

## On some Southern African Harpactirinae, with notes on the eumenophorines *Pelinobius muticus* Karsch, 1885 and *Monocentropella* Strand, 1907 (Araneae, Theraphosidae)

Richard C. Gallon

23a Roumania Crescent,  
Llandudno, North Wales, LL30 1UP

### Summary

The taxonomy of five species of Southern African Harpactirinae and two species of Eumenophorinae from East and West Africa is addressed. Two new species of Harpactirinae are proposed: *Harpactirella overdijki* sp. n. and *Idiothele mira* sp. n. *Idiothele nigrofulva* (Pocock, 1898) is redescribed from its types and fresh topotypic material. The previously unknown male of the harpactirine *Ceratogyrus paulseni* Gallon, 2005 is described. *Ceratogyrus ezendami* Gallon, 2001 is transferred to the genus *Augacephalus* and diagnosed from its two congeners *Augacephalus breyeri* (Hewitt, 1919) and *A. junodi* (Simon, 1904). The eumenophorine genus *Pelinobius* Karsch, 1885 is revalidated and proposed as a senior synonym of *Citharischius* Pocock, 1900. *Phoneyusa gregori* Pocock, 1897, *Phoneyusa bettoni* Pocock, 1898, *Citharischius crawshayi* Pocock, 1900 and *Phoneyusa rufa* Berland, 1914 are treated as junior synonyms of *Pelinobius muticus* Karsch, 1885. The monotypic genus *Monocentropella* Strand, 1907 is treated here as a junior synonym of *Eumenophorus* Pocock, 1897.

### Introduction

The two Harpactirinae species *Ceratogyrus ezendami* Gallon, 2001 and *Ceratogyrus paulseni* Gallon, 2005 were described recently from Southern Africa. *Ceratogyrus ezendami* was described from single specimens of both sexes, whereas *C. paulseni* was only known from the female. Additional specimens of both species have been secured subsequently, providing the opportunity to describe the previously unknown male of *C. paulseni* and to further investigate the taxonomy of *C. ezendami*, which is here transferred to the genus *Augacephalus*.

Recent fieldtrips conducted in South Africa, by myself and others, have yielded two new species of Harpactirinae, *Harpactirella overdijki* sp. n. and *Idiothele mira* sp. n., which are described here. These fieldtrips also resulted in the rediscovery of *Idiothele nigrofulva* (Pocock, 1898) at its type locality, Barberton, and fresh topotypic material of this species is described here along with a redescription of Pocock's original types.

Amongst those who keep and breed African theraphosid spiders, it is well known that extreme sexual dimorphism, and mature male size variation is exhibited by the eumenophorine *Citharischius crawshayi* Pocock, 1900 (Baxter, 1993; G. Tansley & J. Clugston pers. comms). Such intraspecific variation is difficult to appreciate without information gleaned from captive specimens and their breeding, and for this reason the taxonomy of this species and closely sympatric species known from males only was investigated; namely *Pelinobius muticus* Karsch, 1885, *Phoneyusa gregori* Pocock, 1897, *Phoneyusa bettoni* Pocock, 1898 and *Phoneyusa rufa* Berland, 1914. These three species of

*Phoneyusa* and *C. crawshayi* are here treated as junior synonyms of *Pelinobius muticus*. The monotypic genus *Monocentropella* is also treated as a junior synonym of *Eumenophorus*.

### Methods

Methods follow Gallon (2002), except that ocular measurements were obtained microscopically using an eyepiece graticule ( $\pm 0.01$  mm). Somatic measurements of the *Harpactirella* and *Idiothele* species were obtained microscopically, owing to their small size.

**Abbreviations:** Eyes: AME=anterior median, ALE=anterior lateral, PME=posterior median, PLE=posterior lateral. Leg spines: DPV=distal proventral, DRV=distal retroventral, MPV=medial proventral, MRV=medial retroventral, MRL=medial retrolateral, MRD=medial retrodorsal, MPL=medial prolateral, DMV=distal midventral, DPD=distal prodorsal, DRD=distal retrodorsal, PPV=proximal proventral, \*indicates a spine in an atypical position, usually placed more proximally. R=right, L=left, PL=prolateral, RL=retrolateral. Spinnerets: DS=distal segment, MS=medial segment. SSR=supra-sutural region. Collections: BMNH=Natural History Museum, London, UK; ISNB=Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium; MNHN=Museum National d'Histoire Naturelle, Paris, France; MRAC=Musée Royal de l'Afrique Centrale, Tervuren, Belgium; OUMNH=Hope Museum, Oxford, UK; PPRI=Plant Protection Research Institute (National Collection of Arachnids), Pretoria, South Africa; SAM=South African Museum, Cape Town, South Africa; TM=Transvaal Museum, Pretoria, South Africa; NMKE=National Museum of Kenya, Nairobi, Kenya; ZMB=Museum für Naturkunde der Humboldt-Universität, Berlin, Germany; ZMH=Zoologisches Museum Hamburg, Germany.

### Subfamily Harpactirinae

*Augacephalus ezendami* (Gallon, 2001) **comb. n.** (Plates 1–4, 9, 12, Figs. 1–7)

*Ceratogyrus ezendami* Gallon, 2001: 6, figs. 10–17 (D♂♀).

**Type material:** Holotype ♂ and paratype ♀ (BMNH) from Mozambique; examined.

**Remarks:** Gallon (2002) partly diagnosed the genus *Augacephalus* on the basis that the male lacked or had a reduced DPV tibial apophysis on leg I. Examination of additional new material confirms that whilst males of *A. junodi* lack a tibial apophysis, this feature is present in *A. breyeri*. The only male of *A. breyeri* available for the revision (Gallon, 2002) was missing a palp and one of its front legs, and it is now believed that the reduced tibial apophysis in this specimen is an artefact of leg regrowth (Gallon, 1999).

Batches of wild caught Theraphosidae from Mozambique, imported into Germany (2007–2008), were found to contain specimens conspecific with *Ceratogyrus ezendami* Gallon, 2001. Examination of this



Plates 1–2: *Augacephalus ezendami* (Gallon, 2001). **1** Adult female; **2** Adult male (OUMNH-2009-043).

new material indicated that *C. ezendami* should be transferred to the genus *Augacephalus* because the female closely resembles that of *A. junodi*, having robust hairy palps and legs I–II. In *Ceratogyrus* species the anterior limbs are not so robust and lack the long orange setae present in *Augacephalus* species.

**Diagnosis:** The presence of a pale sub-abdominal band over and between the booklung covers, contrasting with the dark coloration of the rest of the ventral abdominal surface, distinguishes *A. ezendami* from *A. breyeri*. Females of these two species are further separated by carapace profile, which is smoothly raised in *A. ezendami*, but often abruptly stepped at the fovea in *A. breyeri*. Spermathecal shape also assists in distinguishing females of the three *Augacephalus* species: in *A. breyeri* the spermathecae are flattened with a triangular shape; in *A. ezendami* they are flattened with a slight medial constriction and concave dorsum; in *A. junodi* they are medially constricted, typically with a circular terminal cross-section. The prominence of the long orange setae and density of the ventral femoral fringes on the anterior two leg pairs also differs between females of the species (Plates 3–11): thickest in *A. junodi* and least thick in *A. breyeri*, with *A. ezendami* being intermediate with respect to both of these features. Conversely, the length and prominence of the long isolated emergent setae (which protrude through the short velvety-black setae) on the sternum and coxae differs between females of the species: most prominent in *A. breyeri*, less prominent in *A. ezendami* and not apparent in *A. junodi*. The presence of a distal proventral tibial apophysis on leg I readily distinguishes the male of *A. ezendami* from that of *A. junodi*. The mature male of *A. junodi* is also smaller in body length than that of *A. ezendami*.

**Description: Male** (OUMNH-2009-043): Total length 31.8. Carapace profile low, length 14.2, width 10.9. Abdomen length 13.9, width 8.1. Fovea shallow transverse pit. Ocular tubercle length 1.56, width 1.90. Clypeus 0.67. Eye sizes: AME 0.51, ALE 0.54, PME 0.36, PLE 0.44. Sternum with three pairs of oval sub-marginal sigilla, posterior pair more remote from sternal margin. Labial cuspules obscured by regurgitation. Maxilla with *c.* 150 cuspules (but obscured by long setae). DS of posterior spinneret digitiform. Chelicerae with 10R, 10L teeth on promargin. Stridulatory scopula

of plumose setae on retrolateral cheliceral face, corresponding with scopula of similar plumose setae on prolateral trochanteral face of palp. Leg and palp segment lengths in Table 1. Palpal tibia swollen proximally. Metatarsus I straight. Femur III not incrassate. Legs I–II robust (relative to legs III–IV) with long orange setae, particularly on tibiae. Orange retroventral setal fringes on femora as in female, only less dense. Tarsal scopulae integral. Metatarsal scopulae: leg I 83%, leg II 80%, leg III 66%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 31R, 37L). Spination: leg I tibia 1DRV (0L); leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV (0R), 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV (2R), 1DPV, 1DPD, 1DRD. Remaining leg segments aspinose. Tibial spur (Fig. 2): DPV apophysis long, sub-cylindrical; surmounted megaspine short, curved and mid-inflected, protruding proventrally. Coloration (as in Plate 2): as female except pale carapace striae more extensive and woolly, dorsal abdominal setae long and shaggy with dorsal pattern obscure, and dorsal leg coloration more metallic golden brown. Palpal bulb (Figs. 3–5): tegulum pyriform. Embolus elongated and curved. Single weak retrolateral keel starting at base of embolus and spiralling dorsally at embolic tip. Weak ridges run parallel and below retrolateral keel at base of embolus only. Embolus ovoid in cross-section.

**Female** (OUMNH-2009-043): Total length 41.1. Carapace profile domed at caput, length 19.1, width 15.4 (Plate 12, Fig. 6). Abdomen length 16.4, width 11.9.

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	13.5	7.2	10.2	9.0	6.2
<b>II</b>	11.9	6.5	8.5	8.5	6.0
<b>III</b>	9.5	5.2	6.5	9.0	5.6
<b>IV</b>	12.1	5.9	9.5	11.4	6.2
<b>Palp</b>	7.7	5.0	6.0	–	3.7

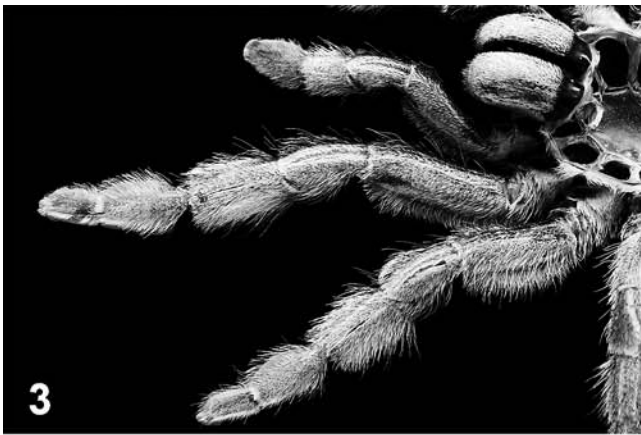
Table 1: *Augacephalus ezendami* (Gallon, 2001). Lengths of leg and palp segments of male (OUMNH-2009-043).

Fovea shallow transverse pit. Ocular tubercle length 2.05, width 2.54. Clypeus 1.03. Eye sizes: AME 0.60, ALE 0.68, PME 0.47, PLE 0.63. Sternum with three pairs of oval submarginal sigilla, posterior pair more remote from sternal margin. Labium with *c.* 90 cuspules. Maxilla with *c.* 250 cuspules. DS of posterior spinneret digitiform. Chelicerae with 9R, 10L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral face, corresponding with scopula of similar plumose setae on prolateral trochanteral face of palp. Leg and palp segment lengths in Table 2. Palp and legs I–II robust (relative to legs III–IV) with long orange setae, particularly on tibiae. Dense orange retroventral setal fringes present on femora of palp and legs I–II only (dispersed long setae on femora III–IV). Tarsal scopulae: integral. Metatarsal scopulae: leg I 80%, leg II 75%,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	14.3	9.2	9.9	8.8	6.1
<b>II</b>	12.0	7.9	8.0	8.2	5.9
<b>III</b>	9.7	6.5	6.1	7.9	5.3
<b>IV</b>	12.6	7.2	9.2	11.1	6.4
<b>Palp</b>	9.8	6.5	6.5	–	6.9

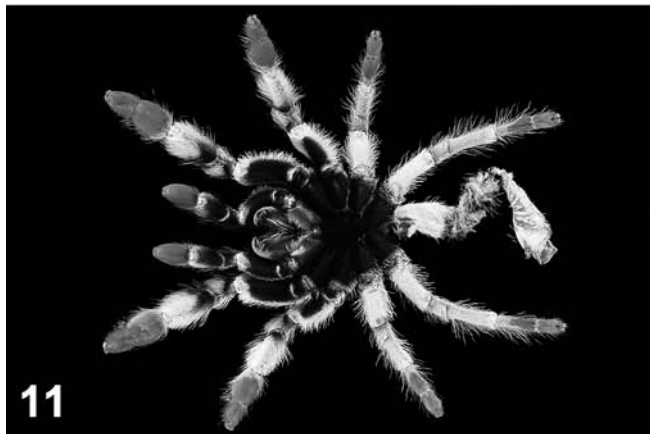
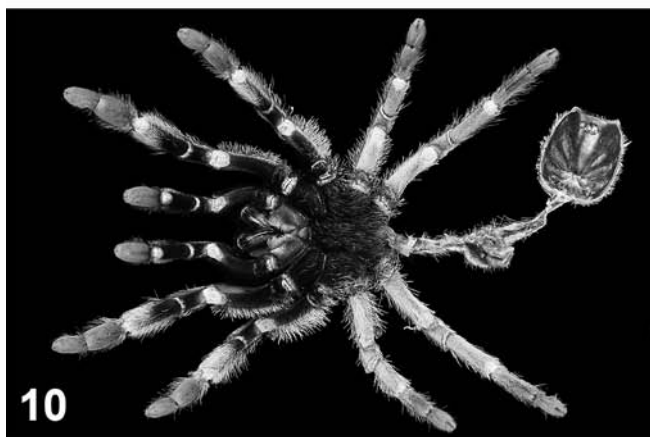
Table 2: *Augacephalus ezendami* (Gallon, 2001). Lengths of leg and palp segments of female (OUMNH-2009-043).

leg III 66%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae but not distally). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 24R, 30L). Spination: palp tibia 3DRV, 3DPV (2R); leg I



Plates 3–8: *Augacephalus* spp. female exuviae. **3–4** *A. ezendami* (Gallon, 2001), Mozambique; **5–6** *A. junodi* (Simon, 1904), Kapama; **7–8** *A. breyeri* (Hewitt, 1919), Swaziland (**3, 5, 7** showing ventral femoral fringe extent; **4, 6, 8** showing sternal setae).

tibia 1DRV, 1DPV; leg II tibia 1DRV, 1DPV; leg III tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV (0R), 1DPD, 1DRD; leg IV tibia 1DRV (3R), 1DPV, metatarsus 1MPV, 1DRV\* (0R), 1DRV (2L), 1DMV, 1DPV, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration (as in Plates 1, 3–4, 9): carapace black with distinct radial golden brown striae (rubbed in this specimen). Chelicerae velvety grey. Legs III–IV, dorsal and retrolateral surfaces of palp and legs I–II beige/brown. Ventral and prolateral surfaces of palp black, except for distal quarter of tibia orange/beige. Ventral and prolateral surfaces of legs I–II black, except for metatarsus and distal three-quarters of tibiae orange/beige. Sternum, coxae and trochanters velvety black



Plates 9–11: *Augacephalus* spp. female exuviae, showing extent of ventral darkening. **9** *A. ezendami* (Gallon, 2001), Mozambique; **10** *A. breyeri* (Hewitt, 1919), Swaziland; **11** *A. junodi* (Simon, 1904), Kapama.



