



A revision of the genus *Trachelas* L. Koch, 1872 (Araneae: Trachelidae) in the continental Afrotropical Region

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Abstract

The polyphyletic spider genus *Trachelas* L. Koch, 1872, with the type species *T. minor* O. Pickard-Cambridge, 1872 from Europe (also known in North Africa and Central Asia), has a worldwide distribution in the tropical, subtropical and temperate regions, although *Trachelas sensu stricto* is restricted to the Old World. Here the continental Afrotropical species are revised and a description of *Trachelas sensu stricto* is provided. *Trachelas canariensis* Wunderlich, 1987, *T. chubbi* Lessert, 1921, *T. pusillus* Lessert, 1923 and *T. sylvae* Caporiacco, 1949 are redescribed, and the female of *T. pusillus* described for the first time. Seven new species are described: *T. falsus* **sp. nov.** (♂ ♀, Côte d'Ivoire, Nigeria, South Africa and Tanzania), *T. humus* **sp. nov.** (♂ ♀, Namibia and South Africa), *T. leggi* **sp. nov.** (♂ ♀, South Africa), *T. longinquus* **sp. nov.** (♂, Central African Republic), *T. russellsmithi* **sp. nov.** (♀, Ethiopia), *T. scutatus* **sp. nov.** (♂ ♀, Ghana and Nigeria) and *T. smithi* **sp. nov.** (♀, Kenya). The female of *Trachelas scopulifer* Simon, 1896 is redescribed, its male is described for the first time, and its transfer to *Thysanina* Simon, 1910 proposed. The immature female type of *T. punctatus* Simon, 1886 from Senegal is presumed lost and this species is considered a **nomen dubium**. A key to the continental species of Afrotropical *Trachelas* is provided. A molecular phylogeny based on the cytochrome oxidase subunit I gene (COI) indicates that the New World species of the genus belong to a distinct lineage and are only distantly related to *Trachelas sensu stricto*.

Key words: Africa, COI, Dionycha, redescription, taxonomy, transfer

Introduction

Trachelas L. Koch, 1872 is a large and widespread spider genus, with 93 described extant species currently recognized, as well as a fossil species from Dominican amber (*T. poinari* Penney, 2001), making it by far the largest trachelid genus (World Spider Catalog 2025). Historically, it has served as a “wastebasket” for relatively unmodified trachelids and is polyphyletic as currently composed (Haddad *et al.* 2009, 2021). The type species of the genus is *Trachelas minor* O. Pickard-Cambridge, 1872, which was described from France and has been recorded from West Africa to the Mediterranean and Central Asia (World Spider Catalog 2025). It has been redescribed or illustrated in detail several times in the last two decades (e.g. Bosselaers *et al.* 2009; Kovblyuk & Nadolny 2009; Marusik & Kovblyuk 2010; Danişman *et al.* 2010; Zamani *et al.* 2016; Jin *et al.* 2017), making it simpler to distinguish its closest relatives from species presently misplaced in the genus. Despite this, resolving the placement of species currently included in the genus is very incomplete, with the majority not sharing consistent morphology with the “*T. minor* species group”, i.e. *Trachelas sensu stricto*.

Revisions of the genus in the New World resulted in the description of several new species and the transfer of many *Trachelas* to other genera, specifically *Trachelopachys* Simon, 1897 and *Meriola* Banks, 1895 (Platnick & Shadab 1974a, b; Platnick 1975; Platnick & Ewing 1995; Platnick & Rocha 1995). Platnick & Shadab (1974a, b) divided the North American species into four distinct species groups based on their genitalic morphology. Additionally, *Meriola* was previously considered a synonym of *Trachelas*, but was redefined to include trachelids

that have a posterior eye row that is neither recurved nor widened, with elongate ventral cusps on the distal segments of legs I and II (Platnick & Ewing 1995). The polyphyly of *Trachelas* is further supported by recent papers on European (Bosselaers *et al.* 2009; Kovblyuk & Nadolny 2009) and Afrotropical trachelids (Haddad 2006, 2025; Haddad & Lyle 2008, 2024; Lyle & Haddad 2009, 2018), in which numerous new genera were described containing species formerly described in *Trachelas* or which could be considered *Trachelas sensu lato*. Furthermore, many of the east Asian species also likely represent one or more new genera considering the variation in their somatic and genitalic morphology (discussed below), and their relationships also need to be resolved in future. These papers represented the first major steps in dividing a large polyphyletic genus into smaller natural units.

Thus, only by considering a more comprehensive range of morphological traits and genitalic bauplans in recent studies has the variation in trachelid morphology been better appreciated and genera more precisely delimited. There are currently seven described species of *Trachelas* recorded from the Afrotropical Region, namely *T. canariensis* Wunderlich, 1987, *T. chubbi* Lessert, 1921, *T. minor*, *T. punctatus* Simon, 1886, *T. pusillus* Lessert, 1923, *T. scopulifer* Simon, 1896 and *T. sylvae* Caporiacco, 1949, following the recent transfer of *T. roeweri* Lawrence, 1938 and *T. schenkeli* Lessert, 1923 to *Jocquestus* Lyle & Haddad, 2018.

In this study, the continental Afrotropical species of *Trachelas sensu stricto* are revised. Five of the seven current species are redescribed from both sexes (*T. pusillus* and *T. scopulifer* were previously only known from one sex), of which one species (*T. scopulifer*) is transferred to *Thysanina* Simon, 1910. Furthermore, *T. punctatus*, from Senegal, is considered a **nomen dubium**; the specimens of *T. minor* recorded from West Africa (World Spider Catalog 2025) are considered as misidentifications, representing a new species (*T. falsus* **sp. nov.**), although the presence of *T. minor* in the Mediterranean portion of North Africa is confirmed here; six other new species are described from the continent. As such, this paper formally delimits the Afrotropical species belonging to *Trachelas sensu stricto*, paving the way for the descriptions of several additional new genera from the region represented solely by new species.

Material and methods

Morphology

Specimens were examined in 70% ethanol. Body measurements were taken of the largest and smallest specimens of each sex, where possible, to determine a size range. Eye and leg measurements were taken from the largest specimen, unless otherwise indicated. All measurements are given in millimetres (mm). Eye arrangements are described for the anterior view of the anterior eye row and dorsal view of the posterior eye row. Leg measurements are presented in the sequence from the femur to tarsus, and the total).

The following abbreviations are used in the descriptions: Ac—aciniform gland spigot(s); AER—anterior eye row; AL—abdomen length; ALE—anterior lateral eye(s); AME—anterior median eye(s); AT—atrium; AW—abdomen width; Cd—connecting ducts; CD—copulatory ducts; CL—carapace length; CO—copulatory openings; CW—carapace width; CY—cymbium; Cy—cylindrical gland spigot(s); EM—embolus; FL—fovea length; mAmp—minor ampullate gland spigot; MAmp—major ampullate gland spigot(s); PA—patellar apophysis; PER—posterior eye row; Pi—piriform gland spigots; PLE—posterior lateral eye(s); PME—posterior median eye(s); RTA—retrolateral tibial apophysis; SL—sternum length; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermatheca; SW—sternum width; TA—tegular apophysis; Ta—tartipore; TE—tegulum; TL—total length.

Material of *T. canariensis* was prepared for scanning electron microscopy by cleaning in a Labcon 5019U ultrasonic bath in 70% ethanol for 30 seconds, followed by dehydration overnight in 100% ethanol. Material was then critical point dried in liquid carbon dioxide in Tousimus Samdri-795 critical-point drier before being mounted on aluminium stubs using double-sided carbon tape and coated with ± 25 nm iridium using a Leica EM ACE-600 coater. Samples were studied and imaged using a JEOL JSM-7800F Schottky Field Emission Scanning Electron Microscope at 5 kV.

Automontage photographs of males and/or females of each species were taken using a Nikon Coolpix 8400 digital camera mounted on a Nikon SMZ800 stereomicroscope or a Nikon DS-L3 camera system attached to the same microscope. A series of 10–25 images were taken and stacked using Combine ZM software (Hadley 2008) to increase the depth of field. All maps were prepared using SimpleMappr (Shorthouse 2010).

Material used in this study was obtained from the following collections (curators are named in parentheses): AMNH—American Museum of Natural History, New York, U.S.A. (N. Platnick); BMNH—British Museum of Natural History, London, England (J. Beccaloni); CAS—California Academy of Sciences, San Francisco, U.S.A. (C. Griswold); MACN—Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina (M. Ramírez); MCVR—Museo Civico di Storia Naturale di Verona, Italy (L. Latella); MHNG—Museum d’Histoire Naturelle de la Ville de Genève (P. Schwendinger) MNHN—Museum National d’Histoire Naturelle, Paris, France (C. Rollard); MRAC—Museum Royale d’la Afrique Centrale, Tervuren, Belgium (R. Jocqué, D. vanden Spiegel); NCA—National Collection of Arachnida, ARC—Plant Protection Research Institute, Pretoria, South Africa (A. Dippenaar-Schoeman, R. Lyle); NMBA—National Museum, Bloemfontein, South Africa (L. Lotz, J. Neethling); NMSA—KwaZulu-Natal Museum, Pietermaritzburg, South Africa (M. Mostovski, M. Ziganira); SAMC—Iziko South African Museum, Cape Town, South Africa (M. Cochrane, A. Mayekiso); TMSA—Ditsong National Museum of Natural History, Pretoria, South Africa (J. Harrison, T. Bird); ZMUC—Zoological Museum, University of Copenhagen, Copenhagen, Denmark (N. Scharff); ZMUM—Zoological Museum of the Moscow State University (K. Mikhailov).

Molecular analysis

To evaluate the relationships of *Trachelas* with other trachelid genera, we used mitochondrial cytochrome oxidase c subunit I (COI) sequence data sourced from the Barcode of Life Data system (BOLD; Ratnasingham and Hebert 2007, 2013). PCR and Sanger sequencing was carried out at the Canadian Centre of DNA Barcoding (CCDB) following their standard extraction and sequencing protocols (CCDB 2019). The Sequence Analysis tool on BOLD was used for the analysis, with sequences aligned using MUSCLE (Edgar 2004) considering a minimum overlap of 200 bp.

To prevent overloading the tree with unnecessary sequences, we only included a single sequence for each described trachelid species available in the SPIZA, CORAR and SPDAR projects on BOLD, as well as several undescribed species in the genera *Thysanina*, *Spinotrachelas* Haddad, 2006 and *Rukuluk* Haddad, 2025, to test the placement of *Trachelas scopulifer* Simon, 1896 and evaluate the relationships of *Trachelas sensu lato*. In total, 21 genera and 53 species of trachelids were included in the analysis, with *Moggridgea loistata* Griswold, 1987 (Migidae) used to root the tree (Appendix 1).

Taxonomy

***Trachelas* L. Koch, 1872**

Trachelas L. Koch, 1872: 256; O. Pickard-Cambridge 1872: 256; Chickering 1972: 215; Platnick & Shadab 1974a: 1; Platnick & Shadab 1974b: 1; Platnick 1975: 1; Paik 1991: 198; Deeleman-Reinhold 2001: 393; Bosselaers *et al.* 2009: 16; Zhang *et al.* 2009: 41; Jin *et al.* 2017: 46.

Type species: *Trachelas minor* O. Pickard-Cambridge, 1872, by original designation.

Remarks. The name *Trachelas* was first used by L. Koch (1866) in an identification key, but as no type species had been described in the genus, it was considered a **nomen nudum**. Subsequently, O. Pickard-Cambridge (1872) described *Trachelas minor*, formalizing the recognition of the genus. L. Koch (1872) provided a more detailed description of the genus, with its authorship being attributed to him.

Diagnosis. *Trachelas sensu stricto* differs from other Afrotropical genera that lack leg spines and ventral cusps on the anterior legs in males, i.e. *Coronarachne* Haddad & Lyle, 2024, *Falcaranea* Haddad & Lyle, 2024, *Fuchiba* Haddad & Lyle, 2008, *Fuchibotulus* Haddad & Lyle, 2008, *Mushimane* Haddad, 2025 and *Trachycymbius* Haddad & Lyle, 2024, by the very coarse carapace integument (shared with *Fuchiba* and *Fuchibotulus*), the presence of a male palpal patellar apophysis and the absence of a tibial apophysis (except *T. scutatus* **sp. nov.**), and by the distinct, sclerotized oval atria or curved ridges of the epigyne that are situated close to the midline.



FIGURE 1. Digital microscope photographs of somatic morphology of *Trachelas chubbi*, male (A–E) and female (F–J): A, F. Habitus, dorsal view; B, G. Same, lateral view; C, H. Same, ventral view; D, I. Leg I, prolateral view; E, J. Metatarsus and tarsus IV. Scale bars = 1.0 mm (A–C, F–H), 0.5 mm (D, E, I, J).

Description (*Trachelas sensu stricto*). Small spiders, 1.76–4.72 mm in length; carapace bright yellow to deep red-brown; oval, broadest at coxae II, gradually narrowed towards eye region (Figs 1A, F, 2A, 6, 7); fovea distinct, a short broad slit; posterior margin distinctly concave (Figs 6, 7); convex in lateral profile, strongly elevated from clypeus to approximately 1/3 carapace length, slightly convex in midsection, with steeper slope in posterior 1/3 (Fig. 1B, G); carapace surface coarsely granulate, with each seta accompanied by posterior transverse ridge and pair of deep depressions (Fig. 2B). All eyes surrounded by black rings; AER procurved in anterior view (Fig. 2C), slightly recurved in dorsal view (Fig. 2D); clypeus usually slightly smaller to slightly larger than AME diameter at AME, AME very slightly larger than ALE; PER slightly recurved in dorsal view (Fig. 2D); PLE usually very slightly larger than PME; MOQ narrower anteriorly than posteriorly, posterior width slightly larger than length. Chilum absent; cheliceral promargin with three teeth (Fig. 2E), retromargin with two teeth, usually on common base (Fig. 2F);

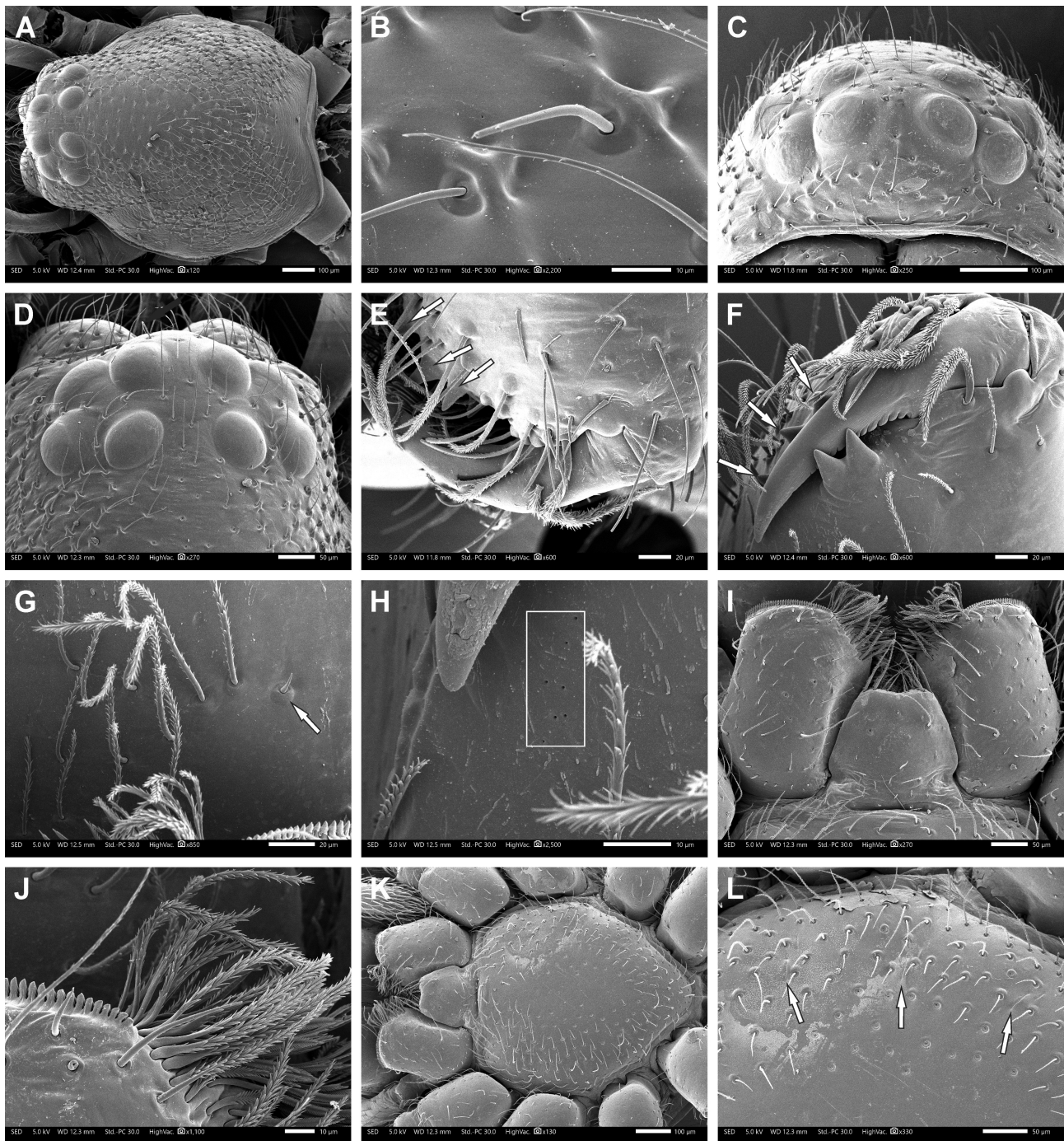


FIGURE 2. Scanning electron micrographs of *Trachelas canariensis*, female (A, B, D, F–L) and male (C, E): A Carapace, dorsal view; B Detail of carapace integument and setae; C Eye region, anterior view; D Same, dorsal view; E, F Distal end of chelicerae, anterior (E) and posterior (F) views, arrows indicating three promarginal teeth; G, H Posterior of cheliceral paturon, arrow indicating modified seta (G) and rectangle including field of pores near proximal retromarginal tooth (H); I Endites and labium; J Detail of endite serrula and mesal hair tuft; K Sternum and mouthparts; L Enlargement of sternum, arrows indicating slit sensilla.

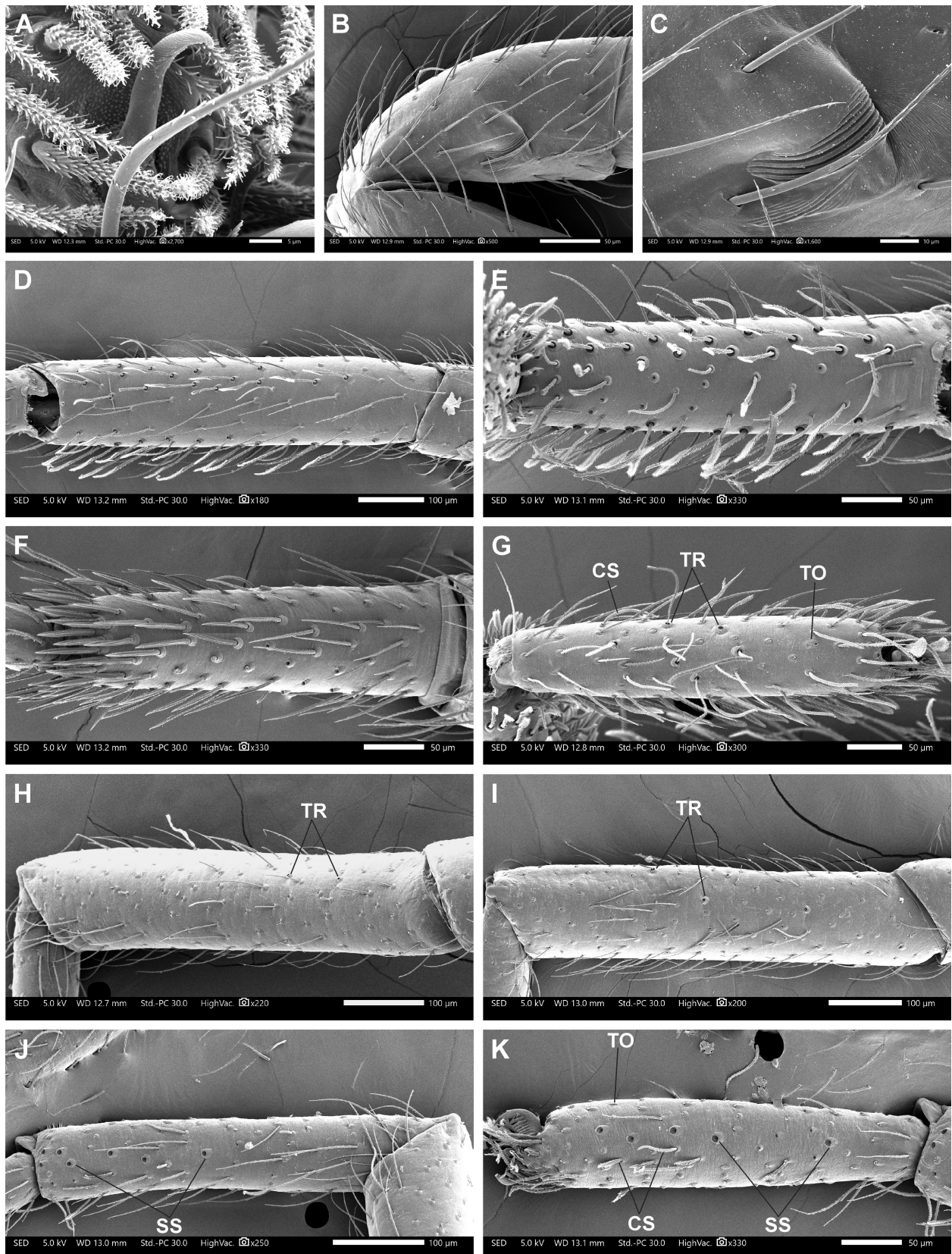


FIGURE 3. Scanning electron micrographs of *Trachelas canariensis*, female (A–G) and male (H–K): A Palpal claw; B Patellar indentation and lyriform organ, leg IV; C Same, detail of lyriform organ; D Tibia I, ventral view; E Metatarsus I, ventral view; F Metatarsus IV, ventral view; G Tarsus I, dorsal view; H Tibia I, prolateral view; I Tibia II, prolateral view; J Metatarsus I, prolateral view; K Tarsus I, prolateral view. Abbreviations: CS—chemosensory setae; SS—scopulate setae; TO—tarsal organ; TR—trichobothria.

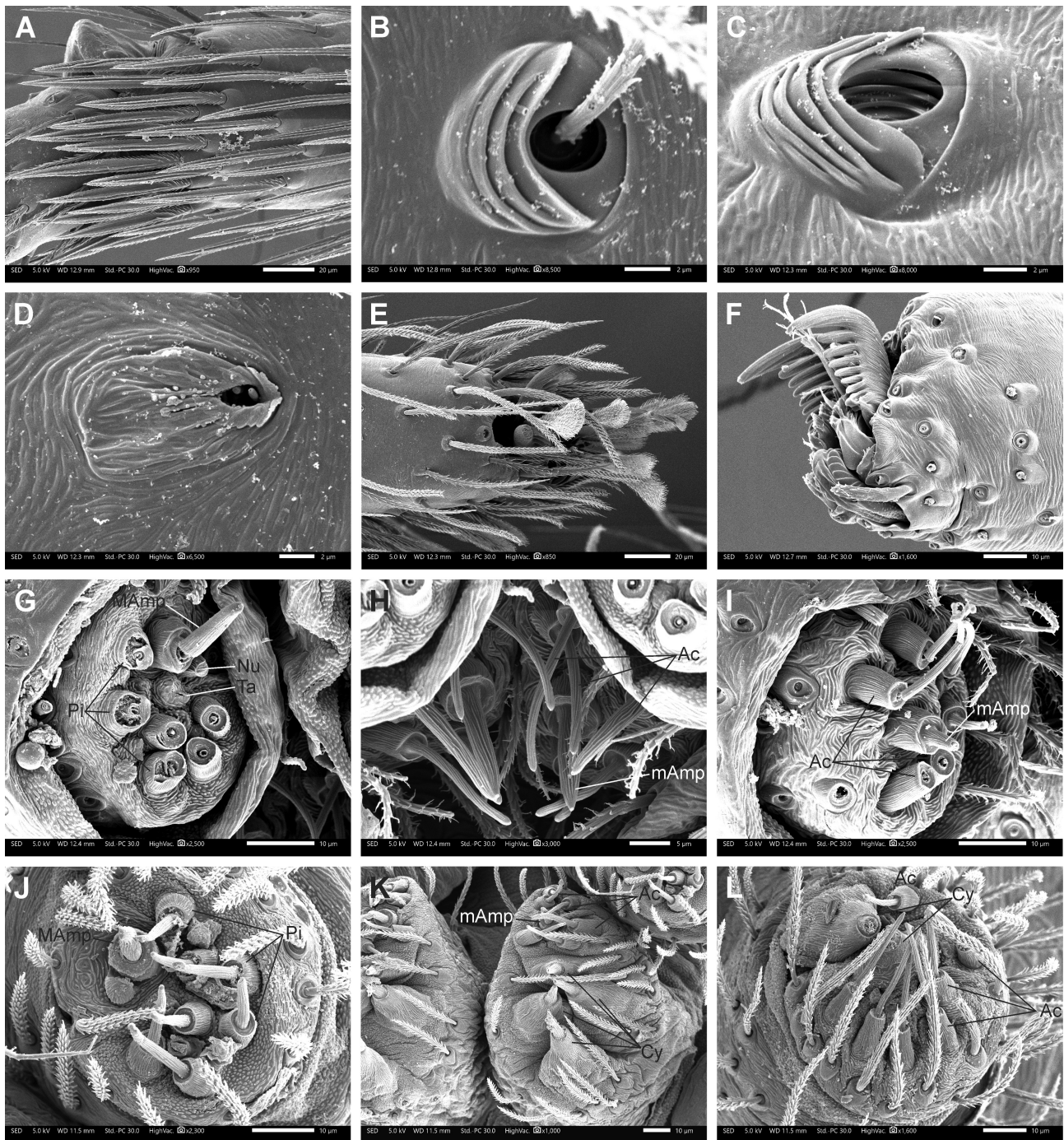


FIGURE 4. Scanning electron micrographs of *Trachelas canariensis*, female (A–E, J–L) and male (F–I): A Metatarsus IV, lateral, detail of preening brush and distal comb; B, C Tarsus I, bases of dorsal (B) and lateral (C) trichobothria; D Same, tarsal organ; E, F Same, claws and claw tufts, dorsal (E) and lateral (F) views; G, J Anterior lateral spinnerets; H, K Posterior median spinnerets; I, L Posterior lateral spinnerets. Abbreviations: Ac—acini-form gland spigot(s); Cy—cylindrical gland spigot(s); mAmp—minor ampullate gland spigot; MAmp—major ampullate gland spigot; Nu—nubbin; Pi—piriform gland spigot(s); Ta—tartipore.

