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A REVISION OF THE GENUS *ROHDENDORFISCA* GRUNIN, 1964 (DIPTERA: SARCOPHAGIDAE)

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The revision of the genus *Rohdendorfisca* is made. The redescriptions of both known species, *R. flagellifera* Grunin, 1964 and *R. forma* (Blackith et Pape, 1999), **comb. n.**, are given.

KEY WORDS: Sarcophagidae, *Rohdendorfisca*, taxonomy.

Ю. Г. Вервес. Ревизия рода *Rohdendorfisca* Grunin, 1964 (Diptera: Sarcophagidae, Sarcophaginae) // Дальневосточный энтомолог. 2007. N. 178. С. 1-10.

Ревизован род *Rohdendorfisca*. Даны переописания обоих известных видов рода – *R. flagellifera* Grunin, 1964 и *R. forma* (Blackith et Pape, 1999), **comb. n.**

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INTRODUCTION

Genus *Rohdendorfisca* was described as monotypic (Grunin, 1964). Rohdendorf (1965) placed it in the subtribe Parasarcophagina of the tribe Sarcophagini. I agree with his opinion (Verves, 1986). Pape (1996) placed *Rohdendorfisca* as a separate subgenus in his giant genus *Sarcophaga* in the tribe Sarcophagini. Later *Sarcophaga forma* was described, but the systematic position of this species was uncertain: "Erecting a new subgenus for *S. forma* mainly based on the current uncertainly seems to us a poor taxonomic strategy as it would imply that *S. forma* could not be

nested within one of the already existing subgenera” (Blackith & Pape, 1999). This opinion was based on erroneous interpretation of aedeagal structures of *S. forma*.

The females of both species of the genus *Rohdendorfisca* are unknown, therefore the diagnosis of genus and species are based on male adult morphology only. The nomenclature of genitalia is given according to Verves (2000) and Verves & Khrokalo (2006).

Genus *Rohdendorfisca* Grunin, 1964

Rohdendorfisca Grunin, 1964: 77 [type species – *Rohdendorfisca flagellifera* Grunin, 1964, by original designation]; Rohdendorf, 1965: 689; Verves, 1986: 176.

Rohdendorfisca (pro subgenus *Sarcophaga*): Pape, 1996: 386.

DESCRIPTION. MALE. Grey flies of median or large size (body length 6.5-14.0 mm). Head densely silvery dusted. Frons in the narrowest part equals to 0.13-0.25 of the head-width, without proclinate *orb*. Flagellomere 2.2-3.0 as long as pedicel; palpi black. Genae, postgenae and occiput densely grayish silver dusted, with white hairs, except for a row of black postocular setae and a few black hairs on each side behind upper ones. Thorax black, densely light-grey dusted, covered with black hairs, with dark longitudinal stripes at mesonotum. *acr* 0 + 1, fine; *dc* 0-1+4-5, weak, only 1-2 prescutellar pairs distinct. Proanepisternum bare. Cell r_{4+5} open; vein R_1 bare, vein R_{4+5} above with a row of black setae from basis and to about half way to *rm-cu* and with 2-3 basal setae below. Mid femur with numerous erect hairs at ventral surface, which about 0.3-0.7 width of femur; hind coxae with several distinct hairs on hind surface; hind femur and tibia both with numerous ventral cilia, which are as long as width of femur and 2-3 times longer than tibial width. Abdomen narrow, elongate-conic, black, densely light grey dusted, with elongate black median spots on tergites; shining black hind border is present on 5th tergite; 2nd and 3rd tergites without marginal bristles. Each of 2nd – 4th sternites covered by long erect hairs.

Terminalia black, 7+8th sytergosternite with several short marginals. Cercus covered with numerous short hairs, without spines. Tip of cercus with short ventrally curved hook. Surstylus not elongate. Paramere looks as elongate parallel bordering band, at apex distinctly curved ventrally. Gonopod shortened, hook-liked at apex. Epiphallus absent. Membrane with two unpaired appendages: basal one is membranous protuberance near the tip of paraphallic ventral plate, and apical is well sclerotised vesica. Harpes elongate, heavy sclerotised, diverging distally. Juxtal filament elongate; a pair of elongate and narrow membranous lateral juxtal processes curved inwards at the tips. Median process with paired awl-shaped median styli, well visible in later Lateral styli long and narrow, with a row of ventral tooth-shaped structures.

