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Studies in the Liocranidae (Araneae): revision of *Andromma* Simon, 1893

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Abstract. The genus *Andromma* Simon, 1893 is revised. The type species *A. aethiopicum* Simon, 1893 (♂♀) and the other three known species, *A. anochetorum* Simon, 1909 (♂), *A. bouvieri* Fage, 1936 (♀) and *A. raffrayi* Simon, 1899 (♂♀), are redescribed. The types of the subspecies *A. raffrayi inhacorensis* Lessert, 1936 were not examined. This subspecies is considered a synonym of the nominal species. Nineteen new species are described and illustrated: *A. albinovani* sp. nov. (♂♀), *A. alvoculatum* sp. nov. (♀), *A. anacardium* sp. nov. (♀), *A. cyamos* sp. nov. (♀), *A. cycnotrachelos* sp. nov. (♂♀), *A. delphiurum* sp. nov. (♂♀), *A. deogratias* sp. nov. (♂♀), *A. dicranobelos* sp. nov. (♂), *A. didrepanum* sp. nov. (♂), *A. divinagraciae* sp. nov. (♂♀), *A. elephantactes* sp. nov. (♀), *A. ghesquierei* sp. nov. (♂♀), *A. heligmos* sp. nov. (♀), *A. helix* sp. nov. (♀), *A. juakalyi* sp. nov. (♂), *A. katangensis* sp. nov. (♀), *A. ophiophagum* sp. nov. (♀), *A. prosopion* sp. nov. (♀) and *A. velum* sp. nov. (♂♀). The distribution of the species and their apparent commensalism with termites are discussed.

Keywords. Afrotropics, commensalism, myrmecophily, taxonomy, termites.

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Introduction

The genus *Andromma* was described by Simon (1893: 387) in the subfamily Cybaeodinae Simon, 1893 in his interpretation of the family Drassidae Sundevall, 1833, a family name now replaced by the Gnaphosidae Banks, 1892. Simon (1893: 387) considered *Andromma* as closely related to *Cybaeodes* Simon, 1878. Whilst his original description of *Andromma* focused mainly on the diagnostic differences with *Cybaeodes* and on the characters of the only, somewhat aberrant species known at the time, *Andromma aethiopicum* Simon, 1893 from Ethiopia. Petrunkevitch (1928: 174) transferred *Andromma* to the subfamily Liocraninae Simon, 1897 in his interpretation of Clubionidae Wagner, 1887. The genus is still classified as such in Roewer (1954: 580). Lehtinen (1967: 290) raised Liocraninae to family rank, but remained vague about the affinity of *Andromma* and *Cybaeodes* (Lehtinen 1967: 226). Brignoli (1983: 546) listed both genera under Liocranidae Simon, 1897 incertae sedis. At present, *Andromma* is still listed in Liocranidae (Ramirez 2014: 343; WSC 2022), which is a poorly defined spider family

(Jocqué & Dippenaar-Schoeman 2006) lacking unique synapomorphies (Bosselaers & Jocqué 2002; Bosselaers 2009). The family, as presently defined is not monophyletic (Ramirez 2014) and is considered to encompass three subfamilies: Liocraninae, Cybaeodinae and Paratinae Marusik *et al.*, 2008 (Marusik *et al.* 2008). Bosselaers & Jocqué (2013) proposed the occurrence of enlarged piriform gland spigots on the male ALS (Platnick & Di Franco 1992: fig. 4) as a synapomorphy for Cybaeodinae. *Andromma* does not have such enlarged piriform gland spigots (Fig. 2F–G) and does not seem to fit well in Cybaeodinae, although Simon (1893, 1899) considered it to be closely related to *Cybaeodes*. Also, in the cladogram of Bosselaers & Jocqué (2002: figs 4–6) both genera do not end up in the same clade. As such, the affinities of *Andromma* remain unclear.

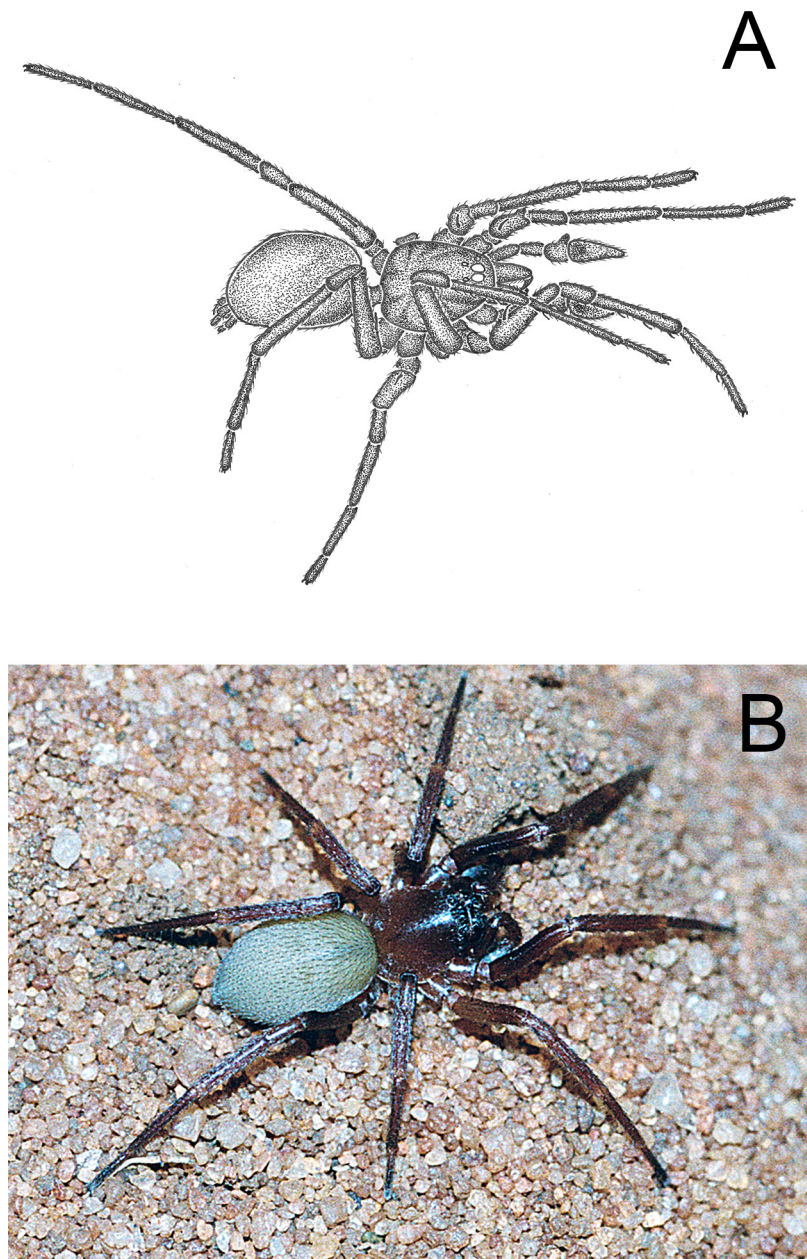


Fig. 1. A. Impression of the habitus of a living male of *Andromma anochetorum* Simon, 1909. B. Live female specimen of *Andromma raffrayi* Simon, 1899, photo © C.G-Haddad, locality unknown.

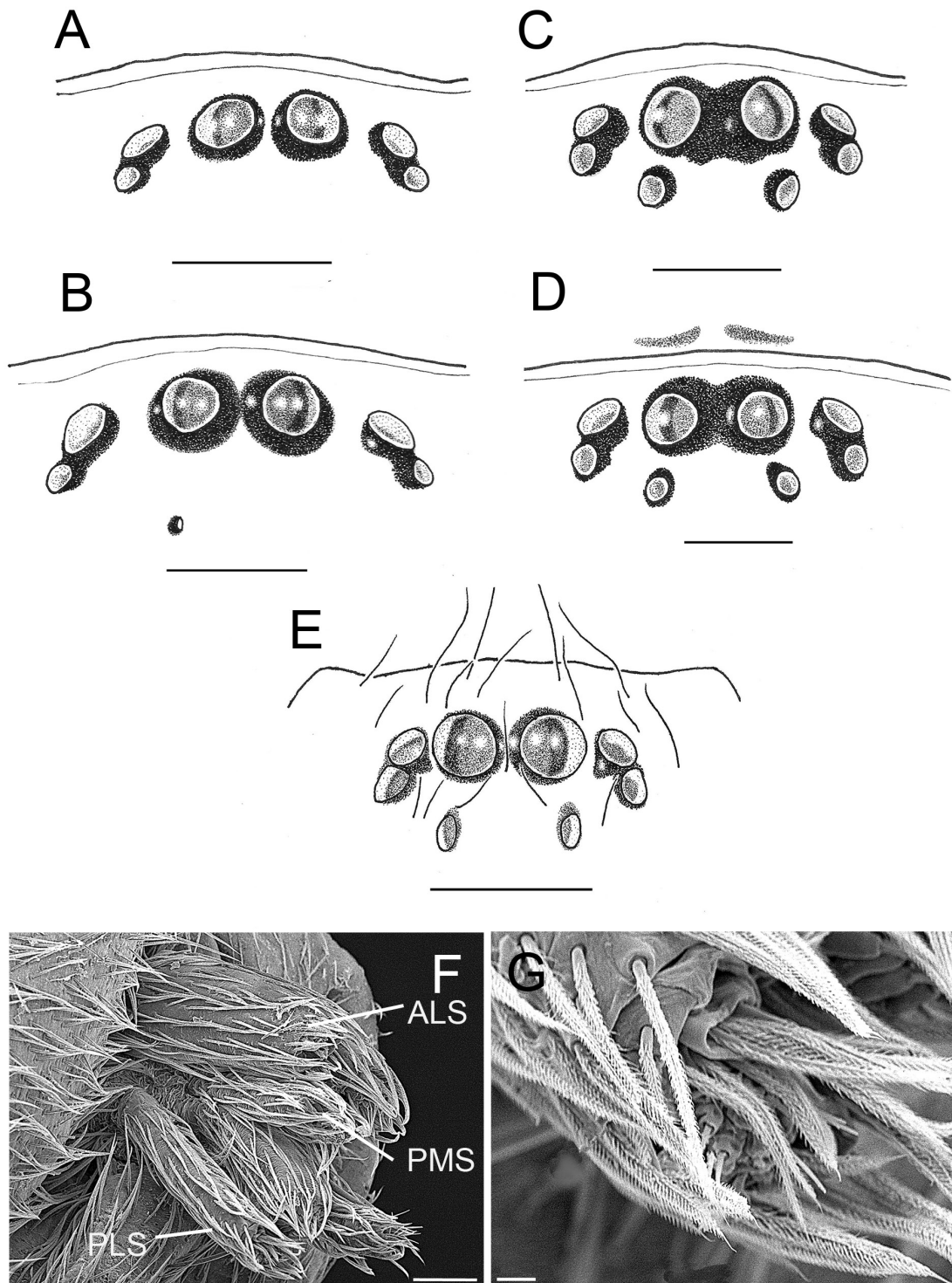


Fig. 2. *Andromma* Simon, 1893. **A–E.** Eye patterns, dorsal view. **F.** Spinnerets, ventral view. **G.** ALS, ventral view. **A–B.** *Andromma deogratias* sp. nov. **A.** ♂, paratype (BE_RMCA_ARA.Ara 246048). **B.** ♀, paratype (BE_RMCA_ARA.Ara 246054). **C–D.** *Andromma divinagraciae* sp. nov. **C.** ♂, holotype (BE_RMCA_ARA.Ara 246051). **D.** ♀, paratype (BE_RMCA_ARA.Ara 246055). **E.** *Andromma ghesquierei* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 84109). **F–G.** *Andromma divinagraciae* sp. nov., ♂, paratype (BE_RMCA_ARA.Ara 246056). Scale bars: A–E=0.2 mm; F=0.1 mm; G = 0.01 mm.

Until now, *Andromma* was considered a small and poorly defined genus. Simon described two additional species: *Andromma raffrayi* Simon, 1899 from South Africa and *Andromma anochetorum* Simon, 1909 from Gabon (Fig. 1). In his descriptions of the latter two species, Simon (1899, 1909) mentioned the myrmecophilous habits of *Andromma* for the first time. Lessert (1936: 220) described *Andromma raffrayi* subsp. *inhacorensis* from Mozambique, based on small, unconvincing differences from the parent species. Fage (1936: 83) added the termitophilous *Andromma bouvieri* from Kenya, bringing the number of presently known species of *Andromma* to four (Dippenaar-Schoeman *et al.* 2021). In the present work, we describe 19 additional species of *Andromma*, all collected from the African continent.

Material and methods

Photographs of the habitus and details of the genitalia were taken with a Leica MZ16 and manipulated with the Leica Application Suite (LAS) stacking software (ver. 3.8; Leica, <https://leicacamera.com>), with a Z-stack of 15–20 images merged into a single photomontage.

For drawings, specimens were studied using Euromex MIC465 and Olympus SZX9 stereo microscopes. Illustrations of the internal female genitalia (vulvae) were made after dissecting them free, digesting soft tissues in trypsin (Sigma) for 24 hours at room temperature and clearing in methyl salicylate. A stack of vulva photographs was then made with an Olympus E5 camera linked to a Wild M12 compound microscope with an LMscope DSLROTC_Pro Universal Digital SLR Adapter (Micro Tech Lab, Graz, Austria). Vulvae were photographed every 0.5 μm and the resulting photographs, about 100 per vulva, were stacked with Zerene Stacker version 1.04 build T2022-03-12-1935 using ‘Pmax’, a pyramid method.

For SEM photos, a male specimen (paratype *A. divinagraciae* sp. nov. BE_RMCA_ARA Ara 246056) was dried in hexamethyldisilazane, gold coated and examined and photographed with a JEOL 6480 LV scanning electron microscope.

Types of already described species were loaned from the Muséum national d’histoire naturelle, Paris (MNHN). The type material of all the new species is deposited in the Royal Museum for Central Africa (RMCA), Tervuren. Some additional material is in the collection of Jan Bosselaers (CJB).

All measurements are in millimetres.

Abbreviations

AER	=	anterior eye row
ALE	=	anterior lateral eyes
ALS	=	anterior lateral spinnerets
AME	=	anterior median eyes
c	=	conductor
CD	=	copulation duct
CO	=	copulatory openings
E	=	embolus
FD	=	fertilisation duct
Fe	=	femur
MF	=	male, female
MOQ	=	median ocular quadrangle
Mt	=	metatarsus
P	=	patella
PCT	=	precoxal triangles
PER	=	posterior eye row
pl	=	prolateral

PLE	=	posterior lateral eyes
PLS	=	posterior lateral spinnerets
plv	=	prolateral ventral
PME	=	posterior median eyes
PMS	=	posterior median spinnerets
rl	=	retrolateral
RTA	=	retrolateral tibial apophysis
SD	=	sperm duct
Sss	=	Sickle-shaped sclerite
ST	=	spermatheca(e)
t	=	tarsus
T	=	tibia
v	=	ventral
VTA	=	ventral tibial apophysis

Results

Class Arachnida Lamarck, 1801
Order Araneae Clerck, 1757
Family Liocranidae Simon, 1897

Genus *Andromma* Simon, 1893

Type species

Andromma aethiopicum Simon, 1893, by monotypy.

Diagnosis

Andromma resembles *Hortipes* Bosselaers & Ledoux, 1998 by the peculiar retina of the AMEs which, as seen from above, is only visible in the median half of these eyes. It differs from it by the absence of a metatarsal sensory array on the legs I and II (Bosselaers & Jocqué 2000; Ramirez 2014: 118), by the smaller number of ventral spine pairs on the tibia and metatarsus I and II, by the flat carapace, which is not elevated in the thoracic region, and by the absence of a median apophysis on the male bulbus. *Andromma* also resembles the equally myrmecophilous *Arabelia* Bosselaers, 2009 in general somatic aspect, but differs from it by the absence of an anterior epigynal hood, by the smaller copulatory opening, by the absence of spermathecae II, by the complex, bipartite RTA of the male palp, and by the longer embolus. It differs from *Cybaeodes* by the bipartite RTA, and by the absence of enlarged piriform gland spigots on the ALS of males, and from *Paratus* Simon, 1898 by the flat carapace, by the shorter and less numerous ventral spine pairs on the tibia and metatarsus I and II, and by the absence of dorsal guanine spots on the abdomen. *Andromma* differs from Liocraninae in general by the absence of rows of large and erectile bristles with special basal sockets in the ventral scopulae of tibia, metatarsus and tarsus of legs I–III (Ubick & Platnick 1991: 2).

Description

Translation of original Latin description of Simon (1893: 390)

Cephalothorax short and oval, rather convex, without fovea. Four eyes in a straight transverse line, the medians of medium size, the laterals small, minute in males. Clypeus about twice as high as diameter of median eyes. Strong chelicerae with a robust and long fang. Labium much wider than long, transversely semicircular and hardly reaching the middle of the endites. Endites broad and short, not much longer than wide, very blunt, inclined, not curved or transversely grooved. Sternum convex, broadly heart-shaped, wider than long. Posterior coxae widely spaced. Leg formula 4123. Legs rather short, tarsi long and hardly shorter than metatarsi, the anterior ones slightly fusiform. Tarsi hardly scopulated, but with

dense claw tufts. Tarsal claws shiny and slender, with a series of 5–6 teeth reaching to the apex. Anterior lateral spinnerets closely spaced, longer than posterior medians. Posterior lateral spinnerets also longer than medians, their apical segment at least $\frac{1}{3}$ shorter than basal one (Fig. 2F–G).

Additional description data

In the remainder of the text, Simon (1893: 387–389) elaborated on the differences between *Andromma* and *Cybaeodes* or *Cythaeron* O. Pickard-Cambridge, 1872 (erroneously spelled *Cythaeron* in the text). This allows us to infer the following additional characteristics: legs reddish brown, spineless, tarsal claw tufts consisting of tenent hairs (Forster 1970: 18; Ubick & Vetter 2005: 69, 71). Anterior lateral spinnerets rather small and cylindrical, separated at the base by their diameter. Posterior median spinnerets of similar shape, as long as anterior laterals or longer. Posterior lateral spinnerets a bit thicker than anterior laterals and slightly more widely separated, resulting in a trapezoidal spinneret area, which is narrower anteriorly, contrary to the situation in gnaphosids, except the *Micaria* group (Murphy 2007). Posterior lateral spinnerets consisting of two segments, the apical one conical and at least one third shorter than the basal one. Female palp rather long, tibia much longer than patella, tarsus a bit longer than tibia and slightly fusiform. Male palpal tibia somewhat shorter than patella, with a bifid apophysis: a hook-shaped retrolateral apophysis (RTA) and a thicker ventral apophysis (VTA) with an anterior cavity. Simon also mentions a small tibial prolateral tooth, but we were unable to observe that in any of the species examined. Palpal tarsus longer than patella and tibia together, oval, large, convex, with a tip that largely exceeds the convex, simple bulbus. Abdomen covered in greyish silky hairs.

Remarks on original description

Simon's original description understandably is solely based on the only species known to him at the time, *A. aethiopicum*. Unfortunately, this species is one of the least representative for the genus as a whole. The following four corrections are important to note:

1. While some species of *Andromma* have a sternum that is as wide as long (e.g., female of *A. deogratias* sp. nov., *A. bouvieri* and *A. ghesquierei* sp. nov.), the sternum is longer than wide in most species of *Andromma* known to date. *Andromma aethiopicum*, *A. anacardium* sp. nov. and the female of *A. raffrayi* are the only species within the genus with a sternum that is clearly wider than long.
2. Most species of *Andromma* have eight eyes. The only other species with significant eye reduction are *A. albinovani* sp. nov. and *A. deogratias* sp. nov. (Fig. 2A–B).
3. Most species of *Andromma* have at least some leg spines.
4. *Andromma* does have a thoracic fovea, as our habitus photographs show (Figs 20A, 22A, 30A). In very pale specimens, it may be difficult to see (Fig. 5A).
5. In his French description, Simon (1893: 388) refers to the claw tufts as “denses et formés de poils claviformes nombreux”. However, careful observation shows that these hairs are not clavate.

To the above can be added that the AMEs of *Andromma* are oriented divergently. As a consequence, the retina of the AMEs which, as seen from above, is only visible in the median half of these eyes. (Fig. 2A–E). Such AMEs are also present in *Hortipes* (Bosselaers & Jocqué 2000: figs 1–2), *Attacobius* Mello-Leitão, 1925 (Corinnidae) (Platnick & Baptista 1995: figs 7–8), *Piabuna* Chamberlin & Ivie, 1933 (Phrurolithidae) (Bosselaers & Jocqué 2002: fig. 2f; Chamberlin & Ivie 1933: fig. 122), *Orthobula* Simon, 1897 (Trachelidae) (Marusik *et al.* 2013: figs 1–2) and *Paratus* (Liocranidae) (Marusik *et al.* 2008: fig. 4), and others (Bosselaers & Jocqué 2002: table 1). Furthermore, the male palp has a tibial apophysis split into a ventral (VTA) and retrolateral (RTA) part as well as a globular bulbus without median apophysis (Figs 4E–F, 6D–E). The epigyne presents conspicuous copulatory openings in most species (Figs 5C–D, 9C–D) and the vulva generally has more or less globular spermathecae (Figs 25C–F, 30E–F). The spermathecae have short, tubular fertilisation ducts running in posterior direction. These

fertilisation ducts are accompanied by a sickle-shaped sclerite (Sss) oriented laterally or posteriorly (Fig. 7D; Ledoux & Canard 1991: fig. 36). Such sclerites should not be confounded with fertilisation ducts; they are commonly found in dionycha, e.g., in many Gnaphosidae (Grimm 1985), *Apostenus* Westring, 1851 (Liocranidae) (Grimm 1986), *Arabelia* Bosselaers, 2009 (Liocranidae) (Bosselaers 2009), *Cheiracanthium* Wagner, 1887 (Cheiracanthiidae) (Bosselaers 2013), *Cteniogaster* Bosselaers & Jocqué, 2013 (Liocranidae) (Bosselaers & Jocqué 2013), *Heser* Tuneva, 2004 (Gnaphosidae) (Bosselaers 2010), *Hortipes* Bosselaers & Ledoux, 1998 (Corinnidae) (Bosselaers & Jocqué 2000), *Metatrachelas* Bosselaers & Bosmans, 2010 (Trachelidae) (Bosselaers & Bosmans 2010), *Paratrachelas* Kovblyuk & Nadolny, 2009 (Trachelidae) (Bosselaers *et al.* 2009), *Rhaeboctesis* Simon, 1897 (Liocranidae) (Bosselaers & Jocqué 2002), and *Trachelas* L. Koch, 1872 (Trachelidae) (Bosselaers *et al.* 2009). However, these sclerites are never explicitly mentioned in the literature. Engelhardt (1910: 73, fig. 25) and Osterloh (1922: 386, fig. 36) mention sclerotised beams in the vulvae of *Platnickina tincta* (Walckenaer, 1802) and *Allagelena gracilens* (C.L. Koch, 1841) respectively, but these structures do not correspond to the sickle-shaped sclerites mentioned here.

Key to the species of *Andromma* Simon, 1893

Males

1. Posterior eyes partly or completely reduced (Figs 2A–B, 3)..... 2
 - Posterior eyes present, eight eyes (Fig. 2C–E)..... 4
2. Animal of medium size (5 mm), only PME missing, RTA large and arrow-shaped (Fig. 17C–F) *A. deogratias* sp. nov.
 - Animal small (3 mm)..... 3
3. Sternum wider than long (Fig. 4B), only AME present (Fig. 4A)..... *A. aethiopicum* Simon, 1893
 - Sternum as long as wide (Fig. 6B), only PME missing (Fig. 6A)..... *A. albinovani* sp. nov.
4. VTA relatively simple in ventral view: globular, heart-shaped, mushroom-shaped or hook-shaped (e.g., Figs 10E–F, 24C–D, 33E–G)..... 5
 - VTA more complex in ventral view, often sail-shaped or flag-shaped (Figs 13C–D, 21E–F, 28E–F, 36C–D) 10
5. Ventral part of RTA globular VTA subtriangular with rounded corners, embolus median in ventral view, bent in retrolateral direction, with slightly curved tip (Fig. 24C–F)..... *A. ghesquierei* sp. nov.
 - VTA heart-shaped, mushroom-shaped or hooked, embolus retrolateral in ventral view, bent in prolateral direction..... 6
6. VTA shaped like a mushroom or a mooring post in ventral view, bifid in retrolateral view, RTA a two-horned prong (Fig. 33E–H) *A. raffrayi* Simon, 1899
 - VTA not bifid, RTA may be complex, but not a two-horned prong..... 7
7. VTA transversely heart-shaped in ventral view, RTA apically bifurcated in ventral view, and with a long, dorsally curved tip in retrolateral view (Fig. 19C–F) *A. dicranobelos* sp. nov.
 - VTA with a retrolaterally oriented hook in ventral view 8
8. VTA with a thick globular base in ventral view, hook-shaped in retrolateral view, RTA flattened in retrolateral view, with an apical hook (Fig. 10C–F)..... *A. anochetorum* Simon, 1909
 - VTA more slender and with a pronounced hook in ventral view, mushroom-shaped in retrolateral view..... 9

9. VTA with a broad base in ventral view, RTA flattened in retrolateral view, with an apical hook (Fig. 15C–F) *A. delphiurum* sp. nov.
 – VTA a slender, sharp hook in ventral view, RTA consisting of two triangular processes in retrolateral view (Fig. 20C–F)..... *A. didrepanum* sp. nov.
10. VTA flattened, elaborate, shaped like a sail in ventral view (Figs 21E–F, 36C–D) 11
 – VTA complex, not shaped as a sail (Figs 13C–D, 28E–F) 12
11. RTA small and bluntly triangular in retrolateral view (Fig. 36E–F)..... *A. velum* sp. nov.
 – RTA rather large, inversely heart-shaped, with a blunt, dorsally curved tip (Fig. 21C–D)
 *A. divinagraciae* sp. nov.
12. RTA with a bifid tip in ventral view (Fig. 28E–F)..... *A. juakalyi* sp. nov.
 – RTA with a single, slender tip, sinuous in ventral view, dorsally curved in retrolateral view (Fig. 13C–F)..... *A. cynotrachelos* sp. nov.

Females

1. Sternum wider than long, no precoxal triangles, oval CO separated by three times their short axis, posterior eyes absent (Fig. 5A, C–D) *A. aethiopicum* Simon, 1893
 – Sternum not wider than long, with or without precoxal triangles (Bosselaers & Jocqué 2002: fig 1k; Penniman 1985: 16), CO closer together, at least PLE present (Figs 2B, 3, 11D–E)..... 2
2. Sternum with strong precoxal triangles, epigyne more than twice as wide as long, CO transversely oval, separated by less than their long axis (Fig. 11A, D–E)..... *A. bouvieri* Fage, 1936
 – Precoxal triangles absent or epigyne not that wide or CO not transversely oval (Fig. 33I–J) 3
3. Copulatory openings longitudinally egg-shaped, separated by their short axis. Copulatory ducts winding, fused over their entire length into one dark brown, sclerotised mass (Figs 33I–J, 35C–G) *A. raffrayi* Simon, 1899
 – Copulatory ducts not fused into one sclerotised mass over their entire length 4
4. Copulatory ducts simple, consisting of one to three mostly straight sections and showing one 180° bend (e.g., Figs 7C–D, 12E–F, 25E–F, 26E–F) 5
 – Copulatory ducts narrower, long, helically coiled over at least part of their length (e.g., Figs 22E–F, 27E–F, 29E–F, 30E–F)..... 12
5. Spermathecae very large, oval, medially located and almost touching, each connected to a laterally situated rather thin copulatory duct widening towards the CO (Fig. 25E–F). *A. ghesquierei* sp. nov.
 – Spermathecae smaller, copulatory ducts wide, often with internal spikes, starting with a first, posterior stretch that runs transversely from the lateral side to the middle, followed by a second stretch running in anterior direction, a 180° bend and a third stretch running in posterior direction towards the spermathecae (e.g., Figs 23E–F, 26E–F)..... 6
6. Copulatory openings only vaguely defined (Figs 7A–B, 26C–D)..... 7
 – Copulatory openings clearly defined, oval, kidney- or mung bean- (*Vigna radiata*) shaped (e.g., Fig. 12B–D) 9
7. Animals small (3 mm), precoxal triangles weak or inconspicuous (Fig. 16B) 8
 – Animals of medium size (6 mm), precoxal triangles pronounced (Fig. 26B), internal spikes of copulatory duct strong (Fig. 26E–F)..... *A. heligmos* sp. nov.

8. Internal spikes of copulatory duct weak (Fig. 7C–D)..... *A. albinovani* sp. nov.
 – Internal spikes of copulatory duct strong (Fig. 16E–F)..... *A. delphiurum* sp. nov.
9. Copulatory openings inversely comma-shaped (Fig. 23C–D) *A. elephantactes* sp. nov.
 – Copulatory openings oval or mung bean-shaped (Fig. 12C–D)..... 10
10. Copulatory openings transversely mung bean-shaped (Fig. 12B–D)..... *A. cyamos* sp. nov.
 – Copulatory openings longitudinally circular or longitudinally egg-shaped (Fig. 11C–D)..... 11
11. Animals small (3 mm), sternum wider than long (Fig. 9B)..... *A. anacardium* sp. nov.
 – Animals of medium size (5 mm), sternum as long as wide, third stretch of copulatory duct S-shaped, spermathecae narrow and tapering (Fig. 18B, E–F)..... *A. deogratias* sp. nov.
12. Epigyne heavily sclerotised, consisting of two longitudinally oval or sausage-shaped plates. Copulatory openings longitudinally oval or inconspicuous (Figs 22C–D, 37C–D)..... 13
 – Epigyne less heavily sclerotised, copulatory openings circular, transversely oval or transversely bean-shaped (e.g., Figs 29C–D, 30C–D)..... 14
13. Epigynal sclerotised plates sausage-shaped, CO inconspicuous (Fig. 22C–D).....
 *A. divinagraciae* sp. nov.
 – Epigynal sclerotised plates ear-shaped, CO inconspicuous, situated in longitudinally oval depressions..... *A. velum* sp. nov.
14. Copulatory openings transversely kidney-shaped (Figs 14C–D, 30C–D)..... 15
 – Copulatory openings circular or transversely oval (Figs 8C–D, 27C–D) 16
15. Second half of the copulatory duct with five or more closely appressed coils (Fig. 14E–F)
 *A. cynotrachelos* sp. nov.
 – Second half of copulatory duct with three more loosely appressed coils (Fig. 30E–F)
 *A. ophiophagum* sp. nov.
16. Copulatory openings small, oval, separated by three times long axis, first, anteriorly running stretch of copulatory duct consisting of four helical coils (Fig. 29C–F)..... *A. katangensis* sp. nov.
 – Copulatory openings more closely spaced (Figs 8C–D, 31C–D)..... 17
17. Animal small (3 mm), precoxal triangles weak, CO transversely oval, separated by two times their long axis, first stretch of copulatory duct consisting of five helical coils, spermathecae large, two thirds of vulva height (Fig. 27B–F)..... *A. helix* sp. nov.
 – Animals of medium size (5–7 mm), with strong precoxal triangles, first stretch of copulatory duct less extensively coiled, consisting of three helical coils (Figs 8E–F, 31E–F)..... 18
18. Epigyne consisting of two oval CO separated by two times their long axis and circled by a comma-shaped sclerotised ring (Fig. 8C–F)..... *A. alvocatatum* sp. nov.
 – Sclerotised part of epigyne one continuous plate, CO broadly oval and separated by their long axis (Fig. 31C–F) *A. prosopion* sp. nov.

Andromma aethiopicum Simon, 1893

Figs 3–5, 38

Andromma aethiopicum Simon, 1893: 390, figs 346–348 (description ♂♀).

Diagnosis

Andromma aethiopicum differs from all other known species of *Andromma* by the complete absence of posterior median eyes in both males and females, by the RTA which is close to that of *A. albinovani* sp. nov. but differs from it by being bifid in ventral view and hooked in retrolateral view, and by the widely separated transversely oval copulatory openings.

Material examined

Lectotype (here designated)

ETHIOPIA • ♂; Agaos; M.A. Raffray leg.; MNHN AR1678.

Paralectotype

ETHIOPIA • 1 ♀; same collection data as for lectotype; MNHN AR1678.

Note

Precise date and locality unknown.

Description

The specimens are completely bleached and the description is therefore restricted to some essential details; limits of secondary eyes, chilum, spines and clypeal setae are invisible. The translation of the original Latin description of Simon (1893) and his drawings are provided.

Translation of original description

Cephalothorax yellowish orange, smooth and hairless. Anterior median eyes black, with black margin. Abdomen short, ovate, dorsum pale grey, with many yellowish dots, venter pale with epigastric area yellow, slightly coriaceous. Sternum, mouthparts and legs bright yellow, labium darker. Palp pale yellow with extremities somewhat darker; femur fairly long, narrow and almost straight; patella almost twice as long as wide; tibia slightly shorter than patella, somewhat tapering, provided with a minute distal prolateral tooth and a retrolateral dark, very sharp apophysis, which is hooked at the tip. Ventrally a subspherical apophysis, which is anteriorly concave and ridged. Tarsus longer than tibia plus patella, rounded at base, with tapered, fairly long tip, widely surpassing bulbus.

