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A NEW SPECIES OF THE GENUS *MESORHAGA* SCHINER, 1868 (DIPTERA: DOLICHOPODIDAE) FROM TANZANIA, WITH A KEY TO AFROTROPICAL SPECIES

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Summary. *Mesorhaga tanzaniensis* sp. n. is described from the Udzungwa Mountain National Park in Tanzania. New species differs from all other Afrotropical species of the genus in large size, yellow antenna, almost entirely yellow legs, and brown spots on abdominal tergites. Male cercus of the new species bears very long dorsolateral setae, which are longer than cercus. A new key to Afrotropical species of *Mesorhaga* is provided.

Key words: long-legged flies, Sciapodinae, Mesorhagini, taxonomy, new species, key, Afrotropical region.

И. Я. Гричанов. Новый вид рода *Mesorhaga* Schiner, 1868 (Diptera: Dolichopodidae) из Танзании с определительной таблицей видов тропической Африки // Дальневосточный энтомолог. 2021. N 435. С. 1-6.

Резюме. Из национального парка «Горы Удзунгва» в Танзании описан новый для науки вид *Mesorhaga tanzaniensis* sp. n., который отличается от всех других афротропических видов рода крупными размерами, желтыми усиками, почти полностью желтыми ногами, коричневыми пятнами на тергитах брюшка. Церки самцов нового вида имеют очень длинные, длиннее церка, дорсолатеральные щетинки. Составлена новая определительная таблица видов рода *Mesorhaga* тропической Африки.

INTRODUCTION

The *Mesorhaga* Schiner, 1868 is mainly pantropical genus of Sciapodinae comprising about 90 species including several species known from the Nearctic (USA) and South-Eastern Palaearctic regions (Bickel, 2007; Grichanov, 2021). The Palaearctic species confined to northern China, Korea, Japan and Russian Far East (Kurile Islands) appear to be of eastern Oriental origin. *Mesorhaga* is poorly represented in museum collections, the species often described from the holotype or a small type series. The distribution of *M. demeyeri* Grichanov, 1998 in the Democratic Republic of the Congo, Madagascar, and South Africa is remarkable. Grichanov (1998) provided a key to five Afrotropical species. Subsequently two more new species have been described (Grichanov, 1999, 2000). Eight (including a new) species are found in central, eastern, southern Africa and on Madagascar (Grichanov, 2018). In this paper a new species of *Mesorhaga* from Tanzania is described and a new key to Afrotropical species is provided.

MATERIAL AND METHODS

Holotype of a new species is housed at the Zoological Museum, Natural History Museum of Denmark, University of Copenhagen (ZMUC). Specimen was studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera. Morphological terminology and abbreviations follow Cumming & Wood (2017) and Grichanov & Brooks (2017). The lengths of the podomeres are given in millimeters. Body length is measured from the base of the antenna to the tip of abdominal segment 6. Wing length is measured from the base to the wing apex.

TAXONOMY

Subfamily Sciapodinae Becker, 1917

Tribe Mesorhagini Bickel, 1994

Genus *Mesorhaga* Schiner, 1868

Type species: *Mesorhaga tristis* Schiner, 1868, by original designation.

NOTES. See Bickel (1994, 2007) and Grichanov & Brooks (2017) for diagnosis of the genus. Grichanov & Brooks (2017) have provided a key to all Afrotropical genera of the subfamily Sciapodinae. Bickel (1994, 2007) used such character as “wing vein M with distinct curved, almost right angle bend” to separate the Australian and New Guinean *Mesorhaga geoscopa* species group and Mesoamerican *Mesorhaga lacrymans* species group from other groups. The Afrotropical species with this character (*M. africana* Curran, 1927, *M. demeyeri* Grichanov, 1998, *M. pauliani* Vanschuytbroeck, 1952 and *M. tanzaniensis* **sp. n.**) and opposite character “wing vein M with more gentle curve” (*M. garamba* Grichanov, 1999, *M. kirkspriggsi* Grichanov, 2000, *M. mahunkai* Grichanov, 1997 and *M. tsurikovi* Grichanov, 1998) are quite different from each other in other morphological features. At present it is not possible to associate them with species groups from other parts of the World.

