**Olios sjostedti** Lessert, 1921 (Araneae: Sparassidae): first description of the female and first records from South Africa and Botswana

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**ABSTRACT**

*Olios sjostedti* Lessert, 1921, originally described from Mount Kilimanjaro, Tanzania, is now recorded from South Africa and Botswana as well. A redescription of the male is provided and the female described for the first time.

**KEY WORDS:** Afrotropical region, South Africa, Botswana, Tanzania, Sparassidae, *Olios*, Taxonomy, redescription, huntsman spiders.

**INTRODUCTION**

The genus *Olios* Walckenaer, 1837 currently consists of 246 species and six subspecies (Platnick 2014). Jäger and Kunz (2005) diagnosed males in an identification key by their distal embolic coil and the presence of tegular apophyses. Material from South Africa revealed an *Olios* species with a simple embolus not having a distal coil. It was identified as *Olios sjostedti* Lessert, 1921, which had been previously described only from Tanzania. A redescription of the male is provided and the female described for the first time. The specimens represent the first records in South Africa and Botswana, and generally the second report of geographical occurrence for this species. The new localities are approximately 2400 to 2700 kilometres southwest to south of the type locality.

**MATERIAL AND METHODS**

Material was examined and drawn while in 70% denatured ethanol utilising a Leica MZ16 stereomicroscope with a camera lucida attachment. Copulatory organs were dissected and kept in micro-vials within the original tubes. Left male palps in ventral view are used for describing the origin points of the embolus, apophyses and conductor on the tegulum.

Abbreviations: ALE – anterior lateral eyes; AME – anterior median eyes; AW – anterior width of dorsal shield of prosoma; d – dorsal; DK – serial field number of material collected by Dirk Kunz; OL – opisthosoma length; OW – opisthosoma width; p – prolateral; PJ – serial number for Sparassidae examined by Peter Jäger; PL – prosoma length; PLE – posterior lateral eyes; PME – posterior median eyes; PW – prosoma width; r – retrolateral; RTA – retrolateral tibial apophysis; SD – serial number of Sparassidae with tissue/DNA samples available; v – ventral; I–IV – referring to leg numbers.

Museum collections (curators given in parentheses):

MHNG – Museum d’Histoire Naturelle, Geneva, Switzerland (Peter Schwendinger);
NMBA – National Museum, Bloemfontein, South Africa (Leon Lotz);
NHRM – Naturhistoriska Riksmuseet, Stockholm, Sweden (Gunvi Lindberg, Torbjörn Kronestedt);
Olios sjostedti Lessert, 1921

Figs 1–16

Olios sjostedti: Lessert 1921: 391, figs 12–13 (description of male); Roewer 1955: 696.

[N.B.: according to the ICZN (1999: article 32.5.2), letters with umlauts, i.e. ö, ü and ä, are only changed to oe, ue and ae, respectively, when based on a German word; since Yngve Sjöstedt (1866–1948) was a Swedish zoologist, the scientific name has to be “sjostedti”].

**Diagnosis:** Small to medium-sized Sparassinae, total length ♂: 6.7–10.0; ♀ 8.4–15.0. Males can be distinguished from all other *Olios* spp. by the simple and only slightly curved embolus without a distal coil or bend (Figs 2–3). The arrangement of two tegular apophyses arising proximally from the tegulum in a 6- to 7-o’clock position is characteristic (Figs 1–3). Females, like those of many *Olios* species, are not easy to diagnose. The asymmetrical arrangement of the internal duct system might be one important character (Fig. 9). In the cleared epigyne in ventral view, the fertilisation ducts appear as an asymmetrical, heart-shaped structure. The epigyne does not have a distinct median slit and there is only a small posterior incision and dark triangular region around the copulatory openings (Figs 8, 15).

