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New species and new records of jumping spiders from Botswana, Namibia and Zimbabwe (Araneae: Salticidae)

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ABSTRACT. Twelve new species of Salticidae are described from southern Africa. Five of them from Zimbabwe - *Dendryphantès sanguineus* sp. n. (♂, ♀), *Heliophanus tenuitas* sp. n. (♂), *Langona fusca* sp. n. (♀), *Langelurillus sibandai* sp. n. (♀), *Plexippus tsholoshto* sp. n. (♀), four from Namibia - *Cembalea hirsuta* sp. n. (♂), *Evarcha karas* sp. n. (♂), *Langelurillus namibicus* sp. n. (♀), *Langona sabulosa* sp. n. (♂, ♀), and three species - *Langona tortuosa* sp. n. (♂, ♀), *Plexippus lutescens* sp. n. (♂), *Pseudicius matabelensis* sp. n. (♂, ♀) from both countries. For *Cembalea triloris* HADDAD & WESOŁOWSKA, 2011, *Langona pilosa* WESOŁOWSKA, 2006 and *Heliophanus megae* WESOŁOWSKA, 2003 missing females are described for the first time. *Heliophanus lesserti* WESOŁOWSKA, 1986, *Holcolaetis zuluensis* LAWRENCE, 1973, *Mogrus matisi* (BERLAND & MILLOT, 1941) and *Phlegra simplex* WESOŁOWSKA & RUSSELL-SMITH, 2000 are newly recorded for Zimbabwe, *Langelurillus minutus* WESOŁOWSKA & CUMMING, 2011 and *Pseudicius solitarius* HADDAD & WESOŁOWSKA, 2011 for Namibia, *Mihroheros termitophagus* WESOŁOWSKA & CUMMING, 1999, *Langona bethae* WESOŁOWSKA & CUMMING, 2011 and *Parajotus refulgens* WESOŁOWSKA, 1999 for Botswana.

Key words: arachnology, taxonomy, Salticidae, new species, Afrotropical Region.

INTRODUCTION

The diversity of salticids in most areas of southern Africa is still poorly known. Scarce information on these spiders originates mostly from the 19th century. Only the area of South Africa has been studied relatively intensely. Numerous observations on the salticids of this country have been provided by PECKHAMS' (1902, 1903) and by LAWRENCE (1937, 1938, 1942, 1947) who intensively explored Zululand and Natal. However, contemporary studies have proved that the knowledge of the spider fauna

of South Africa still remains insufficient. For example, the last papers of WESOŁOWSKA & HADDAD (2009) and HADDAD & WESOŁOWSKA (2011) brought the descriptions of as much as 29 new species of salticids from this country.

The spider faunas of other countries of southern Africa are known to even smaller extent. PECKHAMS' (1903) reported only 25 salticid species from Zimbabwe. Many new data have been recently published by WESOŁOWSKA (1999) and WESOŁOWSKA & CUMMING (2008, 2011). There are 105 salticid species known from Zimbabwe at the moment (WESOŁOWSKA & CUMMING 2011). The number of species is quite impressive, but it should be kept in mind that only limited parts of the country were searched and its spider fauna is known only fragmentarily. Namibian spiders were studied by LAWRENCE (1927, 1928). His data were recently supplemented by records from the Brandberg massif (WESOŁOWSKA 2006). Nevertheless, only 43 species of jumping spiders are known from this large country (PRÓSZYŃSKI 2011). Botswana remains practically a white spot on the map, only 17 salticid species were reported from here (PRÓSZYŃSKI 2011).

This study presents new results of extensive recent faunistic explorations of Botswana, Zimbabwe and Namibia. Twelve new species and unknown hitherto sexes of three species are described. In addition new distributional records for several other species are given.

Voucher specimens have been deposited in the following collections:

Natural History Museum, London (NHM);

California Academy of Sciences, San Francisco (CAS);

National Museum, Bloemfontein, South Africa (NMBA);

National Museum of Namibia, Windhoek (SMN);

National Museum (Natural History) of Zimbabwe, Bulawayo (NMZ);

Plant Protection Research Institute, Pretoria, South Africa (PPRI);

Royal Museum for Central Africa, Tervuren (MRAC).

SYSTEMATICS

Cembalea hirsuta sp. n.

Figs 1-4, 85

DIAGNOSIS

Distinguished from *Cembalea triloris* HADDAD & WESOŁOWSKA, 2011 by having clearly longer embolus and triangular distal haematodocha (oval in *C. triloris*).

ETYMOLOGY

The name refers to very hairy male pedipalps.

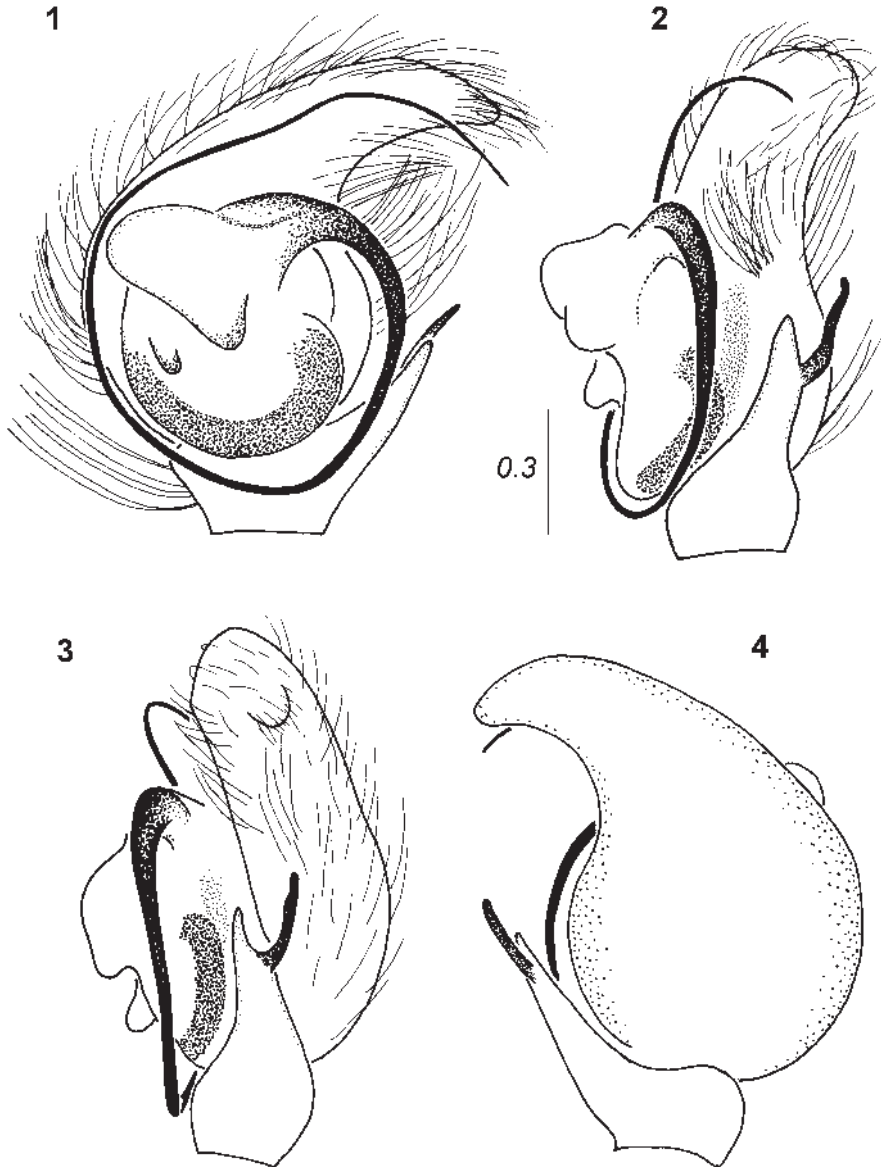
MATERIAL EXAMINED

Holotype: male, NAMIBIA, Walvis Bay, 10 km S of Swakopmund, 22°47'S:14°32'E, on plant, 13.VII.1988, leg. L. LOTZ (NMBA).

Paratype: NAMIBIA, Walvis Bay, 1 male, 22.II.1990, leg. W. PULAWSKI (CAS).

DESCRIPTION

Measurements [in mm]. Cephalothorax: length 2.5-2.6, width 1.9-2.0, height 1.0-1.1. Abdomen: length 2.4-2.7, width 1.6-1.8. Eye field: length 1.0-1.2, anterior width 1.5-1.7, posterior width 1.6-1.8.



1-4. *Cembalea hirsuta* sp. n., holotype: 1 - palpal organ, ventral view, 2 - palpal organ, ventrolateral view, 3 - palpal organ, lateral view, 4 - palpal organ, dorsal view

Male. General appearance as in Fig. 85. Carapace high and convex, sloping posteriorly, brown with slightly darker eye field. Brown hairs cover thoracic part, white hairs form lighter median streak, some whitish hairs on carapace sides posteriorly. Eyes of anterior row with fringe of white scales from above, some white hairs on eye field. Clypeus clothed in brown hairs. Chelicerae dark brown, endites and labium lighter with whitish tips, sternum yellow with dense white hairs. Abdomen oval, in holotype dark brown with irregular whitish marginal patches, in paratype greyish fawn with brown median streak, covered with dense hairs, venter light. Spinnerets clothed in grey hairs. Legs orange, femora with dark hairs on distal ends. First pair of legs slightly darker, femur with long dense hairs ventrally (Fig. 85). Pedipalps light brown, clothed in very dense and long hairs (white with admixture of brown ones). Palpal femur with dense long white hairs. Tibia short, single apophysis with long additional terminal spike (Figs 2, 3). Bulb with convex anterior haematodocha, embolus long, encircling bulb (Fig. 1). Cymbium with long tip, curved to retrolateral side.

Female unknown.

DISTRIBUTION

Known only from the type locality in western Namibia.

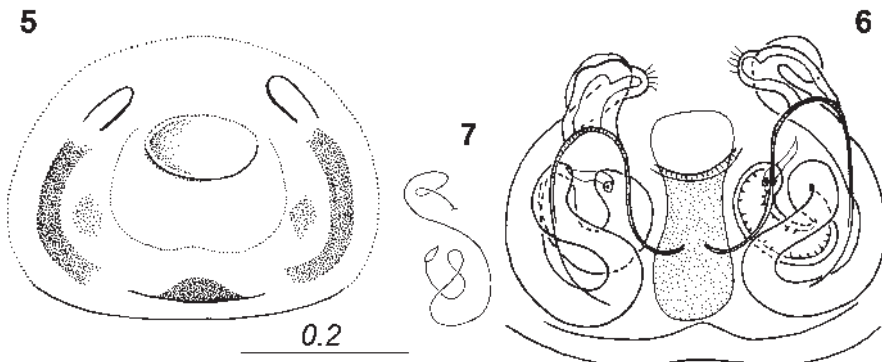
Cembalea triloris HADDAD & WESOŁOWSKA, 2011

Figs 5-7

Cembalea triloris HADDAD & WESOŁOWSKA 2011: 55.

MATERIAL EXAMINED

NAMIBIA, Keetmanshoop, Tses, 25°55'S:18°20'E, dunes, pitfall trap, 2 males, 2-5.IV.2003, leg. R. POLLER & F. VAN DEVENTER (MRAC); Keetmanshoop, Donkermodder, 26°53'S:18°39'E, dunes, pitfall trap, 2 females, 26-29.III.2003, leg. R. POLLER & F. VAN DEVENTER (MRAC).



5-7. *Cembalea triloris*: 5 - epigyne, 6 - internal structure of epigyne, 7 - diagrammatic course of seminal duct

DESCRIPTION

Description of male is given in HADDAD & WESOŁOWSKA (2011).

Female. Measurements. Cephalothorax: length 2.1-2.2, width 1.6-1.8, height 0.9-1.0. Abdomen: length 2.4-2.6, width 1.6-1.8. Eye field: length 1.0-1.1, anterior width 1.5, posterior width 1.7.

Carapace high, sloping posteriorly, dark brown, eyes surrounded with black rings. Light median band composed of whitish hairs on thoracic part, two poorly contrasting lateral bands. White scales surround anterior eyes, whitish hairs cover eye field. Clypeus high, clothed in dense light hairs, stretches to carapace sides. Chelicerae and labium light brown, endites and sternum dark yellow. Abdomen oval, sandy in colour, clothed in dense whitish and fawn hairs, with poorly defined traces of darker pattern composed of median chain of chevrons and diagonal submarginal lines. Venter light. Spinnerets dark grey. Legs yellow, bearing numerous spines (especially III and IV pairs). Epigyne with deep central cavity (Fig. 5). The cavity leads to a deep pocket (Fig. 6), seminal ducts long, meandering, with accessory glands fall into their initial parts.

DISTRIBUTION

Known from South Africa and south part of Namibia.

REMARKS

The description of the female is given for the first time.

***Dendryphantes sanguineus* sp. n.**

Figs 8-17, 86-87

DIAGNOSIS

Distinguished by intensively claret coloration of abdomen. The male is related to *Dendryphantes rafalskii* WESOŁOWSKA, 1999 from Zimbabwe, but has shorter tibial apophysis and base of embolus is enveloped with big terminal apophysis. The female genitalia resemble these in *Dendryphantes purcelli* PECKHAM & PECKHAM, 1903 known from South Africa but seminal ducts and receptacles are clearly shorter, also sclerotization of gonopores surroundings is more delicate.

ETYMOLOGY

The name is derived from abdomen colouration.