Key to Afrotropical species of *Mesorhaga*
(*M. africana* is known by female only)

1. M_{1+2} with gentle curvature; *dm-m* distinctly shorter than distal part of M_4 2
- M_{1+2} with two nearly right-angular bends; *dm-m* usually as long as distal part of M_4 5
2. Cercus thick and short, about 1/4 length of epandrium, without very long setae (Grichanov, 2000: fig. 1); hind tibia yellow, with narrow brown posterodorsal stripe on second quarter; body 2.4–2.6 mm (Namibia) *M. kirkspriggsi* Grichanov
- Cercus about half as long as epandrium, with at least 3 very long dorsolateral setae; hind tibia yellow or black at extreme apex 3
3. Cercus weakly curved, with 3 dorsolateral setae, shorter than cercus (Grichanov, 1997: fig. 1); distal part of M_4 1.5 times longer than *dm-m*; hind femur brown, hind tibia and basitarsus yellow; body 3.7 mm (Tanzania) *M. mahunkai* Grichanov
- Cercus hooked, with at least 4 dorsolateral setae, longer than cercus; distal part of M_4 1.3 or 1.7 times longer than *dm-m*; hind femur mostly yellow 4
4. Distal part of M_4 1.7 times longer than *dm-m*; femora and tibiae yellow, hind femur with small brown spot at apex, apical segments of tarsi brown; hypopygium (Grichanov 1999: fig. 1); body 4 mm (DR Congo, Kenya) *M. garamba* Grichanov
- Distal part of M_4 1.3 times longer than *dm-m*; femora mostly yellow, hind femur with brownish apices, fore and mid femora brown in basal third; hind tibia black at extreme apex; hind basitarsus black-brown; hypopygium (Grichanov, 1998: fig. 3); body 4.7–5.3 (Burundi) *M. tsurikovi* Grichanov
5. Antenna yellow; legs almost entirely yellow; cercus with very long dorsolateral setae, longer than cercus (Fig. 1A–E); body 7.3 mm (Tanzania) *M. tanzaniensis* sp. n.
- Antenna black; legs mostly brown or black; cercus without very long setae; body shorter than 4 mm 6
6. Hind femur brownish except yellow apex, hind tibia dark-yellow except brownish apex, hind basitarsus brownish; *dm-m* about as long as distal part of M_4 (Curran, 1927: fig. 16); body 2.25 mm (DR Congo, Tanzania) *M. africana* Curran
- Hind leg entirely black; *dm-m* as long as or shorter than distal part of M_4 ; body 3.3–3.8 mm 7
7. Legs black with fore tibia brown; *dm-m* 2/3 as long as distal part of M_4 ; hypopygium (Grichanov, 1998: fig. 2); body 3.3 mm (Madagascar) *M. pauliani* Vanschuytbroeck
- Fore and mid tibiae and basitarsi yellow; *dm-m* as long as distal part of M_4 ; hypopygium (Grichanov, 1998: fig. 1); body 3.8 mm (DR Congo, Madagascar, South Africa) *M. demeyeri* Grichanov

***Mesorhaga tanzaniensis* Grichanov, sp. n.**

<http://zoobank.org/NomenclaturalActs/C042E95F-8A0F-40CB-BCCF-2D435A50C635>

Fig. 1A–E

TYPE MATERIAL. Holotype – ♂ (dried from ethanol and mounted on pin), **Tanzania**: Morogoro Region, Udzungwa Mt. Nat. Park, Mito Mitatu, 7°50′22.7″S, 36°50′42.8″E, 1325 m, Malaise trap No 3, 7.X 2013, leg. T. Pape & N. Scharff [ZMUC].

DESCRIPTION. MALE. Head (Fig. 1A). Frons shining greenish blue, densely covered with white pruinosity; 1 white hair-like vertical seta and 2 strong postvertical

setae present at end of postocular row; upper postocular setae black, short, uniserial; ventral postcranium covered with irregular white hairs; face and clypeus metallic green with bronze reflections and dusting of silvery pruinosity; face broad, about as high as wide under antennae, narrowed downward, 3 times higher than clypeus; clypeus small, adjacent to margin of eyes; antenna (Fig. 1B) with scape and pedicel small, simple, light yellow; pedicel with ring of short yellow setae, 1 longer yellow ventral and 1–2 longer black dorsal bristles; postpedicel yellow, small, conoid, as long as high, with short hairs; arista-like stylus brown, dorsoapical, separated from postpedicel, microscopically haired; length (mm) of scape, pedicel, postpedicel, stylus (segments 1 and 2), 0.12/0.07/0.09/0.06/1.12; palpus brown with white hairs; proboscis yellow-orange with white hairs.