Plate 12: *Augacephalus ezendami* (Gallon, 2001), adult female carapace, dorsal view (OUMNH-2009-043).

with longer emergent setae. Dorsum of abdomen beige/brown with reduced dark pattern of bars, spots and reticulations. Ventral surface of abdomen dark brown with pale orange/brown band over and between all four booklung covers. Spermathecae (Fig. 7): paired, unlobed with slight medial constriction. Basal section wide and flattened in cross-section, termini ovoid in cross-section and concave dorsally. Setal fringe on posterior margin of epigastric scutum composed of short straight setae.

*Material examined*: MOZAMBIQUE: OUMNH-2009-043, 1♂1♀.

*Distribution*: Mozambique, exact location unknown.

*Ecology*: Unknown. Presumably fossorial. Captive females produce single fixed hammock egg-sacs suspended within their retreat, yielding *c.* 95 spiderlings (S. Haller and P. Messenger pers. comms).

*Ceratogyrus paulseni* Gallon, 2005 (Plates 13–14, Figs. 8–13)

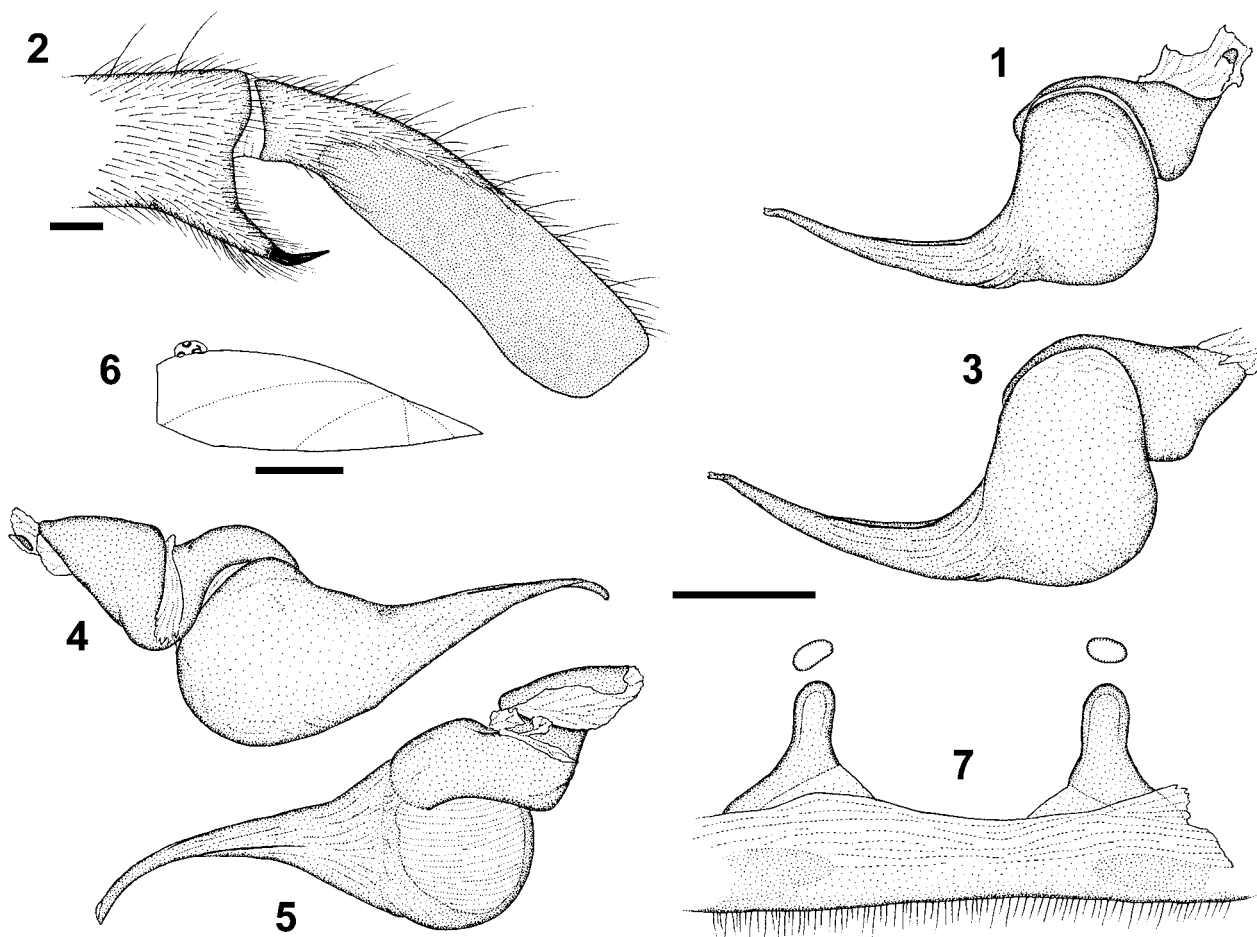
*Ceratogyrus paulseni* Gallon, 2005: 179, figs. 1–7 (D♀).

*Type material*: See Gallon (2005) for type listing and female diagnosis. All types examined.

*Diagnosis*: The male of *Ceratogyrus paulseni* is readily distinguished from all other *Ceratogyrus* species by the absence of a foveal protuberance and the possession of a transverse fovea. The thick, slightly curved, embolus of *C. paulseni* provides further distinction from other *Ceratogyrus* species, which possess more elongated thinner emboli. The pale ventral abdominal surface of *C. paulseni* differs from that of most other *Ceratogyrus* species, where the abdomen is dark brown with a pale anterior sub-abdominal band.

Unlike in females, males of *C. paulseni* lack ventral darkening on the anterior legs and palps, and may consequently be confused with *Pterinochilus* males. However, palpal bulb morphology, particularly the curvature of the embolus, readily distinguishes *C. paulseni* from all known *Pterinochilus* males (Gallon, 2002, 2008, 2009).

*Remarks*: The two males of *C. paulseni* described here were reared to maturity from specimens collected alongside the type females. Gallon (2005) discussed the taxo-



Figs. 1–7: *Augacephalus ezendami* (Gallon, 2001). **1** Palpal bulb, retrolateral view (holotype male BMNH); **2** Tibial spur on left leg I, prolateral view (male OUMNH-2009-043); **3–5** Palpal bulb: **3** Retrolateral view; **4** Ventral view; **5** Dorsal view (male OUMNH-2009-043); **6** Carapace, lateral view (female OUMNH-2009-043); **7** Spermathecae, with distal cross-sections above, dorsal view (female OUMNH-2009-043). Scale lines=1 mm (1–5, 7), 5 mm (6).

onomic placement of this species within the *Augacephalus/Ceratogyrus* clade, speculating that examination of the then unknown male might clarify the taxonomic position of *C. paulseni*, however this still requires further investigation and would benefit from molecular study.

**Description: Male** (PPRI AcAT 2007/13a): Total length 28.0. Carapace profile low, length 12.1, width 9.8. Abdomen length 11.3, width 6.9. Fovea deep transverse slit. Ocular tubercle length 1.26, width 1.51. Clypeus 0.15. Eye sizes: AME 0.42, ALE 0.36, PME 0.28, PLE 0.36. Sternum with three pairs of oval submarginal sigilla, posterior pair more remote from sternal margin. Labium with *c.* 105 cuspules. Maxilla with *c.* 225 cuspules. DS of posterior spinneret digitiform (Fig. 8). Chelicerae with 11R, 10L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral

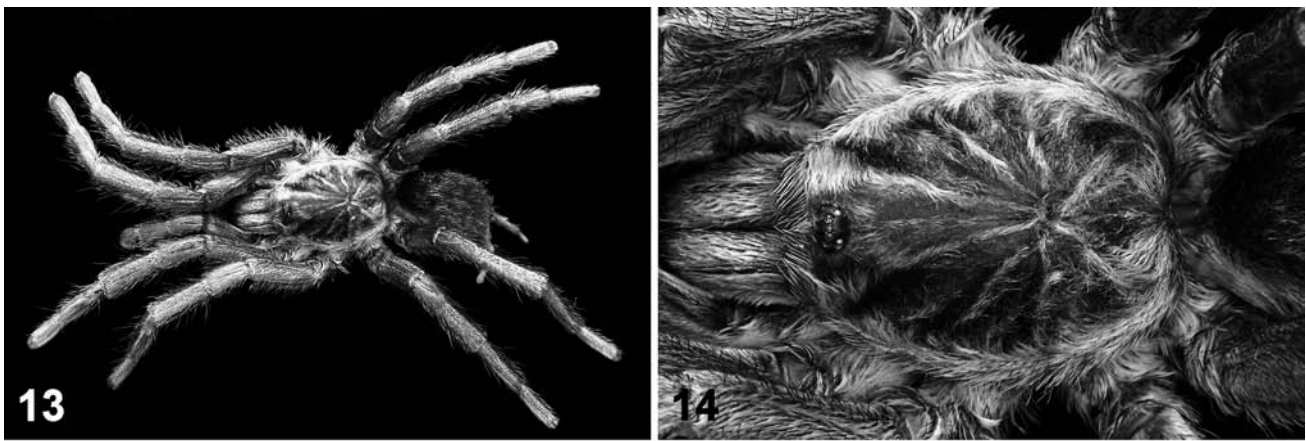
face, corresponding with scopula of similar plumose setae on prolateral trochanteral face of palp. Leg and palp segment lengths in Table 3. Palpal tibia straight. Metatarsus I straight. Femur III not incrassate. Tarsal scopulae integral. Metatarsal scopulae: leg I 80%, leg II 83%, leg III 66%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 44R, 49L). Spination: leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL (0R), 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MRD, 1DRD. Remaining leg segments aspinose. Tibial spur (Fig. 9): DPV apophysis long,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	10.0	5.8	7.7	8.2	6.3
<b>II</b>	9.6	5.3	7.3	7.9	5.7
<b>III</b>	8.5	4.2	6.2	8.6	6.1
<b>IV</b>	10.5	4.9	8.2	11.5	6.5
<b>Palp</b>	6.4	4.1	4.9	–	3.0

Table 3: *Ceratogyrus paulseni* Gallon, 2005. Lengths of leg and palp segments of male (PPRI AcAT 2007/13a).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	9.5	5.8	7.0	7.7	5.6
<b>II</b>	9.0	5.3	6.8	7.2	5.8
<b>III</b>	8.2	4.4	5.9	8.4	5.8
<b>IV</b>	9.8	4.9	7.5	10.6	6.4
<b>Palp</b>	6.3	4.2	4.7	–	3.0

Table 4: *Ceratogyrus paulseni* Gallon, 2005. Lengths of leg and palp segments of male (PPRI AcAT 2007/13b).



Plates 13–14: *Ceratogyrus paulseni* Gallon, 2005. **13** Adult male (PPRI AcAT 2007/13b); **14** Male carapace, dorsal view (PPRI AcAT 2007/13b).

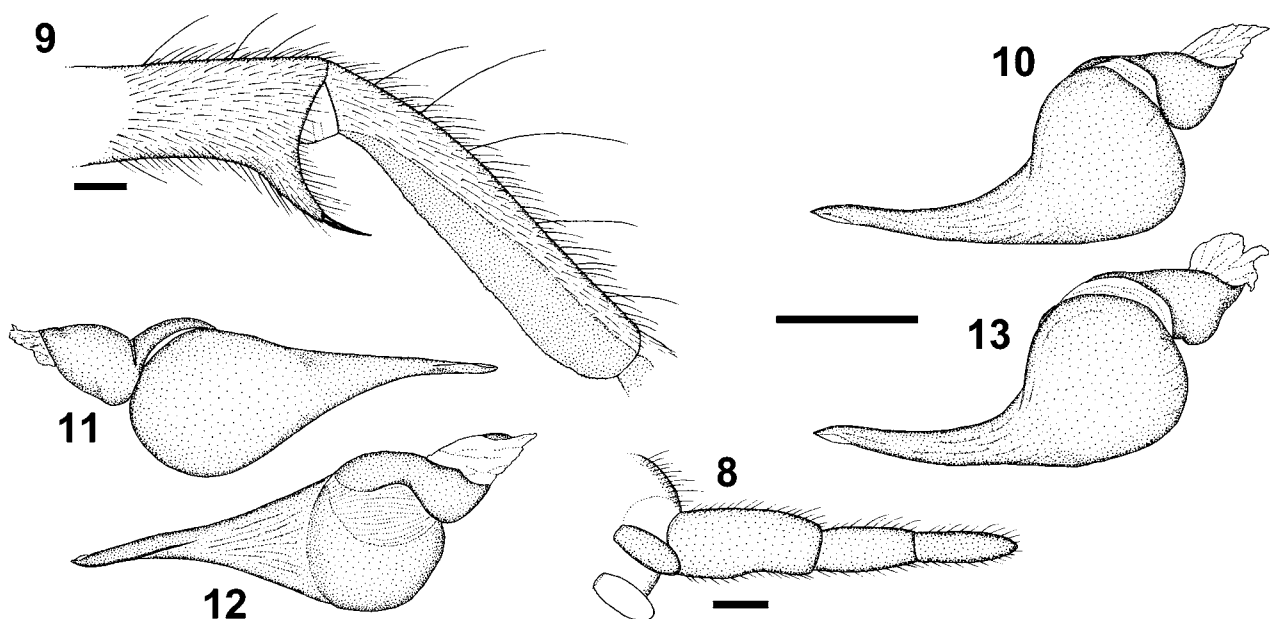
sub-cylindrical; surmounted megaspine long, curved, protruding proventrally. Coloration (as in Plate 13): carapace dark brown with golden beige radial striae and margin. Chelicerae, palps and legs golden grey-brown. Dorsum of abdomen beige with indistinct dark pattern of bars and spots. Venter of abdomen mottled beige with booklung covers and epigastric scutum slightly paler. Sternum, maxilla, palp trochanter, coxa I and trochanter I slightly smoky compared with underside of other limb segments, which are pale grey-brown. Palpal bulb (Figs. 10–12): tegulum pyriform. Embolus thick, elongated and curved very slightly. Embolus weakly tri-keeled; prolateral, ventral and dorsal keels start halfway along embolus. Dorsal keel merges into embolus before tip, prolateral and dorsal keels terminate at embolic tip. Ventral keel forms small flange at base of embolic tip. Embolus compressed laterally.

*Male* (PPRI AcAT 2007/13b). As PPRI AcAT 2007/13a except: Total length 27.4. Carapace length 12.2, width 9.5 (Plate 14). Abdomen length 10.8, width 6.3.

Ocular tubercle length 1.15, width 1.56. Clypeus 0.17. Eye sizes: AME 0.44, ALE 0.31, PME 0.28, PLE 0.31. Labium with *c.* 100 cuspsules. Maxilla with *c.* 210 cuspsules. Chelicerae with 12R, 11L teeth on promargin. Leg and palp segment lengths in Table 4. Clavate trichobothria on tarsus I, 37R, 39L. Spination: leg I tibia 2DRV (1R); leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV (2R), metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV\* (0L), 1DMV\* (0L), 1DRV, 1DMV (2R), 1DPV, 1MRD (atypically as 1MRL on L), 1MPL (0L), 1DPD, 1DRD. Remaining leg segments aspinose. Palpal bulb (Fig. 13): dorsal keel starts one third along embolus.