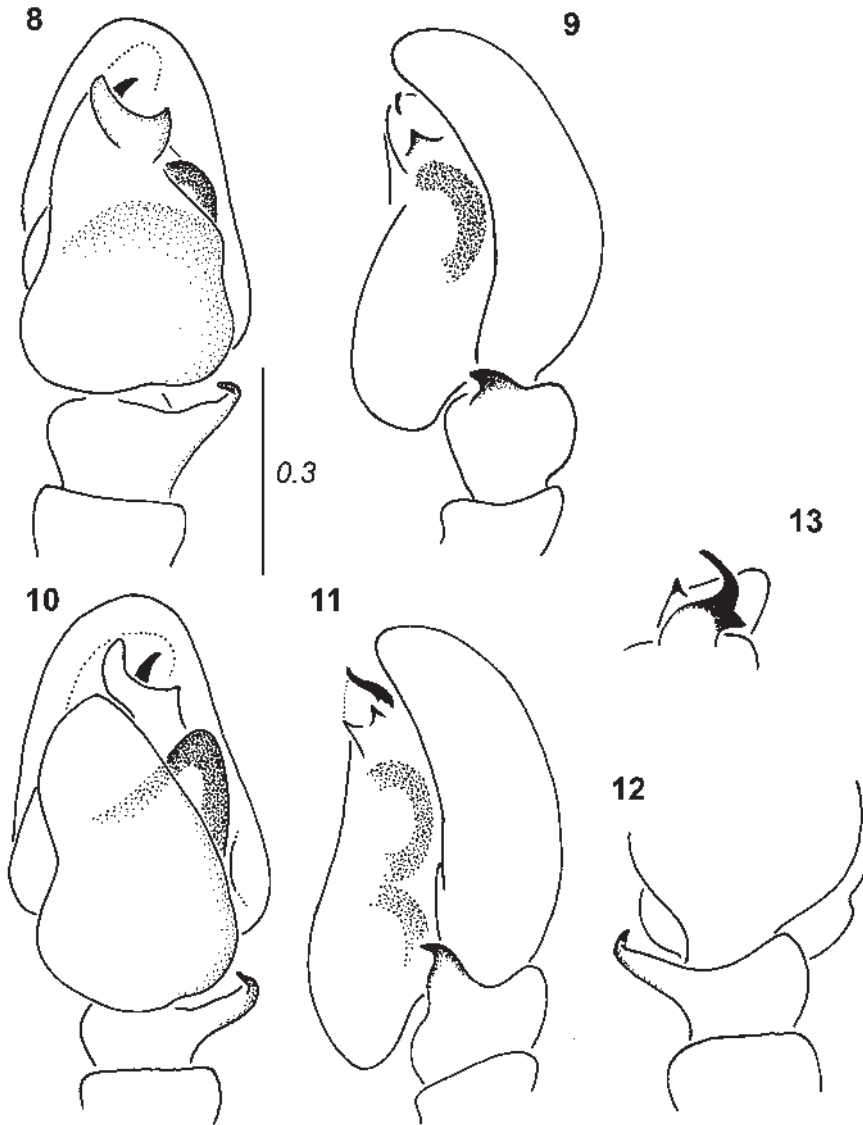
MATERIAL EXAMINED

Holotype: male, ZIMBABWE, Nyanga, Kwaragusa road, 2140 m a.s.l., 18°13'S:32°49'E, 7.I.2010, leg. J. LENZ (MRAC).

Paratypes: together with holotype, 1 male, 1 female; same locality, 1 male, 1 subad. male, 3 females, 1 imm., 3.X.2010 (MRAC).

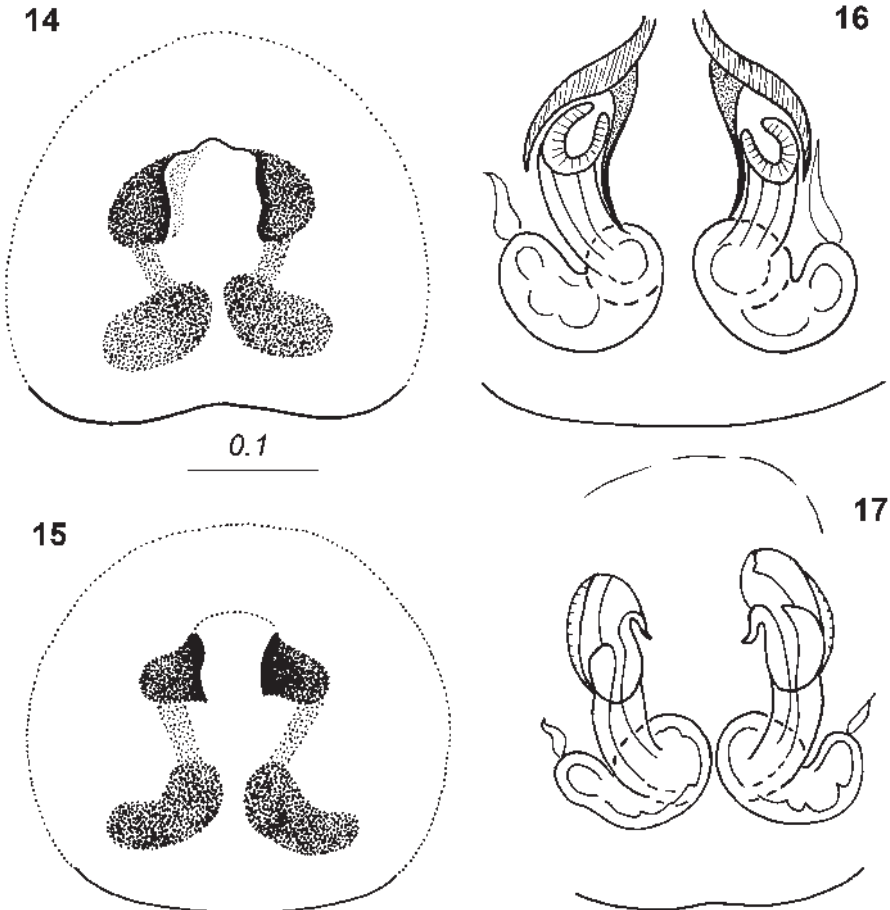
DESCRIPTION

Measurements (male/female). Cephalothorax: length 1.7-1.9/1.8-1.9, width 1.2-1.3/1.3-1.4, height 0.7-0.8/0.6-0.7. Abdomen: length 1.9-2.3/2.2-2.3, width 1.0-1.5/1.4-1.7. Eye field: length 0.8/0.8, anterior width 1.0-1.1/1.0-1.1, posterior width 1.1-1.2/1.1-1.2.



8-13. *Dendryphantès sanguineus* sp. n., paratypes: 8, 10 - palpal organ, ventral view 9, 11 - palpal organ, lateral view, 12 - palpal tibia, dorsal view, 13 - embolus, dorsal view (cymbium removed)

Male. Small spider. Carapace oval, broadest at half of its length, brown, slightly darker marginally. Eyes surrounded with black rings, eye field delicately pitted, in anterior part large silver path formed by translucent guanine. Some short whitish hairs on slopes of carapace, near eyes long brown bristles. Clypeus very low. Chelicerae large, brown. Labium, endites and sternum light brown. Abdomen ovoid, reddish brown with faint pattern, sides anteriorly yellowish. Dorsum of abdomen clothed in delicate colourless hairs. Venter light brown. Spinnerets dark brown. Legs brown, femora with darker rings, first pair slightly stouter and darker than others, tibia I with three pairs of spines ventrally, metatarsus with two pairs. Leg hairs colourless, spines brown. Pedipalps brown, palpal organ as in Figs 8-12. Tibial apophysis short (Fig. 9), base of embolus hidden under terminal apophysis of bulb (Figs 8, 10), delicate membrane joins lower tip of this apophysis with tip of embolus. Structure of embolus as in Fig. 13.



14-17. *Dendryphantes sanguineus* sp. n., paratypes: 14, 15 – epigyne, 16, 17 – internal structure of epi-

Female. General appearance as in Figs 86, 87. Shape of body as in male. Colouration of abdomen slightly lighter, light brown. Whole carapace covered with delicate dense short whitish hairs, among them scarce long brown bristles. Guanine crystals translucent through integument on eye field, in centre of ocular area two blackish patches. Abdomen intensively claret, with traces of darker pattern, clothed in colourless hairs and scarce long brown bristles. Venter also claret with two light streaks and two lines formed with light dots. Legs yellow, tuft of black hairs at tarsi claws. Epigyne with central depression (Figs 14, 15). Gonopores framed by sclerotized rims (Figs 16, 17).

DISTRIBUTION

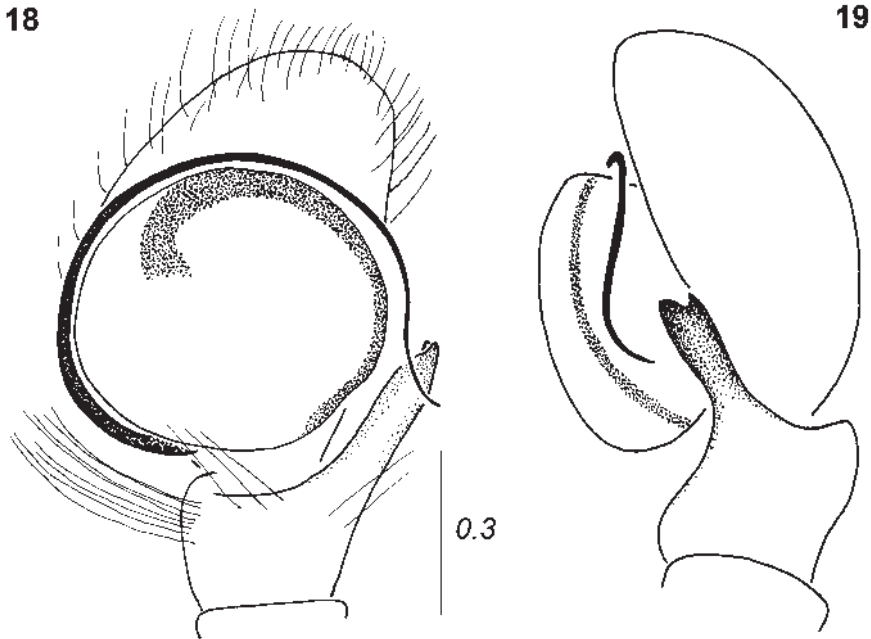
Known only from the type locality in eastern Zimbabwe.

Evarcha karas sp. n.

Figs 18-19

DIAGNOSIS

The species resembles *Evarcha flagellaris* HADDAD & WESOŁOWSKA, 2011 from South Africa, but has not striped pattern of abdomen, the shape of tibial apophysis is different (narrow and pointed in *E. flagellaris*, wide and bifurcated in *E. karas*), the end of embolus reaches to tip of tibial apophysis.



18-19. *Evarcha karas* sp. n., holotype: 18 - palpal organ, ventral view, 19 - palpal organ, lateral view

ETYMOLOGY

The name is a noun in apposition, referring to the region of Namibia, where the type locality is placed.

MATERIAL EXAMINED

Holotype: male, NAMIBIA, Keetmanshoop, Lichtenfels, 25°38'S:17°43'E, dunes, pitfall trap, 3-6.IV.2003, leg. R. POLER & F. VAN DEVENTER (NMBA).

DESCRIPTION

Measurements. Cephalothorax: length 2.5, width 1.9, height 1.0. Abdomen: length 2.4, width 1.7. Eye field: length 1.1, anterior width 1.6, posterior width 1.7.

Male. Shape of body typical for *Evarcha* members. Carapace high, dark brown, vicinity of eyes black. Whole carapace covered with white greyish hairs, only on foveal area hairs rubbed off. Long brown bristles on eye field, denser anteriorly, tufts of long setae form "horns" at smallest eyes. Clypeus moderately high, brownish with yellow band, below anterior lateral eyes four parallel lines composed of white hairs. Anterior eyes encircled with white and yellowish scales. Mouth parts brown, sternum yellowish orange. Abdomen ovoid, brownish grey with irregular median yellow streak, dark line along centre of the streak. Hairs correspond to background colour cover abdomen, among them long brown bristles. Venter light, slightly tinged with grey. Spinnerets grey. Legs light brown, ends of their segments darker. Longest legs of first pair, femur with 1-1-3 spines dorsally, patella with 0-1 prolaterally, tibia 2-2-2 ventrally, metatarsus 2-2 ventrally. Leg hairs and spines brown. Pedipalps light brown, clothed in dense whitish hairs. Bulb rounded, very convex; embolus thin and long, with whip-shaped end, tibial apophysis large, with bicuspid tip (Figs 18, 19).

Female unknown.

DISTRIBUTION

Known only from the type locality in southern Namibia.

***Heliophanus (Heliophanus) lesserti* WESOŁOWSKA, 1986**

Figs 20-24, 88

Heliophanus lesserti WESOŁOWSKA 1986: 31.

MATERIAL EXAMINED

ZIMBABWE, SE Lowveld, Malilangwe Wildlife Reserve, 21°10'S:31°40'E, Hakamela Camp, 400 m a.s.l., 1 male, XII.2003, leg. M. CUMMING (NMBA).

