*; 41 – ♀ holotype of *Portia oreophila*) from Madagascar, general appearance: (37, 39, 41) female, dorsal views; (38) ditto, front view; (40) male, dorsal view. Scale bars: 1 mm.

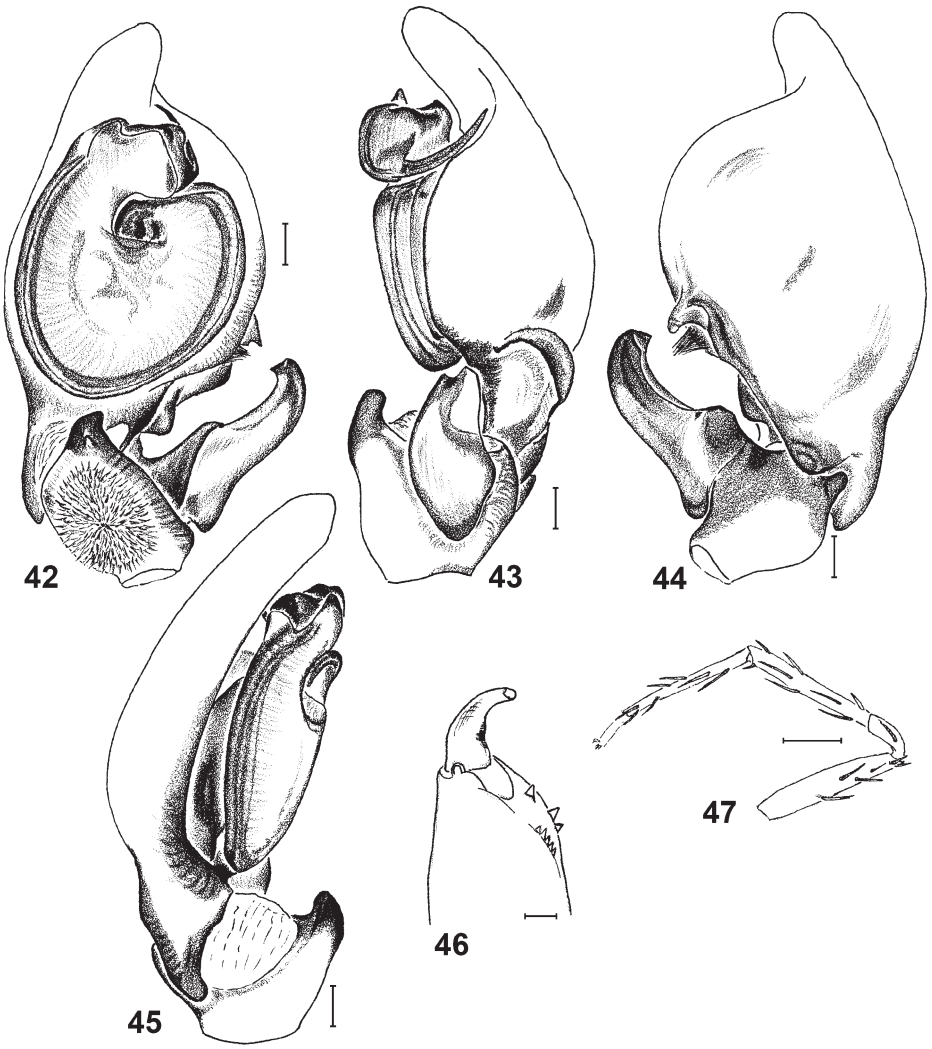
Description:

Male (holotype of *Portia madagascarensis*).

Measurements: Carapace: length 2.45, width 1.90, height at PLE 1.50. Ocular area: length 1.20, width anteriorly 1.65, width posteriorly 1.45. Diameter of AME 0.50. Abdomen: length 2.60, width 1.60. Clypeal height: 0.10. Cheliceral length: 0.95. Length of leg segments: I2.40+0.90+2.45+2.45; II 2.20+0.90+1.95+2.05+0.75; III 1.90+0.75+1.45+1.90+0.75; IV 2.40+0.90+2.00+3.05+0.75.