Female similar to male, but dorsum of abdomen darker. Palp fairly long, tibia much longer than patella, tarsus slightly longer and thicker than tibia. Epigyne a fairly large, transversely oval, reddish and shiny area, on either side with large subcircular shallow depression. Original Latin text: Simon (1893: 390).

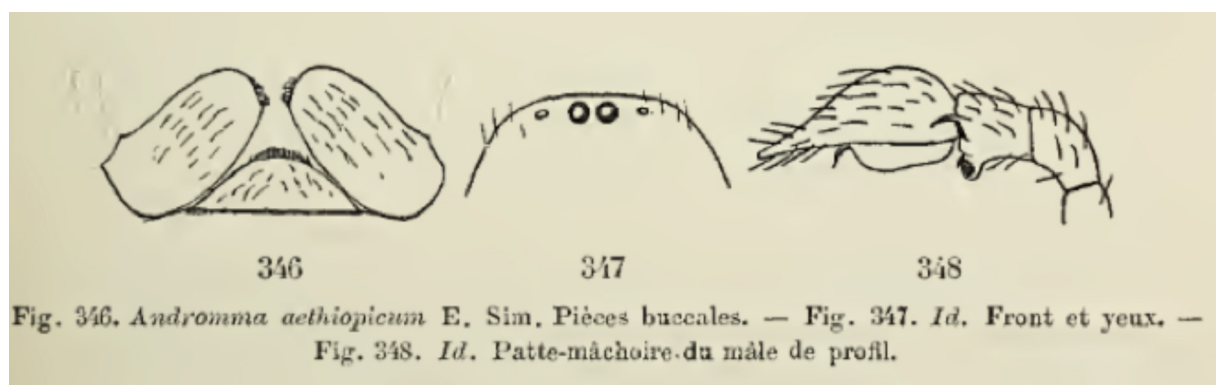


Fig. 3. *Andromma aethiopicum* Simon, 1893. Original drawings and legend from Simon (1893).

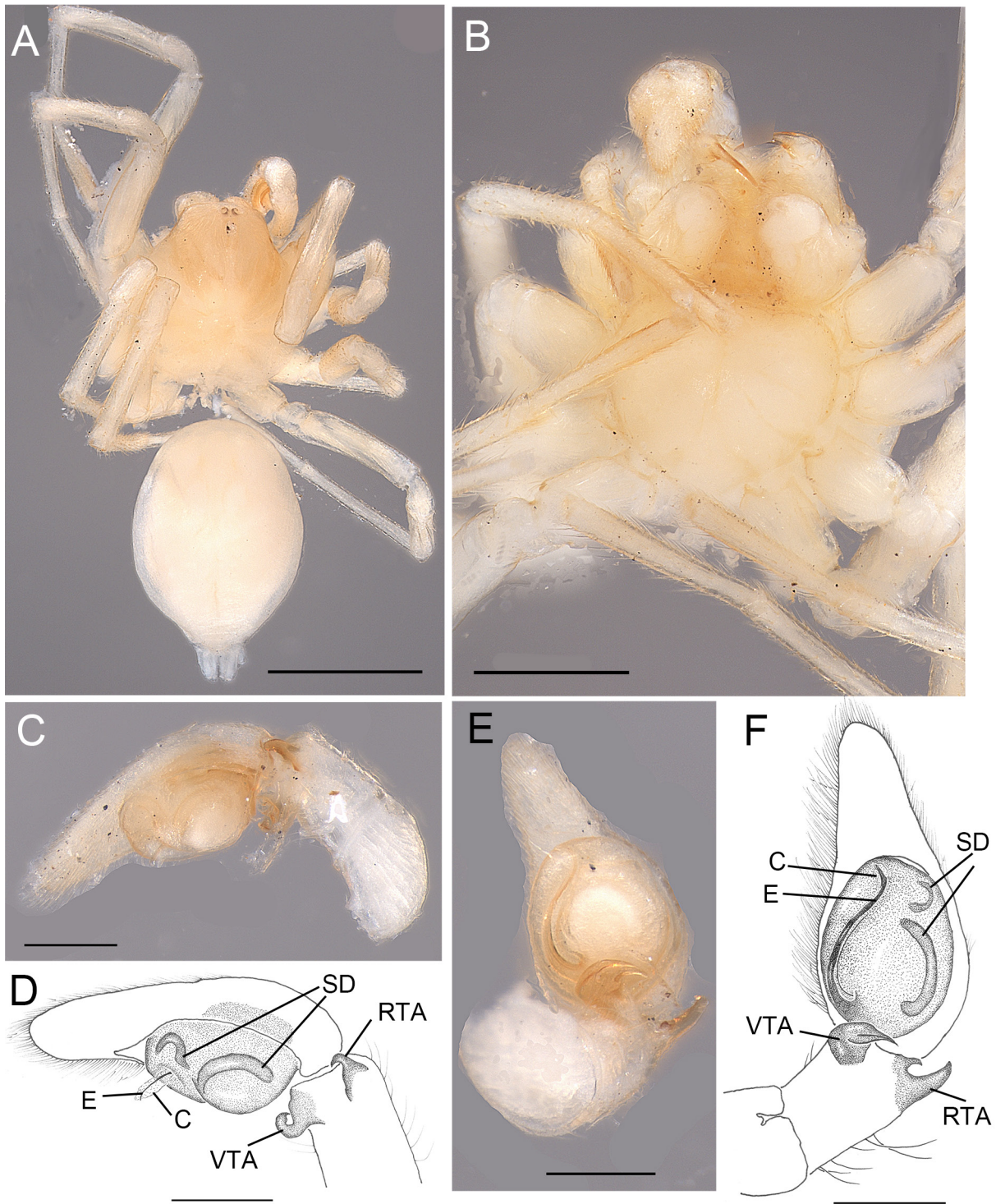


Fig. 4. *Andromma aethiopicum* Simon, 1893, ♂, lectotype (MNHN AR1678). **A.** Habitus, dorsal view. **B.** Cephalothorax, ventral view. **C–D.** ♂, left palp, retrolateral view. **E–F.** Same, ventral view. Abbreviations: C=conductor; E=embolus; RTA=retrolateral tibial apophysis; SD=sperm duct; VTA=ventral tibial apophysis. Scale bars: A=1 mm; B=0.5 mm; C–F=0.2 mm.

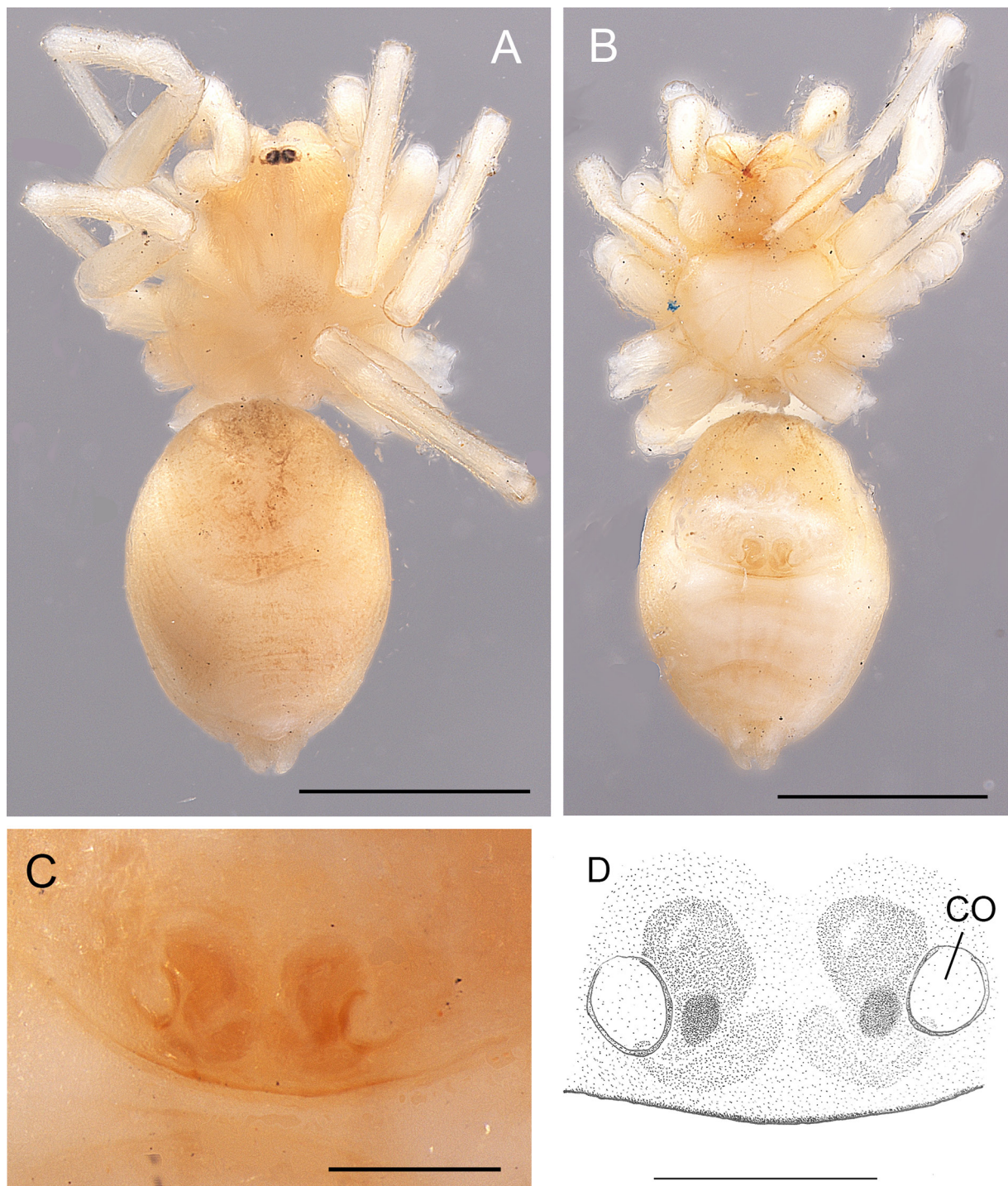


Fig. 5. *Andromma aethiopicum* Simon, 1893, ♀, paralectotype (MNHN AR1678). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. Abbreviation: CO=copulatory opening. Scale bars: A–B=1 mm; C–D=0.2 mm.

Additional description data

Male (lectotype, Fig. 4)

MEASUREMENTS. Total length 3.05. Carapace length 1.35, width 1.07, height 0.71.

COLOUR (Fig. 4A–B). Entirely pale.

EYES. Only the AMEs are visible. AME 0.08, AME–AME: 0.02. Clypeus vertical, 0.08. Sternum 0.50 long, 0.71 wide.

LEG I MEASUREMENTS. Fe: 0.92; P: 0.36; T: 0.85; Mt: 0.78; t: 0.64; total: 3.55.

LEG FORMULA. 4123.

MALE PALP (Fig. 4C–F). VTA and RTA hook-shaped: RTA a deeply incised hook, VTA with swollen base, tip tapered, turned in anterior direction (Fig. 4D). Embolus originating prolaterally on base of tegulum, slender, with curved tip accompanied by small membranous conductor (Fig. 4F). Sperm duct surfacing at two spots retrolaterally in tegulum (Fig. 4D, F).

Female (paralectotype, Fig. 5)

MEASUREMENTS. Total length 2.77. Carapace length 1.28, width 0.99, height 0.71.

COLOUR (Fig. 5A–B). Entirely pale.

EYES. Anterior eyes visible, posterior eyes absent; AME 0.10, AME–AME: 0.02. Clypeus vertical, 0.10, Sternum 0.71 long, 0.85 wide.

LEG I MEASUREMENTS. Fe: 0.99; P: 0.43; T: 0.85; Mt: 0.85; t: 0.71; total: 3.83.

EPIGYNE (Fig. 5C–D). A wide rectangular sclerotised area; oval copulatory openings separated by three times their short axis; internal structure vaguely visible in transparency.

Distribution

The type locality ‘Agaos’ could not be found; the spot on the distribution map (Fig. 38) is in Central Ethiopia.

Andromma albinovani sp. nov.

[urn:lsid:zoobank.org:act.6B4EC288-9991-446D-BB13-0DA253E4AAF6](https://doi.org/10.3897/zoobank.org/act.6B4EC288-9991-446D-BB13-0DA253E4AAF6)

Figs 6–7, 39

Diagnosis

The male of *Andromma albinovani* sp. nov. is characterized by the shape of the VTA and RTA being simpler than in all other species of *Andromma* except *A. aethiopicum*, and the female by the epigyne with tubular structures visible in transparency and comma-shaped copulatory openings.

Etymology

The species name is a patronym as a tribute to Benoit Albinovanus, the driving force behind the choral ‘Museicanti’ of the Royal Museum of Central Africa in Tervuren.

Type material

Holotype

IVORY COAST • ♂; Bouaflé, Congo Aboisso; 6°59' N; 5°39' W; 5 Feb. 1981; J. Everts leg.; pitfalls; BE_RMCA_ARA.Ara 177497.

Paratypes

IVORY COAST • 1 ♂, 1 ♀; same collection data as for holotype; BE_RMCA_ARA.Ara 177497.

Note

Holotype has one palp attached, paratype none.

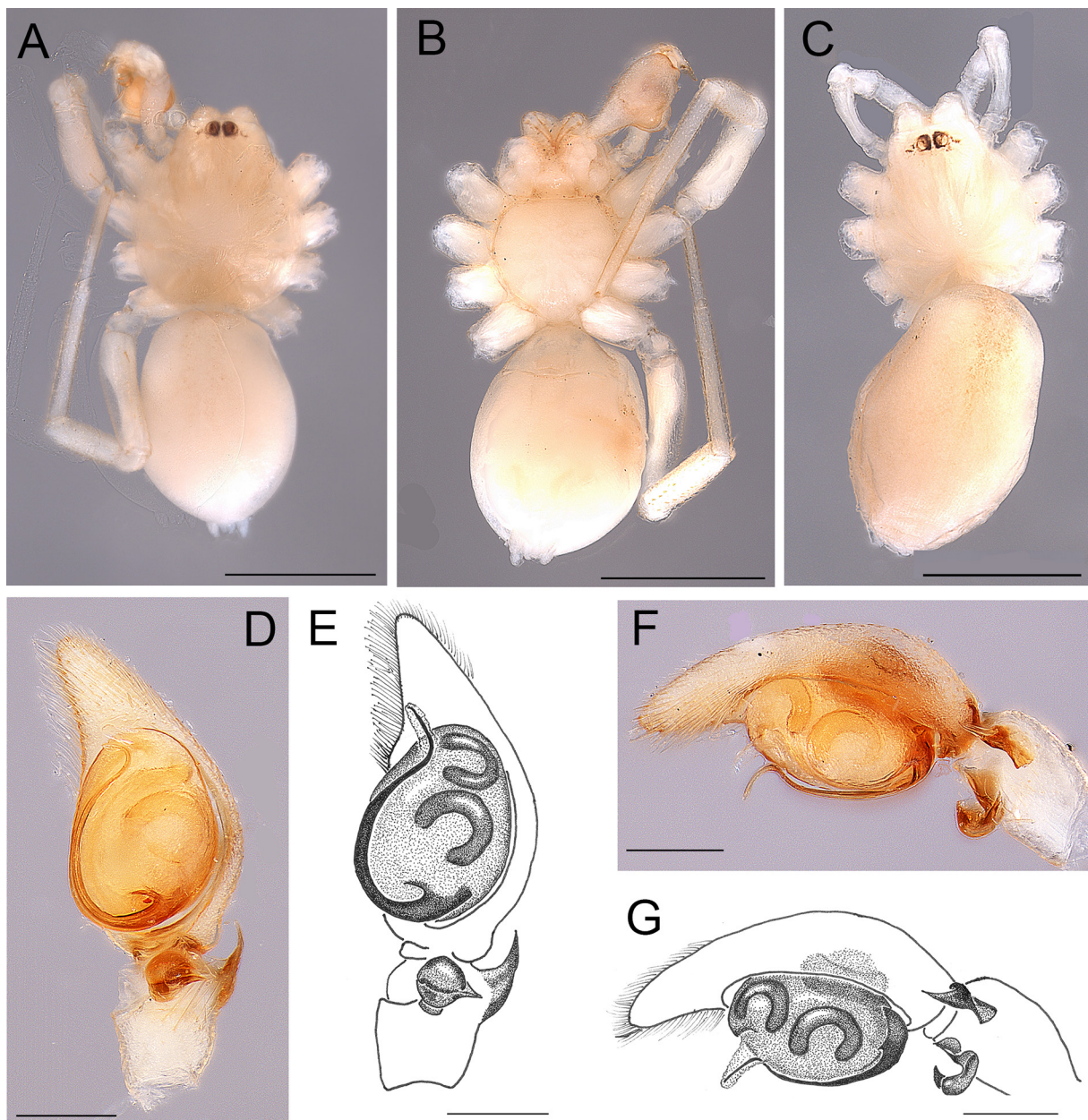


Fig. 6. *Andromma albinovani* sp. nov. **A–B, D–G.** ♂, holotype (BE_RMCA_ARA.Ara 177497). **C.** ♀, paratype (BE_RMCA_ARA.Ara 177497). **A, C.** Habitus, dorsal view. **B.** Same, ventral view. **D–E.** ♂, left palp, ventral view. **F–G.** Same, retrolateral view. Scale bars: A–C=1 mm; D–G=0.2 mm.

Description

Male (holotype, Fig. 6A–B, D–G)

MEASUREMENTS. Total length 2.84. Carapace length 1.42, width 1.07; height 0.43.

COLOUR (Fig. 6A–B). Entirely pale cream, probably bleached.

PROSOMA. Fovea hardly visible. PME absent. AER straight from above, width 0.21. AME 0.10, ALE and PLE 0.06; AME–AME: 0.02, AME–ALE: 0.02, ALE–PLE: touching. Clypeus vertical, 0.07. Chilum absent. Sternum 1.07 long, same width.

LEG SPINATION. All femora with one dorsal spine.

LEG I MEASUREMENTS. Fe: 0.89, P: 0.33, T: 0.62; Mt: 0.66; t: 0.53; total: 3.03.

LEG FORMULA. 4123.

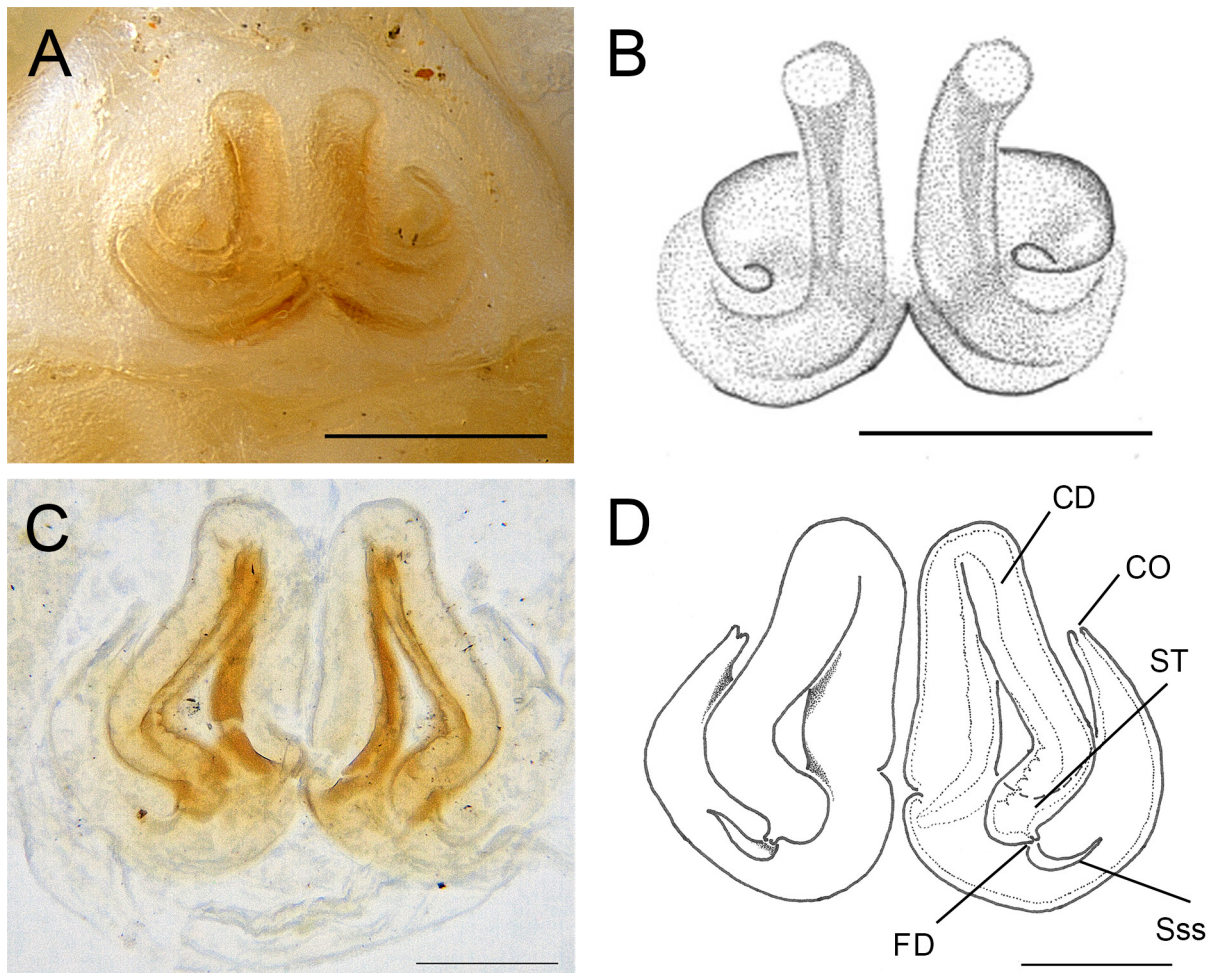


Fig. 7. *Andromma albinovani* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 177497). **A–B.** Epigyne, ventral view. **C–D.** Same, cleared, dorsal view. Abbreviations: CD = copulation duct; CO = copulatory openings; FD = fertilisation duct; Sss = sickle-shaped sclerite; ST = spermathecae. Scale bars: A–B=0.2 mm; C–D=0.1 mm.

MALE PALP (Fig. 6D–G). RTA flattened, twisted with innermost prong sharp, outer tip rounded; VTA a transverse curved disk with pointed retrolateral extremity; bulbus fairly large, alveolus about $\frac{2}{3}$ of cymbium, which is somewhat curved inward; two curves of sperm duct visible in tegulum retrolaterally; embolus originates on posterior part of tegulum, runs along its prolateral side, ending in curved tip accompanied by small membranous conductor.

Female (paratype, Fig. 7)

MEASUREMENTS. Total length 2.70. Carapace length 1.14, width 0.92, height 0.43.

COLOUR (Fig. 6C). very similar to male.

EYES. AME 0.08, AME–AME: 0.02. Other eyes poorly delimited.

PROSOMA. Clypeus vertical, 0.07. Chilum absent. Sternum 0.78 long, same width.

LEGS. Missing from femur onwards.

EPIGYNE (Fig. 7A–D). Copulatory openings inconspicuous, comma-shaped, leading to initially broadening copulatory ducts running in posterior direction, then inward, followed by an anterior running stretch and finally a second stretch in posterior direction, ending in small spermathecae with a short, postero-lateral fertilisation duct and clearly defined, outward directed sickle-shaped sclerites.

Distribution

Known only from the type locality in central Ivory Coast (Fig. 39).

Andromma alvoculatum sp. nov.

[urn:lsid:zoobank.org:act:B65FE230-EC50-4B9C-B560-A6DF1F931096](https://zoobank.org/urn:lsid:zoobank.org:act:B65FE230-EC50-4B9C-B560-A6DF1F931096)

Figs 8, 38

Diagnosis

The female of *Andromma alvoculatum* sp. nov. is characterized by widely separated copulatory openings surrounded by a spiralled sclerotised rim.

Etymology

The species name is an adjective combining the Latin words ‘*alvus*’ and ‘*oculus*’, referring to the epigyne, which looks like two eyes on the belly (Fig. 8B).

Type material

Holotype

D.R. CONGO • ♀; Parc National Albert, sect. Ruwenzori, Kyandolire, lieu dit Camp des Gardes; 0°20' N, 29°49' E; 1700 m a.s.l.; 17 Oct. 1952; G.F. De Witte leg.; BE_RMCA_ARA.Ara 240739.

Description

Female (holotype, Fig. 8)

MEASUREMENTS. Total length 7.45. Carapace length 2.49, width 2.13, height 0.92.

COLOUR (Fig. 8A–B). Carapace orange, gradually paler towards posterior margin; AME rim dark; fovea reddish; chelicerae, palps and legs orange; endites yellowish orange, paler along median and anterior

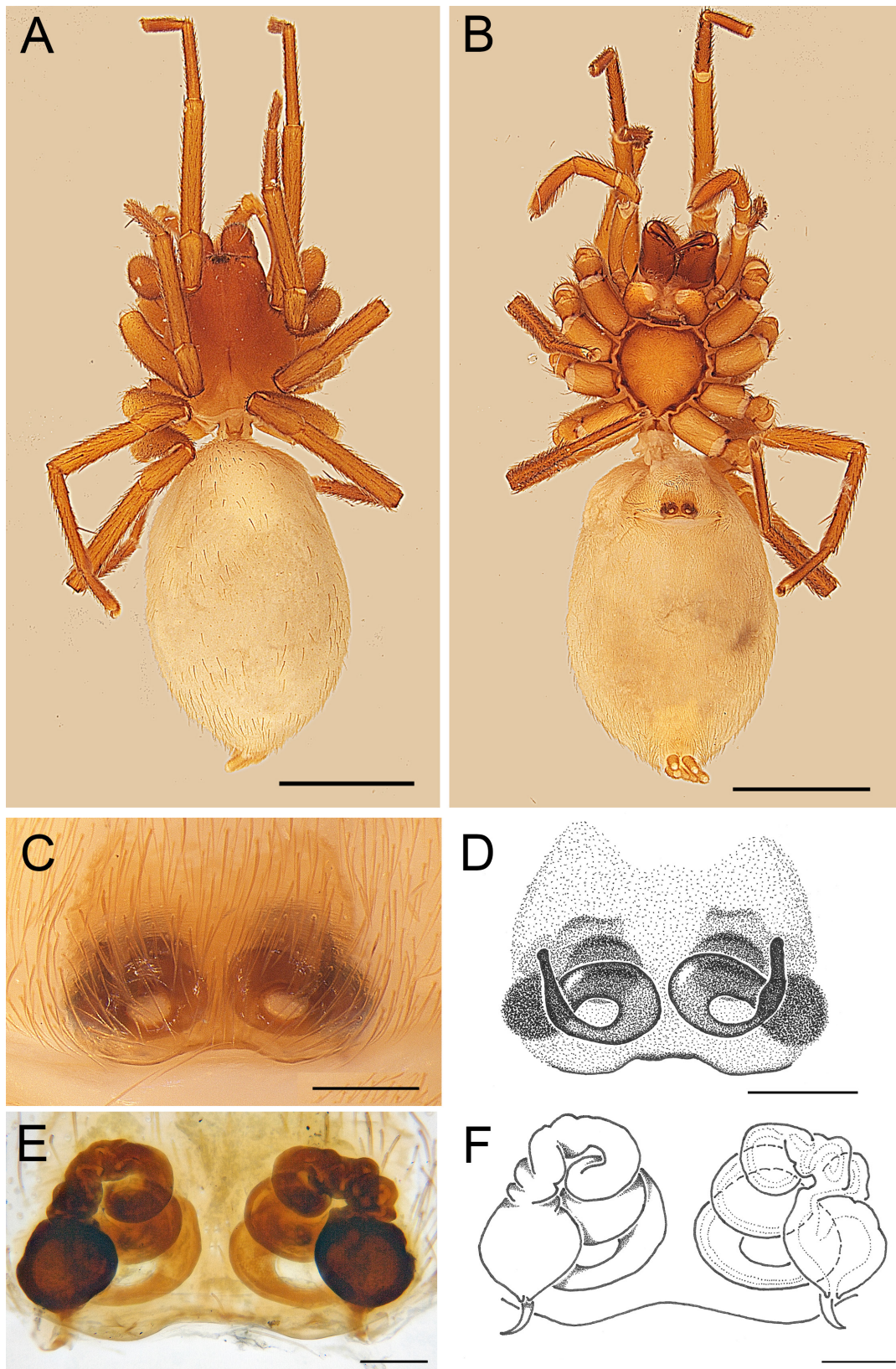


Fig. 8. *Andromma alvoculatum* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 240739). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same, cleared, dorsal view. Scale bars: A–B=2 mm; C–D=0.2 mm; E–F=0.1 mm.

margins; labium orange, paler in distal half; sternum orange with thin dark brown margin and brown precoxal triangles (Fig. 8B); abdomen cream; spinnerets yellow.

PROSOMA. Fovea pronounced, length 0.43, anterior end 1.21 from PME. MOQ length 0.30, anterior width 0.28, posterior width 0.33. AER slightly recurved from above, width 0.67, PER procurved from above, width 0.71. All eyes circular; AME 0.13, ALE 0.10, PLE 0.08, PME 0.02; AME–AME: 0.02, AME–ALE: 0.12, ALE–PLE: 0.02, PME–PME: 0.25. Clypeus vertical, 0.12, with six long setae. Chelicerae with dorsal and ventral longitudinal groups of long setae; anterior margin with three teeth, the most proximal the smallest, and one small somewhat slightly more inward. Chillum poorly developed, two sclerites, each 0.03 high, 0.16 wide. Sternum 1.42 long and as wide.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; T I v 2-2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2; Mt II v 2-2-2; T III pl 1 rl 1 v 1-2; Mt III pl 1 rl 1 v 1-2; T IV rl 1 v 1-2; Mt IV v 2-2.

LEG I MEASUREMENTS. Fe: 2.13, P: 0.71, T: 1.99, Mt: 1.85, t: 1.21; total: 7.89.

LEG FORMULA. 4123.

PALP. Female palpal tarsus curved, with scopula.

EPIGYNE (Fig. 8C–F). Roughly rectangular area, wider than long, with posterior margin recurved; widely separated copulatory openings with transverse oval membrane, slightly less than twice their longest diameter apart, surrounded by broad, spiralled, sclerotised border; broad, coiled copulatory ducts end in widely separated, subglobular spermathecae.

Male

Unknown.

Distribution

Known only from the type locality in D.R. Congo (Fig. 38).

Andromma anacardium sp. nov.

[urn:lsid:zoobank.org:act:BF36FF98-2229-48EA-ACC5-F72889C641FD](https://zoobank.org/act:BF36FF98-2229-48EA-ACC5-F72889C641FD)

Figs 9, 38

Diagnosis

The female of *Andromma anacardium* sp. nov. is characterized by the wide sternum and by the epigyne with copulatory openings surrounded by a dark semicircle.

Etymology

The species name, a noun in apposition, refers to the tree *Anacardium occidentale* L. as the dark pattern of the epigyne (Fig. 9C) resembles two nuts of the cashew tree.

Type material

Holotype

ETHIOPIA • ♀; Awash National Park, compound of RAS Hotel; 8°59' N, 40°10' E; 1000 m a.s.l.; 13 May 1986; A. Russell-Smith leg.; at light; BE_RMCA_ARA.Ara 90890.