DIAGNOSIS. Genus *Rohdendorfisca* by bare proanepisternum, bristle-shaped lateral styli, and elongate juxtal processes is similar to genus *Liosarcophaga* Enderlein, 1928, but is well distinguished by presence of large and protruding harpes.

The position of the genus *Rohdendorfisca* in the system of the family Sarcophagidae is as follow: subfamily Sarcophaginae (hypophallus is differentiated into lateral

styli, median process and others inner parts of distiphallus); tribe Sarcophagini (basi- and distiphallus well separated; head of male without proclinate *orb*; hind coxae with several distinct hairs on hind surface); subtribe Parasarcophagina (4-5 postsutural dorsocentral setae; epiphallus absent; vesica & juxta well developed).

NOTES. The Grunin's drawings of male genitalia of *R. flagellifera* are excellent (Figs 1-4), but he named harpes as "styli" and did not show truly lateral styli (Fig. 3). Lateral styli show by me as right bristle liked appendages placed dorsally and laterally from harpes (Figs 5, 6).

The male genitalia of holotype of *R. forma* (Fig. 11-14) and specimen from United Arab Emirates (Figs 7-10) are identical. The original description of *R. forma* is based on mixture of nomenclature of parts of aedeagus. Really, a "funnel-like extension" is a juxtal filament, and a "hole" into it absent; this "hole" is a simple membranous area. At Fig. 11 the majority part of lateral stylus is covered by juxta as in Fig. 9, the tip of lateral stylus is bristle-liked. Blackith & Pape (1999) mistake this tip for juxtal filament, and ring-shaped base of lateral stylus for its terminal opening (Fig. 13). So called "ventral plate" (Fig. 11) is really a membranous protuberance of membrane (Fig. 9).

The general shape of genitalia of *R. flagellifera* and *R. forma* is the same, and both species belongs to genus *Rohdendorfisca*.

SPECIES INCLUDED. Two known species are distributed in mountain areas of Arabian Peninsula, Pakistan, and Central Asia.

Key to species

1. Cercus in profile without dorsal protuberance (Fig. 1); vesica narrow, stick-shaped (Figs 3, 5) ***R. flagellifera***
- Cercus in profile with distinct dorsal protuberance (Fig. 7); vesica enlarged to apex, pole-axe-shaped (Figs 9, 11a, b) ***R. forma***

***Rohdendorfisca flagellifera* Grunin, 1964**

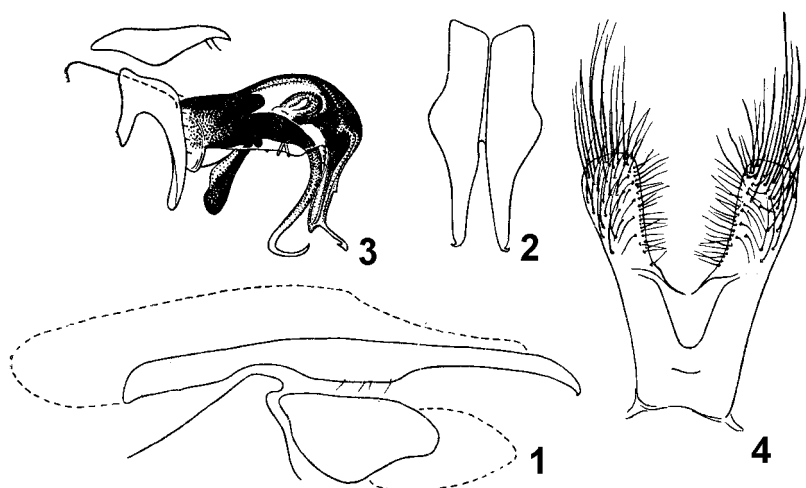
Figs 1-6.

Rohdendorfisca flagellifera Grunin, 1964: 77 (holotype – ♂, Turkmenistan: Kara-Kala [now: Garrygala], on horse, 11.IX 1930, coll. Petrischeva; deposited in Zoological Institute, St Petersburg, Russia; studied); Rohdendorf, 1965: 689, 694; Rohdendorf & Verves, 1979: 55; Verves, 1986: 176; Nandi, 2002: 404.

Sarcophaga flagellifera: Sugiyama, 1988: 118.

Sarcophaga (Rohdendorfisca) flagellifera: Pape, 1996: 386.

