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Research article

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East African pholcid spiders: an overview, with descriptions of eight new species (Araneae, Pholcidae)

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Abstract. This paper summarizes current knowledge about East African pholcids. East Africa is defined as the area from 12°S to 5°N and from 28° to 42°E, including all of Uganda, Kenya, Burundi, Rwanda, and Tanzania. An annotated list of the 15 genera and 87 species recorded from this area is given, together with distribution maps and an identification key to genera. Most East African species (90%) belong to one of only six genera: *Buitinga* Huber, 2003 (21 species); *Smeringopus* Simon, 1890 (18); *Pholcus* Walckenaer, 1805 (17); *Spermophora* Hentz, 1841 (12); *Leptopholcus* Simon, 1893 (5) and *Quamtana* Huber, 2003 (4). Eight species for which DNA sequence data have been published recently are newly described: *Buitinga batwa* sp. nov., *B. wataita* sp. nov., *Spermophora mau* sp. nov., *S. maathaiae* sp. nov., *S. bukusu* sp. nov., *S. kirinyaga* sp. nov., *S. kyambura* sp. nov. and *Quamtana nyahururu* sp. nov. *Crossopriza johncloudsleyi* Deeleman-Reinhold & van Harten, 2001, previously only known from Yemen, is redescribed based on specimens from Kenya. Additional new records are given for 21 previously described species.

Keywords. Pholcidae, East Africa, taxonomy, identification key.

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Introduction

The exploration of East African pholcid spiders started late and progress was slow for almost a century. Strand (1906a, 1906b, 1907, 1913) and Tullgren (1910) reported the first six species for the area considered here, and until the end of the 20th century, the number increased to a mere 19 currently valid species. That this is in stark contrast to the actual diversity of the region was first demonstrated by a spider inventory made in the Tanzanian Uzungwa Mountains (Sørensen *et al*. 2002; Sørensen 2003). Pholcids were not only the most abundant spider family but proved to be represented in the area by a rich and highly endemic fauna. Most of this material and of other material available in collections has since been studied (Huber 2003a, 2007, 2009, 2011, 2012), and at the level of genera our knowledge about East African pholcids can probably be considered as fairly complete. At the level of species, the situation is very different. Several lines of evidence (unpublished material in collections; distribution patterns; poorly sampled areas; data from recent expeditions focusing on pholcids) indicate that many species remain undescribed and even more may remain undiscovered. The present paper is an attempt to summarize current knowledge about East African pholcids, complementing recent revisionary work that concentrated on major genera (Huber 2003a, 2011, 2012). Rather than closing the subject it is meant to facilitate access to the available information, to guide future collecting expeditions, and to point out some biologically interesting open questions.

Material and methods

A large part of the material studied herein was collected during recent expeditions to Kenya and Uganda (both in 2010). This material is deposited at Zoologisches Forschungsmuseum Alexander Koenig, Bonn (ZFMK) and National Museums of Kenya, Nairobi (NMKE). Further material was borrowed from the following institutions: Natural History Museum, London (NMH); California Academy of Sciences, San Francisco (CAS); Collection John and Frances Murphy, Middlesex, England (CJFM); Museum of Comparative Zoology, Cambridge (MCZ); Muséum national d'Histoire naturelle, Paris (MNHN); Musée royal de l'Afrique Centrale, Tervuren (MRAC); Netherlands Centre for Biodiversity Naturalis, Leiden (RMNH); Museo Zoologico de "la Specola", Firenze (MZF); Museum für Naturkunde, Berlin (ZMB); Zoological Museum, University of Copenhagen, Copenhagen (ZMUC).

Methods and terminology are as in recent revisions (Huber 2011, 2012). Measurements are in mm unless otherwise noted. Eye measurements are +/- 5 µm. Epigyna were cleared in a warm NaOH solution and stained with chlorazol black. Locality coordinates are in round brackets when copied from labels and original publications or when received directly from collectors, in square brackets when originating from some other source (such as online gazetteers, Google Earth, MRAC database, etc.). The following abbreviations are used: ALE: anterior lateral eyes; ALS: anterior lateral spinnerets; AME: anterior median eyes; a.s.l.: above sea level; L/d: length/diameter; PME: posterior median eyes.

The geographic area considered here is somewhat arbitrary, largely following a widely used definition of "East Africa" (e.g. Indeje *et al*. 2000; Shongwe *et al*. 2011) but adapted to include all of Kenya and all of Tanzania: the area from 12°S-5°N and 28°-42°E (Fig. 16). The five countries completely included (Uganda, Kenya, Burundi, Rwanda, and Tanzania) form a political community (East African Community, EAC) rather than a natural or biologically defined unity. In fact, a recent analysis shows that East Africa presents a very complex biogeographical mixture and is best considered a large regional mosaic (Linder *et al*. 2012). However, the area largely coincides with the distribution of the most diverse and only endemic pholcid genus in eastern Africa: *Buitinga* and its closest relatives currently assigned to *Spermophora* (the species around *S. minotaura* Berland, 1920 in Dimitrov, Astrin & Huber 2012).

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Results

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Pholcidae C.L. Koch, 1851

Annotated list of East African genera and species

Pholcidae described from East Africa as defined herein, with countries, references, and new records.

Anansus Huber, 2007

Anansus is widely distributed in tropical Africa (Huber 2007) but only two unidentified specimens (possibly representing one or two undescribed species) of these tiny spiders are known from East Africa (Fig. 16): 1 ♂ from Uganda, Budongo Forest near Sonso (1.75°N, 31.58°E, in ZFMK Ar 5466) and 1 ♀ from Uganda, Bwindi Impenetrable Forest National Park, Kitahurira (0.97°S, 29.68°E, in CAS).

Artema Walckenaer, 1837

The natural distribution of *Artema* ranges from northern Africa to Central Asia. Only the synanthropic *A. atlanta* Walckenaer, 1837 has been collected in East Africa (Fig. 17).

1. *Artema atlanta* Walckenaer, 1837. Tanzania (Tullgren 1910), newly recorded for Kenya and Uganda.

New records

KENYA: *Western Province*: 2 ♀♀, in ZFMK (Ar 8660), Mbutali, in building (0°29.3'N, 34°50.3'E), 1550 m a.s.l., 2 Feb. 2010 (B.A. Huber). *Coast Province*: 1 juv., in ZFMK (Ar 8661), Kwale, in building (4°10.4'S, 39°27.2'E), 410 m a.s.l., 24 Jan. 2010 (B.A. Huber); 1 ♂, in CJFM (6068), Kilifi [3°37.9'S, 39°50.9'E], garden scrub, 5 Sep. 1977 (Murphy). *Rift Valley*: 1 ♂, 2 ♀♀ + juvs., in MCZ (34008), Lodwar, 60 km W Lake Rudolf (= Turkana) [3°07.1'N, 35°36.0'E], 16-26 Aug. 1963 (B. Patterson). TANZANIA: *Zanzibar*, 2 ♂♂, 5 ♀♀ + juvs., in MCZ (34073), [~6.2°S, 39.2°E], 18 Sep. 1961 (E.D. Roper); ♂♂, ♀♀ (2 vials), in MCZ (34075-76), May 1882 (C. Cooke). UGANDA: 1 ♀, in ZFMK (Ar 8662), Kasese District, Ruwenzori Mts., Nyakalengija, in building (0°20.5'N, 30°02.6'E), 1590 m a.s.l., 1 Dec. 2010 (B.A. Huber). Additional new record. SOMALIA: 1 ♀, in MZF, Mogadishu [2°02'N, 45°21'E], 31 Mar.-14 Apr. 1924 ("Stef. + Pucc.").

Buitinga Huber, 2003

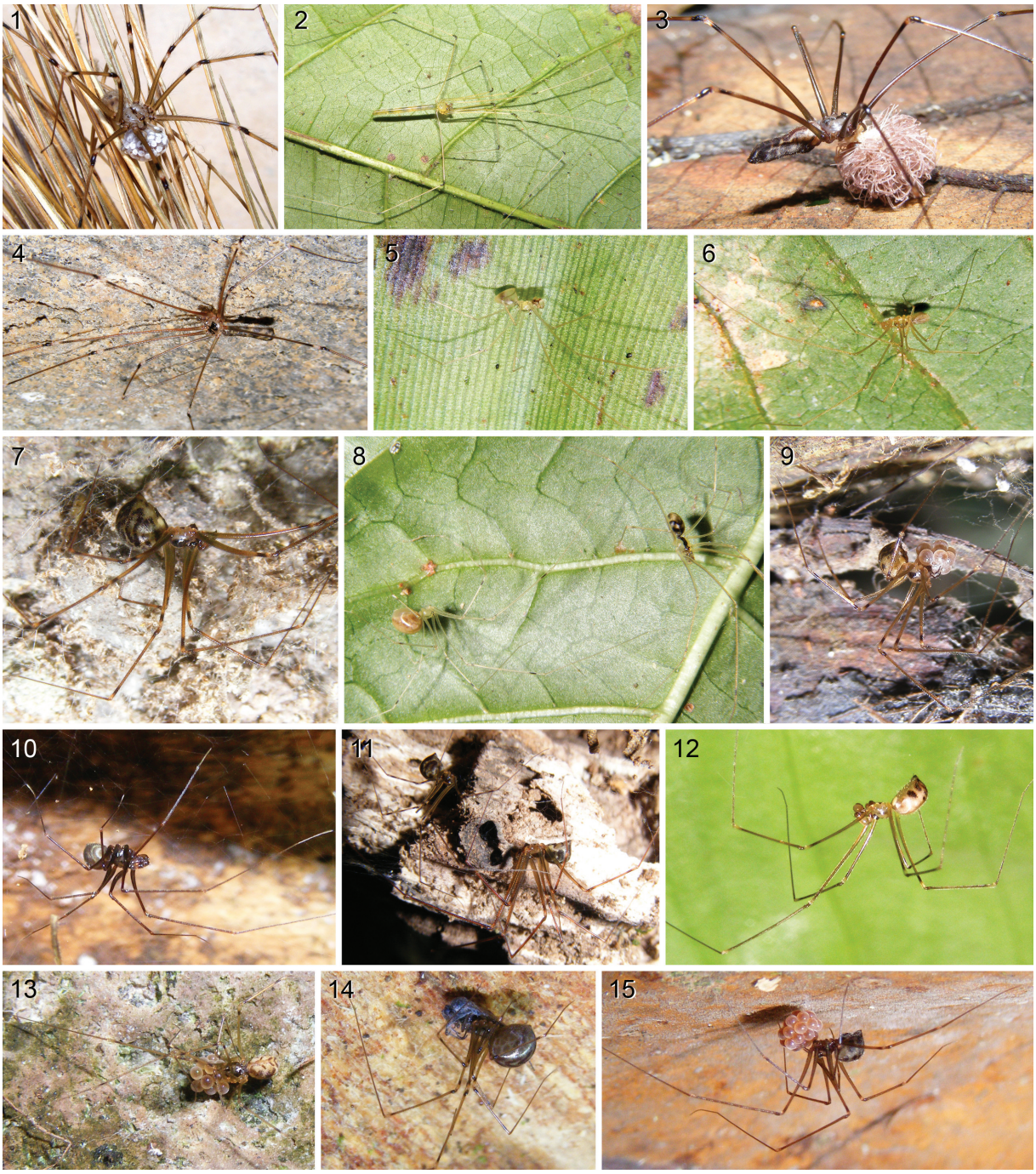
Buitinga is a diverse genus endemic to East Africa (Fig. 18). Only *B. mulanje* Huber, 2003 (from Southern Malawi, see Huber 2003a) occurs outside the area considered here. The genus comprises mostly small, long-legged species that are largely restricted to well-preserved forests. The genus now includes 22 described species, but dozens of additional species are likely to occur (Huber 2003a).

2. *Buitinga amani* Huber, 2003. Tanzania (Huber 2003a).

New records

TANZANIA: 1 ♂, 6 ♀♀ + juvs. in CAS, Tanga Region, East Usambara Mountains, 12 km SE Amani, Kihuhwi-Zigi Forest Reserve (5°06.3'S, 38°40.6'E), 400-500 m a.s.l., 2-4 Nov.1995 (C. Griswold, N. Scharff, D. Ubick); 1 ♂, 10 ♀♀ + juvs., in CAS, same data but sifting litter; 1 ♂, in ZMUC, Tanga Region, Magrotto Hill [5°07'S, 38°46'E], Jul.-Sep.1994 (Frontier).

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Figs 1-15. — **1**. *Artema atlanta* Walckenaer, 1837 from Mbutali, Kenya. — **2**. *Leptopholcus tipula* (Simon, 1907) from Semuliki, Uganda. — **3**. *Smeringopus mpanga* Huber, 2012 from Kalinzu F.R., Uganda. — **4**. *Pholcus taita* Huber, 2011 from Taita Mountains, Kenya. — **5**. *Quamtana kabale* Huber, 2003 from Ruwenzori, Uganda. — **6**. *Quamtana nyahururu* sp. nov. from Thompson Falls, Kenya. — **7-8**. *Spermophora minotaura* Berland, 1920 from Mt. Kenya (7: dark morph; 8: light morph). — **9**. *Spermophora mau* sp. nov. from near Elburgon, Kenya. —**10**. *Spermophora kirinyaga* sp. nov. from Mt. Kenya, Kenya. — **11**. *Buitinga nigrescens* (?) (Berland, 1920) from Ol Donyo Sabuk, Kenya. — **12**. *Buitinga ruhiza* Huber, 2003 from Buhoma, Uganda. — **13**. *Buitinga batwa* sp. nov. from Mgahinga Gorilla N.P., Uganda. — **14**. *Buitinga ruwenzori* Huber, 2003 from Ruwenzori, Uganda. — **15**. *Buitinga griswoldi* Huber, 2003 from Buhoma, Uganda. Photos BAH.

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3. *Buitinga asax* Huber, 2003. Tanzania (Huber 2003a).

New records

TANZANIA: many ♂♂ and ♀♀ (54 vials), in ZMUC, Iringa Region, Mufindi Distr., Uzungwa Scarp F.R., Kihanga Stream (8°22.1'S, 35°58.7'E), 1800 m a.s.l., 17-27 May 1997 (ZMUC-SI expedition).

4. *Buitinga batwa* sp. nov. (see below). Uganda.

5. *Buitinga buhoma* Huber, 2003. Uganda (Huber 2003a).

New records

UGANDA: 4 ♂♂, 6 ♀♀, in ZFMK (Ar 8663), Kanungu District, Bwindi Impenetrable N.P., waterfall trail near Buhoma (0°59.8'-1°00.2'S, 29°36.9-37.2'E), ~1500-1600 m a.s.l., 22 Nov. 2010 (B.A. Huber); 4 ♀♀ in pure ethanol, in ZFMK (Uga 124), same data. 2 ♂♂, 2 ♀♀, in ZFMK (Ar 8664), Bushenyi District, Kalinzu Forest Reserve (0°22.5'S, 30°06.9'E), 1500 m a.s.l., 28 Nov. 2010 (B.A. Huber); 1 ♀, 1 juv. in pure ethanol, in ZFMK (Uga 120), same data; 2 ♂♂, in ZFMK (Ar 8665), Kisoro District, Mgahinga Gorilla N.P., at tree near park gate (1°21.2'S, 29°37.1'E), 2350 m a.s.l., 25 Nov. 2010 (B.A. Huber); 2 ♂♂, 1 ♀♀, in ZFMK (Ar 8666), Mgahinga Gorilla N.P., bamboo forest (~1°22.0-22.3'S, 29°36.3-36.9'E), 2500-2600 m a.s.l., 25 Nov. 2010 (B.A. Huber).

Assigned tentatively

UGANDA: 3 ♂♂, 1 ♀, in ZFMK (Ar 8667), Kisoro District, Mgahinga Gorilla N.P., bamboo forest (~1°22.0-22.3'S, 29°36.3-36.9'E), 2500-2600 m a.s.l., 25 Nov. 2010 (B.A. Huber); 2 ♀♀ in pure ethanol, in ZFMK (Uga 151), same data. 8 ♀♀ (2 vials), in ZFMK (Ar 8868-69), Kisoro District, between Nyakabande and Muko, roadside forest (1°15.2'S, 29°47.6'E), 2260 m a.s.l., 26 Nov. 2010 (B.A. Huber); 5 ♀♀ (2 vials) in pure ethanol, in ZFMK (Uga 130, 131), same data.

Notes

Some of the newly collected specimens above are assigned tentatively because they have a shorter abdomen and a slightly different color pattern. The MRAC has a very similar undescribed species from Burundi (Mt. Musumba), with slightly different procursus tip and longer proximal projections on the male chelicerae (MRAC 226400).

6. *Buitinga ensifera* (Tullgren, 1910). Tanzania (Tullgren 1910).