DESCRIPTION

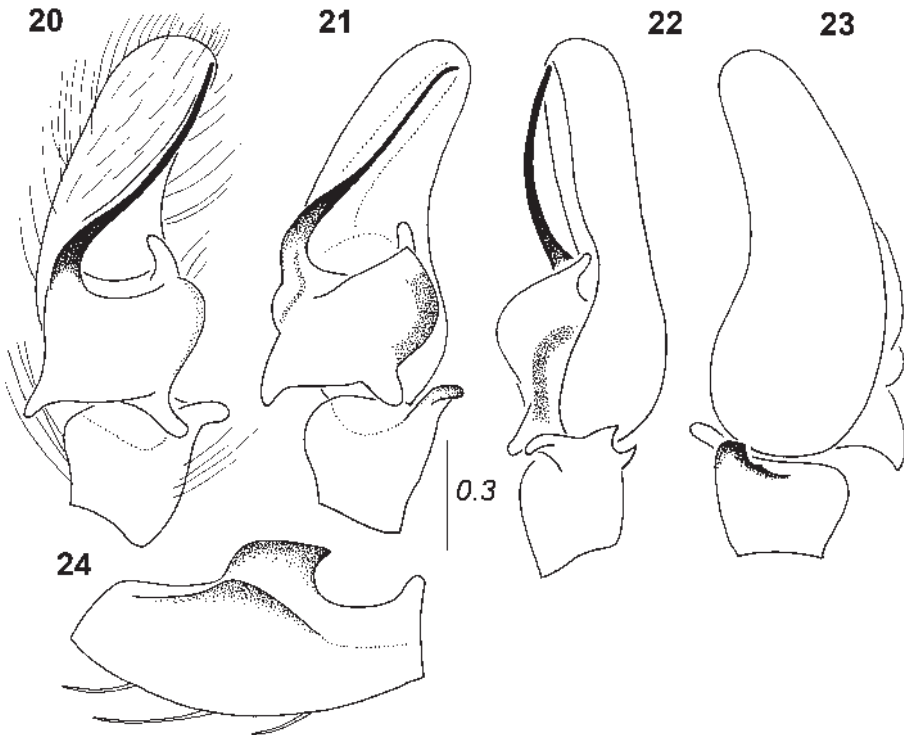
Measurements. Cephalothorax: length 2.8, width 2.2, height 1.4. Abdomen: length 2.7, width 1.9. Eye field: length 1.2, anterior width 1.60, posterior width 1.9.

Male. General appearance as in Fig. 88. Medium sized, dark coloured spider. Carapace slightly pear-shaped, moderately high, gently sloping posteriorly, dark brown;

eye field black, shiny, pitted. Long brown bristles near eyes, colourless hairs on dorsum of carapace. Clypeus low, blackish. Mouth parts and sternum dark brown. Abdomen ovoid, black, clothed in delicate colourless hairs. White hairs form wide light band along anterior margin, the band extends on sides to mid abdominal length. Venter dark. Spinnerets blackish. Legs dark brown, first pair stouter and longer than others. Pedipalps dark, covered with dense hairs. Palpal femur with ventral furrow and wide short apophysis (Fig. 24). Cymbium long narrow, bulb short in relation to it, square with elongated corners, embolus thin and long (Figs 20, 21). Ventral tibial apophysis short; dorsal one flat, pincers shaped (Figs 22, 23).

DISTRIBUTION

Known from Congo (Zaire), Botswana, Namibia and South Africa, in Zimbabwe recorded for the first time.



20-24. *Heliophanus lesserti*: 20 - palpal organ, ventroprolateral view, 21 - palpal organ, ventral view, 22 - palpal organ, retrolateral view, 23 - palpal organ, dorsal view, 24 - palpal femur

Heliophanus (Helafricanus) megae WESOŁOWSKA, 2003

Figs 25-27

Heliophanus megae WESOŁOWSKA 2003a: 274.

MATERIAL EXAMINED

ZIMBABWE, Nyanga National Park, Kwaragusa road, 18°13'S:32°49'E, on granite log at Aloe Crag, 5 males, 3 females, 26-29.XII.2003, leg. M. CUMMING (MRAC).

DESCRIPTION

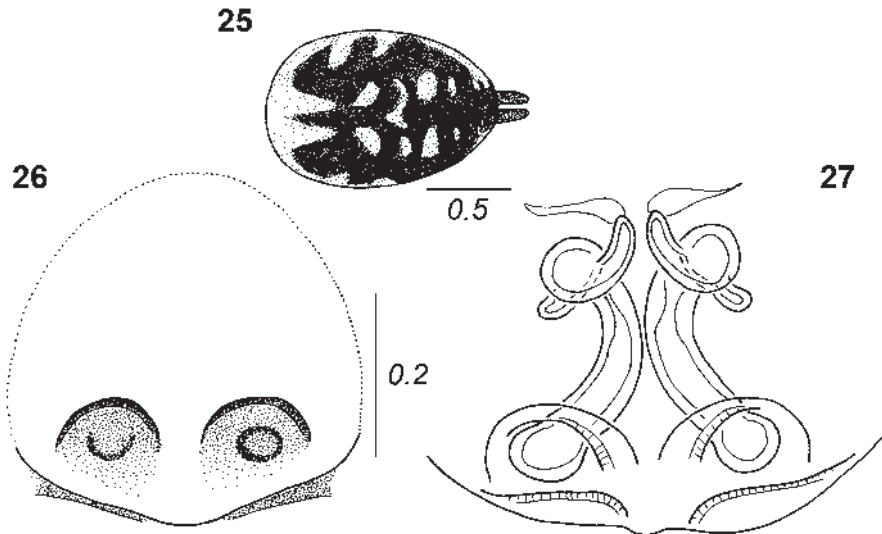
Measurements (male/female). Cephalothorax: length 1.6-2.1/1.7-1.9, width 1.2-1.5/1.3-1.4, height 0.6-0.7/0.7-0.8. Abdomen: length 1.8-2.0/2.0-3.2, width 1.2-1.5/1.4-2.3. Eye field: length 0.6-0.9/0.8-0.9, anterior width 0.9-1.0/0.9-1.0, posterior width 1.0-1.1/1.0-1.1.

Description of male is given in WESOŁOWSKA (2003a).

Female. Slightly larger than male. Carapace brown with darker eye field, black near eyes, ocular area pitted, clothed in long brown bristles, denser at first eye row. White hairs form thin median stripe on carapace, extending to path at thoracic part anteriorly. Some white hairs in vicinity of posterior median eyes and on slopes of carapace. Small white scales surround anterior median eyes, white hairs on clypeus. Chelicerae and sternum light brown, endites and labium dark yellow. Abdomen greyish brown, clothed in dark hairs, with pattern composed of lighter spots (Fig. 25). Venter light. Spinnerets dark. Leg yellow, femora tinged with grey, especially their basis darker, distal ends of tibiae also dark. Leg hairs brown. Epigyne typical for members *Helaffricanus* subgenus, with two posterior depressions (Fig. 26). Vicinity of gonopores strongly sclerotized, internal structure of epigyne as in Fig. 27.

DISTRIBUTION

Known only from the type locality in eastern Zimbabwe.



25-27. *Heliophanus megae*: 25 - abdominal pattern of female, 26 - epigyne, 27 - internal structure of epigyne

REMARKS

The first description of the female is given here.

Heliophanus (Heliophanus) tenuitas sp. n.

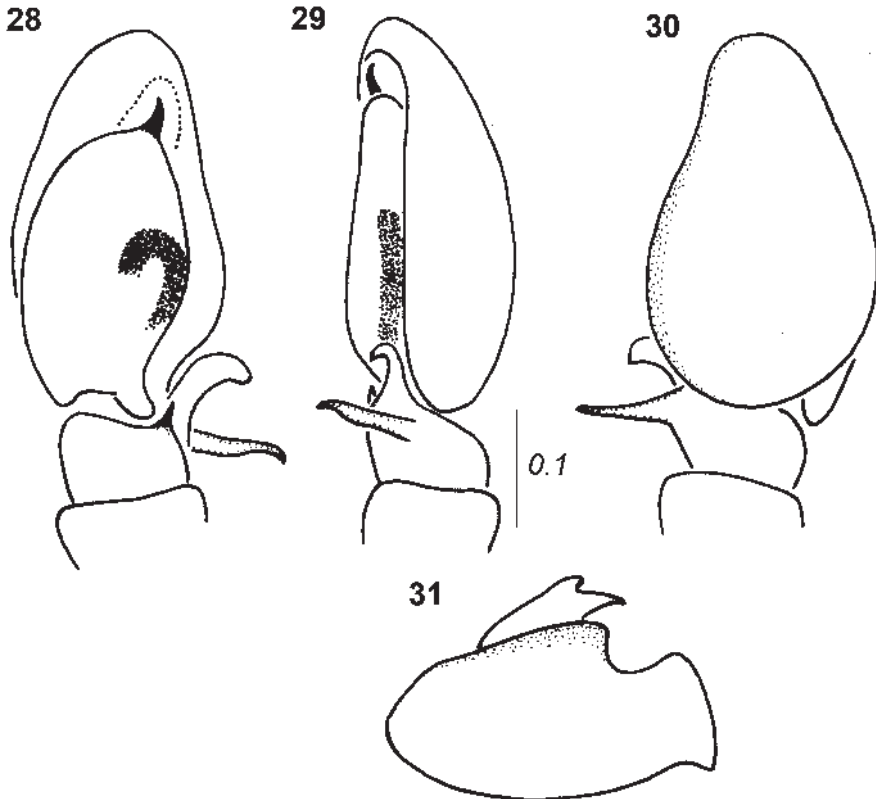
Figs 28-31

DIAGNOSIS

The smallest (c. 2 mm) species in the genus, characterized by the short embolus, furcated femoral apophysis and very long and thin dorsal tibial apophysis of the palp.

ETYMOLOGY

From Latin, give the word here meaning "smallness" and refers to the body size.



28-31. *Heliophanus tenuitas* sp. n., holotype: 28 - palpal organ, ventral view, 29 - palpal organ, lateral view, 30 - palpal organ, dorsal view, 31 - palpal femur

MATERIAL EXAMINED

Holotype: male, ZIMBABWE, SE Lowveld, Malilangwe Wildlife Reserve, 21°10'S:31°40'E, Hakamela Camp, 400 m a.s.l., 13-15.XII.2004, leg. M. CUMMING (MRAC).

DESCRIPTION

Measurements. Cephalothorax: length 1.0, width 0.7, height 0.3. Abdomen: length 1.0, width 0.7. Eye field: length 0.4, anterior width 0.6, posterior width 0.7.

Male. Diminutive spider, measuring only about 2 mm. Carapace dark brown, eye field black, pitted. Some delicate colourless hairs cover carapace. Mouth parts and sternum brown. Abdomen ovoid, black, dorsum covered with large scutum, venter dark. Spinnerets brown. Legs brown with slightly lighter metatarsi and tarsi. Leg hairs dark. Pedipalps brown. Bulb oval, embolus very short (Fig. 28). Tibia with three apophyses; ventral small spike like, retrolateral hooked and dorsal very thin and long (Figs 28, 30). Femur of palp with apophysis bifurcated on tip (Fig. 31).

Female unknown.

DISTRIBUTION

Known only from the type locality in south-eastern Zimbabwe.

***Holcolaetis zuluensis* LAWRENCE, 1973**

Holcolaetis zuluensis LAWRENCE 1973: 255; ROEWER 1965: 28; WANLESS 1985: 259; WESOŁOWSKA & HADDAD 2009: 47.

MATERIAL EXAMINED

ZIMBABWE, SE Lowveld, Malilangwe Wildlife Reserve, 21°10'S:31°40'E, Hakamela Camp, 400 m a.s.l., in water trap, 1 male, III.2004, leg. M. CUMMING (MRAC); same locality, Kwali Camp, 1 male, III.2004, leg. A. KASCHULA (NMBA).

DISTRIBUTION

Hitherto known from South Africa and Tanzania, now firstly recorded in Zimbabwe.

***Langelurillus minutus* WESOŁOWSKA & CUMMING, 2011**

Langelurillus minutus WESOŁOWSKA & CUMMING 2011: 79.

MATERIAL EXAMINED

NAMIBIA, Etosha National Park, 21°S:16°E, pitfall trap, I.1997, 4 males, leg. A. RUSSELL-SMITH (NMBA).

DISTRIBUTION

Hitherto known only from Zimbabwe, it is the first record from Namibia.

Langelurillus namibicus sp. n.

Figs 32-33

DIAGNOSIS

The female is distinctive in having a unique form of epigyne, with very broad pocket at epigastric furrow.

ETYMOLOGY

The name is derived from Namibia, the country of its type locality.

MATERIAL EXAMINED

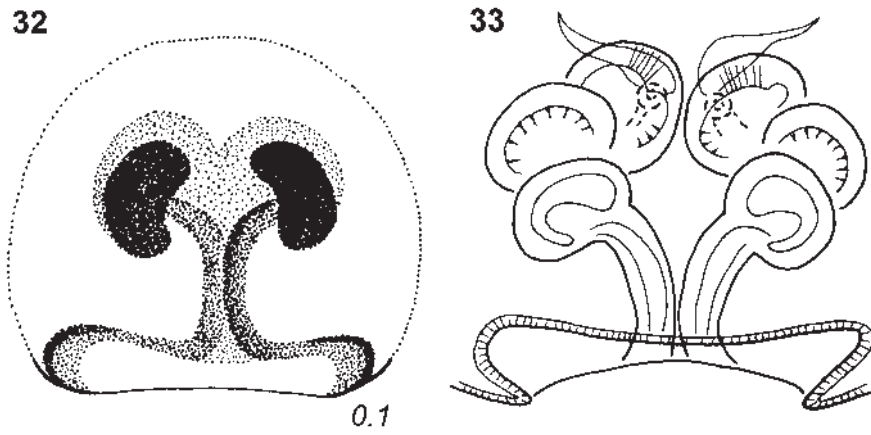
Holotype: female, NAMIBIA, Grabwaser, 27°55'S:18°15'E, 9.VII.1986, under stones/red sand, leg. C. PIETERSE (NMBA).

DESCRIPTION

Measurements. Cephalothorax: length 2.7, width 2.2, height 1.0. Abdomen: length 3.9, width 3.4. Eye field: length 1.0, anterior and posterior width 1.8.

Male unknown.

Female. Carapace moderately high, dark brown with almost black eye field, clothed in dense greyish white hairs clinging to dorsum, some long brown bristles among them on eye field, short thick rod bristles on anterior part of ocular area. Anterior eyes surrounded by small white scales. Clypeus low, orange, some white hairs on it. Chelicerae light brown, with small tooth on retrolateral margin. Labium and endites brownish with pale tips. Sternum brown. Abdomen almost spherical, brownish grey, covered with delicate short grey hairs and scarce brown bristles. Venter light. Spinnerets long, yellow with dark ends. Legs short, first pair with very short segments, orange brownish with darker marks at basis and ends of segments. Leg hairs brown, spines numerous, light. Epigyne small, with very wide pocket at epigastric furrow (Fig. 32). Gonopores



32-33. *Langelurillus namibicus* sp. n., holotype: 32 - epigyne, 33 - internal structure of epigyne

situated posteriorly, seminal ducts short, receptacles composed with three globular chambers, strongly sclerotized (Fig. 33).