*Material examined*: SOUTH AFRICA: PPRI AcAT 2007/13, 2♂2♀, Letaba, Kruger National Park [23°50'S, 31°35'E], 233 m, 28 October 2005, reared to maturity September–October 2006 (Martin Paulsen and Ian Engelbrecht).

*Distribution and ecology*: Refer to Gallon (2005).



Figs. 8–13: *Ceratogyrus paulseni* Gallon, 2005. **8** Spinnerets, ventral view; **9** Tibial spur on left leg I, prolateral view; **10–13** Palpal bulbs: **10, 13** Retrolateral views; **11** Ventral view; **12** Dorsal view (**8–12** male PPRI AcAT 2007/13a; **13** male PPRI AcAT 2007/13b). Scale lines=1 mm.

*Harpactirella overdijki* sp. n. (Plates 15–16, Figs. 14–22)

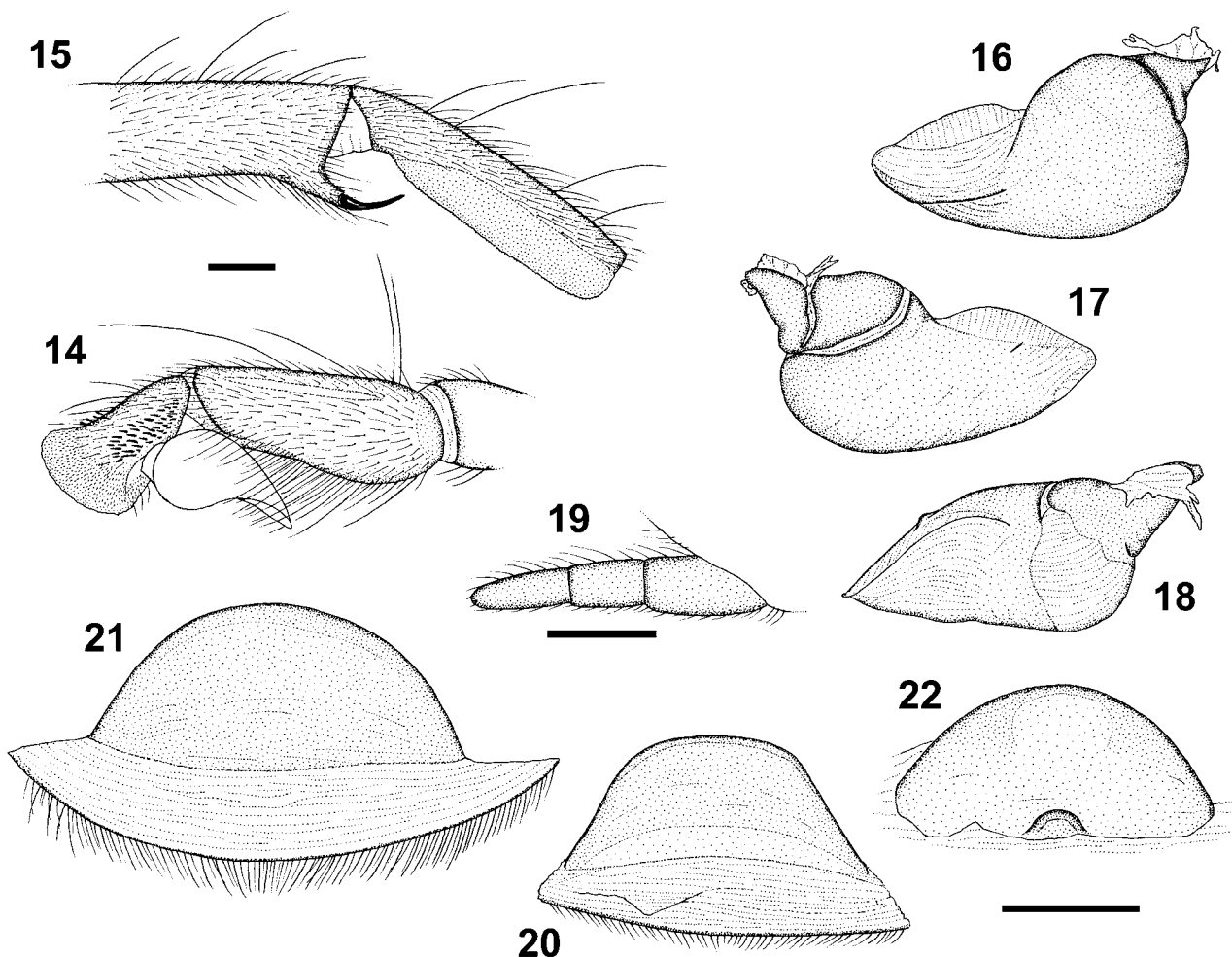
*Type material*: Holotype ♂ (PPRI AcAT 2009/2999) from South Africa, Swadini, Blyde River Canyon, 28 July 2003, reared to maturity on 27 September 2003, died 24 November 2003 (R. Gallon, T. Ezendam & S. van Overdijk). Paratypes: SOUTH AFRICA: 1♂ (BMNH), Transvaal (=Mpumalanga); 1♀ (PPRI AcAT 2009/3000), World's End, Blyde River Canyon, 27 July 2003, died October 2006 (R. Gallon); 1♀ (BMNH), Guinea Fowl Trail, Blyde River Canyon, 1090 m, 26 July 2003, preserved 10 December 2007 (R. Gallon, T. Ezendam & S. van Overdijk); 1♀ (OUMNH-2009-042), Swadini, Blyde River Canyon, under slab, 2 August 2003, preserved July 2009 (R. Gallon); 1♂ (OUMNH-2009-042), captive bred, Swadini, Blyde River Canyon (R. Gallon).

*Etymology*: A patronym honouring Mr Sjeff van Overdijk, a researcher with a particular skill at locating this species in the field.

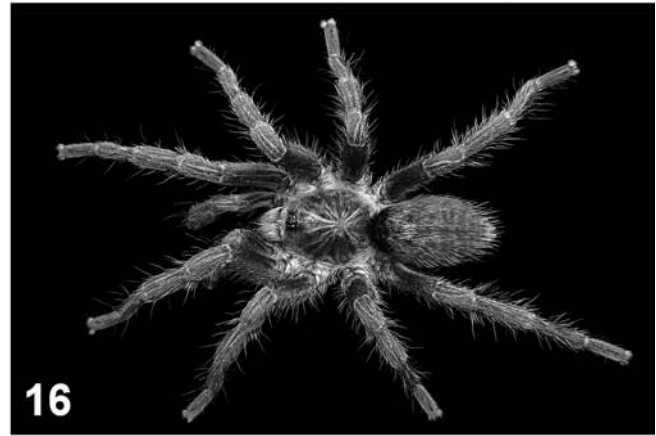
*Diagnosis*: Females are readily distinguished from all other Southern African *Harpactirella* species by their fused spermathecae (Figs. 20–22). In males the squat, broad embolus (Figs. 16–18) is highly characteristic, contrasting with the thin, more elongated emboli of

other *Harpactirella* species. The absence of proximal and medial tibial spines on legs III–IV distinguishes *H. overdijki* sp. n. from other sympatric *Harpactirella* species.

*Description*: *Male holotype* (PPRI AcAT 2009/2999): Total length 18.5. Carapace profile low, length 8.5, width 7.5. Abdomen damaged, length 7.2, width 4.5. Fovea deep transverse pit. Ocular tubercle length 1.14, width 1.26. Clypeus 0.27. Eye sizes: AME 0.41, ALE 0.45, PME 0.29, PLE 0.35. Sternum with three pairs of oval submarginal sigilla, posterior pair more remote from sternal margin. Labium with *c.* 85 cuspules. Maxilla with *c.* 145 cuspules. DS of posterior spinneret subconical, length 0.77; MS length 0.90. Chelicerae with 8R, 8L teeth on promargin. No stridulatory scopulae on retrolateral cheliceral face or prolateral trochanteral face of palp. Upper prolateral surface of chelicerae without scopula of elongated setae. Leg and palp segment lengths in Table 5. Cymbium with retrolateral spinose field (Fig. 14). Palpal tibia swollen proximally. Metatarsus I straight. Femur III not incrassate. Tarsal scopulae: tarsi I–III integral; tarsus IV divided longitudinally by weak line of setae. Metatarsal scopulae: leg I 83%, leg II 83%, leg III 75%, leg IV 66% (I–III integral,



Figs. 14–22: *Harpactirella overdijki* sp. n. **14** Left palp showing spinose cymbium, retrolateral view; **15** Tibial spur on left leg I, prolateral view; **16–18** Palpal bulb: **16** Retrolateral view; **17** Prolateral view; **18** Dorsal view; **19** Posterior spinnerets, prolateral view; **20–21** Spermathecae, dorsal views; **22** Exuvial spermatheca, showing mid-basal nodule, ventral view (**14–18** holotype male PPRI AcAT 2009/2999; **19** paratype male BMNH; **20** paratype female PPRI AcAT 2009/3000; **21** paratype female BMNH; **22** paratype female OUMNH-2009-042). Scale lines = 1 mm.



Plates 15–16: *Harpactirella overdijki* sp. n. **15** Adult female, Guinea fowl trail, Swadini; **16** Adult male, Swadini.

IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 14L, R leg I missing). Spination: palp tibia 1DPV spine-seta; leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV (0L), 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV (1L), 1DPV, metatarsus 1MRV (0L), 1MPV, 1DRV, 1DMV, 1DPV, 1MPL (0L), 1MRD (0L), 1DPD, 1DRD. Remaining leg segments aspinose. Tibial spur (Fig. 15): DPV apophysis long, sub-cylindrical; surmounted megaspine long, curved, protruding proven-trally. Coloration (as in Plate 16): as female except dark dorsal abdominal pattern more ill-defined and carapace striae more woolly and ill-defined. Palpal bulb (Figs. 16–18): tegulum pyriform. Embolus squat and very broad with scoop-like dorsum. Embolus tri-keeled; very broad dorsal and retrolateral keels start at base of embolus and merge at embolic tip; very short isolated prolateral keel forms small tag below dorsal keel. Embolus distinctly crescentic in cross-section.

*Male paratype* (BMNH): As holotype except: Total length 16.8. Carapace length 7.6, width 6.3. Abdomen length 7.4, width 4.5. Ocular tubercle length 1.00, width 1.33. Clypeus 0.13. Eye sizes: AME 0.42, ALE 0.38, PME 0.23, PLE 0.33. Labium with *c.* 95 cuspules. Maxilla with *c.* 180 cuspules. DS of posterior spinneret digitiform, length 0.94; MS length 0.67 (Fig. 19). Chelicerae with 10R, 9L teeth on promargin. Leg and palp segment lengths in Table 6. Clavate trichobothria: (34R, 35L). Spination: leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD,

1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1MRD, 1DPD, 1DPD. Remaining leg segments aspinose.

*Female paratype* (PPRI AcAT 2009/3000): Total length 29.6. Carapace profile raised at caput, length 9.5, width 7.9. Carapace 41.0% length of leg I. Abdomen damaged, length 15.6, width 11.2. Fovea deep transverse pit. Ocular tubercle length 1.28, width 1.54. Clypeus 0.33. Eye sizes: AME 0.44, ALE 0.46, PME 0.38, PLE 0.40. Sternum with three pairs of oval submarginal sigilla. Labium with 146 cuspules. Maxilla with *c.* 200 cuspules. DS of posterior spinneret subconical, length 1.00; MS length 1.05. Chelicerae with 7R, 9L teeth on promargin. No stridulatory scopulae on retrolateral cheliceral face or prolateral trochanteral face of palp. Upper prolateral surface of chelicerae without scopula of elongated setae. Leg and palp segment lengths in Table 7. Tarsal scopulae: tarsi I–III integral; tarsus IV divided longitudinally by band of setae. Metatarsal scopulae: leg I 83%, leg II 80%, leg III 66%, leg IV 60% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 24R, 23L). Spination: palp tibia 1DPV; leg I tibia 1DPV; leg II tibia 1DPV (0R); leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1PPV (0R), 1MRV, 1MPV, 1DRV, 1DMV, 1DPV, 1MRD, 1MPL, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration (as in Plate 15): carapace dark brown with radial pattern of yellow-brown striae and dark mask around ocular tubercle. Carapace margin with olive-brown fringe of setae. Chelicerae, palps and

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	7.0	4.3	5.1	4.6	3.9
<b>II</b>	6.5	4.0	4.4	4.6	3.9
<b>III</b>	5.8	3.3	3.8	5.4	3.9
<b>IV</b>	7.6	3.9	5.8	7.4	4.4
<b>Palp</b>	4.6	3.0	3.4	–	2.4

Table 5: *Harpactirella overdijki* sp. n. Lengths of leg and palp segments of male holotype (PPRI AcAT 2009/2999).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	5.8	3.6	4.3	3.9	3.3
<b>II</b>	5.4	3.3	3.6	3.7	3.3
<b>III</b>	4.9	2.8	3.2	4.5	3.3
<b>IV</b>	6.5	3.2	4.9	6.2	3.7
<b>Palp</b>	4.2	2.7	2.9	–	2.1

Table 6: *Harpactirella overdijki* sp. n. Lengths of leg and palp segments of male paratype (BMNH).



	Fe	Pa	Ti	Mt	Ta
<b>I</b>	6.7	4.7	4.4	4.0	3.4
<b>II</b>	6.2	4.3	3.9	3.8	3.5
<b>III</b>	5.5	3.6	3.4	4.4	3.4
<b>IV</b>	7.1	4.0	5.4	6.5	4.0
<b>Palp</b>	5.2	3.5	3.2	–	4.0

Table 7: *Harpactirella overdijki* sp. n. Lengths of leg and palp segments of female paratype (PPRI AcAT 2009/3000).

legs and spinnerets olive brown. Dorsum of abdomen yellow-brown with dark pattern of bars, spots and reticulations; reticulations extend to lateral areas. Ventral surface of abdomen yellow-brown with only few dark speckles, booklung covers and genital sclerite paler yellow-brown. Sternum, labium and maxillae slightly darker than leg coxae. No ventral darkening on limbs. Spermathecae (Fig. 20): fused with single mid-basal nodule on ventral surface. Distal section of spermathecae thickened in cross-section. Setal fringe on posterior margin of epigastric scutum composed of long curved setae of even length.

*Paratype female* (BMNH): As PPRI AcAT 2009/3000 paratype except: Total length 30.8. Carapace length 10.2, width 8.6. Carapace 40.8% length of leg I. Abdomen length 17.1, width 11.6. Ocular tubercle length 1.15, width 1.64. Clypeus 0.33. Eye sizes: AME 0.41, ALE 0.50, PME 0.32, PLE 0.40. Labium with 112 cuspules. Maxilla with *c.* 250 cuspules. DS of posterior spinneret subconical, length 0.90; MS length 1.08. Chelicerae with 9R, 9L teeth on promargin. Leg and palp segment lengths in Table 8. Metatarsal scopulae: leg I 80%, leg II 75%, leg III 75%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Clavate trichobothria (tarsus I, 42R, 35L). Spination: palp tibia 1DPV; leg I tibia 1DPV (0L); leg II tibia 1DPV; leg III tibia 2DRV (1R), 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1MRV (0R), 1DRV, 1DMV, 1DPV, 1MRD, 1MPL, 1DPD, 1DRD. Remaining leg segments aspinose. Spermathecae (Fig. 21).