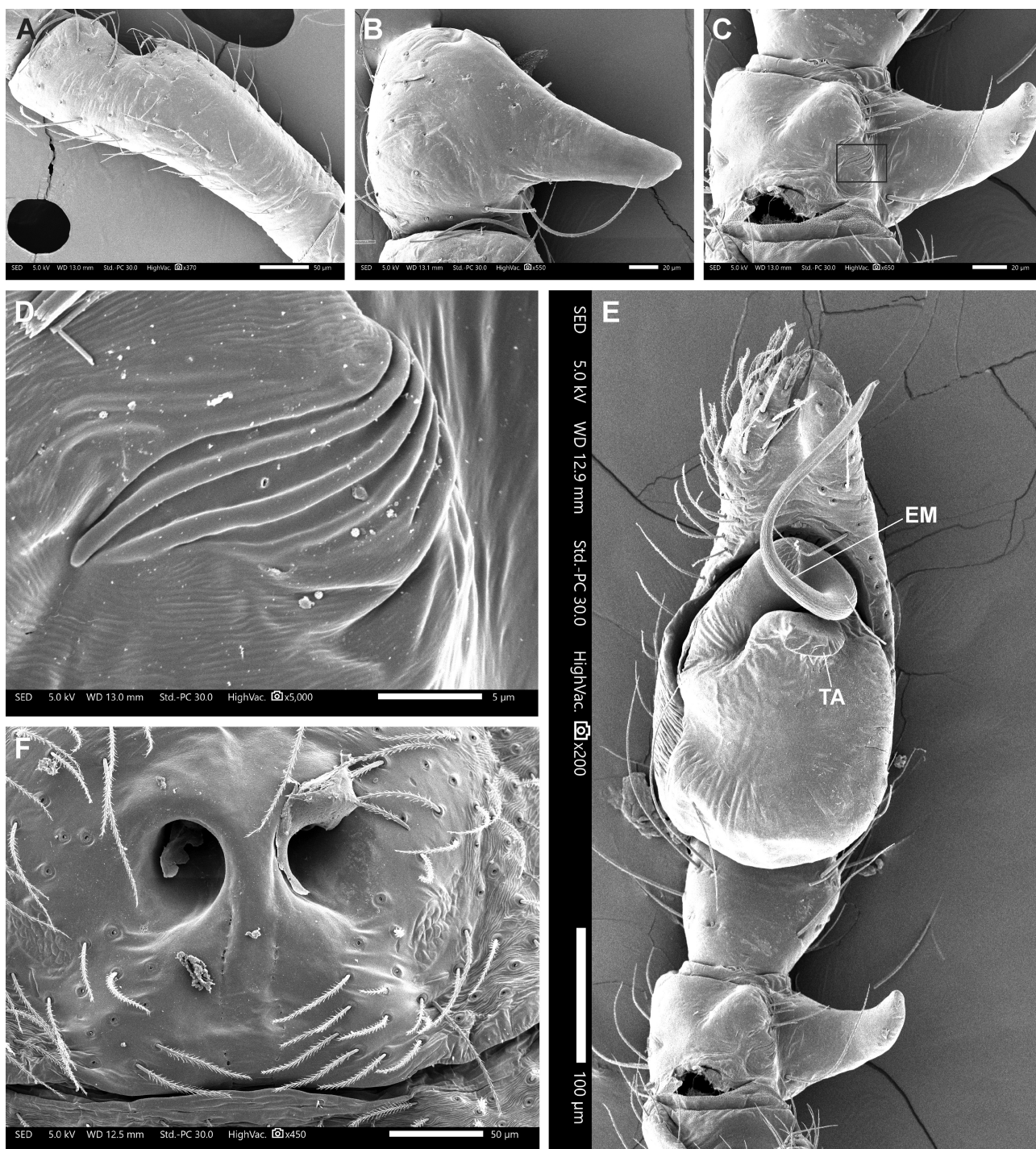


FIGURE 5. Scanning electron micrographs of *Trachelas canariensis*, male (A–E) and female (F): A Palpal femur, retrolateral view; B Patella, dorsal view; C Same, ventral view, rectangle enclosing lyriform organ (D); E Palpal patella, tibia and tarsus, ventral view; F Epigyne, ventral view. Abbreviations: EM—embolus; TA—tegular apophysis.

fang with distinct serrula (Fig. 2F); posterior surface of paturon with field of long setae, single modified short seta and field of pores posterior to retromarginal teeth (Fig. 2G, H); endites converging slightly distally, lateral margins not parallel, mesal margins with longitudinal groove and dense maxillar hair tuft (Fig. 2I), distal margins with distinct serrula comprising elongate denticles with sharp tips (Fig. 2J); labium trapezoidal, narrower distally than proximally, length less than proximal width, distal margin with slight concavity (Fig. 2I). Pleural bars sclerotised, isolated (Fig. 1G); sternum shield-shaped, slightly longer than broad, broadest at coxa II (Fig. 1C, H), surface smooth centrally, covered in long straight setae with more pronounced tuberculate bases towards borders (Fig. 2K);

precoxal triangles present, intercoxal sclerites short but usually present between all coxal pairs. Leg formula 4123 or 1423, sparsely covered in fine setae (Fig. 3B–K); leg I and II only slightly thickened compared to legs III and IV (Figs 1A–C, F–H, 6, 7); dorsal femoral surface almost straight, very slightly concave at $\frac{1}{2}$ its length, ventral surface very slightly convex (Fig. 1D, I); all femora strongly constricted proximally (Fig. 1D, I); patellar indentation on retrolateral side narrow, with lyriform organ at proximal end (Fig. 3B, C); legs I and II of both sexes without ventral cusps on tibiae, metatarsi or tarsi, only with weak scopulae (Fig. 3D–K); all tibiae, metatarsi and tarsi with sparse dorsal trichobothria (Fig. 3H, I, 4B, C); metatarsi with short metatarsal stopper (Figs 3J, K, 4A), metatarsi III and IV with weak ventral preening brush and comb at distal end (Figs 3F, 4A); tarsi with sparse tactile hairs, few dorsal trichobothria and chemosensory setae (Fig. 3G, K); trichobothria with slightly lowered distal plate, distal margin of hood overlapping plate, hood with four to six roughly concentric curved ridges (Fig. 4B, C); tarsal organ at approximately $\frac{4}{5}$ tarsus length (Fig. 3K), flush with integument, surface finely wrinkled, opening oval and distally placed (Fig. 4D); paired tarsal claws short, with eight teeth and dense tenant setae forming claw tufts in between (Figs 3G, K, 4E, F). Abdomen oval, sometimes uniformly coloured, otherwise with mottled grey markings or chevrons on creamy-grey background (Figs 1A–C, F–H, 6, 7); dorsal scutum usually in males only, only in female of *T. scutatus* **sp. nov.** (Fig. 7E), covering most of dorsum; dorsum covered in scattered short fine setae, with two pairs of sigilla in both sexes; venter without large sclerites, with paired rows of indistinct tiny sclerites from epigastric furrow to spinnerets, covered in scattered short fine setae (Fig. 1C, H). Spinnerets short, conical, in compact group, spigots only studied in detail in both sexes of *T. canariensis*: ALS of males with one Mamp, six Pi, a single Nu and single Ta (Fig. 4G), of females with one Mamp, seven Pi and single Ta (Fig. 4J); PMS of males only with single mamp and five Ac (Fig. 4H), of females with one mamp, four Cy and six Ac (Fig. 4K); PLS of males with one mamp and six Ac (Fig. 4I), of females with two Cy and seven Ac (Fig. 4L). Male palpal femur with distinct distal ventral concavity (Fig. 5A; see also Bosselaers *et al.* 2009: fig. 4; Jin *et al.* 2017: fig. 3D); patella with triangular or hook-like retrolateral PA, with ventral patellar indentation with lyriform organ at its base (Fig. 5B–E); palpal tibiae without apophyses (except *T. scutatus* **sp. nov.**, with rounded RTA), sometimes only with distal retrolateral sclerotized ridge; TE generally oval in ventral view, as broad as CY, with distinct distal TA (Fig. 5E); EM base broad, originating prodistally or distally, EM forming simple distal coil or loop (Fig. 5E). Female palpal claw simple, slightly bent distally, without teeth (Fig. 2A). Epigyne quite heavily sclerotized, with CO in oval AT or curved ridges near midline in anterior half (Fig. 5F), without hood; CD usually directed anteriorly, often looping, with terminal swelling with narrow stalk entering almost round ST II near centre (see Ramírez 2014: fig. 179D) [ST II often break off during ultrasonic cleaning of epigyne]; Cd usually looping before running posteriorly near midline of epigyne before entering oval or bilobed posterior or posterolateral ST I; Cd usually with thickened section prior to entering ST I.

Composition. Based on the current study and a review of the literature, the following species should be considered as *Trachelas sensu stricto*: *T. canariensis* Wunderlich, 1987 (Canary Islands, Spain, and East, Central and southern Africa), *T. chamoli* Quasin, Siliwal & Uniyal, 2018 (India), *T. chubbi* Lessert, 1921 (Central and East Africa), *T. costatus* O. Pickard-Cambridge, 1885 (Pakistan and India), *T. crewsae* Marusik & Fomichev, 2020 (Tajikistan), *T. falsus* **sp. nov.** (Central, West and southern Africa), *T. himalayensis* Biswas, 1993 (India), *T. humus* **sp. nov.** (southern Africa), *T. leggi* **sp. nov.** (South Africa), *T. longinquus* **sp. nov.** (Central African Republic), *T. minor* O. Pickard-Cambridge, 1872 (Europe, West Asia, North Africa), *T. oreophilus* Simon, 1906 (India and Sri Lanka), *T. pusillus* Lessert, 1923 (Central and southern Africa), *T. quisquiliarum* Simon, 1906 (Sri Lanka), *T. russellsmithi* **sp. nov.** (Ethiopia), *T. scutatus* **sp. nov.** (Ghana and Nigeria), *T. smithi* **sp. nov.** (Kenya), *T. sylvae* Caporiacco, 1949 (Central and East Africa), *T. tanasevitchi* Marusik & Kovblyuk, 2010 (far eastern Russia), *T. uniaculeatus* Schmidt, 1956 (Canary Islands) and *T. vulcani* Simon, 1896 (China, Indonesia and Japan).

The New World fauna, currently including 62 described species (World Spider Catalog 2025), represents a phylogenetically distinct lineage from *Trachelas sensu stricto* (Fig. 23; Pett *et al.* unpublished data) and is thus not considered further here. Several Asian species, i.e. the Chinese *T. alticolus* Hu, 2001, *T. bomiensis* Jin & Mi, 2024 (Liu *et al.* 2024), *T. brachialis* Jin, Yin & Zhang, 2017, *T. gaoligongensis* Jin, Yin & Zhang, 2017, *T. gigapophysis* Jin, Yin & Zhang, 2017, *T. nanyuensis* Yin, 2012 (Yin *et al.* 2012) and *T. sinensis* Chen, Peng & Zhao, 1995, as well as *T. japonicus* Bösenberg & Strand, 1906 from far eastern Russia, China, Japan and Korea, are likely misplaced and may belong to a new genus. Males of most of these species have ventral cusps on the anterior legs (except *T. alticola* and *T. sinensis*, apparently absent, and *T. nanyuensis*, not indicated in description) and a well-developed palpal tibial apophysis (often basal and posteriorly directed). Their females have an epigyne with a very different internal structure to *Trachelas sensu stricto*, particularly the usually elongate lateral ST II (more oval in *T. japonicus*) and

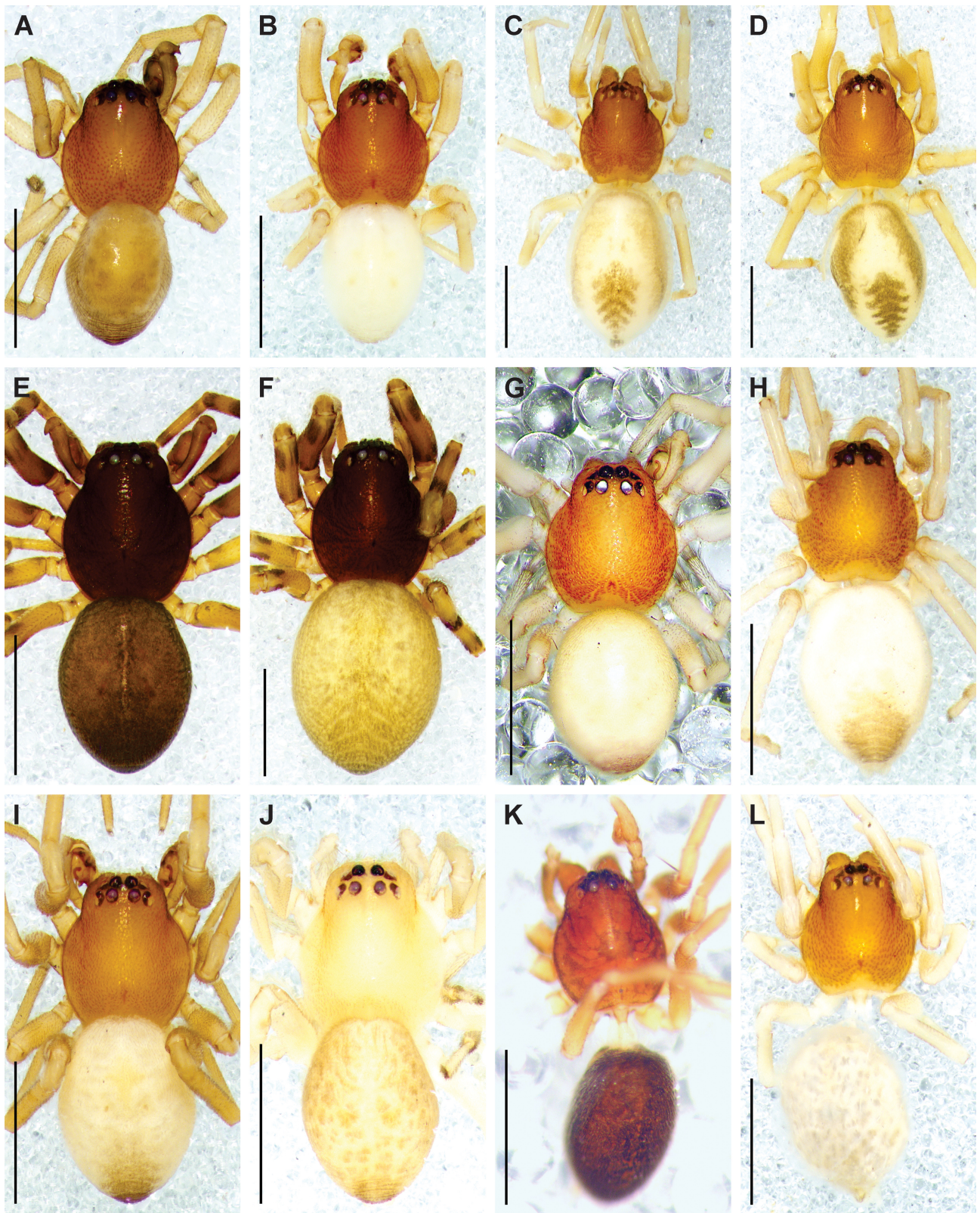


FIGURE 6. Dorsal habitus of Afrotropical *Trachelas* species: A–D *T. canariensis*, males from Bloemfontein (A) and Pretoria (B) and females from Ethiopia (C, D); E, F *T. chubbi*, male (E) and female (F) from Kihanga; G, H *T. falsus* **sp. nov.**, male (G) and female (H) from Thendele; I, J *T. humus* **sp. nov.**, male (I) and female (J) from Thendele; K, L *T. leggi* **sp. nov.**, male (K) and female (L) from Cape Town. Scale bars: 1 mm.

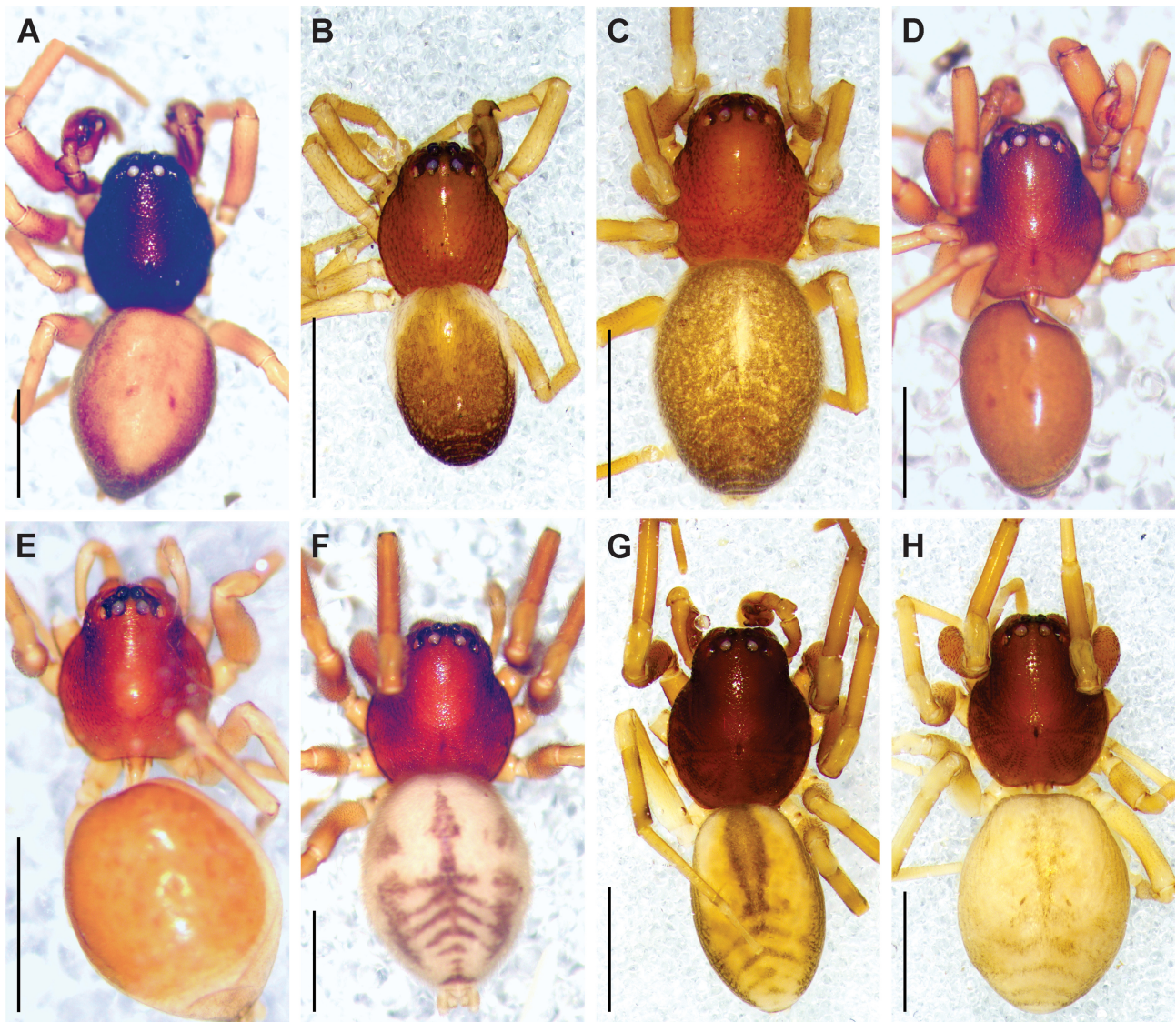


FIGURE 7. Dorsal habitus of Afrotropical *Trachelas* species: A *T. longinquus* **sp. nov.**, male from Dzanga-Sangha Forest; B *T. pusillus*, male from Tembe; C *T. russellsmithi* **sp. nov.**, female from Addis Ababa; D, E *T. scutatus* **sp. nov.**, male (D) and female (E) from Agege; F *T. smithi* **sp. nov.**, female from Kakamega Forest; G, H *T. sylvae*, male (G) and female (H) from Ruwenzori. Scale bars: 1 mm.

long connecting ducts originating laterally, curving in an arch mesally then posteriorly (e.g. Zhang *et al.* 2009; Yin *et al.* 2012; Jin *et al.* 2017; Jin & Mi 2024; Tang *et al.* 2024). Furthermore, the Chinese *T. fanjingshan* Zhang, Fu & Zhu, 2009, *T. fasciae* Zhang, Fu & Zhu, 2009, *T. kavanaughi* Tang, Yan, Zhao & Peng, 2024, *T. shilinensis* Jin, Yin & Zhang, 2017, *T. ventriosus* Tang, Yan, Zhao & Peng, 2024 and *T. zhui* Li, Wang, Zhang & Chen, 2019, all known only from females, have a similar internal epigyne structure to that of the Asian species referred to above and are thus also likely to be misplaced, but confirmation of this requires discovery of their males. *Trachelas devi* Biswas & Raychaudhuri, 2000 (Bangladesh) has a procurved PER and very different somatic morphology and genitalia to *Trachelas sensu stricto* (Biswas & Raychaudhuri 2000: figs 15–21), so is likely not a trachelid and should be transferred to another family.

Key to the continental Afrotropical species of *Trachelas*

1. Males 2
- Females 10
2. Embolus (EM) forming distinct coil or loop along its path 3
- EM not forming coil or loop but gradually curving and tapering towards tip and bending towards prolateral side of palp (Fig. 14E, F) *T. longinquus* sp. nov.
3. EM long, forming open coil with slender distal section. 4
- EM short, forming compact coil, distal section compact or sharp but not slender 7
4. EM forming two distinct loops along its path, tip blunt and situated along retrolateral side of cymbium (CY); palp with rounded retrolateral tibial apophysis (RTA, Fig. 17C, D) *T. scutatus* sp. nov.
- EM with only single loop along its path, tip sharp and positioned along ventral side of CY; palp without rounded RTA 5
5. Tegulum (TE) almost parallel-sided, broad distally, EM base almost as broad as TE (Fig. 13A); EM with sharp retrolateral bend to long slender distal section, with tip directed at 11 o'clock; patellar apophysis (PA) finger-shaped in ventral view (Fig. 13A, B) *T. humus* sp. nov.
- TE somewhat pear-shaped, narrowed distally, EM base clearly narrower, approximately half the width of TE (Figs 8A, 15A); EM with gradual looping bend, with tip directed at 1 o'clock; PA triangular or compact in ventral view (Figs 5E, 8A, 15A) 6
6. EM almost as long as TE in ventral view, with long slender distal section; PA triangular in ventral view, with broad base almost extending entire length of patella (Figs 5B, C, E, 8A, B) *T. canariensis*
- EM about half the length of TE in ventral view, with thicker distal section; PA compact in ventral view, placed distally on patella (Fig. 15A, B). *T. pusillus*
7. EM curving along longitudinal axis of palp, roughly inverted 6-shaped in lateral view; sperm duct S-shaped, with strong proximal and distal bends (Figs 10A, 19A) 8
- EM compact, curving along transverse axis of palp, with short stout tip directed distally; sperm duct only with strong proximal bend, U-shaped or forming proximal loop, gradually curving in distal section (Figs 11A, 14A) 9
8. EM narrow in ventral view, with blunt tip in lateral view (Fig. 10A, B). *T. chubbi*
- EM broad in ventral view, with sharp pointed tip in lateral view (Fig. 19A, B) *T. sylvae*
9. Proximal section of sperm duct forming broad U-shaped bend in ventral view; proximal section of EM orientated slightly retrodistally; PA positioned near middle of patella (Fig. 14A, B) *T. leggi* sp. nov.
- Proximal section of sperm duct forming closed loop; proximal section of EM orientated slightly retroproximally; PA positioned distally on patella (Fig. 11A, B) *T. falsus* sp. nov.
10. Epigyne (EP) with distinct circular or oval atria (AT) with strongly sclerotized rims, with copulatory openings (CO) within their margins 11
- EP with simple curved ridges leading to CO 15
11. AT large, occupying almost 2/3 length of epigynal plate (Fig. 19C) *T. sylvae*
- AT smaller, occupying at most 1/2 length of epigynal plate (Figs 10C, 11C, 13C, 18A) 12
12. AT round, as wide as long, with CO along anterior margin (Fig. 10C); copulatory ducts (CD) looping laterally, anteriorly, then mesally before entering transversely orientated secondary spermathecae (ST II) (Fig. 10D) *T. chubbi*
- AT oval, clearly longer than wide, with CO along posterior margin; CD and ST II variable, but ST II not transversely orientated 13
13. CD initially broad, narrowing rapidly; ST II lollipop-shaped; ST I pear-shaped, transversely orientated, almost twice as long as broad (Fig. 13C, D) *T. humus* sp. nov.
- CD initially narrow, parallel-sided along their length; ST II round or bilobed; ST I pentagonal or ovoid, very slightly wider than long (Figs 11C, D, 18C, D) 14
14. ST II round; connecting ducts (Cd) very narrow, with almost perpendicular bend and loop before entering pentagonal ST I (Fig. 11C, D) *T. falsus* sp. nov.
- ST II clearly bilobed; Cd broad, thickened and looping dorsally before making sharp bend that enters ST I (Fig. 18C, D) *T. smithi* sp. nov.
15. Sclerotized ridges (SR) of CO small, recurved, along midline of epigyne, with narrow CD initially directed anteriorly; copulatory ducts forming complete loop laterally before entering longitudinally oval ST II (Fig. 17E–G); abdomen with dorsal scutum *T. scutatus* sp. nov.
- SR of CO clearly separated, directed mesally (Figs 5F, 8C, 14C, 15C, 17A); copulatory ducts funnel-shaped or spiralling, initially directed mesally then anteriorly before entering round ST II (Figs 8D, 14D, 15D, 17B); abdomen without dorsal scutum. 16
16. ST II positioned anterolaterally in epigyne, in same plane as CD *T. russellsmithi* sp. nov.
- ST II positioned laterally near midpoint of epigyne, clearly posterior to CD 17
17. CD directed anteriorly then bending posterolaterally before looping to ST II; Cd forming complete loop between ST II before diverging to enter transversely oval ST I, close to epigastric furrow (Fig. 8C, D) *T. canariensis*
- CD spiralling, initially directed mesally then anteriorly before bending back to enter ST II; Cd thickened posterior to ST II, looping laterally and forming short channel that enters ST I 18
18. SR of CO relatively large and more than 1/2 the diameter of ST II, separated by slightly more than 2× their diameter (Fig. 14C) *T. leggi* sp. nov.
- SR of CO small and almost 1/3 the diameter of ST II, separated by approximately 3× their diameter (Fig. 15C) *T. pusillus*

***Trachelas canariensis* Wunderlich, 1987**

Figs 2–5, 6A, B, 8

Trachelas canariensis Wunderlich, 1987: 238, figs 636–639 (♂ ♀) (Holotype ♂, together with 3♂ 6♀ paratypes: **CANARY ISLANDS**: La Gomera, Valle Gran Rey, near beach in Barran Co, VII.1985, leg. J. Wunderlich [detritus in reeds], SMF—not examined); Bosselaers *et al.* 2009: 22, figs 4, 16–21 (♂ ♀); Bosselaers 2010: 23, figs 10–13, 21 (♂); Wunderlich 2012: 20, figs 11–14 (♂ ♀).