Note

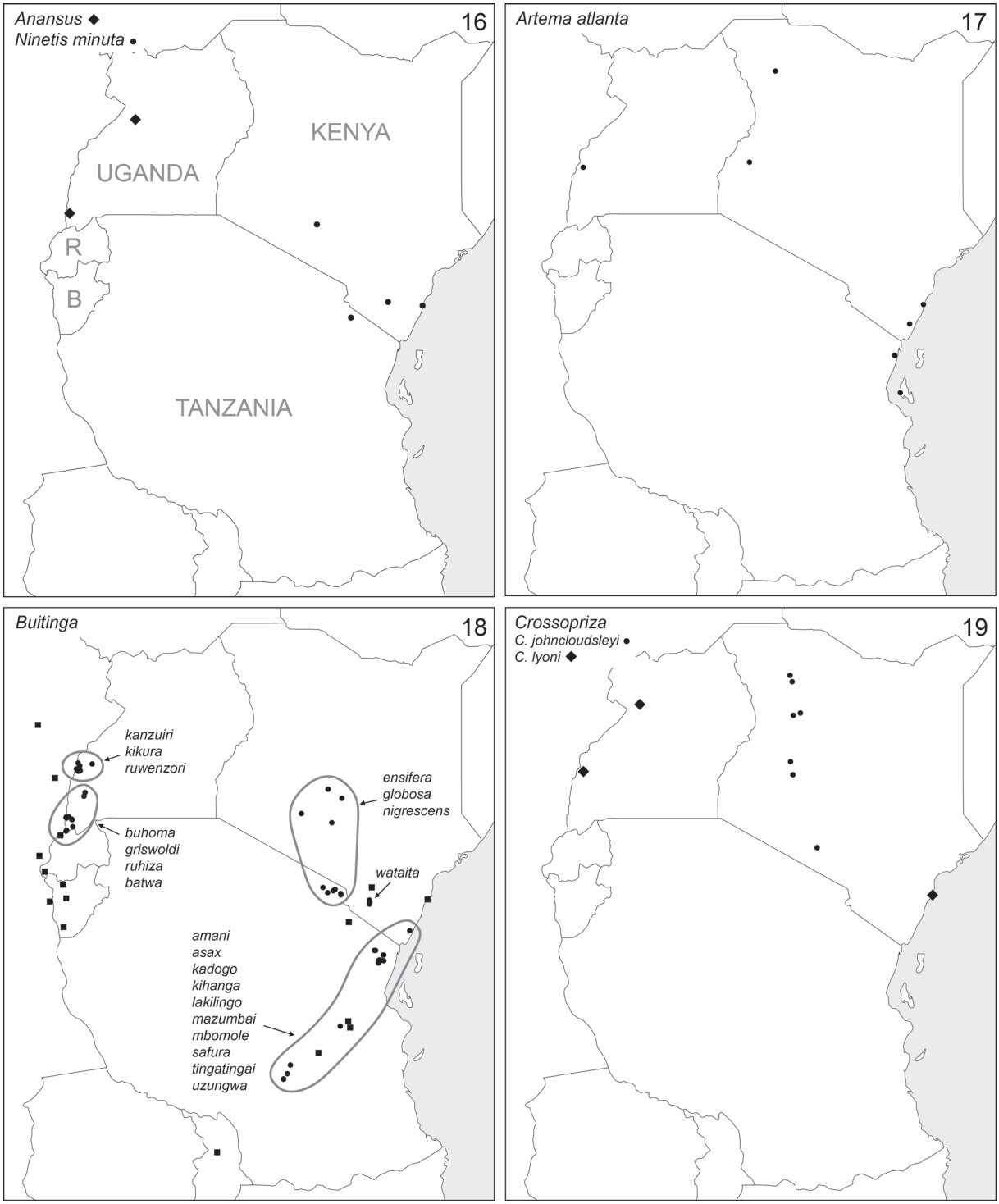
No material of this species was available to Huber (2003a), and the type material seems to be lost. New material from Kenya (2 ♂♂, 3 ♀♀ from Kirimeri Forest, near Runyenyere, near Mt. Kenya), in MRAC (215277, 293) might belong to this species but topotypical material (from Kilimanjaro) is needed to properly redescribe this species and to evaluate the Kenyan specimens.

7. *Buitinga globosa* (Tullgren, 1910). Tanzania (Tullgren 1910; Berland 1920; Huber 2003a sub *Buitinga nigrescens*).

Note

As indicated previously (Huber 2003a), this species might be a senior synonym of *B. nigrescens* (Berland, 1920). The first author has since seen what is left from Tullgren's (1910) syntypes (2 ♀♀ without abdomens, from Kilimanjaro, Kiboscho, in ZMB 9870; and 2 ♀♀, 1 ♀ without abdomen and a possibly male prosoma without chelicerae and palps from Kilimanjaro, Kibonoto, in MNHN, AR 10388) as well as Berland's (1920) male specimens (2 ♂♂ from Kilimanjaro, Marangu, in MNHN, AR 10378). Berland's (1920) specimens seem to be correctly identified, and they correspond exactly to the specimens from Mt. Meru described as *Buitinga nigrescens* in Huber (2003a). The redescription of *B. nigrescens* in Huber (2003a) is thus probably based on a misidentification and refers to *B. globosa*. However, since no topotypical males are known of *B. nigrescens* (Mt. Kenya, "st. no. 39" at 2400 m a.s.l., now Naro Moru Track), and since newly collected males from other Kenyan localities (see

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Figs 16-19. Known distributions of the genera *Anansus*, *Ninetis*, *Artema*, *Buitinga*, and *Crossopriza* in East Africa (R: Rwanda; B: Burundi). For detailed maps of *Buitinga*, see Huber (2003a). Squares: unidentified/undescribed specimens.

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B. nigrescens below) indicate that *B. nigrescens* might in fact be a valid species, the two species are not synonymized.

8. *Buitinga griswoldi* Huber, 2003. Uganda (Huber 2003a).

New records

UGANDA: 7 ♂♂, 2 ♀♀, in ZFMK (Ar 8670), Bushenyi District, Kalinzu Forest Reserve (0°22.5'S, 30°06.9'E), 1500 m a.s.l., 28 Nov. 2010 (B.A. Huber); 1 ♀ in pure ethanol, in ZFMK (Uga 119), same data. 5 ♂♂, 2 ♀♀, in ZFMK (Ar 8671), Kanungu District, Bwindi Impenetrable N.P., waterfall trail near Buhoma (0°59.8'-1°00.2'S, 29°36.9-37.2'E), ~1500-1600 m a.s.l., 22 Nov. 2010 (B.A. Huber); 1 ♂, 3 ♀♀ in pure ethanol, in ZFMK (Uga 123), same data. 5 ♂♂, 2 ♀♀, in ZFMK (Ar 8672), Bushenyi District, Kasyoha-Kitomi Forest Reserve (0°16.1'S, 30°09.1'E), 1280 m a.s.l., 29 Nov. 2010 (B.A. Huber); 4 ♀♀ in pure ethanol, in ZFMK (Uga 111), same data.

9. *Buitinga kadogo* Huber, 2003. Tanzania (Huber 2003a).

10. *Buitinga kanzuiri* Huber, 2003. Congo DR (Huber 2003a).

11. *Buitinga kihanga* Huber, 2003. Tanzania (Huber 2003a).

12. *Buitinga kikura* Huber, 2003. Congo DR (Huber 2003a).

13. *Buitinga lakilingo* Huber, 2003. Tanzania (Huber 2003a).

New record

TANZANIA: 6 ♂♂ 18 ♀♀ (21 vials, partly without date and altitude data) in ZMUC, Tanga Region, Lushoto Distr., Mazumbai Forest Reserve (4°49'S, 38°29'E), 1650-1730 m a.s.l., Jul. 1995 (ZMUC expedition).

14. *Buitinga mazumbai* Huber, 2003. Tanzania (Huber 2003a).

15. *Buitinga mbomole* Huber, 2003. Tanzania, Kenya (Huber 2003a).

16. *Buitinga nigrescens* (Berland, 1920). Kenya (Berland 1920).

Note

The Tanzanian specimens described as *B. nigrescens* in Huber (2003a) are very probably *B. globosa* (see above). Females of the two species appear indistinguishable, but newly collected males (and females) from Ol Donyo Sabuk National Park and Hell's Gate National Park (in ZFMK, Ar 8673-74, Ken 114) indicate that *B. nigrescens* might in fact be a valid species (with distinctively hooked bulbal apophysis). However, since no topotypical males are known of *B. nigrescens* (Mt. Kenya, Naro Moru Track), the identity of these newly collected specimens remains dubious.

17. *Buitinga ruhiza* Huber, 2003. Uganda (Huber 2003a).

New records

UGANDA: 4 ♂♂, 3 ♀♀ in ZFMK (Ar 8675), Kanungu District, Bwindi Impenetrable N.P., waterfall trail near Buhoma (0°59.8'-1°00.2'S, 29°36.9-37.2'E), ~1500-1600 m a.s.l., 22 Nov. 2010 (B.A. Huber); 3 ♀♀, 1 juv. in pure ethanol in ZFMK (Uga 122), same data.

Note

The ZFMK has some poorly preserved specimens of a very similar undescribed species from Rwanda, near Nyakabuya, Cyamudongo Forest (ZFMK Ar 5210-12). The MRAC has specimens of a further undescribed species from Burundi, Forêt de Rwegura (2 ♂♂: MRAC 214019, 214108; 5 ♀♀: MRAC 213725, 214018, 214021, 214071, 214117).

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18. *Buitinga ruwenzori* Huber, 2003. Congo DR, Uganda (Huber 2003a).

New records

UGANDA: 2 ♂♂, 22 ♀♀ in ZFMK (Ar 8876), Kasese District, Ruwenzori Mts., near Nyabitaba Hut (~0°21.5-21.8'N, 29°58.7-59.7'E), 2260-2600 m a.s.l., 1 Dec. 2010 (B.A. Huber); 1 ♂, 4 ♀♀, 4 juvs. in pure ethanol, in ZFMK (Uga 156), same data. 1 ♀ in ZFMK (Ar 8677), Ruwenzori Mts., between Nyabitaba Hut and Guy Yeoman Hut (~0°20.6-21.5'N, 29°55.6-58.7'E), 2660-3300 m a.s.l., 2 Dec. 2010 (B.A. Huber). 1 ♀, 1 juv. in ZFMK (Ar 8678), Ruwenzori Mts., between N.P. gate and Nyabitaba Hut (~0°21.3-21.8'N, 29°59.7-30°01.6'E), 1720-2260 m a.s.l., 1 Dec. 2010 (B.A. Huber); 1 ♀, 1 juv. in pure ethanol in ZFMK (Uga 159), same data. 1 ♂, 1 ♀ in ZFMK (Ar 8679), Kabarole District, Kibale Forest N.P., forest near Makerere Univ. Research Station (0°33.2'N, 30°21.4'E), ~1500 m a.s.l., 6 Dec. 2010 (B.A. Huber).

19. *Buitinga safura* Huber, 2003. Tanzania (Huber 2003a).

New records

TANZANIA: 89 ♂♂, 155 ♀♀ (191 vials, partly without date and altitude data) in ZMUC, Tanga Region, Lushoto Distr., Mazumbai Forest Reserve (4°49'S, 38°29'-30'E), 1370-1730 m a.s.l., Jul.-Dec. 1995 (ZMUC expedition). 23 ♂♂, 15 ♀♀ (25 vials, partly without date and altitude data) in ZMUC, Muheza Distr., Kwamgumi Forest Reserve (4°57'S, 38°45'E), 430 m a.s.l., Nov. 1995 (ZMUC expedition). 28 ♂♂, 101 ♀♀ (89 vials, partly without date and altitude data) in ZMUC, Iringa Region, Mufindi Distr., Uzungwa Scarp Forest Reserve (8°30'-32'S, 35°52'E), 1370-1515 m a.s.l., Mar. 1995-Mar. 1996 (McKamey *et al*.); many ♂♂ and ♀♀ (80 vials) in ZMUC, Uzungwa Scarp F.R., Kihanga Stream (8°22.1'S, 35°58.7'E), 1800 m a.s.l., 17-27 May 1997 (ZMUC-SI expedition).

20. *Buitinga tingatingai* Huber, 2003. Tanzania (Huber 2003a).

New records

TANZANIA: *Tanga Region*: 9 ♂♂, 7 ♀♀ (16 vials, partly without date and altitude data) in ZMUC, Lushoto Distr., Mazumbai Forest Reserve (4°49'S, 38°29'E), 1650-1730 m a.s.l., Jul.-Nov.1995 (ZMUC expedition); 3 ♀♀, 1 juv. in CAS, same data but 1400-1800 m a.s.l., 10-20 Nov. 1995 (Griswold, Scharff, Ubick).

21. *Buitinga uzungwa* Huber, 2003. Tanzania (Huber 2003a).

22. *Buitinga wataita* sp. nov. (see below). Kenya.

Crossopriza Simon, 1893

Apart from the pantropical synanthropic *C. lyoni*, only *C. johncloudsleyi* is here newly recorded from East Africa (Fig. 19).

23. *Crossopriza johncloudsleyi* Deeleman-Reinhold & van Harten, 2001. Kenya (see below).

24. *Crossopriza lyoni* (Blackwall, 1867). Newly recorded for East Africa (Uganda, Kenya).

New records

UGANDA: *Western Region*: 1 ♀ in ZFMK (Ar 8680), Kasese District, Ruwenzori Mts., Nyakalengija, in building (0°20.5'N, 30°02.6'E), 1590 m a.s.l., 1 Dec. 2010 (B.A. Huber). 1 ♀ in MRAC (125918), [Bulisa District], Murchison Falls [2°16.6'N, 31°41.1'E], 10 Nov. 1963 (Cloudsley-Thompson). KENYA: *Coast Province*: 1 ♀ in ZFMK (Ar 8681), Malindi, in hotel (3°13.0'S, 40°07.8'E), 10 m a.s.l., 21 Jan. 2010 (B.A. Huber).

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Leptopholcus Simon, 1893

Of the ten species of *Leptopholcus* currently known from mainland Africa (Huber 2011), five occur in East Africa (Fig. 22).

25. *Leptopholcus budongo* Huber, 2011. Uganda, Kenya (Huber 2011).

26. *Leptopholcus gracilis* Berland, 1920. Kenya (Berland 1920; Brignoli 1980; Huber 2011), Tanzania, Somalia (Huber 2011).

27. *Leptopholcus gurnahi* Huber, 2011. Tanzania (Huber 2011).

28. *Leptopholcus signifer* Simon, 1893. Kenya (Huber 2011).

29. *Leptopholcus tipula* (Simon, 1907). Uganda (Huber 2011).

Micropholcus Deeleman-Reinhold & Prinsen, 1987

Only the synanthropic *M. fauroti* (Simon, 1887) has been collected in East Africa (Huber 2011) (Fig. 21).

30. *Micropholcus fauroti* (Simon, 1887). Kenya (Deeleman-Reinhold & Prinsen 1987; Huber 2011), Congo DR, Tanzania, Uganda, Somalia (Huber 2011).

Modisimus Simon, 1893

Modisimus is a New World genus; only the synanthropic *M. culicinus* (Simon, 1893) has a pantropical distribution. This tiny species is probably not rare, but it has previously been recorded only once from Africa (Congo DR; Lawrence 1938; sub *Hedypsilus lawrencei*). It is here newly recorded for East Africa (Fig. 20).

31. *Modisimus culicinus* (Simon, 1893). Newly recorded for East Africa (Kenya).

New record

KENYA: *Coast Province*: 1 ♂, 3 ♀♀ in CJFM (5878, 6429, 6454), Kilifi [3.615°S, 39.854°E], garden scrub, 30 Aug.-19 Sep.1977 (3 vials) (Murphy).

Ninetis Simon, 1890

Of the five species of *Ninetis* distributed from Namibia to Yemen, only *N. minuta* (Berland, 1919) has been collected in East Africa (Fig. 16).

32. *Ninetis minuta* (Berland, 1919). Kenya (Berland 1919; Huber 2000; Huber & El Hennawy 2007), Tanzania (Huber 2000), Somalia (Huber & El Hennawy, 2007).

New record

KENYA: *Coast Province*: 1 ♂, 5 ♀♀ in CJFM (5952, 6014, 6123), Kilifi [3.615°S, 39.854°E], coastal scrub, 1-6 Sep. 1977 (3 vials) (Murphy).

Pehrforsskalia Deeleman-Reinhold & van Harten, 2001

Pehrforsskalia includes three described species, two of which occur in East Africa (Fig. 20): the widely distributed *P. conopyga* Deeleman-Reinhold & van Harten, 2001 and *P. shambaa* Huber, 2011 from Tanzania.

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33. *Pehrforsskalia conopyga* Deeleman-Reinhold & van Harten, 2001. Burundi, Uganda (Huber 2009); newly recorded for Kenya.

New record

KENYA: Rift Valley: 1 ♀ in CAS, Marich Pass Field Studies Centre (1°32.2'S, 35°27.4'E), 3000 ft. a.s.l., 13 Jul. 1999 (W.J. Pulawski, J.S. Schweickert).

34. *Pehrforsskalia shambaa* Huber, 2011. Tanzania (Huber, 2011).

Pholcus Walckenaer, 1805

In East Africa, *Pholcus* is represented by 17 species from five species groups identified in Huber (2011). Two species groups are endemic to East Africa and restricted to the southeastern part of East Africa (Fig. 23): the *lamperti* group (8 species) and the *taarab* group (3 species); each of the other three groups ranges further west or north respectively and is in East Africa restricted to the northwestern part: the *chappuisi* group (4 species in East Africa), the *bamboutos* group (*Ph. hoyo* Huber, 2011), and the *circularis* group (*Ph. leruthi* Lessert, 1935).

35. *Pholcus amani* Huber, 2011. Tanzania (Huber 2011).

36. *Pholcus chappuisi* Fage, 1936. Kenya (Fage & Simon 1936; Huber 2011).

37. *Pholcus fagei* Kratochvil, 1940. Kenya (Simon & Fage 1922; Huber 2011).

38. *Pholcus hoyo* Huber, 2011. Congo DR (Huber 2011).

39. *Pholcus kihansi* Huber, 2011. Tanzania (Huber 2011).

40. *Pholcus kwamgumi* Huber, 2011. Tanzania, Kenya (Huber 2011).

41. *Pholcus kyondo* Huber, 2011. Congo DR (Huber 2011).

42. *Pholcus lamperti* Strand, 1907. Tanzania (Strand 1907; Simon & Fage 1922; Huber 2011).

43. *Pholcus leruthi* Lessert, 1935. Rwanda, Uganda, Kenya (Huber 2011).

44. *Pholcus lilangai* Huber, 2011. Tanzania (Huber 2011).

45. *Pholcus lupanga* Huber, 2011. Tanzania (Huber 2011).

46. *Pholcus mazumbai* Huber, 2011. Tanzania (Huber 2011).

47. *Pholcus strandi* Caporiacco, 1941. Ethiopia (Caporiacco 1941).

48. *Pholcus taarab* Huber, 2011. Tanzania, Malawi (Huber 2011).

49. *Pholcus taita* Huber, 2011. Kenya (Huber 2011).

50. *Pholcus twa* Huber, 2011. Congo DR, Burundi, Rwanda, Uganda, Sudan (Huber 2011).