Leg spination: I Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d 1-0-1-1 pr and rt 1-0-1-0 v 2-2-2ap, Mt d 0-0-1-1-0 pr 0-1-0-1-1 rt 0-1-0-1-1 v 1-0-0-2apl; II Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d 1-0-1-1, pr and rt 1-0-1-0, v 2-2-2ap, Mt d 0-0-1-1-0, pr 1-0-1-2ap, rt 1-1-2ap, v 2-0-1ap; III Fm d 0-1-1-1, pr and rt 0-0-1-1-1; Pt pr and rt 1; Tb d 1-0-0-1, pr and rt 1-0-1, v 2-2-2ap; Mt d 0-0-1-0-0, pr and rt 1-1-2ap, v 2-0-2ap; IV Fm d 1-1-1, pr 0-0-1-0-1-1, rt 0-0-1-1-1; Pt pr and rt 1; Tb d 1-0-1 pr 1-0-1 rt 1-0-1-1 v 2-2-2ap, Mt d 2-2-0 pr 0-1-2ap rt 0-0-2ap v 1-1-1-0-2ap.

Colouration (Fig. 40): Carapace brown, covered with white hairs, with white ocular area and black around eyes. Clypeus pale yellow, covered with white hairs and bristles. Chelicerae brown-yellow. Sternum yellow. Abdomen yellow, but dorsum with a small dark patch in middle part. All legs yellow, but tibiae and metatarsi I and II brown. Palpal structure as in Figs 42–45.



Figs 42–47. *Meleon madagascarensis* (Wanless, 1978) from Madagascar (♂ holotype of *P. madagascarensis*): (42) male palp, ventral view; (43) ditto, retrolateral view; (44) ditto, dorsal view; (45) ditto, median view; (46) chelicera, ventral view; (47) leg I, lateral view. Scale bars: 0.1 mm.

Female (holotype of *Portia oreophila*).

Measurements: Carapace: length 2.40, width 1.90, height at PLE 1.50. Ocular area: length 1.20, width anteriorly 1.65, width posteriorly 1.45. Diameter of AME 0.50. Abdomen: length 2.65, width 1.75. Clypeal height: 0.10. Cheliceral length: 1.00. Length of leg segments: I 2.20+0.90+1.70+1.85+0.90; II 1.90+0.75+1.70+1.70+0.75; III 2.00+0.75+1.50+1.65+0.80; IV 2.25+0.75+2.00+2.90+0.80.