Diagnosis. The male of this species is most similar to that of *T. humus* **sp. nov.** in sharing an embolus with a long slender distal section but can be distinguished by the narrower proximal section (almost as broad as the tegulum in *T. humus* **sp. nov.**) and the tip of the embolus being directed at 1 o'clock as opposed to 11 o'clock in the latter species (cf. Figs 8A and 13A). The female of this species can be distinguished from other Afrotropical congeners by the funnel-shaped copulatory ducts that rapidly narrow after the copulatory opening (Fig. 8C, D).

Male. Measurements: CL 1.00–1.60, CW 0.83–1.38, AL 1.00–2.50, AW 0.80–1.38, TL 1.90–3.60, FL 0.03–0.13, SL 0.65–0.90, SW 0.58–0.90, AME–AME 0.10, AME–ALE 0.03, ALE–ALE 0.35, PME–PME 0.25, PME–PLE 0.08, PLE–PLE 0.55. Length of leg segments: I 4.23 (1.30, 0.55, 1.05, 0.80, 0.53); II 3.98 (1.13, 0.55, 0.95, 0.83, 0.52); III 2.81 (0.85, 0.38, 0.60, 0.65, 0.33); IV 3.99 (1.13, 0.48, 0.98, 1.00, 0.40).

Carapace reddish-orange; eye region darker, with brown rings around eyes (Fig. 6A, B); AME and ALE approximately equal in size; clypeus height equal to approximately AME diameter; AME separated by about one diameter; AME separated from ALE by about 0.2× AME diameter; PLE slightly larger than PME; PME separated by approximately 1.25× their diameter; PME separated from PLE by approximately 0.5× PME diameter. Chelicerae orange, pale orange towards fang base, endites and labium slightly lighter; three promarginal teeth, median tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum pale yellow, light brown towards borders. Abdomen creamy white to pale yellow dorsally, mottled brown over last 3/4 of abdomen (Fig. 6A, B); first pair of sigilla pale brown, anterior to midpoint, second pair slightly darker, posterior to midpoint of abdomen. Legs pale yellow to pale brown; legs I and II more robust, slightly darker than III and IV. Palp pale yellow to brown; retrolateral PA large, triangular, slightly curved; CY pear-shaped; TE oval, slightly more than 1/2 CY length; SP gradually curved, with sharp proximal bend; EM originating prodistally, with proximal section approximately half the width of TE, distal section long, curving clockwise, prodistally from its base, with tip directed at 1 o'clock (Figs 5A–E, 8A, B).

Female. Measurements: CL 1.25–1.75, CW 1.10–1.48, AL 1.70–2.40, AW 1.20–1.80, TL 2.95–4.15, FL 0.05–0.10, SL 0.78–0.90, SW 0.73–0.83, AME–AME 0.08, AME–ALE 0.05, ALE–ALE 0.28, PME–PME 0.13, PME–PLE 0.08, PLE–PLE 0.45. Length of leg segments: I 3.56 (1.11, 0.48, 0.83, 0.62, 0.52); II 3.28 (1.00, 0.50, 0.78, 0.60, 0.40); III 2.68 (0.80, 0.38, 0.55, 0.65, 0.30); IV 3.97 (1.13, 0.48, 0.98, 0.98, 0.40).

Carapace reddish-brown; eye region brown, dark brown to black rings around eyes (Fig. 6B); AME and ALE equal in size; clypeus height equal to approximately AME diameter; AME separated by distance equal to 0.4× their diameter; AME separated from ALE by approximately 0.2× AME diameter; PME slightly larger than PLE; PME separated about one diameter; PME separated from PLE by about 0.7× PME diameter. Chelicerae pale brown, endites and labium slightly lighter; three promarginal teeth, median tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum pale brown, darker towards border. Abdomen with pale yellow to pale grey dorsum, with pale brown mottling over surface, darker posteriorly above spinnerets [in Ethiopian specimens, with grey sides and chevrons in posterior half; Fig. 6C, D]. Legs I to IV uniform pale yellow to pale brown; anterior legs slightly more robust, slightly darker than posteriors. Epigyne weakly sclerotised, with broad, arched, anteriorly directed AT housing CO; CD directed anteriorly, bending back sharply before entering large, circular, medially situated ST II, separated by 3/4 their diameter; Cd directed mesally, then posteriorly along midline, making complete loop in thickened posterior section before diverging posterolaterally, entering oval ST I near epigastric fold on their anteromesal margins; ST I separated by about their diameter (Figs 5F, 8C, D).

Material examined. **ANGOLA:** Centro de Estudos de Cela [11°12'S, 15°18'E], 16.IV.1972, leg. M.K.P. Meyer (strawberries), 1♂ (NCA 76/1887). **BOTSWANA:** Maun, Boronyane, 19°55'S, 23°25'E, 6.IX.1975, leg. A. Russell-Smith (in rushes in shallow water), 1♂ 1♀ (BMNH); Maun, Government Camp, House 36, 19°59'S, 23°25'E, I–II.1977, leg. A. Russell-Smith, 1♂ 1♀ (BMNH); Maun, Island Safari Lodge, 19°55'S, 23°31'E, 29.IX.1975, leg. A. Russell-Smith (riverine forest), 2♀ (BMNH); Maun, Maphaneng Pan, 19°56'S, 23°25'E, III.1976, leg. F. Wanless & A. Russell-Smith (edge of riverine woodland, ground layer), 3♂ 3♀ (BMNH); Maun, N of Maphaneng Pan,

19°56'S, 23°25'E, 21.II.1976, leg. F. Wanless & A. Russell-Smith (riverine wood, ground layer), 1♀ (BMNH); Maun, Okavango, side of Thalamakane River, 19°59'S, 23°30'E, 24.VIII.1975, A. Russell-Smith, 1♀ (BMNH); Maun, Thalamakane River, 19°59'S, 23°30'E, III.1976, leg. F. Wanless & A. Russell-Smith (floodplain grassland), 5♂ 2♀ (BMNH); Same locality, 13.III.1971, leg. A. Russell-Smith (*Setaria* grassland), 11♂ (BMNH), 1♂ (BMNH); Same locality, 5.II.1976, leg. A. Russell-Smith (*Setaria* grassland), 2♂ 1♀ (BMNH); Same locality, 11.IX.1976, leg. A. Russell-Smith (*Setaria* grassland), 1♂ 1♀ (BMNH); Same locality, 25.VII.1975, leg. A. Russell-Smith (grazed *Setaria* grassland), 13♂ 12♀ (BMNH); Same locality, 7.III.1976, leg. F. Wanless & A. Russell-Smith, 2♂ 5♀ (BMNH); Maxwee, Okavango Delta floodplain, 19°28'S, 23°39'E, 1.IV.1975, leg. A. Russell-Smith (grassland),

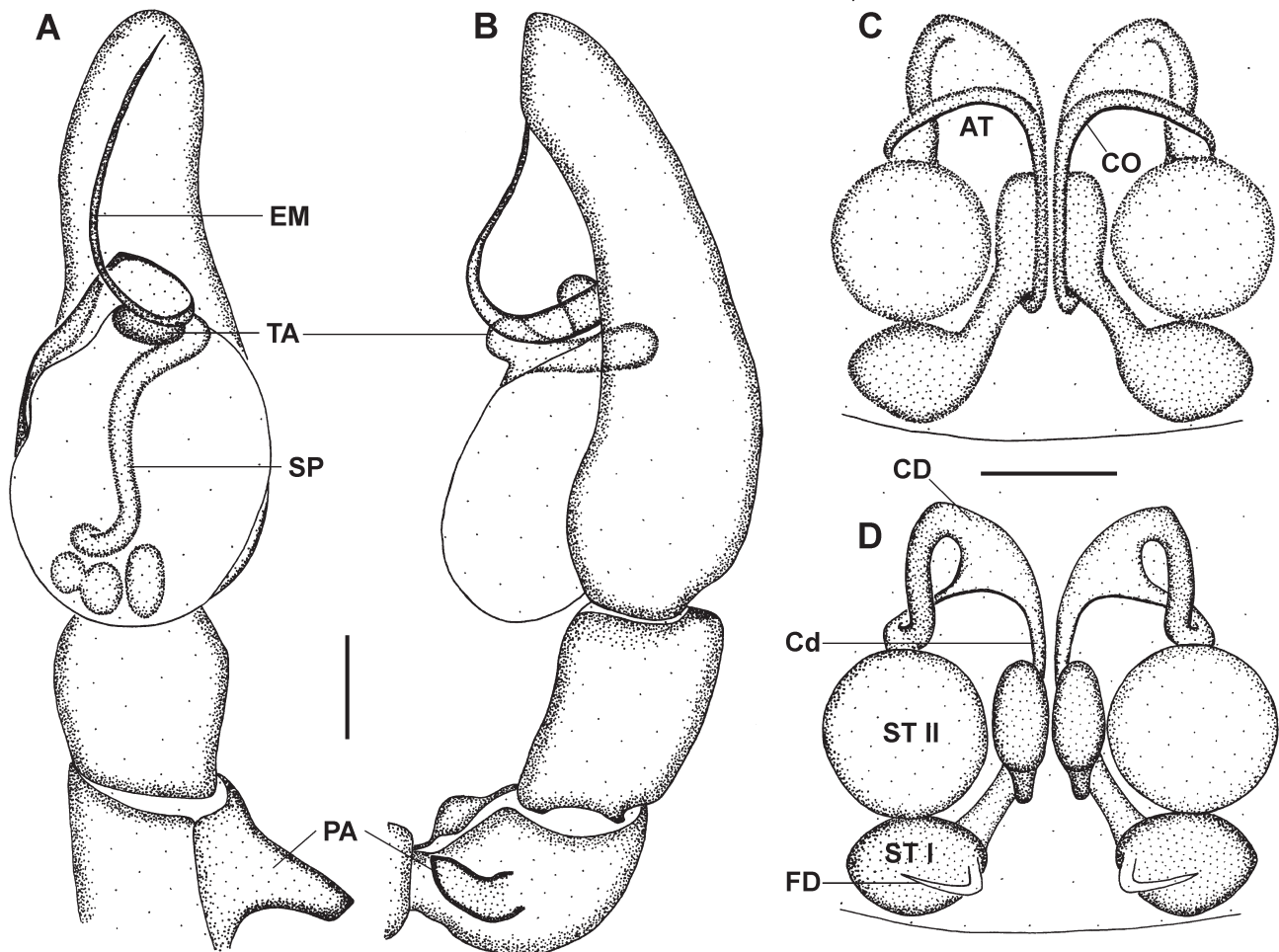


FIGURE 8. Genitalic morphology of *Trachelas canariensis*: A Male palp, ventral view; Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermatheca; TA—tegular apophysis.

1♂ 1♀ (BMNH); Mbomba Lagoon, Okavango Delta, 19°10'S, 23°18'E, 19.XI.1972, leg. A. Russell-Smith (moist *Hyparrhenia* grassland), 2♀ (BMNH); Moremi Lagoon, 19°11'S, 23°16'E, 30.VI.2003, leg. A. Russell-Smith (sweep net), 1♀ (BMNH); Pom Pom, Okavango Delta, 19°35'S, 22°50'E, 18.VIII.2001, leg. M. Dangerfield (dry riparian vegetation, pit trap 4), 1♂ (NCA 2001/419). **D.R. CONGO:** Bikara, 18 km S of Lubero, Lubéro-Goma Road, 00°15'S, 29°12'E, 2100 m a.s.l., XII.1976, leg. M. Lejeune (dans vieilles tiges de lobélies), 1♂ (MRAC 159839); Face N du Ruwenzori, camp de Kikura, 00°35'N, 29°57'E, 2000 m a.s.l., VII–VIII.1974, leg. M. Lejeune, 1♂ (MRAC 154732); Kivu, Kambaila, 00°10'N, 29°10'E, VI.1973, leg. M. Lejeune, 1♂ (MRAC 145812); Route Lubero-Butembo, région de Lukanga, forêt de Vukengete, 05°01'S, 14°18'E, 2210 m a.s.l., XII.1974–I.1975, leg. M. Lejeune (mousses couverte de graminées), 1♂ (MRAC 168091); Sake, 01°34'S, 29°02'E, V.1937, leg. J. Ghesquière, 2♂ 2♀ 1 imm. (MRAC 174292). **ETHIOPIA:** 16 km S of Addis Ababa [ca. 08°50'N, 38°46'E], leg. A. Russell-Smith, 20.VI.1987 (grass tussocks, stream course), 1♀ (BMNH); Wondo Genet, near Awassa [ca. 07°04'N,

38°37'E], 21.I.1984, leg. A. Russell-Smith (marshy area near hot springs), 1♀ (BMNH). **KENYA:** Mt. Kenya, Sirimon track, 00°10'S, 37°20'E, 2550 m a.s.l., 25.VII.1975, leg. R. Bosmans (montane rainforest), 1♂ (MRAC 161902). **LESOTHO:** Sehlabathebe National Park, 2364 m a.s.l., 29°52.931'S, 29°07.144'E, 10.XI.2002, leg. C. Haddad (under sandstone rocks, montane grassland), 1♂ (NCA 2006/1342). **RWANDA:** Lulana, lac Ihema, 01°55'S, 30°45'E, 6.VI.1969, leg. R. Kiss, 1♂ (MRAC 159694); Bugesera, rives lac Tsohoa, 02°06'S, 30°00'E, X.1957, leg. N. Leleup, 1♀ (MRAC 97145). **SOUTH AFRICA:** *Eastern Cape:* 17 km NE of Cookhouse, 32°38.160'S, 25°53.755'E, 23.IV.2010, leg. C. Haddad (base of grass tussocks, roadside), 2 imm. 1♀ (TMSA 23756). *Free State:* Bloemfontein, Bloemendal Estate, 29°03.209'S, 26°12.312'E, 1382 m a.s.l., leg. SCSA members, 18.II.2023, 1♂

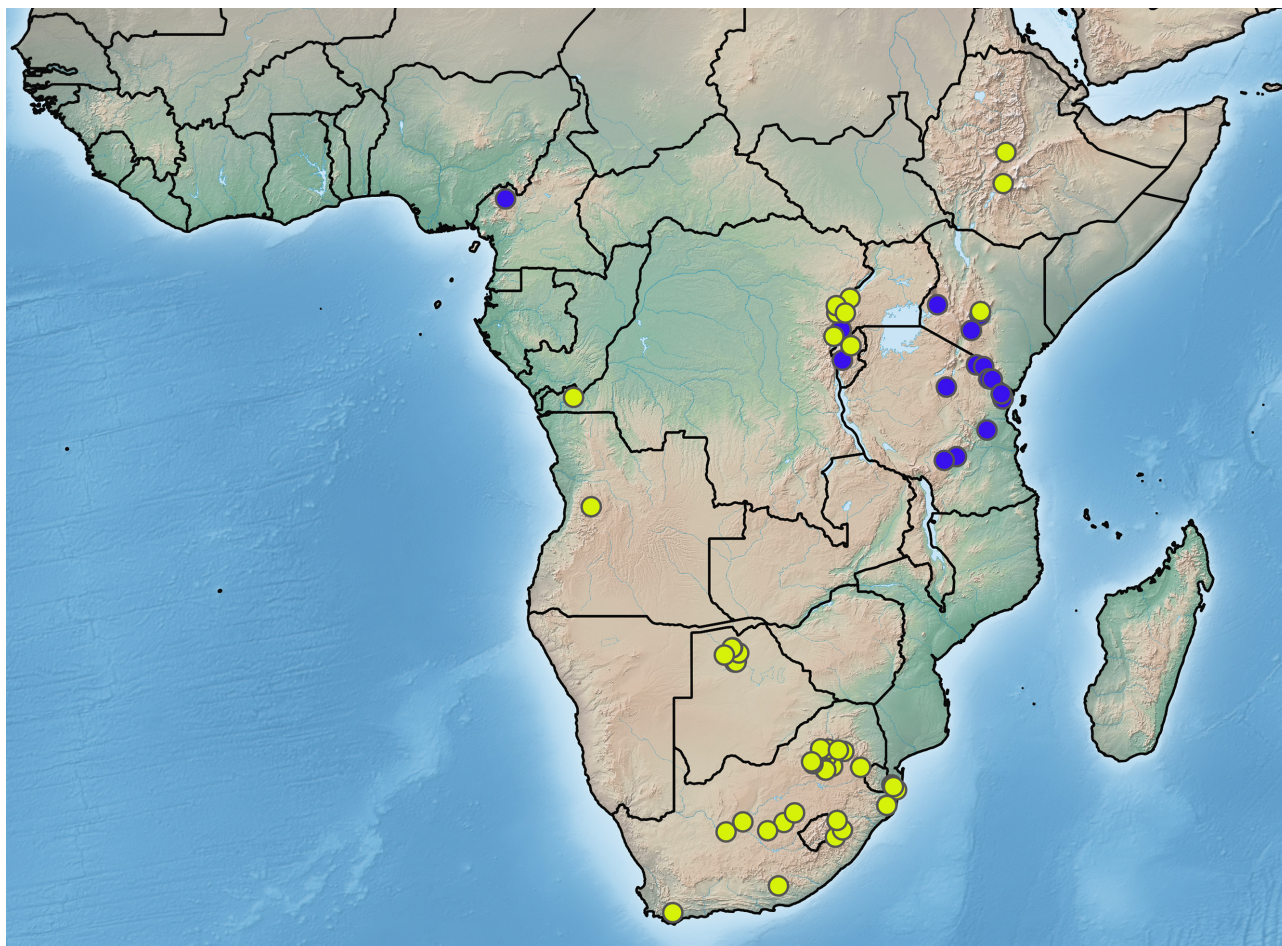


FIGURE 9. Distribution of *Trachelas canariensis* (yellow circles) and *T. chubbi* (blue circles) in the continental Afrotropical Region.

(NCA 2021/1284); Same locality, Free State National Botanical Gardens, 29°02'S, 26°12'E, 5.V.2008, leg. C. Luwes (base of grass tussocks), 1♀ (NCA 2008/2887); Erfenis Dam Nature Reserve, 28°30.431'S, 26°48.547'E, 28.II.2006, leg. C. Haddad (at base of *Themeda* grass), 1♂ (NCA 2006/671); Same locality, Site 7, rocky hillside, 28°29.629'S, 26°48.323'E, 30.IX–28.X.2009, leg. R. Fourie & A. Grobler (pitfall traps), 1♂ (NCA 2009/3603); Same locality, Site 8, *Themeda* grassland, 28°29.804'S, 26°48.503'E, 30.IX–28.X.2009, leg. R. Fourie & A. Grobler (pitfall traps), 1♂ (NCA 2009/3606); Same locality, Site 8, *Themeda* grassland, 28°29.804'S, 26°48.503'E, 31.VIII–30.IX.2009, leg. R. Fourie & A. Grobler (pitfall traps), 1♂ (NCA 2009/3656); Kalkfontein Dam Nature Reserve, 29°31'S, 25°17'E, 9.IV.2008, leg. L. Lotz (sweeping grass), 1♀ (NMBA 12080). *Gauteng:* Bronkhorstspuit district, Farm Witfontein, 25°51.982'S, 28°57.895'E, 3.IV.2003, leg. H. Roux (koppie slope, hand collecting), 1♂ (NCA 2009/683), 1♀ (S.E.M. preparations); Cullinan, Leeufontein Nature Reserve, 25°21.845'S, 28°36.737'E, 15.II.2002, leg. H. Roux (pan trap, koppie slope, open woodland), 1♀ (NCA 2010/2883); Pretoria/Tshwane, Meyerspark, 25°44'S, 28°18'E, 31.VIII.2002, leg. C. Haddad (on table in garden), 1♂ (NCA 2006/1335); Same locality, Rietondale, ARC—Plant Protection Research Institute [25°43'S, 28°14'E], 3.IV.2001, leg. A. Russell-Smith (in rough grassland), 1♂ (BMNH).

KwaZulu-Natal: Coastal Cashews, near KwaNgwanase/Manguzi, 27°12'S, 32°35'E, 85 m a.s.l., 12.I.2002, leg. C. Haddad (beats, cashew trees), 1♂ (NCA 2006/1336); Drakensberg Mountains, Cathedral Peak Hotel, 28°56.806'S, 29°12.683'E, 1430 m a.s.l., 4.X.2020, leg. R. Booysen & R. Steenkamp (hand collecting, at hotel gate), 1♂ (NCA 2021/1106); Hluhluwe Reserve, 28°05'S, 32°02'E, 900 ft a.s.l., 1.VI.1985, leg. C.E. Griswold, 1♂ (NMSA); Loteni Nature Reserve, 29°28'S, 29°31'E, 24.XII.1978, leg. A.S. Dippenaar-Schoeman (sweeping), 1♂ (NCA 2006/1518), 2♂ (S.E.M. preparations); Ndumo Game Reserve, South Boundary Fence, 26°55.6'S, 32°19.0'E, 13.VI.2005, leg. C. Haddad (*Commiphora harveyi* bark), 1♂ (NCA 2006/1337); Tembe Elephant Park, Pioneer grassland, 27°01.470'S, 32°24.346'E, 5.XII.2009, leg. C. Haddad (base of grass tussocks), 3♂ 1♀ (TMSA 23732); 75 km WSW of Estcourt, Cathedral Peak Forest Station, Meteorological station, Little Berg [28°56'S, 29°13'E], 1860 m a.s.l., 21–31.XII.1979, leg. S. & J. Peck (Malaise trough, veld), 1♂ (AMNH). **Limpopo:** Sterkfontein [25°02'S, 29°36'E], 10.IV.1976, leg. A. Russell-Smith (marshy areas near stream), 1♀ (BMNH); Tuinplaas, Springbokvlakte, Settlers Lodge, 24°54'S, 28°43'E, 29.V.2001, leg. M. van Jaarsveld (grass, pitfalls), 1♂ (NCA 2003/1358); 5 km from Warmbaths, 24°53'S, 28°17'E, 17.II.1977, leg. I. Vosloo (sweepnet, grass), 1♂ (NCA 77/471). **Mpumalanga:** Badplaas, Emboleni Game Reserve, 25°56'S, 30°33'E, 28.III.2001, leg. A. Russell-Smith (in litter in woodland), 1♀ (S.E.M. preparations); Delmas district, Farm Rietvallei, 26°05'S, 28°32'E, 28.IV.2005, leg. M. van Jaarsveld (pitfall traps, *Bacillus thuringiensis* maize), 1♂ (NCA 2006/1558); Same locality, 26°05'S, 28°34'E, 28.IV.2005, leg. M. van Jaarsveld (pitfall traps, unsprayed maize), 1♀ (NCA 2006/1556); Marble Hall, 24°57'S, 29°17'E, 3.V.2002, leg. M. Mellett (*Bacillus thuringiensis* cotton survey, pit traps), 1♀ (NCA 2004/1334). **Northern Cape:** Douglas Holiday Resort, 29°01'S, 23°53'E, 15.IV.1997, leg. E. van den Berg *et al.* (veldgrass), 1♂ (NCA 97/494); Green Valley Nuts, Prieska, 29°35'S, 22°56'E, 20.IX.2001, leg. C. Haddad (under cut grass, ground covers), 1♂ 1♀ (NCA 2002/480); Same locality, 28.I.2001, leg. C. Haddad, 2♂ 3♀ (NCA 2009/656). **North West:** Hartebeespoort Navigation Station, 25°44'S, 27°51'E, 28.XI.1984, leg. E. Ueckerman (on grass), 1♂ (NCA 85/92); Brits, 25°37'S, 27°46'E, I–II.1988, leg. A. van den Berg (cotton, whole plant method), 1♂ 3♀ (NCA 89/550). **Western Cape:** Riviersonderend, 34°09'S, 19°55'E, leg. A.J. Prins (in cow dung), 1♂ (SAMC ENW-C003370). **UGANDA:** Rukungiri district, Kitahurita Bwindi Impenetrable National Park, 00°15'S, 29°41'E, ca. 1740 m a.s.l., 18–20.IX.1996, leg. C.E. Griswold, 1♂ (CAS).