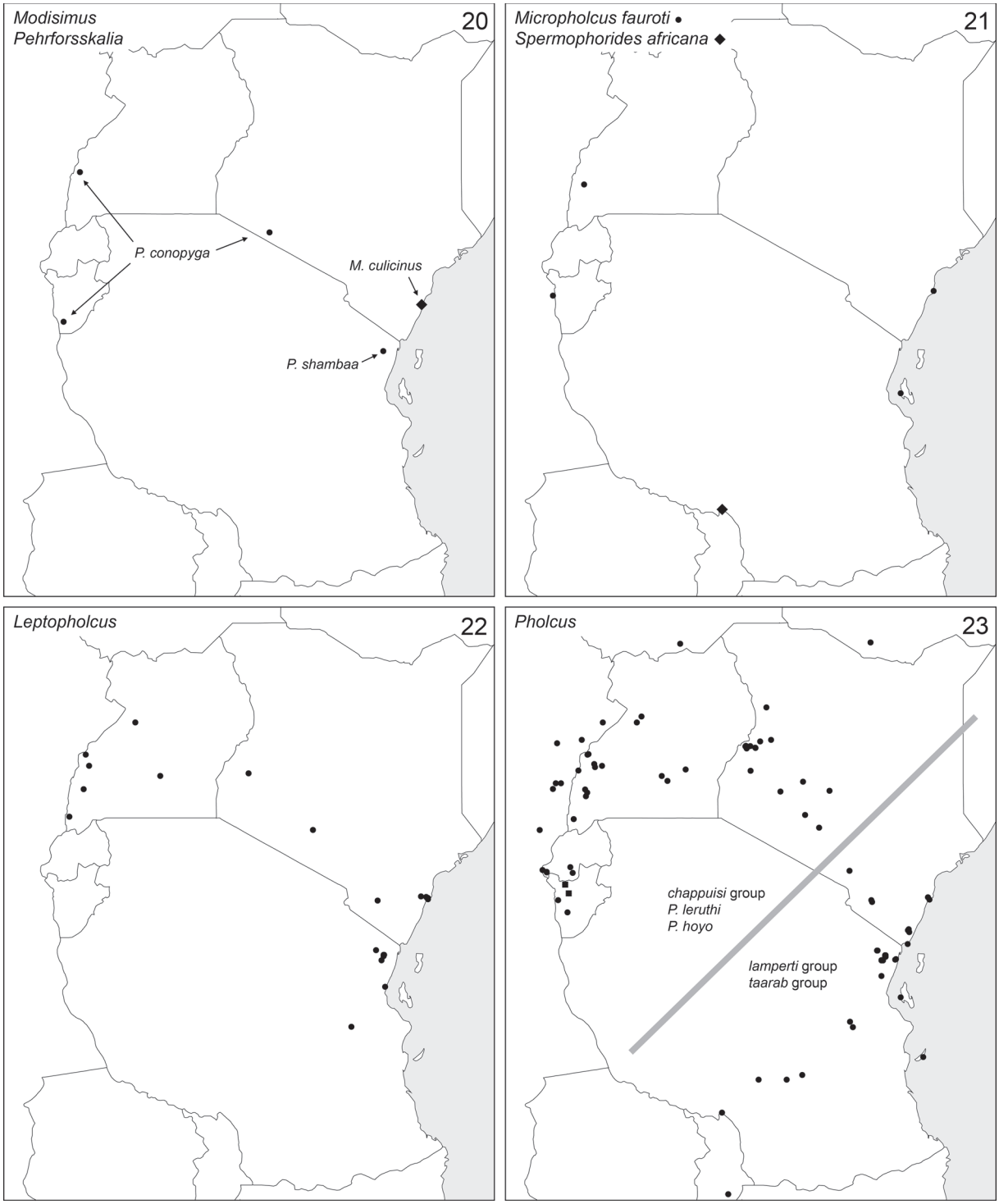
51. *Pholcus wahehe* Huber, 2011. Tanzania (Huber 2011).

Physocyclus Simon, 1893

Physocyclus is a New World genus. Only the pantropical synanthropic *P. globosus* (Taczanowski, 1874) has been collected in East Africa (Fig. 24).

52. *Physocyclus globosus* (Taczanowski, 1874). Tanzania (Saaristo, 2001); newly recorded for Burundi, Kenya, Malawi, and Uganda.

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Figs 20-23. Known distributions of the genera *Modisimus*, *Pehrforsskalia*, *Micropholcus, Spermophorides*, *Leptopholcus*, and *Pholcus* in East Africa. For detailed maps of *Leptopholcus* and *Pholcus*, see Huber (2011). Squares: unidentified/undescribed specimens.

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New records

BURUNDI: 1 ♀ in MRAC (134827), Bujumbura [3°22.2'S, 29°22.0'E], 2 Jan. 1969 (J. Lewalle). KENYA: 1 ♂, 1 juv. in ZMUC, Malindi, Silversand Campsite [~3°14.0'S, 40°07.6'E], 12 Aug. 1979 (N. Scharff). MALAWI: 1 ♂ in MRAC (153511 part), Chintheche [11°50.1'S, 34°10.1'E], in house, 15 Jan. 1978 (R. Jocqué). TANZANIA: 1 ♀ in MRAC (125959), Zanzibar [~6°10'S, 39°12'E], 26 Nov. 1968 (J. Cloudsley Thompson); 1 ♂, 1 juv. in MRAC (159419), Dar es Salaam, U.D.S.M Campus [6°46.8'S, 39°12.2'E], 1977 (K.M. Howell and zoology students); 5 juvs. in CAS, Dar es Salaam, in house, 25-26 Oct. 1995 (D. Ubick). UGANDA: 2 ♂♂ in ZFMK (Ar 8682), Bushenyi District, near Katunguru, in building (0°08.9'S, 30°03.9'E), 950 m a.s.l., 29 Nov. 2010 (B.A. Huber); 2 ♂♂, 1 ♀ in ZFMK (Ar 8683), Masindi District, Nybyeya, in building (1°40.3'N, 31°32.2'E), 1145 m a.s.l., 9 Dec. 2010 (B.A. Huber).

Quamtana Huber, 2003

Quamtana is most diverse in southern Africa, but a few species occur as far north as Cameroon, Congo DR, Uganda (Huber 2003b), and Kenya (herein). Four species are currently known from East Africa (Fig. 25). The new species *Q. nyahururu* represents the first record of the genus for Kenya and Tanzania.

53. *Quamtana biena* Huber, 2003. Congo DR (Huber 2003b).

54. *Quamtana kabale* Huber, 2003. Uganda (Huber 2003b).

New records

UGANDA: 6 ♂♂, 6 ♀♀, 1 juv. in ZFMK (Ar 8684), Kasese District, Ruwenzori Mts., near N.P. gate (~0°21.3'N, 30°01.6'E), ~1800 m a.s.l., underside of leaves (mostly banana), 1 & 3 Dec. 2010 (B.A. Huber); 1 ♂, 6 ♀♀, 1 juv. in pure ethanol in ZFMK (Uga 141), same data.

55. *Quamtana kitahurira* Huber, 2003. Uganda (Huber 2003b); newly recorded for Burundi.

New record

BURUNDI: 1 ♂ in ZFMK (Ar 5265), Nyakabuya, Cyamudongo [2.868°S, 29.503°E], Oct.1993 (T. Wagner).

56. *Quamtana nyahururu* sp. nov. (see below). Kenya, Tanzania.

Smeringopus Simon, 1890

With 55 species, *Smeringopus* is currently the most species-rich Afrotropical pholcid genus. Eighteen species in eight species groups have been described from East Africa (Huber 2012). Three species groups are endemic to East Africa: *rubrotinctus* group (5 species), *chogoria* group (2 species) and *S. ngangao*. The other five groups (*arambourgi* group; *peregrinus* group; *roeweri* group; *S. pallidus* (Blackwall, 1858); *S. lesserti* Kraus, 1957) are more widely distributed (Huber 2012) (Fig. 26).

57. *Smeringopus bujongolo* Huber, 2012. Uganda, Congo DR (Huber 2012).

58. *Smeringopus butare* Huber, 2012. Congo DR, Burundi, Rwanda (Huber 2012).

59. *Smeringopus bwindi* Huber, 2012. Congo DR, Uganda (Huber 2012).

60. *Smeringopus carli* Lessert, 1915. Uganda (Lessert 1915), Tanzania (Huber 2012).

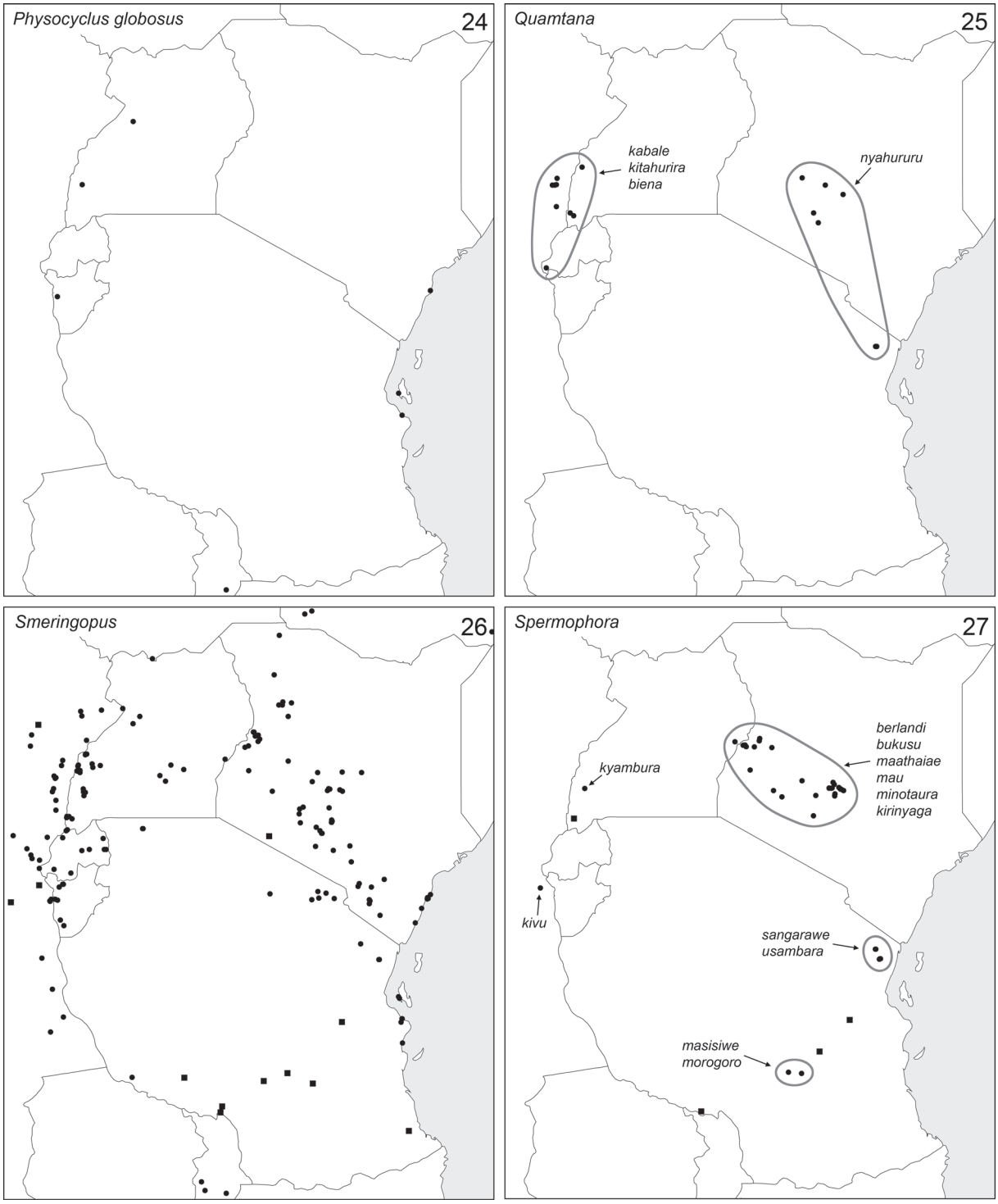
61. *Smeringopus chogoria* Huber, 2012. Kenya (Huber 2012).

62. *Smeringopus lesserti* Kraus, 1957. Congo DR (Huber 2012).

63. *Smeringopus lubondai* Huber, 2012. Congo DR (Huber 2012).

64. *Smeringopus mgahinga* Huber, 2012. Congo DR, Uganda (Huber 2012).

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Figs 24-27. Known distributions of the genera *Physocyclus*, *Quamtana*, *Smeringopus* and *Spermophora* in East Africa. For detailed maps of *Quamtana* see Huber (2003b), of *Smeringopus* see Huber (2012) and of *Spermophora* see Huber (2003a). Squares: unidentified/undescribed specimens.

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65. *Smeringopus mpanga* Huber, 2012. Uganda (Huber 2012).

66. *Smeringopus ngangao* Huber, 2012. Kenya, Tanzania (Huber 2012).

67. *Smeringopus pallidus* (Blackwall, 1858). Burundi, Congo DR, Malawi, Tanzania, Uganda (Huber 2012).

68. *Smeringopus peregrinoides* Kraus, 1957. Rwanda, Tanzania (Kraus 1957; Huber 2012), Congo DR, Burundi, Uganda, Kenya (Huber 2012).

69. *Smeringopus peregrinus* Strand, 1906. Tanzania (Strand 1906b; Tullgren 1910; Huber 2012), Kenya, Uganda (Huber 2012).

70. *Smeringopus roeweri* Kraus, 1957. Rwanda (Kraus 1957), Congo DR, Malawi, Tanzania (Huber 2012).

71. *Smeringopus rubrotinctus* Strand, 1913. Rwanda (Strand 1913; Huber 2012), Burundi (Huber 2012).

72. *Smeringopus ruhiza* Huber, 2012. Burundi, Uganda (Huber 2012).

73. *Smeringopus turkana* Huber, 2012. Kenya, Ethiopia (Huber 2012).

74. *Smeringopus zonatus* Strand, 1906. Ethiopia (Strand 1906a).

Spermophora Hentz, 1841

Spermophora is in fact an Asian genus (Huber 2005) and African representatives have tentatively been assigned to it for lack of a better hypothesis (Huber 2003a). Recent molecular data (Dimitrov *et al*. 2012) suggest that at least the six Kenyan species (Fig. 27) are closely related to the East African genus *Buitinga*. Twelve East African species are currently assigned to *Spermophora.*

75. *Spermophora berlandi* Fage, 1936. Kenya (Fage & Simon 1936).

76. *Spermophora bukusu* sp. nov. (see below). Kenya.

77. *Spermophora kirinyaga* sp. nov. (see below). Kenya.

78. *Spermophora kivu* Huber, 2003. Congo DR (Huber 2003a).

79. *Spermophora kyambura* sp. nov. (see below). Uganda.

80. *Spermophora maathaiae* sp. nov. (see below). Kenya.

81. *Spermophora masisiwe* Huber, 2003. Tanzania (Huber 2003a).

82. *Spermophora mau* sp. nov. (see below). Kenya.

83. *Spermophora minotaura* Berland, 1920. Kenya (Berland 1920; Simon & Fage 1922; Huber 2003a).

Types

1 ♂, 1 ♀ syntypes and 2 juvs. from Kenya, Mount Kenya, "st. nº 39" [0°10.5'S, 37°08.9'E], Jan.-Feb. 1912 (Alluaud, Jeannel), in MNHN (AR 10368), examined (not available in Huber 2003a).

Note

This species shows slight morphological variation (male cheliceral apophyses) and conspicuous color variation. The position of the frontal male cheliceral apophyses varies from almost parallel to strongly diverging. Huber (2003a) mentioned color variation with respect to the epigynum but it also occurs on carapace and abdomen in both males and females. Below, specimens are divided into three morphs: light morph (median dark band on carapace, light sternum, two large marks on abdomen or monochromous light abdomen; Figs 55, 56); medium morph (pair of narrow dark stripes on carapace do not reach lateral margins, dark sternum; abdomen pattern in principle as in dark morph but less developed), and dark

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morph (wide black stripes on carapace reaching lateral margins, dark sternum; complex dark pattern on abdomen; Figs 53, 54). In Chogoria Forest at 2460 m, light and medium morphs were found together, but in different microhabitats: the light morph among vegetation, with the apex of the domed web attached to the underside of a green leaf (Fig. 8); the medium morph close to the ground, with the same type of web among mosses and in small cavities. However, in other localities, light and medium/dark morphs were collected by fogging (see below), suggesting that medium/dark morphs also occur higher in the vegetation (on mosses of trees?). Low molecular distances (Dimitrov, Astrin & Huber 2012) and indistinguishable genitalia suggest that this might be a case of ecological speciation at an early stage.