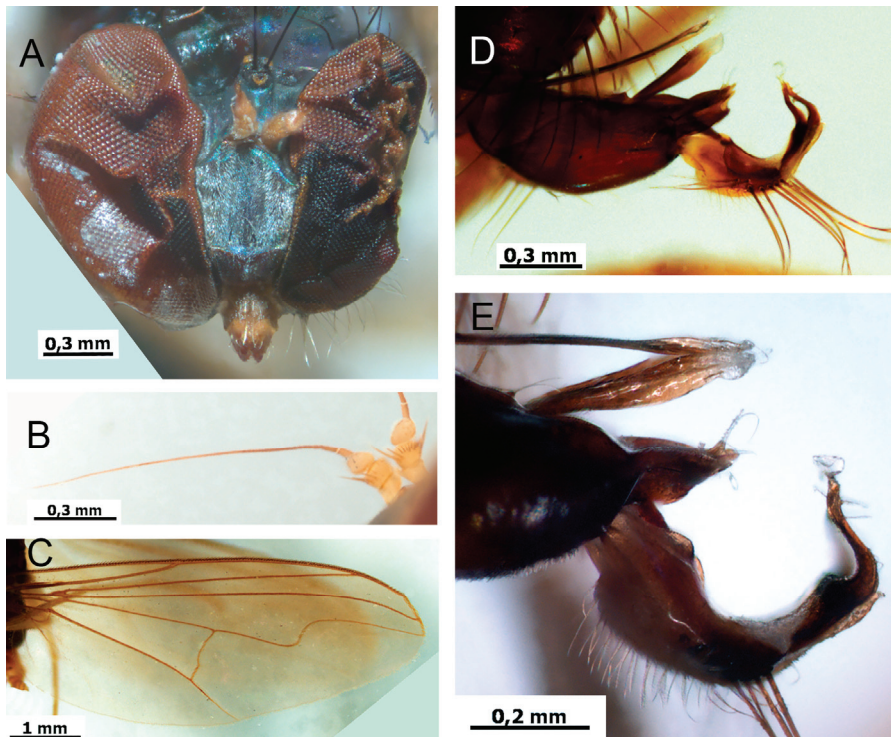


Fig. 1. *Mesorhaga tanzaniensis* sp. n. (holotype): A – head; B – antenna; C – wing; D – hypopygium, lateral view, in ethanol; E – apex of hypopygium, lateral view, dry.

Thorax. Dark metallic green with bronze reflections; pleura with white pruinosity; setae black; 5 strong dorsocentral bristles; 3 long irregularly paired acrostichals; scutellum with 2 strong and 2 hair-like bristles.

Legs including coxae yellow, but mid coxa and hind knee brown; segments 4 and 5 of fore and hind tarsi brown; hind tarsus blackish brown from tip of basitarsus;

fore and mid coxae with white hairs and 2–3 white subapical bristles; hind coxa with 1 yellow bristle at base; fore and mid femora with ventral rows of white hairs, not longer than diameter of femora; tibiae and tarsi simple, without strong setae or remarkable hairs; tibia and tarsomere (from first to fifth) length ratio (mm): fore leg: 1.81/1.25/0.55/0.34/0.23/0.18, mid leg: 2.41/1.75/0.7/0.48/0.26/0.16, hind leg: 3.14/1.1/1.02/0.59/0.29/0.23.

Wing (Fig. 1C). Widest at middle, smoky anteriorly, veins yellow-brown; costa with simple setulae; R_1 long; R_{4+5} gently curved to M in apical third; M_2 absent without fold or indication on membrane; M strongly bent, with nearly right-angle curve; ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_1 , 1.08/0.22; crossvein dm-m almost straight; ratio of crossvein dm-m to apical part of M_{1+2} (fork-handle) to apical part of M_4 , 0.8/1.17/0.88; anal vein fold-like; anal lobe well developed and alula small; anal angle acute; lower calypter yellow with brown rim and golden cilia; halter light yellow.