Distribution. Widely distributed in central, eastern and southern Africa (Fig. 9). Considering the species has not yet been recorded in West Africa, it is plausible that it may have been introduced from continental Africa to the Canary Islands, from where it was originally described (Wunderlich 1987), or *vice versa*.

Trachelas chubbi Lessert, 1921

Figs 1, 6E, F, 10

Trachelas chubbi Lessert, 1921: 435, figs 74–76 (Holotype ♂ and allotype ♀: **TANZANIA:** Kilimanjaro Region: Kibonoto [Kibongoto, 03°11'S, 37°06'E], zone des cultures, IX, MNHG—examined).

Diagnosis. This species is most similar to *T. sylvae*, as males of both species share an embolus that is inverted 6-shaped in lateral view and a small distal patellar apophysis, but it can be recognised by the narrow profile of the embolus in ventral view (broad in *T. sylvae*) and the broader proximal bend of the spermophor (*vs* narrow) (cf. Figs 10A, B and 19A, B). The female of this species can be recognised by the almost round atria that are as broad as long (larger and distinctly oval in *T. sylvae*) and the small subtriangular secondary spermathecae, *vs* oval (cf. Figs 10C, D and 19C, D).

Male. Measurements: CL 1.44–2.24, CW 1.20–1.76, AL 1.65–2.40, AW 1.10–1.92, TL 2.60–4.72, FL 0.08–0.12, SL 0.86–1.10, SW 0.80–1.04, AME–AME 0.08, AME–ALE 0.04, ALE–ALE 0.37, PME–PME 0.18, PME–PLE 0.12, PLE–PLE 0.65. Length of leg segments: I 5.30 (1.69, 0.73, 1.31, 0.94, 0.63); II 4.71 (1.43, 0.65, 1.12, 0.86, 0.65); III 3.70 (1.12, 0.45, 0.78, 0.94, 0.41); IV 4.92 (1.41, 0.59, 1.10, 1.31, 0.51).

Carapace reddish-brown (Fig. 6E); eye region reddish-brown, with darkened, almost black rings around eyes; AME and ALE approximately equal; clypeus height equal to 1.2× AME diameter; AME separated by half their diameter; AME separated from ALE by 0.2× AME diameter; PME and PLE equal in size; PME separated by approximately 1.2× their diameter; PME separated from PLE by PLE diameter. Chelicerae reddish-brown, endites and labium brown; three promarginal teeth, proximal tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum orange, brown towards borders. Abdomen uniform grey dorsally (Fig. 6E), rarely with

traces of faint grey chevron marking; scutum covering entire dorsum; paired sigilla indistinct; surface covered with fine setae. Legs I to IV pale brown, with incomplete bands; anterior legs more robust, slightly darker than posteriors; femora I and II with distal incomplete band, patellae with none, tibiae with two incomplete bands, one distal and one proximal, metatarsi with one incomplete proximal band, tarsi with none. Palp pale brown to brown in colour; PA small, distal, curved proximally, with sharply pointed tip; CY roughly pear-shaped, distal end subtriangular; TE oval, about 3/5 CY length; SP S-shaped, with strong proximal and distal bends; EM originating prolaterally, proximal section looping behind TA, distal section short, twisting with rounded tip; inverted 6-shaped in lateral view, somewhat laterally compressed in ventral view (Fig. 10A, B).

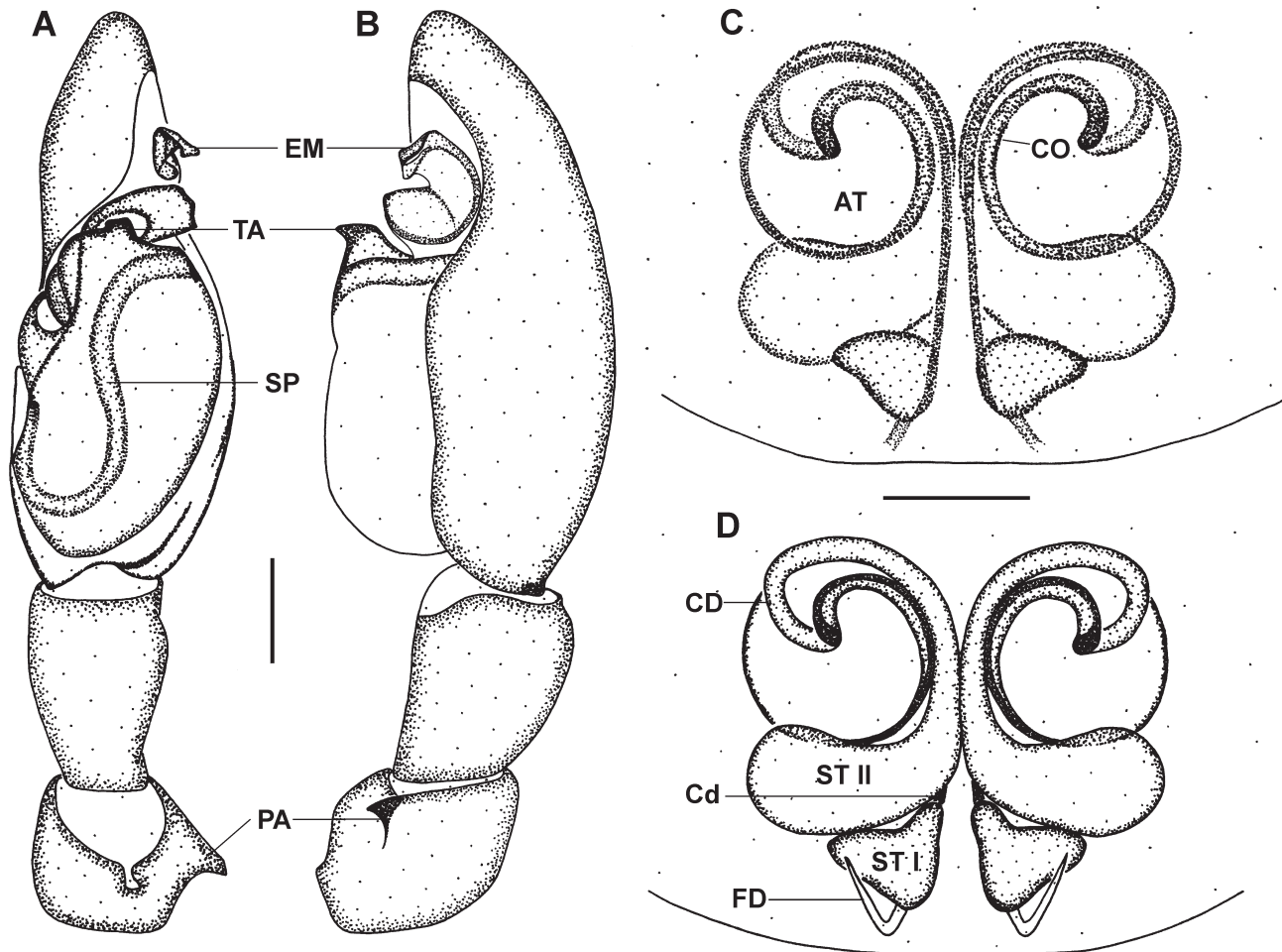


FIGURE 10. Genitalic morphology of *Trachelas chubbi*: A Male palp, ventral view; B Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermathecae; TA—tegular apophysis.

Female. Measurements: CL 1.18–1.92, CW 0.98–1.16, AL 1.84–3.04, AW 1.41–2.08, TL 2.70–4.88, FL 0.01–0.06, SL 0.76–1.08, SW 0.69–1.02, AME–AME 0.08, AME–ALE 0.04, ALE–ALE 0.37, PME–PME 0.14, PME–PLE 0.12, PLE–PLE 0.65. Length of leg segments: I 4.59 (1.41, 0.71, 1.02, 0.86, 0.59); II 4.59 (1.37, 0.67, 1.10, 0.90, 0.55); III 3.76 (0.94, 0.59, 0.90, 0.86, 0.47); IV 4.60 (1.49, 0.63, 1.10, 1.06, 0.32).

Carapace surface reddish-brown; eye region brown, with black rings around eyes (Fig. 6F); AME larger than ALE; clypeus height equal to twice AME diameter; AME separated by approximately 0.5 their diameter; AME separated from ALE by distance equal to 0.25 ALE diameter; PME slightly larger than PLE; PME separated by distance equal to 1.4 their diameter; PME separated from PLE by distance equal to PME diameter. Chelicerae brown, endites and labium yellow-brown; three promarginal teeth, median tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum orange, brown towards border. Abdomen with mottled grey dorsum, with faint traces of chevron marking; paired sigilla indistinct. Legs I to IV pale yellow to pale brown, with

incomplete bands; anterior legs pairs more robust, slightly darker than posteriors; femora I and II with incomplete distal band, patellae without bands, tibiae with two incomplete bands, one distal and one proximal, metatarsi with one incomplete proximal band, tarsi with none. Genital area relatively strongly sclerotised, brown to dark brown; AT almost circular, as long as wide, with CO at anterior margin; CD looping anteriorly, then mesally and posteriorly before entering adjoining transverse oval ST II near centre of epigyne; Cd very short, entering small subtriangular ST II on their anteromesal margin; ST I separated by less than 1/2 their width (Fig. 10C, D).

Other material examined: **BURUNDI:** Forêt de Rwegura, 02°55'S, 29°31'E, 2200 m a.s.l., 10.IV.2002, leg. B. Nzigidahera (versant est, by hand), 1♀ (MRAC 214149). **CAMEROON:** *Northwest Province:* Menchum Division, Near Lake Oku, 06°12'N, 10°27'E, ca. 2150 m a.s.l., leg. C. Griswold *et al.*, 7–13.II.1992 (litter, forest), 1♀ (ZMUC). **D.R. CONGO:** Bikara, 18 km S of Lubéro, Lubéro-Goma Road, 00°15'S, 29°12'E, 2100 m a.s.l., XII.1976, leg. M. Lejeune (feuilles sèches de lobélies), 1♂ (MRAC 159934); Same locality, XII.1976, leg. M. Lejeune (dans vieilles tiges de lobélies), 1♀ (MRAC 221588); Same locality, 1200 m a.s.l., XII.1976, leg. M. Lejeune (littière), 1♂ (MRAC 159810); Kivu, Mt. Lubwe, S.E. de Butembo, 00°02'N, 29°18'E, 2400 m a.s.l., 13.IV.1971, leg. M. Lejeune (dans mousse), 1♂ (MRAC 138905); Kivu, volcan Karisimbi Rweru [01°30'S, 29°26'E], 2700 m a.s.l., leg. R.P.M. Lejeune (dans bambusetum), 1♀ (MRAC 138498); 9.VIII.1970, Rutshuru, 01°11'S, 29°27'E, V.1937, leg. J. Ghesquière, 1♀ (MRAC 174313). **KENYA:** 1.5 km S of Castle Forest Lodge, 00°23'S, 37°18'E, 1985 m a.s.l., 21.IV.2004, leg. R. Jocqué *et al.* (mountain forest, beating), 2♂ 2♀ 2 imm. (MRAC 215131), 1♂ 1♀ (MRAC 215136); Kakamega Forest, Ileho, 00°13'N, 34°54'E, 22.IX.2002, leg. D. Shilabira Smith (Malaise trap), 1♀ (MRAC 220199); Same data but 14.IX.2002, 1♀ (MRAC 220239); Same data but 28.IX.2002, 1♀ (MRAC 220255); Same data but 22.VI.2002, 1♀ (MRAC 220261); Same data but 29.VI.2002, 1♀ (MRAC 220483); Same data but 20.VI.2002, 1♀ (MRAC 220502); Nairobi, Karura Forest, 01°14'S, 36°49'E, 8.XII.1979, leg. P. Reavell (dense edge trees and climbers), 1♀ (NMSA 13405). **TANZANIA:** *Arusha Region:* Hanang Mountain, south slope, 04°26'S, 35°24'E, 2200–2300 m a.s.l., 24–25.V.1957, leg. P. Basilewsky & N. Leleup (forêt avec Cupressus, gorge du Himit), 1♀ (MRAC 111723). *Iringa Region:* Uzungwa Mountains, Mufindi, Kigogo Forest Reserve [08°35'S, 35°17'E], 1700 m a.s.l., 8–10.X.1984, leg. N. Scharff (pitfall traps, montane rain forest), 1♂ (ZMUC); Uzungwa Mountains, Uzungwa Scarp Forest Reserve, 11 km SE of Masisiwe, Kihanga Stream, 08°22'05.7"S, 35°58'41.6"E, 1800 m a.s.l., 17–27.V.1997, leg. ZMUC & USNM expedition (understory), 5♀ (ZMUC); Same data but canopy, 4♂ 3♀ (ZMUC). *Kilimanjaro Region:* Kilimanjaro: Marangu, 03°17'S, 37°31'E, 1550 m a.s.l., 27.II.1956, leg. N. Leleup & J. Leleup, 1♀ (MRAC 112233); Mkomazi Game Reserve, 03°58'S, 37°48'E, 1.II.1996, leg. A. Russell-Smith (roadside, in grass litter), 2♀ (BMNH); Same locality, top of Ibaya Hill, 04°00'S, 38°00'E, 29.I.1996, leg. A. Russell-Smith (dry *Spirostachys* forest), 2♂ (MRAC 211322). *Morogoro Region:* Uluguru Mountains, Lupanga, West [06°52'S, 37°42'E], 1900 m a.s.l., 1.VII.1981, leg. M. Stoltze & N. Scharff, 1♀ (ZMUC); Same data but I–VII.1981 (pitfall trap), 1♂ (ZMUC). *Tanga Region:* East Usambara Mountains, Amani, 05°05'S, 38°37'E, 1000 m a.s.l., 20.VII.1980, leg. M. Scholtze & N. Scharff, 1♂ 4♀ (ZMUC); East Usambara Mountains, Amani Forest, 05°05.7'S, 38°38.0'E, 950 m a.s.l., 27.X–9.XI.1995, leg. C.E. Griswold *et al.*, 8 imm. 2♂ 4♀ (CAS); East Usambara Mountains, Amani, Mbomole Hill, 05°05.7'S, 38°37.0'E, 1000 m a.s.l., 5–8.XI.1995, leg. C.E. Griswold *et al.*, 28 imm. 10♀ (CAS); East Usambara Mountains, Dodwe Stream [05°05.3'S, 38°36.3'E], 900 m a.s.l., 10.VII.1980, leg. M. Stoltze & N. Scharff, 1♂ (ZMUC); East Usambara Mountains, Sangarawe Forest, 05°06.5'S, 38°35.7'E, 990 m a.s.l., 5–6.XI.1995, leg. C.E. Griswold *et al.*, 2 imm. 1♂ (CAS); West Usambara Mountains, Lushoto District, Mazumbai Forest Reserve, 04°49'S, 38°31'E, 1370–1435 m a.s.l., 4.XII.1995, leg. S. McKamey *et al.* (fog 31), 4♂ (ZMUC); Same locality, 04°49'S, 38°30'E, 1400–1800 m a.s.l., 10–20.XI.1995, leg. C.E. Griswold *et al.*, 24 imm. 4♂ 5♀ (CAS); Same locality, 04°49'S, 38°29'E, 1800–1900 m a.s.l., 10–20.XI.1995, leg. C.E. Griswold, N. Scharff & D. Ubick, 12 imm. 1♂ 2♀ (CAS); West Usambara Mountains, Mazumbai, 04°49'S, 38°31'E, 1600 m a.s.l., 1.VIII.1980, leg. M. Stoltze & N. Scharff, 1♂ (ZMUC).

Distribution. Widely distributed in equatorial Africa, as far west as Cameroon (Fig. 9).

Trachelas falsus sp. nov.

Figs 6G, H, 11

Trachelas minor Simon 1897: 183; Simon 1932: 977; Ramírez 2014: 373 (in part misidentified).

Etymology. This species name is taken from the Latin for “mistaken or misled”, which refers to the historical misidentification of this species in Africa as *T. minor*.

Diagnosis. The male of this species is most similar to *T. leggi* **sp. nov.**, as they share a similar embolus shape, but it can be recognised by the proximal section of the embolus being directed retroproximally rather than retrodistally and by the position of the patellar apophysis, which is located distally as opposed to medially on the patella (cf. Figs 11A, B and 14A, B). It also differs from *T. minor*, which has a retrodistally orientated proximal section of the embolus and a medially positioned patellar apophysis, similar to *T. leggi* **sp. nov.** (see Bosselaers *et al.* 2009: figs 10, 11 and Jin *et al.* 2017: fig. 3). The female of this species also resembles that of *T. minor* in the general epigyne shape, particularly the oval anterior atria, but can be recognised by the relatively larger size of the atria (almost half the length of the epigynal plate) compared to those of *T. minor*, which are only approximately a quarter of the length of the epigynal plate (cf. Fig. 11C with Bosselaers *et al.* 2009: figs 13 and Jin *et al.* 2017: fig. 2G).

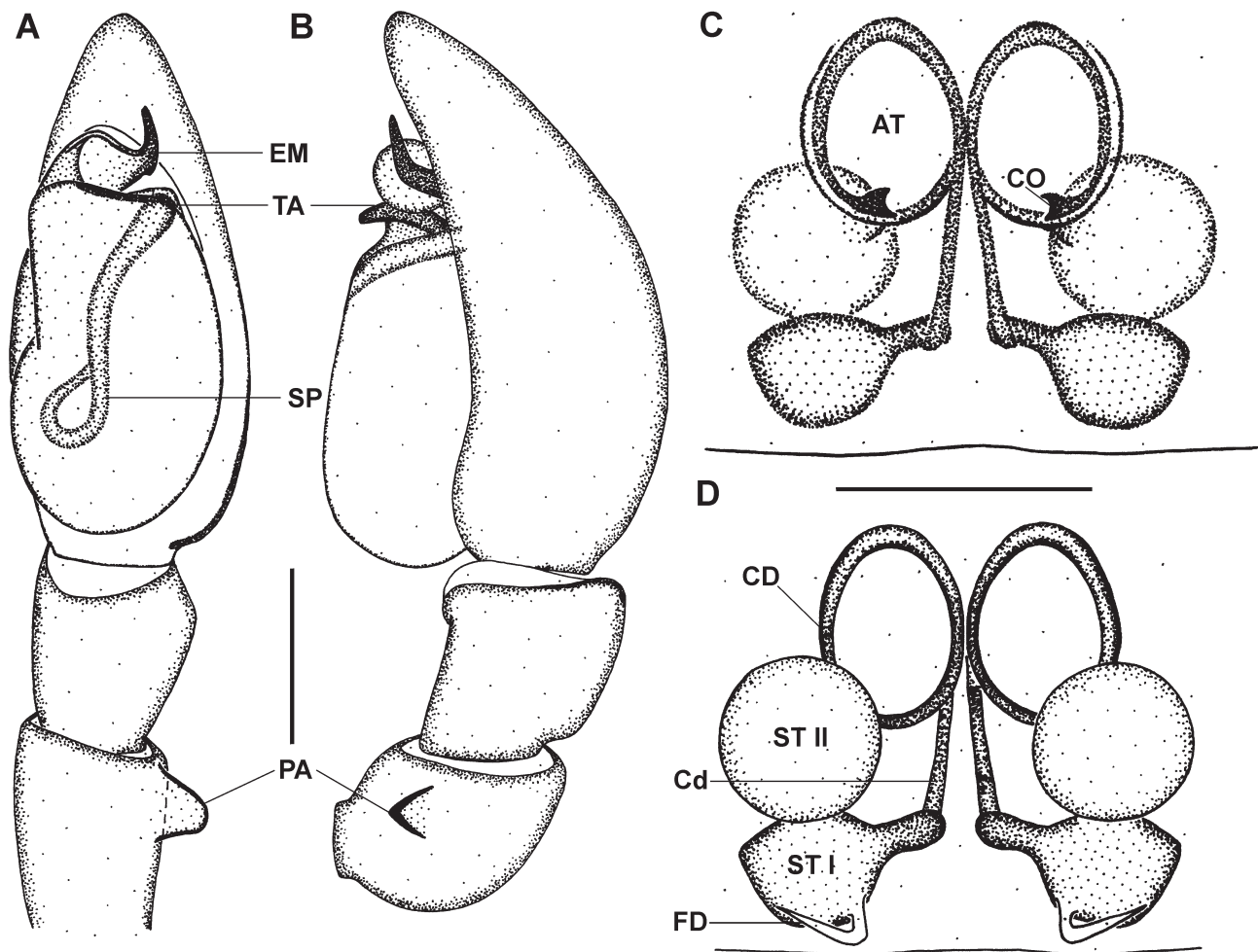


FIGURE 11. Genitalic morphology of *Trachelas falsus* **sp. nov.**: A Male palp, ventral view; B Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermathecae; TA—tegular apophysis.

Male. Measurements: CL 0.86–1.10, CW 0.74–0.88, AL 0.82–1.33, AW 0.71–1.10, TL 1.76–2.31, FL 0.06–0.08, SL 0.53–0.61, SW 0.53–0.57, AME–AME 0.06, AME–ALE 0.02, ALE–ALE 0.22, PME–PME 0.04, PME–PLE 0.06, PLE–PLE 0.33. Length of leg segments: I 2.30 (0.78, 0.41, 0.43, 0.31, 0.37); II 2.25 (0.61, 0.27, 0.57, 0.47, 0.33); III 1.85 (0.55, 0.27, 0.37, 0.41, 0.25); IV 2.62 (0.80, 0.29, 0.55, 0.69, 0.29).

Carapace brown to reddish-brown; eye region orange to brown, with dark brown to black rings around eyes (Fig. 6G); AME and ALE equal in size; clypeus height equal to distance slightly more than AME diameter; AME separated by distance equal to 0.7 their diameter; AME separated from ALE by distance equal to 0.4 AME diameter;

PME and PLE equal in size; PME separated by distance equal to their diameter; PME separated from PLE by distance equal to 0.7 PME diameter. Chelicerae brown, endites and labium slightly lighter; three promarginal teeth, median tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum pale brown, darker towards border. Abdominal dorsum pale creamy-yellow to pale grey (Fig. 6G), with faint yellow dorsal scutum; two pairs of pale brown sigilla present. Legs I to IV pale yellow-brown. Palpal CY oval, gradually narrowed distally; retrolateral PA small, sharply pointed, positioned distally on patella; TE oval, SP with gradual median curve and distinct narrow proximal loop; EM originating prodistally, with proximal section broad, forming single narrow coil, distal section short, stout, directed distally (Fig. 11A, B).

Female. Measurements: CL 0.86–1.06, CW 0.86–1.76, AL 1.15–1.61, AW 0.47–1.22, TL 1.90–2.74, FL 0.04–0.08, SL 0.53–0.65, SW 0.55–0.60, AME–AME 0.04, AME–ALE 0.02, ALE–ALE 0.22, PME–PME 0.08, PME–PLE 0.06, PLE–PLE 0.33. Length of leg segments: I 2.31 (0.73, 0.29, 0.55, 0.41, 0.33); II 2.13 (0.63, 0.29, 0.49, 0.41, 0.31); III 1.76 (0.51, 0.25, 0.37, 0.39, 0.24); IV 2.68 (0.78, 0.29, 0.65, 0.67, 0.29).

Carapace reddish-brown; eye region brown, with black rings around eyes (Fig. 6H); AME and ALE are equal in size; clypeus height slightly more than AME diameter; AME separated by $0.7\times$ their diameter; AME separated from ALE by about $0.2\times$ AME diameter; PME separated by their diameter; PME separated from PLE by $0.5\times$ PME diameter. Chelicerae brown, endites and labium dark yellow-brown; three promarginal teeth, median tooth largest, proximal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum pale brown, darker towards border. Abdominal dorsum creamy yellow, with mottled grey marking above spinnerets (Fig. 6H); two pairs of sigilla, first pair pale brown, anterior to midpoint, second pair darker, posterior to midpoint. Legs I to IV pale yellow to pale brown. Epigyne with oval AT anteriorly, almost half the length of epigynal plate; CO small, located posteriorly in AT, partly overlapping large, round ST II; CD curling around atrial perimeter before entering ST II, separated by their diameter; Cd running along midline before abruptly bending at almost perpendicular angle posteriorly, entering subpentagonal ST I on their mesal margin; ST I separated by approximately their width (Fig. 11C, D).

Type material: Holotype: ♂: **CÔTE D'IVOIRE:** Bouaké, F.-Foro, 07°41'N, 05°02'W, 26–28.VIII.1974, leg. G. Couturier (piège coloré) (MRAC 216452).