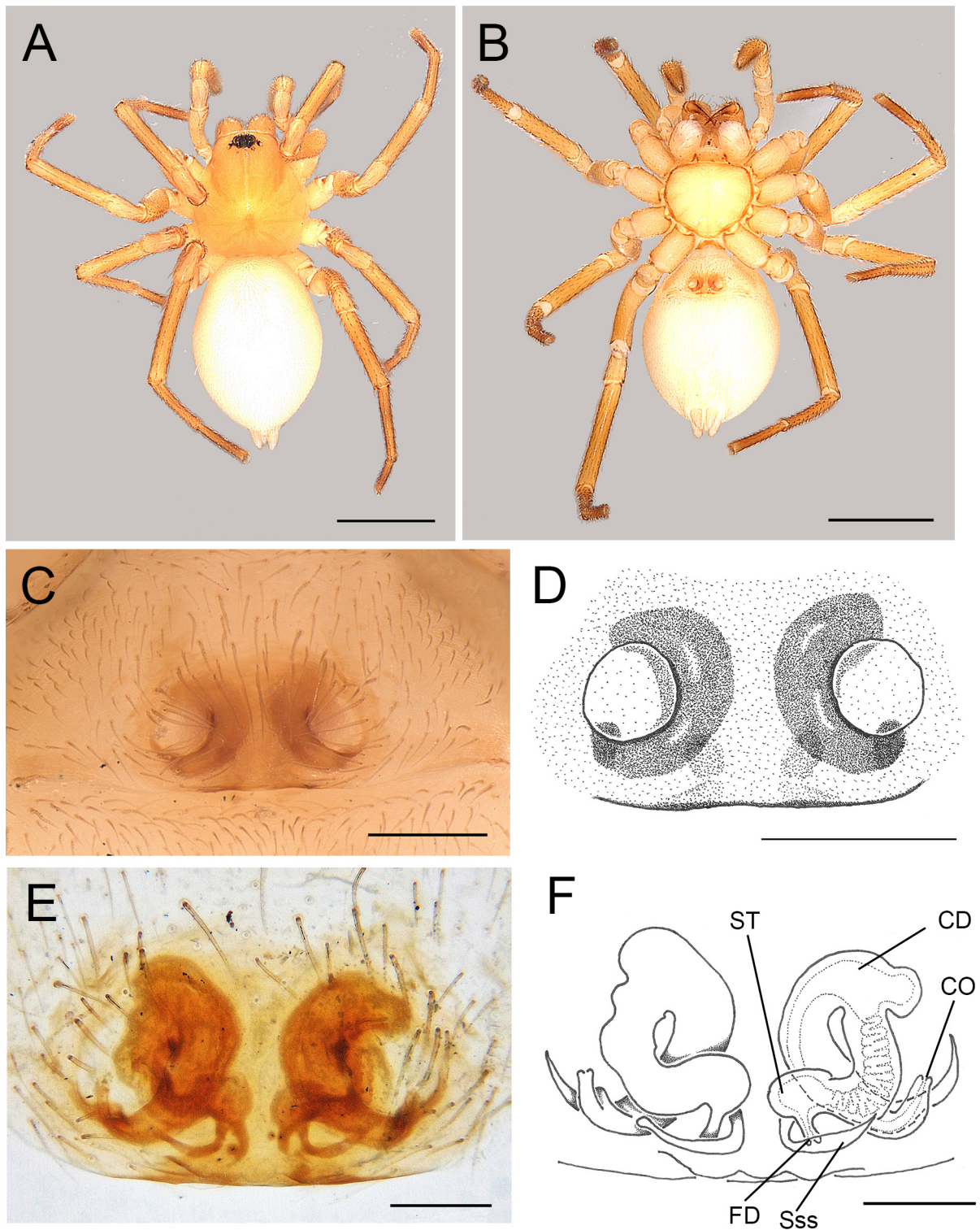


Fig. 9. *Andromma anacardium* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 90890). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Epigyne, cleared, dorsal view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; Sss=sickle shaped sclerites; ST=spermatheca. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

Description

Female (holotype, Fig. 9)

MEASUREMENTS. Total length 3.34. Carapace length 1.42, width 1.14, height 0.57.

COLOUR (Fig. 9A–B). Carapace yellowish orange, with dark AME region, paler spot in front of reddish fovea; chelicerae orange; endites yellowish orange, paler along median and anterior margins; labium orange, paler in distal half; sternum pale yellow with brownish margins; legs orange; coxa, trochanter and patella paler; abdomen including spinnerets pale cream.

PROSOMA. Fovea pronounced, length 0.12, anterior end 0.62 from PME. MOQ length 0.20, anterior width 0.23, posterior width 0.21, AER straight from above, width 0.30, PER procurved from above, width 0.41. All eyes circular, very small except AME; AME 0.08, ALE 0.03, PLE 0.03, PME 0.02; AME–AME: 0.07, AME–ALE: 0.02, ALE–PLE: 0.07, PME–PME: 0.18. Clypeus vertical, 0.08 without setae. Chilum absent. Sternum 0.71 long, 0.84 wide.

LEGS. Without spines.

LEG I MEASUREMENTS. Fe: 1.15, P: 0.48, T: 0.96, Mt: 0.96, t: 0.64; total: 4.19.

LEG FORMULA. 4123.

PALP. Female palpal tarsus almost straight, with sparse scopula.

EPIGYNE (Fig. 9C–F). Roughly rectangular area, wider than long, with widely separated semicircular copulatory openings; copulatory ducts wide, with simple part running forward and part with internal spikes running backward, ending in small, oval, closely set spermathecae; fertilisation ducts short, pointing backward. Sickle-shaped sclerites directed outward.

Male

Unknown.

Distribution

Known only from the type locality in Ethiopia (Fig. 38).

Andromma anochetorum Simon, 1909
Figs 1A, 10, 40

Andromma anochetorum Simon, 1909: 335 (description ♂).

Diagnosis

The male of *A. anochetorum* is recognized by the VTA with a thick globular base in ventral view, hook-shaped in retrolateral view and the RTA flattened in retrolateral view, with an apical hook

Type material

Holotype

GABON (Congo Française) • ♂; Fernan Vaz; L. Fea leg.; MNHN AR3112. Collected as commensal or parasite of ants of *Anochetus* Mayr, 1861.

Note

The specimen is completely bleached and the description lacks therefore some essential details; limits of secondary eyes, chilum, spines and clypeal setae are invisible.

Description translated from Latin

Cephalothorax reddish orange, almost smooth, short and with sparse yellowish setae, AME with black surrounding. Anterior eyes in straight row, almost touching and of different size; AME dark, rounded,

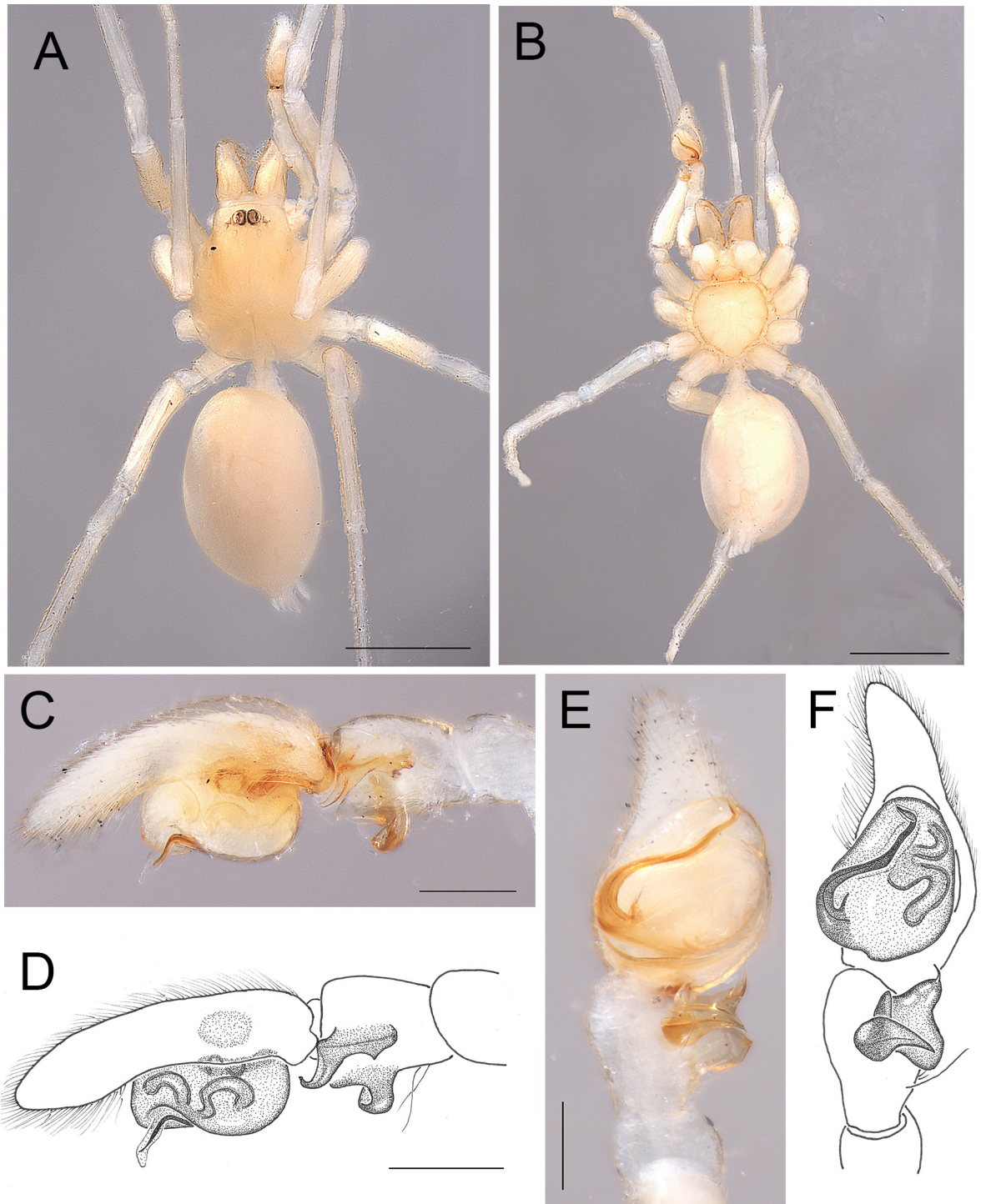


Fig. 10. *Andromma anochetorum* Simon, 1909, ♂, holotype (MNHN AR3112). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Left palp, retrolateral view. **E–F.** Same, ventral view. Scale bars: A–B=1 mm; C, E =0.2 mm; D, F = 0.25 mm.

and diameter one fourth longer than of remainder, which are white. Posterior eyes very small in a procurved row; PME, at least three times more distant from each other than from the PLE. Clypeus slightly wider than AME. Abdomen pale yellow with whitish setae. In front with small, reddish ovoid scutum. Chelicerae well developed, slightly rugose, with elongate dental furrow, anterior one provided with two small widely separated teeth. Sternum, mouthparts and legs pale yellowish brown; endites twice as long as wide; legs fairly long with short setae; all femora with one dorsal spine in distal half; tibia I with three pairs of small spines, metatarsus I with similar pairs of spines; other segments spineless; male palp with slightly darker tarsus, femur with small dorsal spine at distal tip; patella slightly longer than wide, slightly convex, spineless; tibia almost as long as patella, distal part with reddish apophysis composed of two parts: one compressed but sharp, the apical one much more slender and curved, with inferior ridge, anteriorly a distal sharp hook, posteriorly curved into a fairly long tubercle forming a channel; cymbium oval, with long sharp tip; bulbus large, fairly convex oval, rounded at base; embolus strong, long, curved. Original Latin text: Simon (1909: 335–336).

Additional description data

Male (holotype, Fig. 1A, 10)

MEASUREMENTS. Total length 3.20. Carapace length 1.42, width 0.78, height 0.38.

COLOUR (Fig. 10A–B). Entirely pale.

EYES. AME 0.10, ALE 0.07, PLE 0.06; AME–AME: touching, AME–ALE: 0.02, ALE–PLE: 0.02. Clypeus vertical, 0.10, Sternum 0.78 long, 0.71 wide.

LEG I MEASUREMENTS. Fe: 1.28, P: 0.42, T: 1.22, Mt: 0.96, t: 0.77; total: 4.65.

LEG FORMULA. 4123.

Female

Unknown.

Distribution

Known only from the type locality in Gabon (Fig. 40). The species is myrmecophilous.

Andromma bouvieri Fage, 1936
Figs 11, 38

Andromma bouvieri Fage, 1936: 85, figs 1–2 (description ♀).

Material examined

Lectotype (here designated)

KENYA • ♀; South Turkana, between the Nepau escarpment and Kalodeke, SW of Lake Turkana; appr. 2°40' N, 38°23' W; 800–1000 m a.s.l.; 20 Jan. 1933; Arambourg, Chapuis and Jeannel leg.; in hot, dry desert, in chimney-mound *Macrotermes* (subgenus *Bellicositermes*) sp. termite nests, (stn 22); MNHN AR3103.

Paralectotype

KENYA • 1 ♀; same collection data as for lectotype; MNHN AR3103.

Supplementary description

Female (lectotype, Fig. 11)

MEASUREMENTS. Total length 4.69. Carapace length 2.56, width 2.13; height 1.07.

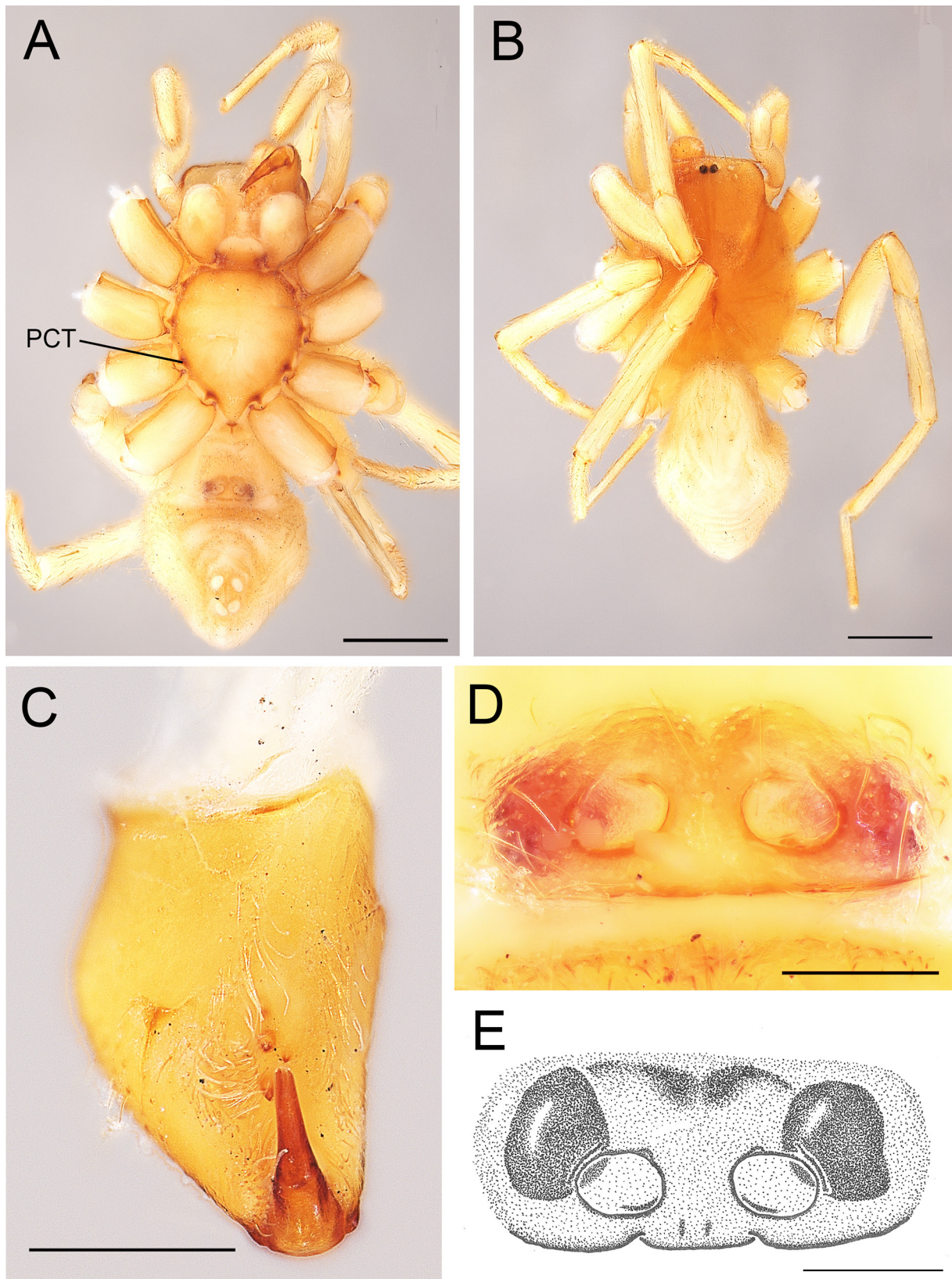


Fig. 11. *Andromma bouvieri* Fage, 1936, ♀, lectotype (MNHN AR3103). **A.** Habitus, ventral view. **B.** Same, dorsal view. **C.** Right chelicera, median view. **D–E.** Epigyne, ventral view. Abbreviation: PCT=precoxal triangles. Scale bars: A–B=1 mm; C=0.5 mm; D=0.2 mm; E=0.25 mm.

COLOUR (Fig. 11A–B). Carapace and chelicerae orange. Legs and abdomen pale yellow.

PROSOMA. Fovea 0.32, 1.05 from PME.

EYES. MOQ length 0.25, anterior width 0.31, posterior width 0.34, AER straight from above, width 0.64, PER procurved from above, width 0.70. All eyes circular; AME 0.15, ALE 0.08, PLE 0.07, PME 0.03; AME–AME: 0.05, AME–ALE: 0.05, ALE–PLE: 0.02, PME–PME: 0.15. Clypeus vertical, 0.23, with seven long setae. Chilum absent. Sternum length 1.56, same width. Chelicerae (Fig. 11C): promargin with two teeth and one tiny tooth slightly more inward.

LEG SPINATION. All femora with one dorsal and one proventral spine. T I v 2-2-2-2-2; Mt I v 2-2-2; T III pl 1 v 2; Mt III v 2-2; T IV v 2-2; Mt IV v 1-1.

LEG I MEASUREMENTS. Fe: 2.34, P: 0.92, T: 2.06, Mt: 1.73, t: 1.28; total: 8.33.

LEG FORMULA. 4123.

EPIGYNE (Fig. 11D–E). A wide, sclerotised area with posterior margin medially with two small indentations, anterior margin indented in the middle; copulatory openings transversely oval, separated by less than their long axis; internal structure vaguely visible in transparency.

Male

Unknown.

Distribution

Known only from the type locality in northern Kenya (Fig. 38). The species is termitophilous.

Andromma cyamos sp. nov.

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Figs 12, 38

Diagnosis

The female of *Andromma cyamos* sp. nov. is characterized by the absence of leg spination apart from the dorsal femoral spines, the poorly developed fovea and by the epigyne with small, closely set copulatory openings shaped like a mung-bean.

Etymology

The species name is from the Greek ‘κιάμος’, meaning ‘bean’, referring to the mung bean-shaped copulatory openings (Fig. 12D).

Type material

Holotype

D.R. CONGO • ♀; Visiki, NW of Butembo; 0°33' N, 29°42' E; 1100 m a.s.l.; Jun.1974; M. Lejeune leg.; terreau prélevé sous bois mort dans un champ cultivé; BE_RMCA_ARA.Ara 155566.

Description

Female (holotype, Fig. 12)

MEASUREMENTS. Total length 3.20. Carapace length 1.63, width 1.35, height 0.50.

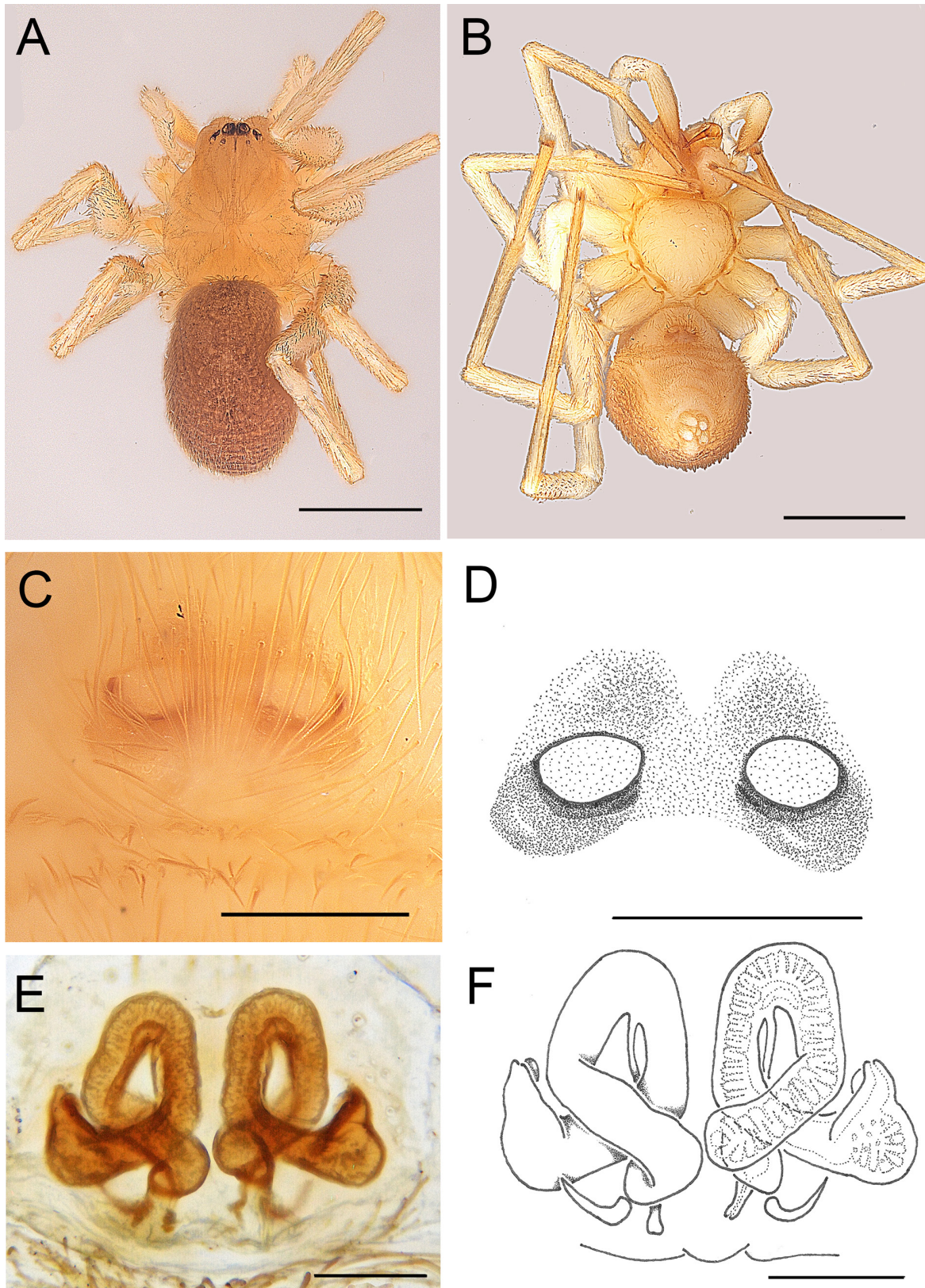


Fig. 12. *Andromma cyamos* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 155566). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

COLOUR (Fig. 12A–B). Carapace pale yellow with faint radiating striae; legs and palp pale yellow, tips of tarsus yellowish orange; sternum pale yellow with thin darker rim; abdomen dorsum pale sepia mottled with grey, sides and venter including spinnerets cream.

PROSOMA. Fovea hardly visible. MOQ length 0.23, anterior width 0.25, posterior width 0.26. AER slightly recurved from above, width 0.46, PER procurved from above, width 0.49. All eyes circular; AME 0.10, ALE 0.08, PLE 0.07, PME 0.05; AME–AME: 0.05, AME–ALE: 0.03, ALE–PLE: 0.07, PME–PME: 0.18. Clypeus vertical, 0.10, with four long setae. Chelicerae with dispersed setae. Chilum absent. Sternum 1.00 long, 0.92 wide.

LEG SUPINATION. Very few spines, only femora with one dorsal spine.

LEG I MEASUREMENTS. Fe: 1.63, P: 0.50, T: 1.28, Mt: 1.42, t: 1.09; total: 5.92.

PALP. Female palpal tarsus slightly curved, with sparse scopula.

EPIGYNE (Fig. 12C–F). Trapezoidal area, wider than long, with slightly oblique mung bean-shaped copulatory openings, less than half their longest axis apart, posterior rim darkly sclerotised; copulatory ducts at entrance with well-defined atrium, fairly wide and with coiled lumen over entire length, ending in small, ill-defined spermathecae; fertilisation ducts pointing backward. Copulatory openings provided with piriform atrium with internal spikes, followed by broad copulatory ducts, also with internal spikes and running forward, thence backward, curved towards the centre, ending in a globular spermatheca hardly wider than ducts; fertilisation ducts thin, posterior, sickle-shaped sclerites oriented outward.

Male

Unknown.

Distribution

Known only from the type locality in D.R. Congo (Fig. 38).

Andromma cynotrachelos sp. nov.

[urn:lsid:zoobank.org:act:418B3B49-91D6-43CD-B116-2E2DDF9BE601](https://zoobank.org/act:418B3B49-91D6-43CD-B116-2E2DDF9BE601)

Figs 13–14, 38

Diagnosis

The male of *Andromma cynotrachelos* sp. nov. is characterized by the shape of the RTA with a fairly long, slender, sharp tipped prong, curved upwards. The female has an epigyne with a long, tightly wound copulatory duct and kidney-shaped copulatory openings with transverse longest axis.

Etymology

The species name is a noun in apposition from the Greek ‘κύκνος’, meaning ‘swan’, and ‘τράχηλος’, meaning ‘neck’, because the spike of the RTA resembles the neck of a swan (Fig. 13D).

Type material

Holotype

D.R. CONGO • ♂; Kivu, Plaine de la Ruindi, Bulemba; 0°47' S, 29°47' E; 15 Jun. 1972; M. Lejeune leg.; termitière; BE_RMCA_ARA.Ara 247532.

Paratypes

D.R. CONGO • 1 ♂, 7 ♀♀; same collection data as for holotype; BE_RMCA_ARA.Ara 144678.

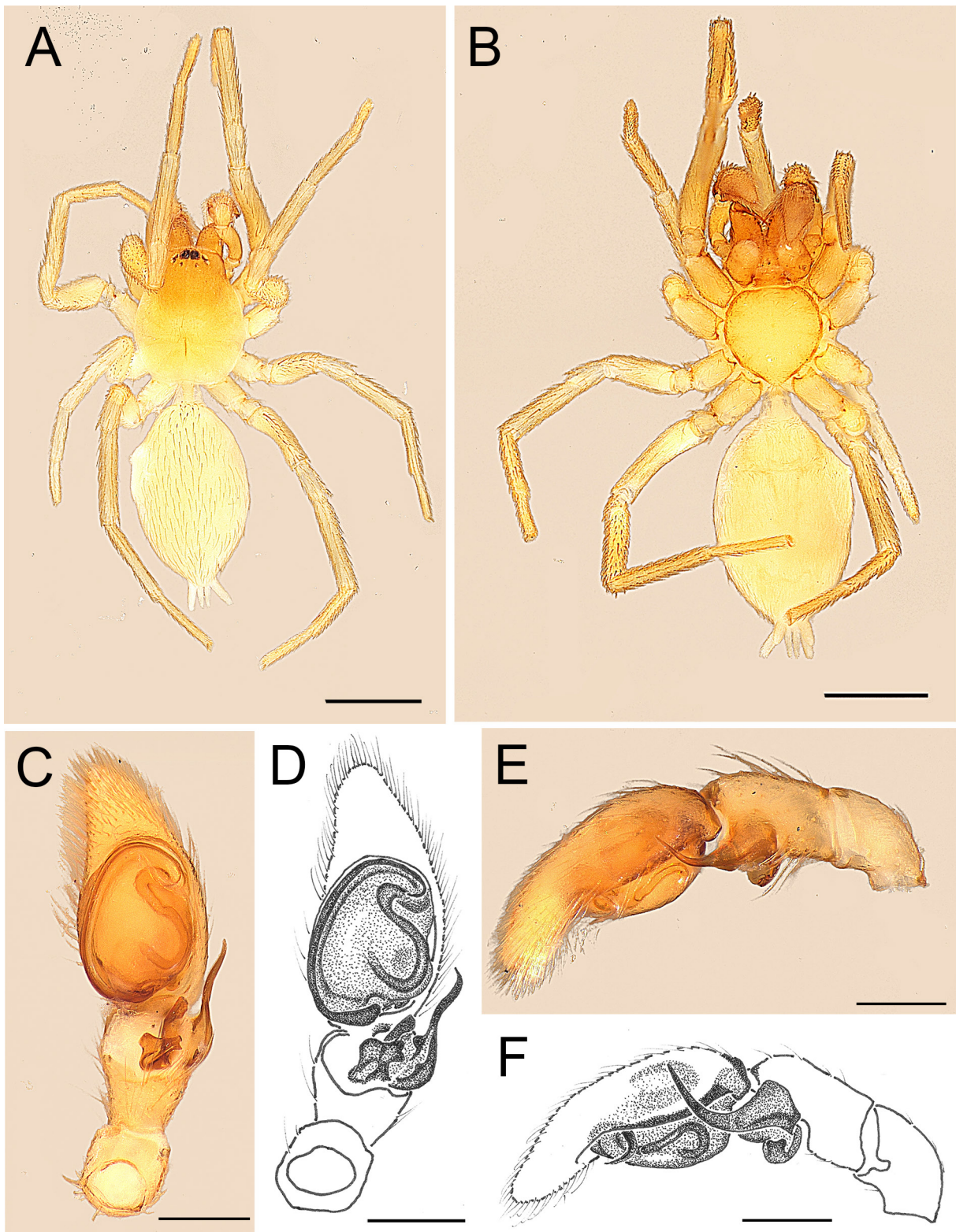


Fig. 13. *Andromma cynotrachelos* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 247532). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Left palp, ventral view. **E–F.** Same, retrolateral view. Scale bars: A–B=1 mm; C–F =0.2 mm.

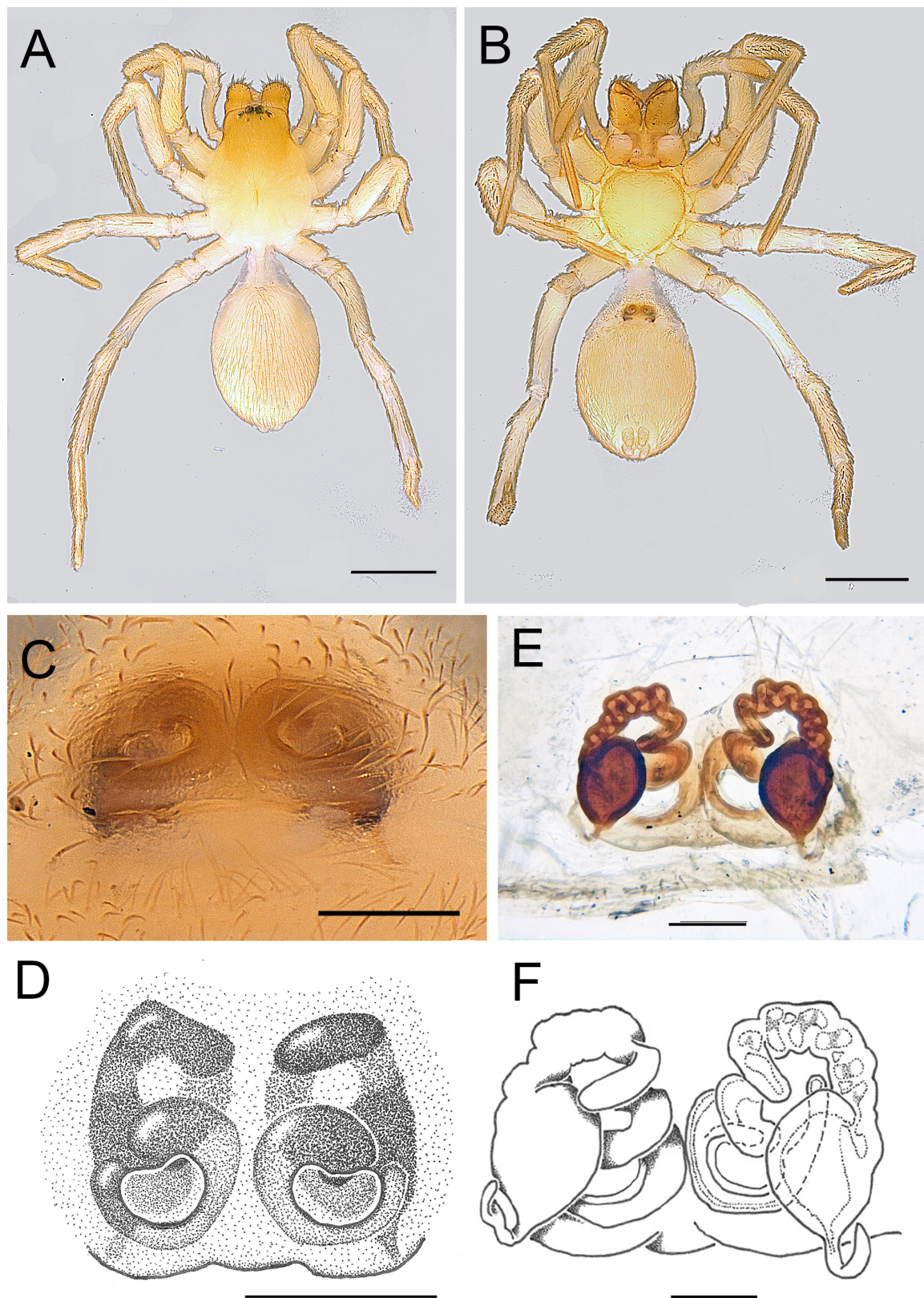


Fig. 14. *Andromma cynotrachelos* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 144678). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same, cleared, dorsal view. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

Description

Male (holotype, Fig. 13)

MEASUREMENTS. Total length 3.60. Carapace length 1.42, width 1.21, height 0.57.

COLOUR (Fig. 13A–B). Cephalic area of carapace and chelicerae yellowish orange, thoracic part, legs and mouthparts pale yellow; AME rim dark; fovea reddish; sternum pale yellow with thin pale brown rim; abdomen including spinnerets pale cream.

PROSOMA. Fovea pronounced, length 0.18, anterior end 0.78 from PME. MOQ length 0.15, anterior width 0.18, posterior width 0.18. AER straight from above, width 0.36, PER procurved from above, width 0.39. All eyes circular; AME 0.08, ALE 0.07, PLE 0.05, PME 0.03; AME–AME: 0.08, AME–ALE: 0.03, ALE–PLE: touching, PME–PME: 0.13. Clypeus vertical, 0.05, without long setae. Chilum absent. Chelicerae: anterior margin with two teeth.