**Male.**

Redescription:

♂ (PJ 3418): PL 4.0, PW 4.6, AW 2.4, OL 5.0, OW 3.3. Eye diameters: AME 0.31, ALE 0.23, PME 0.21, PLE 0.25. Eye interdistances: AME–AME 0.17, AME–ALE 0.19, PME–PME 0.41, PME–PLE 0.49, AME–PME 0.26, ALE–PLE 0.25, clypeus height at AME 0.06, clypeus height at ALE 0.09. Leg measurements: palp 5.3 (1.6, 0.7, 0.9, –, –, 2.1); leg I 21.7 (5.9, 2.5, 5.9, 5.7, 1.7); leg II 23.5 (6.5, 2.6, 6.4, 6.3, 1.7); leg III 17.0 (5.1, 1.9, 4.6, 4.1, 1.3); leg IV 17.7 (5.2, 1.8, 4.6, 4.7, 1.4). Leg formula: II-I-IV-III. Spination: palp: 130, 000, 0000 (bristles present on patella and tibia); Femur I–III 323, IV 320; Patella I–IV 000; Tibia I–II, III 2124(3), IV 210(2)4; Metatarsus I–III 2024, IV 3037. Metatarsus IV with ventral distal spine in sparse distal scopula, metatarsi I–III without such a spine. Cheliceral furrow with 2 anterior and 4 posterior teeth, the two median posterior teeth fused; with 5 long bristles at posterior base of fang (Fig. 7).

**Copulatory organ:** As in diagnosis. Embolus and conductor arising from tegulum in 7-o’clock position, conductor widened distally (Figs 2–3). Embolus tip slightly widened (Figs 5–6). Two apophyses at base of embolus, the one closer to embolus prolaterad, pointed, and partly hidden behind second apophysis, the proximal one laminar with slightly serrated margin (Figs 1–3). Bulbal parts behind embolus and conductor partially
membranous. Sperm duct only very slightly undulating (Figs 2–3). Cymbium tip as long as or slightly longer than conductor width. RTA complex, with strongly sclerotised and distinctly bent dorsal part and soft, spoon-shaped ventral part (Figs 2–4).

Figs 1–7. Olios sjostedti Lessert, 1921: (1–2, 4–5) holotype male from Tanzania; (3, 6–7) male from South Africa. (1–4) Left male palp: (1) prolateral view, (2–3) ventral view, (4) retrolateral view; (5–6) embolus tip, retrolateral view; (7) left chelicerae, ventral view (bristles are indicated by their insertion points). Abbreviations: dRTA – dorsal part of retrolateral tibial apophysis, E – embolus, TA1/2 – tegular apophysis 1/2, vRTA – ventral part of retrolateral tibial apophysis.
Colouration in ethanol: Yellowish brown with dark brown patterning (Figs 12–13). Dorsal prosoma with patches behind eye region, one patch at anterior end of fovea. Ventral prosoma including ventral coxae and femora pale yellowish brown, without pattern. Chelicerae only marginally as well as labium and gnathocoxae slightly darker. Legs and palps yellowish brown, darker distally, partly with indistinct dots and small patches. Dorsal opisthosoma with vivid pattern consisting of partly fused patches along heart and more distinctly along posterior midline, with irregular dots laterally. Ventral opisthosoma pale yellowish brown with few dark patches or spots in front of spinnerets.
Female.

Description:
♀ (PJ 3425): PL 3.9, PW 4.4, AW 2.8, OL 7.8, OW 5.3. Eye diameters: AME 0.26, ALE 0.23, PME 0.23, PLE 0.25. Eye interdistances: AME–AME 0.20, AME–ALE 0.21, PME–PME 0.40, PME–PLE 0.53, AME–PME 0.23, ALE–PLE 0.30, clypeus height at AME 0.11, clypeus height at ALE 0.10. Leg measurements: palp 4.1 (1.2, 0.5, 0.9, 1.5); leg I 15.5 (4.4 2.0, 3.9, 3.9, 1.3); leg II 16.7 (4.8, 2.1, 4.3, 4.1, 1.4); leg III 11.8 (3.7, 1.5, 2.8, 2.7, 1.1); leg IV 12.3 (3.8, 1.4, 3.1, 2.9, 1.1). Leg formula: II–IV–III. Spination: palp: 130, 000, 0010, 1003 (bristles present on patella and tibia); Femur I 2(1)23, II–III 323, IV 320(1); Patella I–IV 000; Tibia I 1024, II 1024, III 2023, IV 2003; Metatarsus I–III 2024, IV 3037(8). Metatarsus IV with ventral distal spine in sparse distal scopula, metatarsi I–III without such a spine. Cheliceral furrow with 2 anterior and 4 posterior teeth; with 4 long bristles at posterior base of fang. Palpal claw with 8–9 teeth.