Allotype: ♀: same data as holotype (MRAC 216359).

Paratypes: **CÔTE D'IVOIRE:** Bouaflé, Klébo, 06°52'N, 06°08'W, I.1981, leg. J. Everts (pièges), 1♂ (MRAC 166407); Bouaflé, Koudougou, 05°56'N, 05°40'W, II.1981, leg. J. Everts (pièges), 1♂ 1♀ (MRAC 166259); Bouaké, F.-Foro, 07°41'N, 05°02'W, 26–28.VIII.1974, leg. G. Couturier (piège coloré), 2♀ (MRAC 216482), 1♀ (MRAC 216383). **SOUTH AFRICA:** *KwaZulu-Natal:* Drakensberg Mountains, near Tendele Camp [28°42'S, 28°56'E], 11.XI.2014, leg. A. Russell-Smith (in *Protea* savanna), 1♀ (BMNH); Oribi Gorge Nature Reserve, 30°43.079'S, 30°16.381'E, 315 m a.s.l., 13.I.2011, leg. C. Haddad (base of grass tussocks, open grassland patch), 1♂ 1♀ (TMSA 23990).

Other material examined: **CÔTE D'IVOIRE:** Bouaflé, 06°59'N, 05°45'W, 29.I.1981, leg. J. Everts (pitfalls), 1♂ (MRAC 173993); Bouaflé, Klébo, 06°52'N, 06°08'W, I.1981, leg. J. Everts (pièges), 1♂ (MRAC 166407); Bouaflé, Koudougou, 05°56'N, 05°40'W, III.1980, leg. J. Everts (pièges), 1♀ (MRAC 166253). **NIGERIA:** Ibadan, International Institute of Tropical Agriculture (I.I.T.A.), 07°14'N, 03°30'E, 24.V.1981, leg. A. Russell-Smith (sweeping ground layer and shrubs, secondary forest), 1♀ (MRAC 177308); Same locality, 12.VI.1981, leg. A. Russell-Smith (beaten from shrub layer, bush plots, corp site), 1♀ (MRAC 177312); Same locality, 23.V.1974, leg. A. Russell-Smith (corp. plots, 04), 1♀ (BMNH); Same locality, 28.VII.1974, leg. A. Russell-Smith (corp site, fallow bush), 5♂ 6♀ (BMNH). **SOUTH AFRICA:** *KwaZulu-Natal:* eThekweni/Durban, Buffelsdraai Township, 29°38'S, 30°58'E, 14.IV.2019, leg. S.P. Mntambo (hand collecting, *Chromolaena odorata* eradication project), 1♀ (NCA 2019/959); Ithala Game Reserve, Onverdacht picnic site, 27°31.967'S, 31°18.984'E, 29.I.2014, leg. C. Haddad (base of grass tussocks), 1♂ 1♀ (NCA 2013/5091); Ndumo Game Reserve, Southern boundary, 26°53.204'S, 32°10.641'E, 10.XII.2009, leg. C. Haddad (grass litter, *Acacia tortilis* savanna), 3♂ 2♀ (TMSA 23651); Same data as previous but leg. C. Haddad, R. Lyle & V. Butler, 4.VII.2009, 1 imm. 1♂ 3♀ (TMSA 23563); Underberg, Sani Pass transect, 29°41'S, 29°31'E, 20.I.2008, leg. University of Pretoria students (pitfall traps), 1 imm. 1♀ (NCA 2009/681). **TANZANIA:** Mkomazi Game Reserve, Kikolo plot, 04°00'S, 38°00'E, 25.I.1996, leg. A. Russell-Smith (thick grass below *Commiphora* trees), 2♂ 2♀ (MRAC 211321).

Distribution. Widespread in the Afrotropical Region, but only known from Côte d'Ivoire, Nigeria, South Africa and Tanzania (Fig. 12). It is likely that all previous records of *T. minor* occurring in West Africa, including those from Senegal (Simon 1897: 183) and Sierra Leone and Liberia (Simon 1932: 977; Ramírez 2014: 373), refer to this new species, as their embolus structures are the most similar among the *Trachelas sensu stricto* and we found no

specimens matching the genitalic morphology of *T. minor*, as illustrated in several recent papers (e.g. Bosselaers *et al.* 2009; Marusik & Kovblyuk 2010; Jin *et al.* 2017), among the specimens examined in this study. Unfortunately, we were unable to examine any material from those three countries to confirm this. Incidentally, the scanning electron micrographs of the vulva of *T. minor* by Ramírez (2014: fig. 179D) were based on specimens from Algeria, which match the epigyne illustrations of Mediterranean populations of *T. minor* (Bosselaers *et al.* 2009: figs 13–15) and not *T. falsus* **sp. nov.** (Fig. 11C, D), so we can definitively confirm that *T. minor* at least occurs in North Africa. As such, we conclude that *T. minor* does not occur in the Afrotropical Region and that its distribution is restricted to the Palearctic Region, extending from the Mediterranean (including North Africa) to Central Asia.

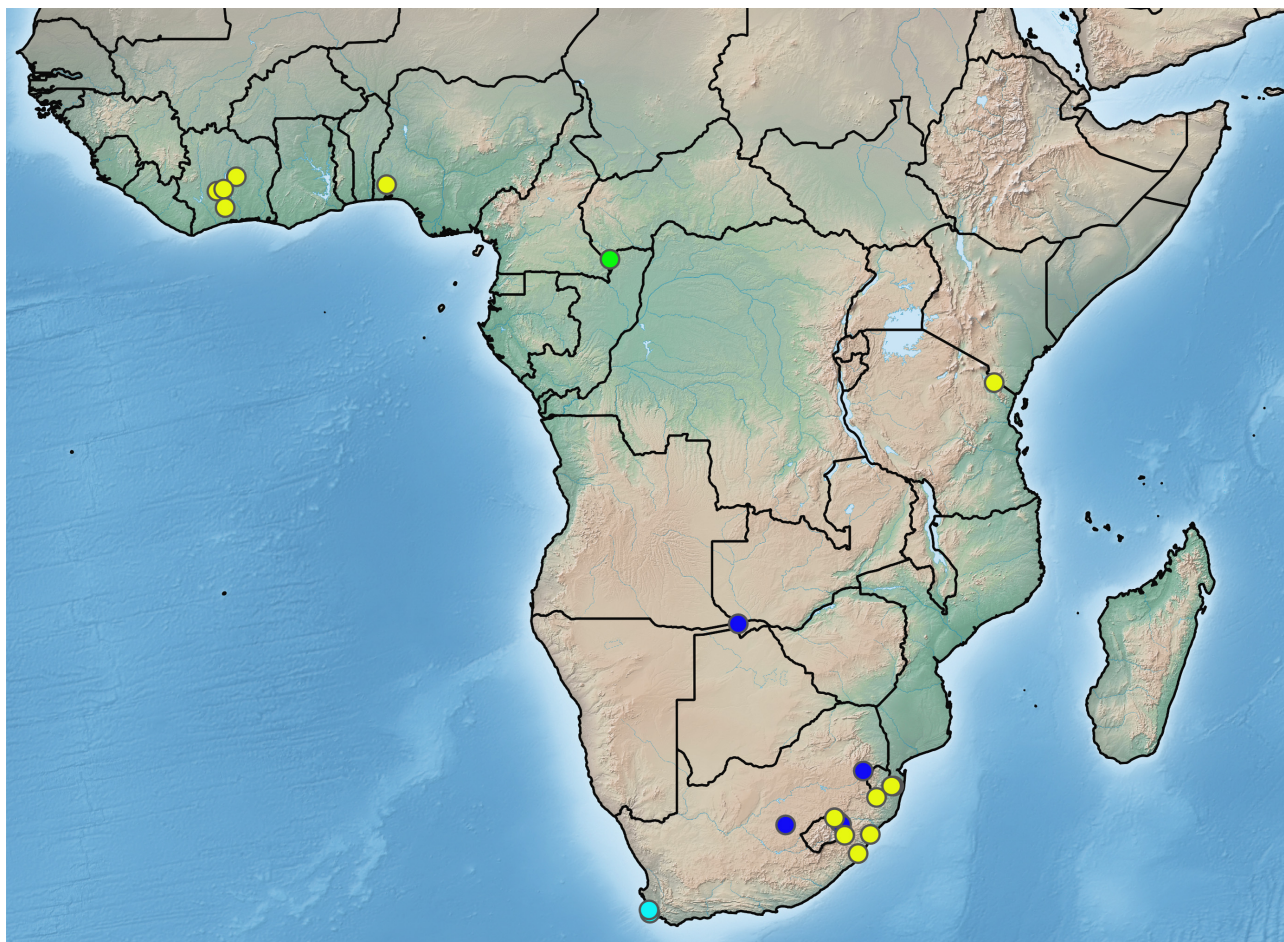


FIGURE 12. Distribution of *Trachelas falsus* **sp. nov.** (yellow circles), *T. humus* **sp. nov.** (blue circles), *T. leggi* **sp. nov.** (turquoise circles) and *T. longinquus* **sp. nov.** (green circle) in the continental Afrotropical Region.

Trachelas humus **sp. nov.**

Figs 6I, J, 13

Etymology. This species name is derived from Latin for “ground”, which refers to the habitat of this species. Noun in apposition.

Diagnosis. The male of this species shares with *T. canariensis* the slender distal section of the embolus but can be distinguished by it curving towards the prodistal side, with the tip directed at 11 o’clock (Fig. 13A), whereas that of *T. canariensis* curves towards the retrodistal side, with the tip directed at 1 o’clock (Fig. 8A). The female is distinctive among Afrotropical *Trachelas* by the broad, transverse primary spermathecae, which are twice as wide as long (Fig. 13C).

Male. Measurements: CL 1.08, CW 0.93, AL 1.30, AW 0.95, TL 2.20, FL 0.08, SL 0.65, SW 0.60, AME–AME 0.05, AME–ALE 0.03, ALE–ALE 0.24, PME–PME 0.08, PME–PLE 0.05, PLE–PLE 0.35. Length of leg segments: I 3.63 (1.05, 0.40, 0.98, 0.70, 0.50); II 2.84 (0.83, 0.33, 0.73, 0.55, 0.40); III 2.17 (0.63, 0.30, 0.33, 0.63, 0.28); IV 3.28 (1.00, 0.33, 0.85, 0.75, 0.35).

Carapace bright orange-brown (Fig. 6I); eye region brown, with dark brown rings around eyes; AME and ALE equal in size; clypeus height $1.7\times$ AME diameter; AME separated by their diameter; AME separated from ALE by $0.2\times$ AME diameter; PME slightly larger than PLE; PME separated by slightly more than their diameter; PME separated from PLE by about $0.5\times$ PME diameter. Chelicerae brown, endites and labium slightly lighter; two promarginal teeth, proximal tooth largest; two retromarginal teeth, distal tooth largest. Sternum pale brown, darker towards borders. Abdomen creamy-yellow dorsally, with faint grey mottled patch in posterior half; dorsal scutum pale yellow; first pair of sigilla very pale, anterior to midpoint; second pair darker, posterior to midpoint. Legs pale yellow-brown, femora of legs I and II dark yellow-brown. Palp yellow-brown, with PA finger-like, slightly curved towards proximal side; CY conical in distal half, gradually narrowed distally; TE oval, slightly more than $1/2$ CY length; EM with proximal section nearly as broad as TE, curving clockwise, distal section slender, elongate, curving towards prodistal side, with tip directed at 11 o'clock (Fig. 13A, B).

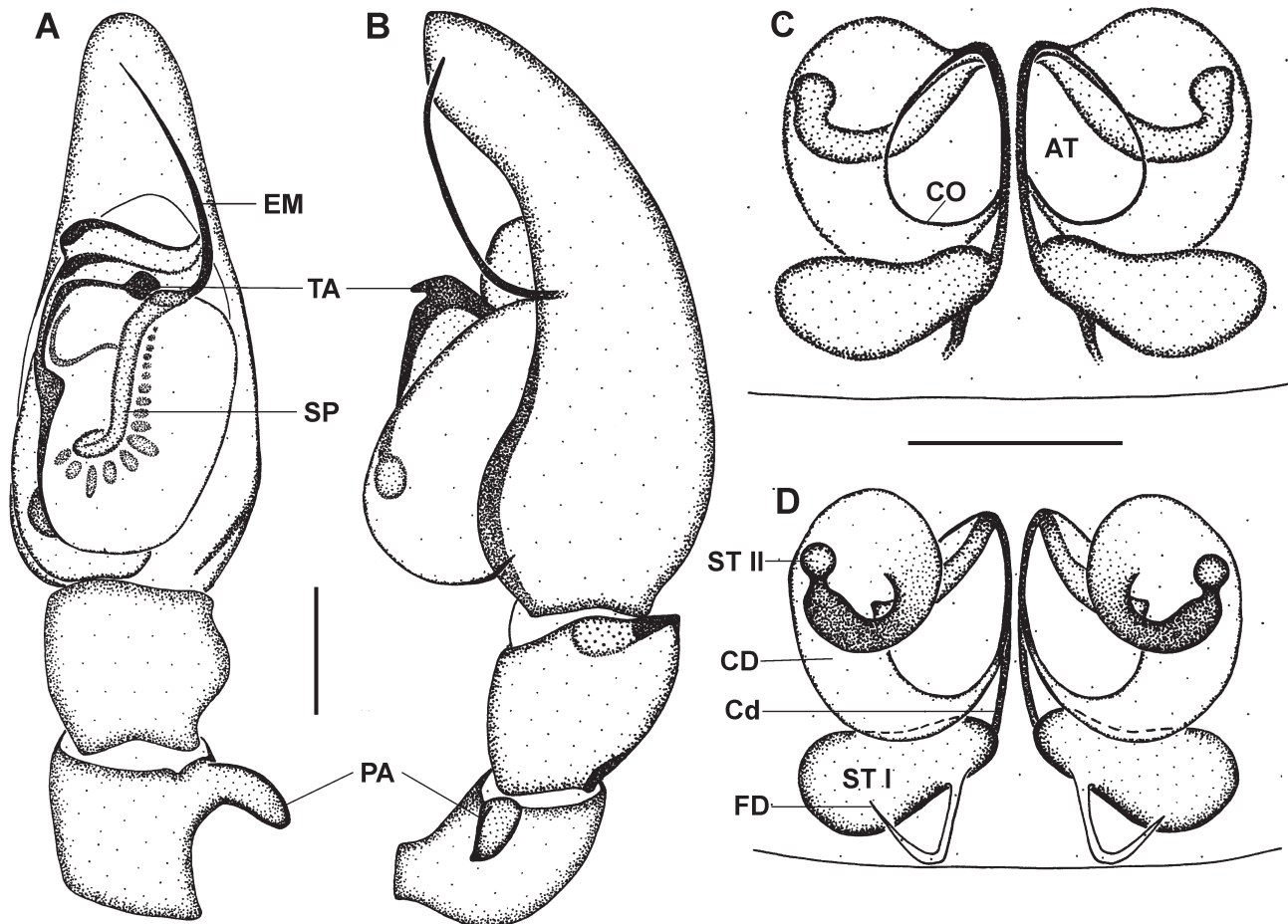


FIGURE 13. Genitalic morphology of *Trachelas humus* sp. nov.: A Male palp, ventral view; B Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermathecae; TA—tegular apophysis.

Female. Measurements: CL 1.00–1.13, CW 0.93–0.95, AL 1.25–1.78, AW 0.85–1.35, TL 2.23–2.70, FL 0.05–0.08, SL 0.63–0.70, SW 0.53–0.63, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.23, PME–PME 0.10, PME–PLE 0.05, PLE–PLE 0.38. Length of leg segments: I 3.18 (0.95, 0.40, 0.75, 0.63, 0.45); II 2.75 (0.85, 0.35, 0.65, 0.53, 0.37); III 2.31 (0.63, 0.45, 0.43, 0.50, 0.30); IV 3.51 (1.00, 0.38, 0.85, 0.88, 0.40).

Carapace orange-brown; eye region brown, with dark brown rings around eyes (Fig. 6J); ALE slightly larger than AME; clypeus height slightly more than AME diameter; AME separated by their diameter; AME separated from ALE by $0.2\times$ AME diameter; PME slightly larger than PLE; PME separated by slightly more than their diameter; PME separated from PLE by $0.7\times$ PME diameter. Chelicerae, endites and labium orange; three promarginal teeth, distal tooth largest, proximal tooth smallest; three retromarginal teeth, median tooth largest, distal tooth smallest.

Sternum pale brown, darker towards borders. Abdomen with dorsum pale yellow, with pale grey mottling (Fig. 6J); first pair of sigilla very pale brown, anterior to midpoint; second pair darker, posterior to midpoint. Legs uniform pale brown; legs I and II slightly more robust and darker than legs III and IV. CO situated posteriorly in oval AT next to midline, their long axes converging anteriorly; CD initially as broad as CO, tapering rapidly while curving laterally and anteriorly, forming complete spiral terminating in small lollipop-shaped ST II anterolaterally; ST II separated by almost 10× their diameter; Cd converging anteromesally, bending backwards, running along midline before entering broad, transversely oval ST I posterolaterally; ST I twice as broad as long, separated by approximately 1/6 their width (Fig. 13C, D).

Type material: Holotype ♂ and 6♀ paratypes: **SOUTH AFRICA:** *KwaZulu-Natal:* iSimangaliso Wetland Park, Eastern Shores Nature Reserve, 29°05.726'S, 26°09.435'E, 3.VII.2007, leg. C. Haddad (leaf litter) (NCA 2007/2896).

Paratypes: **NAMIBIA:** Caprivi Strip, Kwando [17°41'S, 23°28'E], 24.III.1976, leg. F. Wanless & A. Russell-Smith (river *Phragmites* and *Papyrus*), 1♀ (BMNH). **SOUTH AFRICA:** *KwaZulu-Natal:* Drakensberg Mountains, Royal Natal National Park, 40.6 km W of Bergville, 28°41.369'S, 28°56.243'E, 1480 m a.s.l., 21.I.2011, leg. H. Wood *et al.* (general collecting, montane grassland and plantation), 1♀ (CAS, CASENT 9043415); Same locality, Thendele Camp, 28°42.701'S, 28°56.052'E, 1600 m a.s.l., 17.X.2015, leg. C. Haddad (grass tussocks, alpine grassland), 5♂ 1♀ (NCA 2015/2078); Drakensberg Mountains, Cathedral Peak Hotel, 28°56.806'S, 29°12.683'E, 1430 m a.s.l., 4.X.2020, leg. R. Booysen & R. Steenkamp (hand collecting, at hotel gate), 1♂ (NCA 2021/1105); iSimangaliso Wetland Park, Eastern Shores Nature Reserve, 29°05.726'S, 26°09.435'E, 3.VII.2007, leg. C. Haddad (leaf litter), 1♂ (MACN-Ar 12922, CJG-03050), 1♀ (MACN-Ar 12924, CJG-03051). *Mpumalanga:* Badplaas, Embuleni Nature Reserve, 26°02'S, 30°34'E, 28.III.2001, leg. Y.M. Marusik, 1♀, together with 2 non-type imm. (ZMUM).

Other material examined: **SOUTH AFRICA:** *KwaZulu-Natal:* Drakensberg Mountains, Monk's Cowl [29°04'S, 29°20'E], 16.XI.2014, leg. A. Russell-Smith (grass tussock in *Protea* savanna), 1♂ (BMNH); Drakensberg Mountains, Royal Natal National Park, Cascade Falls pathway, 28°41.373'S, 28°56.246'E, 1485 m a.s.l., 21.I.2011, leg. C. Haddad (base of grass tussocks), 2♀ (TMSA 23982); Ndumo Game Reserve, Nyamiti Pan, 26°53.350'S, 32°17.717'E, 53 m a.s.l., 17.X.2020, leg. R. Booysen & R. Steenkamp (hand collecting), 1♀ (NCA 2021/1301).

Distribution. Known from several localities in eastern South Africa and northeastern Namibia (Fig. 154).

Trachelas leggi sp. nov.

Figs 6K, L, 14A–D

Etymology. This species is named after Robert Legg, who collected the holotype.

Diagnosis. Males of this species share with *T. falsus* sp. nov. the short, transversely coiled embolus with a short, stout, distally directed tip, but can be distinguished from it by the broad proximal bend of the sperm duct (*vs* with closed proximal loop), the retrodistally directed proximal section of the embolus (*vs* retroproximally) and the medial position of the small patellar apophysis (*vs* distal). Females are most similar to *T. russellsmithi* sp. nov., as they have similarly sized copulatory openings directed mesally, but can be distinguished by the copulatory openings being separated by two diameters (*vs* equal to their diameter), the secondary spermathecae being positioned near the middle of the epigyne (*vs* anteriorly) and the abdomen being uniformly grey (*vs* with a narrow pale anterior stripe in *T. russellsmithi* sp. nov.).

Male. Measurements: CL 0.88, CW 0.70, AL 1.00, AW 0.65, TL 1.90, FL 0.03, SL 0.53, SW 0.50, AME–AME 0.03, AME–ALE 0.03, ALE–ALE 0.15, PME–PME 0.05, PME–PLE 0.05, PLE–PLE 0.25. Length of leg segments: I 2.39 (0.68, 0.25, 0.55, 0.48, 0.43); II 1.86 (0.55, 0.20, 0.40, 0.38, 0.33); III 1.47 (0.43, 0.18, 0.28, 0.35, 0.23); IV 1.92 (0.55, 0.23, 0.43, 0.43, 0.28).

Carapace yellow-orange, with dark brown mottling (Fig. 6K); eye region brown, with dark brown rings around eyes; ALE larger than AME; clypeus height equal to AME diameter; AME separated by 0.5× their diameter; AME separated from ALE by 0.2× AME diameter; PME and PLE equal in size; PME separated by their diameter; PME separated from PLE by PME diameter. Chelicerae brown, paler towards fang base, endites and labium yellow-brown; two promarginal teeth, distal tooth largest; two retromarginal teeth, distal tooth largest. Sternum brown, darker towards borders. Abdominal dorsum mottled grey, with dark brown undertones; scutum distinct, covering most of abdomen (Fig. 6K). Legs uniform pale brown; legs I and II slightly more robust and darker than III and IV.

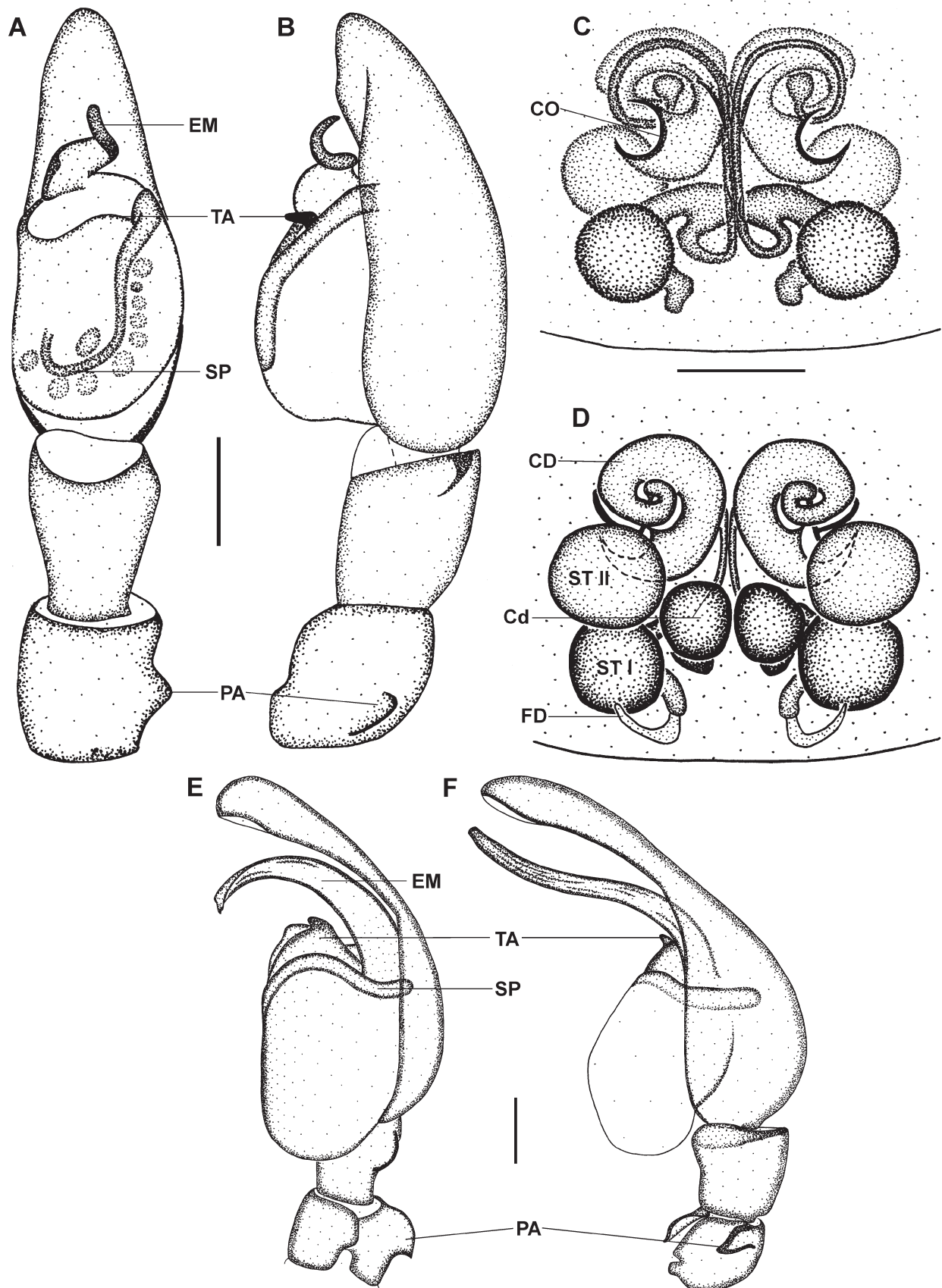


FIGURE 14. Genitalic morphology of *Trachelas leggi* **sp. nov.** (A–D) and *T. longinquus* **sp. nov.** (E, F): A, E Male palp, ventral view; B, F Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermathecae; TA—tegular apophysis.