LEG SPINATION. All femur with one dorsal spine, Fe I pl 1; T I v 2-2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2; Mt II v 2-2-2; T III v 2; Mt III v 2; T IV v 1-2; Mt IV v 2.

LEG MEASUREMENTS. Fe: 1.07, P: 0.43, T: 0.85, Mt: 0.78, t: 0.64; total: 3.77.

MALE PALP (Fig. 13C–F). RTA with long, slender, sharp tipped prong, curved dorsally in retrolateral view; VTA with intricate extrusions; bulbus occupying $\frac{2}{3}$ of cymbium length; embolus with thick base, originating on posterior end of tegulum, following the tegulum contour ending on distal retrolateral side; sperm duct visible retrolaterally, S-shaped. Conductor indistinct.

Female (paratype, Fig. 14)

MEASUREMENTS. Total length 4.05. Carapace length 1.63, width 1.28, height 0.64.

COLOUR (Fig. 14A–B). Similar to male.

PROSOMA. Fovea pronounced, length 0.20, anterior end 0.88 from PME. MOQ length 0.16, anterior width 0.23, posterior width 0.18. AER straight from above, width 0.41, PER procurved from above, width 0.46. All eyes circular; AME 0.08, ALE 0.07, PLE 0.05, PME 0.03; AME–AME: 0.05, AME–ALE: 0.03, ALE–PLE: touching, PME–PME: 0.13. Clypeus vertical, 0.07, with four long setae. Chilum absent. Chelicerae: anterior margin with two teeth.

LEG SPINATION. All femora with one dorsal spine, Fe I pl 1; T I v 2-2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2; Mt II v 2-2-2; T III v 1-2; Mt III v 2-2; T IV v 1-2; Mt IV v 2-2.

LEG MEASUREMENTS. Fe: 1.35, P: 0.57, T: 1.07, Mt: 0.99, t: 0.71; total: 4.69.

PALP. Female palpal tarsus slightly curved, with sparse scopula.

EPIGYNE (Fig. 14C–F). Roughly rectangular area, wider than long, with kidney shaped copulatory openings separated by their longest axis; copulatory ducts consisting of three loosely wound coils followed by a tightly wound helicoidal stretch ending in the drop shaped lateral spermathecae.

Distribution

Known only from the type locality in D.R. Congo (Fig. 38). The species is termitophilous.

Andromma delphiurum sp. nov.

urn:lsid:zoobank.org:act:A42A4884-10FB-4B40-AF77-2081949AE59C

Figs 15–16, 39

Diagnosis

Both sexes of *Andromma delphiurum* sp. nov. are characterized by the short MOQ. Males of the species are characterized by the shape of the VTA, which resembles the tail of a dolphin (Fig. 15E–F); females are recognized by the epigyne with broad, vaguely delimited copulatory openings (Fig. 16C–D) and the large copulatory ducts following a parallel course, first in posterior direction, then towards the front of the epigyne and back (Fig. 16E–F).

Etymology

The species name is a noun in apposition from the Greek ‘δελφίς’, meaning ‘dolphin’, and ‘οὐρά’, meaning ‘tail’, as the VTA in retrolateral view resembles the tail of a dolphin (Fig. 15F).

Type material

Holotype

NIGERIA • ♂; Ibadan, IITA; 7°30' N, 3°54' W; 1–8 Aug. 1981; A. Russell-Smith leg.; secondary forest, pitfalls; BE_RMCA_ARA.Ara 235830.

Paratypes

NIGERIA • 1 ♂, 2 ♀♀; 27 Apr. 1973; fallow bush plots; further collection data as for holotype; BE_RMCA_ARA.Ara 247537 • 1 ♂; same collection data as for preceding; BE_RMCA_ARA.Ara 247538.

Description

Male (holotype, Fig. 15D, F)

MEASUREMENTS. Total length 3.34. Carapace length 1.42, width 1.14; height 0.57.

COLOUR (Fig. 15A–B). Cephalothorax entirely pale yellow, carapace with an orange tinge in ocular area; abdomen pale, dorsum with faint broad band with slightly darker margins in anterior half.

PROSOMA. AME circular, other eyes oval; AER slightly recurved from above, width 0.31, PER procurved from above, width 0.36. AME 0.10, ALE 0.05, PLE 0.05, PME 0.05; AME–AME: 0.03, AME–ALE: touching, ALE–PLE: touching, PME–PME 0.13. Clypeus vertical, 0.12, with four long setae. Chillum absent. Sternum 0.92 long, same width. Chelicerae: anterior margin with two teeth, a third tiny one in between the two, somewhat closer to retromargin.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; other spines tiny and inconspicuous: T I v 2-2-2; Mt I v 2-2; T II v 2-2-2; Mt II v 2-2.

LEG I MEASUREMENTS. Fe: 1.42, P: 0.47, T: 1.27, Mt: 1.24, t: 0.86; total: 5.26.

LEG FORMULA. 4123.

MALE PALP (Fig. 15C–F). RTA roughly rectangular as seen from the side, with thin, forward projecting, dorsally curved prong; VTA with dolphin tail shaped projection in retrolateral view; embolus originating in center of posterior margin of tegulum running forward over middle of tegulum, slender tip curved outward; sperm duct visible over long, twisted course.

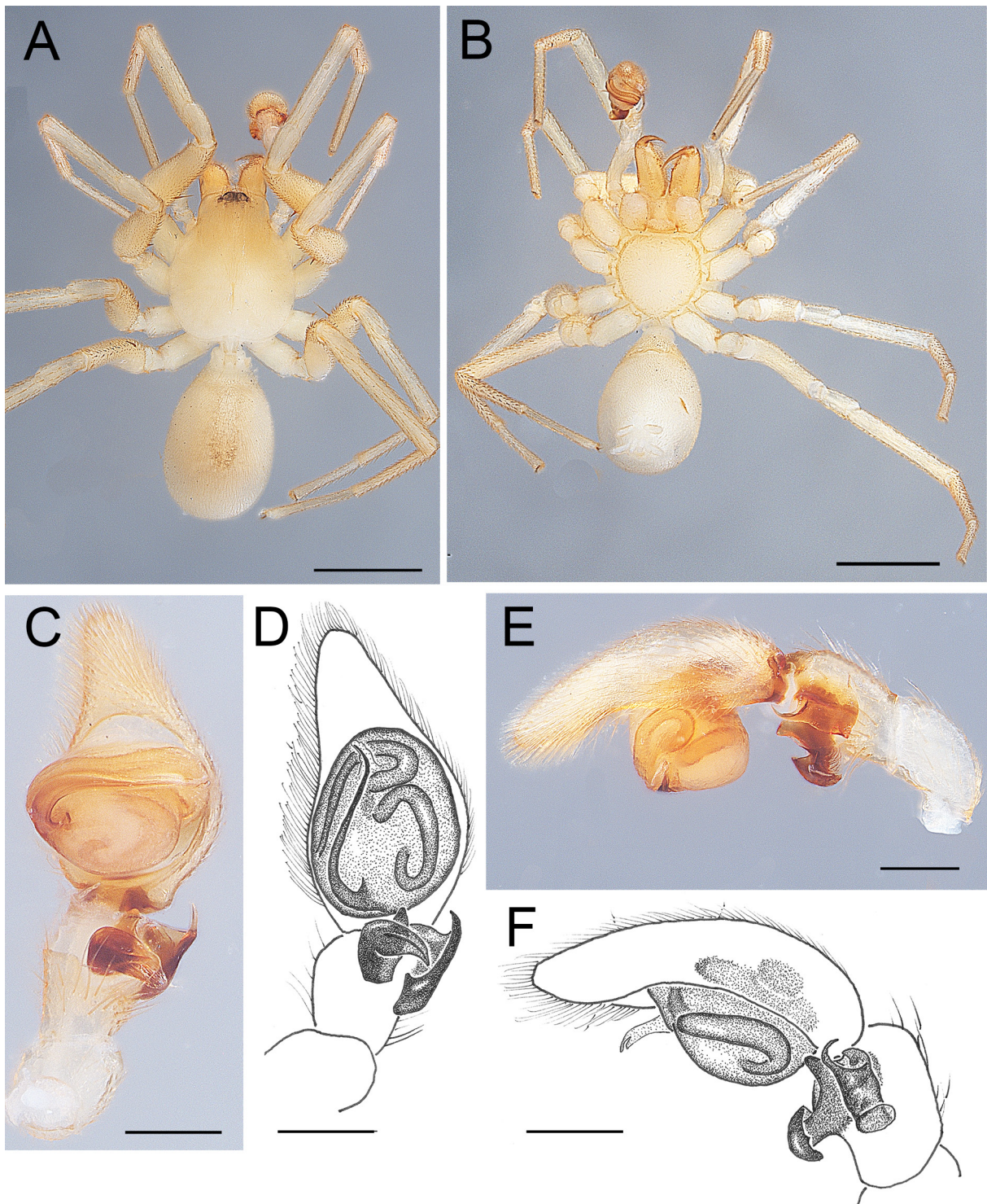


Fig. 15. *Andromma delphiurum* sp. nov. **A–B, C, E.** ♂, paratype (BE_RMCA_ARA.Ara 247537), **D, F.** ♂, holotype (BE_RMCA_ARA.Ara 235830). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** ♂, left palp, ventral view. **E–F.** Same, retrolateral view. Scale bars: A–B=1 mm; C–F=0.2 mm.

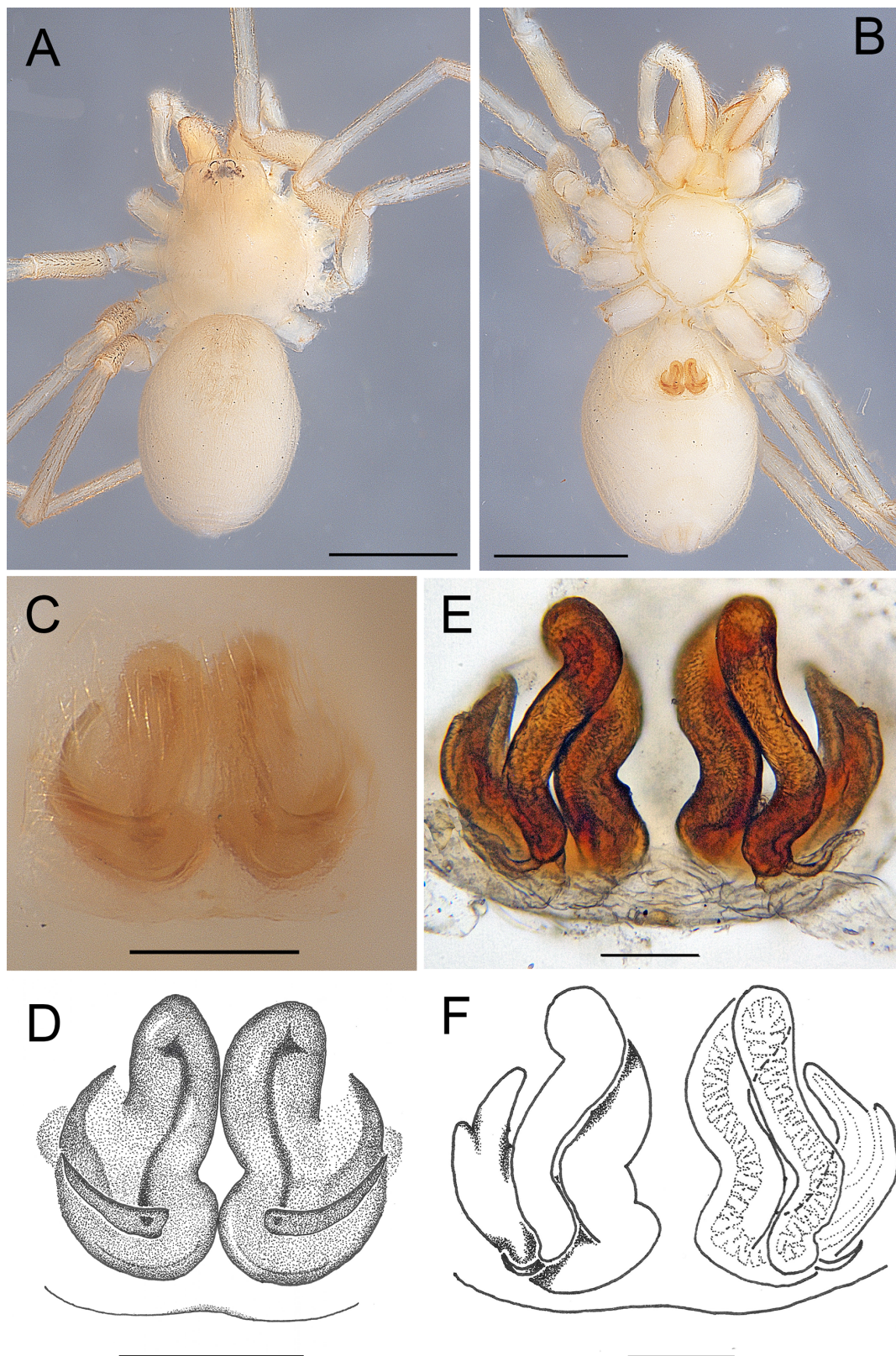


Fig. 16. *Andromma delphiurum* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 247537). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same, cleared, dorsal view. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F = 0.1 mm.

Female (paratype, Fig. 16)

MEASUREMENTS. Total length 3.05. Carapace length 1.28, width 1.14; height 0.57.

COLOUR (Fig. 16A–B). Very similar to male.

PROSOMA. AME circular, other eyes oval; AER slightly recurved from above, width 0.31, PER procurved from above, width 0.36. AME 0.10, ALE 0.04, PLE 0.05, PME 0.03; AME–AME: 0.05, AME–ALE: 0.02, ALE–PLE: touching, PME–PLE: 0.05, PME–PME 0.15. Clypeus vertical, 0.12, no long setae. Chilum absent. Sternum 0.85 long, 0.78 wide. Chelicerae: anterior margin with two teeth, a third tiny at base of fang, somewhat closer to retromargin. Clypeus vertical, 0.07. Chilum absent. Sternum 0.78 long, same width.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; no other spines.

LEG I MEASUREMENTS. Fe: 1.28, P: 0.43, T: 1.14, Mt: 1.14, t: 0.78; total: 4.77.

LEG FORMULA. 4123.

EPIGYNE (Fig. 16C–F). Copulatory openings behind centre, each with wide, procurved vaguely defined margin; copulatory ducts wide, running backward, forward and backward again in parallel course; spermathecae small, not wider than duct. Sickle-shaped sclerites directed outwards.

Distribution

Known only from the type locality in Nigeria (Fig. 39).

Andromma deogratias sp. nov.

[urn:lsid:zoobank.org:act:7FA53C76-2702-4563-920A-04A3E6CDB94E](https://zoobank.org/act:7FA53C76-2702-4563-920A-04A3E6CDB94E)

Figs 2A–B, 17–18, 40

Diagnosis

The male of *Andromma deogratias* sp. nov. is characterized by the shape of the RTA with a fairly long, slender, sharp, tipped prong, pointing antero-dorsally. The female has an epigyne with egg shaped copulatory openings in a trapezoidal epigyne and long spermathecae hardly separated from the copulatory ducts.

Etymology

The species name is a patronym after Déogratias Nduwarugira, who collected all the available specimens.

Type material

Holotype

BURUNDI • ♂; Rumonge, Rumonge Forest; 4°00'27.72" S, 29°29'26.40" E; 12 Dec. 2013; Déogratias Nduwarugira leg.; miombo forest; BE_RMCA_ARA.Ara 246049.

Paratypes

BURUNDI • 1 ♀; 11 Apr. 2013; further same collection data as for holotype; BE_RMCA_ARA.Ara 246050 • 1 ♂; same collection data as for holotype; BE_RMCA_ARA.Ara 246048 • 1 ♂; 8 May 2013; further same collection data as for holotype; BE_RMCA_ARA.Ara 246052 • 1 ♀; 10 May 2013; further same collection data as for holotype; BE_RMCA_ARA.Ara 246054 • 1 ♂; 24 May 2013; further same collection data as for holotype; BE_RMCA_ARA.Ara 246053.

Description

Male (holotype, Fig. 17)

MEASUREMENTS. Total length 4.97. Carapace length 2.27, width 1.58, height 0.92.

COLOUR (Fig. 17A–B). Carapace with cephalic area orange, somewhat darker than thoracic area; legs, chelicerae and sternum orange; abdomen including spinnerets pale cream.

PROSOMA. Fovea pronounced, length 0.50, anterior end 0.99 from PME. AME circular, ALE and PLE oval; AER straight from above, width 0.51, PER width 0.51. AME 0.08, ALE 0.07, PLE 0.05, PME absent; AME–AME: 0.05, AME–ALE: 0.05, ALE–PLE: touching. Clypeus vertical, 0.12, with six long setae. Sternum 1.21 long, 1.07 wide. Chilum two narrow strips, 0.02 high, 0.07 wide. Chelicerae: strongly bulging in front; anterior margin with four teeth: three in a row, the most proximal the smallest, a tiny one slightly inward from the central one, another small one, more inward at base of fang.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; T I v 2-2-2-2-2-2; Mt I v 2-2-2-2; T II v 2-2-2-2; Mt II v 2-2-2-2; T III pl 1 rl 1 v 2; Mt III v 2-2; T IV pl 1-1 rl 1-1 v 2-2; Mt IV v 2-2-2.

LEG I MEASUREMENTS. F: 2.10, P: 0.77, T: 1.82, Mt: 1.68, t: 1.40; total: 7.77.

MALE PALP (Fig. 17C–F). RTA broad, arrow-shaped, VTA hook-shaped; bulbus simple with short, distally curved embolus and small membranous conductor positioned distomedially.

Female (paratype, RMCA 246054, Fig. 18)

MEASUREMENTS. Total length 5.29. Carapace length 2.13, width 1.28, height 0.83.

COLOUR (Fig. 18A–B). Similar to male.

PROSOMA. Fovea pronounced, length 0.43. MOQ anterior width 0.26, AER straight from above, width 0.57, PER width 0.61. AME circular, ALE and PLE oval; AME 0.10, ALE 0.09, PLE 0.05, PME reduced, or even only one eye present (Fig. 2B); AME–AME: 0.07, AME–ALE: 0.05, ALE–PLE: touching. Clypeus vertical, 0.15, with six long setae. Chilum two strips, 0.07 high, 0.15 wide. Sternum 1.42 long, same width. Chelicerae as in male.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; T I v 2-2-2-2-2-2; Mt I v 2-2-2-2; T II v 2-2-2-2; Mt II v 2-2-2-2; T III v 1-2; Mt III v 2-2; T IV v 1-2; Mt IV v 2-2.

LEG I MEASUREMENTS. F: 2.06, P: 0.71, T: 1.85, Mt: 1.79, t: 1.28; total: 7.69.

FEMALE PALPAL TARSUS. Ventrally straight, dorsally curved; scopula well developed.

EPIGYNE (Fig. 18C–F). Roughly trapezoidal area, with central egg-shaped copulatory openings separated by 1.6 times their longest axis; posterior part divided by longitudinal cleft behind chevron shaped transverse dividing ridge. Copulatory ducts wide and with large bends, ending in spermathecae appearing as prolongation of copulatory ducts. Fertilisation duct procurved.

Distribution

Known only from the type locality in Burundi (Fig. 40).

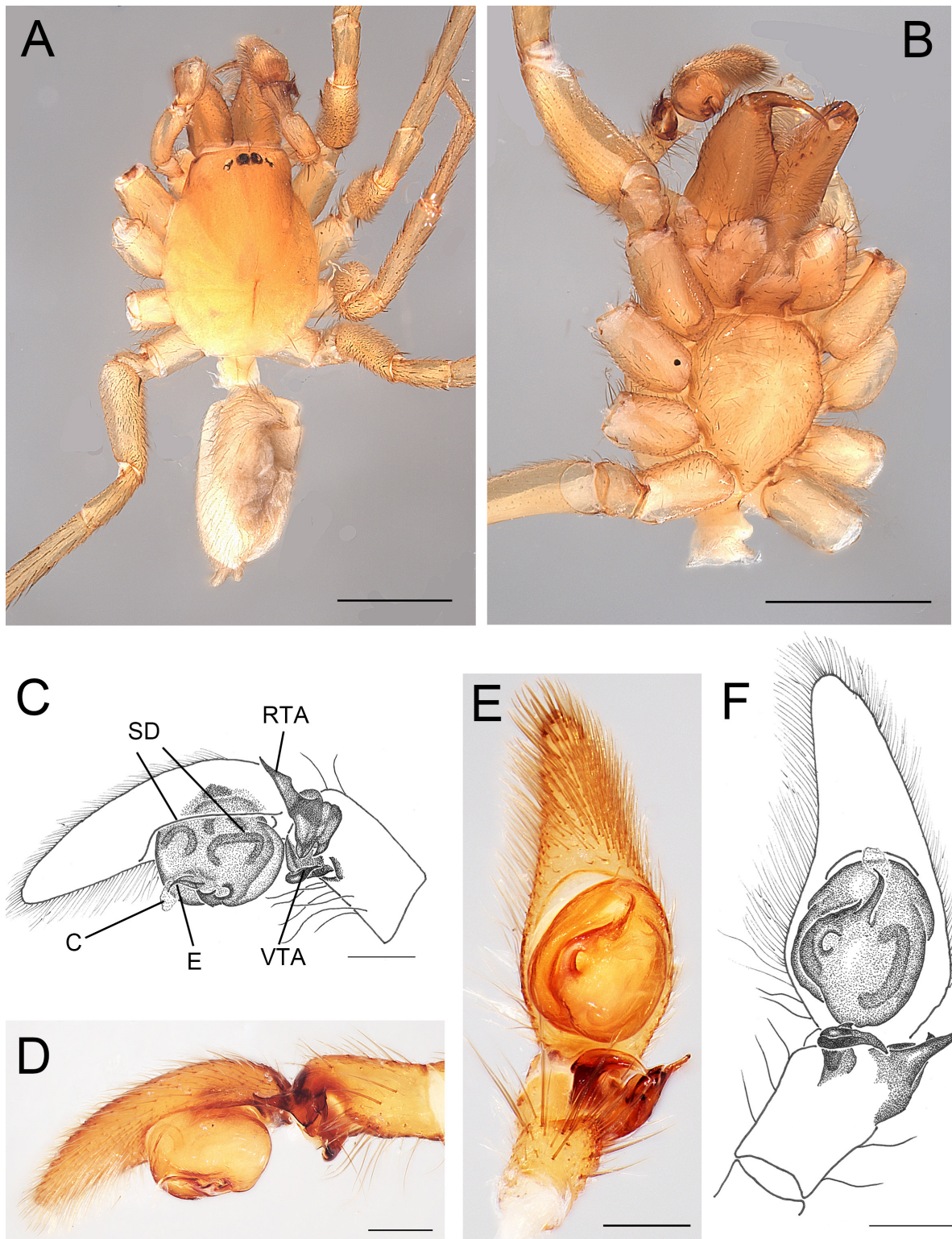


Fig. 17. *Andromma deogratis* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 246049). **A.** Habitus, dorsal view. **B.** Cephalothorax, ventral view. **C–D.** ♂, left palp, retrolateral view. **E–F.** Same, ventral view. Abbreviations: C=conductor; E=embolus; RTA=retrolateral tibial apophysis; SD=sperm duct; VTA=ventral tibial apophysis. Scale bars: A=0.5 mm; B=1 mm; C–F=0.2 mm.

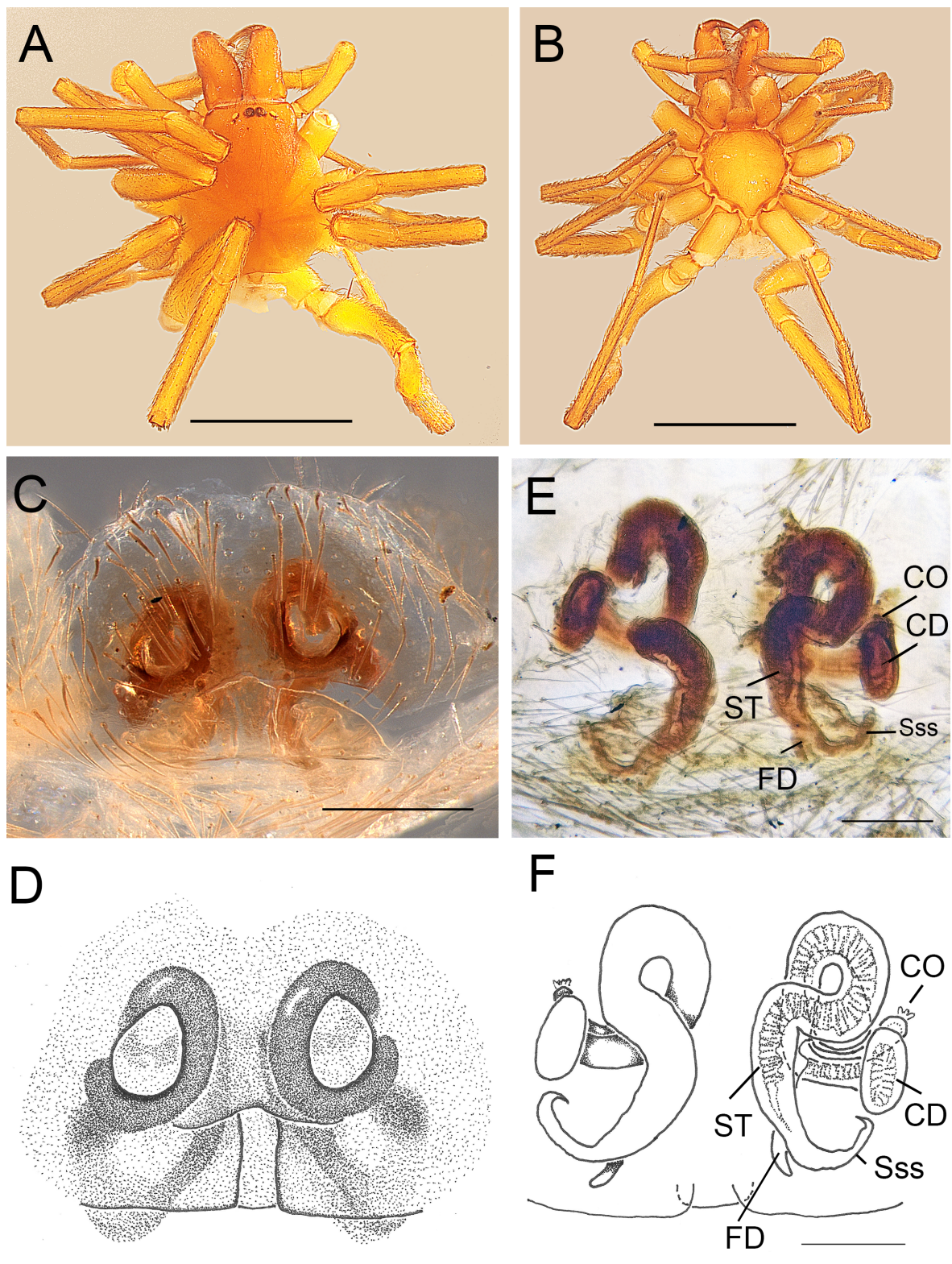


Fig. 18. *Andromma deogratias* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 246054). **A.** Cephalothorax, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, cleared, ventral view. **E–F.** Same cleared, dorsal view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; Sss=sickle shaped sclerites; ST=spermatheca. Scale bars: A–B=2 mm; C–D=0.2 mm; E–F=0.1 mm.

Andromma dicranobelos sp. nov.

[urn:lsid:zoobank.org:act:9F72FCCB-187B-4A7E-8E10-AC0DB279D1A5](https://doi.org/10.21203/rs.3.rs-1877272/v1)

Figs 19, 40

Diagnosis

The male of *Andromma dicranobelos* sp. nov. is characterized by the shape of the VTA and RTA, which look like a forked spear in ventral view (Fig. 19D–E).

Etymology

The species name is a noun in apposition composed by the Greek nouns ‘δικρανον’ (meaning ‘fork’) and ‘βελος’ (meaning ‘spear’), referring to the shape of the RTA, which looks like a forked spear in ventral view (Fig. 19D–E).

Type material

Holotype

D.R. CONGO • ♂; Bas Congo, Mayombe, Luki Forest Reserve, near guest house; 5°38' S, 13°04' E; 4 Nov. 2006; D. De Bakker and J.P. Michiels leg.; road verge, by hand; BE_RMCA_ARA.Ara 220165.

Paratypes

D.R. CONGO • 1 ♂; same collection data as for holotype; pitfalls, rainforest; 13–23 Nov. 2006; De Bakker and Michiels leg.; BE_RMCA_ARA.Ara 222718 • 1 ♂; 4 Nov. 2006; by hand, road edge near guesthouse; further collection data as for preceding; BE_RMCA_ARA.Ara 222611.

Description

Male (holotype, Fig. 19C–D)

MEASUREMENTS. Total length 4.26. Carapace length 1.99, width 1.56; height 0.57.

COLOUR (Fig. 19A–B). Carapace orange, gradually paler towards posterior margin, with dark area around AME, reddish fovea, without setae; chelicerae orange; endites yellowish orange, darker along lateral margin, paler along median margin; labium uniform orange; sternum orange with brownish precoxal triangles; legs yellowish orange; abdomen including spinnerets cream with faint darker dorsal pattern and dispersed darker setae.

PROSOMA. Fovea pronounced, length 0.30, anterior end 0.80 from PME. MOQ length 0.26, anterior width 0.25, posterior width 0.25, AER straight from above, width 0.45, PER procurved from above, width 0.49. All eyes circular; AME 0.10, ALE and PLE 0.08, PME 0.06; AME–AME: 0.05, AME–ALE: 0.05, ALE–PLE: 0.02, PME–PME: 0.15. Clypeus vertical, 0.13, with six long setae. Chilum absent. Sternum length 1.07, same width.

LEG SPINATION. All femora with one dorsal spine; T I v 2-1-2-1-2; Mt I v 2-2-2.

LEG I MEASUREMENTS. Fe: 1.85, P: 0.78, T: 1.63, Mt: 1.49, t: 0.99; total: 6.74.

LEG FORMULA. 4123.

MALE PALP (Fig. 19C–F). RTA with flat retrolateral part, its anterior margin with thin dorsally curved prong with sharp tip, posteriorly followed by a smaller leaf-shaped extension. VTA transversely heart-shaped in ventral view. Bulbus large, filling three quarters of the cymbial alveolus; embolus originating on posterior part of tegulum, curved along margin of tegulum, curved tip accompanied by small membranous conductor positioned medioretrolaterally. SD s-shaped, visible over entire length of tegulum.

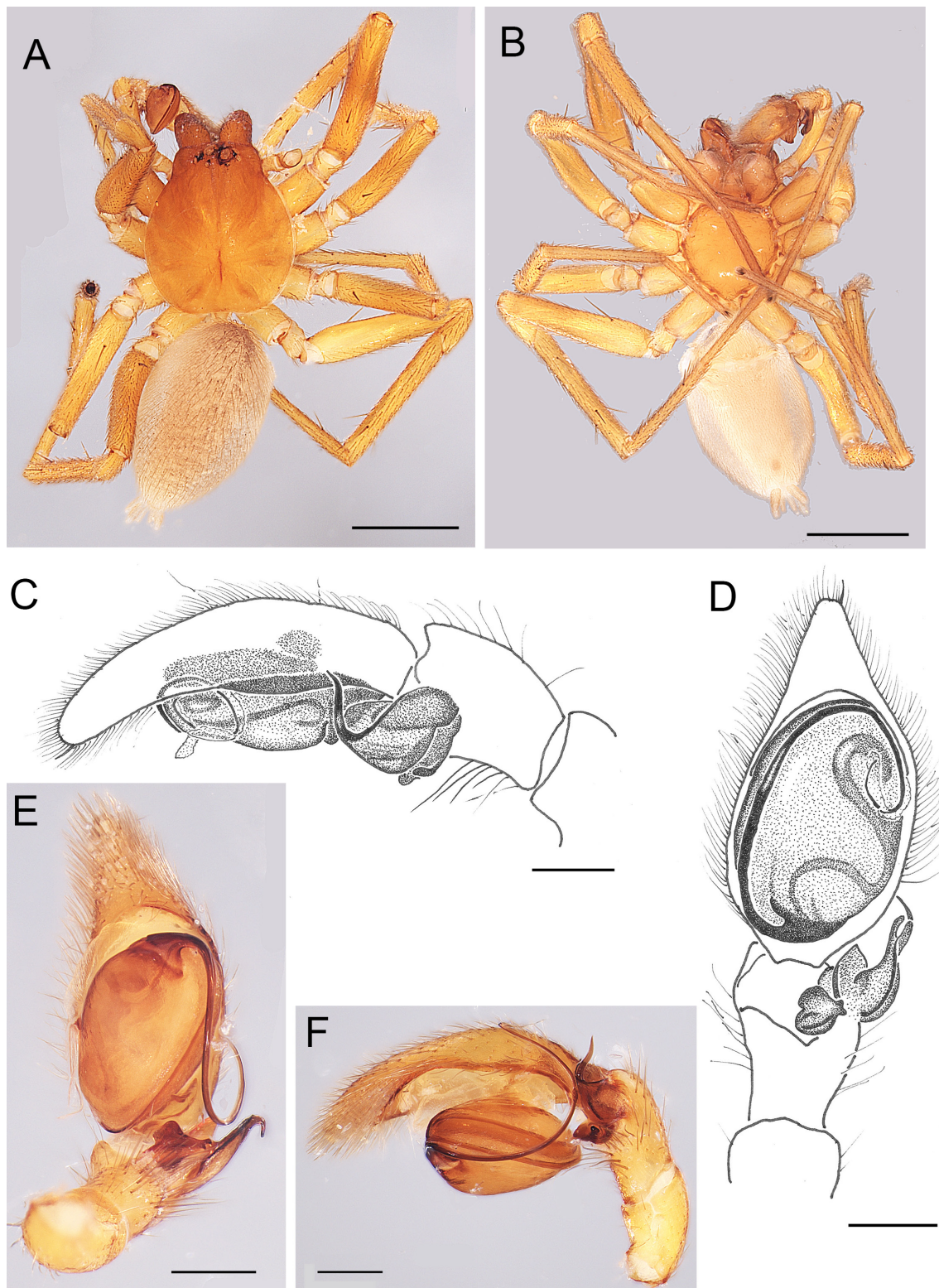


Fig. 19. *Andromma dicranobelos* sp. nov. **A–B, E–F.** ♂, paratype ((BE_RMCA_ARA.Ara 222718)). **C–D.** ♂, holotype (BE_RMCA_ARA.Ara 220165). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C.** Left palp, retrolateral view. **D.** Same, ventral view. **E.** Same, expanded (bulb rotated 180°), ventral view. **F.** Same, retrolateral view. Scale bars: A–B=1 mm; C–F=0.2 mm.