*Additional material examined*: SOUTH AFRICA: BMNH 03.7.14.56.57, 3♀, Zoutpansberg, Transvaal (J. P. Cregoe); PPRI AcAT 80/141, 1 imm. ♂, Farm Althorpe, 10 km East, Maputo road Kaapmuiden, silk-lined burrow, 13 April 1979 (M. Stiller); PPRI AcAT 83/223, 1 imm. ♂, Farm Althorpe, 10 km E. of Kaapmuiden, in burrow, 14 April 1979 (M. Stiller); PPRI AcAT 83/224, 1♀ (spermathecae missing from tube), Farm Althorpe, 10 km E. of Kaapmuiden, under stone, 14 April 1979 (M. Stiller); PPRI AcAT 84/759, 1♀, Bergfontein, Vivo, under stones, 5 December 1967 (N. Genis); PPRI AcAT 91/525, 1♀, Klaserie Nature Reserve, Klaserie, small burrow, 18 April 1990 (M. Filmer); PPRI AcAT 91/1402, 1♂, Skukuza Camp,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	7.2	5.0	4.8	4.3	3.8
<b>II</b>	6.6	4.4	4.1	4.1	3.7
<b>III</b>	5.9	3.9	3.5	4.9	3.6
<b>IV</b>	7.8	4.5	5.5	7.2	4.2
<b>Palp</b>	5.5	3.7	3.2	–	4.0

Table 8: *Harpactirella overdijki* sp. n. Lengths of leg and palp segments of female paratype (BMNH).

Kruger National Park, 6 December 1971 (A. Braack); PPRI AcAT 91/1420, 2♀, Eendrag W Mill, Mabohelene, Phalaborwa, 8 August 1975 (L. Wagner); PPRI AcAT 91/1448, 1♀, Randpark Ridge, Johannesburg, in web, April 1991 (L. Prendini); PPRI AcAT 91/1461, 1 imm., Swadini Nature Reserve, Hoedspruit, shallow silk-lined burrow, 19 August 1991 (M. Filmer); PPRI AcAT 92/238, 1♀, Haenertsburg, burrow with small sheet web, 14 December 1991 (J. Leroy); PPRI AcAT 2004/80, 1♀, Tshokwane, Kruger National Park, silk lined burrow, 12 December 2003 (M. Paulsen & I. Engelbrecht); PPRI AcAT 2004/82, 1♀, Satara Camp, Kruger National Park, silk burrow, 12 December 2003 (M. Paulsen); PPRI AcAT 2004/83, 1♀, Tshokwane, Kruger National Park, silk lined burrow, large rocks, 12 December 2003 (M. Paulsen); PPRI AcAT 2004/84, 1 imm. ♂, 2 imms., Lajuma, Soutpansberg, 12 December 2002 (S. Foort); PPRI AcAT 2004/89, 1♀, Skukuza Camp, Kruger National Park, under log, 26 April 1998 (J. Leroy); PPRI AcAT 2004/92, 1♀, near Tzaneen, Gravelotte, 30 March 1996 (C. Oosthuizen); PPRI AcAT 2004/95, 1♀, near Tzaneen, Gravelotte, silk lined burrow, 31 November 2003 (M. Paulsen & I. Engelbrecht); PPRI AcAT 2004/96, 1♂, Letaba Camp, Kruger National Park, mixed Mopane and Acacia, 1 December 2003 (M. Paulsen & I. Engelbrecht); TM13430, 1♀, Louw's Creek, Barberton, 2531Cb, October 1922 (G. P. F. van Dam); TM13431, 1♀, Louw's Creek, Barberton, 2531Cb, October 1922 (G. P. F. van Dam); TM13432, 1♀, Louw's Creek, Barberton, 2531Cb, October 1922 (G. P. F. van Dam); TM13433, 1♀, Louw's Creek, Barberton, 2531Cb, October 1922 (G. P. F. van Dam); TM13434, 1♀, Louw's Creek, Barberton, 2531Cb, October 1922 (G. P. F. van Dam); TM13899, 1♀, Newgate near Louis Trichardt, Zoutpansberg, 2329Bb, July 1923 (A. Roberts); TM15636, 3♀ 3 imm. ♂, Louw's Creek, Barberton, March 1920 (G. P. F. van Dam); TM18488, 1♂, Shingwedzi, Kruger National Park, 19–20 November 1961 (Vari & Rorke); TM18489, 2♀ (other four specimens in jar not conspecific), Lydenburg, 20 November 1961 (Mr Krantz); TM5154, 1 imm. ♂, near Mica, Letaba district, 2430Bb, July 1931 (A. G. White); TM6358, 1♂ 1♀ 1 imm. ♂, Farm Zeekoegat, Olifants River, Pilgrimsrest, 2431Aa, October 1927 (H. Lang); TM6362, 1♀ 1 imm. ♂ (1♂ in jar not conspecific), Farm Zeekoegat, Olifants River, Pilgrimsrest, 2431Aa, October 1927 (H. Lang); TM6477, 1 imm. ♂, Klaserie, Pilgrimsrest, 2431Ca, July 1928 (A. G. White); TM6621, 1♀, Brombeek, Zoutpansberg, 2229Cb, 17 March 1934 (B. Saayman).

*Distribution*: Widely distributed through Limpopo Province, Mpumalanga and into Gauteng, South Africa.

*Ecology*: Constructs densely silk-lined tunnels/burrows beneath rocks and logs in both open and lightly wooded habitats. Males are mature in December. Captive females produce single fixed hammock egg-sacs suspended within their retreat. The young emerge from the sac at the nymph-2 stage, moulting into spiderlings within the maternal retreat. Egg-sacs yield approximately 60 spiderlings. Gallon *et al.* (2004) mentioned arthropod associations with this species.

*Idiothele mira* sp. n. (Plates 17–18, 19B, 20, Figs. 23–33)

*Type material*: Holotype ♂ (PPRI AcAT 2007/128) from South Africa, Ndumo Game Farm [26°54'S, 32°19'E], 12 January 2007, on wall of house (Charles Haddad). Paratypes: 1♂ (PPRI AcAT 2007/128), same data. SOUTH AFRICA: 1♂ (BMNH), Ndumo Game Farm [26°54'S, 32°19'E], 13 May 2005, reared to maturity on 1–2 January 2007 (Thomas Ezendam, Sjeff van Overdijk & Guy Tansley); 1♀ (BMNH), Ndumo Game Farm [26°54'S, 32°19'E], 7 February 2005 (Milan Řezáč); 1♀ (PPRI AcAT 2007/129), Tembe Elephant Park [27°01'S, 32°24'E], 10 January 2002, sand forest (Charles Haddad); 1♂ (MRAC 228476), Ndumo Game Farm [26°54'S, 32°19'E], captive bred F1 generation (Milan Řezáč).

*Etymology*: From the Latin for wonderful, referring to the sky-blue coloration on the tarsi and metatarsi.

*Diagnosis*: The sky-blue farinaceous coloration on the tarsi and metatarsi (colour image in Ezendam, 2007) readily distinguishes *Idiothele mira* sp. n. from *I. nigrofulva*. Under spirit the dorsum of the tarsi and metatarsi appears dark grey and the blue coloration is not apparent, unless the specimen is surface-dried. In both sexes the carapace of *I. mira* sp. n. is more elongated than the almost circular carapace of *I. nigrofulva* (Plate 19A–B). In *I. mira* sp. n. the spermathecae termini are closer together than in *I. nigrofulva* (Figs. 32–33 cf. 38, 43).

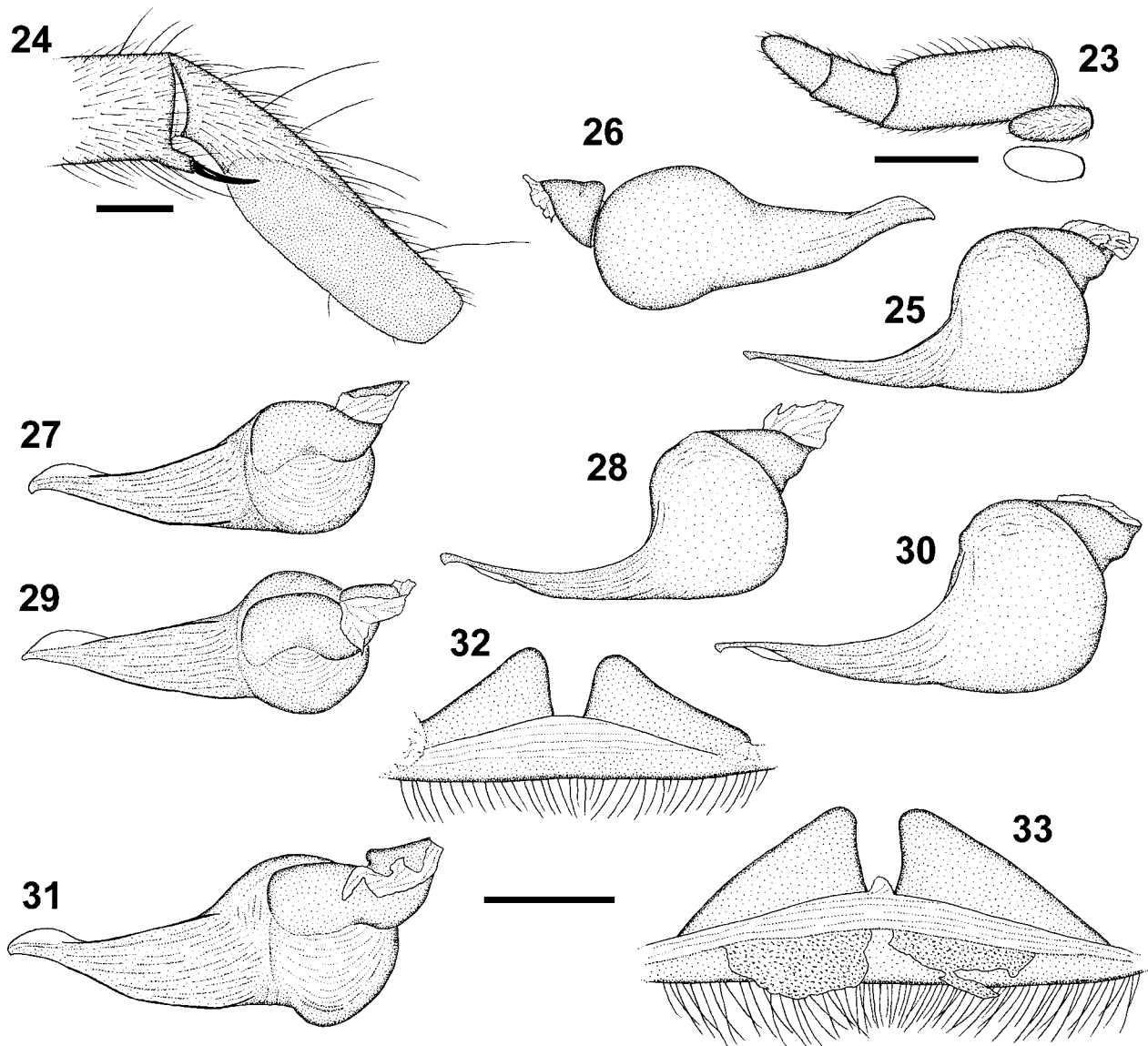
*Remarks*: Freshly moulted specimens of *I. mira* sp. n. lack the blue colour, which develops a few days post-moult. The blue coloration is caused by a farinaceous substance on the integument, rather than being associated with setae.

*Description*: *Male holotype* (PPRI AcAT 2007/128): Total length 19.9. Carapace profile low, length 8.7,

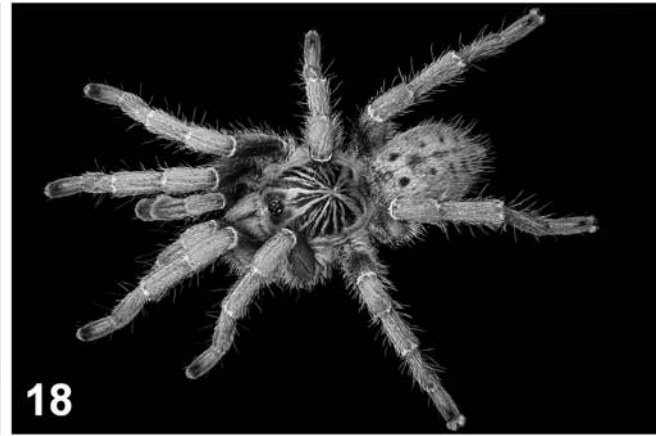
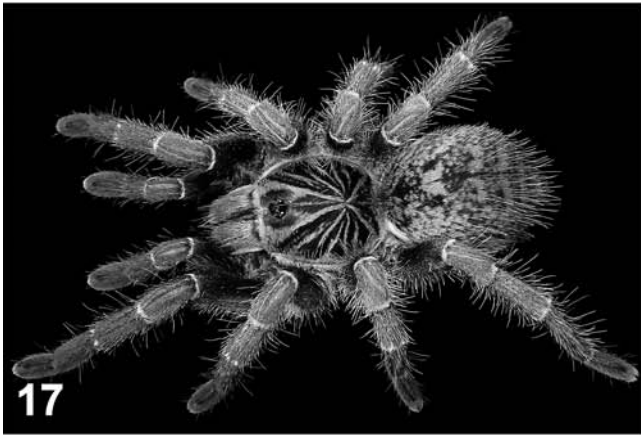
	Fe	Pa	Ti	Mt	Ta
<b>I</b>	7.2	4.2	5.1	4.5	3.6
<b>II</b>	6.9	3.9	4.5	4.7	3.6
<b>III</b>	5.8	3.1	3.8	5.1	3.6
<b>IV</b>	7.5	3.6	5.6	7.6	4.2
<b>Palp</b>	5.3	3.2	3.7	–	2.4

Table 9: *Idiothele mira* sp. n. Lengths of leg and palp segments of male holotype (PPRI AcAT 2007/128).

width 7.2. Abdomen length 8.6, width 4.8. Fovea deep transverse slit. Ocular tubercle length 1.21, width 1.41. Clypeus 0.46. Eye sizes: AME 0.41, ALE 0.38, PME 0.23, PLE 0.35. Sternum with three pairs of oval submarginal sigilla. Labium with 28 cuspules. Maxilla with *c.* 80 cuspules. DS of posterior spinneret subconical, length 0.69; MS length 0.74 (Fig. 23). Chelicerae with 9R, 12L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral face, opposing



Figs. 23–33: *Idiothele mira* sp. n. **23** Spinnerets, ventral view; **24** Tibial spur on left leg I, pro-lateral view; **25–31** Palpal bulbs: **25, 28, 30** Retrolateral views; **26** Ventral view; **27, 29, 31** Dorsal views; **32–33** Spermathecae, note sperm plugs in **33**, dorsal views (**23–27** holotype male PPRI AcAT 2007/128a; **28–29** paratype male PPRI AcAT 2007/128b; **30–31** paratype male BMNH; **32** paratype female BMNH; **33** paratype female PPRI AcAT 2007/129). Scale lines = 1 mm.



Plates 17–18: *Idiothele mira* sp. n. **17** Adult female (PPRI AcAT 2009/3003); **18** Adult male paratype (BMNH).

area on prolateral trochanteral face of palp without scopula, but with group of long isolated black setae. Leg and palp segment lengths in Table 9. Palpal tibia straight. Metatarsus I straight. Femur III not incrassate. Tarsal scopulae integral. Metatarsal scopulae: leg I 83%, leg II 83%, leg III 75%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 34R, 30L). Spination: palp tibia 1DPV; leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1PPV (0L), 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MRV (0R), 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1MRD, 1DPD, 1DRD. Remaining leg segments aspinose. Tibial spur (Fig. 24): DPV apophysis short, sub-cylindrical; surmounted megaspine long, curved, protruding proventrally. Coloration (as in Plate 18): as female except dark dorsal abdominal pattern more ill-defined, carapace striae more woolly and sky-blue markings on tarsi and metatarsi less vibrant. Palpal bulb (Figs. 25–27): tegulum pyriform. Embolus broad with flattened hooked tip. Embolus tri-keeled; retro- and prodorsal keels starting at base of embolus, terminating short of embolic tip; distinct flanged proventral keel starts two-thirds along embolus, spiralling dorsally to form hooked embolic tip. Embolus flattened in cross-section.