DISTRIBUTION

Known only from the type locality in southern Namibia.

Langelurillus sibandai sp. n.

Figs 34-35, 89

DIAGNOSIS

The largest (over 10 mm) member of the genus, with dumpy body, the epigyne with two small gonopores situated laterally. The seminal duct with a large chamber in its initial part.

ETYMOLOGY

Named after the collector Mr Lucas Masenga SIBANDA.

MATERIAL EXAMINED

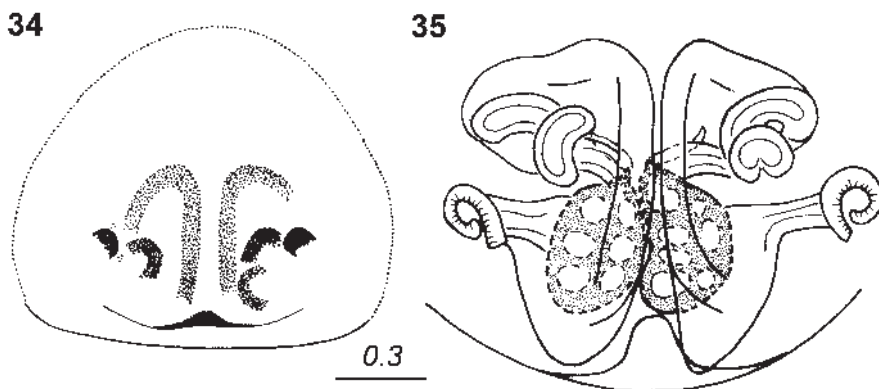
Holotype: female, ZIMBABWE, Tsholotsho, 19°46'S:27°44'E, 3500 m a.s.l., VIII.1999, leg. L. SIBANDA (MRAC).

Paratype: together with holotype, 1 female.

DESCRIPTION

Measurements. Cephalothorax: length 4.7-5.7, width 4.3, height 2.2-2.3. Abdomen: length 6.9-7.1, width 6.1-7.0. Eye field: length 1.7-1.9, anterior width 2.4-2.6, posterior width 2.5-2.7.

Male unknown.



34-35. *Langelurillus sibandai* sp. n., paratype: 34 - epigyne, 35 - internal structure of epigyne

Female. General appearance as in Fig. 89. Large sized spider, its body length exceeds 1 cm. Carapace oval, moderately high with gently sloped posterior part, brown with traces of two light streaks on thoracic area. Eye field short, dark, densely covered with greyish white scale like hairs, among them short rod bristles on anterior part of ocular area, two round white patches framed with fawn areolas in centre of eye field (Fig. 89). Anterior eyes surrounded with white scales. Some short light hairs and sparse brown bristles on thoracic part of carapace, denser bristles also at eyes. Clypeus with white hairs along lower margin and thin white line below anterior median eyes. Chelicerae large, toothless, brownish orange but their tips and fangs black. Endites and labium orange with yellowish upper margins. Sternum orange. Abdomen very large, bulged, fawn with chain of five pairs of lighter spots encircled by brown rings and faint submarginal patches. Sides light marked and streaked with brownish stains, venter whitish yellow. Spinnerets fawn. Legs short, brownish orange, tarsi I and II slightly darker. Segments of first pair of legs very short. Leg hairs thin, brown; spines short, numerous. Spination of leg I: femur dorsally 1-1-5, tibia pro- and retrolaterally 1, ventrally 2-2-2, metatarsus dorsally 2-2 apically, pro- and retrolaterally 2-1 apically, ventrally 2-2 apically. Epigyne large, triangular, with two small gonopores laterally (Fig. 34). Internal structure of epigyne as in Fig. 35; seminal ducts with enlargements, receptacles spherical, complex, multi-chambered.

DISTRIBUTION

Known only from the type locality in south-western Zimbabwe.

REMARKS

Generic placement of this species requires confirmation after discovery of the male.

Langona bethae WESOŁOWSKA & CUMMING, 2011

Figs 36-40

Langona bethae WESOŁOWSKA & CUMMING 2011: 81.

MATERIAL EXAMINED

BOTSWANA, Okavango Delta, Samochima lagoon, Shakawe Fishing Camp, 18°26'S:21°54'E, in litter, 1 male, 10.XII.2006, leg C. HADDAD (PPRI AcAT 2007/1015); Okavango Delta, near Shakawe, Lesideng Research Centre, 18°25'S:21°55'E, dry savanna, pitfall trap, 5 males, 1 female, 26.X-11.XII.2006, leg C. HADDAD (PPRI AcAT 2007/1110); ZIMBABWE, Chizarira National Park, Kaswiswi Camp, Muchene river, 17°42'S:27°55'E, 2 males, 5 females, 21-27.X.2009, leg. L. CHARI (MRAC); Matabeleland, Chisuma Area, 26°50'S:18°05'E, 1 female, 2 imm., 28-31.VII.1990, leg. F. NYATI (NMZ/A 8304).

DESCRIPTION

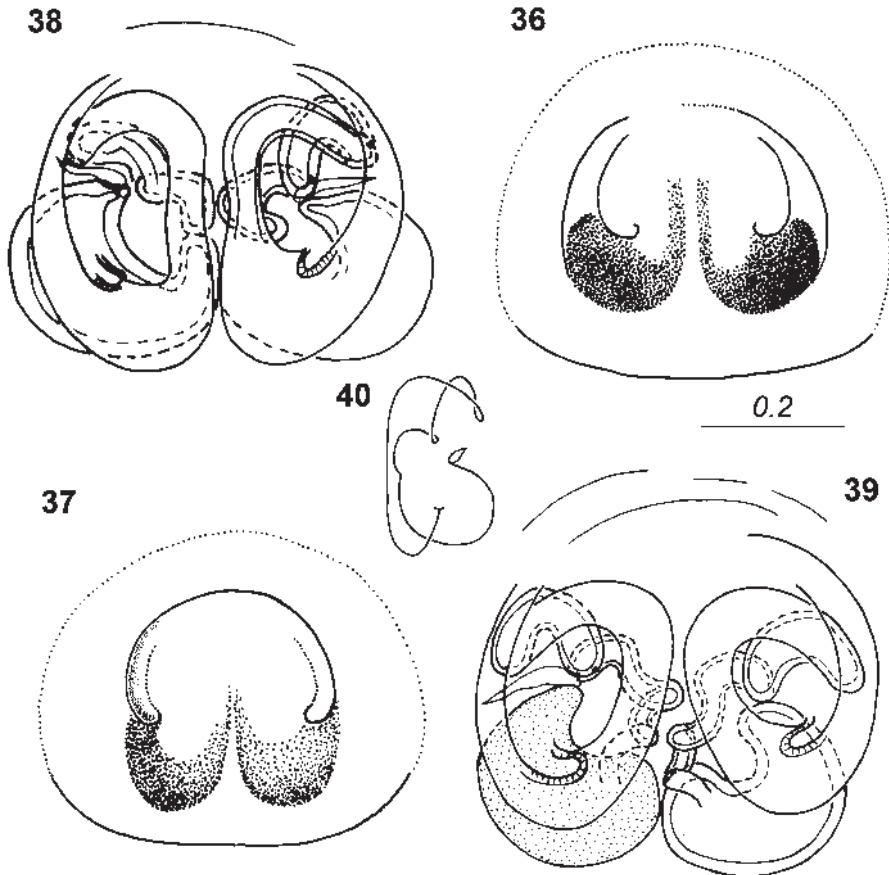
Description of both sexes is given in WESOŁOWSKA & CUMMING (2011). Female genitalia of the species showed in Figs 36-39.

DISTRIBUTION

Hitherto known only from Zimbabwe, now firstly recorded in Botswana.

REMARKS

The male of the species has palp similar to this in *L. pilosa*, but tibial apophysis shorter. General colouration lighter than in the latter species, eye field with dense yellowish hairs.



36-40. *Langona bethae*: 36, 37 - epigyne, 38, 39 - internal structure of epigyne, 40 - diagrammatic course of seminal duct

***Langona fusca* sp. n.**

Figs 41-42

DIAGNOSIS

Distinguishable by the large size, dark colouration and small epigyne with thick-walled distal parts of seminal ducts and small receptacles. The epigyne in external view similar to that in *Langona bethae*, but receptacles are situated more posteriorly, at the epigastric furrow.

ETYMOLOGY

The name refers to dark colouration of the spider.

MATERIAL EXAMINED

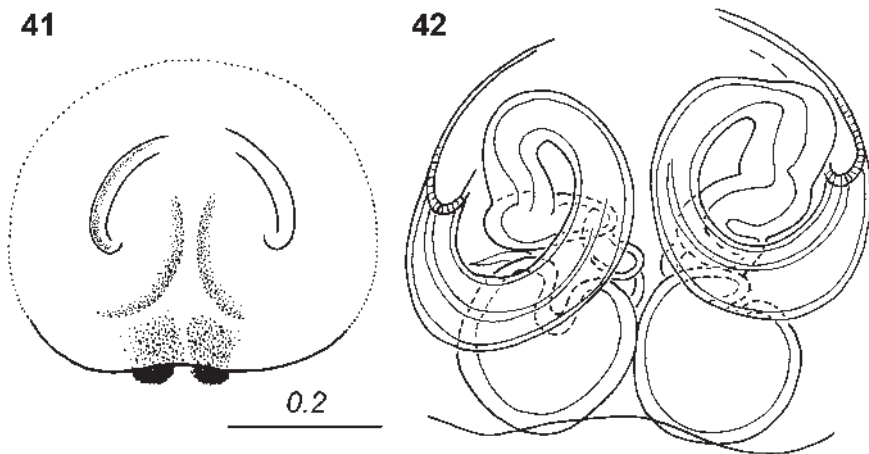
Holotype: female, ZIMBABWE, Hwange National Park, Baobab Hill, 18°50'S:26°20'E, IV.1987, leg. A. ELLERT (NMZ/A 9600).

DESCRIPTION

Measurements. Cephalothorax: length 5.0, width 3.8, height 2.0. Abdomen: length 6.2, width 5.1. Eye field: length 1.2, anterior width 2.4, posterior width 2.5.

Male unknown.

Female. Large spider, ranging over 10 mm. Carapace pear-shaped, widest at coxae III, with very short eye field, occupying only quarter of carapace length. Eye field black, clothed in dense short light greyish hairs, among them short rod bristles, thoracic part of carapace dark brown, greyish hairs form wide median light band on it, laterally from the band brown areas with dark hairs, on side surfaces of carapace hairs light. Clypeus moderately high, brown. Chelicerae light brown, toothless. Labium, endites



41-42. *Langona fusca* sp. n., holotype: 41 - epigyne, 42 - internal structure of epigyne

and sternum orange. Abdomen brown with narrow median light streak slightly serrated posteriorly, sides light marked and streaked with brownish stains, venter greyish yellow. Hairs correspond to background colour cover abdomen. Spinnerets dark. Femora of legs light brown with dark marks, distal segments dark brown. Epigyne small, with narrow horseshoe-shaped depression, (Fig. 41). Internal structure as in Fig. 42, seminal ducts form initial loop, distal part with thick walls, receptacles smaller than in the related species.

DISTRIBUTION

Known only from the type locality in western Zimbabwe.

REMARKS

The placement of this species in the genus *Langona* will be verified after revision of the related African Aelurillinae.

***Langona mediocris* WESOŁOWSKA, 1999**

Langona mediocris WESOŁOWSKA 1999: 156.

MATERIAL EXAMINED

ZIMBABWE, Hwange National Park, Sinamatella Camp, 18°36'S:26°19'E, in litter, 3 males, 2.IX.2004, leg M. CUMMING (MRAC).

DISTRIBUTION

Known only from Zimbabwe.

***Langona pilosa* WESOŁOWSKA, 2006**

Figs 43-48

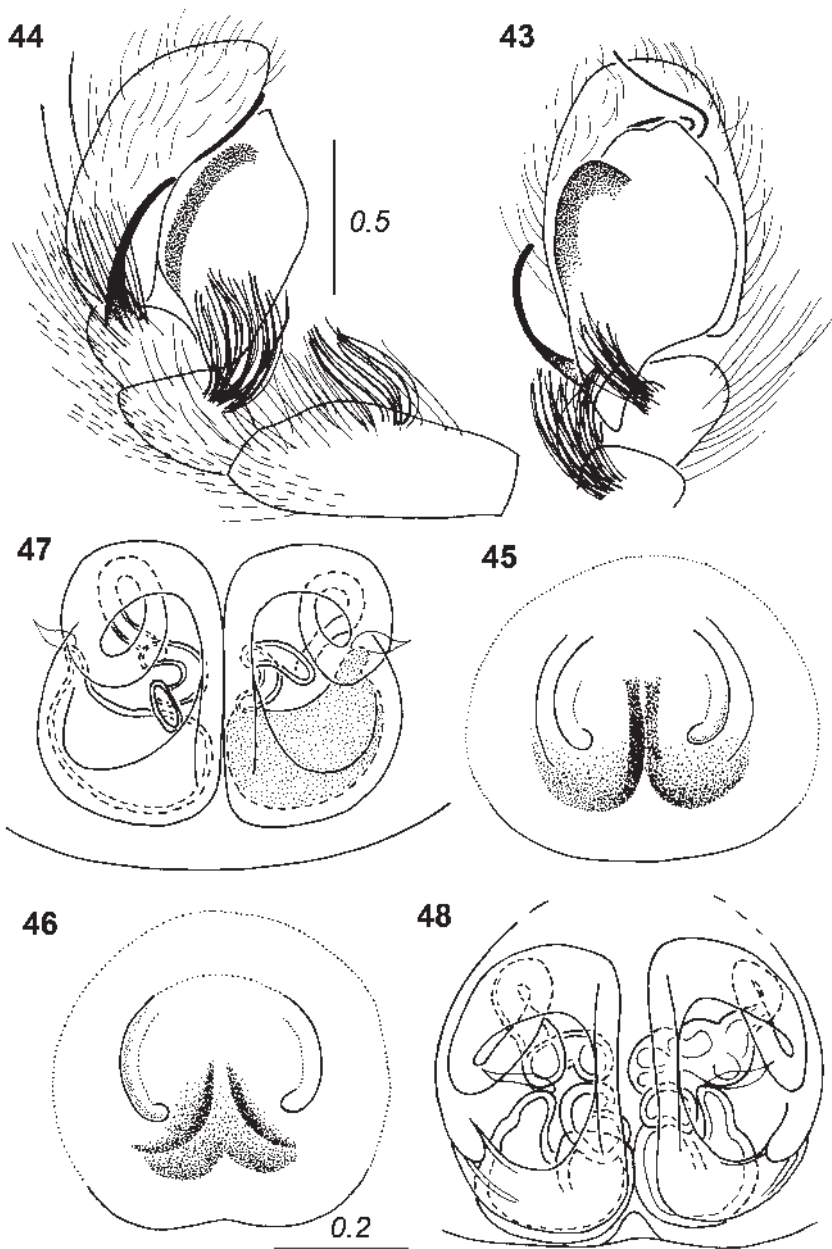
Langona pilosa WESOŁOWSKA 2006: 237.