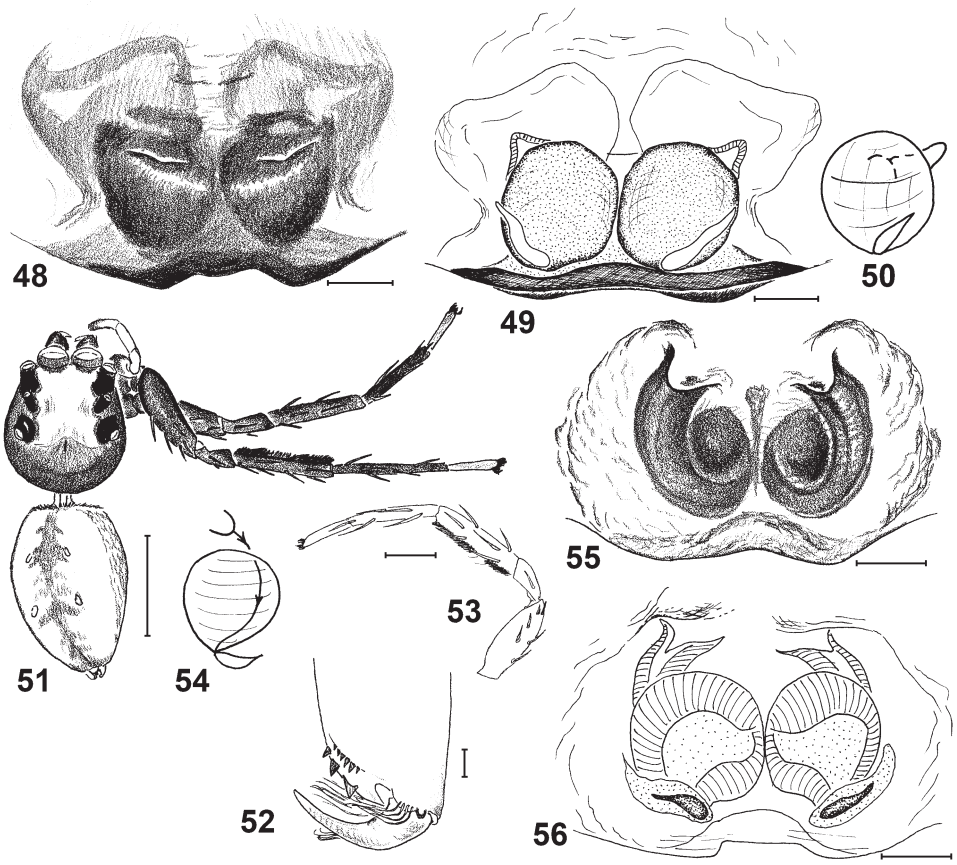
Leg spination: I Fm d 1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Ti d pr and rt 1-1 v 2-2-0, Mt d 0-0-1-1-0-0, pr 1-0-1, rt 1-1-1ap, v 2-0-2-0; II Fm d 1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d 1-0-1-1 pr and rt 1-0-1-0 v 2-2-1ap, Mt d 0-0-1-1-0 pr and rt 1-1-1ap,

v 2-0-1-1ap; III Fm d 1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d 1-0-1 pr and rt 1-1 v 2-2-2ap, Mt pr and rt 1-1-2ap, v 0-2-0-2ap; IV Fm d 1-1-1 pr 0-1-0-1-1 rt 0-0-0-0-1, Pt pr and rt 1 Tb d 1-0-1 pr and rt 1-1 v 2-2-2ap, Mt d 2-2-0-0 pr 0-0-1-2ap rt 0-0-0-2ap v 0-2-0-0-2ap.

Colouration: As in the male (Fig. 41), but tibiae I ventrally with dense fringes of brown hairs. Epigyne and spermathecae as in Figs 54–56.

Type material examined: *Portia madagascarensis* holotype (♂; MRAC, 142917), MADAGASCAR: Mt Ambohisanga, 15°31'S:49°06'E, i.1951, A. Pierrard. *Portia oreophila* holotype (♀; MRAC, 200208) same locality, i.1961, A. Pierrard.

Comments: To date, the species is known from the type specimens and from Madagascar only. It was Wijesinghe (1994) who matched the male of *Portia madagascarensis* with the female of *P. oreophila* and thereby provided the current conception of the species. The species is redescribed here on the basis of the type specimens.



Figs 48–56. *Meleon raharizonina* Logunov & Azarkina, 2008 (48–51) from Madagascar (Tamatave), and *Meleon madagascarensis* (Wanless, 1978) (52–56) from Madagascar (♀ holotype of *Portia oreophila*): (48, 55) epigyne, ventral view; (49, 56) spermathecae, dorsal view; (50, 54) diagrammatic course of the insemination ducts; (51) female, dorsal view; (52) chelicera, ventral view; (53) leg I, lateral view. Scale bars: 0.1 mm in Figs 48, 49, 53–56; 1 mm in Fig. 51.

Meleon raharizonina Logunov & Azarkina, 2008

Figs 37, 48–51

Meleon raharizonina: Logunov & Azarkina 2008: 102–103, figs 29–35.

Description:

Male. See Logunov & Azarkina (2008).

Female.