New records

KENYA: *Eastern Province*: 1 ♂, 1 ♀ (medium morph), in ZFMK (Ar 8685), Mt. Kenya N.P., Chogoria Forest, "site 1" (0°12.1'S, 37°29.4'E), 2460 m a.s.l., 27 Jan. 2010 (B.A. Huber); 5 ♂♂, 6 ♀♀ (light morph) in ZFMK (Ar 8686), same data; 1 ♂, 3 ♀♀, 1 juv. (light morph) in pure ethanol, in ZFMK (Ken 111), same data; 9 ♂♂, 8 ♀♀ (dark morph), in ZFMK (Ar 8687), Chogoria Forest, "site 2" (0°14.2'S, 37°34.0'E), 1950 m a.s.l., 27 Jan. 2010 (B.A. Huber); 1 ♂, 3 ♀ in pure ethanol, in ZFMK (Ken 120), same data; ~20 ♂♂, 20 ♀♀ (2 vials), in ZFMK (Ar 8688-89), Mt. Kenya, Chogoria Route [0°14.1'S, 37°33.1'E], 2000 m a.s.l., 21 Oct. 2002 (T. Wagner), fogging of *Podocarpus latifolius*; ~60 ♂♂, 60 ♀♀ (3 vials), in ZFMK (Ar 8690-92), same data but 2500 m a.s.l. [0°11.8'S, 37°29.1'E], 19 Oct. 2002; ~80 ♂♂, 80 ♀♀ (3 vials), in ZFMK (Ar 8693-95), same data but 3000 m a.s.l. [0°09.1'S, 37°26.1'E], 16 Oct. 2002; 4 ♂♂, 10 ♀♀ (medium morph), in MRAC (215189, 193, 198, 251), Chogoria Forest, bamboo forest at 2660 m a.s.l. [0°11.0'S, 37°27.9'E], 24 Apr. 2004 (R. Jocqué, C. Warui, van den Spiegel); 1 ♀, in MRAC (161912), Sirimon track at 2650 m a.s.l. [0°00.2'S, 37°15.6'E], 23 Jul. 1975 (R. Bosmans). *Central Province*: 13 ♂♂, 23 ♀♀ (dark morph), in ZFMK (Ar 8696-97), Mt. Kenya N.P., Naro Moru Forest, overhangs along road (0°10.2'-10.6'S, 37°12.0'-13.3'E), 2800-3200 m a.s.l., 29 Jan. 2010 (B.A. Huber); 2 ♂♂, 4 ♀♀ in pure ethanol, in ZFMK (Ken 124), same data; 1 ♂, 2 ♀♀ (medium morph), in ZFMK (Ar 8698), same data; 2 ♀♀, 1 juv. (medium morph) in pure ethanol, in ZFMK (Ken 125), same data; 11 ♂♂, 10 ♀♀ (dark morph), in ZFMK (Ar 8699), Mt. Kenya N.P., above Naro Moru Forest, small cave (0°10.0'S, 37°14.0'E), 3580 m a.s.l., 29 Jan. 2010 (B.A. Huber); 1 ♂, 3 ♀♀, 2 juvs. in pure ethanol, in ZFMK (Ken 127), same data; 1 ♂, 5 ♀♀ (4 vials; dark and medium morphs), in ZFMK (Ar 8700-03), Mt. Kenya N.P. (West) (0°10'S, 37°09'E), 2550 m a.s.l., fogging of *Podocarpus latifolius*, Feb.1999 (T. Wagner); 3 ♀♀ (2 vials, medium and dark morphs), in ZFMK (Ar 8704-05), same data but fogging of *Afrocrania volckensii*; 5 ♂♂, 9 ♀♀, 3 juvs. (light morph) and 1 ♀ (dark morph), in MRAC (215075, 125, 132, 133, 393), Castle Forest, 1.5 km S of lodge [0°23.5'S, 37°18.6'E], 1985 m a.s.l., 21 Apr. 2004 (R. Jocqué, C. Warui, van den Spiegel); 1 ♀ (light morph), in MRAC (215141), same data but clearing of forest near lodge [0°22.9'S, 37°18.7'E], 2025 m a.s.l.; 5 ♂♂, 23 ♀♀ (medium morph), in MRAC (215161), same data but bamboo forest at 2445 m a.s.l. [0°19.9'S, 37°19.0'E]; 33 ♂♂, 77 ♀♀ (10 vials; mostly medium morph, few dark morph), in ZFMK (Ar 8706-15), Aberdare National Park at 2750 m a.s.l. (0°23'S, 36°46'E), fogging of *Podocarpus latifolius*, Jan.-Feb.1999 (T. Wagner); 9 ♂♂, 23 ♀♀ (5 vials; light, medium, and dark morphs), in ZFMK (Ar 8716-17, 19-21), Kikuyu Escarpment, Gatamaiyu (0°58'S, 36°42'E), 2330 m a.s.l., mountain forest, fogging of *Podocarpus latifolius*, Feb. 1999 (T. Wagner); 6 ♂♂, 11 ♀♀ (7 vials; light and dark morphs), in ZFMK (Ar 8722-28), same data but fogging of *Tabernaemontana stapfiana*, 18-23 Jan. 1999; 2 ♂♂, 10 ♀♀ (4 vials, light, medium, and dark morphs), in ZFMK (Ar 8729-32), same data but fogging of *Teclea nobilis*, 18-23 Jan. 1999. *Western Province*: 1 ♂, 3 ♀♀, 1 juv. (dark morph), in ZFMK (Ar 8733), Kakamega Forest N.P., near Isiukhu River Falls (0°21.1'N, 34°52.1'E), 1580 m a.s.l., 2-3 Feb. 2010 (B.A. Huber); 1 ♀, 3 juvs. in pure ethanol, in ZFMK (Ken 140), same data. *Rift Valley*: 8 ♂♂, 11 ♀♀, juvs. (dark morph), in ZFMK (Ar 8734), Thompson Falls near Nyahururu, (0°02.7'N, 36°22.1'E), 2350 m a.s.l., 30 Jan. 2010 (B.A. Huber); 2 ♂♂, 3 ♀♀, 10 juvs. in pure ethanol, in ZFMK (Ken 131), same data; 5 ♂♂, 4 ♀♀ (dark morph), in ZFMK (Ar 8735), Mau Escarpment between Kericho and Molo, forest fragment near road

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(0°14.3'S, 35°32.7'E), 2130 m a.s.l., 4 Feb. 2010 (B.A. Huber); 1 ♀, 5 juvs. in pure ethanol, in ZFMK (Ken 137), same data; 1 ♀, in CJFM (1543), Kitale, Kaibos [1°12'N, 35°08'E?].

84. *Spermophora morogoro* Huber, 2003. Tanzania (Huber 2003a).

85. *Spermophora sangarawe* Huber, 2003. Tanzania (Huber 2003a).

New record
TANZANIA: 1 ♀, 2 juvs. in CAS, Tanga Region: E Usambara Mountains, Amani, Mbomole Hill (5°05.7'S, 38°37'E), 1000 m a.s.l., 5-8 Nov. 1995 (Griswold, Scharff, Ubick).

86. *Spermophora usambara* Huber, 2003. Tanzania (Huber 2003a).

New record
TANZANIA: 37 ♂♂, 63 ♀♀ (79 vials, partly without date and altitude data) in ZMUC, Tanga Region, Lushoto Distr., Mazumbai Forest Reserve (4°49'S, 38°29'-31'E), 1370-1730 m a.s.l., Jul. 1995 (ZMUC expedition).

Spermophorides Wunderlich, 1992

Spermophorides is largely restricted to the Canary Islands and the southwestern Mediterranean (Wunderlich 1992). A single species has been collected in mainland Africa (Huber 2007) (Fig. 21).

87. *Spermophorides africana* Huber, 2007. Tanzania (Huber 2007).

Identification key to East African pholcid genera

1. Eight eyes (AME present) ……2
– Six eyes (AME absent) ……11

2. Carapace with median indentation ……3
– Carapace domed, without median indentation ……6

3. Abdomen cylindrical (Fig. 3), not elevated posteriorly ……***Smeringopus***
– Abdomen globular or slightly elongated and elevated above spinnerets (Figs 28, 30) ……4

4. Legs with many small black marks on femora and tibiae (Figs 28, 30); male femora 1 with row of ventral spines ……***Crossopriza***
– Legs without small black marks (only few dark rings); male femora 1 without spines …5

5. Procursus with prominent distal spine, female carapace with posterior median cone acting against frontal plate on abdomen ……***Physocyclus globosus*** **(Taczanowski, 1874)**
– Procursus short, without distal spine; female carapace without posterior cone ……
…… ***Artema atlanta*** **Walckenaer, 1837**

6. Abdomen globular; short legs (leg 1 <3x body length) ……***Ninetis***
– Abdomen oval or elongated; long legs (leg 1 >5x body length) ……7

7. Abdomen drawn into cone dorso-posteriorly (fig. 29 in Huber 2011) ……***Pehrforsskalia***
– Abdomen rounded posteriorly ……8

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8. Abdomen oval ……9
– Abdomen cylindrical or worm-shaped (Figs 2, 4) ……10

9. Procursus with long hinged dorsal process, epigynum weakly sclerotized, internal U-shaped structure visible through cuticle frontally (figs 83-89 in Huber 2011) …***Micropholcus fauroti*** **(Simon, 1887)**
– Procursus widely curved, without long dorsal process (figs 204-205 in Huber 2003b); female unknown ……***Quamtana kitahurira*** **Huber, 2003**

10. Male chelicerae with pair of lateral unsclerotized projections in distal position; tip of male palpal trochanter apophysis serrated (e.g., figs 301-303 in Huber 2011); epigynum weakly sclerotized ……***Leptopholcus***
– Male chelicerae with pair of lateral unsclerotized projections in proximal position or absent; tip of male palpal trochanter apophysis not serrated (e.g., figs 1163-1165 in Huber 2011); epigynum strongly sclerotized ……***Pholcus***

11. Eyes close together on turret, in male with frontal hairy pocket; male chelicerae with pair of small frontal apophyses, without proximal lateral projections (figs 2-4 in Huber 1996) ……***Modisimus culicinus*** **(Simon, 1893)**
– Eyes not on turret; male chelicerae with proximal lateral projections ……12

12. Sternum with unique pattern of dark lines radiating from behind labium; male palpal tibia globular, much larger than femur (figs 8, 33 in Huber 2007) ……***Anansus***
– Sternum pattern different; male palpal tibia not globular, usually not much larger than femur ……13

13. Procursus attachment to tarsus distal rather than proximal; anterior and posterior epigynal sclerite with one pair of pockets each (figs 62-66 in Huber 2007) ……***Spermophorides***
– Procursus attachment to tarsus rather proximal; posterior epigynal sclerite without pair of pockets …14

14. Prolateral attachment of bulb to tarsus; proximal bulbal sclerite strongly developed (Figs 107, 112); epigynum with pair of external pockets, never with scape ……15
– Dorsal attachment of bulb to tarsus (e.g., Figs 75, 87, 97); proximal bulbal sclerite absent or poorly developed and hidden; epigynum without pair of pockets, often with scape ……16

15. Male frontal cheliceral apophyses small (Fig. 113), close together; corresponding female pockets (poorly visible in dissecting microscope) also close together ……***Quamtana*** (except *Q. kitahurira*)
– Male frontal cheliceral apophyses large (Fig. 109), wide apart; corresponding female pockets (poorly visible in dissecting microscope) also wide apart ……***Spermophora kyambura*** **sp. nov.**

16. Procursus without ventral flap (e.g. Figs 76, 82) ……***Buitinga***
– Procursus with ventral flap (e.g. Figs 88, 93, 98, 103) …***Spermophora*** (except *S. kyambura* sp. nov.)

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Taxonomy

Crossopriza johncloudsleyi Deeleman-Reinhold & van Harten, 2001
Figs 28-31, 62-63, 70-74

Crossopriza johncloudsleyi Deeleman-Reinhold & van Harten, 2001: 197-199; figs 11-16, ♂, ♀♀ (Yemen).

Diagnosis

Easily distinguished from known congeners by male clypeus modification (shapes of pair of apophyses; Fig. 29), male palp (shapes of procursus and bulbal process; Figs 70, 71), and distinctive epigynum (large pits and lateral processes; Figs 30, 62, 73).

Type material

Holotype

♂, examined.

Paratypes

5 ♀♀, 1 juv. (3 ♀♀ examined, the other two ♀♀ paratypes could not be located).

Type locality

YEMEN, Ja'ar (13°13'N, 45°18'E), 50 m a.s.l., 15-16 May 2000 (A. van Harten), in RMNH (15173).

Other material examined

KENYA: *Rift Valley Province*: 2 ♂♂, 2 ♀♀, in CJFM (1 ♂, 1 ♀, 3841) and ZFMK (1 ♂, 1 ♀, Ar 8736), Lake Hannington [= Lake Bogoria, ~0°15'N, 36°05'E], 1000 m a.s.l., lakeside scrub, 2 Aug. 1974 (Murphy); 2 ♀♀, in CJFM (2275), Lake Baringo [~0°38'N, 36°01'E, 980 m a.s.l.], 28 Aug. 1972 (Murphy); 1 ♀, in CJFM (3805), Baringo, near hot springs, 1100 m a.s.l., 31 Jul. 1974 (Murphy); 1 ♀, 2 juvs., in MCZ (34026), Lokori [~1°58'N, 36°06'E, 600 m a.s.l.], 16 Aug. 1965 (B. Patterson Expedition); 1 ♀, in MCZ (34012), 15 miles ENE Lokori [~2°02'N, 36°18'E, 600 m a.s.l.], 28-29 Jun. 1966 (collector not given); 1 ♂, in MCZ (34022), Lothagam (2°56'N, 36°04'E) [~400 m a.s.l.], 2-5 Aug. 1967 (B. Patterson); 1 ♀, in MCZ (34018), Kangatotha ("40 km E of Lodwar, W of Lake Rudolf") [~3°07'N, 36°00'E, 400 m a.s.l.], 27 Aug. – 7 Sep. 1963 (B. Patterson); 1 ♂, in NMH, Kajiado [1°51'S, 36°47'E, 1700 m a.s.l.], road culverts, May 1973 (collector not given).

Description

Male (Lake Bogoria)

Measurements. Total body length 2.8, carapace width 1.2. Leg 1: 21.0 (6.0 + 0.5 + 5.8 + 7.2 + 1.5), tibia 2: 3.7, tibia 3: 2.7, tibia 4: 3.3; tibia 1 L/d: 50. Distance PME-PME 70 µm, diameter PME 85 µm, distance PME-ALE 35 µm, distance AME-AME 25 µm, diameter AME 85 µm.

Color. Carapace ochre-yellow, medially slightly darker including ocular area and clypeus, sternum light brown with slightly darker radiating marks, legs ochre-yellow with many small black marks, mostly on femora (Fig. 28) and tibiae, not on coxae, few on metatarsi, abdomen ochre-grey with indistinct small dark and white internal marks dorsally and laterally, ventrally with darker pattern, wider anterior of gonopore.

Body. Habitus as in Figs 28 and 29; ocular area elevated, compact, no 'accessory eyes' (cf. Huber 2009); carapace with thoracic pit; clypeus with pair of distally slightly hooked apophyses on rim, ~140 µm

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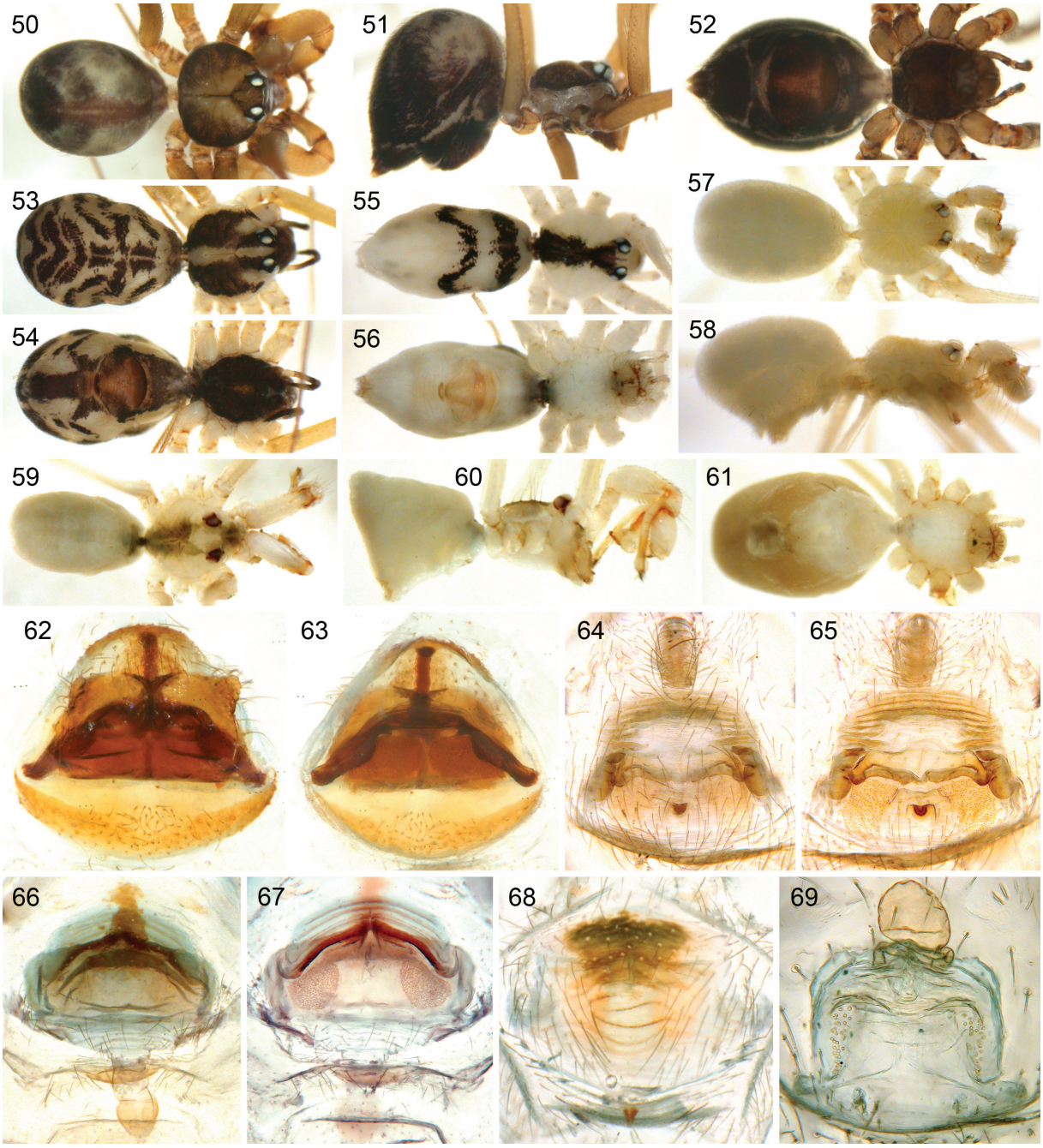
long. Chelicerae as in Fig. 72, with large frontal apophyses provided with one thick modified hair each and pair of smaller apophyses laterally, some hair bases accompanied by small cuticular elevations, fine stridulatory ridges. Sternum wider than long (0.78/0.50), unmodified.

Palps. As in Figs 70 and 71, coxa with prominent joint (arrow) and retrolateral hump, trochanter simple, femur with distinct ventral apophysis, tibia very large, procursus curved towards femur, with strong



Figs 28-49. — 28-31. *Crossopriza johncloudsleyi* Deeleman-Reinhold & van Harten, 2001, ♂ (28, 29) and ♀ (30, 31). — **32-35**. *Buitinga wataita* sp. nov., ♂ (32-34) and ♀ (35). — **36-39**. *Buitinga batwa* sp. nov., ♂ (36-38) and ♀ (39). — **40-44**. *Spermophora mau* sp. nov., ♂ (40, 41, 44) and ♀ (42, 43).— **46**. *Spermophora maathaiae* sp. nov., ♂. — **45, 47-49**. *Spermophora bukusu* sp. nov., ♂.