*Male paratype* (PPRI AcAT 2007/128): As holotype except: Total length 20.1. Carapace length 9.5, width 8.0. Abdomen length 8.5, width 4.8. Ocular tubercle length 1.28, width 1.51. Clypeus 0.41. Eye sizes: AME 0.47, ALE 0.40, PME 0.29, PLE 0.36. Labium with 27 cuspules. Maxilla with *c.* 65 cuspules. DS of posterior

spinneret length 0.85; MS length 0.62. Chelicerae with 9R, 10L teeth on promargin. Leg and palp segment lengths in Table 10. Clavate trichobothria: (tarsus I, 32L. R leg I absent). Spination: palp tibia 1DRV; leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MRV (0R), 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1MRD, 1DPD, 1DRD. Remaining leg segments aspinose. Palpal bulb (Figs. 28–29).

*Male paratype* (BMNH): As holotype except: Total length 23.4 (Plate 18). Carapace length 11.1, width 9.3. Abdomen length 9.4, width 5.6. Ocular tubercle length 1.50, width 1.59. Clypeus 0.72. Eye sizes: AME 0.46, ALE 0.44, PME 0.29, PLE 0.40. Labium with 22 cuspules. Maxilla with *c.* 60 cuspules. Posterior spinneret wizened. Chelicerae with 9R, 8L teeth on promargin. Leg and palp segment lengths in Table 11. Metatarsal scopulae: leg I 80%, leg II 80%, leg III 66%, leg IV 50% (I–III integral, IV bisected longitudinally by band of stiff setae). Clavate trichobothria: (tarsus I, 49R, 46L). Spination: palp tibia 1DPV; leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV (1L), 1DPV, metatarsus 1MPV (2L), 1MRV (0R), 1DRV (2L), 1DMV, 1DPV, 1MPL,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	7.6	4.5	5.3	5.2	3.8
<b>II</b>	7.2	4.2	4.9	4.9	3.8
<b>III</b>	6.4	3.6	4.1	5.5	4.1
<b>IV</b>	8.0	4.1	5.9	8.0	4.6
<b>Palp</b>	5.5	3.4	3.9	–	2.6

Table 10: *Idiothele mira* sp. n. Lengths of leg and palp segments of male paratype (PPRI AcAT 2007/128).

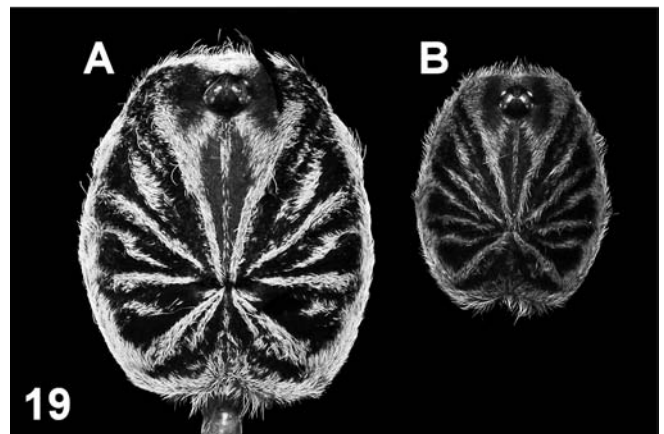
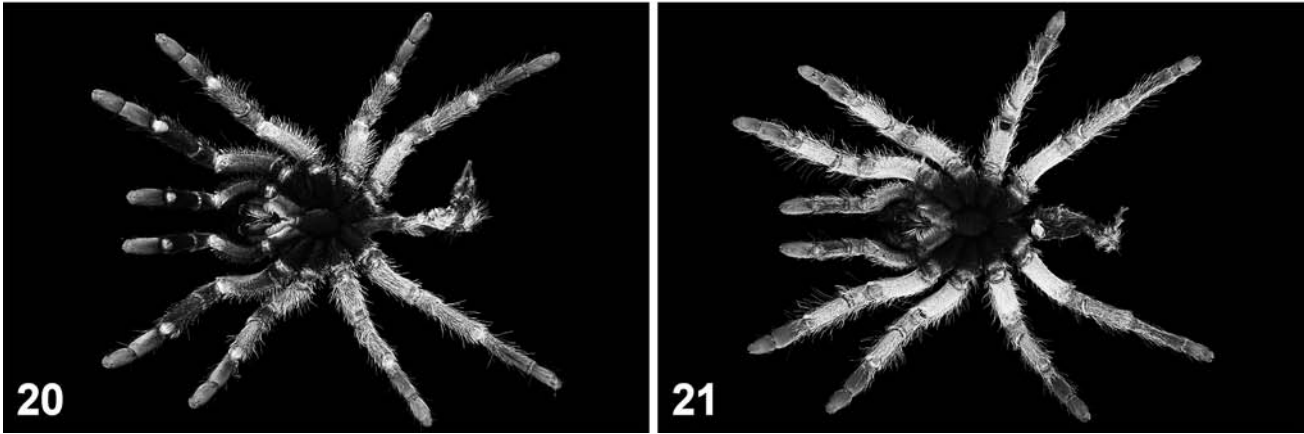


Plate 19: *Idiothele* spp. adult female exuvial carapaces, dorsal view. **A** *I. nigrofulva* (Pocock, 1898), Barberton; **B** *I. mira* sp. n., Ndumo.



Plates 20–21: *Idiothele* spp. female exuviae, showing extent of ventral darkening. **20** *I. mira* sp. n., Ndumo; **21** *I. nigrofulva* (Pocock, 1898), Barberton.

1MRD, 1DPD, 1DRD. Remaining leg segments aspinose. Palpal bulb (Figs. 30–31).

*Female paratype* (BMNH): Total length 25.5. Carapace profile domed, length 9.4, width 8.1. Abdomen length 12.1, width 7.8. Fovea deep transverse slit. Ocular tubercle length 1.35, width 1.49. Clypeus 0.49. Eye sizes: AME 0.44, ALE 0.40, PME 0.26, PLE 0.32. Sternum with three pairs of oval submarginal sigilla. Labium with 23 cuspules. Maxilla with *c.* 95 cuspules. DS of posterior spinneret subconical, length 0.85; MS length 1.13. Chelicerae with 11R, 12L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral face, opposing area on prolateral trochanteral face of palp without scopula, but with group of long isolated black setae. Leg and palp segment lengths in Table 12. Tarsal scopulae integral. Metatarsal scopulae: leg I 80%, leg II 80%, leg III 66%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 21R, 31L). Spination: palp tibia 1DPV; leg II tibia 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV (0R), 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1MRL (0R), 1MRD, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration (as in Plate 17): carapace dark brown with distinct metallic brown radial striae and dark mask around ocular tubercle. Chelicerae, trochanters, femora, patellae and tibiae beige brown. Dorsum of tarsi and metatarsi sky-blue in life, dark greyish in alcohol. Dorsum and lateral surfaces of abdomen beige with dark pattern of bars, spots and reticulations. Ventral surface of abdomen black with

paler booklung covers and genital sclerite. Sternum and ventral surfaces of coxae and trochanters very dark brown. Spermathecae: paired, unlobed, triangular and flattened with termini close together (Fig. 32).

*Female paratype* (PPRI AcAT 2007/129): As BMNH except: Total length 27.2. Carapace length 11.9, width 9.5. Abdomen length 11.5, width 7.8. Ocular tubercle length 1.45, width 1.68. Clypeus 0.64. Eye sizes: AME 0.49, ALE 0.42, PME 0.27, PLE 0.32. Labium with 36 cuspules. Maxilla with *c.* 60 cuspules. DS of posterior spinneret length 1.08; MS length 0.95. Chelicerae with 11R, 11L teeth on promargin. Leg and palp segment lengths in Table 13. Tarsal scopulae integral, with several medial setae on proximal third of tarsus IV. Metatarsal scopulae: leg I 80%, leg II 80%, leg III 66%, leg IV 60%. Clavate trichobothria: (tarsus I, 33R, 30L). Spination: palp tibia 1DPV; leg I tibia 1DRV, 1DPV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV (2L), metatarsus 1MRV, 1MPV, 1DRV, 1DMV (2R), 1DPV, 1MPL, 1MRD (0R), 1DPD, 1DRD. Remaining leg segments aspinose. Spermathecae (Fig. 33).

*Additional material examined*: SOUTH AFRICA: PPRI AcAT 2005/20, 1 imm. ♂, Ndumo Game Reserve, leaf litter, broadleaf woodland, 6 February 2005 (Charles Haddad); PPRI AcAT 2009/3001, 2 imm. ♂, Ndumo Game Reserve, under rocks, broadleaf woodland, 22 January 2006 (Charles Haddad); PPRI AcAT 2009/3002, 1 imm. ♂, 1 imm., Ndumo Game Reserve, under rocks, broadleaf woodland, 22 January 2006 (Charles Haddad); PPRI AcAT 2009/3003, 1♀, Ndumo Game Farm [26° 54' S, 32° 19' E], 13 May 2005, reared to maturity (Thomas Ezendam, Sjeff van Overdijk & Guy Tansley); PPRI AcAT 2009/3004, 1♀, Tembe Elephant Park, under logs, 28 January 2006 (Charles Haddad); PPRI AcAT 2007/3306, 1 imm. ♂, Tembe Elephant Park, under logs, closed woodland/sand, 14 January 2002 (Charles Haddad).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	8.9	5.4	6.1	6.2	5.0
<b>II</b>	8.4	5.0	5.8	5.9	4.9
<b>III</b>	7.4	4.3	5.0	6.8	5.1
<b>IV</b>	9.4	4.7	6.8	9.5	4.9
<b>Palp</b>	6.3	4.0	4.4	–	2.4

Table 11: *Idiothele mira* sp. n. Lengths of leg and palp segments of male paratype (BMNH).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	7.2	4.8	4.6	4.2	3.5
<b>II</b>	6.5	4.4	4.2	4.1	3.5
<b>III</b>	5.7	3.7	3.5	4.8	3.5
<b>IV</b>	7.4	4.1	5.2	7.0	4.1
<b>Palp</b>	5.4	3.5	3.1	–	4.3

Table 12: *Idiothele mira* sp. n. Lengths of leg and palp segments of female paratype (BMNH).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	8.1	5.6	5.3	5.1	3.9
<b>II</b>	7.5	4.9	4.7	5.1	3.9
<b>III</b>	6.8	4.4	4.2	5.8	3.9
<b>IV</b>	8.5	4.8	6.1	8.3	4.6
<b>Palp</b>	6.3	4.2	3.7	–	4.9

Table 13: *Idiothele mira* sp. n. Lengths of leg and palp segments of female paratype (PPRI AcAT 2007/129).

**Distribution:** Known from Ndumo and Tembe Elephant Game Reserves, South Africa.

**Ecology:** Constructs densely silk-lined tunnels/cells beneath rocks and logs in lightly wooded habitats. The burrow entrance can be sealed with a thin, wafer-like, silken trapdoor, but this is not always obvious *in situ* (T. Ezendam, S. van Overdijk, C. Haddad and G. Tansley pers. comms). Males are mature in January. A captive female produced a single fixed hammock egg-sac suspended within its retreat. The contents of this egg-sac failed to develop, but numbered 32 large (3.98 mm diameter) eggs in total (pers. obs.).

***Idiothele nigrofulva* (Pocock, 1898)** (Plates 19A, 21–22, Figs. 34–43

*Pterinochilus nigrofulvus* Pocock, 1898a: 317 (D♂♀).

*Idiothele nigrofulva*: Gallon, 2002: 223 (♂♀).

**Type material:** Syntypes 1♂ 1♀ (BMNH 98.5.7.24) from South Africa, Barberton [25°48'S, 31°03'E] (P. Rendall); examined.

**Remarks:** See Gallon (2002, 2004) for full synonymy list, type listing and additional diagnosis.

**Diagnosis:** Refer to *Idiothele mira* sp. n. diagnosis.

**Description:** **Male syntype** (BMNH 98.5.7.24): Total length 20.0. Carapace profile low, length 10.0, width 7.9. Abdomen wizened, length 6.5, width 4.8. Fovea deep transverse slit. Ocular tubercle length 1.28, width 1.49. Clypeus 0.41. Eye sizes: AME 0.44, ALE 0.40, PME) 0.32, PLE 0.38. Sternum with three pairs of oval submarginal sigilla. Labium with 29 cuspules. Maxilla with *c.* 55 cuspules. DS of posterior spinneret subconical, length 0.72; MS length 0.49 (Fig. 34). Chelicerae with 10R, 10L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral face, opposing area on prolateral trochanteral face of palp with weak scopula (not obviously plumose) and group of long isolated black setae. Leg and palp segment lengths in Table 14. Palpal tibia straight (Fig. 35). Metatarsus I straight. Femur III not incrassate. Tarsal scopulae integral (tarsus IV missing). Metatarsal scopulae: leg I 80%,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	8.4	5.0	5.8	5.7	4.2
<b>II</b>	7.8	4.7	5.2	5.4	4.1
<b>III</b>	6.9	3.8	4.4	6.2	4.2
<b>IV</b>	8.6	4.2	6.4	8.6	–
<b>Palp</b>	5.7	3.5	4.1	–	2.6

Table 14: *Idiothele nigrofulva* (Pocock, 1898). Lengths of leg and palp segments of male syntype (BMNH 98.5.7.24).

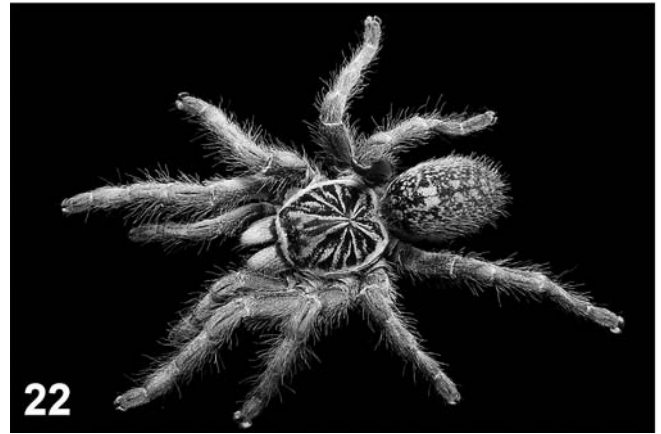


Plate 22: *Idiothele nigrofulva* (Pocock, 1898), adult female, Barberton.

leg II 80%, leg III 75%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 30L, R tarsus missing). Spination: palp tibia 1DPV spine-seta (0L); leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MRV, 1MRD, 1DPD, 1DRD. Remaining leg segments aspinose. Tibial spur (Fig. 36): DPV apophysis subcylindrical; surmounted megaspine long, curved, protruding proventrally. Coloration (after Pocock who described specimen in original dry-pinned condition): carapace black with golden border and bands radiating from fovea. Legs covered with intermixed golden black setae, darker ventrally. Abdomen with golden-yellow or reddish setae. Sternum and coxae deep chocolate brown. Palpal bulb (Fig. 37): tegulum pyriform. Embolus elongated, gently curved. Broad prolateral keel forms flange on distal half of embolus. Small retrolateral flange present at embolic tip forming a hook.