Measurements: Carapace: length 2.20, width 1.85, height at PLE 1.50. Ocular area: length 1.20, width anteriorly 1.00, width posteriorly 0.85. Diameter of AME 0.50. Abdomen: length 2.55, width 1.60. Clypeal height: 0.20. Cheliceral length: 0.55. Length of leg segments: I 2.10+0.85+1.75+1.80+0.80; II 1.80+0.85+1.90+1.50+0.65; III 1.55+0.70+1.55+1.55+0.60; IV 1.95+0.70+1.65+2.60+0.70.

Leg spination: I Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-0, Mt d 0-2-0 pr and rt 1-1-0, v 2-0-2ap; II Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-0, Mt d 0-2-0 pr and rt 1-0-1, v 2-0-2-1ap; III Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d, pr and rt 1-1 v 2-2-2ap, Mt d 0-2-0 pr and rt 1-1-2ap, v 2-0-2ap; IV Fm d 0-1-1-1 pr and rt 0-0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-2ap, Mt d 0-2-0 pr and rt 1-1-2ap v 1-1-0-0-2ap.

Colouration (Figs 37, 51): Carapace light yellow, with pale yellow ocular area and black around eyes. Sternum yellow. Clypeus light brown. Cheeks yellow, covered with white hairs. Abdomen: dorsum pale yellow, with a grey longitudinal stripe; sides and venter grey-yellow. Spinnerets brownish; book-lungs pale yellow. All legs brownish yellow, but femora I–III brown, femur IV with 2 brown apical spots. Palps pale yellow, but palpal tarsi brownish. Epigyne and spermthecae as in Figs 48–50.

Material examined: MADAGASCAR: 1♀ (MRAC, 200.208), Tamatave [= Toamasina], Foulpointe [= Mahavelona], *ca* 19°36'S:48°13'E, forest on clay soil, sieved litter, xii.1993, A. Pauly; 1♂ (MRAC, 177817), same locality, forest on clay soil, sieved litter, 11.xi.1993, A. Pauly; 1♀ (MRAC, 177901), same locality, *Asplenium*-forest, xii.1993, A. Pauly.

Comments: This species was recently described after a single male from Madagascar by Logunov and Azarkina (2008). In new samples taken from the NE part of Madagascar we have found both sexes together. The female of *M. raharizonina* is described here for the first time.

Both the male and female of *M. raharizonina* are most similar to those of *M. madagascarensis* (Figs 40, 41, 42–47, 53–56). The male can easily be distinguished by the shape of massive tibial apophysis (Logunov & Azarkina 2008, figs 29–31). The female differs in having shorter inseminations ducts and transverse, slit-shaped copulation openings (*vs* V-shaped ones in *M. madagascarensis*; cf. Figs 48 and 55).

Meleon russata (Simon, 1900)

Figs 26, 27, 57–69

Portia russata: Simon 1900: 381.
Meleon russata (Simon): Wanless 1978: 97–99, figs 6A–D.

Description:

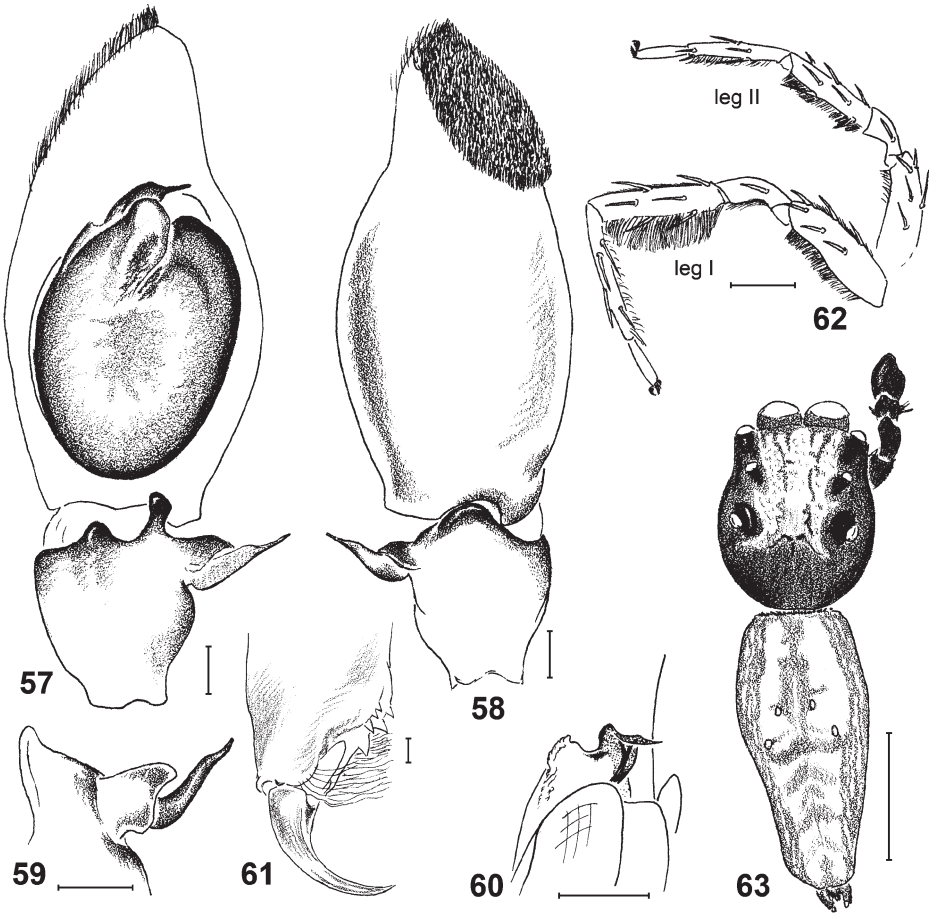
Male.

Measurements: Carapace: length 2.40, width 2.10, height at PLE 1.90. Ocular area: length 1.20, width anteriorly 1.60, width posteriorly 1.55. Diameter of AME: 1.20.

Abdomen: length 3.25, width 1.65. Clypeal height: 0.25. Cheliceral length: 0.55. Length of leg segments: I 2.50+0.90+2.05+2.15+0.90; II 2.00+0.90+1.40+1.65+0.70; III 1.65+0.75+1.20+2.55+0.80; IV 2.10+0.85+1.70+2.50+0.85.

Leg spination: I Fm d, pr and rt 0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-0, Mt pr and rt 1-1-1, v 2-2ap; II Fm d pr and rt 0-1-1-1, Pt pr and rt 1, Tb d 1-1-1 pr and rt 1-1 v 2-2-0, Mt d 0-1-0 pr 1-1 rt 1-1-1, v 2-2ap; III Fm d, pr and rt 0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 1-1-2ap, Mt d 0-1-0 pr and rt 1-1-2ap, v 2-0-2ap; IV Fm d pr and rt 0-1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-1-2ap, Mt pr and rt 1-1-2ap v 1-1-0-0-2ap.

Colouration (Figs 27, 63): Carapace dark brown, with pale yellow ocular area and black around eyes. Sternum dark brown. Clypeus dark brown, but pale white in centre. Cheeks under ALEs yellow-white. Chelicerae dark brown. Abdomen: dorsum brownish grey, with medial grey-brown stripe; sides and venter grey-brown. All legs brown. Femora and tibiae I and II with fringes of dense and long black hairs ventrally (fringes much



Figs 57–63. *Meleon russata* (Simon, 1900) from Madagascar (Tamatave), male: (57) male palp, ventral view; (58) ditto, dorsal view; (59) tibial apophyses, dorsolateral view; (60) embolar divisio, lateral view; (61) chelicera, ventral view; (62) legs I and II, lateral view; (63) general appearance, dorsal view. Scale bars: 0.1 mm in Figs 57–62; 1 mm in Fig. 63.