Copulatory organ: As in diagnosis. Epigynal field as long as wide in its posterior part, bell-shaped, with a number of small muscle sigilla marginally, without slit sense organs (Fig. 8). Copulatory ducts well developed, with smooth surface and wide lumen. Membranous spermathecae elongated, wrinkled and asymmetrically displaced, leading to narrow posterior coils where fertilisation ducts start (Fig. 9); shimmer through cuticle in ventral view of uncleared epigyne (Fig. 8). Fertilisation ducts narrow with narrow lumen and smooth surface, their anterior part hidden in dorsal view by copulatory ducts (Fig. 9).

Colouration in ethanol: As in male, but dorsal prosoma with patches fused with darker eye region to bands, excluding the foveal anterior patch and lateral patches. Chelicerae
brown, dark brown distally (Fig. 14). Gnathocoxae and labium darker brown proximally (Fig. 15).

**Variation**: ♀: PL 3.0–4.3, OL 3.7–5.7. Spination: Femur IV 321; Tibia IV 2104. Number of bristles at fang base: 3–7. Chelicerae with 3 posterior teeth, close together, barely fused. Membranous parts of bulb, conductor (tip) and RTA may vary in shape and according to dehydration status. The shape and arrangement of the two tegular apophyses vary slightly. Some specimens are generally lighter, i.e. with less pigmentation (e.g., PJ 3419, 3420): patches or spots in front of spinnerets or patterning on lateral opisthosoma may be absent. ♂: PL 3.7–4.5, OL 5.2–10.1. Spination: Femur IV 321 or 210, Tibia III 2022 or 2024, IV 2004 or 2013. Number of bristles at fang base: 3–6. Chelicerae with 3 posterior teeth, situated close together (Fig. 11); basal posterior tooth can be much smaller than other posterior teeth or of similar size. Some epigynes with mating plug. Dorsal prosoma has patches fused to an almost circular pattern and additional, separated lateral patches (Fig. 14).

Type material examined: Holotype ♀: (PJ 3417): TANZANIA: Kibonoto, Zone des cultures, October, Sjöstedt leg. 1905/1906, (NHRM: ♂ with right palp; MHNG: left palp); examined. Note: The type locality was noted as Kibonoto. Today it is spelled Kibongoto and is located 2.7 km ENE of Sanya Juu. Data received from Google Earth: 03°10’42.91”S 37°05’35.23”E, 1360 m.


Distribution: Known from the type locality in Tanzania (Kibonoto, Mount Kilimanjaro), from South Africa (northern KwaZulu-Natal: Ndumo Game Reserve, Tembe Elephant Park, Ophathe Game Reserve; Gauteng: Pretoria) and Botswana (Okavango Delta) (Fig. 16).

Natural History: *Olios sjostedti* lives in forests and savannahs from sea level (northeastern South Africa) to 1400 m (Tanzania). Spiders have been recorded behind tree bark, in
vegetation and under stones. All of the males and females from South Africa were found in February, except for two males in October; in Botswana, one male was collected at the end of June. An egg sac of one female contained 95 praelarvae and larvae. Two females had an ecto-parasitic insect larva attached to their anterior opisthosoma, possibly Hymenoptera: Ichneumonidae (Fig. 14: arrow).

Relationships: The male embolus of *O. sjostedti* is unique and completely different from all other embolus types within the genus. The simple structure might represent a secondary simplification, since other bulbal structures like the two tegular apophyses and the RTA seem to represent rather derived (complex) character states. A similar bauplan of the RTA with a strongly sclerotised dorsal part and a membranous ventral part as well as the two tegular apophyses are known for *Olios claviger* (Pocock, 1901) (Jäger & Kunz 2005: figs 320–322), *O. correvoni* Lesert, 1921, *O. darlingi* (Pocock, 1901), *O. faesi* Lessert, 1933, and *O. kassenjicola* Strand, 1906, all of which exhibit an embolus with a characteristic distal apophysis and coil. Especially from the complex structure of the ventral RTA in combination with the particular shape of the dorsal RTA, a close relationship between *O. sjostedti* and the species listed above cannot be excluded. Females of *O. sjostedti* lack the distinct median slit that is usually widened to a “V”-shaped structure anteriorly, characters present in females of the abovementioned species (cf. Jäger & Kunz 2005: fig. 336). However, internal structures in *O. sjostedti* females follow the same bauplan as in other *Olios* species: from the medially situated copulatory orifices, ducts lead to membranous spermathecae and after one or more coils, back to the posteriorly situated fertilisation ducts. Thus, this species cannot be placed unambiguously in one particular species-group within *Olios.*
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