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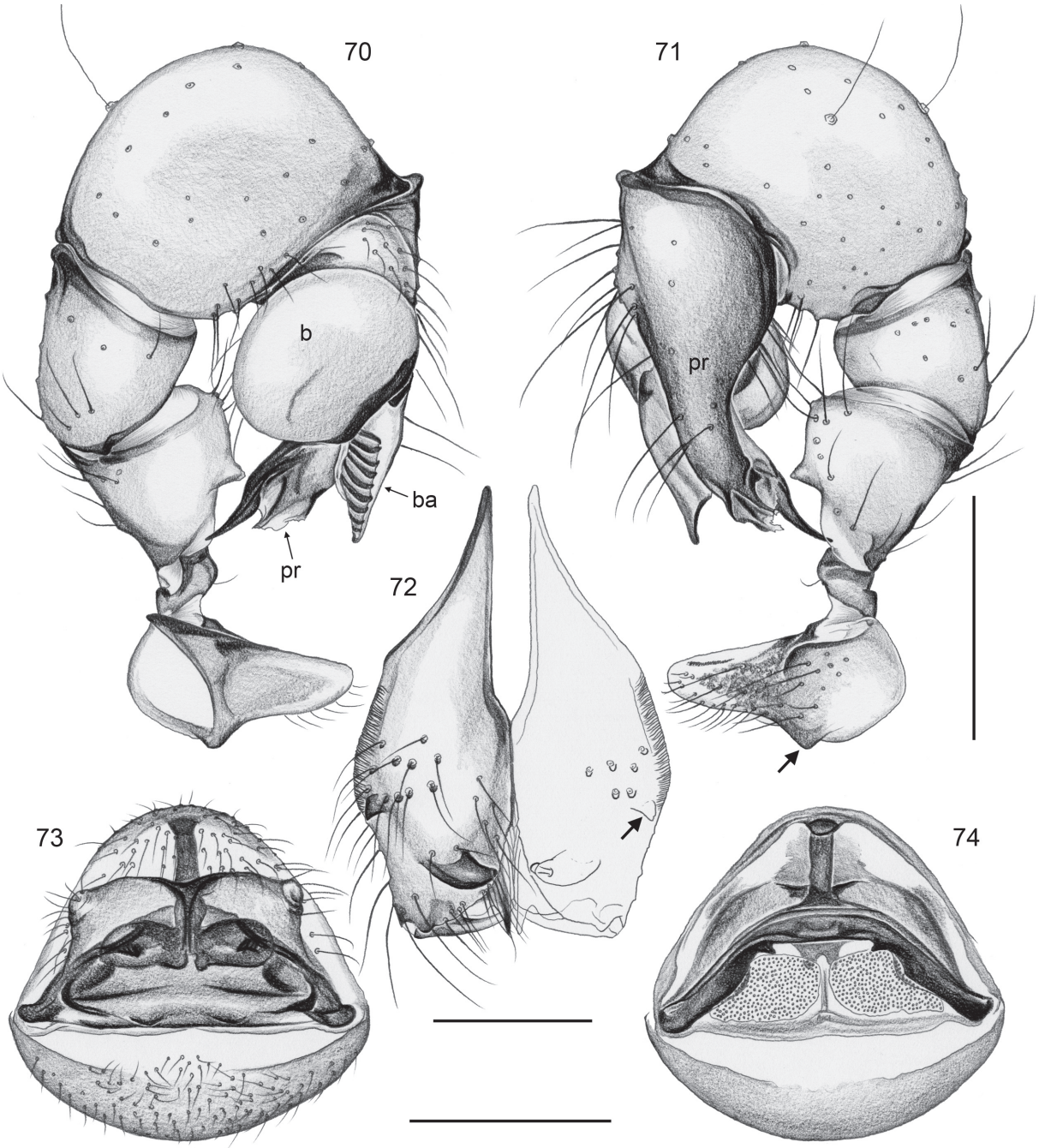


Figs 50-69. — **50-52**. *Spermophora kirinyaga* sp. nov., ♂ (50) and ♀ (51, 52). — **53-56**. *Spermophora minotaura* Berland, 1920, ♀♀, dark morph (53, 54) and light morph (55, 56). — **57-58**. *Spermophora kyambura* sp. nov., ♂. — **59-61**. *Quamtana nyahururu* sp. nov., ♂ (59, 60) and ♀ (61). — **62-63**. *Crossopriza johncloudsleyi* Deeleman-Reinhold & van Harten, 2001, cleared ♀ genitalia, ventral and dorsal views. — **64-65**. *Buitinga batwa* sp. nov., cleared ♀ genitalia, ventral and dorsal views. — **66-67**. *Spermophora maathaiae* sp. nov., cleared ♀ genitalia, ventral and dorsal views. — **68**. *Spermophora bukusu* sp. nov., cleared ♀ genitalia, ventral view. — **69**. *Spermophora kyambura* sp. nov., cleared ♀ genitalia, dorsal view.

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distal apophysis, bulb with only one process (bulbal apophysis) with distinctive prolatero-ventral ridges, sperm duct apparently opening at basis of bulbal apophysis.

Legs. Without curved hairs, few vertical hairs, with spines ventrally on femur 1 (single row on distal half, ~17 spines); retrolateral trichobothrium on tibia 1 at 4%; prolateral trichobothrium absent on tibia 1, present on other tibiae; pseudosegments not visible in dissecting microscope.



Figs 70-74. *Crossopriza johncloudsleyi* Deeleman-Reinhold & van Harten, 2001. 70-71. Left ♂ palp, prolateral and retrolateral views (arrow points to distinctive joint on coxa). 72. ♂ chelicerae, frontal view. 73-74. ♀ genitalia, ventral and cleared dorsal views. b: genital bulb; ba: bulbal apophysis; pr: procursus. Scale lines: 0.2 mm (72), 0.5 mm (70-71, 73-74).

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Variation. Tibia 1 in two other males from Kenya: 5.6, 5.7. The holotype is slightly smaller (tibia 1: 4.5), lacks the small proximal apophyses on the chelicerae (arrow in Fig. 72), and has a slightly differently shaped palpal femur (ventral projection; see fig. 15 in Deeleman-Reinhold & van Harten 2001).

Female

In general similar to male but femur 1 without spines, clypeus unmodified, chelicerae without stridulatory ridges; tibia 1 in 6 females from Kenya: 4.6-5.2 (mean 4.8); in 3 females from Yemen: 3.4-3.5. Without stridulatory apparatus between prosoma and abdomen. Epigynum with large and complex frontal plate with pair of long lateral apophyses, pair of deep pits, and posterior elevated transversal ridge; simple posterior plate; internal genitalia as in Figs 63 and 74. Paratypes with slightly smaller epigyna with slightly shorter projections, otherwise identical (also in dorsal view). ALS with only two spigots each.

Distribution

Known from Yemen and from several localities in Kenya, Rift Valley Province (Fig. 19).

Buitinga wataita sp. nov.
urn:lsid:zoobank.org:act:E19D0275-54F4-4F89-BF12-D2AF12B7276A
Figs 32-35, 75-80

Buitinga Kenya 5: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Distinguished from known congeners by combination of male cheliceral armature (Fig. 77), male palp (shapes of procursus and bulbal process; Figs 75, 76), color pattern on prosoma and abdomen (Figs 32-35), and epigynum with straight scape in anterior position and distinctive posterior structure (Fig. 78).

Etymology

The species is named after the Taita people (also Wataita or Wadawida), a Kenyan ethnic group located in the Taita-Taveta District; noun in apposition.

Type material

Holotype

♂, in ZFMK (Ar 8737).

Paratypes

10 ♂♂, 7 ♀♀, in ZFMK (9 ♂♂, 6 ♀♀: Ar 8738-39) and NMKE (1 ♂, 1 ♀).

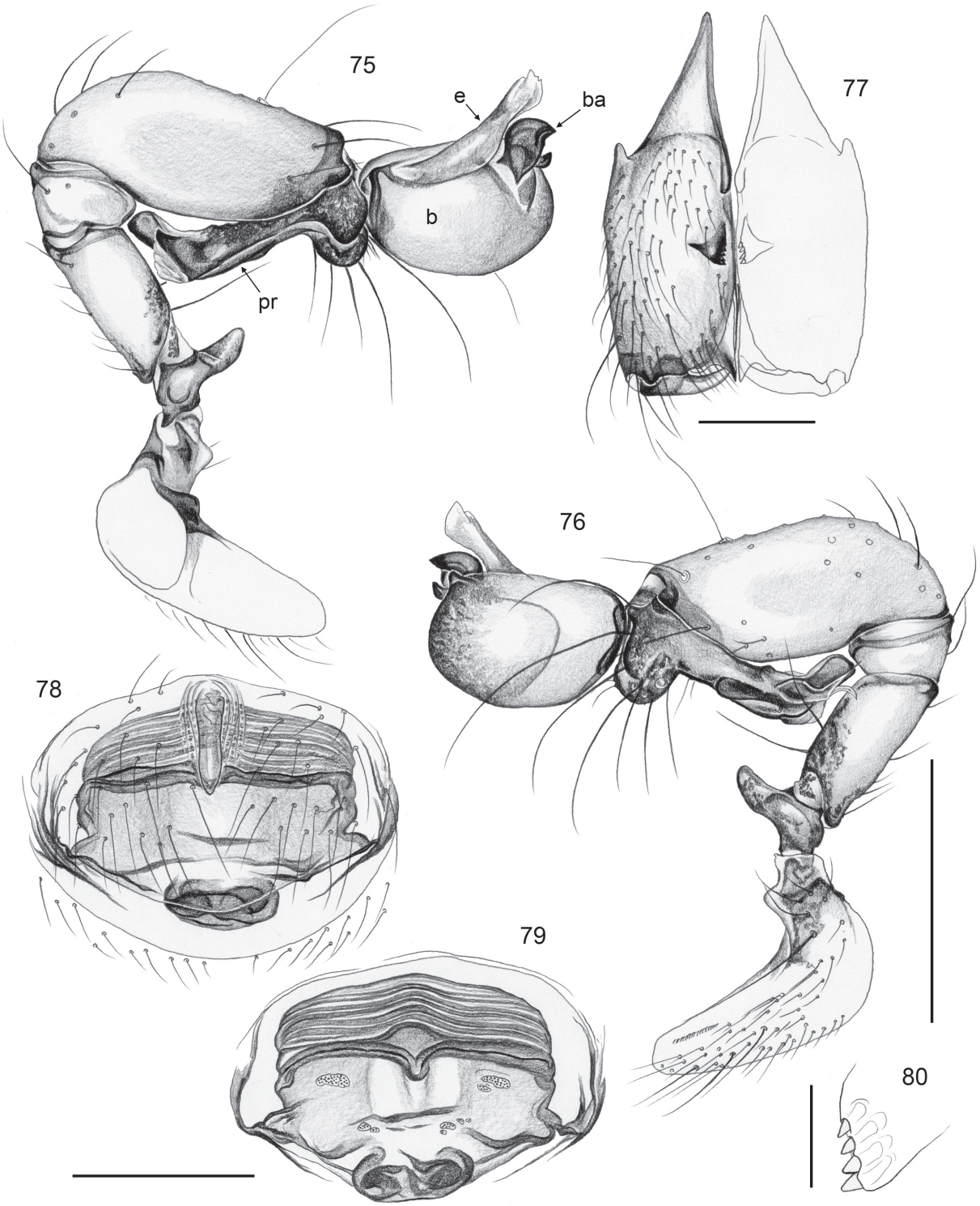
Type locality

KENYA, Coast Province, Taita Hills, Ngangao Forest (3°22.2’S, 38°20.4’E), 1810 m a.s.l., 19 Jan. 2010 (B.A. Huber).

Other material examined

KENYA: *Coast Province*: 4 ♂♂, 3 ♀♀ in pure ethanol, in ZFMK (Ken 89), Taita Hills, Ngangao Forest, same data as types above; 1 ♀, 1 juv., in MRAC (209580), Ngangao Forest, 1720 m a.s.l., sweeping along forest edge, 25 Mar. 2000 (R. Jocqué, C. Warui); 11 ♂♂, 9 ♀♀, in ZFMK (Ar 8740) and 2 ♂♂, 2 ♀♀, in NMKE, Taita Hills, Macha Forest (3°25.3’S, 38°21.5’E), 1610 m a.s.l., 20 Jan. 2010 (B.A. Huber); 3 ♂♂, 4 ♀♀ in pure ethanol, in ZFMK (Ken 94), same data; 1 ♂, 3 ♀♀, in ZFMK (Ar 8741), Taita Hills, Ndiwenyi Forest (3°26.4’S, 38°20.6’E), 1610 m a.s.l., 20 Jan. 2010 (B.A. Huber); 12 ♂♂, 6 ♀♀, in ZFMK (Ar 8742), Chavia Forest (3°28.8’S, 38°20.4’E), 1590 m a.s.l., 20 Jan. 2010 (B.A.

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Figs 75-80. *Buitinga wataita* sp. nov. 75-76. Left ♂ palp, prolateral and retrolateral views. 77. ♂ chelicerae, frontal view. 78-79. ♀ genitalia, ventral and cleared dorsal views. 80. ♂ cheliceral apophysis with modified hairs. b: genital bulb; ba: bulbal apophysis; e: embolus; pr: procursus. Scale lines: 0.05 mm (80), 0.2 mm (77), 0.3 mm (78, 79), 0.5 mm (75, 76).

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Huber); 2 ♀♀ in pure ethanol, in ZFMK (Ken 95), same data; 1 ♂, 1 ♀, 1 juv., in CAS, S slopes Taita Hills, 1030 m a.s.l., 30 Oct. 1957 (E.S. Ross, R.E. Leech).

Description

Male (holotype)

Measurements. Total body length 3.4, carapace width 1.3. Leg 1: 27.0 (6.8 + 0.5 + 6.5 + 10.4 + 2.8), tibia 2: 4.1, tibia 3: 3.0, tibia 4: 4.0; tibia 1 L/d: 41. Distance PME-PME 185 µm, diameter PME 90 µm, distance PME-ALE 55 µm, no AME.

Color. Prosoma pale whitish with black pattern on carapace including ocular area and clypeus, sternum with wide black lateral V-shaped margins, legs ochre-yellow, darker rings on femora (subdistally) and tibiae (proximally and subdistally), tips of femora and tibiae lighter, abdomen pale grey with distinctive black pattern.

Body. Habitus as in Figs 32-34; ocular area slightly elevated; no thoracic furrow, with small median cone on carapace posteriorly; clypeus unmodified. Chelicerae as in Fig. 77, with proximal lateral apophyses, pair of small apophyses proximally near median line, and frontal apophyses in relatively proximal position provided with four modified hairs each (Fig. 80). Sternum as wide as long (0.65), unmodified.

Palps. As in Figs 75 and 76, coxa and trochanter each with retrolatero-ventral apophysis, femur barely modified, trichobothria on tibia very distal, procursus strongly bent back towards femur, distally complex, bulb with simple weakly sclerotized embolus and distinctive pincer-shaped apophysis accompanied by small sclerotized cone.

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 7%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with ~20 pseudosegments.

Variation. The color patterns are very constant but two elements may be less distinct or even missing: the anterior dorsal abdominal mark and the anterior lateral pair of marks on the carapace. Tibia 1 in 35 other males: 5.8-6.9 (mean 6.4).

Female

In general similar to male but ventral abdominal pattern slightly different (anterior paired element shorter, median element longer; Fig. 35), triads closer together (distance PME-PME 140 µm), and carapace without median cone. Tibia 1 in 25 females: 4.5-5.7 (mean 5.2). Epigynum a simple plate with straight scape in anterior position, with distinctive structure posteriorly (Fig. 78); internal genitalia as in Fig. 79, with small pore plates scattered over wide area.

Distribution

Known from Taita Hills only (Fig. 18).

Buitinga batwa sp. nov.

urn:lsid:zoobank.org:act:C456910B-9E7B-4872-830B-87F240C313E3

Figs 13, 36-39, 81-86

Buitinga Uga 61: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Easily distinguished from known congeners by extremely long male cheliceral apophyses (Figs 83, 84); from similar *B. buhoma* Huber, 2003 also by wider epigynal scape and median pocket in internal female

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genitalia (Figs 65, 85), and by details of male palp (shape of bulbal apophysis, two small projections on bulb apart from apophysis and embolus, shapes of distal structures of procursus; Figs 81, 82).

Etymology

The species is named after the Batwa pygmies of south-western Uganda; noun in apposition.

Type material

Holotype
♂, in ZFMK (Ar 8743).

Paratypes
3 ♂♂, 4 ♀♀, in ZFMK (Ar 8744).

Type locality

UGANDA, Kisoro District, Mgahinga Gorilla N.P., gorge (1°22.9'S, 29°35.8-36.0'E), 2900-3000 m a.s.l., 25 Nov. 2010 (B.A. Huber).

Other material examined

UGANDA: *Western Region*: 1 ♂, 2 ♀♀, 1 juv. in pure ethanol, in ZFMK (Uga 147), Kisoro District, Mgahinga Gorilla N.P., gorge, same data as types above; 2 ♂♂, 1 ♀, in ZFMK (Ar 8745), Mgahinga Gorilla N.P., bamboo forest (~1°22.0-22.3'S, 29°36.3-36.9'E), 2500-2600 m a.s.l., 25 Nov. 2010 (B.A. Huber); 2 ♂♂, 1 juv. in pure ethanol, in ZFMK (Uga 150), same data; 3 ♂♂, in ZFMK (Ar 8746), Kisoro District, between Nyakabande and Muko, roadside forest (1°15.2'S, 29°47.6'E), 2260 m a.s.l., 26 Nov. 2010 (B.A. Huber).

Description

Male (holotype)
Measurements. Total body length 2.7, carapace width 1.0. Leg 1: 19.5 (4.6 + 0.4 + 4.8 + 7.3 + 2.4), tibia 2: 2.8, tibia 3: 2.2, tibia 4: 2.9; tibia 1 L/d: 54. Distance PME-PME 185 µm, diameter PME 115 µm, distance PME-ALE 45 µm, no AME.