Female

Unknown.

Distribution

Known only from the type locality in southwestern D.R. Congo (Fig. 40).

Andromma didrepanum sp. nov.

[urn:lsid:zoobank.org:act:4C3E4B13-3B5A-4761-97DE-0FFA981B49E6](https://doi.org/10.3896/urn:lsid:zoobank.org:act:4C3E4B13-3B5A-4761-97DE-0FFA981B49E6)

Figs 20, 38

Diagnosis

Males of *Andromma didrepanum* sp. nov. are characterized by the shape of the VTA and RTA both provided with a sickle-shaped prong and by the embolus with bifid tip, originating on the prolateral side of tegulum.

Etymology

The species name is a noun in apposition from the Greek ‘δρέπανον’, meaning ‘sickle’, because the VTA and RTA feature sickle-shaped appendages, a large one (VTA) and a small one (RTA) (Fig. 20E–F).

Type material

Holotype

D.R. CONGO • ♂; Tshopo Province, Kisangani, Masako Forest Reserve; 0°36' N, 25°13' E; 25 Mar. 2003; J.L. Juakaly leg.; BE_RMCA_ARA.Ara 216034.

Description

Male (holotype, Fig. 20)

MEASUREMENTS. Total length 3.83. Carapace length 1.56, width 1.49; height 0.64.

COLOUR (Fig. 20A–B). Cephalothorax including legs and chelicerae entirely yellowish orange; carapace with radiating striae; sternum yellowish orange with brown rim and small brown precoxal triangles; abdomen cream, dorsum with faint broad band with slightly darker margins in anterior half.

PROSOMA. AME circular, other eyes oval; AER slightly recurved from above, width 0.31, PER procurved from above, width 0.36. AME 0.10, ALE 0.05, PLE 0.05, PME 0.05; AME–AME: 0.03, AME–ALE: touching, ALE–PLE: touching, PME–PME 0.13. Clypeus vertical, 0.12, with four long setae. Chilum absent. Sternum 0.92 long, same width. Chelicerae: anterior margin with two teeth, a third tiny one in between the two, somewhat closer to retromargin.

LEG SPINATION. All femora with one dorsal spine, F I pl 1; other spines tiny and inconspicuous: T I v 2-2-2, Mt I v 2-2; T II v 2-2-2, Mt II v 2-2.

LEG I MEASUREMENTS. Fe: 1.42, P: 0.47, T: 1.27, Mt: 1.24, t: 0.86; total: 5.26.

MALE PALP (Fig. 20C–F). VTA sickle-shaped in ventral view, mushroom-shaped in retrolateral view. RTA pointed in ventral view, ending in a small, sickle-shaped tip; consisting of two sharp, roughly triangular processes in retrolateral view. Sperm duct surfacing as a crescent in retrolateral half of bulbus, rather short, prolateral, ending in a bifid, ventrally curved tip accompanied by a thin, flag-like conductor.

Female

Unknown.

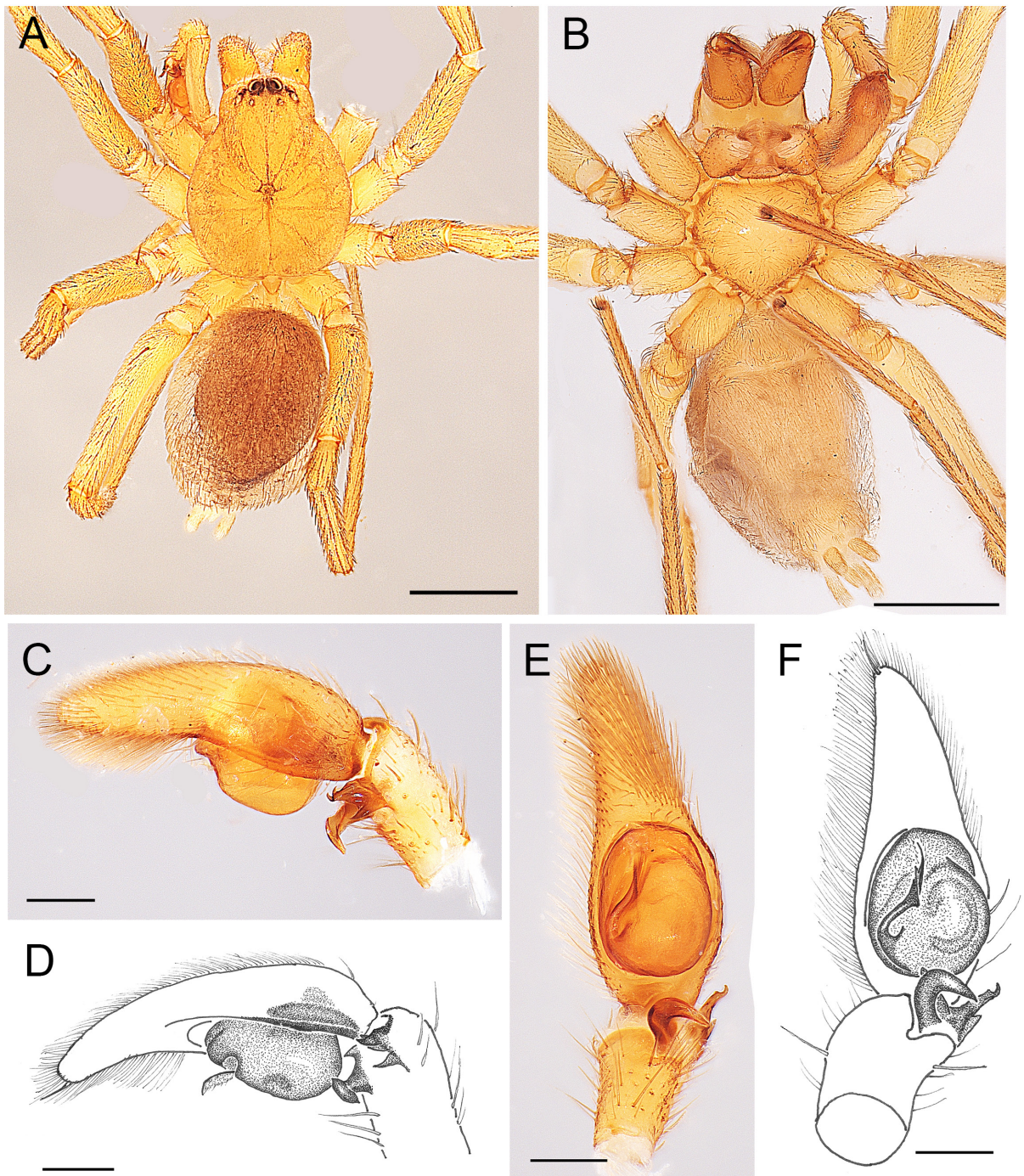


Fig. 20. *Andromma didrepanum* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 216034). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Left palp, retrolateral view. **E–F.** Same, ventral view. Scale bars: A–B=1 mm; C–F=0.2 mm.

Distribution

Known only from the type locality in Tshopo Province, D.R. Congo (Fig. 38).

Andromma divinagraciae sp. nov.

[urn:lsid:zoobank.org:act:AFD4B72A-BBC0-4669-BCDC-A49CC29BA70F](https://zoobank.org/act:AFD4B72A-BBC0-4669-BCDC-A49CC29BA70F)

Figs 2C–D, F–G, 21–22, 38

Diagnosis

Andromma divinagraciae sp. nov. is similar to *A. velum* sp. nov., but differs from it by the shape of the VTA, which is also sail-shaped, but shorter and more anteriorly directed, by the shape of the RTA which is larger and tear-shaped in retrolateral view, and by the epigyne which has two sausage-shaped sclerotised plates versus broad, ear-shaped plates in *A. velum*. (compare Fig. 22C–D with Fig. 37C–D).

Etymology

The species name is a matronym in honour of Emily Divinagracia, one of the driving forces of the choral ‘Museicanti’ of the RMCA.

Type material

Holotype

BURUNDI • ♂; Rumonge, Rumonge Forest; 4°00'27.72" S, 29°29'26.40" E; 17 Dec. 2013; Déogratias Nduwarugira leg.; Miombo woodland; BE_RMCA_ARA.Ara 246051.

Paratypes

BURUNDI • 1 ♀; 8 May 2013; further same collection data as for holotype; BE_RMCA_ARA.Ara 246055 • 1 ♂; same collection data as for preceding; BE_RMCA_ARA.Ara 246056.

Description

Male (holotype, Figs 2C, 21A–F)

MEASUREMENTS. Total length 4.45. Carapace length 2.13, width 1.49, height 0.85.

COLOUR (Fig. 21A–B). Carapace orange, gradually paler towards posterior margin; fovea reddish; chelicerae orange; endites and labium yellowish orange, pale along anterior margin; sternum yellowish orange with pale brown precoxal triangles; legs orange; abdomen including spinnerets cream.

PROSOMA. Fovea pronounced, length 0.36, anterior end 1.07 from PME. MOQ length 0.21, anterior width 0.30, posterior width 0.23 (Fig. 2C). AER straight from above, width 0.54, PER procurved from above, width 0.57. AME circular, remainder oval. AME 0.12, ALE 0.10, PLE 0.05, PME 0.07; AME–AME: 0.07, AME–ALE: 0.05, ALE–PLE: touching, PME–PME: 0.18. Clypeus vertical, 0.15, with six long setae. Chilum two sclerites, each 0.03 high, 0.15 wide. Chelicerae with four teeth on promargin: three in a row of which the distal one the smallest and one near the middle one slight more towards the retromargin; small fifth tooth at base of fang. Sternum 1.21 long, 1.14 wide.

LEG SPINATION. All femora with one dorsal spine, Fe II pl 1; T I pl 1 v 2-2-2-2-2; Mt I v 2-2-2; T II pl 2 v 2-2-2-2; Mt II v 2-2; T III rl 1 v 2-2-2; Mt III v 2-2; T IV pl 1-1 rl 1 v 1; Mt IV v 1.

LEG I MEASUREMENTS. Fe: 2.13, P: 0.78, T: 1.85, Mt: 1.83, t: 1.14; total: 7.73.

LEG FORMULA. 4123.

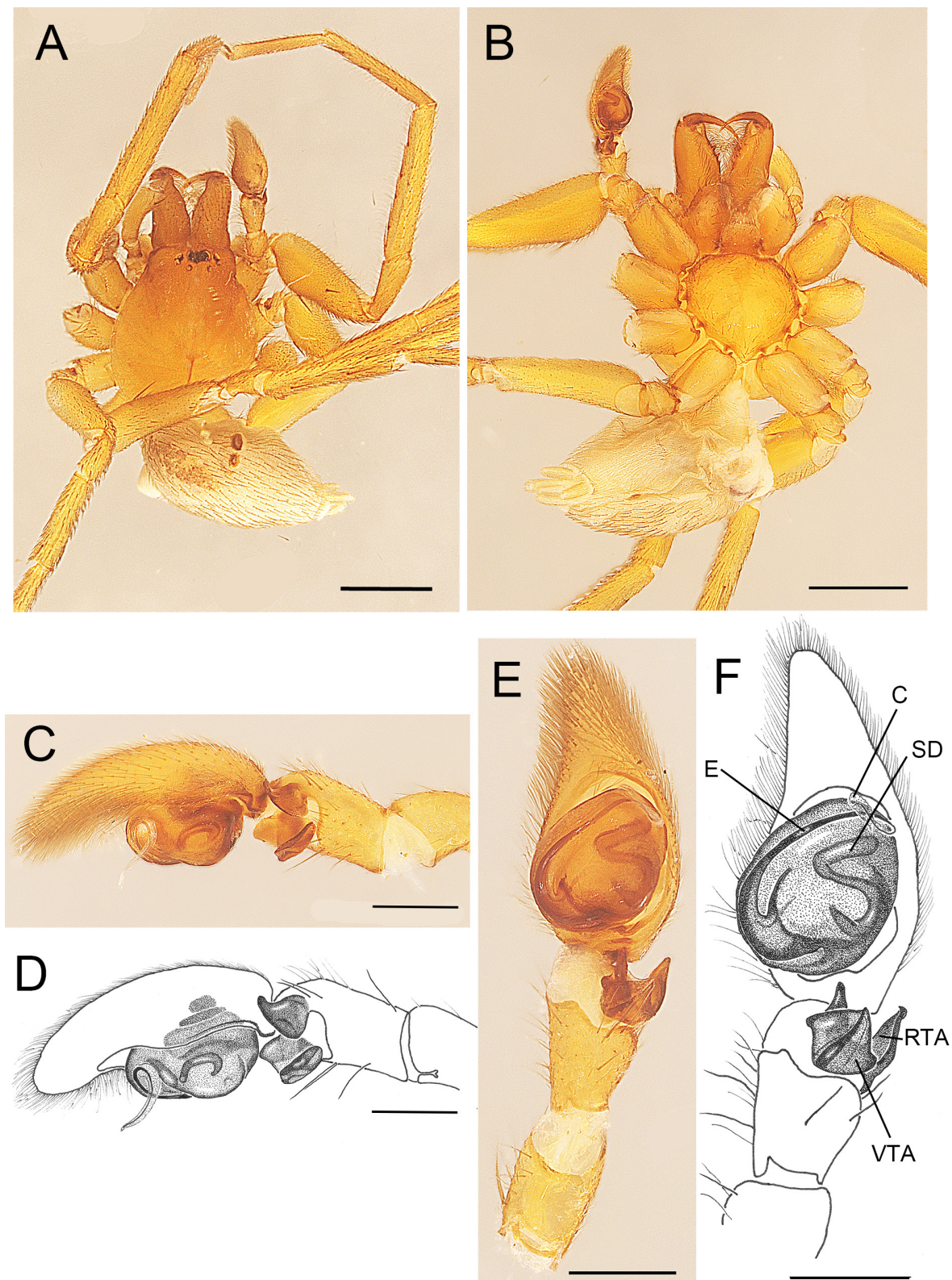


Fig. 21. *Andromma divinagraciae* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 246051). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** ♂, left palp, retrolateral view. **E–F.** Same, ventral view. Abbreviations: C = conductor; E = embolus; RTA = retrolateral tibial apophysis; SD = sperm duct; VTA = ventral tibial apophysis. Scale bars: A–B = 1 mm; C–F = 0.2 mm.

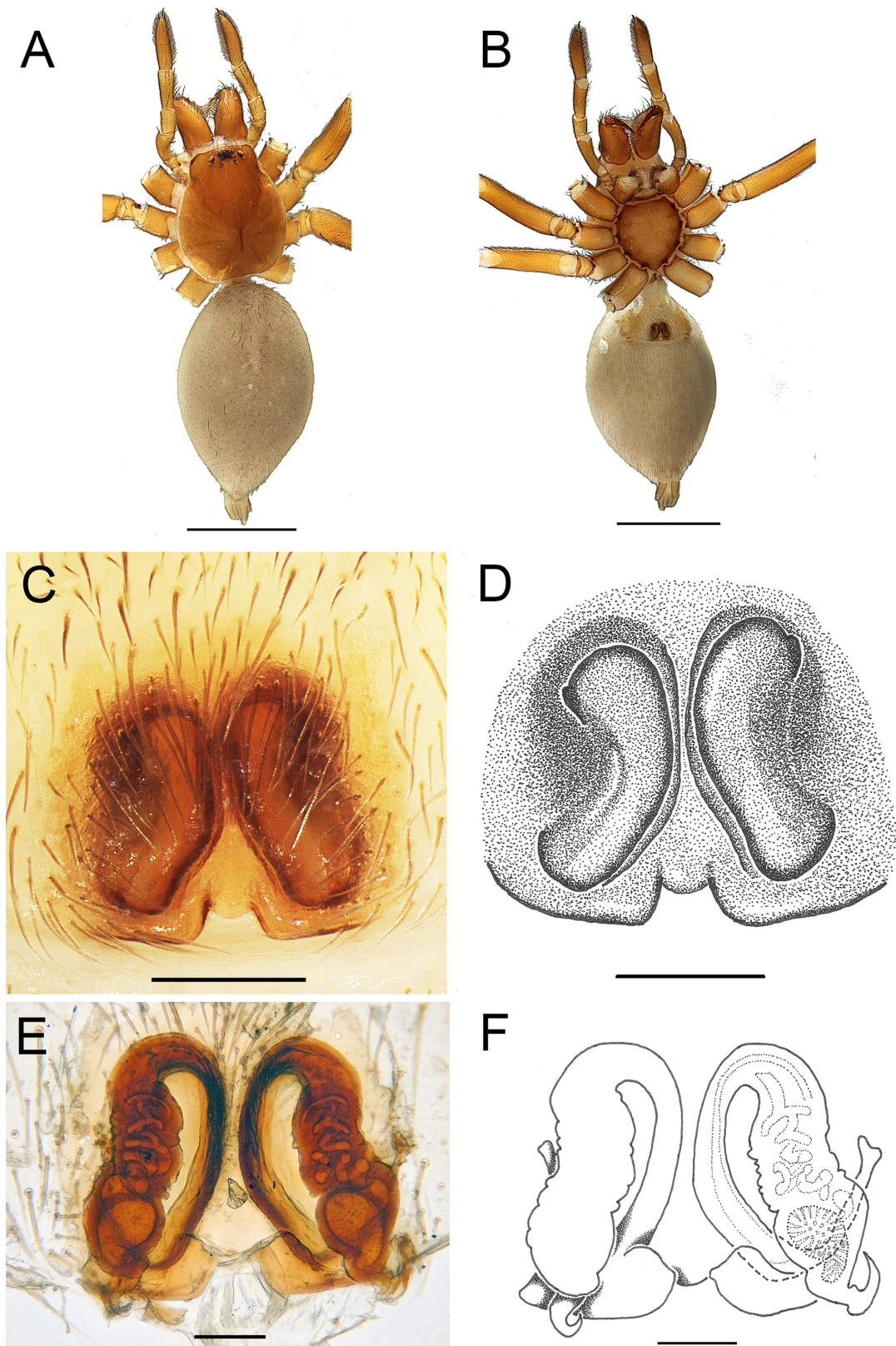


Fig. 22. *Andromma divinagraciae* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 246055). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=2 mm; C–D=0.2 mm; E–F=0.1 mm.

MALE PALP (Fig. 21C–F). RTA bluntly triangular to tear-shaped in retrolateral view; VTA lozenge-shaped in ventral view, like a sail; embolus long, originating on posterior part of tegulum, curved along prolateral margin of tegulum with slender distal, ventrally curved tip accompanied by narrow membranous conductor positioned distoretrolaterally; the prolateral side of the cymbium slightly concave. Sperm duct S-shaped, surfacing on retrolateral side of bulbus.

Female (paratype RMCA 248055, Fig. 22)

MEASUREMENTS. Total length 6.04. Carapace length 2.41, width 1.99, height 0.89.

COLOUR (Fig. 22A–B). As in male.

PROSOMA. Fovea pronounced, length 0.43, anterior end 1.21 from PME. MOQ length 0.28, anterior width 0.31, posterior width 0.36 (Fig. 2D), AER straight from above, width 0.64, PER procurved from above, width 0.67. AME circular, remainder oval. AME 0.12, ALE 0.12, PLE 0.08, PME 0.07; AME–AME: 0.08, AME–ALE: 0.07, ALE–PLE: touching, PME–PME: 0.23. Clypeus vertical, 0.16, with ten long setae. Chilum two triangular sclerites, each 0.07 high, 0.16 wide. Chelicerae with four teeth on promargin; three fairly large ones in one row, a fourth small one between the former, but more towards retromargin, which has one tiny teeth near fang base. Sternum 1.35 wide, 1.42 long.

LEG SPINATION. All femora with one dorsal spine. Preening brush on metatarsus III. Tarsi not widened towards tip.

PALP. Female palp with tarsus straight along promargin, curved along retromargin as seen from above.

SPINATION. All femore with one dorsal spine, T II v 2; T III v 1; T IV v 1.

LEG I MEASUREMENTS. Fe: 2.24, P: 0.84, T: 2.10, Mt: 1.40, t: 1.40; total: 7.87.

LEG FORMULA. 4123.

EPIGYNE (Fig. 22C–F). Slightly longer than wide; with two large ear-shaped depressions; copulatory openings indistinct, located in the anterior part of these depressions; posterior margin of epigyne deepy indented. Copulatory ducts with first part running forward, much narrower than second backward running stretch with tightly appressed, fused coils, which ends in a piriform, thick walled spermatheca with interior spikes. Sickle-shaped sclerites procurved.

Distribution

Known only from the type locality, a Miombo woodland in Burundi (Fig. 38).

Andromma elephantactes sp. nov.

[urn:lsid:zoobank.org:act:98B9B440-9A2B-46F8-BF6C-2BED3A725DAA](https://zoobank.org/act:98B9B440-9A2B-46F8-BF6C-2BED3A725DAA)

Figs 23, 39

Diagnosis

The female of *Andromma elephantactes* sp. nov. is characterized by the shape of the epigyne and the course of the copulatory ducts ending in small oval spermathecae.

Etymology

The species name is a noun in apposition composed by the Greek nouns ‘ἐλέφας’, meaning ‘ivory’, and ‘ἄκτῆ’, meaning ‘coast’, evidently referring to the country of the type locality.

Type material

Holotype

IVORY COAST • ♀; Appouesso, W of village; 6°36'30" N, 3°26'50" W; 20 Nov. 1994; Jocqué R. leg.; cocoa plantation; BE_RMCA_ARA.Ara 201034.

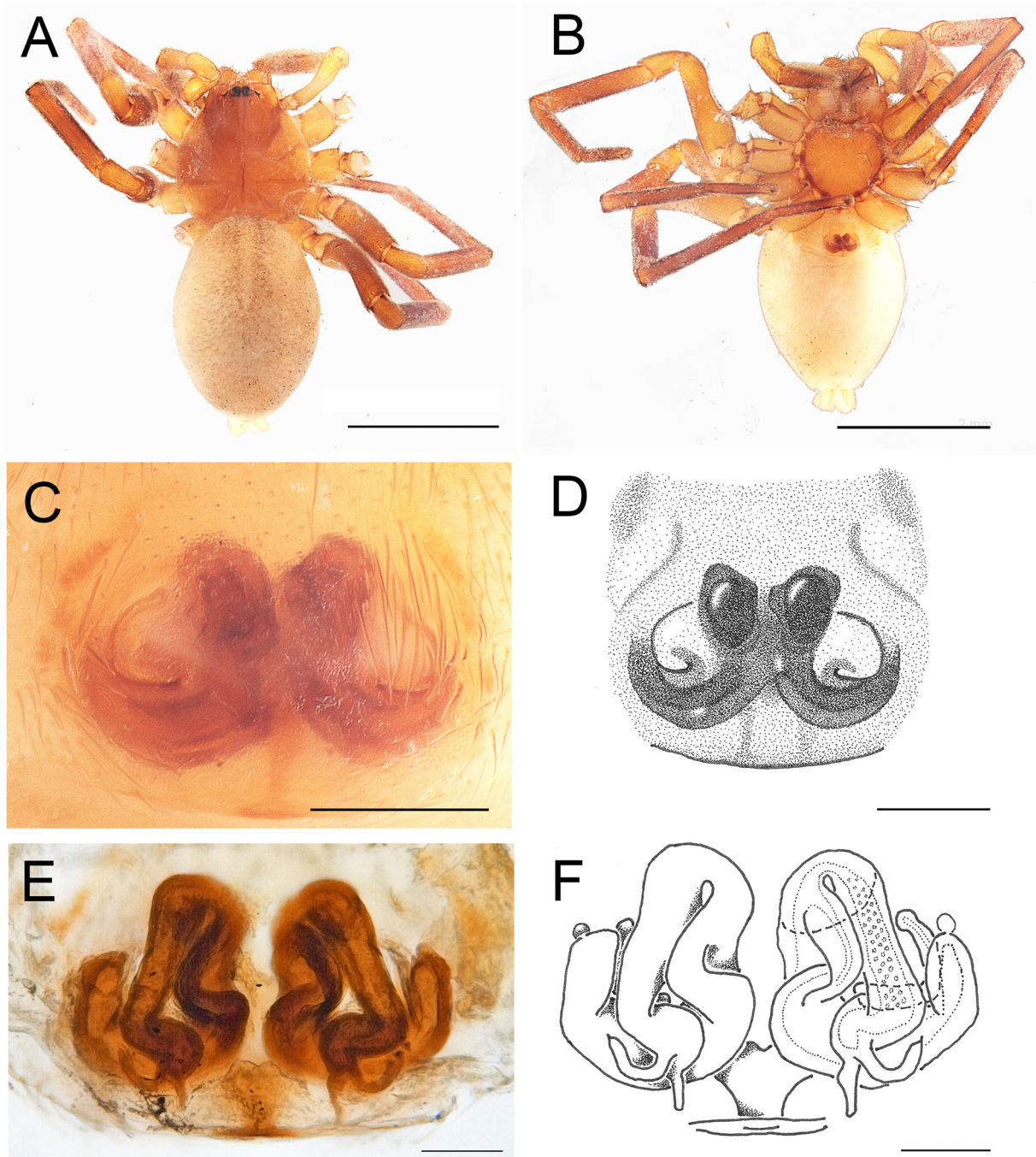


Fig. 23. *Andromma elephantactes* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 201034). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=2 mm; C–D=0.2 mm; E–F=0.1 mm.

Paratype

IVORY COAST • 1 ♀; Appouesso, Forêt Classée de la Bossematié; 6°36'53" N, 3°27'08" W; 7 May 1995; R. Jocqué and K. Tanoh leg.; pitfall 3A; BE_RMCA_ARA.Ara 204230.

Other material

IVORY COAST • 2 ♀♀; Abidjan, Yopougon, CNRS area; 5°19'43.2" N, 4°07'54.6" W; 27 Feb. 2002; sifting leaf litter; CJB 4008.

Description

Female (holotype, Fig. 23)

MEASUREMENTS. Total length 4.97. Carapace length 2.13, width 1.92, height 0.64.

COLOUR (Fig. 23A–B). Carapace orange, gradually paler towards posterior margin; with dark area around AME, reddish fovea, without setae; chelicerae orange; endites yellowish orange, darker along lateral margin, paler along median margin; labium orange, paler in distal half; sternum orange with brownish precoxal triangles; legs brownish orange, coxae and trochanters yellow; abdomen including spinnerets cream; dorsum suffused with greyish brown, with faint pale stripe in anterior half.

PROSOMA. Fovea pronounced, length 0.5, anterior end 0.82 from PME. MOQ length 0.26, anterior width 0.33, posterior width 0.34, AER straight from above, width 0.59, PER procurved from above, width 0.72. All eyes circular; AME 0.15, ALE 0.08, PLE 0.07, PME 0.06; AME–AME: 0.07, AME–ALE: 0.05, ALE–PLE: touching, PME–PME: 0.21. Clypeus vertical, 0.16, with four long setae. Chelicerae with dorsal and ventral longitudinal groups of long setae; anterior margin with five teeth, three in a row, the most proximal the smallest and two tiny ones somewhat in a row slightly more inward. Chilum poorly developed, two sclerites, each 0.05 high, 0.16 wide. Sternum 1.28 long, as wide.

LEG SPINATION. All femora with one dorsal spine; Fe I with small pl spine; remainder of spines tiny.

LEG I MEASUREMENTS. Fe: 2.06, P: 0.78, T: 1.78, Mt: 1.63, t: 1.07; total: 7.32.

LEG FORMULA. 4123.

PALP. Female palpal tarsus with dense scopula.

EPIGYNE (Fig. 23C–F). Roughly rectangular area, wider than long, with copulatory openings with broad, dark, posterior margins; dark anterior bend of copulation duct centrally visible in transparency. First stretch of copulatory ducts narrow with a broad cul-de-sac appendage, running towards the centre, then widening and running forward, followed by a backward running stretch with internal spikes, ending in poorly delimited, small, oval spermathecae; fertilisation ducts thin, tubular, oriented posteriorly. Sickle-shaped sclerites directed outward.

Male

Unknown.

Distribution

Known from the two localities in eastern Ivory Coast (Fig. 39).

Andromma ghesquierei sp. nov.

urn:lsid:zoobank.org:act:D7618EA5-A975-48D8-825D-EA2F9EF5B03D

Figs 2E, 24–25, 40

Diagnosis

The male of *Andromma ghesquierei* sp. nov. differs from the males of all other known species of *Andromma* by the male palp with the embolus originating in the middle of the posterior tegular margin, running over the centre of the tegulum (Fig. 24C–D); the female can easily be recognized by the very large, rounded spermathecae visible in transparency (Fig. 25C–D).

Etymology

The species name is a patronym in honour of J. Ghesquière who collected all the type material of this species apart from the specimens of Lac Tumba; he also collected many other invertebrates in D.R. Congo.

Type material

Holotype

D.R. CONGO • ♂; Equateur Province, Eala; 0°30' N, 18°19' E; 1936; J. Ghesquière leg.; BE_RMCA_ARA.Ara 247536.

Paratypes

D.R. CONGO • 18 ♂♂, 14 ♀♀, 3 juvs; same collection data as for holotype; BE_RMCA_ARA.Ara 177019 • 1 ♀; Nov. 1936; further same collection data as for holotype; BE_RMCA_ARA.Ara 894 • 1 ♀; same collection data as for preceding; BE_RMCA_ARA.Ara 916 • 3 ♀♀, 2 juvs; May 1936; further same collection data as for preceding; BE_RMCA_ARA.Ara 22957 • 1 ♀; same collection data as for preceding; BE_RMCA_ARA.Ara 917 • 1 ♀; same collection data as for preceding; BE_RMCA_ARA.Ara 920 • 1 ♀; same collection data as for preceding; BE_RMCA_ARA.Ara 921 • 1 ♀; Equateur Province, Lac Tumba, Bikoro; 0°43' S, 18°07' E; 350 m a.s.l.; 11 Oct. 1955; N. Leleup leg.; BE_RMCA_ARA.Ara 84109.

Other material

D.R. CONGO • 16 ♂♂, 7 ♀♀; N Kivu., Rutshuru; 1°11' S, 29°27' E; 20 Dec. 1937; J. Ghesquière leg.; BE_RMCA_ARA.Ara 22878.

Description

Male (holotype, Fig. 24)

MEASUREMENTS. Total length 3.20. Carapace length 1.42, width 1.21, height 0.64.

COLOUR (Fig. 24A–B). Cephalothorax including legs and chelicerae yellowish orange, fovea brownish; sternum pale yellow with small brown precoxal triangles; abdomen including spinnerets pale cream.

PROSOMA. Fovea faint, length 0.21, anterior end 0.71 from PME. MOQ (Fig. 2E) length 0.18, anterior width 0.20, posterior width 0.19. AER straight from above, width 0.32, PER procurved from above, width 0.35. AME circular, other eyes oval; AME 0.08, ALE 0.05, PLE 0.05, PME 0.02; AME–AME: 0.03, AME–ALE: 0.01, ALE–PLE: touching, PME–PME: 0.12. Clypeus vertical, 0.06, with four long setae. Chilum absent. Sternum 0.92 long, 0.78 wide. Chelicerae: anterior margin with three teeth.

LEG SPINATION. All femora with one dorsal spine, Fe I pl 1; T I v 2-2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2; Mt II v 2-2-2; T III v 2-2; Mt III pl1v 2; T IV pl 1 v 1; Mt IV rl 1 v 1-2.