Palp pale yellow-brown; PA small, rounded, medially situated; CY elongate-oval; TE oval, more than 1/2 CY length; SP with broad, U-shaped proximal bend; EM short, originating prodistally, with narrow, retrodistally directed proximal section in clockwise coil and short, distally directed tip (Fig. 14A, B).

Female. Measurements: CL 1.03, CW 0.92, AL 1.40, AW 1.11, TL 2.45, FL 0.06, SL 0.62, SW 0.59, AME–AME 0.06, AME–ALE 0.01, ALE–ALE 0.20, PME–PME 0.08, PME–PLE 0.05, PLE–PLE 0.33. Length of leg segments: I 2.37 (0.70, 0.37, 0.54, 0.43, 0.33); II 2.19 (0.62, 0.32, 0.49, 0.44, 0.32); III 1.79 (0.52, 0.29, 0.32, 0.42, 0.24); IV 2.59 (0.76, 0.31, 0.60, 0.63, 0.29).

Specimen slightly faded; carapace yellow-orange, cream on posterior slope behind fovea; ocular region slightly darker, with black rings around eyes (Fig. 6L); AME and ALE subequal; clypeus height $1.25 \times$ AME diameter; AME separated by $1.2 \times$ their diameter; AME separated from ALE by $0.17 \times$ AME diameter; PLE very slightly larger than PME; PME separated by their diameter; PME separated from PLE by $0.6 \times$ PME diameter. Chelicerae yellow-orange, endites and labium slightly lighter; three promarginal teeth, proximal tooth smallest, median and distal teeth subequal; two retromarginal teeth on common base, proximal tooth slightly larger. Sternum pale yellow, with darker border. Abdomen pale creamy-grey dorsally and ventrally, with faint grey mottling (Fig. 6L). Legs uniform creamy-yellow. Epigyne with strongly curved, mesally directed ridges separated by twice their diameter; CD initially directed mesally and anteriorly, forming complete coil, narrowing terminally, with narrow channel leading to round ST II, separated by $1.2 \times$ their diameter; Cd very narrow, looping laterally then mesally and posteriorly along midline, thickened posteriorly before looping back and forming narrow channel that enters round posterolateral ST I, separated by $1.3 \times$ their diameter (Fig. 14C, D).

Type material: Holotype: ♂: **SOUTH AFRICA:** *Western Cape:* Cape Peninsula, dunes north of Muizenberg, 34°06'S, 18°27'E, 21.IV–5.V.1991, leg. R. Legg (MRAC 173691).

Paratype: **SOUTH AFRICA:** *Western Cape:* Cape Town, Signal Hill [33°55'S, 18°24'E], 13.VIII.1978, leg. A. Russell-Smith (under stones), 1♀ (BMNH).

Other material examined. None.

Distribution. Only known from the vicinity of Cape Town, South Africa (Fig. 12).

Trachelas longinquus sp. nov.

Figs 7A, 14E, F

Etymology. The species name is derived from Latin *longus* for “long”, which refers to the long embolus of the male.

Diagnosis. The male of this species can be easily recognised from congeners by the simple, curved, elongate embolus that is as long as the tegulum and the small, triangular retrolateral patellar apophysis pointing ventrally (Fig. 14E, F), whereas directed ventrolaterally or laterally in other species. Female unknown.

Male. Measurements: CL 1.50, CW 1.33, AL 1.90, AW 1.48, TL 3.30, FL 0.10, SL 0.85, SW 0.83, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.35, PME–PME 0.15, PME–PLE 0.10, PLE–PLE 0.55. Length of leg segments: I 3.79 (1.18, 0.50, 0.90, 0.73, 0.48); II 3.65 (1.13, 0.48, 0.83, 0.73, 0.48); III 2.68 (0.80, 0.38, 0.55, 0.65, 0.30); IV 3.66 (1.10, 0.43, 0.85, 0.93, 0.35).

Carapace reddish-brown (Fig. 7A); eye region dark brown, with black rings around eyes; AME and ALE subequal in size; clypeus height equal to AME diameter; AME separated by $0.5 \times$ their diameter; AME separated from ALE by $0.2 \times$ AME diameter; PLE slightly larger than PME; PME separated by $1.5 \times$ their diameter; PME separated from PLE by PME diameter. Chelicerae brown, endites and labium dark yellow-brown; two promarginal teeth, distal tooth largest; two retromarginal teeth, distal tooth largest. Sternum brown, darker towards border. Abdomen pale yellow, with brown scutum covering almost entire length of abdomen dorsally (Fig. 7A); first pair of sigilla indistinct, anterior to midpoint of abdomen, second pair brown, elongate, posterior to midpoint. Legs uniform pale brown; legs I and II slightly darker, more robust than posteriors; tibiae of legs I and II with long, erect ventral setae. Palp dark yellow-brown, PA small, triangular, positioned distally, with tip directed ventrally; palpal tibia with shallow, rounded retrolateral ridge; CY rounded proximally, narrow distally; TE oval, SP curving transversely across tegulum; EM originating retrolaterally, simple, elongate, curved proventrally (Fig. 14E, F).

Type material. Holotype: ♂: **CENTRAL AFRICAN REPUBLIC:** Sangha-Mbaéré Prefecture, Réserve Spéciale de Forêt Dense de Dzanga-Sangha, 12.7 km 326° NW Bayanga, 03°00'18"N, 16°11'36"E, 420 m, 10–17.V.2001, leg. B.L. Fisher (rainforest, beating low vegetation, BLF 4087) (CAS).

Other material examined. None.

Distribution. Known only from the type locality (Fig. 12).

***Trachelas pusillus* Lessert, 1923**

Figs 7B, 15

Trachelas pusillus Lessert, 1923: 195, figs 42–46 (Holotype ♂: **SOUTH AFRICA:** Grahamstown/Makhandia [33°18'S, 26°31'E], leg. J. Hewitt, deposited in MHNG—examined); Bosselaers *et al.* 2009: 24, figs 4, 38–39; Bosselaers 2010: 25, figs 4–9, 14–20.

Diagnosis. The male of this species is distinctive among Afrotropical congeners and can be easily recognised by the embolus looping on the longitudinal axis of the palp in ventral view and the hatchet-shaped patellar apophysis in lateral view (Fig. 15A, B). The epigyne of the new species is most similar to that of *T. leggi* **sp. nov.** but can be distinguished by the small copulatory openings that are separated by about three diameters (Fig. 15C) vs copulatory openings larger and separated by two diameters (Fig. 14C).

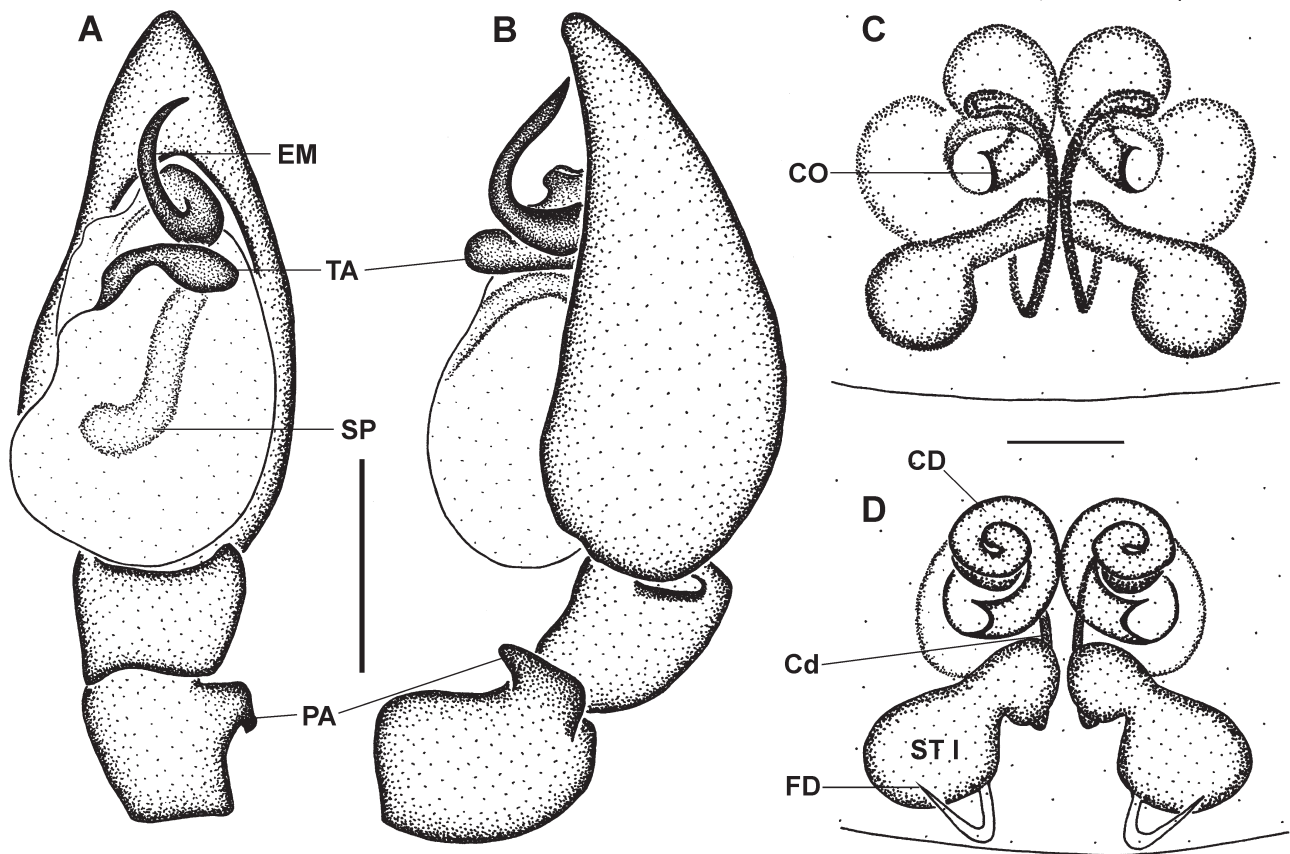


FIGURE 15. Genitalic morphology of *Trachelas pusillus*: A Male palp, ventral view; B Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view [ST II broken off during preparation]. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermatheca; TA—tegular apophysis.

Male. Measurements: CL 0.90, CW 0.74, AL 1.06, AW 0.75, TL 1.93, FL 0.04, SL 0.52, SW 0.46, AME–AME 0.04, AME–ALE 0.01, ALE–ALE 0.18, PME–PME 0.71, PME–PLE 0.03, PLE–PLE 0.28. Length of leg segments: I 2.04 (0.60, 0.27, 0.46, 0.38, 0.33); II 1.86 (0.55, 0.24, 0.40, 0.35, 0.32); III 1.48 (0.42, 0.22, 0.29, 0.34, 0.21); IV 2.17 (0.62, 0.25, 0.48, 0.55, 0.27).

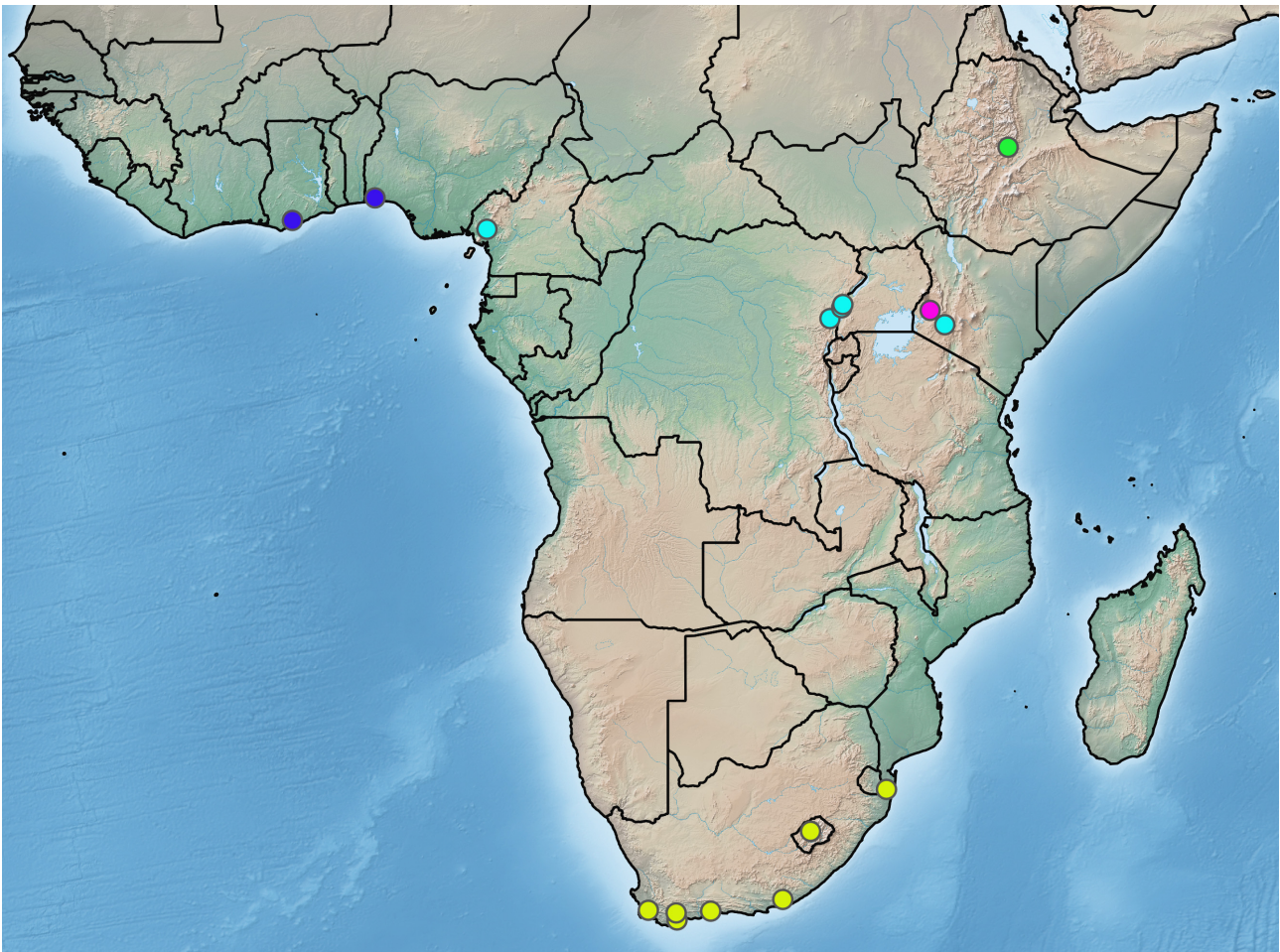


FIGURE 16. Distribution of *Trachelas pusillus* (yellow circles), *T. russellsmithi* **sp. nov.** (green circle), *T. scutatus* **sp. nov.** (blue circles), *T. smithi* **sp. nov.** (magenta circle) and *T. sylvae* (turquoise circles) in the continental Afrotropical Region.

Carapace bright orange, eye region slightly darker, with black rings around eyes (Fig. 7B); AME very slightly larger than ALE; clypeus height $1.1 \times$ AME diameter; AME separated by $0.5 \times$ times their diameter; AME separated from ALE by $0.1 \times$ AME diameter; PME very slightly larger than PLE; PME separated by about $0.85 \times$ their diameter; PME separated from PLE by about $0.4 \times$ PME diameter. Chelicerae bright orange, endites and labium slightly lighter; three promarginal teeth, proximal tooth smallest, median tooth largest; two retromarginal teeth on common base, subequal in size. Sternum bright orange, with darker border, covered in faint grey mottling, concentrated around border. Abdominal dorsum cream in anterior half, dark grey in posterior half, with broad orange scutum covering $\frac{3}{4}$ of abdomen, covered in grey mottling (Fig. 7B); venter uniform cream. All legs uniform creamy-yellow. Palp pale yellow-brown; PA hatchet-shaped, small, with broad base, narrowing near middle into ventrally directed point; CY oval, tapering to sharp point distally; TE oval, with prolateral protrusion proximally, almost $\frac{3}{4}$ length of CY; SP simple, oblique, with gradual proximal bend; EM originating distally on tegulum behind broad TA, forming single simple loop on longitudinal axis of palp, with tip directed retrodistally (Fig. 15A, B).

Female. Measurements: CL 1.00–1.20, CW 0.95–1.08, AL 1.50–1.58, AW 1.08–1.20, TL 2.50–2.70, FL 0.03–0.10, SL 0.63–0.70, SW 0.60–0.70, AME–AME 0.08, AME–ALE 0.13, ALE–ALE 0.26, PME–PME 0.10, PME–PLE 0.05, PLE–PLE 0.33. Length of leg segments: I 2.91 (0.88, 0.40, 0.63, 0.53, 0.45); II 2.53 (0.70, 0.38, 0.55, 0.50, 0.40); III 2.15 (0.63, 0.33, 0.43, 0.48, 0.28); IV 2.96 (0.93, 0.35, 0.70, 0.70, 0.28).

Carapace brown to reddish-brown; eye region brown to reddish-brown, with black rings around eyes; AME and ALE equal in size; clypeus height slightly larger than AME diameter; AME separated by $1.4 \times$ their diameter; AME separated from ALE by $0.4 \times$ AME diameter; PME and PLE equal in size; PME separated by $1.7 \times$ their diameter; PME separated from PLE by PME diameter. Chelicerae brown, endites and labium yellow-brown; three

promarginal teeth, median tooth largest, distal tooth smallest; two retromarginal teeth, distal tooth largest. Sternum pale brown to brown, darker towards border. Abdomen pale yellow dorsally, darkening to grey posteriorly. Legs uniformly pale brown; legs I and II slightly more robust, slightly darker than legs III and IV. Epigyne with small, mesally directed ridges, with CO separated by three diameters; CD forming complete compact coil, with short narrow stalk entering round ST II in anterior half of epigyne [both ST II broken off during ultrasonic epigyne clearing]; Cd slender, converging near midline, looping back posteriorly before forming thickened oblique stalk entering oval posterolateral ST I, separated by slightly less than their diameter (Fig. 15C, D).

Other material examined. **LESOTHO:** Mohale Dam, Island 3, 29°25.396'S, 28°05.903'E, 2040 m a.s.l., 16.XII.2003, leg. C. Haddad (under rocks, montane grassland), 1♀ (NCA 2006/1338). **SOUTH AFRICA:** *KwaZulu-Natal:* Tembe Elephant Park, 10.IV.1998, leg. A. Leroy (leaf litter), 1♀ (NCA); Tembe Elephant Park, Viewing Tower, 27°02.226'S, 32°24.906'E, 115 m a.s.l., 5.XII.2019, leg. C. Haddad & R. Booysen (base of grass tussocks), 1♂ (NMBA 18810). *Western Cape:* De Hoop Nature Reserve, Koppie Alleen, 34°28'S, 20°30'E, 6.IX.2007, leg. C. Haddad (hand collecting), 1♀ (NCA 2007/119); George, Elsenberg [33°58'S, 22°25'E], 8.V.1972, leg. Volschenk (grazing), 1♀ (NCA 76/1097); Stellenbosch, 28 Cluver Road [33°55'S, 18°52'E], 28.VIII.1979, leg. H. Lombaard, 1♀ (NCA 2007/1329); Swellendam, Bontebok National Park, 34°04'S, 20°27'E, 30.X.1987, leg. Entomology staff (various methods), 1♀ (NMBA 15002); same locality, 34°02.990'S, 20°28.890'E, 119 m a.s.l., 15.X.2011, leg. L. Almeida *et al.* (general collecting, fynbos and grassland), 2 imm. 4♂ 3♀ (CAS, CASENT 9043374).

Distribution: Widely distributed in central, eastern and southern Africa (Fig. 16).

Trachelas russellsmithi sp. nov.

Figs 7C, 17A, B

Etymology. This species is named after Tony Russell-Smith, who collected the type series, in recognition of his contributions to African arachnology.

Diagnosis. This species closely resembles *T. leggi* sp. nov. in genitalic morphology, particularly in the size of the curved ridges surrounding the copulatory openings of the epigyne, but can be distinguished by the dark abdomen with a narrow pale median stripe in the anterior half of the abdomen (cf. Figs 7C and 6L) and by the more anterior position of the secondary spermathecae, in the same plane as the copulatory openings (Fig. 17A) vs near the centre of the epigyne (Fig. 14C). Male unknown.

Female. Measurements: CL 0.99–1.10, CW 0.87–0.97, AL 1.40–1.52, AW 0.97–1.13, TL 2.53–2.72, FL 0.05–0.06, SL 0.62–0.66, SW 0.54–0.61, AME–AME 0.05, AME–ALE 0.01, ALE–ALE 0.21, PME–PME 0.08, PME–PLE 0.04, PLE–PLE 0.34. Length of leg segments: I 2.51 (0.76, 0.35, 0.56, 0.48, 0.36); II 2.38 (0.71, 0.33, 0.52, 0.47, 0.35); III 1.95 (0.59, 0.27, 0.38, 0.44, 0.27); IV 2.95 (0.87, 0.31, 0.68, 0.76, 0.33).

Carapace bright yellow-orange (Fig. 7C), paler on posterior slope behind fovea; eye region slightly darker, with black rings around eyes; ALE very slightly larger than AME; clypeus height equal to 1.44× AME diameter; AME separated by 0.65× their diameter; AME separated from ALE by 0.1× AME diameter, almost touching; PME slightly larger than PLE; PME separated by slightly less than their diameter; PME separated from PLE by 0.5× PME diameter. Chelicerae yellow-orange, endites and labium slightly lighter; three promarginal teeth, proximal tooth smallest, distal tooth largest; two subequal retromarginal teeth on common base; endites creamy-yellow; labium yellow-brown proximally, creamy-yellow distally. Sternum bright yellow-orange, borders orange-brown. Abdomen mottled dark grey dorsally, with narrow cream stripe in anterior half and eight fine recurved transverse chevrons in posterior half (Fig. 7C); venter cream, with faint grey mottling. Legs pale yellow-brown, distal ends of femora and entire patellae creamy-yellow. Epigyne with strongly curved, mesally directed ridges near anterior edge of epigynal plate; CD short, forming incomplete coil, initially directed mesally, then anteriorly, folding back laterally before entering round anterolateral ST II, separated by their diameter; Cd narrow, curving anteromesally before running along midline of epigyne, thickened posteriorly, folding back and looping laterally before entering transverse oval ST I on their anterior margin; ST I separated by 1.2× their diameter (Fig. 17A, B).

Type material. Holotype ♀ and 2♀ paratypes: **ETHIOPIA:** 51 km E of Addis Ababa [ca. 09°00'N, 39°20'E], 18.VI.1988, leg. A. Russell-Smith (under stones, dry hillside) (BMNH).

Other material examined. None.

Distribution. Only known from the type locality (Fig. 16)

Trachelas scutatus sp. nov.

Figs 7D, E, 17C–G

Etymology. This species name is derived from the Latin for the “scutum”, which refers to the abdominal scutum being present in both males and females.

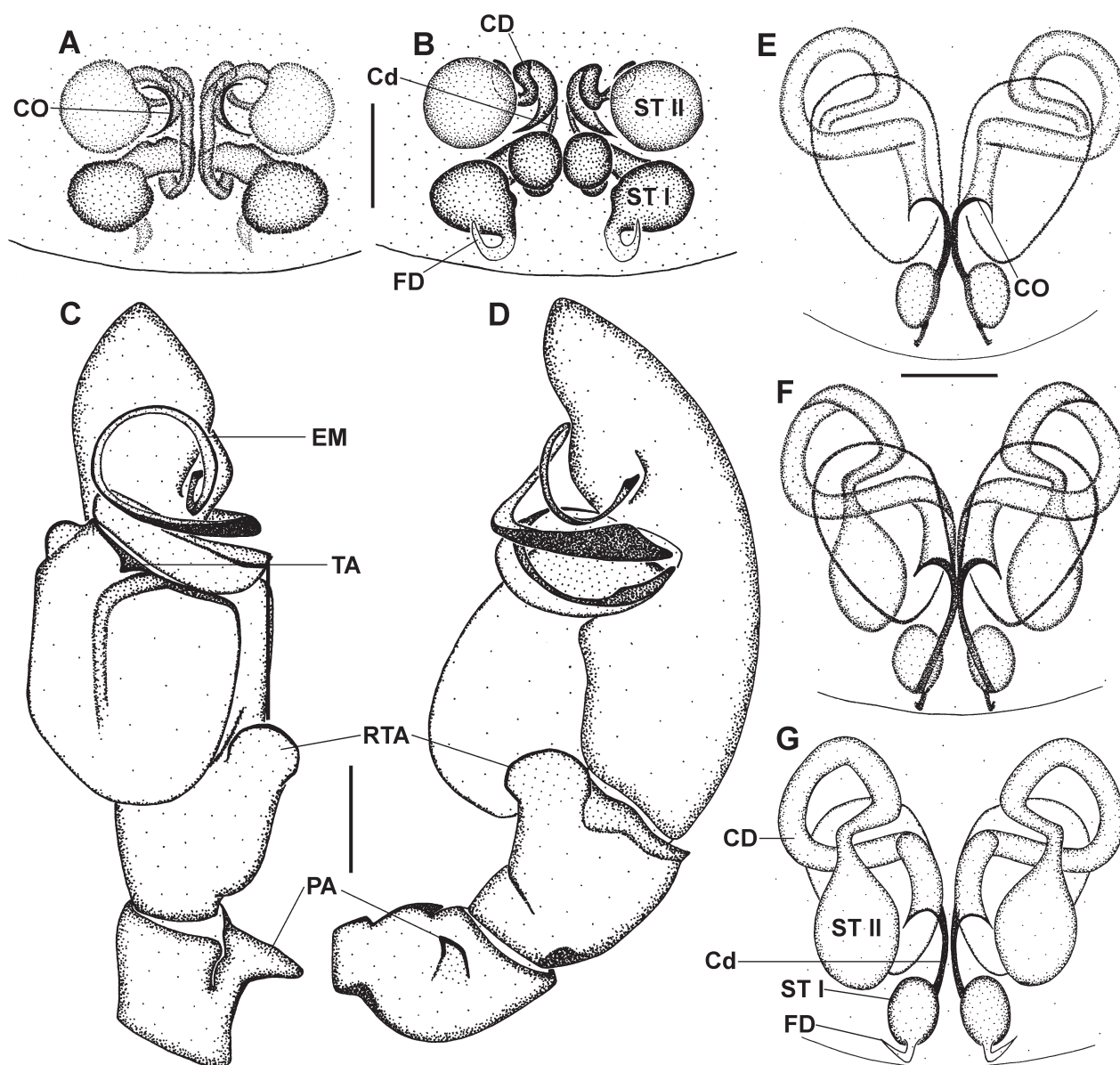


FIGURE 17. Genitalic morphology of *Trachelas russellsmithi* sp. nov. (A, B) and *T. scutatus* sp. nov. (C–G): A, F Epigyne, cleared, ventral view; B, G Same, dorsal view; E Same, prior to clearing, ventral view; C Male palp, ventral view; D Same, retrolateral view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; RTA—retrolateral tibial apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermathecae; TA—tegular apophysis.