MATERIAL EXAMINED. Turkmenistan: Kara-Kala [now: Garrygala], on horse, 11.IX 1930, 1 ♂ (holotype), coll. Petrischeva; Kopet-Dagh, well Chulinka, 13.IX 1972, 1 ♂, coll. K. Grunin (deposited in Zoological Institute, St Petersburg); Geok-Tepe, Indzhigly-Cheshme, 29.IX 1971, 1 ♂, coll. D. Charykuliev (deposited in collection of Yu. Verves, Kyiv, Ukraine). Afghanistan: Prov. Nangrahar, Torkhama, 900 m, 3.IV 1967, 1 ♂, coll. D. Povolny (deposited in Moravian Museum, Brno, Czech Republic).

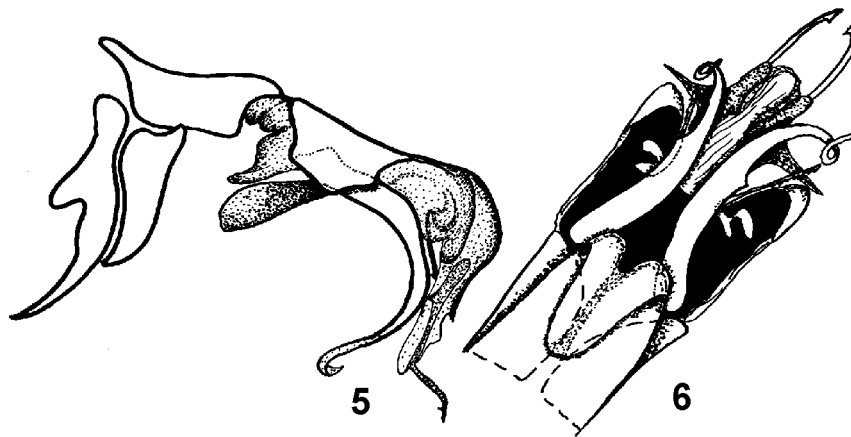


Figs. 1-4. *Rohdendorfisca flagellifera*, male genitalia (after Grunin, 1964): 1) cercus and surstylus in lateral view; 2) cerci in dorsal view; 3) paramere, gonopod and distiphallus in lateral view; 4) 5th abdominal sternite.

REDESCRIPTION. MALE. Total length 6.5-14.0 mm.

Head: frons in the narrowest part equals to 0.21-0.25 of the head-width. Fronto-orbital plates and parafacials densely silver white or slightly grayish dusted, in upper part with brownish gold tint; frontal vitta in fore part black, its hind part before orbital triangle densely light brownish-grey pollinated, in the narrowest part of frons 1.2-2.0 as wide as one of the fronto-orbital plate, the ratio of the width of anterior to posterior 1: 1.3-1.8, but it is the narrowest in the middle of frons. Flagellomere 2.2-3.0x as long as pedicel, arista with very long setae, distinctly thickened in basal 0.3-0.4, antennae completely grayish black, pedicel completely or only distally reddish; palpi slightly widened at apex, black. Parafacials at level of antennal base equals 0.19-0.21x, genae 0.30-0.33x of eye-height. Outer verticals only slightly longer than upper postoculars; inner verticals very strong and long; ocellar bristles mid long, directed latero-anteriorly; 2-3 pairs of fine postocellar setae present; a pair of reclinate strong orbital bristles presents, proclinate ones absent; 6-12 pairs of mid-long frontal bristles present; fronto-orbitals covered with mid-long erect black setae. Parafacials with 2-4 fine black setae in lower part near eye edge. Face, lunula, genal groove and facial ridge densely silver to grayish black dusted. Vibrissae well developed; subvibrissal setae black, mid-long and relatively strong; vibrissal ridges upper vibrissae with small cilia in lower S-2/3. Genae, postgenae and occiput densely grayish silver dusted, with white hairs, except for a row of black postocular setae and a few black hairs on each side behind upper ones.

Thorax: black, densely light-grey dusted, covered with black hairs; mesonotum with a median and two lateral stripes, median stripe subdivided into three narrower ones near transverse suture; all those stripes slightly shot from black to light-brown