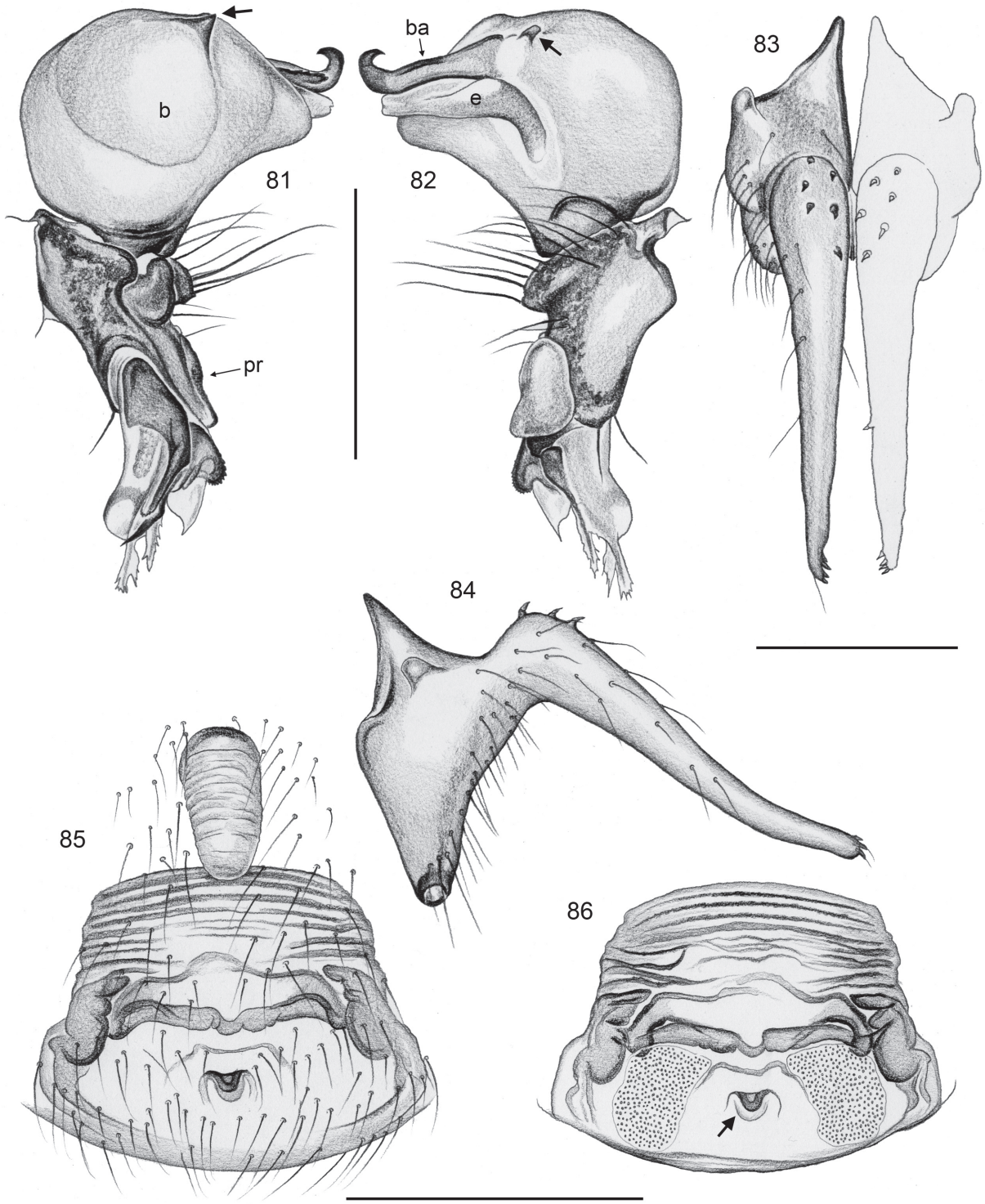
Color. Carapace pale ochre-yellow with black lateral marks, ocular area and clypeus dark brown to black, sternum black with slightly lighter mark behind labium; legs ochre-yellow, darker rings on femora (subdistally) and tibiae (proximally and subdistally); abdomen pale grey with distinctive black pattern.

Body. Habitus as in Figs 36-38; ocular area slightly elevated; only frontally shallow thoracic furrow; clypeus unmodified. Chelicerae as in Figs 83 and 84, with proximal lateral apophyses, pair of extremely long frontal apophyses, each provided with several strong claw-shaped hairs proximo-dorsally and about four modified hairs distally; without further pair of frontal apophyses near laminae. Sternum wider than long (0.70/0.57), unmodified.

Palps. In general very similar *B. buhoma* Huber, 2003 (cf. figs 113 and 114 in Huber 2003a) but coxa with prominent ventral apophysis distally and tibia slightly longer; bulb with four projections: weakly sclerotized embolus, hooked apophysis with subdistal sclerotized ridge, small projection at basis of apophysis (arrow in Fig. 82), and pointed cone-shaped process (arrow in Fig. 81); procursus with large cushion-like structure retrolaterally, prolateral hinged process, complex distally.

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 10%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with ~30 pseudosegments.

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Figs 81-86. *Buitinga batwa* sp. nov. 81-82. Left ♂ procursus and bulb, prolateral and retrolateral views. 83-84. ♂ chelicerae, fronto-dorsal and lateral views. 85-86. ♀ genitalia, ventral and cleared dorsal views (arrow points at distinctive internal pocket). b: genital bulb; ba: bulbal apophysis; e: embolus; pr: procursus. Scale lines: 0.3 mm (83-84), 0.5 mm (81-82, 85-86).

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VARIATION. Tibia 1 in 9 other males: 4.4-5.2 (mean 4.7).

Female

In general similar to male but triads closer together (distance PME-PME 150 µm). Tibia 1 in 5 females: 3.5-3.9 (mean 3.75). Epigynum a simple plate with wide straight scape in anterior position (Figs 64, 85), with distinctive internal sclerotized pocket (arrow in Fig. 86) and large pore plates (Figs 65, 86).

Distribution

Known from southwestern Uganda only (Fig. 18).

Spermophora mau sp. nov.
urn:lsid:zoobank.org:act:4717BA27-3070-47BB-A588-EB037A4F6294
Figs 9, 40-44, 87-91

Spermophora Ken 39: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Distinguished from very similar *S. maathaiae* sp. nov. by shape of female epigynal scape (longer; tip pointed; Fig. 90) and by details of procursus tip (slightly different shapes of sclerites; Figs 87, 88). From other species by male cheliceral armature (shapes of frontal apophyses; Fig. 89) and by pointed tip of female epigynal scape.

Etymology

The species name is derived from the type locality; noun in apposition.

Type material

Holotype

♂, in ZFMK (Ar 8747).

Paratypes

3 ♂♂, 6 ♀♀, in ZFMK (2 ♂♂, 5 ♀♀: Ar 8748) and NMKE (1 ♂, 1 ♀).

Type locality

KENYA, Rift Valley, Mau Escarpment near Elburgon (0°25.3'S, 35°47.3'E), 2930 m a.s.l., 5 Feb. 2010 (B.A. Huber).

Other material examined

KENYA: *Rift Valley*: 2 ♀♀, 2 juvs. in pure ethanol, in ZFMK (Ken 145), Mau Escarpment near Elburgon, same data as types above.

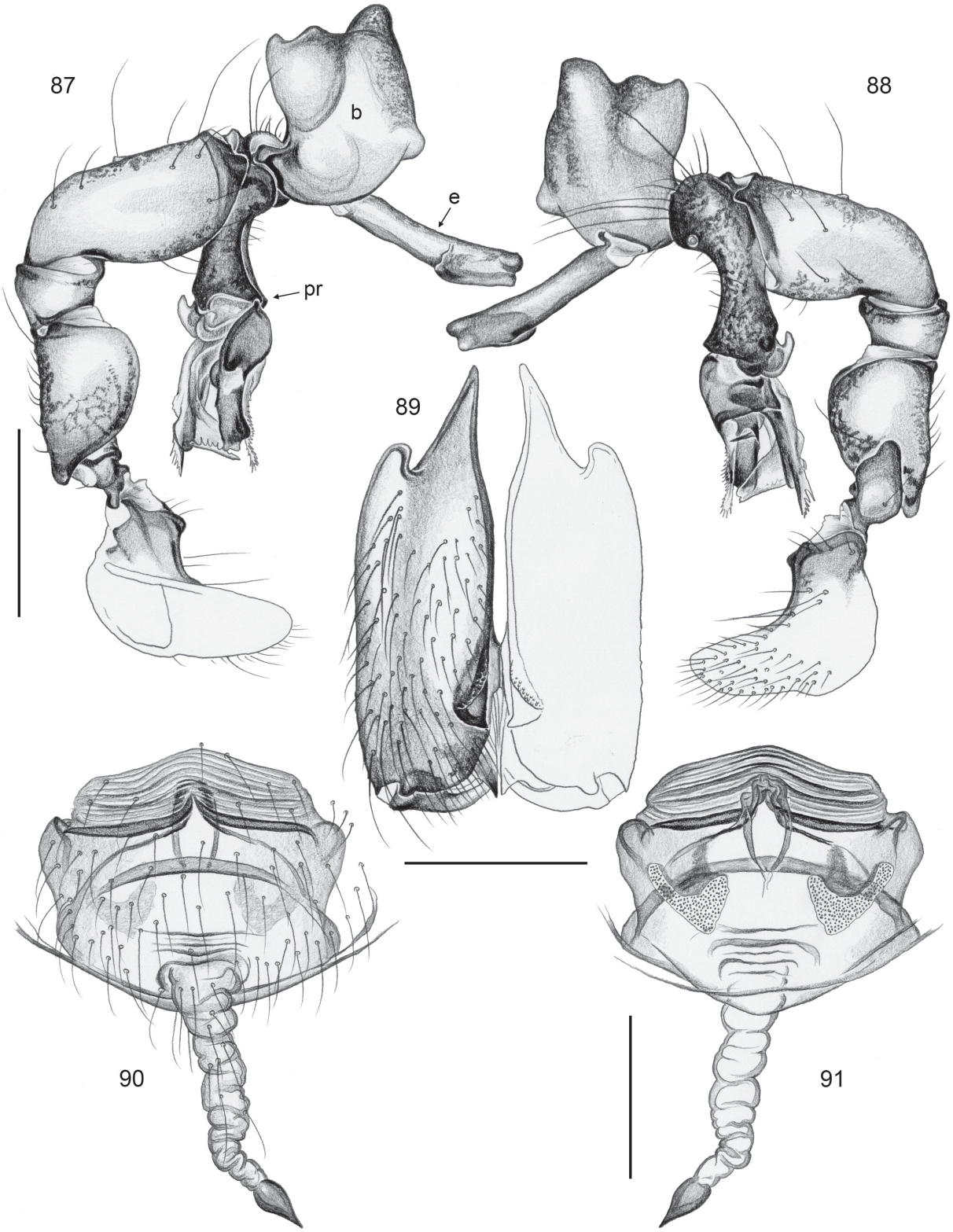
Description

Male (holotype)

MEASUREMENTS. Total body length 3.6, carapace width 1.3. Leg 1: 20.4 (5.2 + 0.5 + 5.1 + 6.9 + 2.7), tibia 2: 3.3, tibia 3: 2.6, tibia 4: 3.4; tibia 1 L/d: 41. Distance PME-PME 175 µm, diameter PME 125 µm, distance PME-ALE 55 µm, no AME.

COLOR. Prosoma ochre-yellow with large lateral black marks and Y-mark behind ocular area, ocular area laterally darkened, clypeus with pair of darker smudges below eye triads, sternum monochromous

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Figs 87-91. *Spermophora mau* sp. nov. 87-88. Left ♂ palp, prolateral and retrolateral views. 89. ♂ chelicerae, frontal view. 90-91. ♀ genitalia, ventral and cleared dorsal views. b: genital bulb; e: embolus; pr: procursus. Scale lines: 0.3 mm (89-91), 0.5 mm (87-88).

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black, legs ochre-yellow, with darker rings on femora (subdistally) and tibiae (proximally, subdistally), abdomen grey with distinctive black pattern dorsally and laterally, ventrally mostly black.

Body. Habitus as in Figs 40 and 41; ocular area elevated, with pair of horns between triads (Fig. 44); carapace only anteriorly with shallow thoracic furrow; clypeus unmodified. Chelicerae as in Fig. 89, each frontal apophysis forming a cup-shaped depression, without modified hairs. Sternum wider than long (0.94/0.72), unmodified.

Palps. As in Figs 87 and 88, coxa with retrolatero-ventral apophysis, trochanter with retrolateral apophysis, femur barely modified (except dorsal apophysis proximally), procursus with ventral flap and several complex distal elements that appear hinged to proximal part, distinctive spine-like process visible in retrolateral view, bulb with three cone-shaped projections and long embolus.

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 10%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with >30 pseudosegments, distinct distally.

Variation. Tibia 1 in 3 other males: 4.8, 4.9, 5.3.

Female

In general similar to male but triads closer together (distance PME-PME 135 µm), without horns. Tibia 1 in 6 females: 4.2-4.4. Epigynum a simple plate with long posterior scape ending in scorpion-tail-like tip (Fig. 90); internal genitalia as in Fig. 91.

Distribution

Known from type locality only (Fig. 27).

Spermophora maathaiae sp. nov.
urn:lsid:zoobank.org:act:133558CC-190F-45DD-8178-A130F484A205
Figs 46, 66-67, 92-96

"Spermophora" sp. 1 indet.: Huber, 2003a: 601, map 4.
Spermophora cf. *berlandi* Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Distinguished from very similar *S. mau* sp. nov. by shape of female epigynal scape (shorter; tip wide and rounded rather than pointed; Fig. 95) and by details of procursus tip (slightly different shapes of sclerites; Figs 92, 93). From other species by male cheliceral armature (shapes of frontal apophyses; Fig. 94) and by widened and sclerotized tip of female epigynal scape.

Etymology

The species is named in honor of Prof. Wangari Maathai, founder of the Green Belt Movement and first African woman to win the Nobel peace prize.

Type material

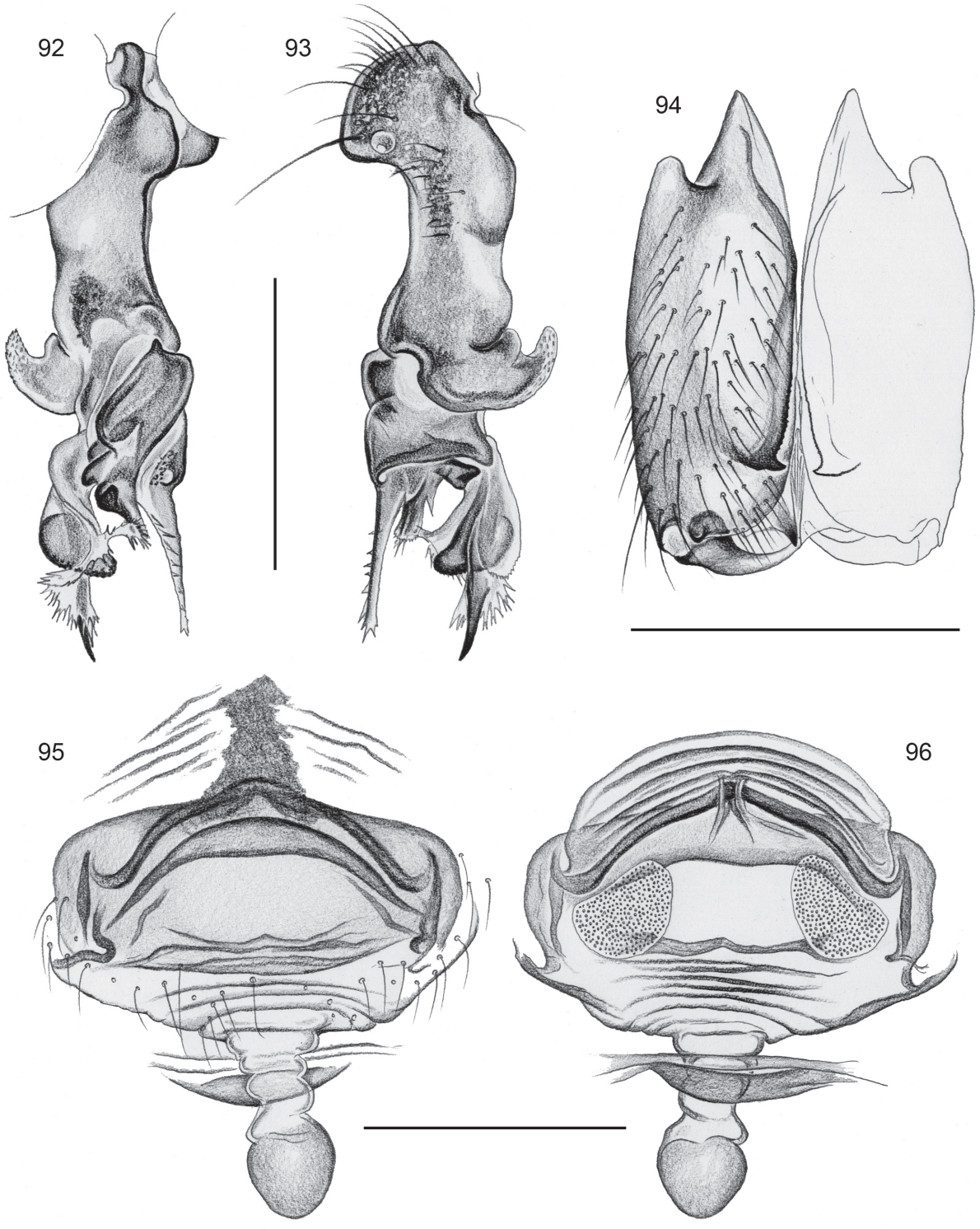
Holotype

♂, in ZFMK (Ar 8749).

Paratypes

3 ♂♂, 6 ♀♀, in ZFMK (2 ♂♂, 5 ♀♀: Ar 8750) and NMKE (1 ♂, 1 ♀).

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Figs 92-96. *Spermophora maathaiae* sp. nov. 92-93. Left ♂ procursus, prolateral and retrolateral views. 94. ♂ chelicerae, frontal view. 95-96. ♀ genitalia, ventral and cleared dorsal views. Scale lines: 0.5 mm.

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Type locality

KENYA, Eastern Province, Mt. Kenya N.P., Chogoria Forest, "site 1" (0°12.1'S, 37°29.4'E), 2460 m a.s.l., 27 Jan. 2010 (B.A. Huber).

Other material examined

KENYA: *Eastern Province*: 3 ♀♀, 3 juvs. in pure ethanol, in ZFMK (Ken 112), Mt. Kenya N.P., Chogoria Forest, "site 1", same data as types above; 1 ♂, 1 ♀, in MRAC (161899), Sirimon Track at 2650 m a.s.l. [0°03.8'S, 37°17.8'E], 24 Jul. 1975 (R. Bosmans). *Central Province*: 1 ♀ in pure ethanol, in ZFMK (Ken 123), Mt. Kenya N.P., Naro Moru Forest, overhanging vegetation along road cut (0°10.2'-10.6'S, 37°12.0'-13.3'E), 2800-3200 m a.s.l., 29 Jan. 2010 (B.A. Huber); 1 ♂, 3 ♀♀, in MRAC (215392), Castle Forest, bamboo forest at 2445 m a.s.l., 21 Apr. 2004 (R. Jocqué, C. Warui, van den Spiegel); 1 ♂, in MRAC (215146), same data but ruins of old brick huts, 2370 m a.s.l..

Description

Male (holotype)

Measurements. Total body length 3.2, carapace width 1.3. Leg 1: 20.8 (5.2 + 0.5 + 5.3 + 7.2 + 2.6), tibia 2: 3.4, tibia 3: 2.6, tibia 4: 3.4; tibia 1 L/d: 40. Distance PME-PME 240 µm, diameter PME 160 µm, distance PME-ALE 25 µm, no AME.