MATERIAL EXAMINED

NAMIBIA, Etosha National Park, 21°S:16°E, pitfall trap, 13 males, 1 female, 19.XI.1996, leg. A. RUSSELL-SMITH (MRAC); Windhoek, 22°35'S:17°05'E, 1 male, III.1991, leg. V. ROTH (CAS); same locality, 7 males, 4 females, II.1975 (SMN 36126); Lichtenstein, north Windhoek distr., under rocks, 1 male, 19.XII.1988, leg. C. MANNHEIMER (SMN 41992); Kavango Gebiet, Rundu, 17°55'S:19°45'E, 1 male, 10.III.1990, leg. W. PULAWSKI (CAS).

DESCRIPTION

Measurements (male/female). Cephalothorax: length 2.3-2.8/3.0-3.1, width 1.7-1.9/2.2-2.3, height 1.0-1.2/1.3. Abdomen: length 2.1-2.5/2.9-3.5, width 1.6-1.9/2.3-2.7. Eye field: length 0.9-1.0/1.0-1.1, anterior and posterior width 1.3-1.5/1.5-1.6.



43-48. *Langona pilosa*: 43 - palpal organ, ventral view, 44 - palpal organ, lateral view, 45, 46 - epigyne, 47, 48 - internal structure of epigyne

Male. Carapace pear-shaped, long, moderately high, brown with black area near eyes. Eye field short, clothed in whitish hairs clinging to surface, stiff short rod bristles on anterior part of eye field, eyes of anterior row surround by white scales. Two light stripes comprised of white hairs on thoracic part, long brown bristles on dark area, some light hairs on slopes. Clypeus light brown with dark hairs. Chelicerae orange, toothless. Labium and endites yellow, sternum brown. Abdomen with light sides, large greyish brown leaf-shaped patch with light wide serrate median streak on dorsum. Brown hairs cover dorsum of abdomen, long and dense at anterior margin. In some specimens hairs rubbed off; dorsum with large brown scutum covering about two third of its length. Venter light. Spinnerets black. Legs yellowish orange, bearing brown hairs and long spines, dark scopulae on tarsi. Pedipalps brown, bulb and cymbium almost black, whole palp very pilose, hairs dense and long; white hairs on dorsum of femur, patella, tibia and base of cymbium, black hairs on ventral surface of femur and on sides other segments, large black tuft on tibia ventrally (Fig. 44). Tibial apophysis very thin and long (Figs 43, 44).

Female. Like male, but slightly larger and colouration less contrasted. Eye field with five ill-defined lighter spots. Sternum yellow. Sides of abdomen marked with small dark stains. Epigyne with narrow horseshoe-shaped depression (Figs 45, 46). Internal structure of epigyne similar to that in "*Langelurillus*" *ignorabilis* WESOŁOWSKA & CUMMING, 2008 from Zimbabwe, but differs slightly in course of seminal ducts (compare Figs 47, 48 herein with Figs 76, 77 in WESOŁOWSKA & CUMMING 2008).

DISTRIBUTION

Hitherto known only from Namibia.

REMARKS

The length of male palpal tibial apophysis in male pedipalp shows some variety, but is longer than in *L. bethae*.

The female of this species is described for the first time here.

***Langona sabulosa* sp. n.**

Figs 49-55, 90-91

DIAGNOSIS

The male is similar to *Langona hirsuta* HADDAD & WESOŁOWSKA, 2011 but differs in colouration, having contrasting pattern of abdomen (uniform in *L. hirsuta*) and three light patches on eye field. The pedipalps are yellow (dark brown in *L. hirsuta*), less hairy, the tibial palpal apophysis is shorter and bulb narrower. The female has unique form of epigyne with small gonopores.

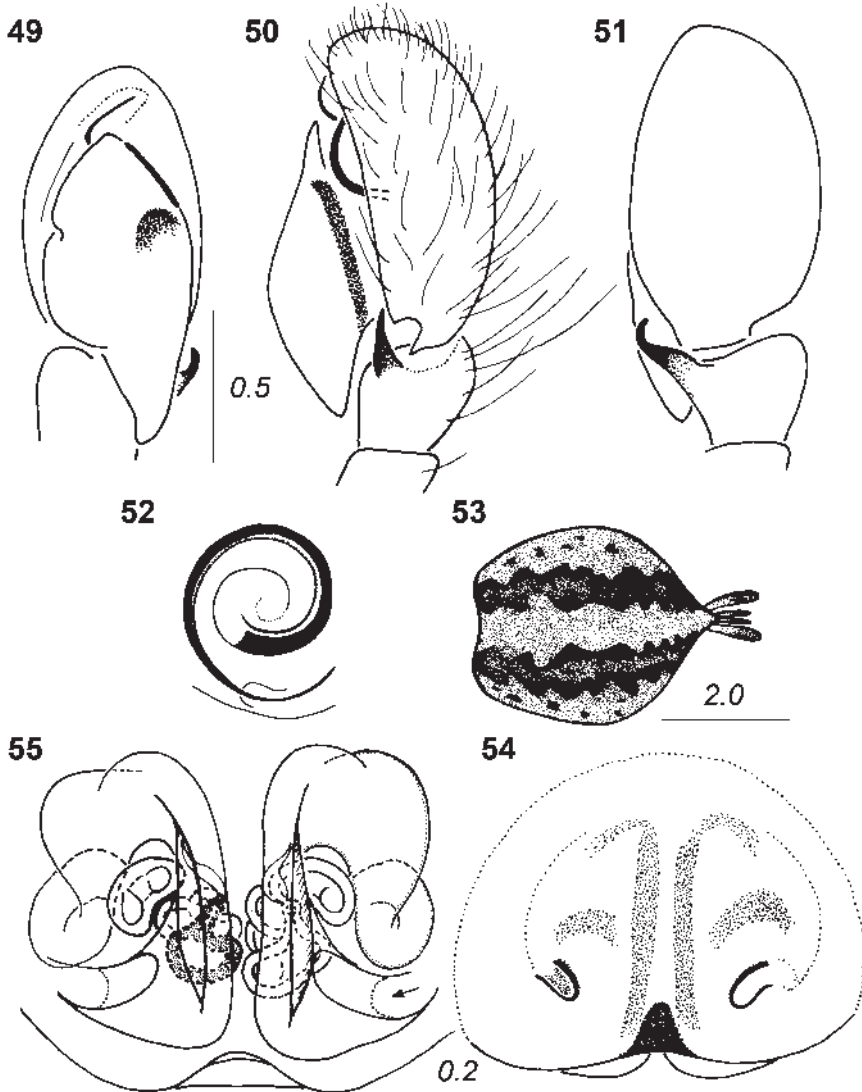
ETYMOLOGY

The name refers to the habitat of the species.

MATERIAL EXAMINED

Holotype: female, NAMIBIA, Karasburg, Middelpos, 28°14'S:17°51'E, dunes, pitfall trap, 25-28.III.2003, leg. R. POLER & F. VAN DEVENTER (NMBA).

Paratypes: NAMIBIA, Keetmanshoop, oase, 28°44'S:17°54'E, dunes, pitfall trap, 26-29.III.2003, 1 female, leg. R. POLER & F. VAN DEVENTER (NMBA); Etosha National



49-55. *Langona sabulosa* sp. n., paratypes: 49 - palpal organ, ventral view, 50 - palpal organ, lateral view, 51 - palpal organ, dorsal view, 52 - embolus, apical view, 53 - abdominal pattern of female, 54 - epigyne, 55 - internal structure of epigyne

Park, pitfall trap, 11.XI.1996, 1 female, leg. A. RUSSELL-SMITH (MRAC); same locality, Andoni North, 12.XI.1996, 9 males, 2 females, 1 imm., leg. A. RUSSELL-SMITH (MRAC); Rehoboth distr., 8 km N from Rehoboth, 23°15'S:17°05'E, 15.II.1990, 1 male, leg. W. PULAWSKI (CAS); same locality, 7.II.1990, 1 male, leg. W. PULAWSKI (CAS).

DESCRIPTION

Measurements (male/female). Cephalothorax: length 2.2-2.9/3.4-4.0, width 1.8-2.3/2.6-3.0, height 1.2-1.3/1.4-1.6. Abdomen: length 2.2-2.6/4.2-4.5, width 1.7-2.1/3.6-3.9. Eye field: length 1.0-1.2/1.4-1.6, anterior width 1.4-1.5/1.8-1.9, posterior width 1.3-1.4/1.9-2.0.

Male. General appearance as in Figs 90, 91. Carapace pear-shaped, widest at coxae III, moderately high, brown with blackish eye field. Whole carapace clothed in dense short whitish hairs, among them some long brown bristles on eye field, short rod setae on anterior part of ocular area. Two faint white streaks on carapace, three rounded white spots in centre of eye field. In some specimens carapace rubbed off. Anterior eyes fringed with white scales. Fovea readily visible. Chelicerae toothless, yellow. Labium and endites light, sternum dark brown clothed in whitish hairs. Abdomen oval, on dorsum large leaf shaped blackish brown patch with median irregular light stripe composed of whitish hairs (Fig. 90); sides mottled, marked with numerous brownish dots on light background. Venter whitish. Spinnerets dark. Legs yellow, sometimes distal parts of their segments slightly darker, scopulae dark. Leg hairs brown and colourless, numerous long spines. Pedipalps light, yellowish orange, clothed in long dense white hairs and long brown bristles. Single thin tibial apophysis (Figs 50, 51), embolus spirally coiled on bulb tip (Figs 49, 52).

Female. Clearly larger than male. Carapace similar as in male. Clypeus medium high, bearing white hairs. Abdomen swollen, almost heart-shaped (Fig. 53), its pattern as in male but lighter. Abdominal dorsum covered with hairs clinging to surface and scarce longer brown bristles. Spinnerets long. Legs yellowish brown, darker rings on proximal and distal ends of their segments. Epigyne large, triangular, with two small gonopores laterally and small pocket at epigastic furrow (Fig. 54). Internal structure of epigyne as in Fig. 55; gonopores situated posteriorly, seminal ducts with big enlargements, receptacles composed with a few loose chambers.

DISTRIBUTION

Known only from Namibia.

REMARKS

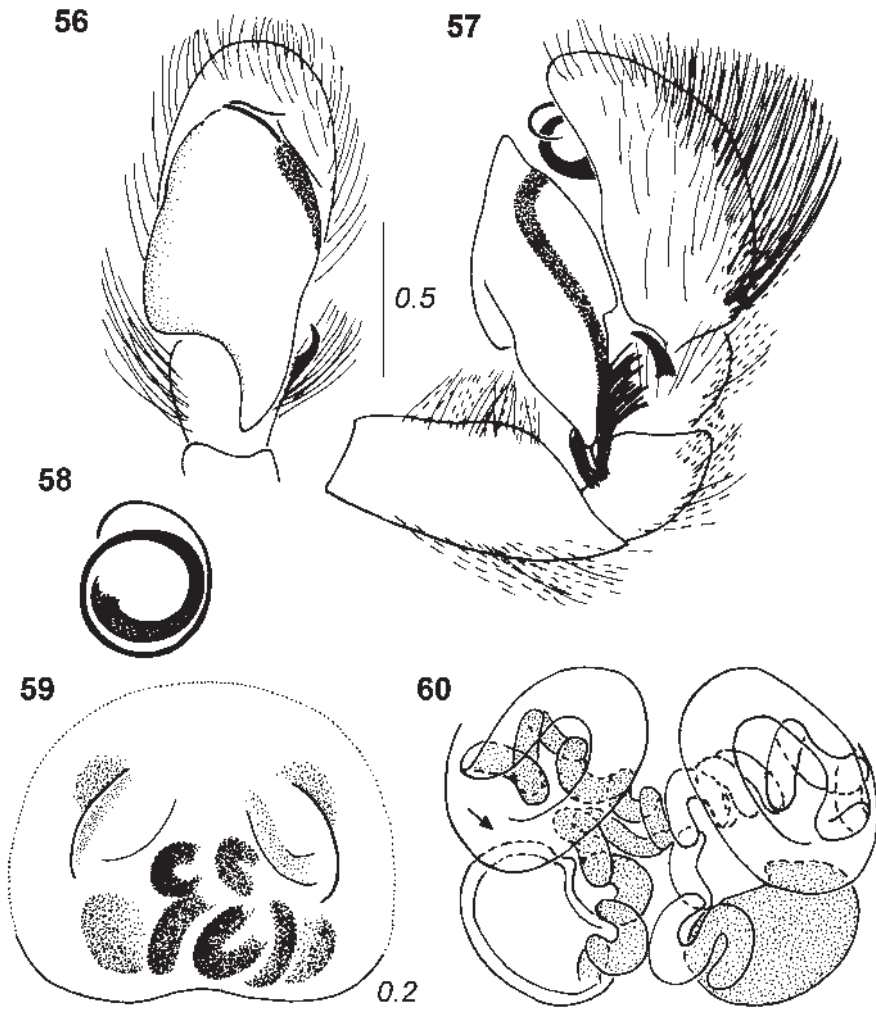
The placement of this species in the genus *Langona* is tentative and is based on toothless chelicerae and similarities of the male to the members of this genus. However, the species differs in some details from *Langona* (rod hairs on eye field, absence of tuft of stout bristles at tibial apophysis in male palp, unlike form of epigyne) and clarification of the species' relationships requires a revision of Aelurillinae.