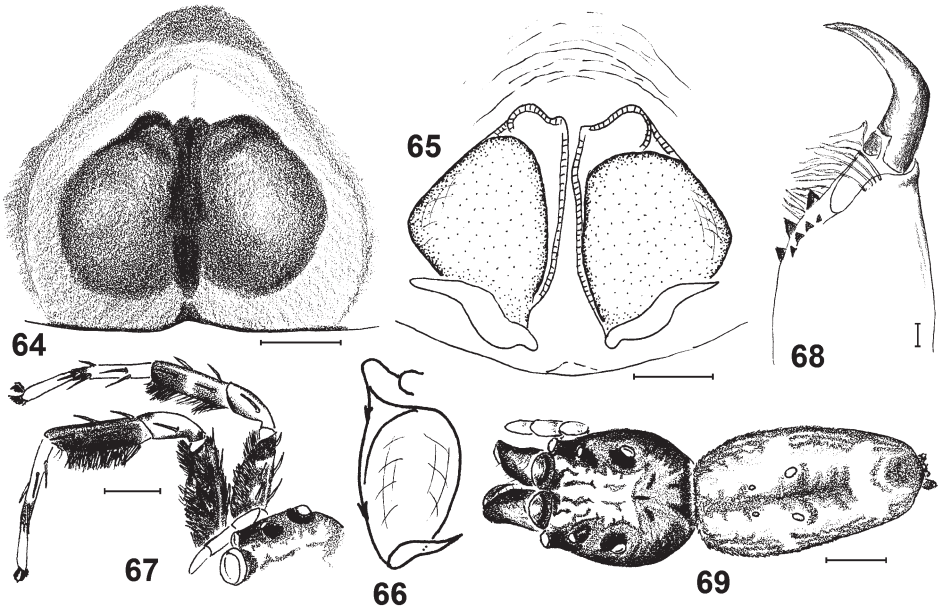
shorter on legs II) (Fig. 62). Spinnerets grey-brown. Book-lungs grey. Palps dark brown, covered with white hairs. Palpal structure as in Figs 57–60.

Female.

Measurements: Carapace: length 2.80, width 2.45, height at PLE 2.05. Ocular area: length 1.30, width anteriorly 1.80, width posteriorly 1.75. Diameter of AME 0.60. Abdomen: length 3.90, width 2.25. Clypeal height: 0.30. Cheliceral length: 1.40. Length of leg segments: I 2.50+1.10+1.80+1.80+0.90; II 2.10+1.00+1.50+1.55+0.75; III 1.80+1.00+1.35+1.70+0.70; IV 2.30+0.90+1.80+2.70+0.85.

Leg spination: I Fm d 1-1-3 pr and rt 0-1-1, Pt pr and rt 1, Tb d, pr and rt 1-1 v 2-2, Mt pr and rt 1-1-1, v 2-0-2ap; II Fm d1-1-3 pr and rt 1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2, Mt pr and rt 1-1-2ap, v 2-0-2ap; III Fm d 1-1-3 pr and rt 1-1-1, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-2ap, Mt d 0-1-0 pr and rt 1-1-2ap, v 2-0-2ap; IV Fm d 0-1-1-3 pr 0-1-1-0 rt 0-0-1-0, Pt pr and rt 1, Tb d pr and rt 1-1 v 2-2-2ap, Mt d 0-1-0 pr 1-1-2ap rt 1-0-2ap v 2-0-2ap.

Colouration (Figs 26, 69): Carapace brown, with pale yellow ocular area and black around eyes. Sternum brown. Clypeus and cheeks brown, with short white hairs. Cheeks under ALEs yellow-white. Chelicerae brown. Abdomen: dorsum grey-yellow, with median grey-brown stripe; sides and venter grey-brown. Book-lungs yellow-grey; spinnerets grey-yellow. All legs yellow-brown, but Fm I and II brown, and Fm II pro- and retrolaterally with yellow patches. Fm I with white hairs. Tb I brown, with fringes of dense and long black hairs ventrally (fringes much shorter on legs II, white in their medial part) (Fig. 26). Palps white-yellow, covered with white hairs. Epigyne and spermathecae as in Figs 64–66.