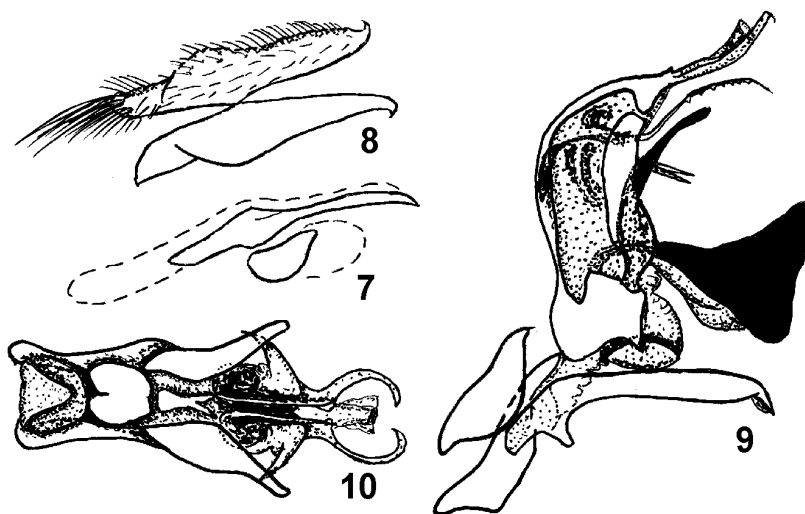
Figs. 5-6. *Rohdendorfisca flagellifera*, male genitalia (original): 5) paramere, gonopod and distiphallus laterally; 6) distiphallus ventrally.

colors. Scutellum with grey pruinescence with more or less distinct dark linear longitudinal median stripe. Lateral parts of thorax densely white dusted. *acr* 0 + 1, fine; *dc* 1+5, weak, only 1-2 prescutellar pairs distinct; *ial* 1+1; proanepisternum bare; *npl* 2, in addition to those bristles the notopleural area covered by several hairs of different length; anepisternum covered with long and dense hairs and with a row of 4-6 long and strong posterior bristles; katepisternum with very long anterior and posterior bristles and more short median one, with numerous erect cilia; scutellum with a pairs of long and strong preapical and basal bristles, apical ones fine, one pair discals distinctly longer than erected discal hairs. Fore and hind metathoracic spiracles brownish black.

Wings: hyaline, veins brown; basicosta and tegula whitish yellow. Costal spine absent; cell r_{4+5} open; vein R_1 bare, vein R_{4+5} above with a row black setae from basis and to about half way to *rm-cu* and with 2-3 basal setae below; vein *M* obtuse or right angled; the ratio of length of 3rd and 5th costal sections is 1.6-1.9 : 1.0; the ratio of length of 2nd and 3rd *M*-sections is 1 : 0.28-0.31; transverse posterior vein strongly s-like curved. Thoracic squama yellowish white, bare on upper surface. Halteres light brown.

Legs: black, with whitish gray dusting on femora and tibia; fore tarsi and tibia with short and numerous ventral cilia in apical half; mid femur with numerous erect hairs at ventral surface, which about 0.4-0.7 width of femur; mid tibia without such ventral ciliature; hind coxae with several distinct hairs on hind surface; hind femur and tibia both with numerous ventral cilia, which are so long as width of femur and 2-3 times longer than tibial width.

Abdomen: narrow, elongate-conic, black, densely light grey dusted; all tergites with black median longitudinal stripes; 5th tergite with shining black hind border; 2nd and 3rd tergites without marginal bristles; 4th sternite with a pair of mediomarginals or without it; 5th tergite with a row of strong marginals. Each of 2nd – 4th sternites covered by long erect hairs.



Figs. 7-10. *Rohdendorfisca forma*, male genitalia (original): 7) cercus and surstylus laterally; 8) cerci dorsally; 9) paramere, gonopod and distiphallus laterally; 10) distiphallus ventrally.

Terminalia: black, 7+8th sytergosternite shining, with a pair of distinct medio-marginals; epandrium shining, almost without dusting. Cercus in profile with narrow apical part, without dorsal protuberance, covered with numerous short hairs, without spines. Tip of cercus with short ventrally curved hook. Surstylus not elongate. Paramere in form of almost straight elongate parallel bordering band, at apex rounded. Gonopod shortened, hook-like at apex. Epiphallus absent. Membrane has 2 unpaired appendages: basal one is small membranous protuberance near the tip of paraphallic ventral plate, and apical – mid sclerotised elongate stick-shaped vesica. Harpes elongate, heavy sclerotised, at apex formed strong hook, with directed dorsally tip. Juxtal filament short; a pair of elongate and narrow membranous lateral juxtal processes curved inwards at the tips. Median process without visible median styli. Lateral styli mid-long and narrow, with a row of ventral tooth-shaped structures.

FEMALE unknown.

DISTRIBUTION. Afghanistan (Nangrahar), Iran, Turkmenistan, Pakistan (Chilas).