Diagnosis. The male of this species can be easily recognised from congeners by the long embolus with two loops along its course and the presence of a rounded retrolateral tibial apophysis (Fig. 17C, D). The female is unique among Afrotropical congeners in the presence of a dorsal scutum that covers the entire abdomen (Fig. 7E), as well as the small adjacent copulatory openings at the centre of the epigyne that lead to looping copulatory ducts that are initially directed anteriorly (Fig. 17E–G).

Male. Measurements: CL 1.30–1.50, CW 1.13–1.15, AL 1.30–1.50, AW 1.08–1.13, TL 2.60–2.80, FL 0.08–

0.10, SL 0.70–0.80, SW 0.63–0.80, AME–AME 0.03, AME–ALE 0.03, ALE–ALE 0.25, PME–PME 0.08, PME–PLE 0.05, PLE–PLE 0.38. Length of leg segments: I 3.46 (1.08, 0.53, 0.85, 0.65, 0.35); II 3.28 (1.05, 0.45, 0.75, 0.65, 0.38); III 2.44 (0.68, 0.35, 0.53, 0.50, 0.38); IV 3.07 (0.98, 0.35, 0.68, 0.78, 0.28).

Carapace reddish-brown (Fig. 7D); eye region slightly darker, with black rings around eyes; ALE larger than AME; clypeus height about 1.25 AME diameter; AME separated by $0.5\times$ their diameter; AME separated from ALE by $0.2\times$ AME diameter; PLE slightly larger than PME; PME separated by their diameter; PME separated from PLE by about $0.5\times$ PME diameter. Chelicerae brown, endites and labium dark yellow-brown; two promarginal teeth, distal tooth largest; two retromarginal teeth, distal tooth largest. Sternum brown, darker towards border. Abdomen pale yellow dorsally; dorsal scutum brown, covering almost entire length of abdomen (Fig. 7D); anterior pair of sigilla anterior to midpoint, paler than posterior pair, situated posterior to midpoint. Legs uniformly pale brown, legs I and II more robust, darker than legs III and IV. Palp dark yellow-brown; PA small, triangular, with pointed tip; tibia with rounded RTA; CY broad proximally, narrowed abruptly at midpoint, with shallow retrolateral ridge at EM tip; TE oval, slightly more than $1/2$ the length of CY; proximal section of EM broad, initially looping in transversal plane, bending clockwise distally then laterally, with tip along retrolateral side of cymbium, directed distally (Fig. 17C, D).

Female. Measurements: CL 1.00–1.10, CW 0.88–1.00, AL 1.30–1.60, AW 0.98–1.30, TL 2.40–2.70, FL 0.08–0.10, SL 0.55–0.63, SW 0.50–0.65, AME–AME 0.03, AME–ALE 0.03, ALE–ALE 0.20, PME–PME 0.08, PME–PLE 0.05, PLE–PLE 0.33. Length of leg segments: I 2.59 (0.88, 0.35, 0.60, 0.43, 0.33); II 2.43 (0.80, 0.30, 0.53, 0.50, 0.30); III 1.89 (0.58, 0.28, 0.38, 0.45, 0.20); IV 2.56 (0.80, 0.28, 0.60, 0.65, 0.23).

Carapace reddish-brown (Fig. 7E); eye region brown, with black rings around eyes; ALE slightly larger than AME; clypeus height equal to AME diameter; AME separated by $0.7\times$ their diameter; AME separated from ALE by $0.2\times$ AME diameter; PLE larger than PME; PME separated by their diameter; PME separated from PLE by $0.7\times$ PME diameter. Chelicerae reddish-brown, endites and labium brown; two promarginal teeth, proximal tooth largest; two retromarginal teeth, distal tooth largest. Sternum orange, darker towards border. Abdomen pale grey dorsally, with brown dorsal scutum covering almost entire length of abdomen (Fig. 7E). Legs uniformly pale yellow, anterior legs slightly more robust than posteriors. Epigyne with median CO, CD initially directed anteriorly, looping laterally, anteriorly then posteriorly before entering teardrop-shaped lateral ST II on anterior margin; ST II separated by their diameter; Cd short, narrow, entering oval posteromesal ST I on anteromesal margin; ST I separated by slightly less than $1/2$ their width (Fig. 17E–G).

Type material. Holotype ♂ and allotype ♀, with one non-type juvenile: **NIGERIA:** Lagos Colony, Agege [06°37'N, 03°19'E], 5.XII.1948, leg. B. Malkin (CAS).

Paratypes: **GHANA:** Kakum Forest, 05°20'N, 01°23'E, 17.XI.2005, leg. R. Jocqué *et al.* (secondary forest, fogging), 1♂ 7♀ (MRAC 218262), 2♂ 3♀ (MRAC 218271).

Other material examined. None.

Distribution. Forests in Ghana and Nigeria (Fig. 16).

Trachelas smithi sp. nov.

Figs 7F, 18

Etymology. This species is named after Dominic Shilabira Smith, who collected the entire type series.

Diagnosis. This species resembles *T. falsus* sp. nov. in the structure of the epigyne, particularly the adjacent oval atria that extend approximately half the length of the epigynal plate, but it can be distinguished by the distinct chevron markings on the abdomen (*vs* uniformly coloured with grey posterior patch; cf. Figs 6H and 7F) and the bilobed secondary spermathecae (Fig. 18), *vs* round (cf. Figs 18 and 11C, D). Male unknown.

Female. Measurements: CL 1.60–1.73, CW 1.48–1.65, AL 2.18–2.40, AW 1.68–1.95, TL 3.80–4.28, FL 0.05–0.10, SL 0.90–1.03, SW 0.93–1.05, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.35, PME–PME 0.15, PME–PLE 0.10, PLE–PLE 0.38. Length of leg segments: I 5.33 (1.65, 0.65, 1.25, 1.08, 0.70); II 4.81 (1.40, 0.63, 1.25, 0.93, 0.60); III 3.66 (1.00, 0.53, 0.75, 0.93, 0.45); IV 5.21 (1.55, 0.53, 1.25, 1.38, 0.50).

Carapace reddish-brown (Fig. 7F); eye region darker, with black rings around eyes; AME slightly larger than ALE; clypeus height slightly less than AME diameter; AME separated by $0.5\times$ their diameter; AME separated from ALE by $0.2\times$ AME diameter; PLE slightly larger than PME; PME separated by $1.2\times$ their diameter; PME

separated from PLE by $0.7 \times$ PME diameter. Chelicerae brown, endites and labium yellow-brown; two promarginal teeth, distal tooth largest; two retromarginal teeth, distal tooth largest. Sternum mottled brown, darker towards borders. Abdomen pale creamy-yellow, with dark grey chevron markings dorsally and longitudinal patches laterally, connected in posterior half of abdomen (Fig. 7F); both pairs of sigilla pale brown, either side of midpoint. Legs pale brown, femora darker; legs I and II slightly more robust, darker than legs III and IV. Epigyne with adjacent oval AT anteriorly, extending almost half length of epigynal plate; CD following path of AT, entering bilobed mediolateral ST II on anterior margin; ST II separated by about $1/3$ their width; Cd running along midline of epigyne, thickened and looping back posteriorly, then laterally, entering oval ST I on anteromesal margins; ST I separated by their width (Fig. 18).

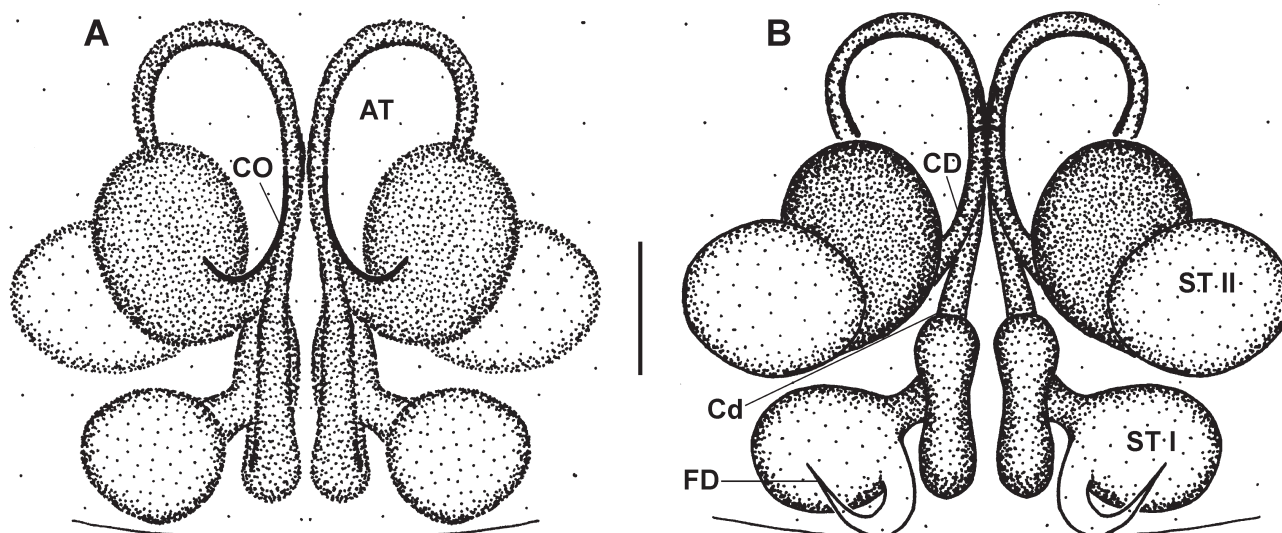


FIGURE 18. Genitalic morphology of *Trachelas smithi* sp. nov.: A Epigyne, ventral view; B Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; FD—fertilization duct; ST I—primary spermatheca; ST II—secondary spermathecae.

Type material. Holotype: ♀: **KENYA:** Kakamega Forest, $00^{\circ}13'N$, $34^{\circ}54'E$, 1654 m a.s.l., leg. D. Shilabira Smith, 3–10.III.2002 (Malaise trap) (MRAC 212720).

Paratypes: **KENYA:** Kakamega Forest, $00^{\circ}13'N$, $34^{\circ}54'E$, 1654 m a.s.l., leg. D. Shilabira Smith, 27.IV.2002 (Malaise trap), 1♀ (MRAC 220271); Same locality, leg. D. Shilabira Smith, 13.IV.2002 (pitfall traps), 1♀ (MRAC 220547).

Other material examined. None.

Distribution. Only known from the type locality (Fig. 16)

Trachelas sylvae Caporiacco, 1949

Figs 7G, H, 19

Trachelas sylvae Caporiacco, 1949: 448, figs 74a–b (Holotype ♂: **KENYA:** Mau Forest [$00^{\circ}36'S$, $35^{\circ}44'E$], deposited in MCVR—examined from photographs).

Diagnosis. The male of this species is most similar to *T. chubbi* but can be recognised by the sharply pointed embolus tip and the relatively broad profile of the embolus in ventral view (Fig. 19A, B), vs a clearly narrower embolus with a broad, not sharp, tip (Fig. 10A, B). The female of *T. sylvae* can be easily recognised from Afrotropical congeners by the massive oval atria that extend nearly $2/3$ of the length of the epigynal plate and the very small posterior primary and secondary spermathecae (Fig. 19C, D).

Remarks. While the types could only be examined from photographs, those images and Caporiacco's (1949: figs 76a–b) drawings correspond most closely to the specimens we examined. In the absence of any other similar Afrotropical species, we are sure that our specimens represent *T. sylvae*.

Male. Measurements: CL 1.30–1.33, CW 1.08–1.15, AL 1.30–1.80, AW 0.85–1.13, TL 2.60–2.80, FL 0.03–0.05, SL 0.73–0.80, SW 0.70–0.75, AME–AME 0.05, AME–ALE 0.03, ALE–ALE 0.20, PME–PME 0.10, PME–PLE 0.10, PLE–PLE 0.44. Length of leg segments: I 3.44 (0.93, 0.45, 0.88, 0.70, 0.48); II 3.19 (0.90, 0.40, 0.78, 0.68, 0.43); III 2.43 (0.70, 0.30, 0.53, 0.60, 0.30); IV 3.39 (0.98, 0.38, 0.78, 0.90, 0.35).

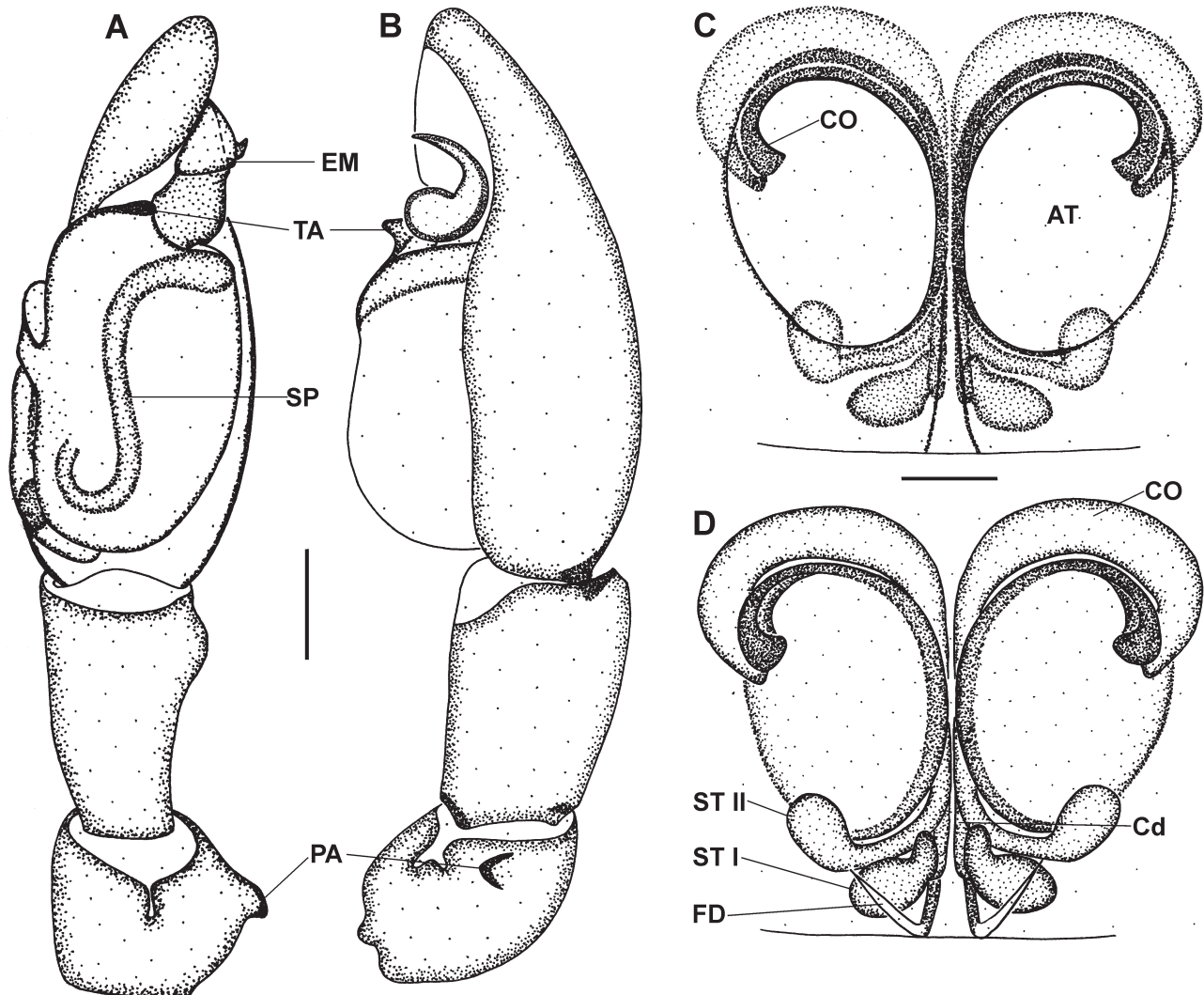


FIGURE 19. Genitalic morphology of *Trachelas sylvae*: A Male palp, ventral view; B Same, retrolateral view; C Epigyne, ventral view; D Same, dorsal view. Scale bars: 0.1 mm. Abbreviations: AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; PA—patellar apophysis; SP—sperm duct; ST I—primary spermathecae; ST II—secondary spermathecae; TA—tegular apophysis.

Carapace reddish-brown (Fig. 7G); eye region brown, with dark rings around eyes; ALE and AME equal in size; clypeus height approximately AME diameter; AME separated by $0.7\times$ their diameter; AME separated from ALE by $0.2\times$ AME diameter; PME and PLE equal in size; PME separated by $1.4\times$ their diameter; PME separated from PLE by PME diameter. Chelicerae pale brown, endites and labium brown; two promarginal teeth, distal tooth largest; two retromarginal teeth, distal tooth largest. Sternum pale yellow, orange towards border. Abdomen pale yellow, with yellow-brown scutum covering entire dorsum, with brown to grey chevron markings dorsally (Fig. 7G); median line extending to middle of abdomen, with numerous lateral chevrons in posterior half, connected to grey lateral stripe. Legs uniform pale yellow to pale brown, with incomplete bands; legs I and II more robust than III and IV; femora I and II with incomplete distal band; patellae without bands; tibiae with two incomplete bands, one distal and one proximal; metatarsi I with incomplete proximal band; tarsi without bands. Palp brown; PA very short, tooth-like, situated distally; CY oval, distal third slightly twisted retrolaterally on its axis; TE oval, about $2/3$ CY length; SP S-shaped, with pronounced proximal and distal bends; EM originating prodistally, looping behind weak TA, distal

section broad and stout in ventral view, inverted 6-shaped with sharp tip in retrolateral view (Fig. 19A, B).

Female. Measurements: CL 1.60–1.98, CW 1.48–1.63, AL 2.65–2.80, AW 2.15–2.33, TL 4.35–4.78, FL 0.08–0.13, SL 0.98–1.10, SW 0.88–1.00, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.33, PME–PME 0.15, PME–PLE 0.10, PLE–PLE 0.58. Length of leg segments: I 5.09 (1.58, 0.65, 1.23, 0.98, 0.65); II 4.88 (1.45, 0.60, 1.23, 1.00, 0.60); III 3.67 (1.08, 0.50, 0.78, 0.88, 0.43); IV 5.03 (1.43, 0.55, 1.20, 1.35, 0.50).

Carapace reddish-brown (Fig. 7H); eye region brown, with black rings around eyes; AER slightly recurved, almost straight; ALE slightly larger than AME; clypeus height equal to AME diameter; AME separated by their diameter; AME separated from ALE by $0.2 \times$ AME diameter; PLE slightly larger than PME; PME separated by $1.25 \times$ their diameter; PME separated from PLE by PME diameter. Chelicerae reddish-brown, endites and labium slightly lighter; two promarginal tooth, distal tooth largest; retromargin with two subequal teeth. Sternum orange, brown towards border. Abdomen pale yellow, mottled grey dorsally; faint chevron marking present, with dark grey median line extending to midpoint of abdomen, with numerous lateral branches (Fig. 7H). Legs uniformly brown, with incomplete bands; legs I and II more robust, slightly darker than III and IV; femora I and II with incomplete distal band; patellae without bands; tibiae with incomplete distal and proximal bands; metatarsi I with incomplete proximal band; tarsi without bands. Epigyne with large, oval AT that extend $2/3$ the length of epigynal plate, with anterolateral CO; CD broad, curving anteriorly, then mesally and posteriorly before entering oval posterolateral ST II, separated by $4 \times$ their width; connecting ducts short, with simple thickened posterior loop before entering oval posteromedian ST I, separated by less than their diameter (Fig. 19C, D).

Other material examined. **CAMEROON:** Southwest Province, Meme Division, Mount Kupe, above Nyassossa, 04°50'N, 09°41'E, 1200–1600 m a.s.l., 16–19.II.1992, leg. C. Griswold *et al.* (forest), 1♀ (ZMUC). **D.R. CONGO:** Bikara, 18 km S of Lubéro, route Lubéro-Gama, 00°15'S, 29°12'E, 1200 ft. a.s.l., XII.1976, leg. M. Lejeune (feuilles sechea de fougères), 1♀ (MRAC 159861); Northern side of Mount Ruwenzori, Kikura Camp [00°35'N, 29°55'E], 2000 m a.s.l., VII–VIII.1974, leg. M. Lejeune (fauchage), 2♂ 2♀ (MRAC 154142); Northern slope of Mount Ruwenzori, Kilindera Camp [00°23'N, 29°57'E], 2750 m a.s.l., VII–VIII.1974, leg. M. Lejeune (intérieur de bambous morts), 1♂ (MRAC 155120); Cataractes, Route Lubero-Butembo, région de Lukanga, Vukengete Forest, 05°01'N, 14°18'E, 2210 m a.s.l., XII.1974–I.1975, leg. M. Lejeune (mousses couverte de graminés), 1♀ (MRAC 168075). **UGANDA:** Ruwenzori [00°22'N, 29°52'E], 1952, leg. G.O. Evans, 3♂ 2♀ (BMNH).

Distribution. Scattered localities in equatorial Central Africa (Fig. 16).

Misplaced species

Thysanina Simon, 1910

Thysanina Simon, 1910: 201; Lyle & Haddad 2006: 97.

Remarks. *Thysanina* can be easily distinguished from *Trachelas sensu stricto* by the smooth rather than tuberculate carapace texture, the presence of ventral cusps and dense scopulae on the anterior tibiae, metatarsi and tarsi of males and females, respectively, and the consistent presence of chevron markings on the abdomen of both sexes (rare in *Trachelas sensu stricto*). However, *Thysanina* is itself probably polyphyletic, and may represent three different genera based on morphological and molecular data (Haddad *et al.* 2021; Haddad 2025). Despite a revision (Lyle & Haddad 2006), wherein a range of genitalic morphology between the six known species was presented, the composition of the genus needs to be revised in future, taking into consideration that more than 15 new species have been subsequently discovered and are awaiting description (C.H., unpublished data).

Thysanina scopulifer (Simon, 1896) comb. nov.

Figs 20, 21

Trachelas scopulifer Simon, 1896: 412 (Holotype ♀: **SOUTH AFRICA:** Cape, MNHN 16638—examined).

Diagnosis. Males can be easily distinguished from all congeners by the very long flattened embolus that forms three broad coils, with the tip directed proximally (Figs 20B, C, 21B, C), whereas the embolus is not coiled in the

other species (Lyle & Haddad 2006). Females of this species can be distinguished by the broad, transversely oval posterior atrium containing the copulatory openings and the unique long copulatory ducts that spiral several times towards the anterior ST II, with the connecting duct bending back medially along the spiral axis before entering the posterolateral ST I (Figs 20E, 21D, E). In other *Thysanina* species, the atria containing the copulatory openings are paired and the copulatory ducts do not comprise multiple spirals (see Lyle & Haddad 2006).

Remarks. The transfer of this species to *Thysanina* is supported by the dense ventral scopulae on the anterior legs of females, the presence of ventral cusps on the tibiae, metatarsi and tarsi I and II of the males, the absence of leg spines, the smooth carapace texture and the characteristic abdominal chevron markings of the specimens examined. The female is redescribed and illustrated and the male described and illustrated for the first time here.



FIGURE 20. Microscope photographs of somatic and genitalic morphology of *Thysanina scopulifer* male (A–C) and female (D, E): A, B Dorsal habitus; C Male palp, ventral view; D Same, retrolateral view; E Epigyne, ventral view. Scale bars: A, B 1.0 mm, C–E 0.1 mm.