Figs 64–69. *Meleon russata* (Simon, 1900) from Madagascar (Tamatave), female: (64) epigyne, ventral view; (65) spermathecae, dorsal view; (66) diagrammatic course of the insemination ducts; (67) legs I and II, lateral view; (68) chelicera, ventral view; (69) female, dorsal view. Scale bars: 0.1 mm in Figs 64, 65, 67, 68; 1 mm in Fig. 69.

Material examined: MADAGASCAR: 1♀ (MRAC, 206672), Tamatave [= Toamasina], Foulpointe [= Mahavelona], *ca* 19°36'S:48°13'E, forest d'Analalava, xi.1995, A. Pauly; 1♀ (MRAC, 207233), same locality, xi.1995, A. Pauly; 1♂ (MRAC, 200.111), same locality, sieved litter, 11.xii.1993, A. Pauly.

Comments: The finding of the male of *M. russata* (Figs 27, 57–63), so long after the ♀ holotype, allows us to comment on the species' taxonomic assignment. The palp conformation of *M. russata*, particularly the shape and position of the embolus and the sclerotized lobe M_2 (*sensu* Wanless 1984*a*, fig. 27G), is almost identical to that of *Veissella milloti* (Logunov & Azarkina 2008, figs 107–111). Both species differ from each other in details of mutual arrangement and size of the embolus and the sclerite M_2, as well as in the shape of tibial apophysis (cf. Figs 57–59). Yet, *V. milloti* was only provisionally placed in the genus *Veissella* (Logunov & Azarkina 2008: 113), as the species has no process on the palpal femur and patella, the key diagnostic character of *Veissella* (see Wanless 1984*a*).

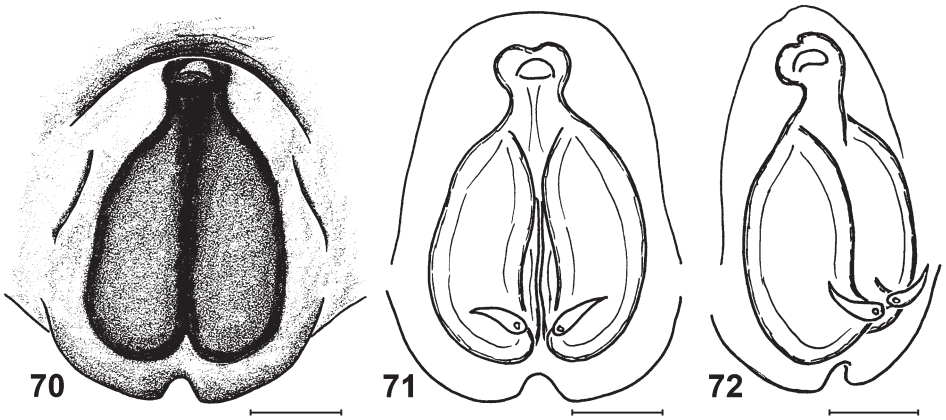
There is no doubt that both *M. russata*, known from Madagascar, and *V. milloti*, known from the Comoros, belong to the same genus, but whether it should be *Meleon*, *Veissella* or a separate genus remains to be further studied. On the one hand, the female of *M. russata* does not possess the median epigynal guide, another key character of *Veissella* (see Wanless 1984*a*, fig. 27E). Yet, as was stressed by Wijesinghe (1994: 59), *M. russata* differs from the true *Meleon* species in the profile of its carapace and the very short copulatory ducts. Thus, it is very likely that *M. russata* and *V. milloti* should be placed in a genus of its own, separated both from true *Meleon* (*sensu* Wijesinghe 1994) and from *Veissella*.