Color. Prosoma ochre-yellow with large lateral black marks, ocular area with black lateral marks, clypeus slightly darkened, sternum monochromous black, legs ochre-yellow, with darker rings on femora (subdistally) and tibiae (proximally, subdistally), abdomen grey with distinctive black pattern dorsally and laterally, ventrally mostly black.

Body. Habitus as in Fig. 46; ocular area elevated, with pair of horns in front of PME (similar *S. mau*, cf. Fig. 44, but wider apart); carapace only anteriorly with shallow thoracic furrow; clypeus unmodified. Chelicerae as in Fig. 94, frontal apophyses without modified hairs. Sternum wider than long (0.90/0.75), unmodified.

Palps. In general as in *S. mau* sp. nov. (cf. Figs 87, 88); coxa with retrolatero-ventral apophysis, trochanter with retrolateral apophysis, femur barely modified (except dorsal apophysis proximally), procursus with ventral flap and several complex distal elements that appear hinged to proximal part (Figs 92, 93), bulb similar *S. berlandi* Fage, 1936 (cf. figs 262-263 in Huber 2003b), with two cone-shaped projections and long embolus.

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 12%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with >20 pseudosegments, distinct distally.

Variation. Tibia 1 in 5 other males: 5.1-5.6 (mean 5.5).

Female

In general similar to male but triads closer together (distance PME-PME 160 µm), without horns. Tibia 1 in 13 females: 4.1-4.8 (mean 4.4). Epigynum a simple plate with long posterior scape ending in wide rounded tip (Figs 66, 95); internal genitalia as in Figs 67 and 96.

Distribution

Known from Mount Kenya only (Fig. 27).

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Spermophora bukusu sp. nov.
urn:lsid:zoobank.org:act:79B65098-2BC0-4922-A582-9669C9FB099F
Figs 45, 47-49, 68, 97-101

Spermophora Kenya 45: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Distinguished from the similar *S. minotaura* Berland, 1920 by male clypeus modification (without sclerotized elements projecting below eye triads), cheliceral armature (distal apophyses with simple rows of cone-shaped modified hairs; Fig. 99), details of male procursus and bulb (shapes of ventral 'flap'; distal procursus elements; embolus; Figs 97, 98), and female genitalia (triangular scape; absence of abdominal modification behind epigynum; Figs 68, 100). Easily distinguished from similar species with horns between eye triads (*S. mau* sp. nov.*; S. berlandi* Fage, 1936*; S. maathaiae* sp. nov.) by general shapes of procursus, bulb, and epigynum.

Etymology

The species is named after the Bukusu, a Kenyan tribe located mainly on the foothills of Mount Elgon; noun in apposition.

Type material

Holotype
♂, in ZFMK (Ar 8751).

Paratypes
4 ♂♂, 2 ♀♀, in ZFMK (3 ♂♂, 2 ♀♀: Ar 8752) and NMKE (1 ♂).

Type locality

KENYA, Rift Valley, Mt. Elgon N.P., along Kimothon River (1°04.6'N, 34°43.5'E), 2510 m a.s.l., 31 Jan. 2010 (B.A. Huber).

Other material examined

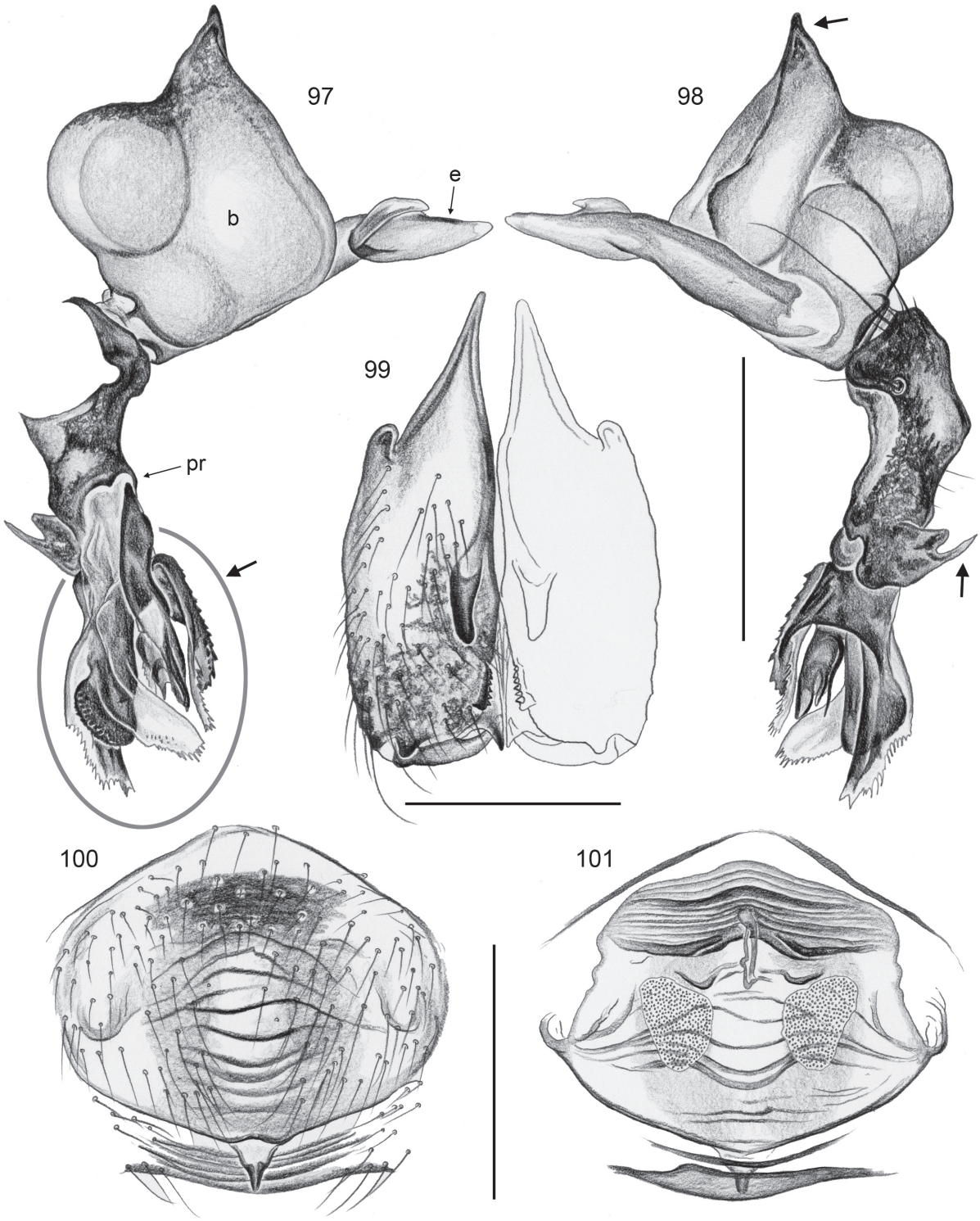
KENYA: *Rift Valley*: 2 ♂♂, 2 ♀♀, 2 juvs. in pure ethanol, in ZFMK (Ken 133), Mt. Elgon N.P., along Kimothon River, same data as types above; 3 ♂♂, 2 ♀♀, in ZFMK (Ar 8753), Kitale Museum Forest (~1°01.3'N, 34°59.7'E), 1880 m a.s.l., 2 Feb. 2010 (B.A. Huber); 1 ♂, 4 ♀♀, 1 juv. in pure ethanol, in ZFMK (Ken 144), same data; 1 ♂, 1 ♀, in ZFMK (Ar 8754), Mt. Elgon N.P., Kitum Cave (1°01.8'N, 34°45.4'E), 2410 m a.s.l., in forest outside cave, 31 Jan. 2010 (B.A. Huber). *Western Province*: 1 ♀, in ZFMK (Ar 8755), Mt. Elgon N.P., forest fragment (1°04.3'N, 34°40.2'E), 3070 m a.s.l., 1 Feb. 2010 (B.A. Huber). UGANDA: *Eastern Region*: 2 ♂♂, 29 ♀♀ (6 vials), in ZFMK (Ar 8756-61), Mt. Elgon (Dist. Mbale) (1°10'N, 34°26'E), 2900 m a.s.l., fogging of *Ilex mitis*, Sep. 1999 (T. Wagner).

Description

Male (holotype)
Measurements. Total body length 3.2, carapace width 1.3. Leg 1: 22.6 (5.8 + 0.4 + 5.9 + 7.9 + 2.6), tibia 2: 3.5, tibia 3: 2.7, tibia 4: 3.5; tibia 1 L/d: 49. Distance PME-PME 205 µm, diameter PME 125 µm, distance PME-ALE 45 µm, no AME.

Color. Prosoma ochre-yellow with large lateral black marks and Y-mark behind ocular area, ocular area laterally darkened, sternum monochromous black, legs ochre-yellow, with darker rings on femora (subdistally) and tibiae (proximally, subdistally), abdomen grey with distinct black pattern, also ventrally.

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Figs 97-101. *Spermophora bukusu* sp. nov. 97-98. Left ♂ procursus and bulb, prolateral and retrolateral views (arrows point to variable structures; see text). 99. ♂ chelicerae, frontal view. 100-101. ♀ genitalia, ventral and cleared dorsal views. b: genital bulb; e: embolus; pr: procursus. Scale lines: 0.3 mm (99), 0.5 mm (97-98, 100-101).

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Body. Habitus as in Figs 47-49; ocular area elevated, with pair of horns between triads (Fig. 45); carapace only anteriorly with shallow thoracic furrow, clypeus barely modified, only large membranous area that appears collapsed (in all males examined). Chelicerae as in Fig. 99, each distal frontal apophysis with straight row of six cone-shaped modified hairs, proximal frontal apophyses slightly flattened (more slender in lateral view). Sternum wider than long (0.86/0.70), unmodified.

Palps. In general very similar *S. minotaura* Berland, 1920 (cf. figs 268 and 269 in Huber 2003a) but embolus distal elements different shape, procursus ventral 'flap' and distal elements also distinctive (Figs 97, 98).

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 9%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with >30 pseudosegments, distinct distally.

Variation. Tibia 1 in 8 other males: 4.3-6.1 (mean 5.1). Males from Kitum Cave and from Kitale differ slightly in several respects (arrows in Figs 97 and 98): pointed process on ventral flap of procursus larger and more curved; shapes of distal procursus structures slightly different; bulbal pointed process slightly longer and more curved.

Female

In general similar to male but triads slightly closer together (distance PME-PME 170 µm), without horns. Tibia 1 in 4 females: 4.1, 4.2, 4.7, 4.9. Epigynum a simple protruding plate with strong transversal ridges, small posterior triangular scape, posteriorly some transversal ridges but no median modification (Figs 68, 100); internal genitalia as in Fig. 101.

Distribution

Known from Mt. Elgon area only (Kenya and Uganda) (Fig. 27).

Spermophora kirinyaga sp. nov.
urn:lsid:zoobank.org:act:FB6D5694-B829-49B4-B47E-AAB80C170389
Figs 10, 50-52, 102-106

Spermophora Ken 21: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Easily distinguished from similar congeners (*S. berlandi* Fage, 1936, *S. minotaura* Berland, 1920) by absence of horns between eye triads; from *S. berlandi* Fage, 1936 also by absence of epigynal scape (only short conical projection; Fig. 105), from *S. minotaura* Berland, 1920 also by unmodified clypeus; from both and from other species also by details of male palp morphology (shapes of bulbal processes and procursus; Figs 102, 103) and male cheliceral armature (Fig. 104).

Etymology

Kirinyaga is a Kikuyu and Embu name for Mount Kenya; noun in apposition.

Type material

Holotype

♂, in ZFMK (Ar 8762).

Paratypes

5 ♂♂, 2 ♀♀, in ZFMK (4 ♂♂, 2 ♀♀: Ar 8763) and NMKE (1 ♂).

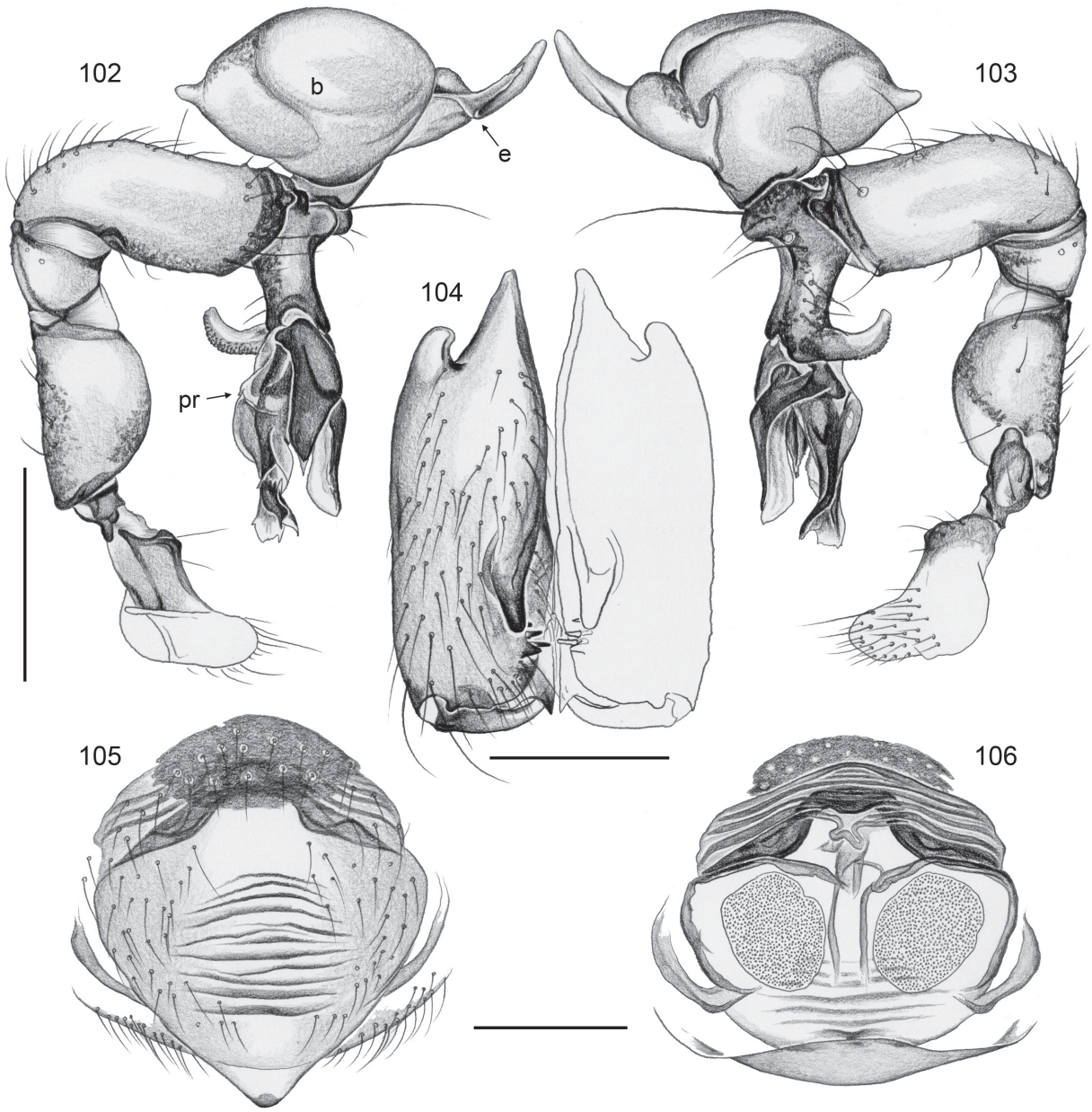
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Type locality

KENYA, Eastern Province, Mt. Kenya National Park, Chogoria Forest, "site 2" (0°14.2'S, 37°34.0'E), 1950 m a.s.l., under logs on ground, 27 Jan. 2010 (B.A. Huber).

Other material examined

KENYA: *Eastern Province*: 7 ♀♀, 1 juv. in pure ethanol, in ZFMK (Ken 119), Mt. Kenya N.P., Chogoria Forest: same data as types above.



Figs 102-106. *Spermophora kirinyaga* sp. nov. 102-103. Left ♂ palp, prolateral and retrolateral views. 104. ♂ chelicerae, frontal view. 105-106. ♀ genitalia, ventral and cleared dorsal views. b: genital bulb; e: embolus; pr: procursus. Scale lines: 0.2 mm (104), 0.3 mm (105-106), 0.5 mm (102-103).

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Description

Male (holotype)

Measurements. Total body length 2.2, carapace width 1.1. Leg 1: 17.1 (4.2 + 0.4 + 4.3 + 6.2 + 2.0), tibia 2: 2.6, tibia 3: 2.0, tibia 4: 2.6; tibia 1 L/d: 46. Distance PME-PME 205 µm, diameter PME 90 µm, distance PME-ALE 25 µm, no AME.

Color. Prosoma ochre with extensive black pattern including ocular area and clypeus, sternum mostly black, medially dark brown, legs ochre-yellow, darker subdistal rings and lighter tips barely visible, abdomen ochre-grey, largely covered with black marks, also ventrally.

Body. Habitus as in Fig. 50; ocular area slightly elevated, without horns; shallow but distinct thoracic furrow; clypeus unmodified. Chelicerae as in Fig. 104, with proximal lateral apophyses, large frontal apophyses (without modified hairs) and three long modified hairs on each side, the distal one accompanied by small black cone. Sternum wider than long (0.72/0.64), unmodified.

Palps. As in Figs 102 and 103, coxa with retrolatero-ventral apophysis, trochanter with retrolateral apophysis, femur barely modified, procursus with ventral flap and several complex distal elements that appear hinged with proximal part, bulb with only one distally bifid process and small rounded projection on opposite side.

Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 14%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with ~20 pseudosegments.

Variation. Tibia 1 in 5 other males: 3.9-4.0.

Female

In general similar to male but triads closer together (distance PME-PME 135 µm). Tibia 1 in 2 females: 3.4, 3.5. Epigynum a large protruding plate with small projection posteriorly (Fig. 105); internal genitalia as in Fig. 106.

Distribution

Known from type locality only (Fig. 27).

Spermophora kyambura sp. nov.
urn:lsid:zoobank.org:act:62CDAD37-6334-4C5F-AE18-EAF1F8F21D8F
Figs 57-58, 69, 107-110

Spermophora Uga 31: Dimitrov, Astrin & Huber 2012 (DNA sequence data).
Spermophora Cam 64: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Tiny monochromous species, distinguished from superficially similar African species (*Nyikoa limbe* Huber, 2007, some '*Spermophora*' and *Quamtana* species) by shape of simple short procursus (Fig. 108), simple bulbal apophysis and embolus with slightly sclerotized distal projection (Fig. 107), by shape of male cheliceral apophyses (provided with one modified hair each; Fig. 109), and by sac-like internal structure frontally in female genitalia (Figs 69, 110; usually visible through cuticle).