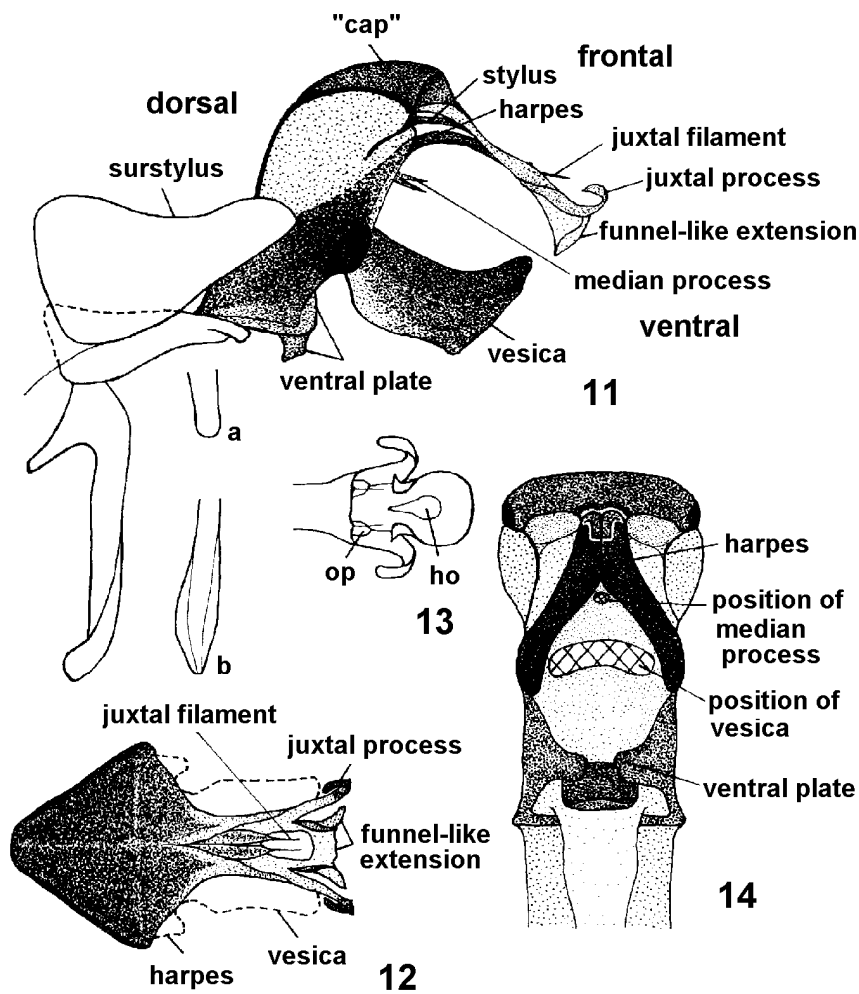
HABITS. Mountainous species. Holotype was collected on horse.

***Rohdendorfisca forma* (Blackith et Pape, 1999), comb. n.**

Figs 7-14

Sarcophaga forma Blackith & Pape, 1999: 240 (holotype – ♂, Oman: Wadi Dar Sawda, 23°14'N, 57°12'E, 1880 m, 2.XI 1990, coll. M. D. Gallagher and J. C. Deeming; deposited in the National Museum of Wales, Cardiff, United Kingdom; not examined).

MATERIAL EXAMINED. United Arab Emirates: Wadi Wurayah, 13.IV 2005, 1 ♂, coll. K. Szpila (deposited in collection of Yu. Verves, Kyiv, Ukraine).



Figs. 11-14. *Rohdendorfisca forma*, male genitalia (after Blackith & Pape, 1999): 11) surstylus, paramere, gonopod and distiphallus laterally; insets (a) and (b) show tips of paramere and gonopod drawn from above; 12) distiphallus ventrally; 13) tip of juxta and funnel-like extension frontoventrally (ho – hole in funnel-like extension; op – openings of lateral styli); 14) distiphallus ventrally.

REDESCRIPTION. MALE. Total length 7.5-10.0 mm.