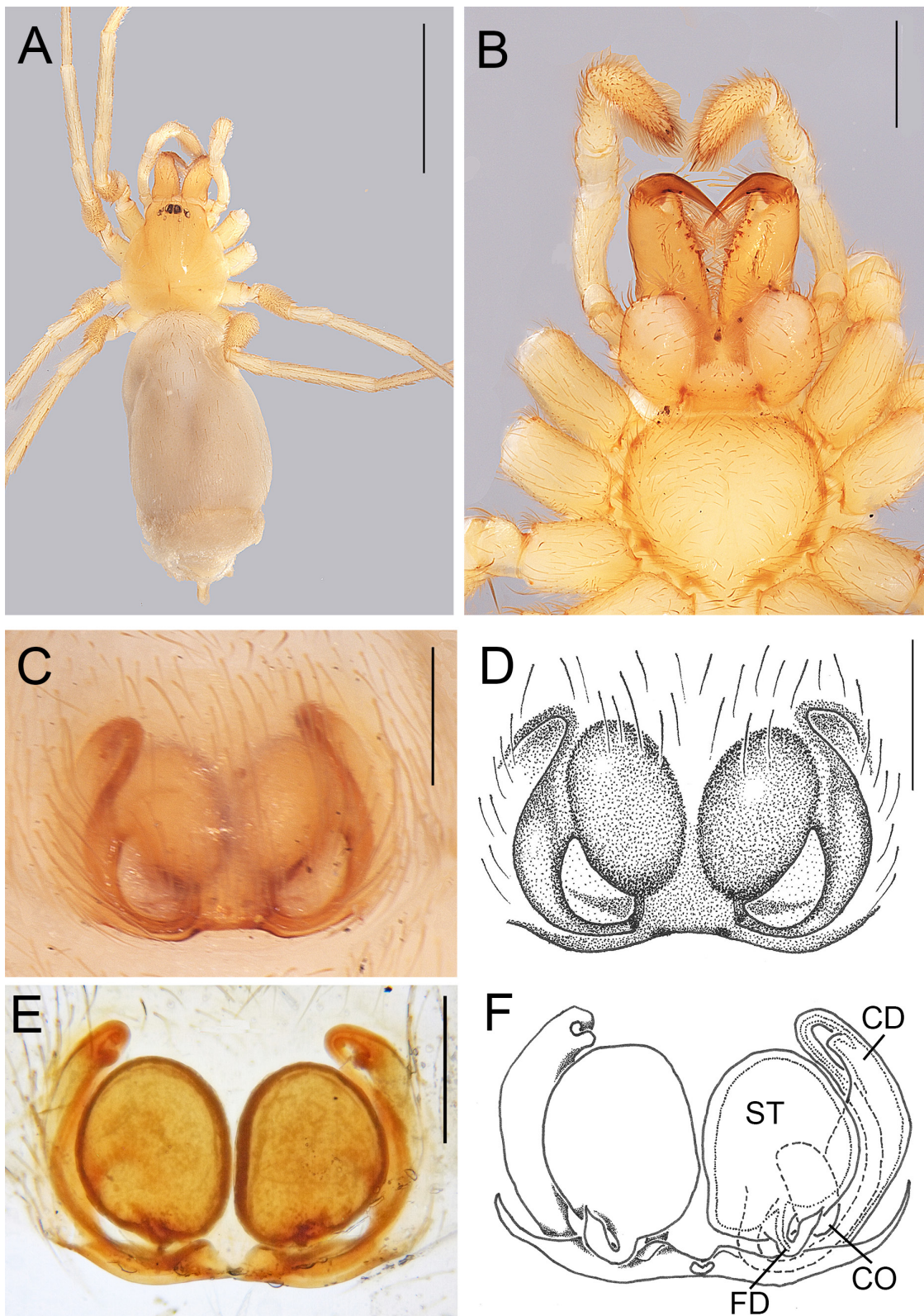


Fig. 24. *Andromma ghesquierei* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara.247536). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** ♂, left palp, ventral view. **E–F.** Same, retrolateral view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; ST=spermatheca. Scale bars: A–B = 1 mm; C–F = 0.2 mm.

LEG I MEASUREMENTS. Fe: 1.07, P: 0.43, T: 0.85, Mt: 0.78, t: 0.64; total: 3.77.

LEG FORMULA. 4123.

MALE PALP (Fig. 24C–F). RTA subcircular, provided with thin prong pointing forward, VTA subtriangular with rounded corners, both in retrolateral and ventral views; tegulum with sperm duct long and complex with wide basal part clearly visible in ventral view; embolus with thick base, originating in centre of posterior margin of tegulum, curved inward, ending in slender tip slightly curved antero-ventrally, near anterior margin of cymbial concavity. Conductor close to distal tip of embolus, subrectangular with a prolateral, forward projecting finger-like appendage.

Female (Paratype BE_RMCA_ARA.Ara 22957; Fig. 25)

MEASUREMENTS. Total length 3.69. Carapace length 1.56, width 0.99, height 0.71.

COLOUR (Fig. 25A–B). Carapace and chelicerae pale yellowish orange, legs pale yellow, sternum yellow with pale brown precoxal triangles.

PROSOMA. Fovea pronounced, length 0.28, anterior end 0.71 from PME. MOQ length 0.25, anterior width 0.25, posterior width 0.26. AER straight from above, width 0.40, PER procurved from above, width 0.45. AME circular, remainder oval; AME 0.10, ALE and PLE 0.05, PME 0.02; AME–AME: 0.05, AME–ALE: 0.03, ALE–PLE: touching, PME–PME: 0.16. Clypeus 0.07. Chelicerae with three teeth. Chilum absent. Sternum 0.92 long, 0.78 wide.

LEGS: Tarsi slightly widened towards extremity. Spination: all femora with one dorsal spine; T I v 2-2-2-2; Mt I v 2-2-2-2; T II v 2-2-2-2; Mt II v 2-2-2-2; T III v 2-2-2-2; Mt III v 2-2-2-2; T IV pl 1 v 1; Mt IV rl 1 v 1-2.

LEG MEASUREMENTS.

	Fe	P	T	Mt	t	total
I	1.47	0.49	1.33	1.33	0.98	5.60
II	1.40	0.49	1.05	0.77	0.70	4.41
III	1.12	0.49	0.91	0.98	0.84	4.34
IV	1.47	0.56	1.26	1.47	0.98	5.74

LEG FORMULA. 4123.

EPIGYNE (Fig. 25C–F). Roughly rectangular, slightly wider than long, with crescent-shaped copulatory openings in the posterior half. Large broadly oval spermathecae and copulatory ducts visible in transparency. Fertilisation duct short, oriented posteriorly. Sickle-shaped sclerites procurved.

Distribution

Known from the Eastern D.R. Congo and the Kivu Province (Fig. 40).

Remark

It would be surprising that the species occurs in the eastern lowland of Congo as well as in the western Kivu Province. The specimens from Kivu may be mislabeled.

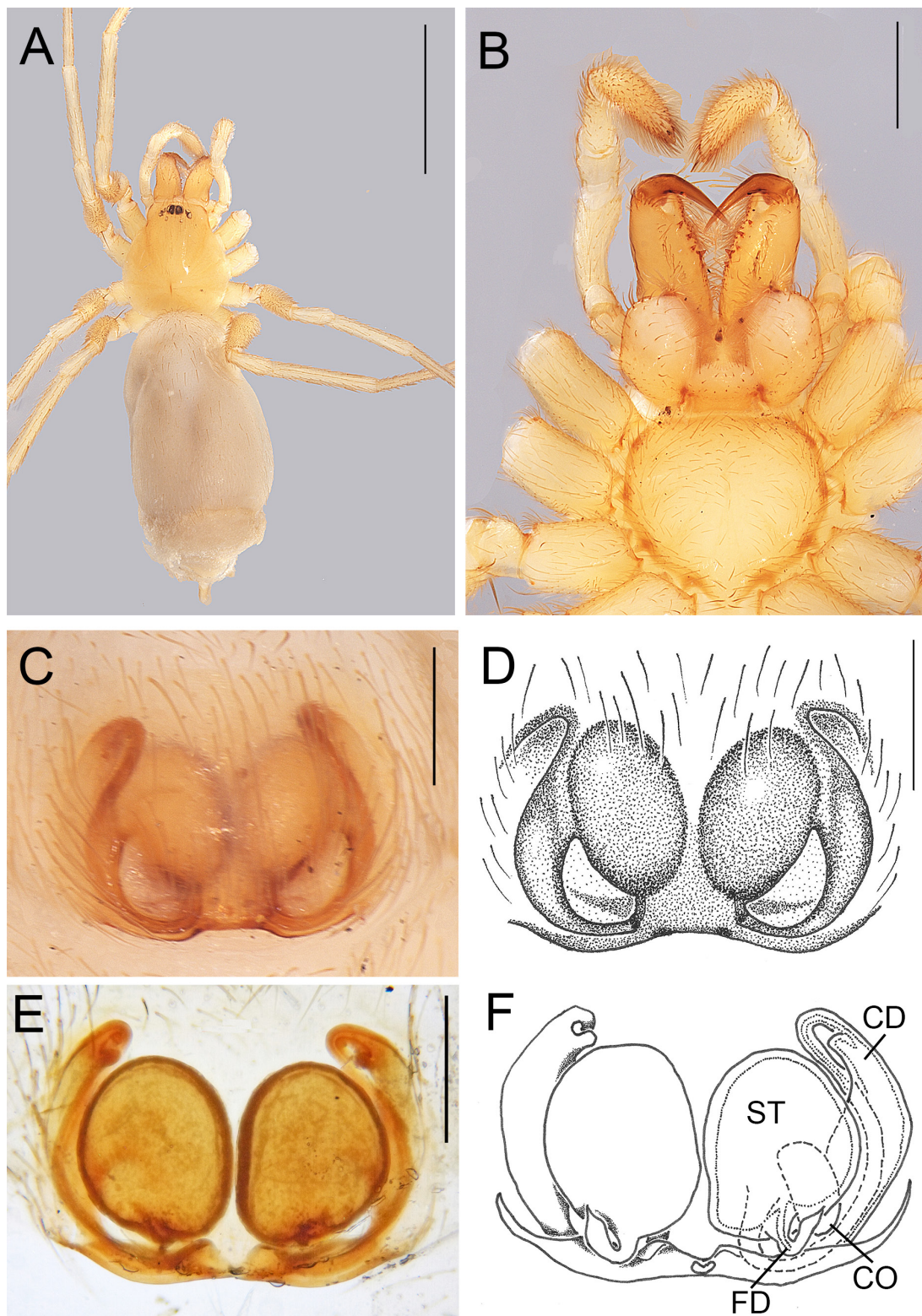


Fig. 25. *Andromma ghesquierei* sp. nov., ♀, paratypes. **A–B.** BE_RMCA_ARA.Ara 84109. **C, E.** BE_RMCA_ARA.Ara 177091. **D, F.** BE_RMCA_ARA.Ara 22878. **A.** Habitus, dorsal view. **B.** Cephalothorax, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; ST=spermatheca. Scale bars: A–B=1 mm; C–E=0.2 mm.

Andromma heligmos sp. nov.

[urn:lsid:zoobank.org:act:71E0CD92-54DD-421E-811C-C2C2CB141B96](https://doi.org/10.21203/rs.3.rs-1111111/v1)

Figs 26, 40

Diagnosis

The female of *Andromma heligmos* sp. nov. is characterized by the epigyne with copulatory openings with posterior margin delimited by an obliquely sinuous sclerotised margin; the copulatory duct is unusual by its strongly curved course and the poorly delimited spermatheca.

Etymology

The species name is a noun in apposition from the Greek ‘έλιγμός’, meaning ‘detour’, as the copulatory duct makes a large detour before entering the spermatheca (Fig. 26E–F).

Type material

Holotype

D.R. CONGO • ♀; N-Kivu Province, Visiki, Forêt de Visiki; 0°03' N, 29°15' E; 27 Dec. 1971; M. Lejeune leg.; BE_RMCA_ARA.Ara 140917.

Description

Female (holotype, Fig. 26)

MEASUREMENTS. Total length 6.0. Carapace length 2.27, width 1.99, height 0.920.

COLOUR (Fig. 26A–B). Cephalothorax entirely yellowish orange; carapace with faint radiating striae; abdomen including spinnerets cream.

PROSOMA. Fovea faint, length 0.50, anterior end 1.35 from PME. MOQ length 0.30, anterior width 0.34. AER straight from above, width 0.34. AME circular, other eyes oval; AME 0.15, ALE 0.10, PME 0.08, PLE 0.10; AME–AME: 0.05, AME–ALE: 0.07, PME–PME: 0.21. Clypeus vertical, 0.08, with seven long setae. Chilum absent. Chelicerae: promargin with three teeth of equal size, and two tiny teeth at the base of the fang. Sternum 1.21 long and as wide.

LEG SPINATION. All femora with one dorsal spine, F I pl 1.

LEG I MEASUREMENTS. Fe: 2.50, P: 0.78, T: 2.27, Mt: 2.06, t: 1.49; total: 9.10.

LEG FORMULA. 4123.

PALP. Female palpal tarsus curved, with sparse scopula.

EPIGYNE (Fig. 26C–F). Roughly trapezoidal area; copulatory openings with posterior margin delimited by an obliquely sinuous sclerotised margin; copulatory ducts wide, with internal spikes, first running forward and then backwards, ending poorly delimited piriform spermatheca with posteriorly oriented sickle-shaped sclerites. Fertilisation duct indistinct.

Male

Unknown.

Distribution

Known only from the type locality in D.R. Congo (Fig. 40).

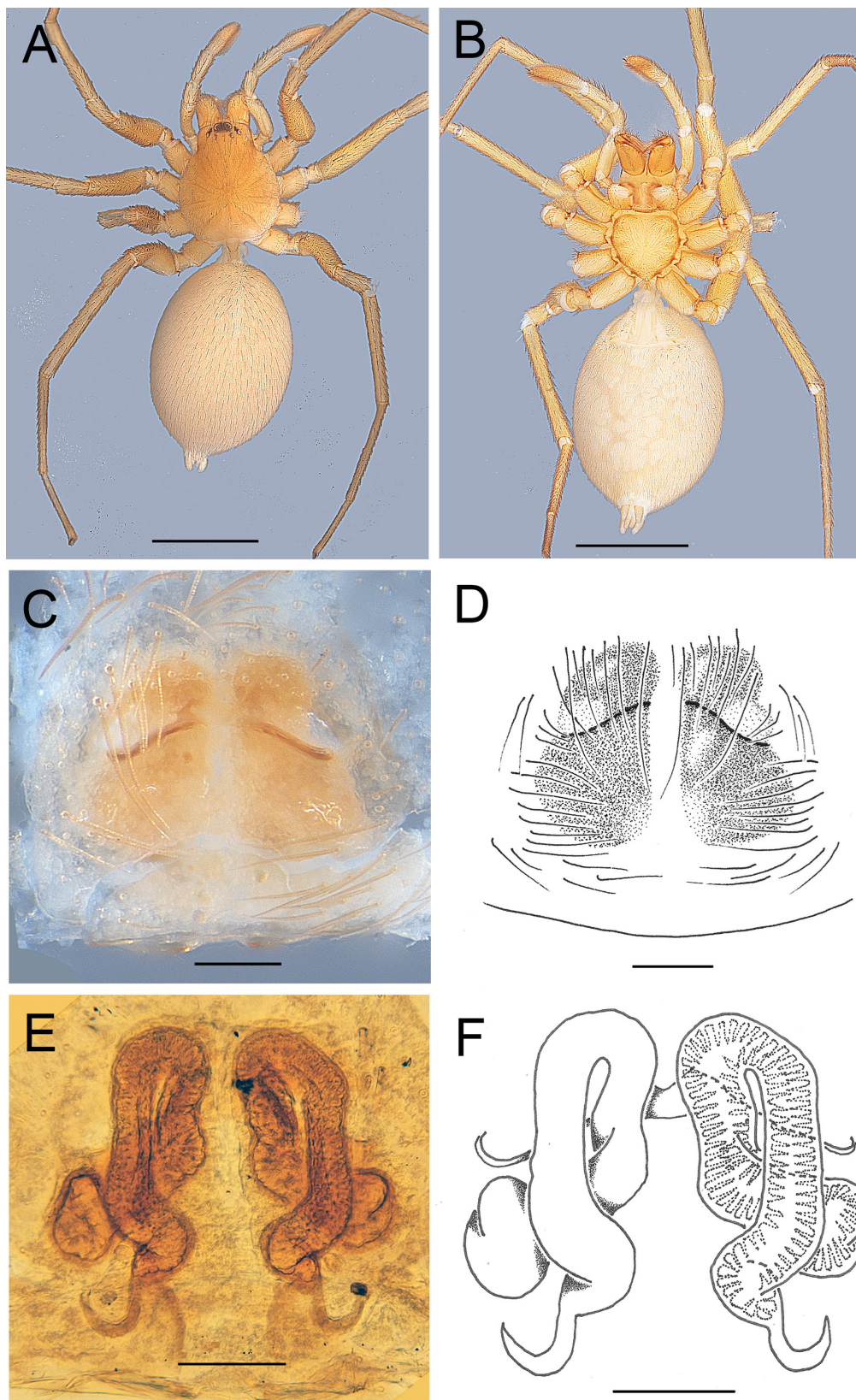


Fig. 26. *Andromma heligmos* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 140917). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=2 mm; C–F=0.1 mm.

Andromma helix sp. nov.

urn:lsid:zoobank.org:act:702F4F0C-FD47-444F-8114-2867A027CEAF

Figs 27, 39

Diagnosis

The female of *Andromma helix* sp. nov. is characterized by the epigyne with small transversely oval copulatory openings with helicoidal copulatory ducts visible in transparency.

Etymology

The species name is a noun in apposition, referring to the shape of the copulatory ducts which are helicoidally wound (Fig. 27E–F).

Type material

Holotype

IVORY COAST • ♀; Kossou; 5°27' N, 7°00' W; 18 Feb. 1975; R. Jocqué leg.; savannah, pitfalls; BE_RMCA_ARA.Ara 152957.

Description

Female (holotype, Fig. 27)

MEASUREMENTS. Total length 2.98. Carapace length 1.49, width 1.28, height 0.50.

COLOUR (Fig. 27A–B): cephalothorax entirely yellowish orange, legs yellow, tarsi and metatarsus slightly darker orange; abdomen including spinnerets cream.

PROSOMA. Fovea pronounced, length 0.29, anterior end 0.65 from PME. MOQ length 0.18, anterior width 0.23. AER straight from above, width 0.32. All eyes circular, PLE not discernible as if fused with ALE; AME 0.08, ALE 0.10, PME 0.02; AME–AME: 0.07, AME–ALE: 0.05, PME–PME: 0.16. Clypeus vertical, 0.08, Chilum absent. Chelicerae with dorsal and ventral longitudinal groups of long setae. Sternum 1.0 long and as wide.

LEG SPINATION (legs II lost). All femora with one dorsal spine; T I v 2-2-2; Mt I v 2-2; T III pl 1 rl 1 v 1-2-2; Mt III v 2-2; T IV pl 1 rl 1 v 2-2; Mt IV v 2-2.

LEG I MEASUREMENTS. Fe: 1.07, P: 0.50, T: 0.92, Mt:0.78, t: 0.57; total: 3.84.

PALP. Female palpal tarsus curved, with sparse scopula.

EPIGYNE (Fig. 27C–F). Roughly rectangular area, wider than long, with widely separated, transversely oval copulatory openings; helicoidal copulatory ducts visible in transparency. Copulatory openings near posterior margin with atrium; copulatory ducts first running forward, making five rather loose helicoidal coils, then becoming tightly coiled and running in retrolateral direction, ending in large globular spermathecae; fertilisation ducts short, directed backward.

Male

Unknown.

Distribution

Known only from the type locality in D.R. Congo (Fig. 39).

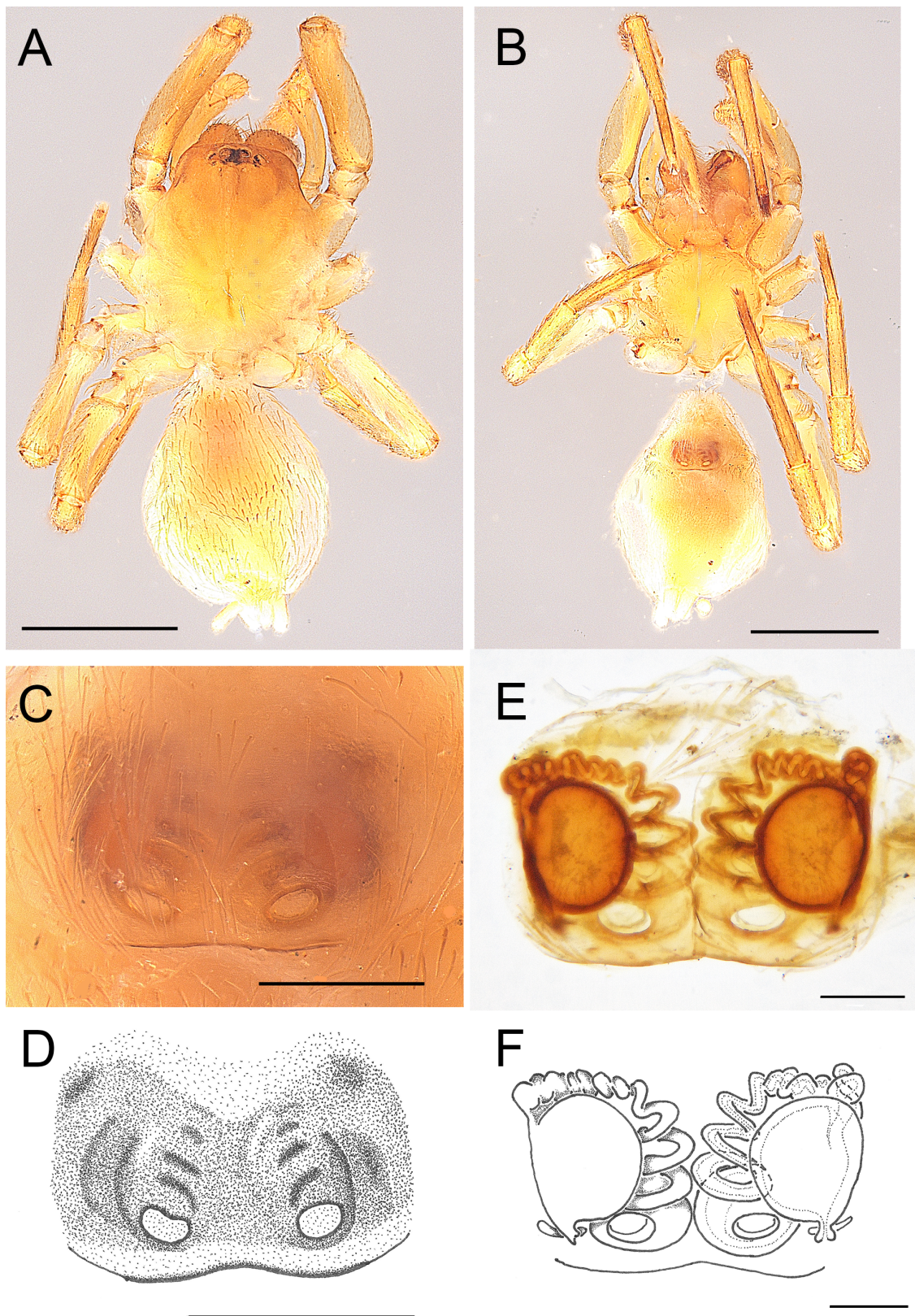


Fig. 27. *Andromma helix* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 152957). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

Andromma juakalyi sp. nov.

urn:lsid:zoobank.org:act:C64027A2-307F-460E-8217-F4EBEF966E07

Figs 28, 40

Diagnosis

The male of *Andromma juakalyi* sp. nov. is small, pale and characterized by the details of the tibial apophyses: the RTA is broad at the base, pointing forward and tapered towards the thin bifid tip; the VTA is T-shaped in lateral view and axe-shaped in ventral view.

Etymology

The species name is a patronym in honour of Jean-Louis Juakaly, who collected the type specimen. He introduced arachnology at the university of Kisangani and is the first arachnologist of D.R. Congo.

Type material

Holotype

D.R. CONGO • ♂; Tshopo Province, Kisangani, Masako Forest Reserve; 0°36' N, 25°13' E; 25 Mar. 2003; J.L. Juakaly leg.; BE_RMCA_ARA.Ara 247539.

Paratype

D.R. CONGO • 1 ♂; same collection data as for holotype; BE_RMCA_ARA.Ara 216029.

Description

Male (holotype, Fig. 28)

MEASUREMENTS. Total length 2.51. Carapace length 1.35, width 1.07, height 0.57.

COLOUR (Fig. 28A–B). Carapace pale yellow with slight orange tinge in cephalic area; chelicerae pale orange; endites, labium, and sternum pale yellow; legs white; abdomen including spinnerets uniform cream.

PROSOMA. Fovea faint, length 0.36, anterior end 0.71 from PME. MOQ length 0.21, anterior width 0.23, posterior width 0.21: AER straight from above, width 0.36, PER procurved from above, width 0.43. All eyes circular except PME oval; AME 0.10, ALE 0.07, PLE 0.05, PME 0.05; AME–AME: 0.03, AME–ALE: 0.02, ALE–PLE: touching, PME–PME: 0.12, PLE–PME: 0.08. Clypeus vertical, 0.10, without long setae. Sternum 0.85 long, 0.78 wide. Chilum absent.

LEG SUPINATION. Femora with one dorsal spine; T I and T IV lost; T I pl 1 v 2-2-2; Mt II 2-1-2; T III pl 1 v2.

LEG I MEASUREMENTS. Fe: 1.78, P: 0.71, T: 1.49, Mt:1.35, t: 0.99; total: 6.32.

MALE PALP (Fig. 28C–F). RTA broad at base, pointing forward and tapered towards thin bifid tip; VTA T-shaped in lateral view, axe-shaped in ventral view; embolus originates at posterior rim of tegulum, runs along prolateral side and curves outward, to slender tip, accompanied by transparent, membranous conductor lying distoretrolaterally; visible part of sperm duct S-shaped.

Female

Unknown.

Variation

The somatic characters of the male paratype are quite different from those of the holotype. The specimen is larger: total length 3.83; carapace length 1.56, width 1.49. The colour is much more orange. Spines on

the legs are more numerous: all femora with one dorsal spine; T I v 2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2; Mt II v 2-2-2; T III v 2-2; Mt III v 2-2; T IV v 2-2; Mt IV v 2-2.

Distribution

Known only from the type locality in D.R. Congo (Fig. 40).

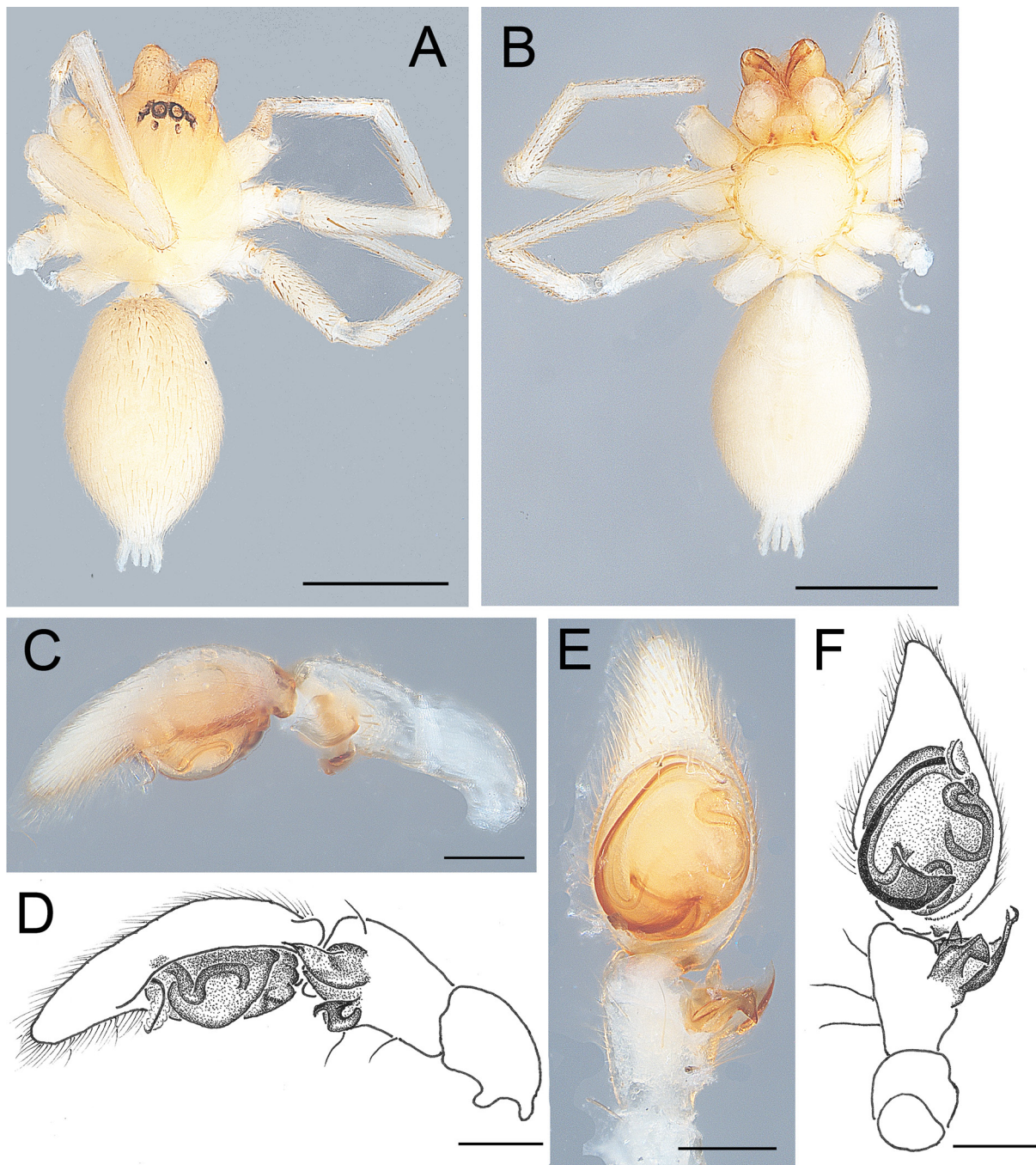


Fig. 28. *Andromma juakalyi* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 247539). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** ♂, left palp, retrolateral view. **E–F.** Same, ventral view. Scale bars: A–B=1 mm; C–F=0.2 mm.

Andromma katangensis sp. nov.

[urn:lsid:zoobank.org:act:11F34E58-37C8-4E65-B3AE-6773A6EB2847](https://zoobank.org/urn:lsid:zoobank.org:act:11F34E58-37C8-4E65-B3AE-6773A6EB2847)

Figs 29, 40

Diagnosis

The female of *Andromma katangensis* sp. nov. is characterized by the numerous leg spines with several lateral ones on tibia and metatarsus, and by the epigyne with small widely separated copulatory openings.

Etymology

The species name is an adjective, referring to the type location.

Type material

Holotype

D.R. CONGO • ♀; Katanga, Jadotville, Kasompi; 10°59' S, 25°53' E; Oct. 1956; Z. Bacq leg.; termitière géante, Mission Bacq; BE_RMCA_ARA.Ara 90890.

Description

Female (holotype, Fig. 29)

MEASUREMENTS. Total length 4.18. Carapace length 2.57, width 2.20, height 0.71.

COLOUR (Fig. 29A–B). Carapace orange, gradually paler towards posterior margin; AME rim dark; fovea reddish; chelicerae orange; endites yellowish orange, paler along median and anterior margins; labium orange, paler in distal half; sternum orange with brownish precoxal triangles; legs yellowish orange; abdomen including spinnerets cream.

PROSOMA. Fovea pronounced, length 0.36, anterior end 1.21 from PME. MOQ length 0.26, anterior width 0.33, posterior width 0.34. AER straight from above, width 0.56, PER procurved from above, width 0.76. All eyes circular; AME 0.12, ALE 0.10, PLE 0.08, PME 0.07; AME–AME: 0.10, AME–ALE: 0.05, ALE–PLE: 0.02, PME–PME: 0.34. Clypeus vertical, 0.12, with seven long setae. Chelicerae with dorsal and ventral longitudinal groups of long setae; anterior margin with five teeth, three in a row, the most proximal the smallest and two tiny ones somewhat in a row slightly more inward. Chilum poorly developed, two sclerites, each 0.07 high, 0.15 wide. Sternum 1.56 long, 1.49 wide.

LEG SPINATION. All femora with one dorsal spine; T I pl 1-1 rl 1-1 v 2-2-2-2-2; Mt I rl 1 v 2-2-2; T II pl 1-1 rl 1-1 v 2-2-2-2; Mt II pl 1 rl 1 v 2-2-2; T III pl 1-1 rl 1-1 v 2-2-2-2; Mt III pl 1-1 rl 1-1 v 2-2; T IV pl 1-1 rl 1-1 v 2-1-2; Mt IV pl 1-1 rl 1 v 2-2.

LEG I MEASUREMENTS. Fe: 2.27, P: 0.85, T: 1.92, Mt: 1.63, t: 1.07; total: 7.74.

PALP. Female palpal tarsus curved, with sparse scopula.

EPIGYNE (Fig. 29C–F). Roughly rectangular area, wider than long, with widely separated, small copulatory openings. Copulatory ducts with six tightly wound coils, ending in well-delimited, globular spermathecae; fertilisation ducts short, pointing in posterior direction. Sickle-shaped sclerites long and curved, also pointing backwards.