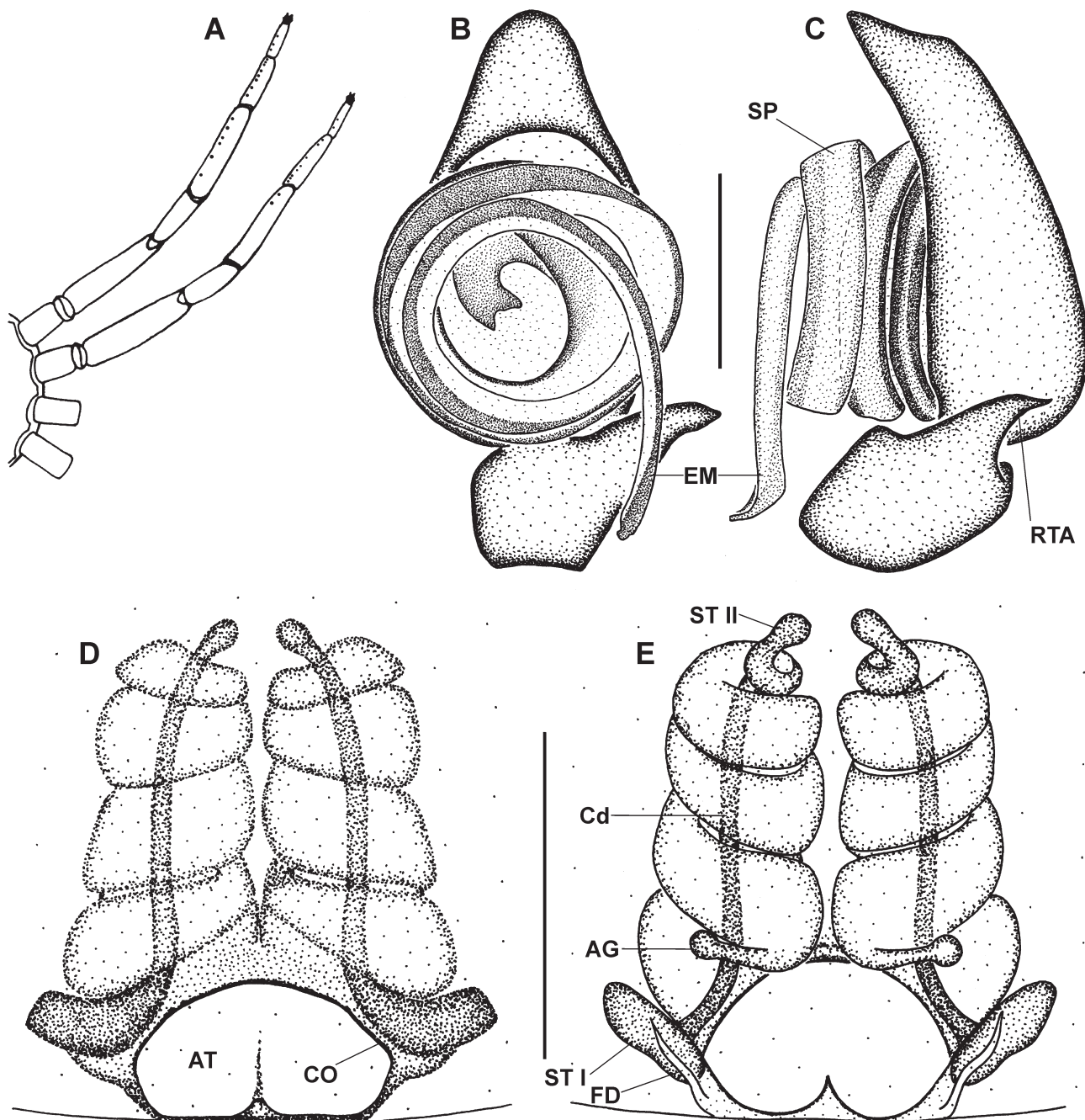


FIGURE 21. Morphology of *Thysanina scopulifer* male (A–C) and female (D, E): A Schematic representation of ventral leg cusps; B Male palp, ventral view; C Same, retrolateral view; D Epigyne, ventral view; E Same, dorsal view. Scale bars: 0.25 mm. Abbreviations: AG—accessory gland; AT—atrium; CD—copulatory duct; Cd—connecting duct; CO—copulatory opening; EM—embolus; FD—fertilization duct; RTA—retrolateral tibial apophysis; SP—sperm duct; ST I—primary spermatheca; ST II—secondary spermatheca; TA—tegular apophysis.

Male. Measurements: CL 1.37–1.40, CW 1.16–1.19, AL 1.49–1.58, AW 1.02–1.10, TL 2.63–2.73, FL 0.09–0.10, SL 0.78–0.81, SW 0.66–0.68, AME–AME 0.07, AME–ALE 0.01, ALE–ALE 0.24, PME–PME 0.08, PME–PLE 0.10, PLE–PLE 0.44. Length of leg segments: I 4.06 (1.22, 0.56, 0.97, 0.79, 0.52); II 3.51 (1.08, 0.48, 0.78, 0.71, 0.46); III 2.79 (0.78, 0.41, 0.56, 0.67, 0.37); IV 4.08 (1.19, 0.43, 0.98, 1.08, 0.40).

Carapace deep yellow-brown, with mottled grey stripe along midline and radiating striae directed from fovea towards palps and legs, all but that directed at leg IV ending in dark transverse blotch (Fig. 20A); surface finely wrinkled, covered in sparse short erect white setae; eye region slightly darker between median eyes, with black rings

around eyes; clypeus height equal to AME diameter; AER slightly procurved, ALE slightly larger than AME; AME separated by $0.8\times$ their diameter; AME separated from ALE by $0.15\times$ AME diameter; PLE slightly larger than PME; PME separated by slightly more than their diameter; PME separated from PLE by PLE diameter. Chelicerae yellow-brown, with distinct boss; anterior surface quite rugose, with scattered long, fine setae; three slightly separated promarginal teeth, proximal tooth smallest, median tooth largest; two adjacent retromarginal teeth, proximal tooth slightly larger. Sternum yellow-brown, with darker borders and dense grey mottling, paler along midline and in stripes radiating from centre towards coxae, forming star-shaped paler marking; surface smooth, covered in scattered short, fine setae; precoxal triangles present; intercoxal sclerites present between all coxal pairs. Abdomen cream dorsally, with faint yellow scutum covering entire dorsum; two pairs of sigilla present, at $1/4$ and $1/2$ abdomen length; dorsum with black stripe along midline, undulating and partly broken in posterior half, accompanied by eight pairs of mediolateral black chevron markings in posterior half (Fig. 20A); sides cream, with continuous broad black line from anterior margin to spinnerets; venter cream, with pair of mediolateral black stripes from epigastric furrow to spinnerets. Legs I and II pale yellow-brown, III and IV yellow; all femora and patellae with broad distal black band; all tibiae and metatarsi with narrow black band at $1/4$ their length and broad black band distally; tarsi without markings; anterior legs more robust, surface covered with short, fine setae; moderately dense scopulae on metatarsi and tarsi of all legs; ventral cusps present on tibiae, metatarsi and tarsi I and II (Fig. 21A); all legs spineless. Palp pale yellow-brown; femur and patella without apophyses, tibia with simple triangular RTA, directed dorsolaterally in ventral view and dorsally in lateral view; CY oval; TE round, providing base for very long, flattened EM, forming three complete coils radiating outwards from point of origin near centre of TE, with tip directed at palpal patella; TE mainly obscured by EM in ventral view; SP clearly visible along entire length of EM in lateral view (Figs 20B, C, 21B, C).

Female. Measurements (eye and leg measurements from second largest specimen): CL 1.60–1.70, CW 1.33–1.53, AL 2.38–2.50, AW 1.68–1.95, TL 3.98–4.20, FL 0.08–0.13, SL 1.00–1.08, SW 0.87–0.88, AME–AME 0.08, AME–ALE 0.03, ALE–ALE 0.30, PME–PME 0.10, PME–PLE 0.10, PLE–PLE 0.48. Length of leg segments: I 4.84 (1.48, 0.68, 1.13, 0.95, 0.60); II 4.16 (1.25, 0.63, 0.95, 0.83, 0.50); III 3.24 (1.00, 0.48, 0.65, 0.73, 0.38); IV 4.77 (1.45, 0.53, 1.18, 1.13, 0.48).

Carapace brown (Fig. 20D); first two thirds of carapace rounded, with steep decline in last third; surface texture smooth, covered with short, fine setae; fovea short, distinct, at two thirds CL; eye region brown with black rings around eyes; AER slightly recurved, almost straight; ALE larger than AME; clypeus height about AME diameter; AME separated by their diameter; AME separated from ALE by $0.4\times$ AME diameter; PME and PLE equal in size; PME separated by their diameter; PME separated from PLE by PME diameter. Chelicerae brown, anterior surface covered with scattered fine, dark, long setae; three promarginal teeth, proximal tooth largest, distal tooth smallest; two retromarginal teeth, equal in size. Sternum light brown, darker towards border, shield-shaped; surface smooth, covered in scattered short, fine setae. Abdomen dorsum pale yellow, with grey chevron; chevron with dark grey median line, extending to $2/3$ abdomen length, with several branches extending laterally (Fig. 20D); abdomen broad anteriorly, tapering posteriorly. Legs uniform pale brown, with distinct, incomplete grey bands on femora to metatarsi; femora with two closed distal bands, patellae covered almost entirely by single band; tibiae and metatarsi with single distal and proximal bands; relatively dense dark scopulae ventrally on metatarsi and tarsi; remaining leg segments with scattered fine, pale setae; regular leg spines, cusps absent. Epigyne weakly sclerotised, with transversely oval posterior AT, with CO situated anteriorly therein; CD broad, spiralling anteriorly, forming four complete spirals before entering anterior finger-like ST II; Cd directed posteriorly along spiral axis, diverging posteriorly before entering small, oblique elongate ST I posterolaterally, separated by $2\times$ their width; CD with clublike transverse accessory gland after one complete coil (Figs 20E, 21D, E).

Other material examined. SOUTH AFRICA: *Western Cape:* Cederberg Wilderness Area, near Driehoek, 23 km 38° NE of Citrusdal, $32^\circ25.741'S$, $19^\circ09.921'E$, 945 m a.s.l., 10.X.2011, leg. L. Almeida *et al.* (general collecting, shaded moist cliff in fynbos), 2♂ 1♀ (CAS, CASENT 9043358); Hermanus, Fernkloof Nature Reserve, $34^\circ23.815'S$, $19^\circ16.256'E$, 29.IX.2007, leg. R. Lyle (beats, fynbos), 1♀ (NCA 2007/3837); Paarl Mountain Nature Reserve, 1.79 km 238° WSW of Paarl, $33^\circ44.109'S$, $18^\circ56.755'E$, 404 m a.s.l., 7.X.2011, leg. L. Almeida *et al.* (fynbos, general collecting), 4♀ (CAS, CASENT 9043262); Riversdale, Spienkop Nature Reserve, $34^\circ00.127'S$, $21^\circ24.420'E$, 365 m a.s.l., 8.X.2022, leg. C. Haddad *et al.* (sifting litter, fynbos), 1♀ (NMBA 19325); Vredendal, Farm Grootfontein 105, $32^\circ04'S$, $18^\circ39'E$, 21.X.1987, leg. L. Lotz (beating), 1♀ (NMBA 1991).

Distribution. Only known from the Western Cape Province, South Africa (Fig. 22).

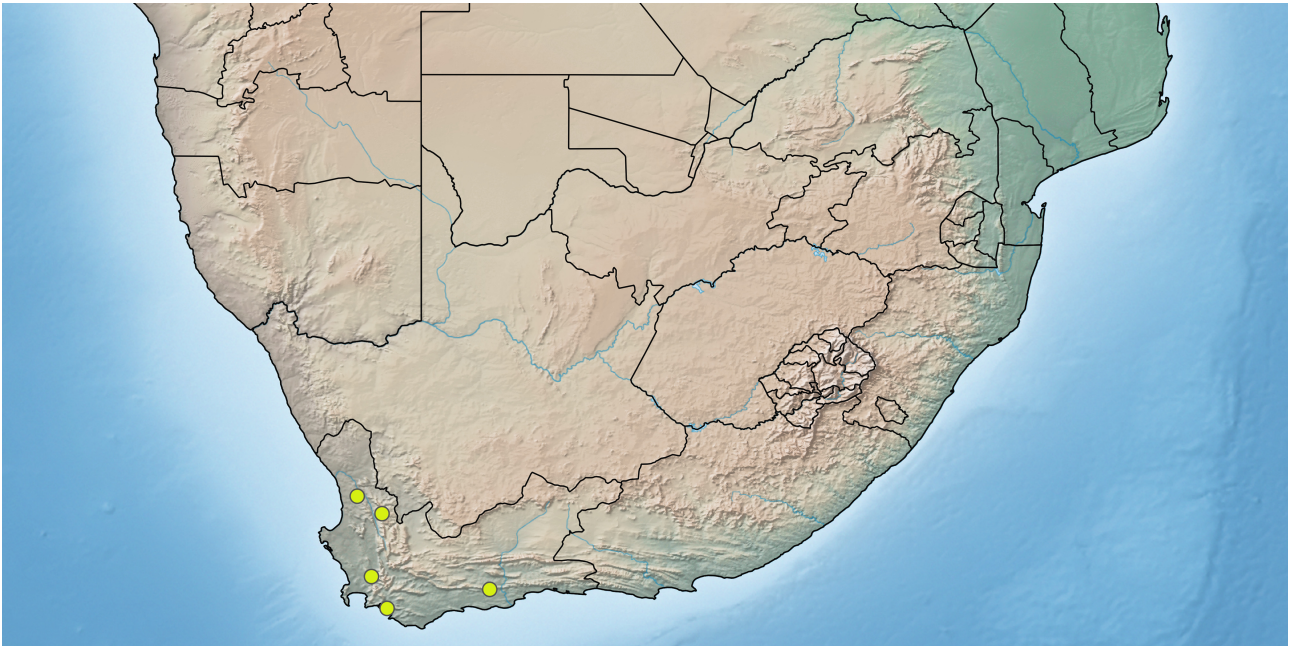


FIGURE 22. Distribution of *Thysanina scopulifer* in South Africa.

Unrecognizable species

Trachelas punctatus Simon, 1886 **nomen dubium**

Trachelas punctatus Simon, 1886: 376 (Holotype juvenile ♀: **SENEGAL**: Saint Louis, leg. E. Simon, MNHN?—not examined, presumed lost).

Remarks. This species was described from Senegal on the base of a juvenile female, as the original description indicates (translated) “Unfortunately we only have one young female whose sexual characteristics are not developed.” The type specimen could not be traced and is presumed lost. The original description is insufficient to identify the species, so we consider it a **nomen dubium**, taking into consideration that no other *Trachelas sensu stricto* reported in this paper have been collected in Senegal and the historical record of *T. minor* from the country could not be verified. The slightly larger size (4 mm) compared to most of the other species treated herein suggest that it could possibly belong to another genus.

Discussion

Trachelas remains a polyphyletic genus, but this revision provides an important step in delimiting the genus and its representative species from the continental Afrotropical Region. Currently, 11 species of *Trachelas sensu stricto* can be distinguished on the continent. This work provides a platform for the recognition of additional new genera that occur in the region, to build on recent taxonomic efforts. The majority of these new genera represent new species that have not yet been described from the work of Lyle (2008), most of which were recorded from tropical forest canopies.

The phylogenetic analysis of Afrotropical and New World Trachelidae based on the COI gene (Fig. 23) clearly support the view that *Trachelas* is polyphyletic. Although we were only able to include five terminals representing three species of *Trachelas sensu stricto*, they formed a monophyletic group distantly separate from the three New World species, as well as from the genera *Meriola* and *Trachelopachys*, both of which include numerous species historically placed in *Trachelas*. Another point of interest is the non-monophyly of *Meriola*. A recent revision of the genus showcased the exceptional range in body forms and genitalia in this genus (González Márquez *et al.* 2021),

and it is quite likely that the different clades in our analysis may represent different genera, although resolving this puzzle requires a more comprehensive molecular phylogeny based on multiple genes. This analysis also provides support for the transfer of *Trachelas scopulifer* to *Thysanina*, with it falling in a clade with *T. gracilis* Lyle & Haddad, 2006 and two undescribed species (Fig. 23). However, the *Thysanina* terminals branched out in three separate clades, supporting previous analyses that suggested it is polyphyletic (Haddad *et al.* 2021; Haddad 2025).

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APPENDIX 1. Summary of the species and localities of specimens sequenced for the cytochrome c oxidase subunit 1 (COI) gene included in the phylogenetic analysis. Sequences are deposited in the Barcode of Life Data System (BOLD). *Moggridgea loistata* (Migidae) was used as the outgroup to root the tree. Abbreviations: CORAR—Corinnids of America and South Africa; MACN—Museo Argentino de Ciencias Naturales, Buenos Aires; NCA—National Collection of Arachnida, Pretoria; NMBA—National Museum, Bloemfontein; SPDAR—Spiders of Argentina; SPIZA—Spiders of South Africa (ZA).

Species	Locality	BOLD Process ID	Catalog #	COI-5P Seq. Length
<i>Moggridgea loistata</i> ♀	Harold Porter National Botanical Gardens	SPIZA1821-24	NMBA 18901	624
<i>Afrocto africana</i> ♀	Amanzi Private Game Reserve	SPIZA393-19	NCA 2019/588	658
<i>Afrocto martini</i> ♀	Harold Porter National Botanical Gardens	SPIZA1893-24	NMBA 18940	658
<i>Afrocto plana</i> ♀	Ndumo Game Reserve	SPIZA388-19	NCA 2019/582	621
<i>Capobula infima</i> ♂	Marloth Nature Reserve	SPIZA2119-24	NMBA 19184	658
<i>Capobula montana</i> ♀	Farm Bankfontein	SPIZA402-19	NCA 2019/887	658
<i>Capobula neethlingi</i> ♂	Grootvadersbosch Nature Reserve	SPIZA2199-24	NMBA 19233	658
<i>Coronarachne denticulata</i> ♂	Ndumo Game Reserve	SPDAR2186-19	MACN-Ar 32948	658
<i>Coronarachne setosa</i> ♀	Vryheid	SPDAR2165-19	MACN-Ar 31234	658
<i>Falcaranea amatola</i> ♀	Ndumo Game Reserve	SPDAR2167-19	MACN-Ar 31294	658
<i>Falcaranea maputensis</i> ♂	Ndumo Game Reserve	SPIZA422-19	NCA 2019/758	658
<i>Falcaranea gladius</i> ♀	Ndumo Game Reserve	SPIZA425-19	NCA 2019/593	658
<i>Foordana distincta</i> ♀	Queenstown	SPIZA1276-21	NCA 2021/1044	658
<i>Fuchiba aquilonia</i> ♀	Ndumo Game Reserve	SPIZA1988-24	NMBA 19075	658
<i>Fuchiba capensis</i> ♂	Garcia Nature Reserve	SPIZA2257-24	NMBA 19264	658
<i>Fuchibotulus haddadi</i> ♀	Golden Gate Highlands National Park	SPIZA395-19	NCA 2019/402	548
<i>Fuchibotulus kigelia</i> ♀	Ndumo Game Reserve	SPIZA1991-24	NMBA 19076	658
<i>Jocquestus schenkeli</i> ♂	Coffee Bay	CORAR013-13	MACN-Ar 12926	658
<i>Meriola arcifera</i> ♂	Cinco Saltos	SPDAR2190-19	MACN-Ar33072	658
<i>Meriola balcarce</i> ♀	Ruta Nacional Ndeg 98	SPDAR820-14	MACN-Ar 32289	658
<i>Meriola cetiformis</i> ♀	Parque Nacional Predelta	CORAR073-13	MACN-Ar 30269	658
<i>Meriola fasciata</i> ♂	San Justo	CORAR081-13	MACN-Ar 30277	649
<i>Meriola fasciata</i> ♂	Parque Nacional Predelta	SPDAR2183-19	MACN-Ar 32281	658
<i>Meriola foraminosa</i> ♂	Reserva Natural Otamendi	CORAR001-13	MACN-Ar 12818	658
<i>Meriola longitarsis</i> ♂	Parque Nacional Nahuel Huapi	SPDAR2159-19	MACN-Ar 30887	658
<i>Meriola macrocephala</i> ♀	Parque Nacional Nahuel Huapi	SPDAR840-14	MACN-Ar 31130	658
<i>Meriola manuel</i> ♀	Cuesta Caviolen	SPDAR2168-19	MACN-Ar 33082	618
<i>Meriola quiricura</i> ♀	Abra del Infiernillo	SPDAR1087-15	MACN-Ar 33380	658
<i>Meriola penai</i> ♂	Nahuel Huapi National Park	SPDAR2201-19	MACN-Ar 33041	658
<i>Meriola rahue</i> ♀	Nahuel Huapi National Park	SPDAR2197-19	MACN-Ar 33902	658
<i>Meriola ramirezi</i> ♀	Reserva Natural Otamendi	CORAR036-13	MACN-Ar 12783	658
<i>Meriola setosa</i> ♀	Parque Nacional Predelta	CORAR077-13	MACN-Ar 30273	658
<i>Meriola virgata</i> ♀	Parque Nacional La Campana	SPDAR2199-19	MACN-Ar33043	658
<i>Mushimane tswibilinki</i> ♂	Ndumo Game Reserve	SPIZA424-19	NCA 2019/757	658
<i>Namaquella arida</i> ♂	Akkerendam Nature Reserve	SPIZA631-21	NCA 2021-229	658
<i>Orthobula radiata</i> ♂	Ndumo Game Reserve	SPIZA400-19	NCA 2019/583	614

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APPENDIX 1. (Continued)

Species	Locality	BOLD Process ID	Catalog #	COI-5P Seq. Length
<i>Patelloceto secutor</i> ♂	Ndumo Game Reserve	SPIZA405-19	NCA 2019/590	658
<i>Planochelas haddadi</i> ♀	Ndumo Game Reserve	SPIZA430-19	NCA 2019/999	596
<i>Poachelas montanus</i> ♀	Hogsback	SPIZA407-19	NCA 2019/587	658
<i>Poachelas striatus</i> ♀	Platberg Nature Reserve	SPIZA365-19	NCA 2019/422	658
<i>Rukuluk gramineus</i> ♂	Witsand Nature Reserve	SPIZA1476-23	NMBA 18616	658
<i>Rukuluk</i> sp. imm.	Tembe Elephant Park	SPIZA410-19	NCA 2019/760	658
<i>Spinotrachelas montanus</i> ♀	Royal Natal National Park	SPDAR2079-18	MACN-Ar 34968	658
<i>Spinotrachelas</i> sp. ♀	Marloth Nature Reserve	SPIZA2121-24	NMBA 19185	658
<i>Thysanina absolvo</i> ♂	Bloemfontein	SPIZA637-21	NCA 2021/233	658
<i>Thysanina gracilis</i> ♀	Farm Bankfontein	SPIZA418-19	NCA 2019/761	647
<i>Thysanina scopulifer</i> ♀	Spioenkop Nature Reserve	SPIZA2338-25	NMBA 19325	658
<i>Thysanina transversa</i> ♀	Hogsback	SPIZA412-19	NCA 2019/586	615
<i>Thysanina</i> sp. ♀	10 km S of Hogsback	SPIZA467-19	NCA 2015/603	625
<i>Thysanina</i> sp. ♀	Farm Bankfontein	SPIZA419-19	NCA 2019/998	630
<i>Thysanina</i> sp. ♀	Farm Craig Doone	SPIZA449-19	NCA 2018/1659	598
<i>Thysanina</i> sp. ♀	Farm Deelfontein	SPIZA1555-23	NMBA 18772	634
<i>Thysanina</i> sp. ♀	Farm Hopefield	SPIZA458-19	NCA 2014/1795	658
<i>Thysanina</i> sp. ♀	George	SPIZA2398-25	NMBA 19369	658
<i>Thysanina</i> sp. ♀	Golden Gate Highlands National Park	SPIZA452-19	NCA2019/1007	621
<i>Thysanina</i> sp. ♀	Ndumo Game Reserve	SPIZA416-19	NCA 2019/594	614
<i>Thysanina</i> sp. ♀	Outeniquastrand	SPIZA453-19	NCA 2016/3067	658
<i>Thysanina</i> sp. ♀	Richtersveld National Park	SPIZA816-21	NCA 2021/362	658
<i>Thysanina</i> sp. ♀	Witsand Nature Reserve	SPIZA1504-23	NMBA 18660	658
<i>Trachelas canariensis</i> ♂	Cathedral Peak Hotel	SPIZA1349-21	NCA 2021/1106	658
<i>Trachelas depressus</i> ♀	University Park	CORAR070-13	MACN-Ar 30299	658
<i>Trachelas humus</i> ♀	Eastern Shores Nature Reserve	CORAR007-13	MACN-Ar 12922	658
<i>Trachelas humus</i> ♂	Eastern Shores Nature Reserve	CORAR008-13	MACN-Ar 12924	658
<i>Trachelas humus</i> ♂	Cathedral Peak Hotel	SPIZA1348-21	NCA 2021/1105	658
<i>Trachelas pusillus</i> ♂	Tembe Elephant Park	SPIZA1600-23	NMBA 18810	657
<i>Trachelas tranquillus</i> ♀	University Park	CORAR069-13	MACN-Ar 30298	658
<i>Trachelas volutus</i> imm.	Minneola	SPDAR2163-19	MACN-Ar 31226	658
<i>Trachelopachys sericeus</i> ♂	Estancia Las Gamas	SPDAR837-14	MACN-Ar 32285	658
<i>Trachelopachys cingulipes</i> ♂	Parque Nacional Predelta	CORAR029-13	MACN-Ar 28306	633
<i>Trachelopachys tarma</i> ♂	Parque Nacional El Palmar	SPDAR2171-19	MACN-Ar 33531	658