Langona tortuosa sp. n.

Figs 56-60

DIAGNOSIS

The species resembles *Langona pilosa* WESOŁOWSKA, 2006. The male is recognizable by having clearly shorter tibial apophysis (in *L. pilosa* apophysis equal to half length of cymbium). The female has far longer seminal ducts, forming many twists with smaller diameter of initial loop than in *L. pilosa*.



56-60. *Langona tortuosa* sp. n., paratype (male) and holotype (female): 56 - palpal organ, ventral view, 57 - palpal organ, lateral view, 58 - embolus, apical view, 59 - epigyne, 60 - internal structure of epigyne

ETYMOLOGY

From Latin, give the word meaning "winding" and refers to the course of seminal ducts, which is very meandering.

MATERIAL EXAMINED

Holotype: female, NAMIBIA, West Caprivi, 26 km W from Kongola, 17°48'S:23°05'E, pitfall trap, 31.X-5.XI.1987, leg. E. MARAIS (SMN 41462).

Paratypes: together with holotype, 3 males; ZIMBABWE: Mataberland, Thuli Safari Area, Shashe Wilderness Camp, 21°58'S:29°07'E, 1 male, 8-11.IV.1990, leg. Falcon College (NMZ/A 9880).

DESCRIPTION

Measurements (male/female). Cephalothorax: length 2.4-2.5/2.8, width 1.7-1.8/2.3, height 1.0-1.1/1.3. Abdomen: length 1.9-2.6/2.6, width 1.4-2.0/2.2. Eye field: length 0.9-1.0/1.1, anterior and posterior width 1.4-1.5/1.6.

Male. Medium sized, pilose spider. Carapace oval, moderately high, dark brown, clothed in dense light greyish hairs. Eye field short, black, with very dense greyish hairs and thick short rod-like bristles anteriorly. Anterior median eyes surround by very small fawn scales. Clypeus with light hairs. Chelicerae toothless. Labium and endites light brown, sternum darker. Abdomen oval, blackish brown, probably bald, with large scutum covering almost whole dorsum. Venter paler, light brownish. Spinnerets blackish. Leg formula 3412. Legs light brown, with darker patches, their spines numerous, long, pale; hairs brown. Tarsi with dark scopulae. Pedipalps brown, very hairy. Femur ventrally with long whitish and brown hairs, all segments - including base of cymbium - dorsally from retrolateral side clothed in dense long white hairs, prolaterally hairs dark. Cymbium short, hairs covering majority part of cymbial dorsum very long, dense, dark and glossy, give angular look of palp (in lateral view, Fig. 57). Tuft of very long and dense blackish hairs on palpal patella ventrally. Tibia with single apophysis (Figs 56, 57). Bulb oval with triangular posterior lobe; embolus hidden between bulb and cymbium, coiled in bulb tip, thin and long (Figs 56, 58).

Female. Slightly larger than male, similarly coloured. Abdomen brown with trace of median serrate belt. Epigyne with two shallow depressions laterally (Fig. 59). Seminal ducts very long, initially weakly sclerotized, form loop, in distal parts more sclerotized, very convoluted, receptacles single-chambered, bean-shaped (Fig. 60).

DISTRIBUTION

Known from Namibia and Zimbabwe.

REMARKS

The placement of this species in the genus *Langona* is tentative, probably a new genus should be created for this species and a few related ones after revision of the African Aelurillinae.

***Langona zimbabwensis* WESOŁOWSKA & CUMMING, 2011**

Figs 61-64

Langona zimbabwensis WESOŁOWSKA & CUMMING 2011: 84.

MATERIAL EXAMINED

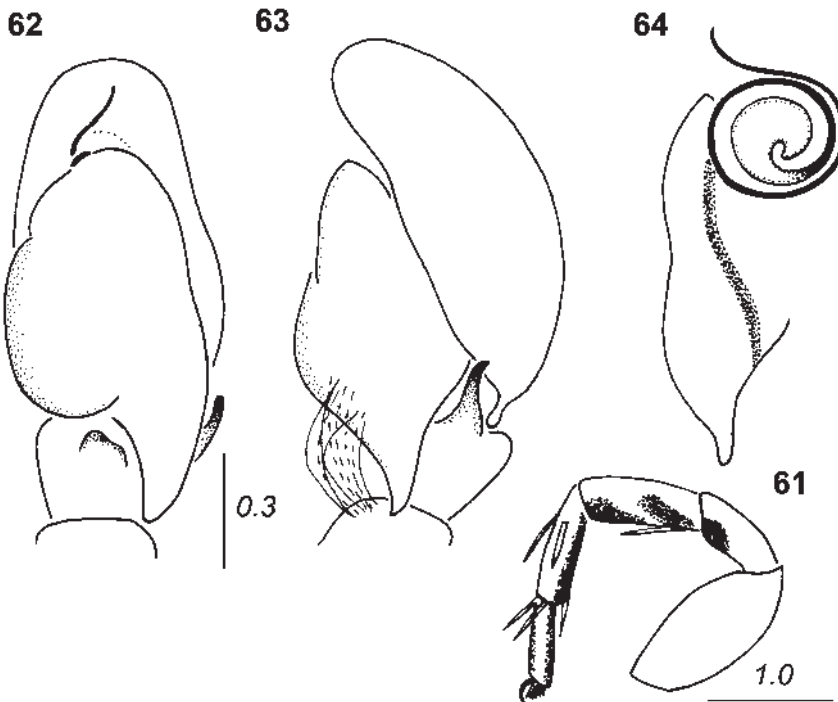
ZIMBABWE, Chizarira National Park, Kaswiswi Camp, Muchene river, 17°42'S:27°55'E, 15 males, 21-27.X.2009, leg. L. CHARI (MRAC).

DESCRIPTION

Description in WESOŁOWSKA & CUMMING (2011). Structure of male pedipalp shown in Figs 62-64. Colouration of first leg as in Fig. 61.

DISTRIBUTION

Known only from Zimbabwe.



61-64. *Langona zimbabwensis*: 61 – first leg, 62 - palpal organ, ventral view, 63 - palpal organ, lateral view, 64 – bulb and embolus apicolateral view (cymbium removed)

***Mihroheros termitophagus* WESOŁOWSKA & CUMMING, 1999**

Mihroheros termitophagus WESOŁOWSKA & CUMMING 1999: 204.

MATERIAL EXAMINED

BOTSWANA, island on Moanachira, 19°00'S:23°25'E, short grass in *Acacia nigrescens* woodland, 1 female, 17.VII.1977, leg. A. RUSSELL-SMITH (NHM); Okawango, mopane woodland Maxwee, 19°20'S:23°25'E, 1 male, 30.VI.1976, leg. F. WANLESS (NHM); same locality, numerous males and females, 21.IV.1976 (NHM).

DISTRIBUTION

Known from South Africa and Zimbabwe, in Botswana recorded for the first time.

***Mogrus matisi* (BERLAND & MILLOT, 1941)**

Philaeus matisi BERLAND & MILLOT 1941: 341.

Philaeus senilis DENIS: 1955: 126.

Mogrus dillae PRÓSZYŃSKI 1989: 40; WESOŁOWSKA & VAN HARTEN 1994: 56; WESOŁOWSKA & RUSSELL-SMITH 2000: 70.

Mogrus matisi WESOŁOWSKA 2003b: 426; Logunov 2004: 88; WESOŁOWSKA & VAN HARTEN 2007: 235; Wesołowska & Tomasiewicz 2008: 28.

MATERIAL EXAMINED

ZIMBABWE, Tsholotsho, 19°46'S:27°44'E, 3500 m .a.s.l, 1 male, 8-11.XI.2001, leg. L. SIBANDA (PPRI).

DISTRIBUTION

Widespread in Africa, known from Senegal, Niger, Yemen, Saudi Arabia, Ethiopia, Sudan and Tanzania, for the first time recorded in Zimbabwe. This is the most southern record of the species, far beyond hitherto known range.

***Parajotus refulgens* WESOŁOWSKA, 1999**

Figs 65-68, 92-93

Parajotus refulgens WESOŁOWSKA 1999: 160.

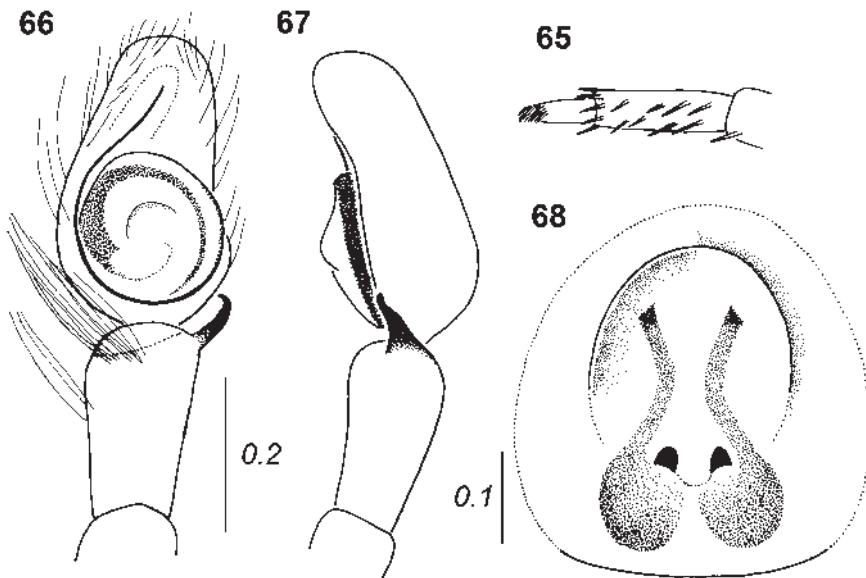
MATERIAL EXAMINED

BOTSWANA, Okawango swamps, Shakawe Fishing Camp, 18°26'S:21°54'E, savanna, 1 male, XII.2001, leg I. VAN NIEKERK (NMBA); ZIMBABWE, Mashonaland East Prov., Lake Chivero, 17°50'S:31°03'E, granite boulders, 1 male, 28.I.2001, leg. M. CUMMING (NHM); same locality, 6 males, 3 females, 9.VIII.2003 (NMZ); same locality, 1 male, 1 female, 6.II.2010; same locality, 1 male, 6.XI.2010 (NMBA).

DESCRIPTION

Measurements (male/female). Cephalothorax: length 1.6-2.1/1.6-1.9, width 1.2-1.8/1.2-1.3, height 0.9-1.2/0.8-0.9. Abdomen: length 1.5-2.7/1.5-1.6, width 1.2-1.9/1.2-1.3. Eye field: length 0.8-1.1/0.8-0.9, anterior width 1.2-1.5/1.2-1.3, posterior width 1.1-1.4/1.1-1.2.

Male. General appearance as in Figs 92, 93. Carapace high, dark brown, eye field large, vicinity of eyes almost black. Wide white streaks composed of light hairs on lateral surfaces of carapace, along lateral margins dark lines. White hairs form three rounded spots on thoracic part of carapace, two small spots in front of posterior lateral eyes and larger patch on eye field between anterior median eyes. Main eyes large, their diameter over twice longer than in anterior laterals. Long brown bristles along first row of eyes. A few characteristic long black scale-like hairs near posterior median eyes (Fig. 93). Anterior eyes encircled by reddish small scales. Clypeus moderately high with mat of white hairs, such hairs cover also bases of chelicerae (Fig. 93). Sternum yellowish, mouth parts light brown. Abdomen ovoid, in some specimens slightly bleached, greyish or reddish brown with traces of three transverse lighter streaks, anteriorly scarce long brown bristles, venter light, sometimes tinged with grey. Spinnerets yellowish. Legs long, yellow or light brown, leg hairs brown. First pair longest, especially tibia and metatarsus. There is large individual variation of males' first leg length. Spines brown, numerous. Spination of leg I: femur dorsally 0-1-1-5, patella prolaterally 0-1; tibia ventrally 2-2-2 (last pair apical), pro- and retrolaterally 1-1; metatarsus dorsally with 2 apical spines, ventrally 13(!) irregularly distributed short spines (Fig. 65). Pedipalps



65-63. *Parajotus refulgens*: 65 – metatarsus of first leg of male, ventral view, 66 – palpal organ, ventral view, 67 – palpal organ, lateral view, 68 – epigyne

yellow or brownish with dark brown hairs on dorsal surface of femur and long dense white hairs on tibia prolaterally and on cymbium (Fig. 93). Palpal tibia long, with single short apophysis, bulb small rounded, embolus thin (Figs 66, 67).

Female. Slightly smaller than male. Black scales near last eyes absent, colouration as in male, abdominal pattern more contrasting. Legs generally white yellowish, with grey spots on base of femora dorsally, distal third of femur length dark grey, also patella and tibia greyish. First pair of legs not such long as in male, they metatarsi without dense ventral spines (on ventral surface only 2 and 2 apical spines). Epigyne weakly sclerotized, with large shallow depression and pair of central pockets (Fig. 68). Internal structure shows in WESOŁOWSKA (1999).

DISTRIBUTION

Known from Zimbabwe and one locality in southern Congo (Zaire), it is the first record from Botswana.