**Female syntype** (BMNH 98.5.7.24a): Total length 27.4. Carapace length 11.5, width not measured owing to damage. Abdomen length 11.0, width 9.2. Fovea missing. Ocular tubercle length 1.46, width 1.79. Clypeus 0.64. Eye sizes: AME 0.46, ALE 0.49, PME 0.37, PLE 0.40. Sternum and labium missing. Maxilla with *c.* 75 cuspules. DS of posterior spinneret subconical, but wizened. Chelicerae with 8R, 9L teeth on promargin. Stridulatory scopula of plumose setae on retrolateral cheliceral face, opposing area on prolateral trochanteral face of palp with weak scopula (not obviously plumose) and group of long isolated black setae. Leg and palp

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	8.6	5.7	5.5	5.1	4.2
<b>II</b>	8.1	5.5	4.9	5.4	4.2
<b>III</b>	7.4	4.5	4.4	6.2	4.3
<b>IV</b>	9.3	5.0	6.5	9.2	4.7
<b>Palp</b>	6.7	4.3	3.9	–	5.2

Table 15: *Idiothele nigrofulva* (Pocock, 1898). Lengths of leg and palp segments of female syntype (BMNH 98.5.7.24a).

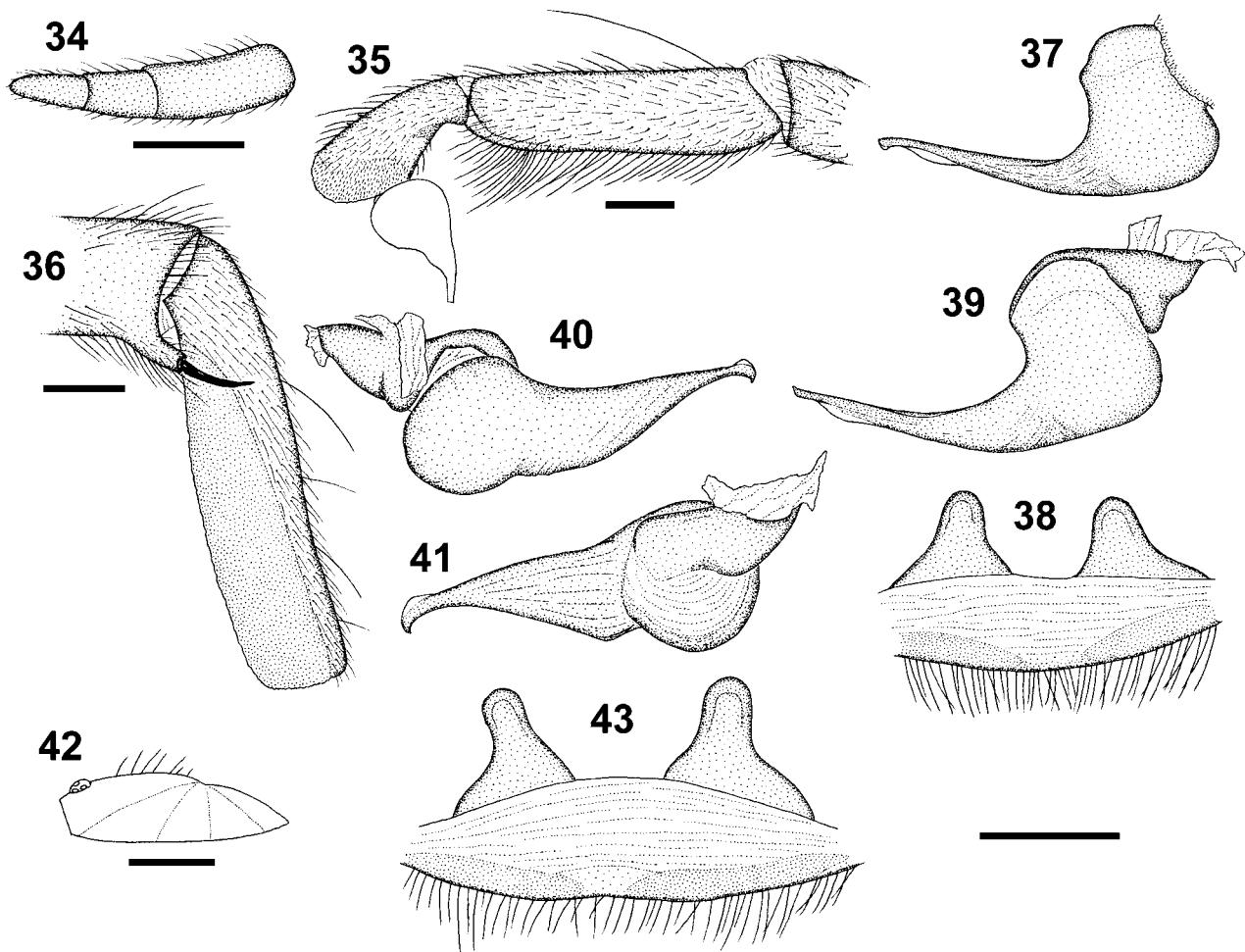
segment lengths in Table 15. Tarsal scopulae integral. Metatarsal scopulae: leg I 83%, leg II 83%, leg III 75%, leg IV 66% (I–III integral, IV bisected longitudinally by band of stiff setae). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria: restricted to U-shaped region on apical half of all tarsi (tarsus I, 33L, R missing). Spination: palp tibia 1DRV, 1DPV; leg I tibia 1DRV, 1DPV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MRD (0L), 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV (1L), 1DPV, metatarsus 1MPV (2R), 2MRV, 1DRV, 1DMV, 1DPV, 1MRD, 1MPL, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration: Pocock notes coloration as in male syntype. Spermathecae: paired, unlobed, triangular and flattened (Fig. 38).

*Male* (BMNH, Barberton): As syntype male except: Total length 24.1. Carapace length 10.8, width 9.6. Abdomen length 10.0, width 6.0. Ocular tubercle length 1.41, width 1.55. Clypeus 0.44. Eye sizes: AME 0.51, ALE 0.46, PME 0.31, PLE 0.37. Labium with 16 cuspules. Maxilla with *c.* 50 cuspules. DS of posterior spinneret subconical, but wizened. Chelicerae with 10R, 10L teeth on promargin. Leg and palp segment lengths

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	9.0	5.5	6.2	6.4	4.8
<b>II</b>	8.4	5.1	5.8	6.2	4.7
<b>III</b>	7.6	4.3	4.9	6.6	4.7
<b>IV</b>	9.5	4.7	6.7	9.8	5.3
<b>Palp</b>	6.8	4.3	4.9	–	3.0

Table 16: *Idiothele nigrofulva* (Pocock, 1898). Lengths of leg and palp segments of male (BMNH, Barberton).

in Table 16. Metatarsal scopulae: leg I 83%, leg II 80%, leg III 66%, leg IV 66%. Clavate trichobothria: (tarsus I, 33L, 35R). Spination: palp tibia 1DPV; leg I tibia 1DRV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1MRV, 1DRV, 1DMV, 1DPV, 1MRD, 1MPL, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration: carapace dark brown with distinct golden metallic radial striae and dark mask around ocular tubercle. Dorsum of chelicerae metallic golden. Legs and palps beige brown. Dorsum and lateral surfaces of abdomen beige with ill-defined dark pattern of bars and spots. Ventral surface of abdomen black



Figs. 34–43: *Idiothele nigrofulva* (Pocock, 1898). **34** Posterior spinnerets, prolateral view; **35** Left palp, retrolateral view; **36** Tibial spur on right leg I, reversed, prolateral view; **37**, **39–41** Palpal bulbs: **37** (reversed), **39** Retrolateral views; **40** Ventral view; **41** Dorsal view; **38**, **43** Spermathecae, dorsal views; **42** Carapace, showing row of erect medial setae, lateral view (**34–37** syntype male BMNH 98.5.7.24; **38** syntype female BMNH 98.5.7.24a; **39–41** Barberton male BMNH; **42–43** Barberton female PPRI AcAT 2009/3005). Scale lines = 1 mm (34–41, 43), 5 mm (42).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	9.6	6.4	6.4	6.1	4.6
<b>II</b>	9.2	5.9	5.7	5.8	4.5
<b>III</b>	8.5	5.1	5.1	7.0	4.6
<b>IV</b>	10.7	5.8	7.3	10.3	5.5
<b>Palp</b>	7.3	5.0	4.6	–	5.7

Table 17: *Idiothele nigrofulva* (Pocock, 1898). Lengths of leg and palp segments of female (PPRI AcAT 2009/3005 Barberton).

with slightly paler booklung covers and genital sclerite. Sternum and ventral surfaces of coxae and trochanters very dark brown. Palpal bulb (Figs. 39–41).

**Female** (PPRI AcAT 2009/3005, Barberton): As syntype female except: Total length 35.9. Carapace (Fig. 42) length 13.8, width 11.5. Abdomen length 17.2, width 11.4. Fovea deep transverse slit. Ocular tubercle length 1.49, width 1.92. Clypeus 0.77. Eye sizes: AME 0.55, ALE 0.51, PME 0.31, PLE 0.37. Sternum with three pairs of oval submarginal sigilla. Labium with 26 cuspules. Maxilla with *c.* 80 cuspules. Spinnerets missing. Chelicerae with 11R, 11L teeth on promargin. Leg and palp segment lengths in Table 17. Clavate trichobothria: (tarsus I, 25L, 36R). Spination: palp tibia 1DPV; leg I tibia 1DRV, 1DPV; leg II tibia 1DRV, 1DPV; leg III tibia 1DRV, 1DPV, metatarsus 1MPV, 1DRV, 1DMV, 1DPV, 1MRD (0R), 1MPL, 1DPD, 1DRD; leg IV tibia 2DRV, 1DPV, metatarsus 1MPV, 1MRV, 1DRV, 1DMV, 1DPV, 1MRD (0L), 1MPL, 1DPD, 1DRD. Remaining leg segments aspinose. Coloration (as in Plate 22): as Barberton male except chelicerae and carapace striae less golden, and dorsum of abdomen with dark pattern of bars, spots and reticulations. Spermathecae (Fig. 43).

**Additional material examined:** SOUTH AFRICA: BMNH 12.8.10.2 (dry tray), 1♀, Barberton [25°48'S, 31°03'E] (P. Rendall); BMNH 03.7.14.56.57, 1♂, Zoutpansberg, Transvaal (J. P. Cregoe); BMNH 05.3.30.31, 1♀, Steynsburg [31°20'S, 25°50'E], Cape Colony (Miss Leppan); BMNH, 1♂, Saddleback view point, Barberton [25°47'S, 31°04'E], matured in captivity June 2006 (Richard Gallon); PPRI AcAT 2009/3005, 1♀, Saddleback view point, Barberton [25°47'S, 31°04'E], 1238 m, died in captivity 18 August 2004 (Richard Gallon & Thomas Ezendam). ZIMBABWE: BMNH 99.5.4.15, 1♀, Devil's Pass, East Mashonaland, October 1897; BMNH 99.5.4.16, 1 imm. ♂, Salisbury (=Harare) [17°50'S, 31°03'E], 22 April 1899 (G. A. K. Marshall); BMNH 08.12.28.8, 1♂, Housefield Estate, Salisbury (=Harare) [17°50'S, 31°03'E] (J. F. Darling); BMNH 08.12.28.9, 1♀, Housefield Estate, Salisbury (=Harare) [17°50'S, 31°03'E] (J. F. Darling). Also see Gallon, 2002, 2004, 2005.

**Distribution and ecology:** Refer to Gallon (2002, 2004, 2005).

## Subfamily Eumenophorinae

### Genus *Pelinobius* Karsch, 1885, revalidated

*Pelinobius* Karsch, 1885: 135; Simon, 1892: 153; 1903: 953.  
*Citharischius* Pocock, 1900: 492; Smith, 1990: 24. **New synonymy.**  
*Phoneyusa*: Pocock, 1899: 841 (in part); Smith, 1990: 44 (in part).

**Type species:** *Pelinobius muticus* Karsch, 1885. By monotypy.

**Species included:** *Pelinobius muticus* Karsch, 1885.

**Remarks:** Large mature males reared from egg-sacs

produced by wild mated *Citharischius crawshayi* females are consistent with the holotype male of *Pelinobius muticus*. Since *P. muticus* is the type species of *Pelinobius*, the monotypic genus *Citharischius* is treated here as a junior synonym of *Pelinobius* (also refer to species remarks below).

*Pelinobius* was treated as a junior synonym of *Phoneyusa* Karsch, 1884 by Raven (1985: 157), who followed Pocock's (1898b: 504) earlier suspicion that the two genera may prove synonymous. At that time Pocock's concept of male *Phoneyusa* was based largely on his two East African species *P. gregori* and *P. bettoni*, and not on West African material (Pocock, 1897: 762). The three East African species of *Phoneyusa*, *bettoni*, *gregori* and *rufa*, are here regarded as synonyms of *Pelinobius muticus*, but the genus *Pelinobius* is considered distinct from the rest of *Phoneyusa* (type species *belandana*).

Raven's (1985) synonymy of *Monocentropella* with *Citharischius* is rejected because the male type of the former genus possessed (type lost, V. Von Wirth pers. comm.) a tibial spur consisting of a "comb of spines" arranged on a mound and divided scopulae on tarsi IV (Strand, 1907). Males of *Citharischius* (= *Pelinobius*) do not display these two features. Amongst the African theraphosid fauna only three genera are known to possess a "comb of spines" tibial spur: *Chaetopelma* Ausserer, 1871, *Monocentropus* Pocock, 1897 and *Eumenophorus*. *Chaetopelma* is a member of the subfamily Ischnocolinae and lacks the Eumenophorinae stridulatory organs. *Monocentropus* possesses a transverse fovea, but *Eumenophorus*, like *Monocentropella*, has a procurved fovea. The two known *Eumenophorus* species also possess divided scopulae on tarsi IV (Smith, 1990). The long labium of *Monocentropella* is considered to represent a species specific feature within *Eumenophorus*. For these reasons *Monocentropella* Strand, 1907 is treated here as a junior synonym of *Eumenophorus* Pocock, 1897, **new synonymy**.

**Diagnosis:** *Pelinobius*, as a eumenophorine, is distinguished from members of other African subfamilies and *Mascaraneus* Gallon, 2005 by the presence of coxal/trochanteral, stridulatory setae between the palp and leg I and between legs I and II. The female of *Pelinobius* is readily distinguished from all other African theraphosids by its robust, velvety hind legs with turned-in tarsi (not marked in immatures) (Plates 23, 33). Its sub-conical, elongated labium provides additional distinction from all other Eumenophorinae (Plates 26–27).

The male of *Pelinobius* lacks a DPV tibial apophysis on leg I, which readily distinguishes it from Eumenophorinae with this feature: *Encyocrates* Simon, 1892, *Eumenophorus* and *Monocentropus*. *Pelinobius* males are readily separated from those of *Hysterocrates* Simon, 1892 and *Phoneyusa sensu stricto* by the absence of a hooked conductor on the palpal bulb. The thinner embolus of *Pelinobius* provides distinction from males of *Anoploscelus* Pocock, 1897. In *Loxoptygus* Simon, 1903 the pro-lateral SSR of coxae I–II, below the mega-bristle, possesses large terminally bifid plumose setae; however, in *Pelinobius* the analogous plumose setae are not bifid.