Meleon sp.

Figs 70–72

Material examined: UGANDA: 1♀ (ZFMK, Ar1444), Budongo Forest, 1°45'N:31°25'E, swamp forest, *Teclea nobilis*, wet season, 11–20.vii.1995, T. Wagner.

Comments: This ♀ cannot be reliably identified or described as a new species. On the basis of its copulatory organs (Fig. 70), it is most close to, but clearly distinct from, *M. solitaria* (*sensu* Wijesinghe 1994). It can be easily distinguished from the ♀ holotype



Figs 70–72. *Meleon* sp. from Uganda, female: (70) epigyne, ventral view; (71) spermathecae, dorsal view; (72) ditto, dorsolateral view. Scale bars: 0.1 mm.

of *P. solitaria* by the ovoid shape of the spermathecae (cf. Figs 71, 72 and figs 4–6 in Wijesinghe 1994). However, the current conception of the latter species is based on the assumption that the ♀ holotype of *Portia solitaria* from Zaire and the ♂ holotype of *Portia falsifera* Wanless, 1978 from Uganda belong to the same species (see Wijesinghe 1994: 60). On the contrary, it is very likely that our ♀ from Uganda and the ♂ holotype of *P. falsifera* belong to the same taxon. If so, the latter name should be revalidated and removed from the synonymy with *M. solitaria*. Thus, the studied ♀ belongs either to *M. falsifera* or to a new species. The matter can be finally decided when a sample of *M. falsifera* with both sexes has been collected.

Genus *Portia* Karsch, 1878

The genus *Portia* consists of 17 described species (Platnick 2009), distributed mostly in the Afrotropical and Oriental regions (Wanless 1978, 1984*a*; Murphy & Murphy 1983), but also in the southern regions of the Palaearctic region (Jastrzębski 1997; Song *et al*. 1999). Here we provide new faunistic records for two Afrotropical species of *Portia*.

Portia africana (Simon, 1886)

Linus africanus Simon, 1886: 393.
Portia africana (Simon): Wanless 1978: 93–96, figs 4A–E, 5A, B, F, J.

Material examined: IVORY COAST: 1♂ (MRAC, 177618), Appouesso, forêt classée de la Bossematié, *ca* 6°35'N:3°28'W, forest edge, between buttresses, 160 m, 14.xi.1993, R. Jocqué; 3♀ (MRAC, 201103), Adiopo Doumé, Orstom, *ca* 5°20'N:4°20'W, around buildings, 12.xi.1994, R. Jocqué. GHANA: 1♀ (MRAC, 217937), Kakum forest, 5°20'N:1°23'W, primary forest, fogging, 25.xi.2005, Jocqué R., De Bakker D. & Baert L.

Distribution: This is a widespread central African species, known from Ivory Coast and Ghana (present data) in the west to Ethiopia in the east (Wesołowska & Tomasiewicz 2008), and southward to Angola and Zambia (Wanless 1978).

Portia schultzi Karsch, 1878

Portia schultzi: Karsch 1878: 774; Wanless 1978: 88–90, figs 1A–G; Wesołowska & Cumming 2008: 207, figs 131–134.

Material examined: MADAGASCAR: 1♀ (MRAC, 200468), Tamatave [= Toamasina], Foulpointe [= Mahavelona], *ca* 19°36'S:48°13'E, forest on sand soil, *Pandanus*-bog, 10.xi.1993, A. Pauly; 1♀ (MRAC, 206578), same locality, Analalava, *ca* 19°46'S:46°08'E, iv.1995, A. Pauly; 1♂ (MRAC, 207056), same locality, forest on sand, litter, xi.1994, A. Pauly.

Distribution: The species is known from tropical Africa, from Guinea in the west to Madagascar in the east (Murphy & Murphy 1983; Logunov & Azarkina 2007; Wesołowska & Cumming 2008; Wesołowska & Haddad 2009; present data).

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