Abdomen. Terga metallic blue-brown, with bronze reflections and matt brown areas with metallic reflections at tergal overlap between segments 2–6; tergum 1 with white hairs and black marginal setae; segment 5 swollen, with numerous long ventral bristles; segments 6, 7 and hypopygium dark brown (Fig. 1D–E); phallus and hypandrium elongate and narrow, with phallus extending only slightly beyond the hypandrial apex; epandrial lobe elongate-ovate, with setae at base, at 3/4 and at apex; surstylus with 3 arms and short setae; cercus strongly curved, with strong and long dorsolateral setae, and apically hooked and narrow, bearing inner lobe, 2–3 simple and 1 clavate apical seta.

MEASUREMENTS (mm). Body length 7.3; antenna length 1.4; wing length 6.5; wing width 2.4.

FEMALE. Unknown.

DIAGNOSIS. *Mesorhaga tanzaniensis* **sp. n.** differs from all other Afrotropical species of the genus in yellow antenna; almost entirely yellow legs; brown spots on abdominal tergites. The antenna and abdomen are entirely brown to black, usually partly dark femora in other species. Male cercus of the new species is species-specific, with very long dorsolateral setae, longer than cercus. It is the largest Afrotropical *Mesorhaga* species.

ETYMOLOGY. The Latin name of the species belongs to the country of origin.

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REFERENCES

- Bickel, D.J. 1994. The Australian Sciapodinae (Diptera: Dolichopodidae), with a review of the Oriental and Australasian faunas, and a world conspectus of the subfamily. *Records of the Australian Museum, Supplement*, 21: 1–394.
- Bickel, D.J. 2007. The Mesoamerican *Mesorhaga* (Diptera: Dolichopodidae), with a taxonomic review of the New World fauna. *Zootaxa*, 1411: 47–67.
- Cumming, J.M. & Wood, D.M. 2017. 3. Adult morphology and terminology. P. 89–134. In: Kirk-Spriggs, A.H. & Sinclair, B.J. (Eds.). *Manual of Afrotropical Diptera. Volume 1. Introductory chapters and keys to Diptera families*. Suricata 4. SANBI Graphics & Editing, Pretoria.
- Curran, C.H. 1927. Records and description of Ethiopian Dolichopodidae. *Revue de Zoologie Africaine*, 15(2): 241–266.
- Grichanov, I.Ya. 1997. A brief review of the Afrotropical fauna of the subfamily Sciapodinae (Diptera: Dolichopodidae) with descriptions of new species. *International Journal of Dipterological Research*, 8(1): 43–50.
- Grichanov, I.Ya. 1998. New data on Sciapodinae (Diptera: Dolichopodidae) with a revised catalogue and keys to afrotropical species. *Bulletin de l'Institut Royal des Sciences naturelles de Belgique Entomologie*, 68: 79–130.
- Grichanov, I.Ya. 1999. New species and new records of afrotropical Sciapodinae (Diptera: Dolichopodidae). *Bulletin de l'Institut Royal des Sciences naturelles de Belgique Entomologie*, 69: 113–135.
- Grichanov, I.Ya. 2000. New afrotropical Sciapodinae and Medeterinae with a review of Namibian Dolichopodidae (Diptera). *Studia Dipterologica*, 7(2): 399–435.
- Grichanov, I.Ya. 2018. *An annotated catalogue of Afrotropical Dolichopodidae (Diptera)*. VIZR, St. Petersburg. 152 pp. (Plant Protection News Supplements, 25). DOI: <https://doi.org/10.5281/zenodo.1187006>
- Grichanov, I.Ya. 2021. *Alphabetic list of generic and specific names of predatory flies of the epifamily Dolichopodidae (Diptera)*. (Online version). Saint Petersburg: All-Russian Research Institute of Plant Protection. Available from: <http://grichanov.aiq.ru/genera3.htm/> (Accessed 1 May 2021).
- Grichanov, I.Ya. & Brooks, S.E. 2017. 56. Dolichopodidae (long-legged dance flies). P. 1265–1320. In: Kirk-Spriggs, A.H. & Sinclair, B.J. (Eds.). *Manual of Afrotropical Diptera, Volume 2. Nematocerous Diptera and Lower Brachycera*. Suricata 5. SANBI Graphics & Editing, Pretoria.