***Pelinobius muticus* Karsch, 1885, restored combination**  
(Plates 23–33, Figs. 44–49)

*Pelinobius muticus* Karsch, 1885: 135, fig. 5 (D♂).

*Phoneyusa gregori* Pocock, 1897: 761, pl. XLIII, figs. 6–6a (D♂);  
Smith, 1988: 39. **New synonymy.**

*Phoneyusa bettoni* Pocock, 1898b: 503 (D♂); Smith, 1988: 37; Smith,  
1990: 47, figs. 197–201, 203–207 (♂); Schmidt, 1993: 111,  
fig. 348 (♂). **New synonymy.**

*Citharischius Crawshayi* Pocock, 1900: 493, fig. a (D♀). **New synonymy.**  
*Citharischius crawshayi*: Smith, 1988: 31; Smith, 1990: 24, figs. 28–37  
(♀).

*Phoneyusa rufa* Berland, 1914: 50, fig. 7 (D♂); Smith, 1990: 54,  
fig. 255a (♂). **New synonymy.**

*Phoneyusa gregori*: Smith, 1990: 52, figs. 245–254 (♂).

*Phoneyusa muticus*: Smith, 1990: 54.

**Type material:** Holotype ♂ (ZMH) from Tanzania, Longidoberge (=Longido), Masai-Land [02°40'S, 36°42'E], 19 January 1884 (Dr G. A. Fischer); images examined. Holotype ♂ (BMNH 1893.11.9.12) of *Phoneyusa gregori* from Kenya, Kilungu, Iveti Mountains, Masailand [01°47'S, 37°22'E] (Dr J. W. Gregory); examined. Holotype ♂ (BMNH 1897.11.20.47) of *Phoneyusa bettoni* from Kenya, Voi [03°23'S, 38°35'E] (Steuart Betton); examined. Holotype ♀ (BMNH 1899.1.13.1) of *Citharischius crawshayi* from Kenya, Kinani (=Kenani) [02°52'S, 38°19'E] (Richard Crawshay); examined. Holotype ♂ (MHNP AR4723) of *Phoneyusa rufa* from Kenya, Kibwezi [02°25'S, 37°57'E], December 1903 (Ch. Alluaud); examined.

**Remarks:** The holotype males of *Pelinobius muticus*, *Phoneyusa gregori* and *Phoneyusa bettoni* share the elongated, conical labium found in the holotype female of *Citharischius crawshayi*. In the holotype of *Phoneyusa rufa* the labium is not as elongated, but this can be attributed to its smaller size. Small mature males, reared in captivity from large wild caught *C. crawshayi* females, also exhibit reduced elongation of the labium. In captivity, young females develop the elongated labium with increasing size (Plates 26–28); large captive reared mature males also exhibit elongated labia. The holotype males of *P. muticus*, *P. gregori*, *P. bettoni* and *P. rufa* lack any form of tibial apophysis on leg I. Although both palps, along with their bulbs, are now missing from the *P. muticus* holotype, Karsch (1885) notes that the

embolus is long, curved and pointed, making no mention of a conductor. The palpal bulbs of all four are therefore consistent, lacking the distinctive conductor found on the palpal bulbs of *Phoneyusa sensu stricto*. The paired spermathecae of *Phoneyusa sensu stricto* are typically squat and broader than long, whereas in *C. crawshayi* they are narrow and elongated. The types of *P. muticus*, *P. gregori*, *P. bettoni*, *C. crawshayi* and *P. rufa* are reddish-brown in colour and their type localities are in close proximity to one another. Pocock (1900) also mentioned that a male specimen of *P. bettoni* (BMNH 1899.1.13.2) was collected along with the holotype female of *C. crawshayi*. For the reasons outlined above *P. gregori*, *P. bettoni*, *C. crawshayi* and *P. rufa* are proposed as junior synonyms of *Pelinobius muticus*.

The specimens described by Laurent (1946) as *Phoneyusa gregori* were examined and are not conspecific with *Pelinobius muticus*. Their taxonomy is outside the scope of this paper and will be discussed within a revision of the Eumenophorinae (Gallon, in prep.).

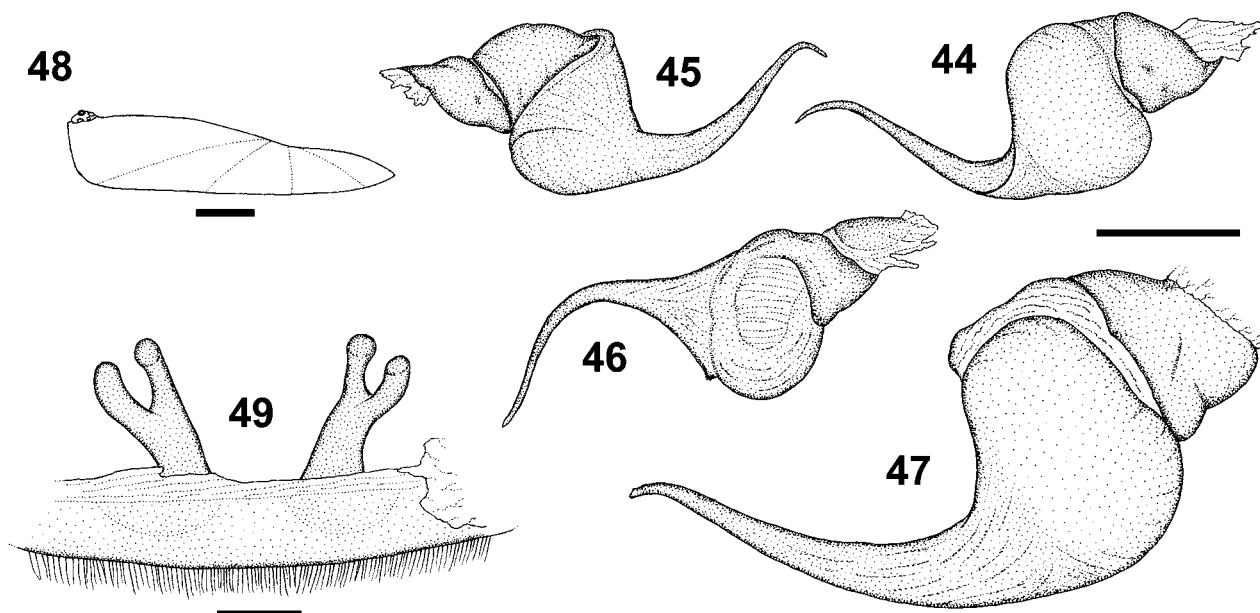
**Diagnosis:** Refer to genus diagnosis.

**Description:** *Small male* (OUMNH-2009-043): Total length 33.5. Carapace profile low, length 15.2, width 13.0. Abdomen length 14.4, width 9.4. Fovea deep procurved pit. Ocular tubercle length 1.94, width 2.23. Clypeus absent. Eye sizes: AME 0.68, ALE 0.58, PME 0.44, PLE 0.55. Sternum with three pairs of oval sigilla (anterior and medial pairs sub-marginal, posterior pair large and medially placed). Labium trapezoid with *c.* 325 cuspules. Labium notched anteriorly. Labial suture with pair of flattened mounds. Maxilla with *c.* 270 cuspules. DS of posterior spinneret digitiform. Chelicerae not dorsally granulated, with 10R, 12L teeth on promargin. Stridulation organs: Palp (RL surfaces): coxa with distal group of dispersed spike setae; trochanter with dense scopula. Leg I (PL surfaces): proximal SSR of coxa with dense scopula of plumose spike setae; distal SSR of coxa glabrous without spike setae; upper margin of SSR fringed with fine white plumose setae covering a single terminally bifid, stridulatory mega-bristle; upper surface of trochanter glabrous with upper margin fringed with double row of curved stridulatory bristles, these covered dorsally with fringe of fine



Plates 23–24: *Pelinobius muticus* Karsch, 1885. **23** Adult female (OUMNH-2009-043); **24** Adult male.





Figs. 44–49: *Pelinobius muticus* Karsch, 1885. 44–47 Palpal bulbs: 44, 47 Retrolateral views; 45 Prolateral view; 46 Dorsal view; 48 Carapace, lateral view; 49 Spermathecae, dorsal view (44–46 small male OUMNH-2009-043; 47 large male OUMNH-2009-043; 48–49 female OUMNH-2009-043). Scale lines = 1 mm (44–47, 49), 5 mm (48).

white plumose setae. Leg I (RL surfaces): coxa with small medial group of spike setae. Leg II (PL surfaces): SSR of coxa as in leg I, except large plumose spike setae more extensive; upper surface of trochanter glabrous with upper margin fringed with double row of weak curved stridulatory bristles, these covered dorsally with fringe of fine white plumose setae. Remaining leg segments devoid of stridulatory setae. Femoral scopulae (all distinctly plumose): palp PL 75% proximal, RL 100%; leg I PL 75% proximal; leg II PL 25% proximal. Remaining femoral surfaces without scopulae. Leg and palp segment lengths in Table 18. Palpal tibia swollen proximally. Femur III strongly incrassate. Metatarsus I straight. Tarsal scopulae integral. Metatarsal scopulae: leg I (83%, integral); leg II (75%, integral); leg III (66%, integral); leg IV (50%, integral). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria on leg I in two rows along entire dorsum of tarsus (25R, 25L). Spination: palp tibia 1DPV; leg I tibia 1DRV, 1DPV, metatarsus 1DMV; leg II tibia 1DRV, 1DPV, metatarsus 2DRV (3R), 1DMV; leg III tibia 1DPV, metatarsus 1DRV (2R), 1DMV, 2DPV; leg IV tibia 1DPV (0R), metatarsus 1DRV, 1DMV, 2DPV. Remaining leg segments aspinose. Tibial spur: absent, no apophyses. Coloration (as in Plate 24): uniformly terracotta, with metallic reddish-pink setae on carapace (when surface dried). Palpal bulb (Figs. 44–46):

tegulum pyriform. Embolus curved, circular in cross-section. Single keel begins at retrodorsal base of embolus, spirals retrolaterally and terminates retroventrally one-third along embolus.

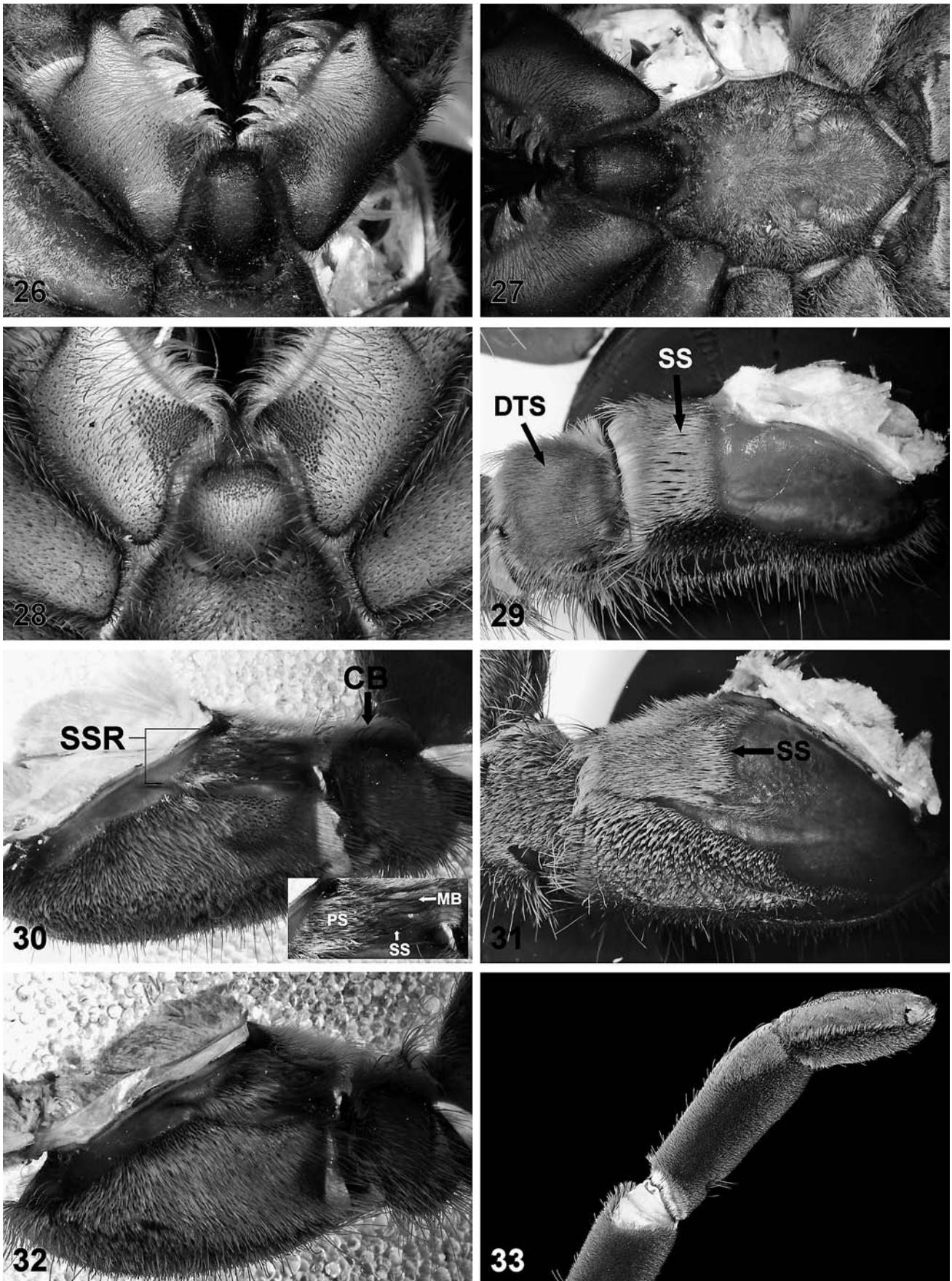
*Large male* (OUMNH-2009-043): As previous male except: Total length 41.8. Carapace length 18.5, width 16.3. Abdomen length 17.2, width 12.3. Ocular tubercle length 2.38, width 2.72. Clypeus 0.59. Eye sizes: AME 0.79, ALE 0.67, PME 0.45, PLE 0.56. Labium conical and strongly elongated, with *c.* 340 cuspules. Labium notched anteriorly. Labial suture with pair of raised mounds. Maxilla with *c.* 380 cuspules. Chelicerae with 11R, 10L teeth on promargin. Stridulation organs: Leg II (PL surfaces): SSR mega-bristle not bifid. Femoral scopulae (not obviously plumose except on RL palp femur): palp PL 60% proximal, RL 100%; leg I PL 80% proximal; leg II PL 60% proximal. Remaining femoral surfaces without scopulae. Leg and palp segment lengths in Table 19. Metatarsal scopulae: leg I (83%, integral); leg II (80%, integral); leg III (50%, integral); leg IV (33%,

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	13.4	7.2	10.6	9.5	6.5
<b>II</b>	11.6	6.7	8.8	9.3	6.3
<b>III</b>	11.1	6.3	7.2	9.9	6.6
<b>IV</b>	14.0	6.8	11.0	13.7	7.4
<b>Palp</b>	8.7	5.0	7.3	–	2.8

Table 18: *Pelinobius muticus* Karsch, 1885. Lengths of leg and palp segments of small male (OUMNH-2009-043).



Plate 25: *Pelinobius muticus* Karsch, 1885, Adult female carapace, dorsal view (OUMNH-2009-043).