Etymology

The species name is derived from the type locality; noun in apposition.

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Type material

Holotype

♂, in ZFMK (Ar 8764).

Paratypes

4 ♂♂, 11 ♀♀, in ZFMK (Ar 8765).

Type locality

UGANDA, Bushenyi District, Kyambura River Gorge (~0°10.7'S, 30°05.8'E), 900 m a.s.l., 29 Nov. 2010 (B.A. Huber).

Other material examined

UGANDA: *Western Region*: 1 ♂, 1 ♀ in pure ethanol, in ZFMK (Uga 140), Bushenyi District, Kyambura River Gorge, same data as types above. CAMEROON: *South Region*: 6 ♂♂, 11 ♀♀, 1 juv., in ZFMK (Ar 8766), near Ebolowa (2°54.9'N, 11°08.3'E), 620 m a.s.l., underside of banana leaves, 11-12 Apr. 2009 (B.A. & J.C. Huber); 3 ♂♂, 9 ♀♀, 2 juvs. in pure ethanol, in ZFMK (Cam 102), same data. CONGO D.R.: *Congo Centrale Province*: 25 ♂♂, 13 ♀♀, in MRAC (separated from 219850-852, 219854-855, 224313-315), Mayombe, Luki Forest Reserve [5°37.5'S, 13°06.0'E], fogging in primary rainforest, 4-5, 7, 12-13 Nov. 2006, 27-29 Sep. 2007 (8 vials) (D. de Bakker, Michiels); 6 ♂♂, 10 ♀♀, in MRAC (separated from 224303, 309), same data but fogging in old secondary rainforest, 17 & 23 Sep. 2007. *Mongala Province*: 5 ♂♂, 16 ♀♀ (3 vials), in MRAC, Mbangi (2°07'N, 21°44'E), fogging, 23-24 Jun. 2009 (D. de Bakker). *Tshopo Province*: 28 ♂♂, 57 ♀♀ (4 vials), in MRAC, Monzé (Engengele), old secondary forest, periodically inundated (2°02'N, 22°44'E), fogging, 29-30 Jun. 2009 (D. de Bakker); 22 ♂♂, 35 ♀♀ (2 vials), in MRAC, Basoko (Bokungu), old palm plantation, 60 years old (1°14'N, 23°36'E), fogging, 7 Mar. 2009 (D. de Bakker).

Material assigned tentatively

GHANA: *Central Region*: 24 ♂♂, 32 ♀♀ (7 vials), in MRAC (217692, 95, 217705, 15, 20, 24, 29), Kakum forest (5°20'N, 1°23'W), fogging in primary and secondary forest, 14-19 & 25 Nov. 2005 (R. Jocqué, D. de Bakker, L. Baert).

Description

Male (holotype)

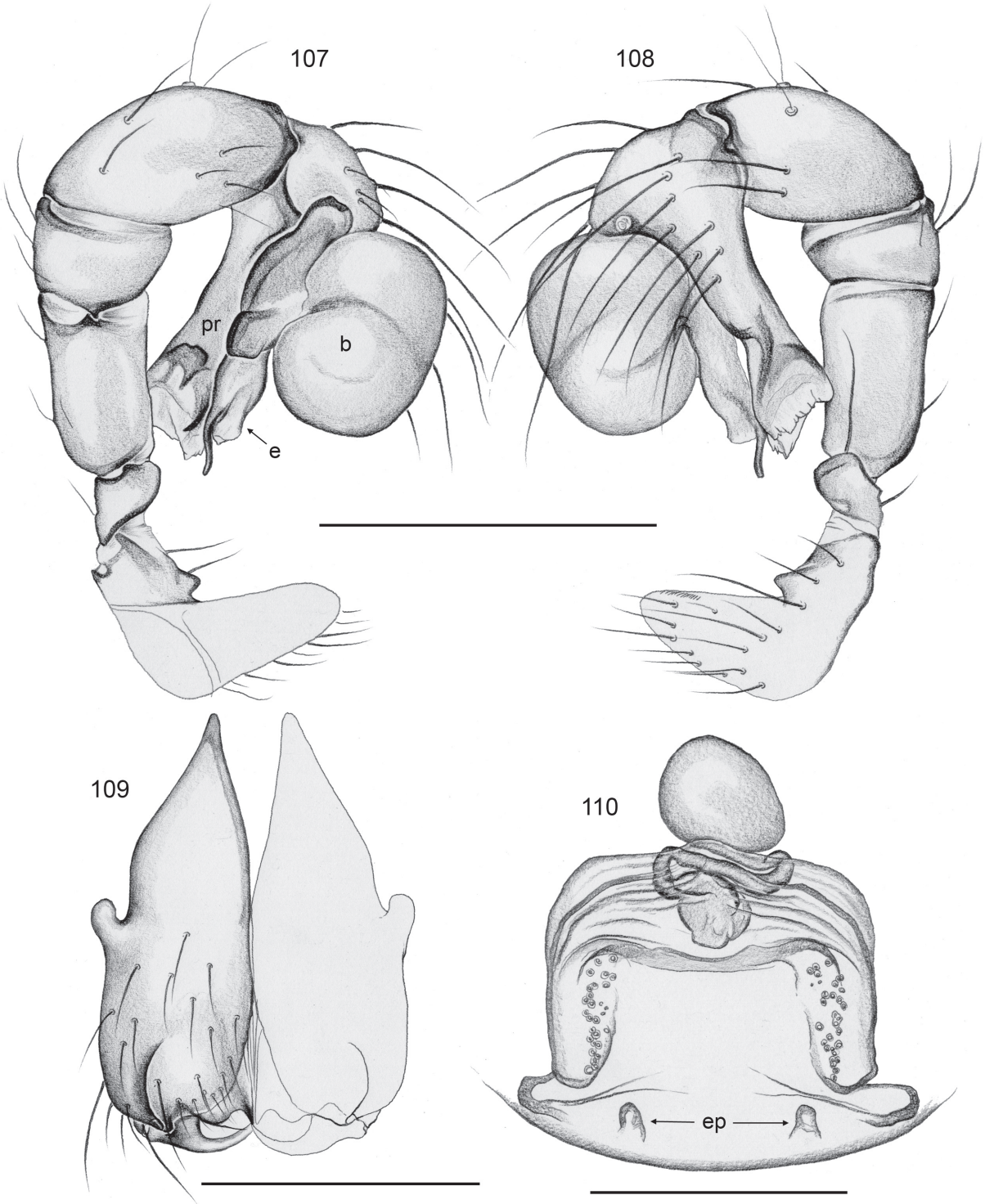
Measurements. Total body length 1.35, carapace width 1.0. Leg 1: 7.8 (2.0 + 0.2 + 2.1 + 2.6 + 0.9), tibia 2: 1.4, tibia 3: 0.9, tibia 4: 1.2; tibia 1 L/d: 43. Distance PME-PME 90 µm, diameter PME 70 µm, distance PME-ALE 10 µm, no AME.

Color. Prosoma monochromous pale ochre-yellow, legs ochre yellow, without darker rings, abdomen monochromous pale grey.

Body. Habitus as in Figs 57 and 58; ocular area barely elevated, carapace without thoracic furrow; clypeus unmodified. Chelicerae as in Fig. 109, each distal frontal apophysis with one modified hair at tip. Sternum wider than long (0.65/0.55), unmodified.

Palps. As in Figs 107 and 108, coxa with small ventral apophysis, trochanter with retrolateral apophysis (slightly longer than appears in Fig. 108), procursus very simple, without hinged process, without ventral flap; bulb with large proximal sclerite, small rectangular apophysis, embolus with slightly sclerotized distal projection.

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Figs 107-110. *Spermophora kyambura* sp. nov. 107-108. Left ♂ palp, prolateral and retrolateral views. 109. ♂ chelicerae, frontal view. 110. ♀ genitalia, cleared dorsal view. b: genital bulb; e: embolus; ep: epigynal pockets; pr: procursus. Scale lines: 0.2 mm (109-110), 0.3 mm (107-108).

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Legs. Without spines and curved hairs, few vertical hairs; retrolateral trichobothrium on tibia 1 at 21%; prolateral trichobothrium absent on tibia 1, present on other tibiae; tarsus 1 with ~20 pseudosegments, distinct distally.

Variation. Tibia 1 in 22 other males from Uganda, Congo DR and Cameroon: 2.3-2.6 (mean 2.4). Males from Ghana seem to have indistinguishable palps but slightly longer and more widely spaced cheliceral apophyses and slightly shorter legs: tibia 1 in 21 males from Ghana: 2.0-2.3 (mean 2.1); they are therefore assigned tentatively.

Female

In general similar to male. Tibia 1 in 34 females from Uganda, Congo DR and Cameroon: 1.6-2.0 (mean 1.8). Epigynum extremely simple, no external modification visible in dissecting microscope; only internal frontal sac-like structure visible through cuticle; pair of pockets only visible in compound microscope (Fig. 110). In females from Ghana, these pockets are barely visible and slightly wider apart; tibia 1 in 20 females from Ghana: 1.4-1.6 (mean 1.55).

Distribution

Widely distributed in tropical Africa (Uganda, Congo DR, Cameroon; possibly also Ghana). Figure 27 shows the only record from East Africa.

Quamtana nyahururu sp. nov.
urn:lsid:zoobank.org:act:CE25DF38-4C5F-4638-98C4-0AA71A061B70
Figs 6, 59-61, 111-115

Quamtana Kenya 10: Dimitrov, Astrin & Huber 2012 (DNA sequence data).

Diagnosis

Distinguished from known congeners by combination of male cheliceral armature (Fig. 113), male palp (shapes of procursus and bulbal process; Figs 111, 112), and absence of AME. The South African *Quamtana ciliata* (Lawrence, 1938) and *Q. mbaba* Huber, 2003 are similar but both have AME and are much larger (total body length ~3.0).

Etymology

The species name is derived from the type locality; noun in apposition.

Type material

Holotype

♂, in ZFMK (Ar 8767).

Paratypes

4 ♂♂, 1 ♀, in ZFMK (3 ♂♂, 1 ♀: Ar 8768) and NMKE (1 ♂).

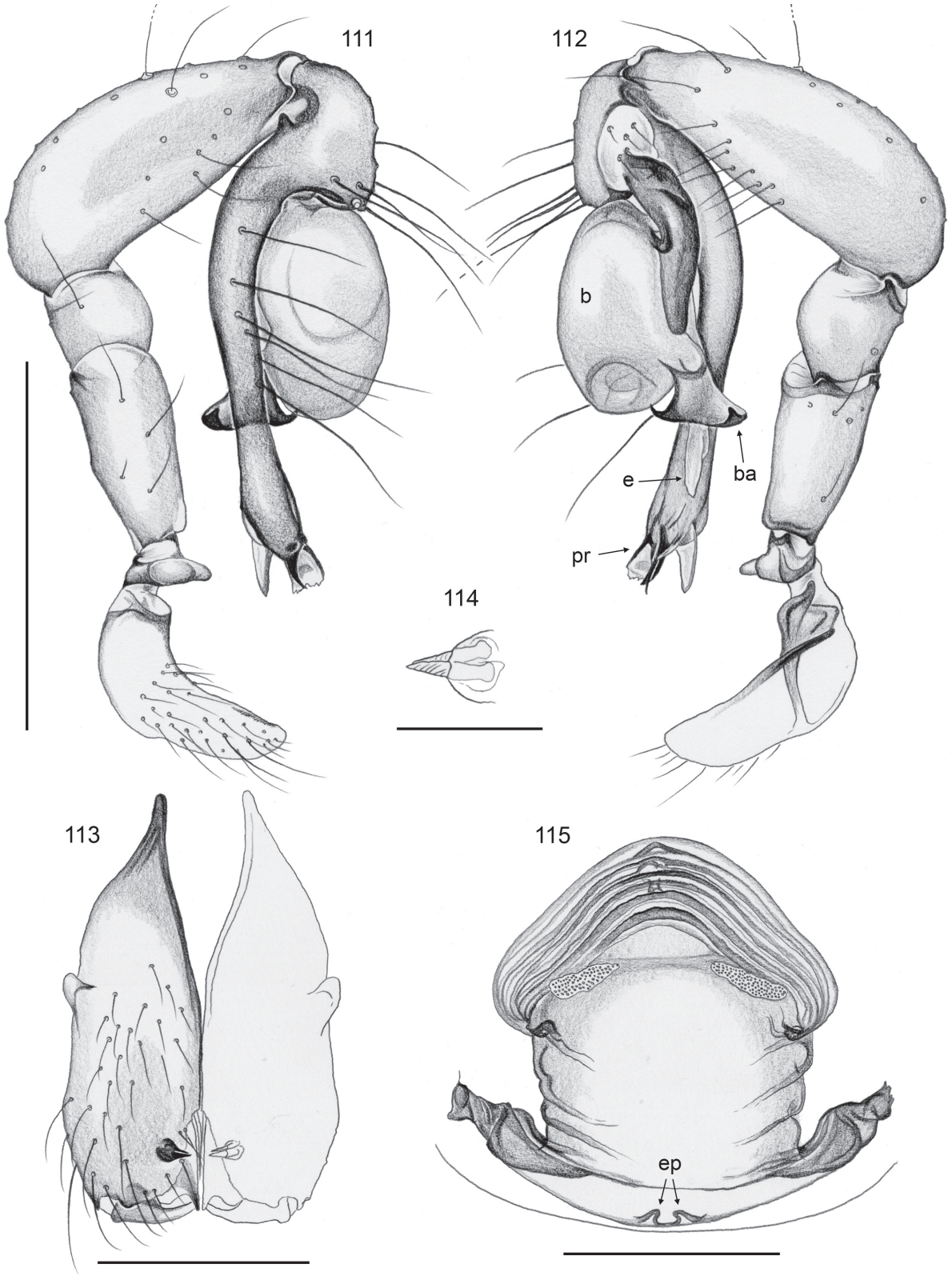
Type locality

KENYA, Rift Valley Province, Thompson Falls near Nyahururu (0°02.7'N, 36°22.1'E), 2350 m a.s.l., on underside of leaf, 30 Jan. 2010 (B.A. Huber).

Other material examined

KENYA: *Rift Valley Province*: 1 ♀, 2 juvs. in pure ethanol, in ZFMK (Ken 132), Thompson Falls near Nyahururu: same data as types above. *Central Province*: 3 ♂♂, in CJFM (4248), Naro Moru [~0°10'S,

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Figs 111-115. *Quamtana nyahururu* sp. nov. 111-112. Right ♂ palp, retrolateral and prolateral views. 113. ♂ chelicerae, frontal view. 114. ♂ cheliceral apophysis with modified hairs. 115. ♀ genitalia, cleared dorsal view. b: genital bulb; ba: bulbal apophysis; e: embolus; ep: epigynal pockets; pr: procursus. Scale lines: 0.05 mm (114), 0.2 mm (113, 115), 0.5 mm (111-112).

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37°02'E], 2000 m a.s.l., riverside scrub, 17 Aug. 1974 (Murphy); 1 ♂, in ZFMK (Ar 8718), Kikuyu Escarpment, Gatamaiyu (0°58'S, 36°42'E), 2330 m a.s.l., mountain forest, fogging of *Podocarpus latifolius*, Feb. 1999 (T. Wagner). *Nairobi Area*: 6 ♂♂, 2 ♀♀, in CJFM (3540, 6635), Nairobi, Muthaiga Golf Club rough [1°15'S, 36°50'E], 1600 m a.s.l., 15 Jul. 1974 and 26 Sep. 1977 (2 vials) (Murphy). *Eastern Province*: 1 ♂, in MRAC (215394), Kirimeri Forest near Runyenjes [0°25.4'S, 37°32.9'E], 1700 m a.s.l., 27 Apr. 2004 (R. Jocqué, C. Warui, van den Spiegel). TANZANIA: *Tanga Region*: 3 ♂♂ (3 vials), in ZMUC, Lushoto Dist., Mazumbai Forest Reserve (4°49'S, 38°29'S), 1650-1730 m a.s.l., 22 Nov. 1995 (ZMUC Expedition), "Fog 25-BO", "Fog 25-FL", "Fog 25-EJ"; 1 ♂, in ZMUC, same locality, date not given, "Fog 4-DF"; 1 ♀ in ZMUC, Mazumbai Forest Reserve at 4°49'S, 38°31'E, 1370-1435 m a.s.l., 4 Oct. 1995, "Fog 31-DO".

Description

Male (holotype)

Measurements. Total body length 1.6, carapace width 0.65. Leg 1: 13.0 (3.3 + 0.3 + 3.5 + 4.8 + 1.1), tibia 2: 2.0, tibia 3 missing, tibia 4: 2.0; tibia 1 L/d: 56. Distance PME-PME 175 µm, diameter PME 70 µm, distance PME-ALE 20 µm, no trace of AME.

Color. Prosoma pale whitish with wide dark median band on carapace including clypeus but not ocular area, legs pale ochre-yellow, without darker rings, abdomen monochromous pale grey.

Body. Habitus as in Figs 59 and 60; ocular area barely elevated, each triad on low hump; no thoracic furrow; clypeus unmodified. Chelicerae as in Fig. 113, with proximal lateral apophyses and distal frontal apophyses provided with two long modified hairs each (Fig. 114), without stridulatory ridges. Sternum wider than long (0.48/0.40), unmodified.

Palps. As in Figs 111 and 112, coxa unmodified, trochanter with short retrolatero-ventral apophysis, femur barely modified, procursus simple except distally, bulb with T-shaped process and transparent straight embolus arising from bulb next to T-shaped process.

Legs. Without spines and curved hairs, few vertical hairs (most hairs missing); retrolateral trichobothrium on tibia 1 at 9%; prolateral trichobothrium absent on tibia 1, present on other tibiae; pseudosegments not visible in dissecting microscope.

Variation. Tibia 1 in 15 other males: 2.8-3.7 (mean 3.3). In most males, the bulb is rotated out from its normal position (cf. figs 79, 80, 107, 108 in Huber 2003b).

Female

In general similar to male but triads even less elevated and much closer together (distance PME-PME 105 µm). Tibia 1 in 5 females: 2.3-2.5. Epigynum extremely simple externally, unsclerotized (Fig. 61) with pair of tiny pockets near posterior rim; internal genitalia as in Fig. 115.

Distribution

Known from several localities in Kenya and Tanzania (Fig. 25).

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