Male

Unknown.

Distribution

Known only from the type locality in D.R. Congo (Fig. 40). The species is termitophilous.

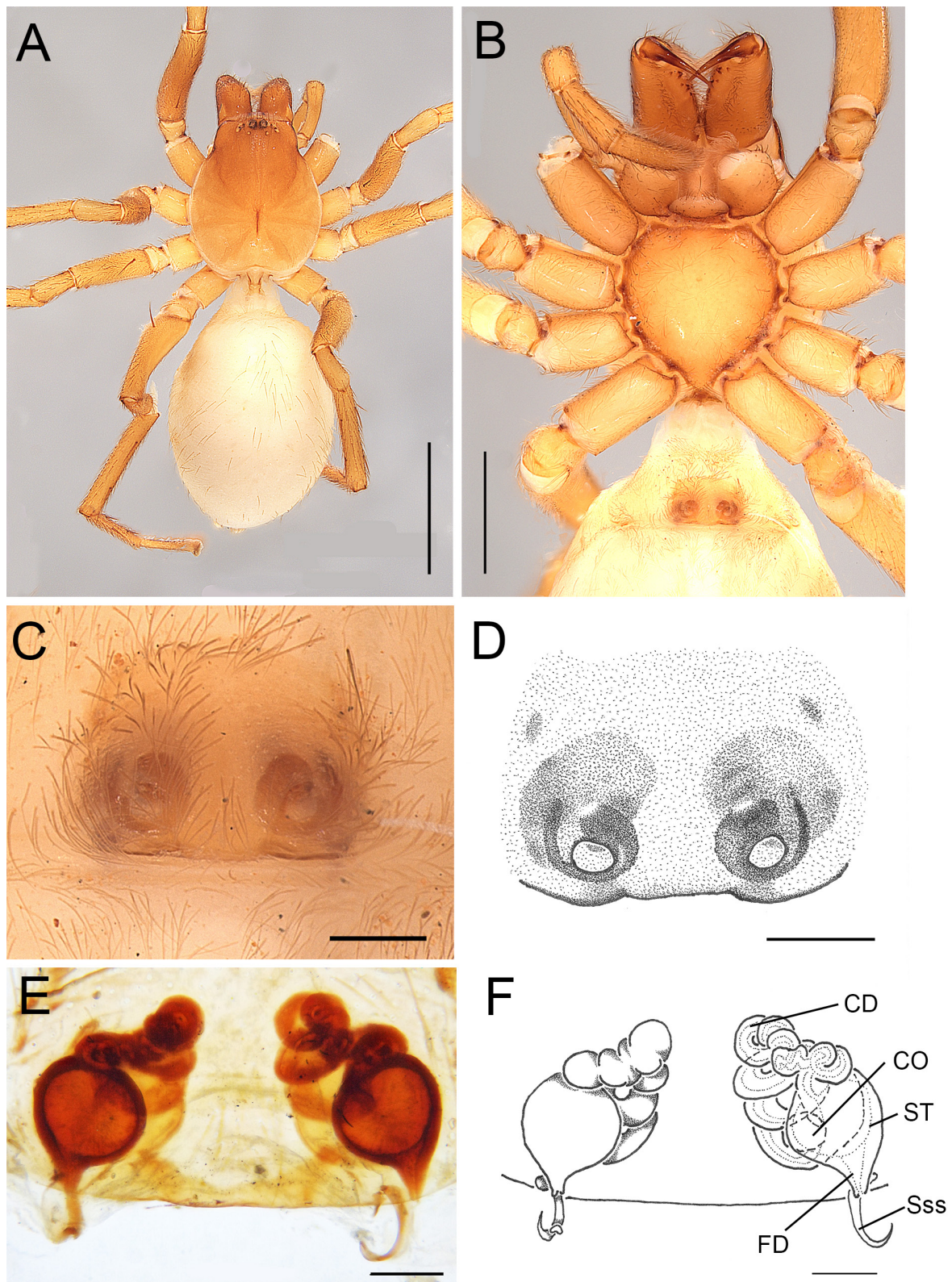


Fig. 29. *Andromma katangensis* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 90890). **A.** Habitus, dorsal view. **B.** Cephalothorax, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; Sss=sickle shaped sclerites; ST=spermatheca. Scale bars: A=2 mm; B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

Andromma ophiophagum sp. nov.

[urn:lsid:zoobank.org:act:09CBE9C3-5143-4D0E-9197-B86CC8F8ABE0](https://doi.org/10.21203/rs.3.rs-1144444/v1)

Figs 30, 40

Diagnosis

The female of *Andromma ophiophagum* sp. nov. is characterized by the epigyne with transversely reniform copulatory openings surrounded by a sclerotised area and by the long copulatory ducts.

Etymology

The species name *ophiophagum* is an adjective referring to the king cobra, *Ophiophagus hannah* Cantor, 1836, because the spermatheca and the insemination duct together resemble a king cobra coming out of a basket.

Type material

Holotype

D.R. CONGO • ♀; North Kivu, Bulemba, Kivu, vallée de Bulemba, plaine de la Ruindi; 0°47' S, 29°47' E; 1100 m a.s.l.; 17 May 1972; M. Lejeune leg.; beating; RMCA_ARA_Ara 144686.

Paratypes

D.R. CONGO • 1 ♀; same collection data as for holotype • 1 ♀; North Kivu, Kaisola, Vallée de Kaisola, plaine de la Ruindi; 0°47' N, 29°47' E; 1100 m a.s.l.; 3 Jul. 1972; M. Lejeune; beating; RMCA_ARA_Ara 144352.

Other material

BURUNDI • 1 ♀; Ruzizi, Plaine de la Ruzizi; 3°21' S, 29°17' E; Feb. 1967; S. Ndani leg.; RMCA_ARA_Ara 131489.

Description

Female (holotype, Fig. 30)

MEASUREMENTS. Total length 5.75. Carapace length 2.13, width 1.92, height 0.78.

COLOUR (Fig. 30A–B). Carapace yellowish orange, paler towards the back; fovea reddish; chelicerae orange; endites yellowish orange, paler along median and anterior margins; labium orange, paler in distal half; sternum pale yellow with brownish margins and brown precoxal triangles; legs orange; abdomen dorsum pale grey, venter and spinnerets pale cream.

PROSOMA. Fovea: length 0.36, anterior end 1.14 from PME. MOQ length 0.30, anterior width 0.25, posterior width 0.30, AER straight from above, width 0.50, PER procurved from above, width 0.54. All eyes circular; AME 0.12, ALE 0.08, PLE 0.07, PME 0.05; AME–AME: 0.03, AME–ALE: touching, ALE–PLE: 0.16, PME–PME: 0.20. Clypeus vertical, 0.16, with four long setae. Chilum two poorly delimited sclerites, each 0.7 high, 0.16 wide. Sternum 1.42 long, 1.35 wide. Chelicerae: promargin with three teeth, the proximal one small; retromargin with one tiny tooth near fang base.

LEG I MEASUREMENTS. F: 2.13, P: 0.85, T: 1.70, Mt: 1.56, t: 0.99; total: 7.23.

LEG SPINATION. All femora with one dorsal spine; T I v 2-2-2-2; T II v 2-2-2-2; T III rl 1 v1-2; T IV pl 1 v 1-2; Mt I v 2-2-2; Mt II v 1-2; Mt III v 2-2; Mt IV v 1-2.

PALP. Female palpal tarsus slightly curved with well-developed scopula.

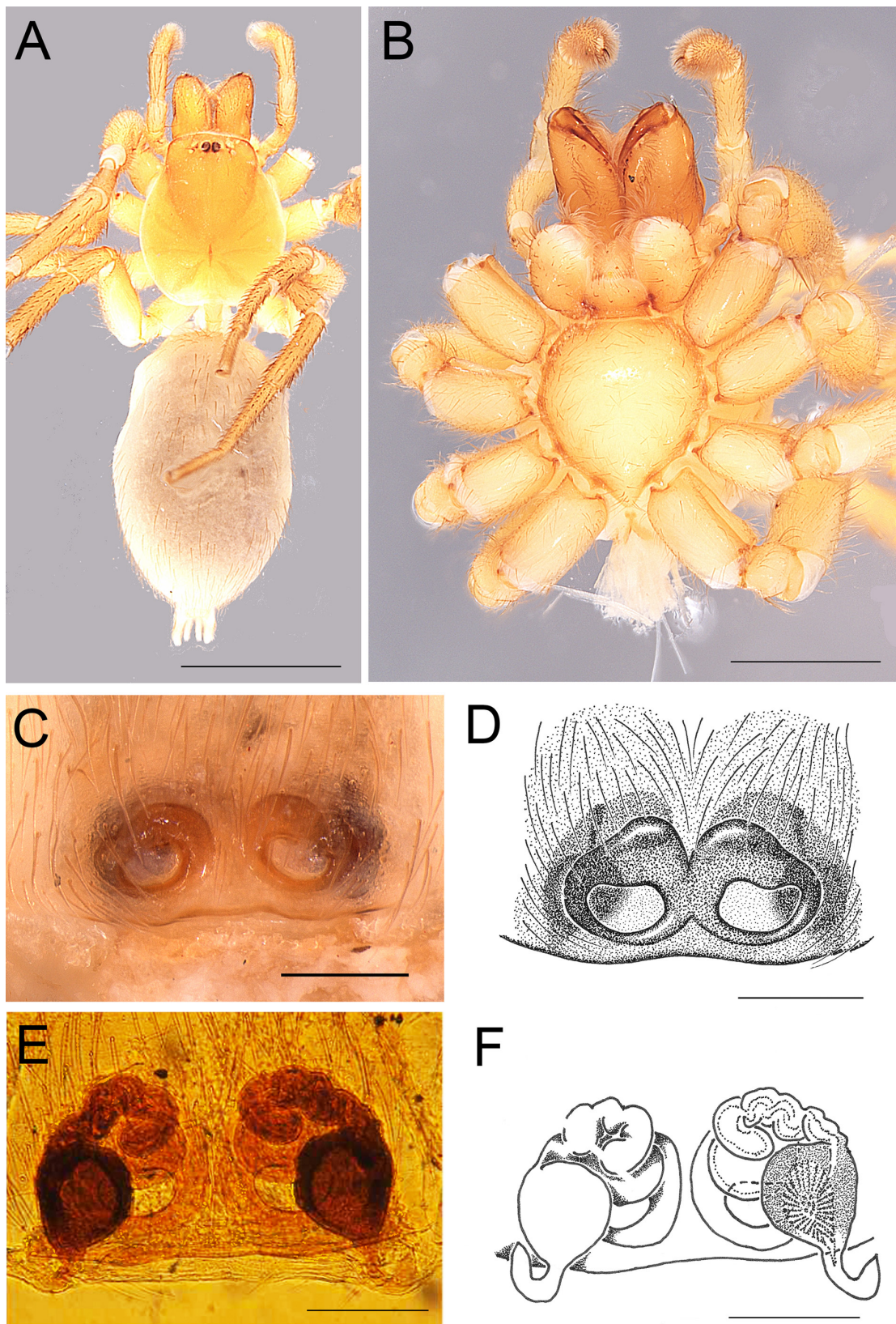


Fig. 30. *Andromma ophiophagum* sp. nov., ♀, holotype (RMCA_ARA_Ara 144686). **A.** Habitus, dorsal view. **B.** Cephalothorax, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A=2 mm; B=1 mm; C–F=0.2 mm.

EPIGYNE (Fig. 30C–F). Roughly rectangular area, wider than long, with posterior margin slightly sinuous, central part concave; widely separated transverse reniform copulatory openings surrounded by sclerotised area. Copulatory ducts with three loose coils followed by a tightly coiled stretch running in retrolateral direction and ending in widely separated piriform spermathecae.

Male

Unknown.

Distribution

Known from the localities in eastern D.R. Congo (Fig. 40).

Andromma prosopion sp. nov.

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Figs 31, 39

Diagnosis

The female of *Andromma prosopion* sp. nov. is characterized by the epigyne with large obliquely oval copulatory openings separated by their long axis.

Etymology

The species name is a noun in apposition from the Greek ‘προσωπειον’, meaning ‘mask’, because the epigyne resembles a mask (Fig. 31C–D).

Type material

Holotype

CAMEROON • ♀; Faro Game Reserve; 8°58' N, 13°42' E; 21 Apr. 2007; R. Jocqué, K. Loosveldt, L. Baert and M. Alderweireldt leg.; wooded savannah, termite mound; BE_RMCA_ARA.Ara 221315.

Paratype

CAMEROON • 1 ♀; Hossere Vokre, western slope; 8°02' N, 12°49' E; 270 m a.s.l.; 22 Apr. 1983; R. Bosmans and J. Van Stalle leg.; Faro River, degraded savannah; BE_RMCA_ARA_Ara 162783.

Description

Female (holotype, Fig. 31)

MEASUREMENTS. Total length 4.76. Carapace length 2.13, width 1.78, height 0.92.

COLOUR (Fig. 31A–B). Carapace yellowish orange, gradually paler towards posterior margin; legs and palp yellowish orange; fovea reddish; chelicerae orange; endites yellowish orange, paler along median and anterior margins; labium orange, paler in distal half; sternum orange with dark brown precoxal triangles; abdomen uniform grey with pale ring around yellow spinnerets.

PROSOMA. Fovea pronounced, length 0.36, anterior end 1.14 from PME. MOQ length 0.25, anterior width 0.28, posterior width 0.31. AER straight from above, width 0.51, PER procurved from above, width 0.57. All eyes circular; AME 0.12, ALE 0.08, PLE 0.07, PME 0.05; AME–AME: 0.02, AME–ALE: 0.03, ALE–PLE: touching, PME–PME: 0.21. Clypeus vertical, 0.15, with four long setae. Chelicerae with few setae. Sternum 1.35 long, 1.28 wide.

LEG SPINATION. All femora with one dorsal spine, F I pl; T I v 2-2-2-2-2; Mt I v 2-2-2; T II v 2-2-2-2-2; T III pl 1 v 1-2; T IV pl 1 rl 1 v 2; Mt IV pl 1 rl 1 v 2-2.

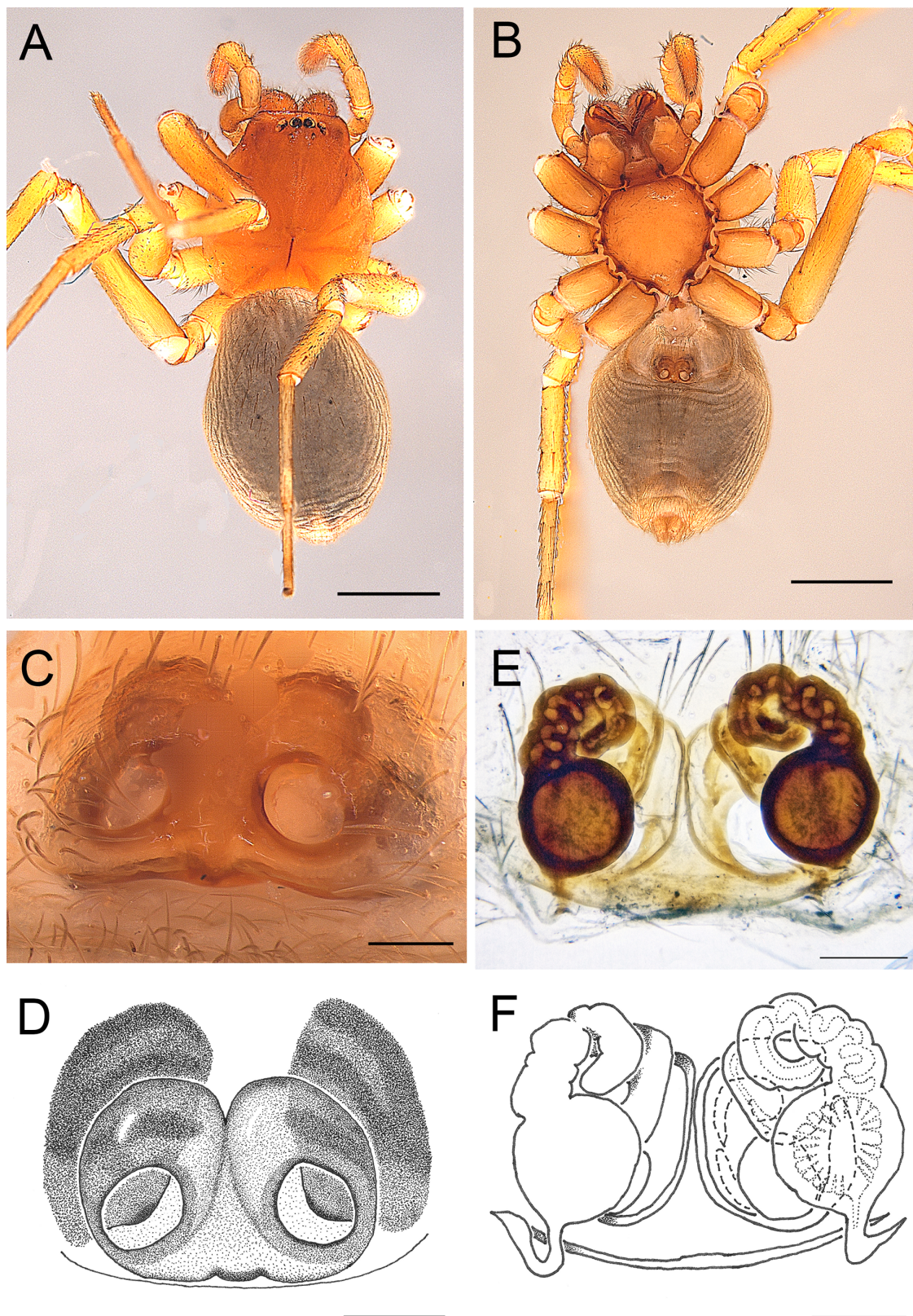


Fig. 31. *Andromma prosopion* sp. nov., ♀, holotype (BE_RMCA_ARA.Ara 221315). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Scale bars: A–B=1 mm; C–F=0.1 mm.

LEG I MEASUREMENTS. Fe: 2.06, P: 0.71, T: 1.63, Mt: 1.56, t: 0.99; total: 6.95.

PALP. Female palpal tarsus curved, with scopula.

EPIGYNE (Fig. 31C–F). Roughly rectangular area, wider than long, with posterior rim sinuous with small, triangular, central protrusion; large obliquely oval copulatory openings separated by their long axis. Copulatory ducts tightly consisting of three loose coils followed by a tightly wound stretch running in posterior direction, ending in well-delimited globular spermathecae; sickle-shaped sclerites ducts procurved. Fertilisation ducts posterior, short and indistinct.

Male

Unknown.

Distribution

Known only from the northern Cameroon (Fig. 39). The species is termitophilous.

Andromma raffrayi Simon, 1899

Figs 1B, 32–35, 40

Andromma raffrayi Simon, 1899: 180, figs A–C (description ♂♀).

Andromma raffrayi inhacorensis Lessert, 1936: 220, figs 13–14 (description ♂).

Andromma raffrayi inhacorensis Dippenaar-Schoeman *et al.* 2021: 7. **Syn. nov.**

Remark

Type material of *Andromma raffrayi inhacorensis* not seen.

Diagnosis

Males of *Andromma raffrayi* differ from all other males of *Andromma* by the palp with a VTA which is anvil-shaped in ventral view and a RTA consisting of two horns. The female is recognized by the epigyne with a sinuous posterior margin and oval copulatory openings separated by their long axis.



Fig. 32. *Andromma raffrayi* Simon, 1899. Original drawings and legend from Simon (1899).

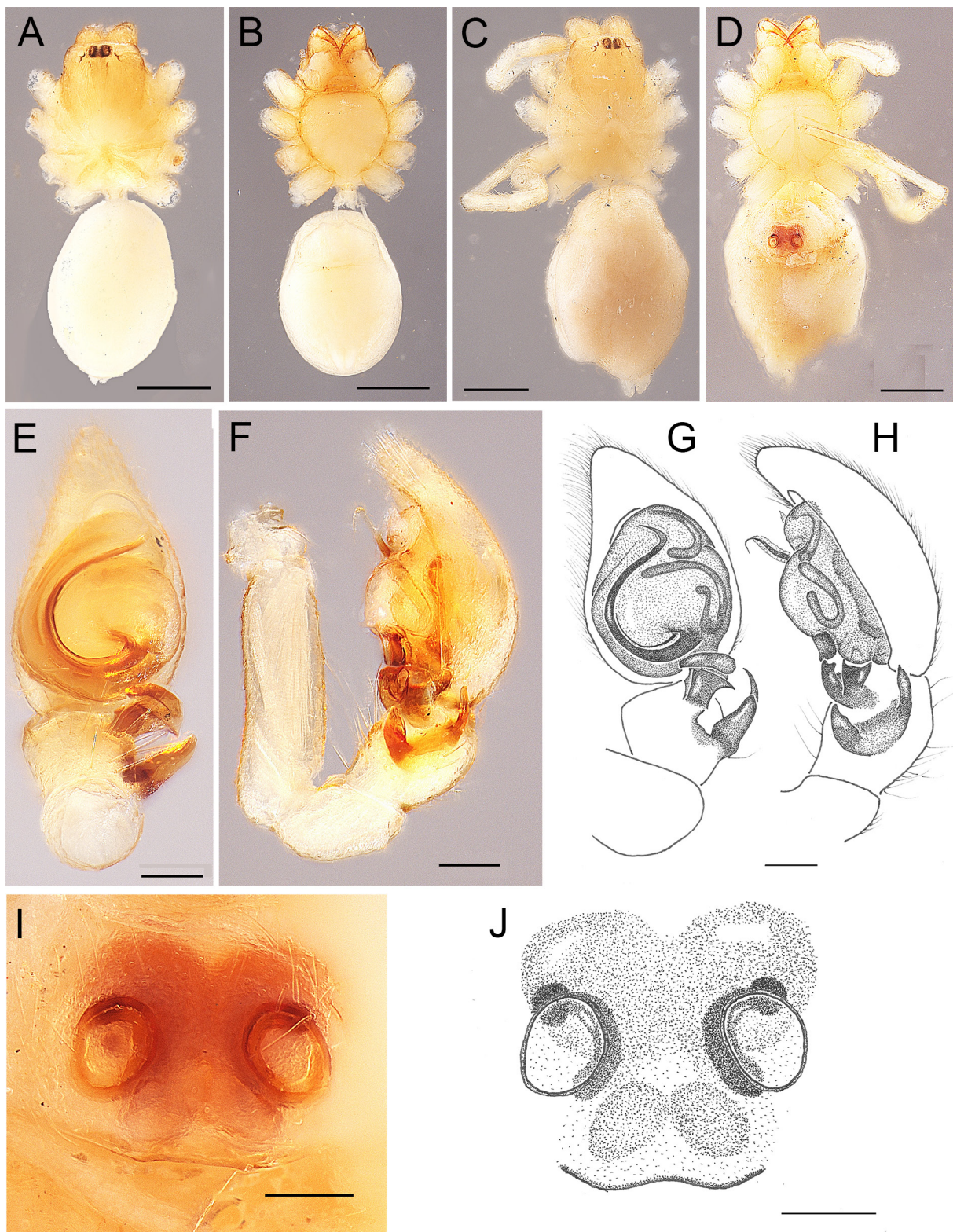


Fig. 33. *Andromma raffrayi* Simon, 1899. **A–B, E–H.** ♂, lectotype (MNHN AR1673). **C–D, I–J.** ♀, paralectotype (MNHN AR1673). **A, C.** Habitus, dorsal view. **B, D.** Same, ventral view. **E, G.** ♂, left palp, ventral view. **F, H.** Same, retrolateral view. **I–J.** Epigyne, ventral view. Scale bars: A–D=1 mm; E–J=0.1 mm.

Type material

Lectotype (here designated)

SOUTH AFRICA • ♂; Cape Good Hope; around 1897; A. Raffray leg.; MNHN AR1673. Collected deep within ant nests of *Plagiolepis* (= *Anoplolepis*) *fallax* (Mayr, 1865), together with a specimen of *Pentaplatarthrus paussoides* Westwood, 1833 (Carabidae).

Paralectotype

SOUTH AFRICA • 1 ♀; same collection data as for lectotype; MNHN AR1673.

Other material

NAMIBIA • 1 ♀; Sitwa near Choy, 10 km S of Kongola, camp of 'Water Affairs'; 17°50' S, 23°25' E; R. Jocqué leg.; by night in vicinity of ant's nest; BE_RMCA_ARA_Ara 168628.

SOUTH AFRICA • 1 ♂, 1 ♀; Ndumo Game Reserve, Mahemane-Mgagabuhleni Roads; 26°53' S, 32°12' E; 20 Jun. 2008; C. Haddad and F. Jordaan leg.; under logs in *Albizia* Durazz., 1772; savannah; BE_RMCA_ARA_Ara 220165.

Translation of original description

MF length 3 mm. Cephalothorax dull orange, laterally and posteriorly gradually fainter, smooth, oval and rather convex. In the middle rather densely and towards the margin more sparingly covered with black hairs. Eight eyes: anterior eyes closely spaced, AER slightly procurved, AME dark and round, more than four times the size of the pale ALE. All posterior eyes pale, PER strongly procurved, PME very small, closer to PLE than to each other. Median ocular quadrangle much wider than long and narrower anteriorly. Clypeus slightly slanting, larger than diameter of AME. Abdomen short and oval, convex, a pale brownish yellow, sparsely covered in short hairs. Spinnerets brownish yellow, the anterior ones somewhat tapering, narrowly spaced. Chelicerae brownish orange, rather smooth, strong, long and cylindrical, with a lengthy, strong fang. Cheliceral rims long and oblique, with three equidistant teeth on anterior rim, the one furthest from fang base smaller, and one small tooth close to fang base on posterior rim. Mouthparts brownish yellow. Sternum a pale brownish yellow, smooth and shiny. Legs rather robust, with rather short hairs, brownish orange, base of coxae and femora, as well as patellae, being paler. Tarsi of anterior legs longer than those of posterior legs, slightly shorter than metatarsi. Epigyne large, a bit wider than high, anterior and posterior end truncated, somewhat narrower posteriorly, dark reddish brown and smooth. On both sides an oval depression including a yellow-brown tubercle. Female palp yellow-brown, tibia cylindrical, somewhat longer than patella, tarsus flattened and slightly curved, longer and a bit thicker than tibia. Male palp brownish orange, darker at the end. Femur strong and slightly curved. Patella convex, tibia about as long as patella and a bit thicker. Tibia retrolaterally with two dark, pointed and subequal apophyses and a more or less ventral, ruddy and flattened apical apophysis with an abruptly narrowing tip and a deep, noticeable fold. Tarsus broadly oval, convex. Lives on the promontorium of Cape Good Hope. Original Latin text: Simon (1899: 180, fig. 32).

Additional description data

Male (BE_RMCA_ARA_Ara 220165, Figs 34A–B, 35A–B)

MEASUREMENTS. Total length 3.34. Carapace length 2.20, width 1.35, height 0.78.

COLOUR (Figs 33A–B, 34A–B). Carapace orange, gradually paler towards posterior margin, with dark area around AME, reddish fovea and dispersed darker setae pointing forward; chelicerae orange; endites and labium yellowish orange, pale along anterior margin; sternum yellow with thin dark brown margin; legs with pale yellow femora, remainder yellowish orange; abdomen cream with dispersed darker setae and thin orange transverse stripe at sperm pore.

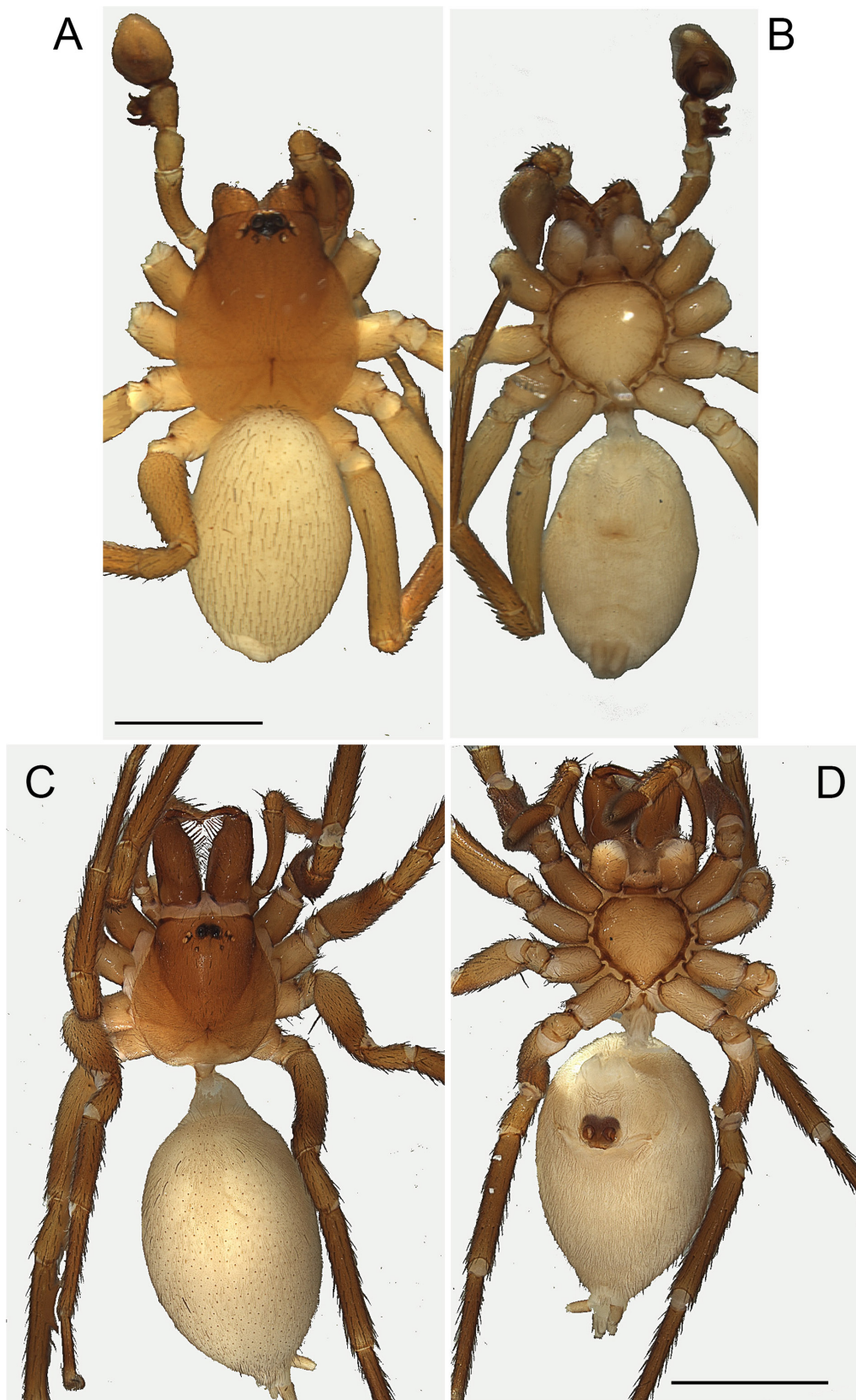


Fig. 34. *Andromma raffrayi* Simon, 1899 (both BE_RMCA_ARA_Ara 220165). **A–B.** ♂. **C–D.** ♀. **A,** **C.** Habitus, dorsal view. **B, D.** Habitus, ventral view. Scale bars: 1 mm.

PROSOMA. Fovea pronounced, length 0.28, anterior end 0.78 from PME. MOQ length 0.18, anterior width 0.25, posterior width 0.25, AER straight from above, width 0.38, PER procurved from above, width 0.44. AME circular, remainder oval; AME 0.12, ALE and PLE 0.04, PME 0.03. AME–AME: 0.03, AME–ALE: 0.02, ALE–PLE: touching, PME–PME: 0.15. Clypeus vertical, 0.10, with eight long setae. Chilum absent. Chelicerae with three promarginal teeth. Sternum 1.14 long, as wide.

LEG SPINATION. All femora with one dorsal spine.

LEG MEASUREMENTS.

	Fe	P	T	Mt	t	total
I				lost		
II	1.19	0.56	0.98	0.84	0.70	4.27
III	0.98	0.49	0.77	0.84	0.63	3.71
IV	0.91	0.49	1.05	1.19	0.70	4.34

MALE PALP (Figs 33E–H, 35A–B). VTA anvil-shaped, bifid, RTA a two-horned prong; embolus long, originating on posteromedial part of tegulum, curved along anterior cymbial margin, distal part strongly curved out and backward along membranous conductor positioned distomedially.

Female (BE_RMCA_ARA_Ara 220165, Figs 34–35)

MEASUREMENTS. Total length 3.34. Carapace length 2.20, width 1.35, height 0.62.

COLOUR (Fig. 34C–D). As in male. The female paralectotype (MNHN AR 1673) is strongly bleached (Fig. 33C–D).

PROSOMA. Fovea pronounced, length 0.36, anterior end 1.21 from PME. MOQ length 0.34, anterior width 0.33, posterior width 0.41, AER straight from above, width 0.59, PER procurved from above, width 0.71. AME circular, remainder oval; AME 0.12, ALE and PLE 0.07, PME 0.05; AME–AME: 0.10, AME–ALE: 0.07, ALE–PLE: touching, PME–PME: 0.30. Clypeus vertical, 0.12, with eight long setae. Chilum two triangular sclerites, each 0.03 high, 0.04 wide. Chelicerae with three teeth on promargin and one small teeth near fang base. Sternum 1.28 long, 1.42 wide.