Phlegra karoo WESOŁOWSKA, 2006

Phlegra karoo WESOŁOWSKA 2006: 250; HADDAD & WESOŁOWSKA 2011: 104; WESOŁOWSKA & CUMMING 2011: 88.

MATERIAL EXAMINED

NAMIBIA, Windhoek, 22°35'S:17°05'E, 1 male, 1 female, II.1975 (SMN).

DISTRIBUTION

Known from Namibia, South Africa and Zimbabwe.

Phlegra simplex WESOŁOWSKA & RUSSELL-SMITH, 2000

Phlegra simplex WESOŁOWSKA & RUSSELL-SMITH 2000: 87.

MATERIAL EXAMINED

ZIMBABWE, Tsholotsho, 19°46'S:27°44'E, 3500 m a.s.l., 1 male, 20.I-12.III.1999 leg. L. SIBANDA (MRAC); same locality, 1 male, 11.XI.2001 (MRAC).

DISTRIBUTION

Hitherto known only from the type locality in northern Tanzania, it is the first record from Zimbabwe.

Phlegra tenella WESOŁOWSKA, 2006

Phlegra tenella WESOŁOWSKA 2006: 250.

MATERIAL EXAMINED

NAMIBIA, Mariental, Middelploas, 24°16'S:18°34'E, dunes, pitfall trap, 1 male, 10-13.IV.2003, leg. R. POLER & F. VAN DEVENTER (NMB).

DISTRIBUTION

Known only from Namibia.

Plexippus lutescens sp. n.

Figs 69-70, 94

DIAGNOSIS

Distinguished from all other *Plexippus* by having the bulb without posterior lobe and very delicate keel on prolateral edge of bulb (strongly sclerotized in other species).

ETYMOLOGY

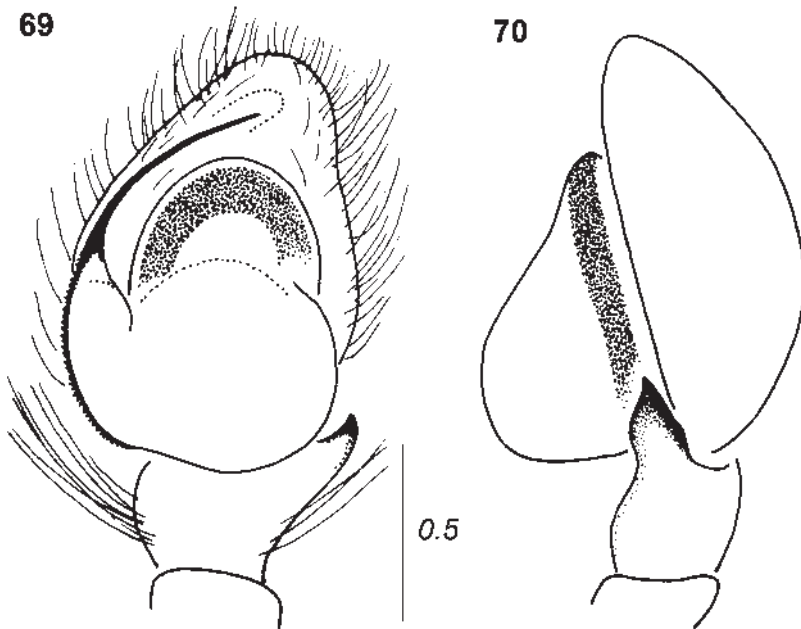
The name refers to light colour of the male bulb.

MATERIAL EXAMINED

Holotype: male, ZIMBABWE, Shamra/Bindura area, 17°24'S:31°25'E, leg. M. CUMMING (MRAC).

Paratype: NAMIBIA, Otjozondjupa region (without precise locality), under stone, 1 male, X.2009, leg. M. FORMAN (MRAC).

Other material: together with holotype, 1 subadult male.



69-70. *Plexippus lutescens* sp. n., holotype: 69 - palpal organ, ventral view, 70 - palpal organ, lateral view

DESCRIPTION

Measurements. Cephalothorax: length 3.3, width 2.4, height 1.3. Abdomen: length 4.0, width 2.1. Eye field: length 1.4, anterior and posterior width 1.9.

Male. General appearance as in Fig. 94. Carapace oval, dark brown, clothed in dark hairs, long brown bristles on eye field. White hairs form median stripe beginning from centre of eye field and running to posterior edge of carapace, two white stripes on lateral slopes, dark narrow line along lateral margins of carapace. Fovea clearly visible. Anterior eyes encircled with small scales, fawn from above, white from below. Chelicerae brown, unidentate. Labium and endites brownish with yellow tips, sternum brown. Abdomen ovoid, dark, brownish russet with slightly lighter median streak laterally framed by narrow whitish lines (Fig. 94) (in paratype abdomen with wide light streak, covered with orange hairs). Colourless hairs cover abdomen, among them long brown bristles. Venter orange, tinged with grey, large triangular patch in centre with three longitudinal darker lines. Spinnerets brown. Legs brown with orange tarsi. Leg hairs and spines dark, some whitish scales on femora. Pedipalps with single short tibial apophysis (Fig. 70). Bulb without lateral lobe (present in other species in the genus), very light, yellowish white. Embolus thin, delicate serrate keel on prolateral side of bulb (Fig. 69).

Female unknown.

DISTRIBUTION

Known from Namibia and Zimbabwe.

***Plexippus tsholotsho* sp. n.**

Figs 71-72

DIAGNOSIS

The epigyne with notches on sides, as in *Plexippus paykulli* (AUDOUIN, 1826), but differs by having meandering seminal ducts and remarkable sclerotization of the vicinity of gonopores.

ETYMOLOGY

The name is a noun in apposition, referring to the type locality.

MATERIAL EXAMINED

Holotype: female, ZIMBABWE, Tsholotsho, 19°46'S:27°44'E, 3500 m a.s.l., 10.I.2003, leg. L. SIBANDA (MRAC).

DESCRIPTION

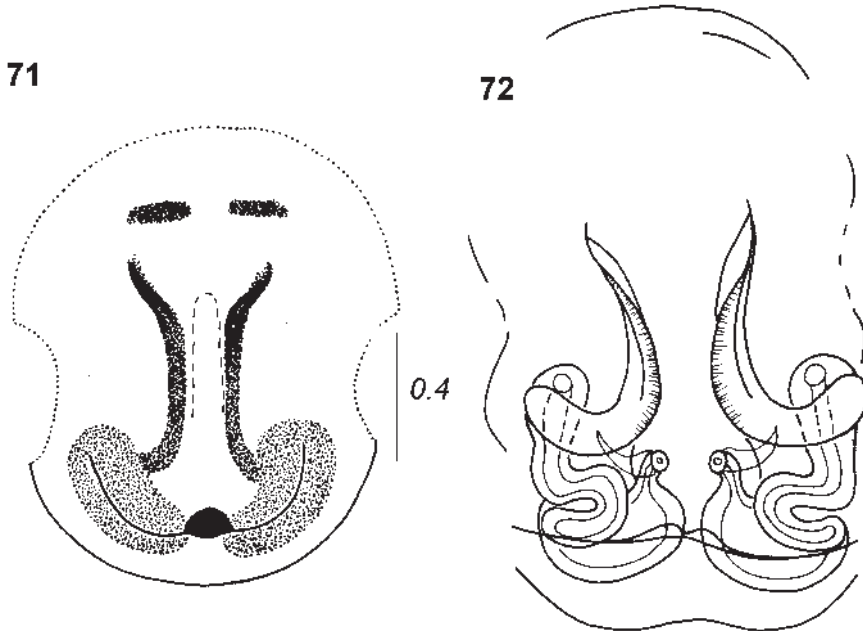
Measurements. Cephalothorax: length 4.0, width 3.1, height 1.7. Abdomen: length 5.2, width 3.7. Eye field: length 1.8, anterior and posterior width 2.3.

Male unknown.

Female. Large spider. Carapace oval, dark brown, near eyes black, foveal area lighter, brownish orange. Whole carapace covered with thin brown hairs, long brown bristles near eyes, fawn scales encircle eyes of anterior row. Clypeus dark. Mouth parts and sternum brown. Abdomen ovoid, dark brown with wide light median streak, the streak clothed in reddish hairs. Scarce long brown bristles on abdominal dorsum. Venter tinged with grey, clothed in dark hairs. Spinnerets greyish brown. Legs brown with orange tarsi. Leg hairs and spines dark. Epigyne large, with notches on sides (Fig. 72). Central part with dish depression, plugged with waxy secretion. Vicinity of gonopores very strongly sclerotized, with large "wings", seminal ducts meandering (Fig. 72).

DISTRIBUTION

Known only from the type locality in Zimbabwe.



71-72. *Plexippus tsholotsho* sp. n., holotype: 71 - epigyne, 72 - internal structure of epigyne

Pseudicius matabelensis sp. n.

Figs 73-78

DIAGNOSIS

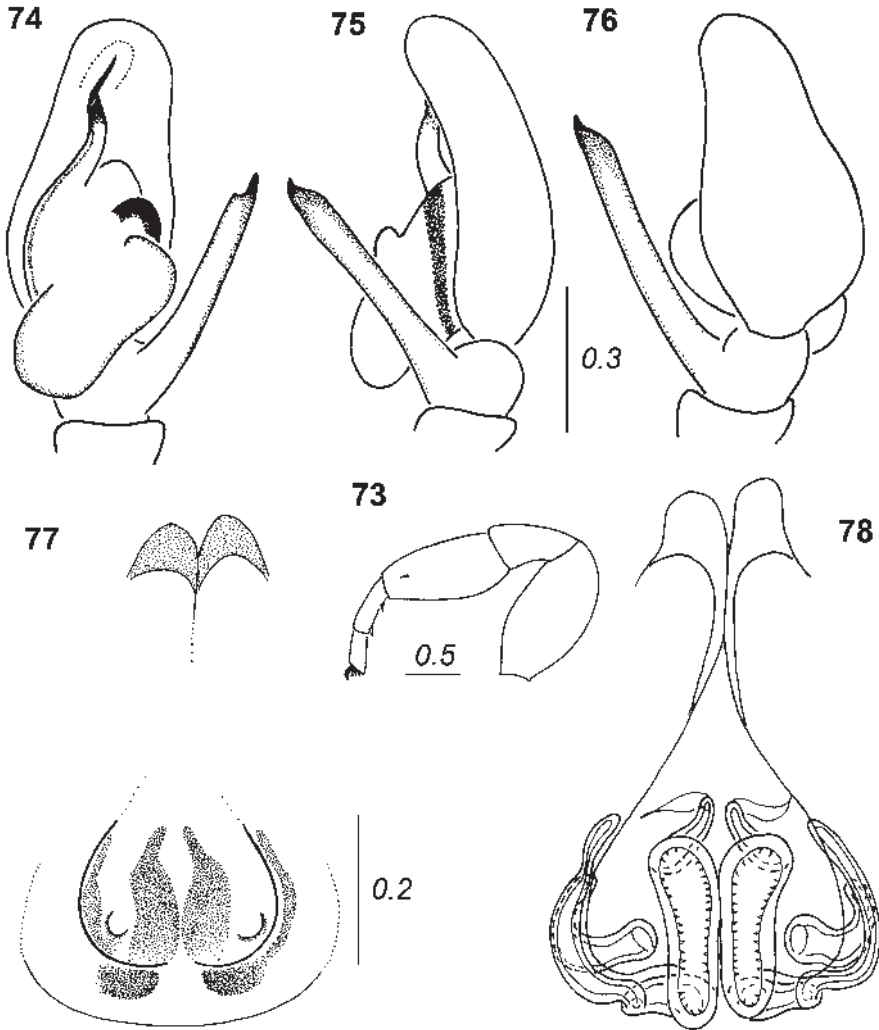
The male is distinctive in having the tibial apophysis extremely long (equal to the length of cymbium). The female is recognizable by the position of epigynal pockets which are located very anteriorly.

ETYMOLOGY

The name is derived from the region in Zimbabwe, in which the type locality is placed.

MATERIAL EXAMINED

Holotype: male, ZIMBABWE, Tsholotsho, 15°45'S:29°44'E, 3500 m a.s.l., 14-17.IX.2007, leg. L. SIBANDA (MRAC).



73-78. *Pseudicius matabelensis* sp. n., paratypes: 73 - first leg, 74 - palpal organ, ventral view, 75 - palpal organ, lateral view, 76 - palpal organ, 77 epigyne, 78 - internal structure of epigyne

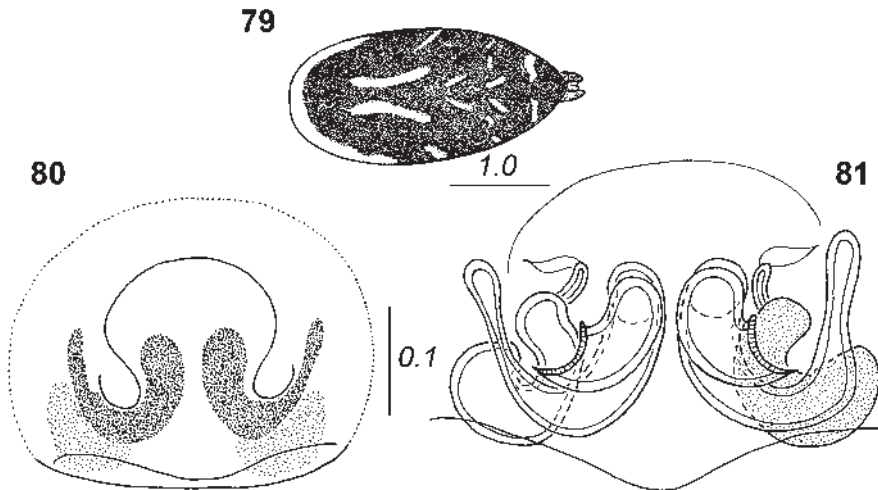
Paratypes: ZIMBABWE, Lowveld SE, Malilangwe Wildlife Reserve, Hakamela Camp, 21°10'S:31°40'E, 400 m a.s.l., 1 male, 15.XII.1974, leg. M. CUMMING (PPRI); NAMIBIA, Lüderitz distr., Boomriver, 28°00'S:17°03'E, 1 male, 2 females, 11-12.XI.1992 (SMN 43018); Maltahöhe distr., Zais, 24°S:16°E, in mud wasp nest, 1 male, 28.X.1990, leg. MARILYN (SMN 42421); same locality, in mud wasp nest, 1 female, 1.XII.1984, leg. M. BRIGEFORD (SMN 39910).