Head: frons in the narrowest part equals to 0.13-0.20 of the head-width. Fronto-orbital plates and parafacials densely silver white dusted, frontal vitta in fore part black, its hind part before orbital triangle densely light brownish-grey pollinated, in the narrowest part of frons as wide as one of the fronto-orbital plate, the ratio of the width of anterior to posterior 1:1, but it narrows in the middle of frons. Flagellomere

2.2-2.4x as long as pedicel, arista with very long setae, slightly thickened in basal 0.2, antennae completely grayish black, apex of pedicel reddish; palpi slightly widened at apex, black. Parafacials at level of antennal base equals 0.22-0.25x, genae 0.33-0.35x of eye-height. Outer verticals only slightly longer than upper postoculars; inner verticals very strong and long; ocellar bristles mid long, directed latero-anteriorly; 2-3 pairs of fine postocellar setae present; a pair of reclinate strong orbital bristles presents, proclinate ones absent; 9-10 pairs of mid-long frontal bristles present; fronto-orbitals covered with mid-long erect black setae. Parafacials with irregular row of fine black setae along eye edge. Face, lunula, genal groove and facial ridge densely silver white dusted. Vibrissae well developed; subvibrissal setae black, mid-long and relatively strong; vibrissal ridges upper vibrissae with small cilia in lower 2/3. Genae, postgenae and occiput densely silver white dusted, with white hairs, except for a row of black postocular setae and a few black hairs on each side behind upper ones.

Thorax: black, densely light-grey dusted, covered with black hairs; mesonotum with a median and two lateral stripes, median stripe subdivided into three narrower ones near transverse suture; all those stripes slightly shot from black to light-brown colors. Scutellum with grey pruinescence and dark longitudinal median stripe. Lateral parts of thorax densely white dusted. *acr* 0 + 1, fine; *dc* 0+4-5, weak, only prescutellar pair distinct; *ial* 0 + 1; proanepisternum bare; *npl* 2 long and 2-3 short, in addition to those bristles the notopleural area covered by numerous short hairs; anepisternum covered with long and dense hairs and with a row of 5-6 long and strong posterior bristles; katepisternum with long anterior and posterior bristles and more short median one, with numerous erect cilia; scutellum with a pairs of long and strong preapical and basal bristles, apical ones fine, discals not distinctly longer than erected discal hairs. Fore and hind metathoracic spiracles brownish black.

Wings: hyaline, veins brown; basicosta and tegula whitish yellow. Costal spine short, about 2.0 length of adjacent spines; cell r_{4+5} open; vein R_1 bare, vein R_{4+5} above with a row black setae from basis and to about half way to *rm-cu* and with 2-3 basal setae below; vein *M* right angled; the ratio of length of 3rd and 5th costal sections is 1.5-2.1 : 1.0; the ratio of length of 2nd and 3rd *M*-sections is 1 : 0,4; transverse posterior vein strongly s-liked curved. Thoracic squama yellowish white, bare on upper surface. Halteres light brown.

Legs: black, with whitish gray dusting on femora and tibia; fore tibia with short and numerous ventral cilia in apical half; mid femur with numerous erect hairs at ventral surface, which about 0.3-0.7 width of femur; mid tibia without such ventral ciliature; hind coxae with several distinct hairs on hind surface; hind femur and tibia both with numerous ventral cilia, which are so long as width of femur and 2-3 times longer than tibial width.

Abdomen: narrow, elongate-conic, black, densely light grey dusted, with elongate triangle black median spots on 3rd and 4th tergites; black median longitudinal stripe and shining black hind border are present on 5th tergite; 2nd and 3rd tergites without marginal bristles; 4th and 5th tergites with a rows of marginals. Each of 2nd – 4th sternites covered by long erect hairs.

Terminalia: black, 7+8th sytergosternite shining, with several short marginals; epandrium distinctly grey dusted. Cercus in profile with narrow apical part and distinct dorsal protuberance, covered with numerous short hairs, without spines. Tip of cercus with short ventrally curved hook. Surstylus not elongate. Paramere in form of straight elongate parallel bordering band, at apex distinctly curved ventrally. Gonopod shortened, hook-like at apex. Epiphallus absent. Membrane has 2 unpaired appendages: basal one is membranous protuberance near the tip of paraphallic ventral plate, and apical – well sclerotised elongate and broad vesica. Harpes elongate, heavy sclerotised, diverging distally. Juxtal filament formed funnel-like extension; a pair of elongate and narrow membranous lateral juxtal processes curved inwards at the tips. Median process with paired awl-shaped median styli, well visible in lateral view. Lateral styli very long and narrow, flagellum-shaped, with a row of ventral tooth-shaped structures.

FEMALE unknown.

DISTRIBUTION. Oman, United Arab Emirates.

HABITS. Mountainous species.

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