Plates 26–33: *Pelinobius muticus* Karsch, 1885. **26** Large female labium, length 6.6 mm; **27** Large female labium and sternum; **28** Immature female labium, length 2.0 mm (OUMNH-2009-043); **29–32** Stridulation organs, female (OUMNH-2009-043); **29** Palp maxilla, retrolateral view, length 11.2 mm; **30** Coxa-trochanter I, prolateral view, length 12.8 mm, SSR detail inset; **31** Coxa I, retrolateral view; **32** Coxa-trochanter II, prolateral view, length 11.5 mm (SSR=supra-sutural region; SS=spike setae; DTS=dense trochanteral scopula; PS=plumose spike setae; MB=mega-bristle; CB=curved stridulatory bristle); **33** Left leg IV showing thickening, velvety setae and reduced metatarsal scopulae, retroventral view (**26**, **27**, **33**: OUMNH-2009-043).

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	16.3	8.5	13.1	12.6	8.6
<b>II</b>	15.1	7.8	10.7	12.1	9.0
<b>III</b>	13.9	7.4	9.3	13.1	9.0
<b>IV</b>	17.2	8.3	13.7	18.6	11.0
<b>Palp</b>	12.2	7.0	11.1	–	3.9

Table 19: *Pelinobius muticus* Karsch, 1885. Lengths of leg and palp segments of large male (OUMNH-2009-043).

integral). Clavate trichobothria (22R, 26L, rubbed). Spination: leg I tibia 1DRV, metatarsus 1DMV; leg II tibia 1DRV, metatarsus 1DRV, 1DMV, 1DPV; leg III tibia 1DPV, metatarsus 1DRV, 1DMV, 2DPV; leg IV metatarsus 1DRV, 1DMV, 2DPV (1R). Remaining leg segments aspinose. Palpal bulb (Fig. 47): without distinct keels.

*Female* (OUMNH-2009-043): Total length 67.6. Carapace profile domed, slightly raised at caput (Plate 25, Fig. 48), length 27.8, width 22.2. Lateral margin of carapace with band of tiny spike setae. Abdomen length 32.2, width 27.2. Fovea deep procurved pit. Ocular tubercle length 3.02, width 3.51. Clypeus 0.99. Eye sizes: AME 0.95, ALE 0.77, PME 0.63, PLE 0.67. Sternum with three pairs of oval sigilla (anterior pair submarginal, medial and posterior pairs large and medially placed); anterior corners of sternum raised. Labium conical and strongly elongated with *c.* 510 cuspules (Plates 26–27). Labium not notched anteriorly, protruding terminally. Labial suture with pair of flattened mounds. Maxilla with *c.* 400 cuspules. DS of posterior spinneret digitiform. Chelicerae not dorsally granulated, with 13R, 14L teeth on promargin. Stridulation organs: Palp (RL surfaces, Plate 29): coxa with distal group of dispersed spike setae; trochanter with dense scopula. Leg I (PL surfaces, Plate 30): proximal SSR of coxa with dense scopula of plumose spike setae; distal SSR of coxa glabrous with group of three robust stridulatory spike setae; upper margin of SSR with a terminally bifid, stridulatory mega-bristle; upper surface of trochanter glabrous with upper margin fringed with double row of curved stridulatory bristles, these covered dorsally with fringe of fine white plumose setae. Leg I (RL surfaces, Plate 31): coxa with medial group of weak spike setae. Leg II (PL surfaces, Plate 32): proximal SSR of coxa with dense scopula of plumose spike setae; distal SSR of coxa without robust stridulatory spike setae; upper margin of SSR with single stridulatory spike seta; upper margin of trochanter with fringe of fine white plumose setae only (no curved stridulatory bristles, only weakly sclerotised analogues). Remaining leg segments devoid of stridulatory setae. Femoral scopulae (weak, not obviously plumose): palp RL proximal 75%; leg I PL proximal 100%. Remaining femoral surfaces apparently without scopulae. Leg and palp segment lengths in Table 20. Leg III and particularly leg IV robust relative to anterior limbs. Pseudo-scopulae of short fine velvety setae cover: RL patella–tibia IV; RL and retrodorsum metatarsus–tarsus IV (these pseudo-scopulae further increase distal girth of leg IV). In life tarsus IV inflects retrolaterally from rest of limb. All tarsi with integral

	Fe	Pa	Ti	Mt	Ta
<b>I</b>	17.3	11.5	13.1	10.5	8.4
<b>II</b>	15.4	10.5	10.4	10.2	9.1
<b>III</b>	15.2	9.9	9.1	12.0	9.3
<b>IV</b>	20.4	12.2	15.4	18.9	12.5
<b>Palp</b>	12.7	8.3	9.5	–	9.0

Table 20: *Pelinobius muticus* Karsch, 1885. Lengths of leg and palp segments of female (OUMNH-2009-043).

scopulae. Metatarsal scopulae: leg I (80%, integral); leg II (66%, integral); leg III (50%, integral); leg IV (33%, integral). Paired claws smooth, third claw absent. All tarsi with paired claw tufts. Clavate trichobothria on leg I in two rows along entire dorsum of tarsus (27R, 28L). Spination: palp tibia 1DPV; leg I metatarsus 1DMV; leg II metatarsus 1DRV, 1DMV, 1DPV; leg III metatarsus 1DRV, 1DMV, 1DPV; leg IV metatarsus 1DRV, 1DMV, 1DPV (0L). Remaining leg segments aspinose. Coloration (as in Plate 23): uniformly terracotta (when surface dried). Spermathecae (Fig. 49): paired, flattened and bilobed. Termini rounded in cross-section.

*Additional material examined*: KENYA: BMNH 1899.1.13.2 (dry tray), 1♂, Kinani (=Kenani) [02°52'S, 38°19'E] (Richard Crawshay); BMNH, 1♂, Kiboko [02°12'S, 37°43'E], March 1967 (Dr D. M. Minter); BMNH, 1♀, Tsavo National Park, February/March 1984 (S. Trevor); NMKE, 1♀, Katangi market, Yata, Machakos District, dug from hole [01°32'S, 37°16'E], 17 July 1993 (Peter Kisilo); NMKE, 1♀, Machakos [01°32'S, 37°16'E], December 1972 (Azumani); NMKE, 1♀, Voi, Lake Malagua [03°23'S, 38°35'E], November 1958 (Aindow); NMKE, 1♂, Voi [03°23'S, 38°35'E], 1985 (S. Trevor); NMKE, 2♂, Voi area, Tsavo East [03°23'S, 38°35'E], April 1986 (S. Trevor & B. Davidson). TANZANIA: OUMNH-2009-043, 1♀, died 15 December 2005; OUMNH-2009-043, 1♂, northern Tanzania (Joe Beraducci). NO DATA: BMNH, 1♀; OUMNH-2009-043, 1♂, captive bred by Guy Tansley, preserved 2006.

*Distribution*: Southern Kenya and northern Tanzania.

*Ecology*: A fossorial species constructing burrows approximately 50 cm deep below acacia scrub bushes (Smith, 1990). The male is mature in December, January, March and April. The female constructs a fixed hammock egg-sac (Tansley, 2001; Gallon & Gabriel, 2006).

#### Additional relevant type material examined

Type specimens of the following species were also examined: *Harpactirella domicola* Purcell, 1903 (SAM), *H. helenae* Purcell, 1903 (SAM), *H. karrooica* Purcell, 1902 (SAM), *H. lightfooti* Purcell, 1902 (SAM), *H. longipes* Purcell, 1902 (SAM), *H. magna* Purcell, 1903 (SAM), *H. schwarzi* Purcell, 1904 (SAM), *H. lapidaria* Purcell, 1908 (ZMB), *H. spinosa* Purcell, 1908 (ZMB), *H. treleaveni* Purcell, 1902 (SAM), *Anoploscelus celeripes* Pocock, 1897 (BMNH), *Eumenophorus clementsi* Pocock, 1897 (BMNH), *E. murphyorum* Smith, 1990 (BMNH), *Phoneyusa belandana* Karsch, 1884 (ZMB), *P. bidentata* Pocock, 1899 (BMNH), *P. buettneri* Karsch, 1886 (ZMB), *P. bidentata ituriensis* Laurent, 1946 (MRAC), *P. antilope* (Simon, 1889) (MNHN), *P. gracilipes* (Simon, 1889) (MNHN), *P. giltayi* Laurent, 1946 (ISNB), *P. cultridens* Berland, 1917 (MNHN), *Loxomphalia rubida* Simon, 1889 (MNHN), *Loxoptygus*

*ectypus* (Simon, 1889) (MNHN), *L. coturnatus* Simon, 1903 (MNHN).

### Acknowledgements

Thanks are due to Leon Baert (ISNB), Jan Beccaloni (BMNH), Margie Cochrane (SAM), Ansie Dippenaar-Schoeman (PPRI), Jason Dunlop (ZMB), Rudy Jocqué (MRAC), Klaas Manamela (TM), Michael Mungai (NMKE) and Christine Rollard (MNHN) for loans and access to material. Darren Mann, James Hogan and Zoë Simmons (OUMNH) provided a secure voucher specimen/type depository. Heronymus Dastych (ZMH) assisted by providing images of the holotype of *Pelinobius muticus*. Adrian Armstrong (KwaZulu-Natal Wildlife, Pietermaritzburg, South Africa), Ansie Dippenaar-Schoeman, Marianne Forsyth-Coetzee (Gauteng Nature Conservation, Johannesburg, South Africa) and Koos de Wet (Mpumalanga Parks Board, Lydenburg, South Africa) are thanked for help securing collecting permits. Thomas Ezendam, Guy Tansley, Sjef van Overdijk and Dennis van Veldhuizen are acknowledged for their help with fieldwork. Steffen Haller, Eddy Hijmensen, Phil Messenger, Timo Raab and Ingo Wendt provided useful specimens and data on captive breeding of *Augacephalus ezendami*. Guy Tansley and James Clugston provided useful information relating to their experiences of breeding *Pelinobius muticus*. Martin Paulsen, Ian Engelbrecht and Charles Haddad are thanked for securing specimens of *Ceratogyrus paulseni* and *Idiothele mira* for description. I would also like to thank Andrew Smith for relating his suspicion that *Phoneyusa gregori* represents the male of *Citharischius crawshayi*, and for allowing me to publish this synonym here along with my own findings. Volker von Wirth is thanked for investigating the whereabouts and existence of the holotype of *Monocentropella stridulantissima* Strand, 1907. Fieldwork was partly funded by a grant from the Ted Locket memorial fund of the British Arachnological Society.

### References

- BAXTER, R. N. 1993: *Keeping and breeding tarantulas*. Chudleigh Publishing, Ilford.
- BERLAND, L. 1914: Araneae (part 1). In *Voyage de Ch. Alluaud et R. Jeannel en Afrique orientale (1911–1912). Résultats scientifiques. Arachnida, III*: 37–94. Paris.
- EZENDAM, T. 2007: The hunt for Blue Foot. *J. Br. Tarantula Soc.* **23**(1): 30–33.
- GALLON, R. C. 1999: Appendage deformity in an African theraphosid spider: *Coelogenium pillansi* Purcell, 1902. *Newsl. Br. arachnol. Soc.* **85**: 8.
- GALLON, R. C. 2001: Revision of the *Ceratogyrus* spp. formerly included in *Coelogenium* (Araneae: Theraphosidae, Harpactirinae). *Mygalomorph* **2**(1): 1–20.
- GALLON, R. C. 2002: Revision of the African genera *Pterinochilus* and *Eucratoscelus* (Araneae, Theraphosidae, Harpactirinae) with description of two new genera. *Bull. Br. arachnol. Soc.* **12**(5): 201–232.
- GALLON, R. C. 2004: *Harpactirella leleupi* Benoit, 1965 is a junior synonym of *Idiothele nigrofulva* (Pocock, 1898) (Araneae, Theraphosidae, Harpactirinae). *Bull. Br. arachnol. Soc.* **13**(3): 95–96.
- GALLON, R. C. 2005: A new species of theraphosid spider from Southern Africa (Araneae, Theraphosidae, Harpactirinae) with distributional notes on other harpactirines. *Bull. Br. arachnol. Soc.* **13**(5): 179–184.
- GALLON, R. C. 2008: On some poorly known African Harpactirinae, with notes on *Avicuscodra arabica* Strand, 1908 and *Scodra pachypoda* Strand, 1908 (Araneae, Theraphosidae). *Bull. Br. arachnol. Soc.* **14**(5): 232–246.
- GALLON, R. C. 2009: Two new *Pterinochilus* species from Kenya (Araneae, Harpactirinae, Theraphosidae). *Bull. Br. arachnol. Soc.* **14**(9): 361–364.
- GALLON, R., EZENDAM, T. & OVERDIJK, S. van 2004: Two incidences of the theraphosid *Harpactirella* associating with other arthropods. *Newsl. Br. arachnol. Soc.* **99**: 9–10.
- GALLON, R. C. & GABRIEL, R. 2006: Theraphosidae egg-sac types. *Newsl. Br. arachnol. Soc.* **106**: 5–10.
- KARSCH, F. 1885: Verzeichniss der von Dr. G. A. Fischer auf der im Auftrage der geographischen Gesellschaft in Hamburg unternommenen Reise in das Massai-Land gesammelten Myriopoden und Arachnoiden. *Jb. hamb. wiss. Anst.* **2**: 131–139.
- LAURENT, R. 1946: Notes arachnologiques africaines II. Sur quelques Theraphosides du Congo Belge (Ischnocolinae, Eumenophorinae, Selenocosmiinae). *Revue Zool. Bot. afr.* **31**(4): 293–326.
- POCOCK, R. I. 1897: On the spiders of the suborder Mygalomorphae from the Ethiopian region, contained in the collection of the British Museum. *Proc. zool. Soc. Lond.* **1897**: 724–774.
- POCOCK, R. I. 1898a: On the Arachnida taken in the Transvaal and in Nyasaland by Mr. W. L. Distant and Dr. Percy Rendall. *Ann. Mag. nat. Hist.* (7) **1**: 308–321.
- POCOCK, R. I. 1898b: On the scorpions, spiders, and solpugas collected by Mr. C. Steuart Betton in British East Africa. *Proc. zool. Soc. Lond.* **1898**: 497–524.
- POCOCK, R. I. 1899: On the scorpions, pedipalps, and spiders from tropical West Africa represented in the collection of the British Museum. *Proc. zool. Soc. Lond.* **1899**: 833–885.
- POCOCK, R. I. 1900: Some new African Theraphosoid spiders in the British Museum. *Ann. Mag. nat. Hist.* (7) **6**: 489–494.
- RAVEN, R. J. 1985: The spider infraorder Mygalomorphae (Araneae): cladistics and systematics. *Bull. Am. Mus. nat. Hist.* **182**: 1–180.
- SCHMIDT, G. 1993: *Vogelspinnen: Vorkommen, Lebensweise, Haltung und Zucht, mit Bestimmungsschlüsseln für alle Gattungen* (4th ed.). Hannover, Landbuch Verlag.
- SIMON, E. 1892: *Histoire naturelle des araignées* **1**(1): 1–256. Paris.
- SIMON, E. 1903: *Histoire naturelle des araignées* **2**(4): 669–1080. Paris.
- SMITH, A. M. 1988: *The tarantula classification and identification guide* (2nd ed.). London, Fitzgerald.
- SMITH, A. M. 1990: *Baboon spiders, tarantulas of Africa and the Middle East*. London, Fitzgerald.
- STRAND, E. 1907: Spinnen des Zoologischen Instituts in Tübingen. *Zool. Jb. (Syst.)* **24**(5): 391–468.
- TANSLEY, G. 2001: *Citharischius crawshayi* – the king baboon – first successful UK breeding? *J. Br. Tarantula Soc.* **16**(2): 42–43.