LEG SPINATION. All femora with one dorsal spine. Preening brush on metatarsus III. Tarsi slightly widened towards tip.

LEG MEASUREMENTS.

	Fe	P	T	Mt	t	total
I	2.17	0.84	1.82	1.54	1.12	7.49
II	2.03	0.77	1.61	1.61	1.12	7.14
III	1.89	0.70	1.40	1.68	0.84	6.51
IV	2.24	0.70	1.82	2.03	0.91	7.70

LEG FORMULA. 4123.

EPIGYNE (Figs 33I–J, 35C–G). Roughly heart-shaped, with an oval copulatory opening on either side of the center, leading to the first stretch of the copulation duct which is kidney-shaped in transverse section (Fig. 35C); copulatory ducts voluminous, intricately wound, with poorly delimited small spermathecae. Fertilisation duct indistinct.

Distribution

South Africa, Namibia, Mozambique (Fig. 40). The species is myrmecophilous.

Note on synonymy

Comparing the illustrations of *Andromma raffrayi* in Simon (1989) with those of Lessert (1936) and Dippenaar *et al.* (2021: 7) leads to the conclusion that there is no objective reason to consider *A. raffrayi inhacorensis* as a valid subspecies.

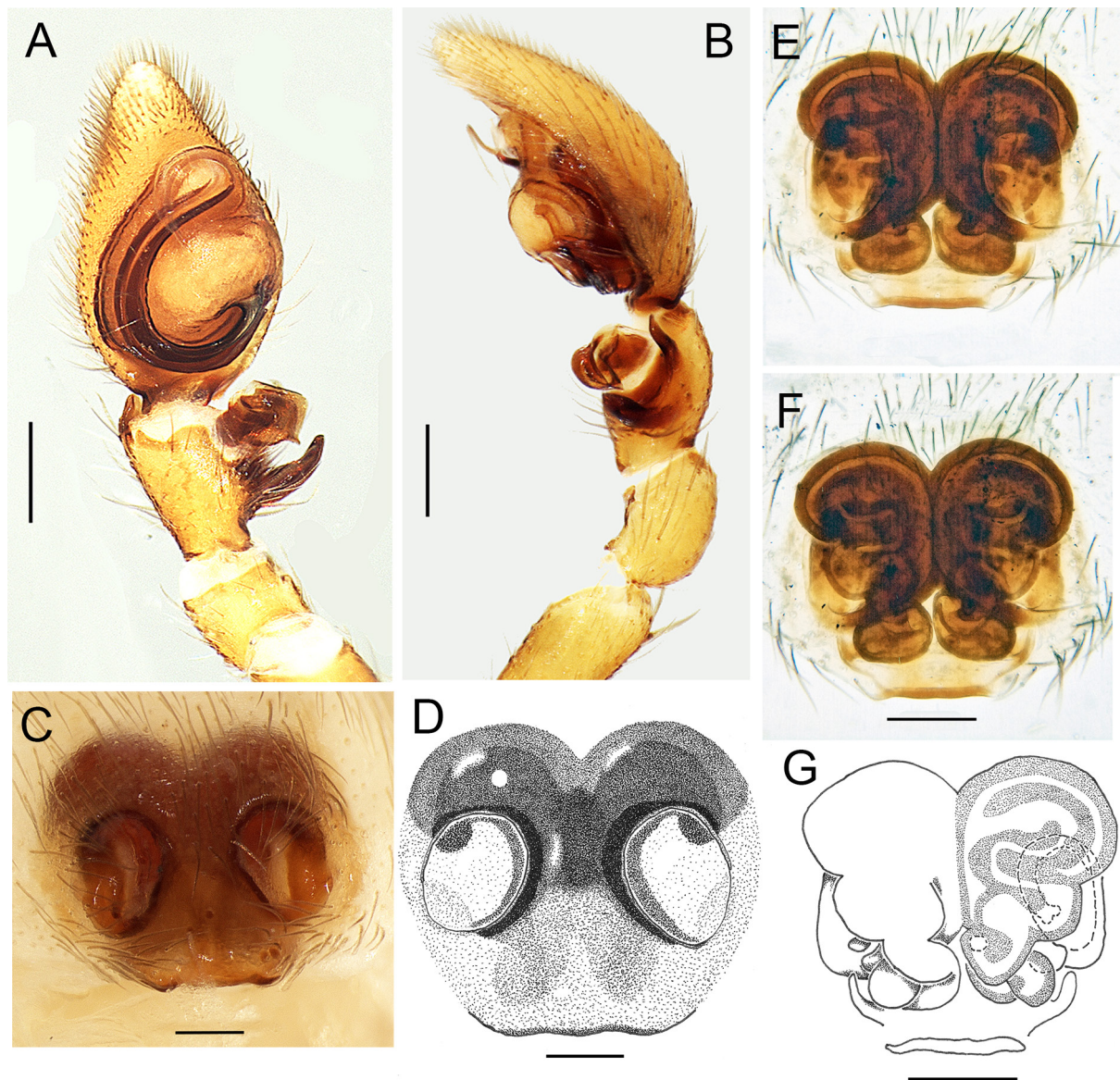


Fig. 35. *Andromma raffrayi* Simon, 1899. **A–B.** Male, BE_RMCA_ARA_Ara 220165 from Kwazulu-Natal. **C–G.** Female, BE_RMCA_ARA_Ara 168628 from Namibia. **A.** ♂, left palp, ventral view. **B.** Same, retrolateral view. **C–D.** Epigyne, ventral view. **E.** Same, cleared, ventral view. **F–G.** Same, dorsal view. Scale bars: 0.1 mm.

Andromma velum sp. nov.

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Figs 36–37, 40

Diagnosis

The male of *Andromma velum* sp. nov. is characterized by the VTA which looks like a sail pointing in retrolateral direction, the female by the epigyne with typical ear-shaped sclerotised plates.

Etymology

The species name is from the Latin ‘*velum*’, meaning ‘sail’, and referring to the VTA, resembling a sail (Fig. 36C–D).

Type material

Holotype

MALAWI • ♂; Nkhata Bay, Nkwazi evergreen forest; 11°36' S, 34°18' E; 23 Nov.–19 Dec. 1978; R. Jocqué leg.; BE_RMCA_ARA.Ara 153251.

Paratype

MALAWI • 1 ♀; 7 Apr. 1978; further collection data as for holotype; BE_RMCA_ARA.Ara 153005.

Description

Male (holotype, Fig. 36)

MEASUREMENTS. Total length 5.68. Carapace length 2.84, width 2.49; height 0.85.

COLOUR (Fig. 36A–B). Carapace, chelicerae, sternum and legs orange; endites with paler distal margin; abdomen pale grey.

PROSOMA. Fovea 0.69 long at 1.28 from PME. AER straight from above, width 0.66. AME 0.16, ALE 0.08, PME 0.03, PLE 0.08; AME–AME: 0.03, AME–ALE: 0.07, ALE–PLE: 0.15, PME–PLE: touching. Clypeus vertical, 0.18, with four long setae. Chilum two sclerites, each 0.05 high, 0.16 wide. Sternum 1.78 long, 1.56 wide. Chelicerae: promargin with five teeth, the first and third the smallest and slightly out of line towards back.

LEG SPINATION. All femora with one dorsal spine, T I pl 1 v 2-2-2-2-2; Mt I v 2-2-2; T II pl 1-1 rl 1-1 v 2-2-2-2; Mt II v 1-2-2; T III pl 1-1 rl 1-1 v 2-2; Mt III pl 1 rl 1 v 2-2; T IV pl 1 rl 1 v 2-2; Mt IV none.

LEG I MEASUREMENTS. Fe: 2.84, P: 1.21, T: 2.70, Mt: 2.41, t: 1.42; total: 10.58.

MALE PALP (Fig. 36C–F). VTA sail-shaped in ventral view, consisting of two complicated, platelike sclerites, RTA small, subtriangular with a slightly hooked tip. Bulbus about half as long as cymbium, sinuous sperm duct visible in retrolateral part of tegulum. Embolus originating on posterior part of tegulum, running along its prolateral edge, ending in a sharp, ventrally curved tip accompanied by a lancet-shaped membranous conductor positioned retrolaterally on anterior rim of bulbus.

Female (paratype, Fig. 37)

MEASUREMENTS. Total length 6.39. Carapace length 2.84, width 2.49, height 1.07.

COLOUR (Fig. 37A–B). Carapace orange, gradually paler towards posterior margin; AME rim dark; fovea reddish; chelicerae orange; endites yellowish orange, paler along median and anterior margins; labium

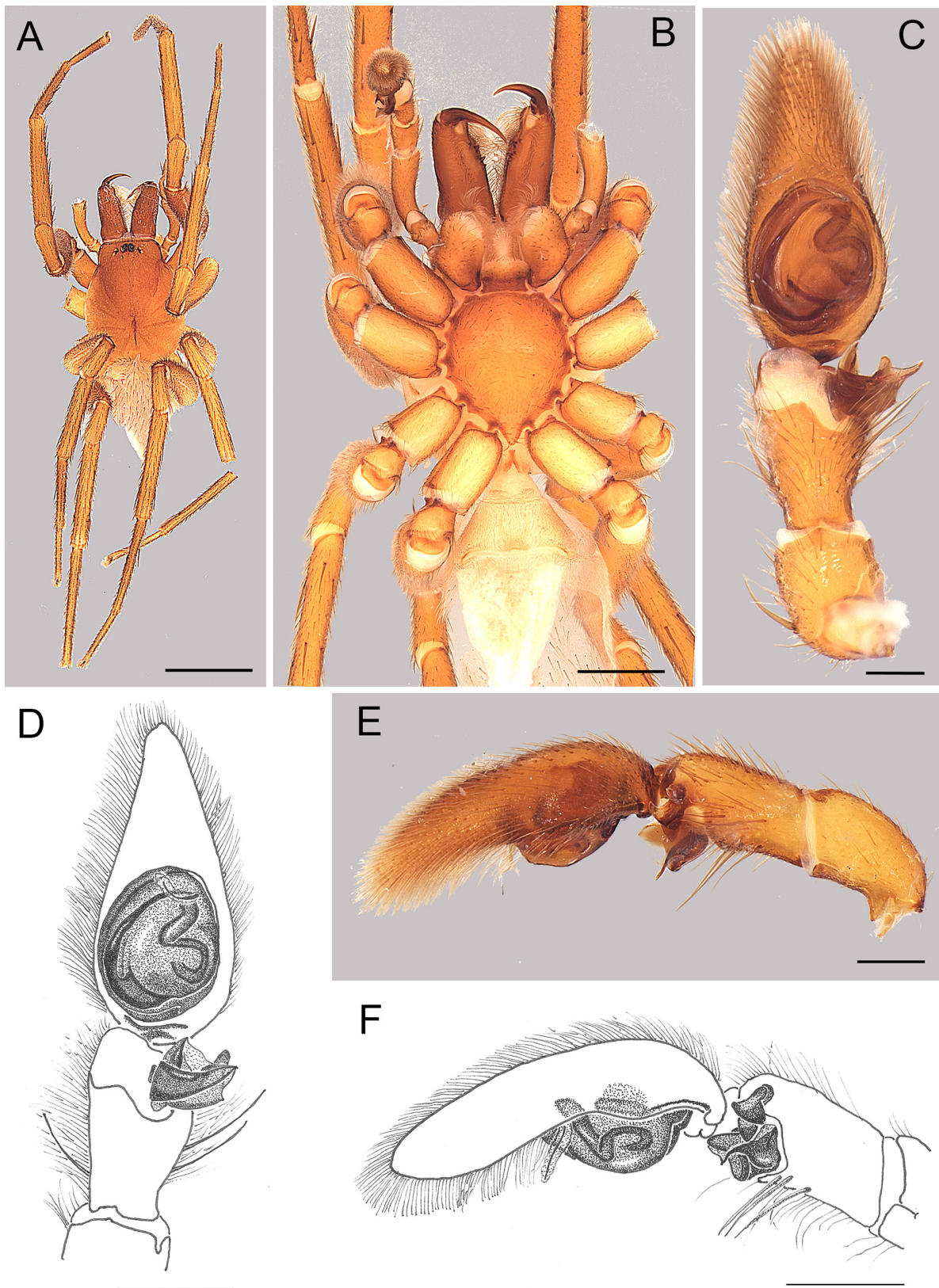


Fig. 36. *Andromma velum* sp. nov., ♂, holotype (BE_RMCA_ARA.Ara 153251). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Left palp, ventral view. **E–F.** Left palp, retrolateral view. Scale bars: A=2 mm; B–C=1 mm; D–F=0.2 mm.

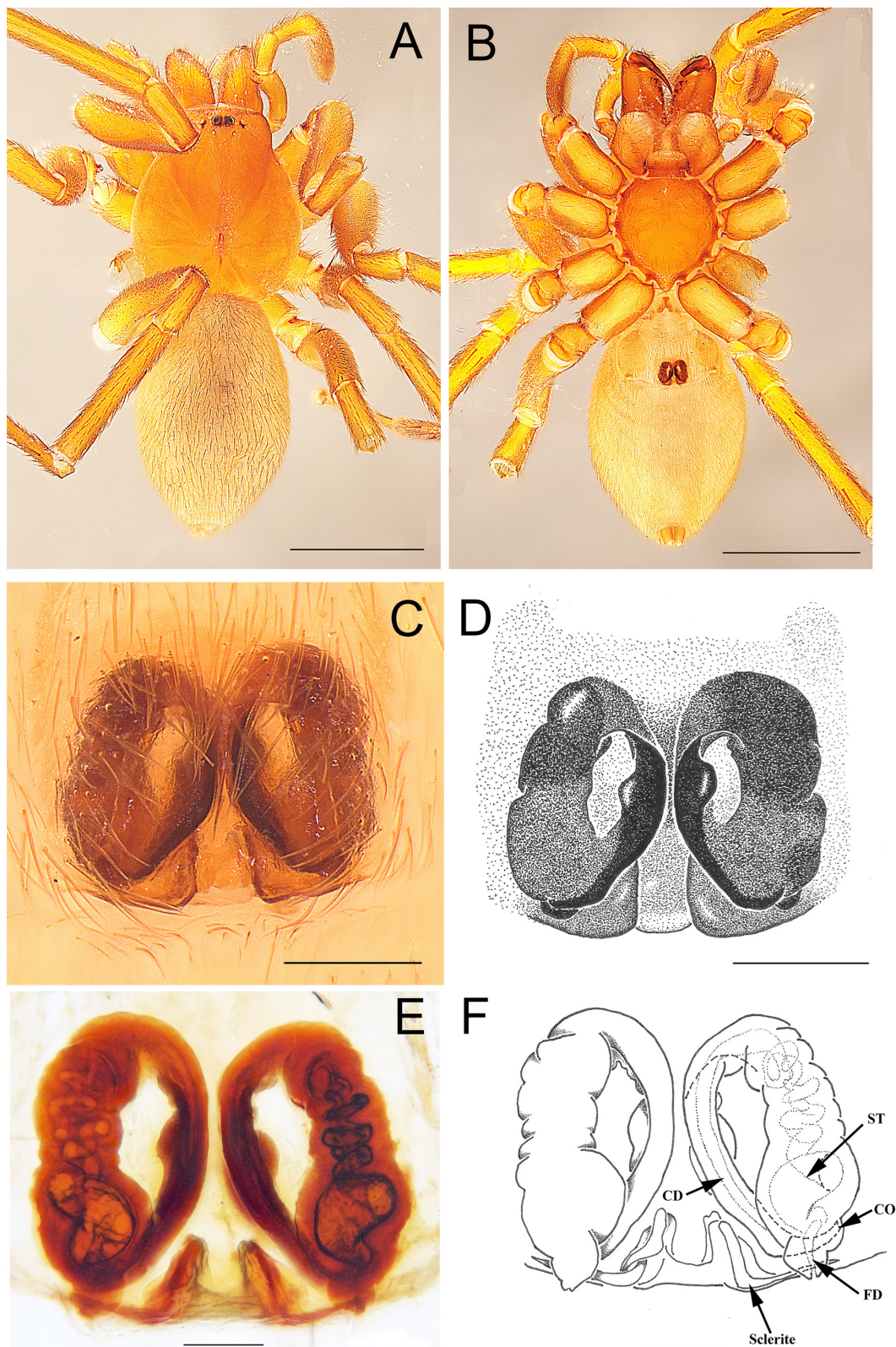


Fig. 37. *Andromma velum* sp. nov., ♀, paratype (BE_RMCA_ARA.Ara 153005). **A.** Habitus, dorsal view. **B.** Same, ventral view. **C–D.** Epigyne, ventral view. **E–F.** Same cleared, dorsal view. Abbreviations: CD=copulatory duct; CO=copulatory opening; FD=fertilisation duct; ST=spermatheca. Scale bars: A–B=1 mm; C–D=0.2 mm; E–F=0.1 mm.

orange, paler in distal half; sternum orange with brownish precoxal triangles; legs yellowish orange; abdomen cream, spinnerets yellowish orange.

PROSOMA. Fovea pronounced, length 0.47, anterior end 1.41 from PME. MOQ length 0.33, anterior width 0.34, posterior width 0.38. AER straight from above, width 0.72, PER procurved from above, width 0.79. All eyes circular; AME 0.13, ALE 0.08, PLE 0.07, PME 0.06; AME–AME: 0.08, AME–ALE: 0.10, ALE–PLE: touching, PME–PME: 0.26. Clypeus vertical, 0.21, with six long setae. Chelicerae: promargin with five teeth as in male. Chilum: two sclerites, each 0.05 high, 0.20 wide. Sternum 1.78 long, 1.63 wide.

LEG SPINATION. All femora with one dorsal spine; T I v 2-2-2-2-2; Mt I v 2-2-2; T II pl 1-1 rl 1-1 v 2-2-2-2; Mt II pl 1 v 2-2; T III pl 1-1 v 2-2-2; Mt III pl 1-1 rl 1 v 2-2; T IV v 2-2; Mt IV pl 1-1 rl 1 v 2-2.

LEG I MEASUREMENTS. Fe: 2.98, P: 1.14, T: 2.49, Mt: 2.27, t: 1.49; total: 10.37.

FEMALE PALPAL TARSUS. Curved, with sparse scopula.

EPIGYNE (Fig. 37C–F). Roughly square area with two ear-shaped heavily sclerotised plates, each containing a longitudinally oval depression provided with a small, inconspicuous copulatory opening; copulatory ducts with straight part running forward and coiled part running backward ending in poorly

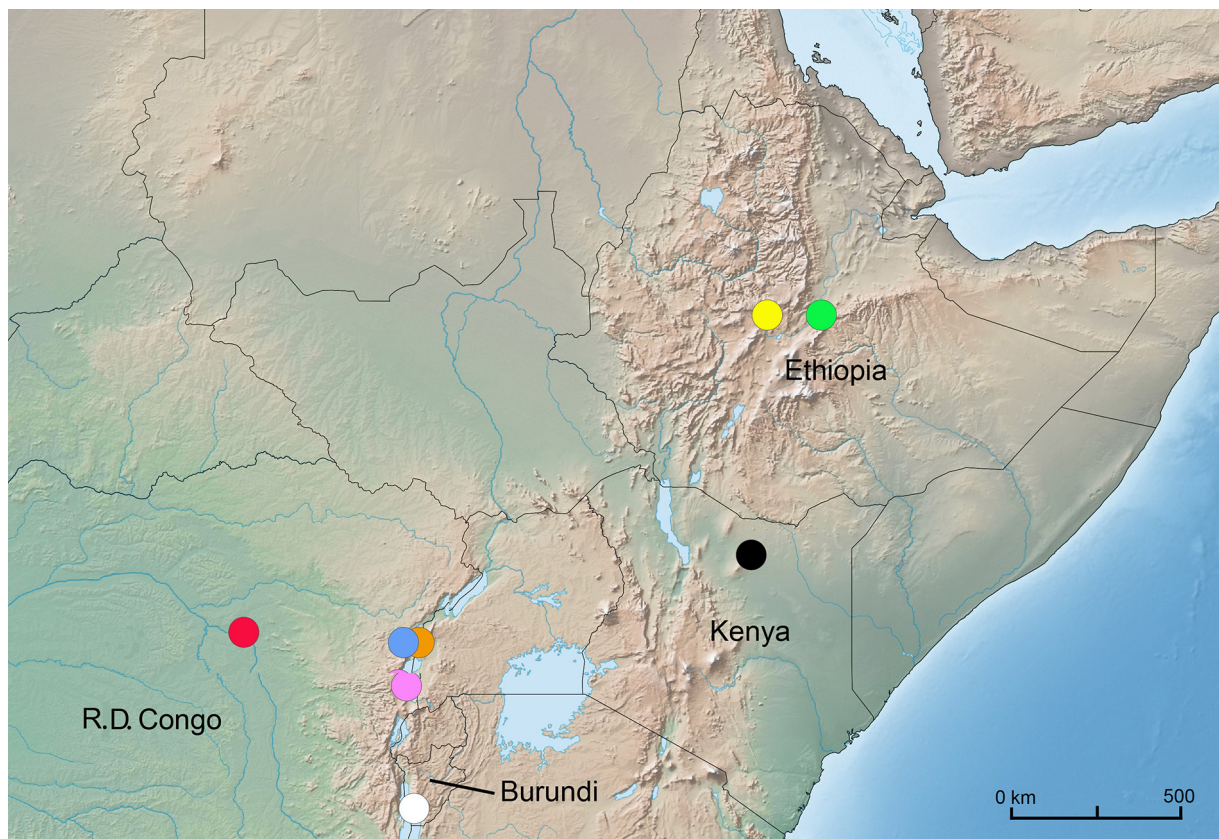


Fig. 38. Distribution map of species of *Andromma* Simon, 1893. *A. aethiopicum* Simon, 1893 (yellow), *A. alvocatatum* sp. nov. (red), *A. anacardium* sp. nov. (green), *A. bouvieri* Fage, 1936 (black), *A. cyamos* sp. nov. (blue), *A. cynotrachelos* sp. nov. (fuchsia), *A. didrepanum* sp. nov. (orange) and *A. divinagraciae* sp. nov. (white).

delimited spermathecae slightly wider than last part of copulatory ducts; fertilisation ducts short, wide, straight.

Distribution

Known only from the type locality in central Malawi (Fig. 40).

Discussion

It appears that most species of *Andromma* have a very small distribution area. One exception is *A. raffrayi*, which is found in many parts of South Africa and Namibia. Considering this and the fact that the genus occupies most of tropical Africa, it is likely that more species will be discovered. Special investigations of the commensals of termite nests will likely reveal that the knowledge of the genus, even after this revision, remains fragmentary.

Many specimens of several species of *Andromma* have indeed been caught in termite's nests and males often in the vicinity of such structures (Nduwarugira *et al.* 2016). There is little doubt that all *Andromma* are inquilines of such nests. Among the species described in the present publication, *A. bouvieri*, *A. cycnotrachelos* sp. nov., *A. katangensis* sp. nov. and *A. prosopion* sp. nov. were found in termite mounds. *Andromma anochetorum* and *A. raffrayi* were collected in or close to ant nests. It seems obvious that species of *Andromma* are at least facultative myrmecophiles (Parmentier *et al.* 2014) or termitophiles, or even integrated inquilines of social insect nests (Hölldobler & Kwapich 2022). Although kleptoparasites of webbing spiders are fairly common mainly in Theridiidae (Exline & Levi 1962; Dupérré & Tapia 2020) and Mysmenidae (Baert & Murphy 1978; Coyle & Meigs 1989; Griswold

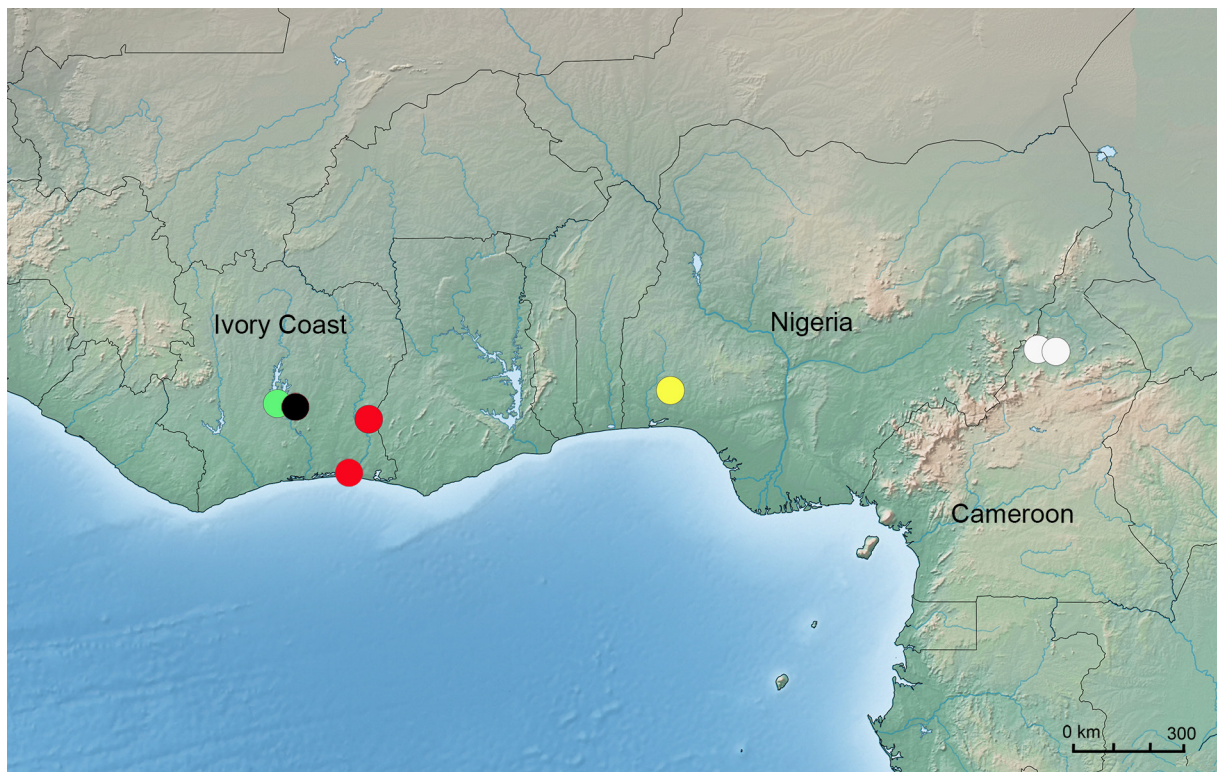


Fig. 39. Distribution map of species of *Andromma* Simon, 1893. *A. albinovani* sp. nov. (green), *A. delphiurum* sp. nov. (yellow), *A. elephantactes* sp. nov. (red), *A. helix* sp. nov. (black) and *A. prosopion* sp. nov. (white).

1985), inquilines or commensals of social insects appear to be rare (Benoit 1977; Fage 1936; Fannes 2013) and only known in the Oonopidae (*Zyngoonops* Benoit, 1977) and the Liocranidae (*Andromma*). Apart from the fact that these spiders live in termite nests, virtually nothing more is known about their biology. Many species of *Andromma* have a general appearance reminding that of the average termite workers with a yellowish orange thorax and a pale cream abdomen. Some species are entirely pale cream though and more information on their host might provide answers on whether this is an adaptation to the colour of the owners of the nest since some termite species are entirely white.

Apart from a certain size difference ranging from small (2–3 mm) to medium (4–7 mm), the somatic morphology of *Andromma* is remarkably constant. Genitalic morphology is the only reliable way to distinguish between species. Most species of *Andromma* have rather simple vulvae with thick, straight copulatory ducts with one or maximally two 180° bends. The males of these species have a VTA that

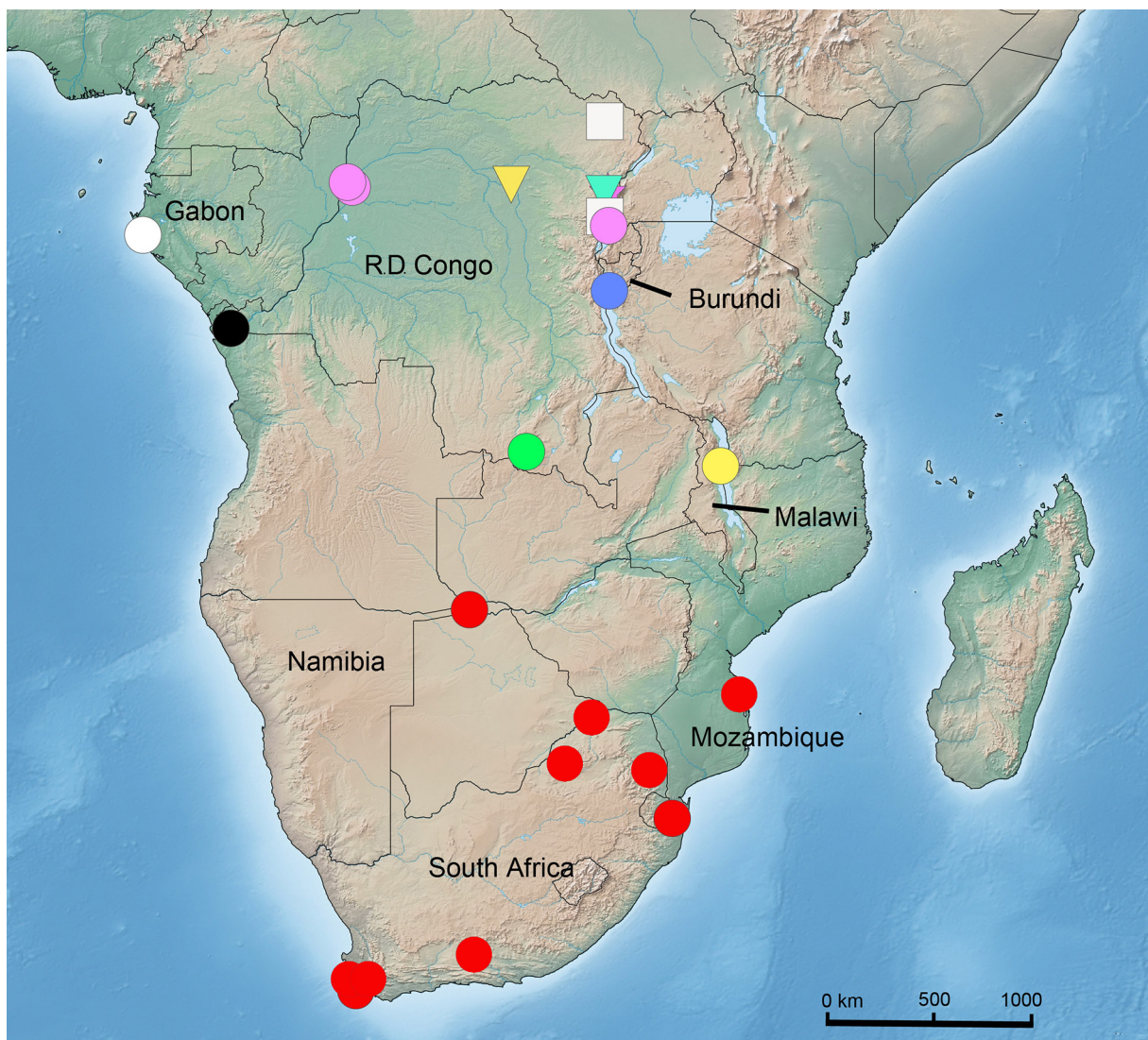


Fig. 40. Distribution map of species of *Andromma* Simon, 1893 (circles if shape of symbol not specified). *A. anochetorum* Simon, 1909 (white), *A. deograti* sp. nov. (blue), *A. dicranobelos* sp. nov. (black), *A. ghesquierei* sp. nov. (fuchsia), *A. heligmos* sp. nov. (green triangle), *A. juakalyi* sp. nov. (yellow triangle), *A. katangensis* sp. nov. (green), *A. ophiophagum* sp. nov. (white squares), *A. raffrayi* Simon, 1899 (red) and *A. velum* sp. nov. (yellow).

is rather simple, mushroom-shaped, and with a sharp hook at the tip. *Andromma albinovani* sp. nov. and *A. delphiurum* sp. nov. are good examples of the group. This group of species is found throughout sub-Saharan Africa, from Ethiopia to South Africa, although *A. raffrayi* can be considered somewhat atypical.

Another group, encompassing nine species (*A. alvocolatum* sp. nov., *A. cycnotrachelos* sp. nov., *A. divinagraciae* sp. nov., *A. helix* sp. nov., *A. juakalyi* sp. nov., *A. katangensis* sp. nov., *A. ophiophagum* sp. nov., *A. prosopion* sp. nov. and *A. velum* sp. nov.) have rather more complex vulvae with a long, helically coiled copulatory duct and a VTA that is far more elaborate, often shaped like a sail. These species are more restricted to the equatorial region, from Malawi to Ivory Coast.

The taxonomic affinity of *Andromma* remains enigmatic, as is the case for *Hortipes* and *Paratus*. For the time being it seems best to leave *Andromma* in Liocranidae.

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