DESCRIPTION

Measurements (male/female). Cephalothorax: length 1.6-1.9/1.7, width 1.1-1.3/1.2, height 0.5-0.6/0.5. Abdomen: length 1.7-2.3/2.0, width 1.0-1.3/1.3. Eye field: length 0.8-0.9/0.7, anterior width 0.9/1.0, posterior width 1.0/1.1.

Male. Small spider. Carapace oval, flat, dark brown with almost black eye field. Ocular area with metallic shine. Colourless delicate hairs cover carapace, near eyes some longer thin bristles. Anterior eyes framed below with very small light scales. Chelicerae large, unidentate. Mouth parts and sternum brown. Stridulatory apparatus present (leg-carapace type). Abdomen elongated, olive-brownish with traces of two lateral light stripes, small anterior scutum on dorsum, clothed in delicate hairs. Venter and spinnerets dark brown. First pair of legs dark brown, very stout, their tibiae strongly swollen (Fig. 73) with short thick spine on prolateral surface distally. Hairs on leg I scarce, long, thin. Other legs light brown, only lateral surface of femora darker. Pedipalps brown. Tibial apophysis single, straight, extremely long (Figs 74-76).

Female. Similar to male, white hairs on clypeus. First leg not stouter, its spines as in male. Epigyne elongated with large depression and two pockets placed anteriorly, far from depression (Fig. 77). Internal structure as in Fig. 78, receptacles strongly sclerotized, elongated, situated along length of body.



79-81. *Pseudicius solitarius*: 79 – abdominal pattern, 80 – epigyne, 81 – internal structure of epigyne

DISTRIBUTION

Known from Namibia and Zimbabwe.

***Pseudicius solitarius* HADDAD & WESOŁOWSKA, 2011**

Figs 79-81

Pseudicius solitarius HADDAD & WESOŁOWSKA 2011: 117.

MATERIAL EXAMINED

NAMIBIA, Heretoland East, Eiseb river, 20°38'S:20°05'E, 2 females, 17.VI.1988, leg. E. MARAIS (SMN 41895); Etosha Pan, 18°36'S:16°14'E, 1 female, 1.V.1987, leg. MARAIS & IRISH (SMN 41310); Bethanien distr., Aukan, 26°49'S:16°56'E, pitfall trap, 1 female, 7-8.VIII.1990, leg C. ROBERTS & E. MARAIS (SMN 41936).

DESCRIPTION

Measurements. Cephalothorax: length 1.9, width 1.2, height 0.6. Abdomen: length 2.4, width 1.3. Eye field: length 0.9, anterior width 1.0, posterior width 1.1.

Female. Carapace oval, very flat, brown with black eye field. Greyish hairs on carapace, brown bristles near eyes, row of stiff long bristles on lateral sides of carapace (stridulatory apparatus). Mouth parts and sternum brown. Abdomen elongated, greyish brown with pattern composed of few pairs of light patches and light band on anterior margin stretches on sides (Fig. 79), venter light. Spinnerets brown. Legs light brown with darker patches, first pair slightly darker than others. Epigyne oval, gonopores placed laterally (Fig. 80). Internal structure of epigyne as in Fig. 81.

DISTRIBUTION

Known from South Africa, in Namibia recorded for the first time.

***Thyene leighi* PECKHAM & PECKHAM, 1903**

Figs 82-84

Thyene leighi PECKHAM & PECKHAM 1903: 225; WESOŁOWSKA & CUMMING, 2011: 99.

MATERIAL EXAMINED

ZIMBABWE: Mana Pools, banks of Zambezi, 19°46'S:27°44'E, 6-10.X.2003, 3 males, 2 subadult. males, leg. M. CUMMING (MRAC); Lowveld SE, Malilangwe Wildlife Reserve, 21°10'S:31°40'E, Hakamela Camp, 13-15-XII.2004, 1 male, leg. M. CUMMING (MRAC).

DESCRIPTION

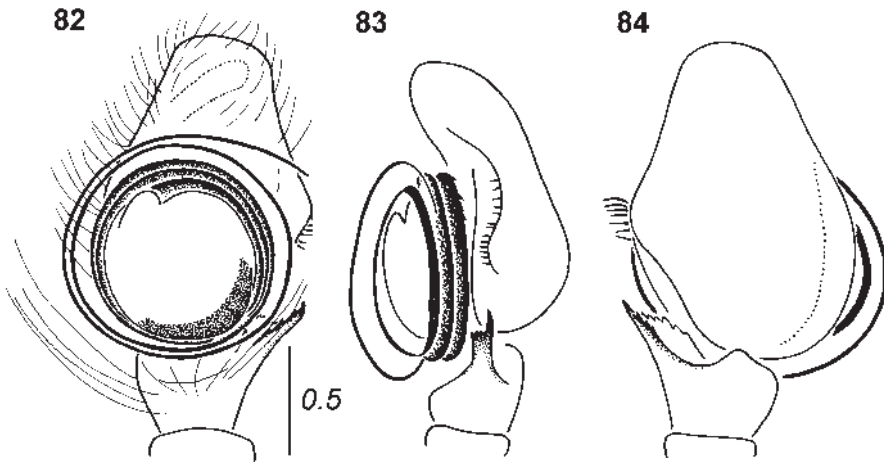
Measurements. Cephalothorax: length 3.5, width 2.9, height 1.2. Abdomen: length 4.5, width 2.1. Eye field: length 1.3, anterior width 1.9, posterior width 2.0.

Male. Large spider. Carapace oval, broadest posteriorly, light brown, darker at margins; with two white streaks laterally and median broad band on thoracic part. Eyes

surrounded by black rings, some long brown bristles in vicinity of anterior eyes. White scale-like hairs form transverse strip on ocular area behind anterior eyes and two bands laterally from eye field. Chelicerae, clypeus and labium dark brown, endites dark with whitish tips. Sternum and coxae yellowish. Abdomen elongated, narrow, yellowish olive with five pairs of black patches, between them small light spots; in subadult specimens lighter, yellow with two longitudinal brownish streaks laterally. Dorsum of abdomen covered sparsely with brown hairs, venter light yellow. Spinnerets light. First pair of legs longer and thicker than others, brown with almost black femora, in subadult specimens lighter, femora decorated with black transverse stripes on ventral and prolateral surfaces. Legs II-IV yellowish, their femora tinged with grey. Leg hairs and spines brown. Pedipalps brownish, cymbium with row of thick sharp setae on retrolateral edge (Figs 83, 84). Tibial apophysis broad, serrate (Fig. 84). Tegulum rounded, embolus very long, encircling tegulum four times (Fig. 82), initial part of embolus armed with a few small teeth (Fig. 83).

DISTRIBUTION

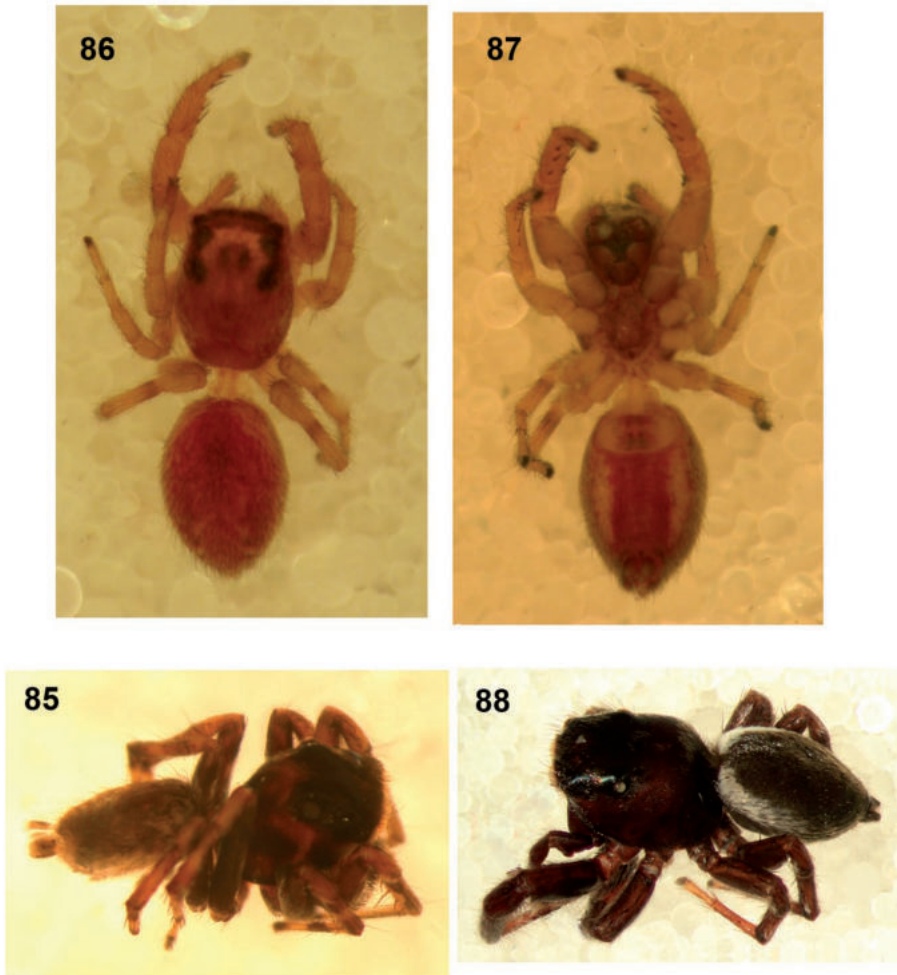
Known from South Africa and Zimbabwe.



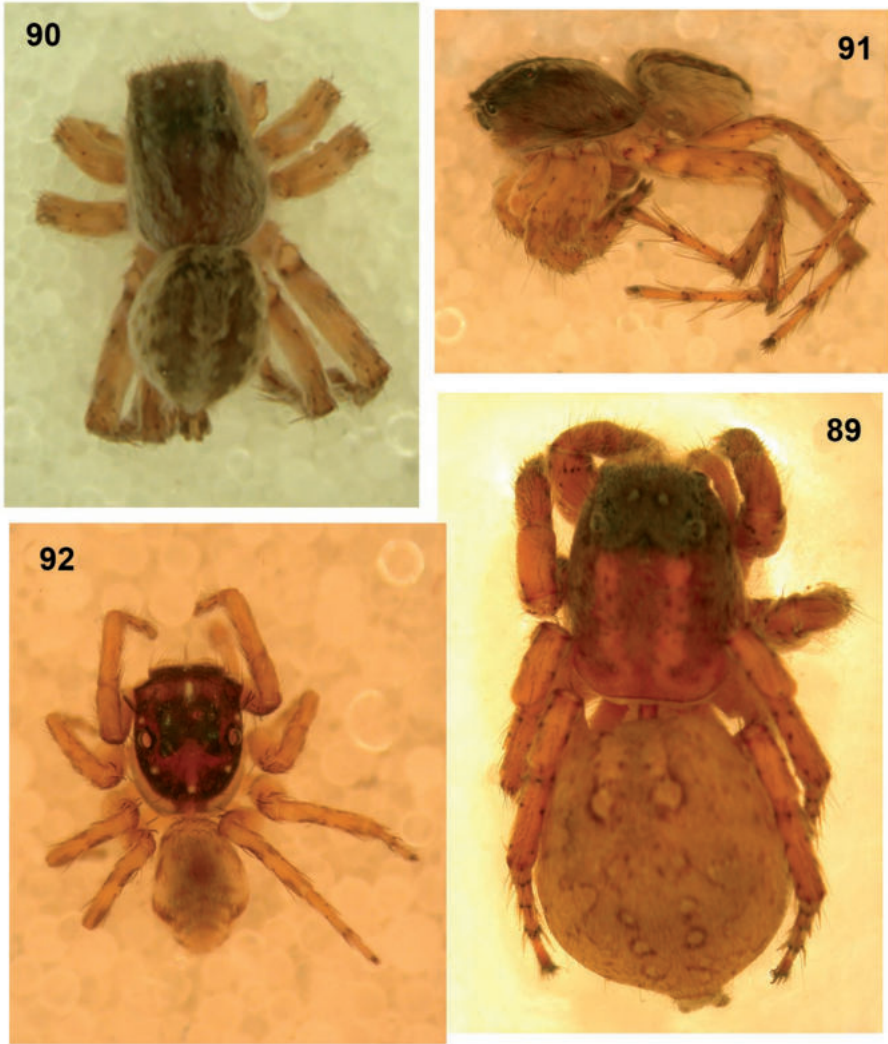
82-84. *Thyene leighi*: 82 - palpal organ, ventral view, 83 - palpal organ, lateral view, 84 - palpal organ, dorsal view

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85-88. 85 - *Cembalea hirsuta*, lateral view, 86 - *Dendryphantes sanguineus*, female, dorsal view, 87 - ditto, ventral view, 88 - *Heliophanus lesserti*, lateral view



89-92. 89 – *Langelurillus sibandai*, dorsal view, 90 – *Langona sabulosa*, dorsal view, 91 – ditto, lateral view, 92 - *Parajotus refulgens*, dorsal view



93-94. 93 - *Parajotus refulgens*, living individual from Zimbabwe, frontal view, (phot. M. CUMMING), 94 - *Plexippus lutescens*, living individual from Namibia, dorsolateral view (phot. M. FORMAN)

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