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A new species of robber fly of the genus *Leptogaster* Meigen, 1803 (Diptera: Asilidae) from Dagestan, Russia

Новый вид ктыря рода *Leptogaster* Meigen, 1803 (Diptera: Asilidae) из Дагестана, Россия

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***Ключевые слова*:** Diptera, Asilidae, *Leptogaster*, новый вид, Дагестан, Россия.

Abstract. A new species *Leptogaster rutulica* **sp. n.** from southwestern Dagestan is described with comprehensive photographs of the external morphology and details of the male genitalia. Differences from other species of the genus *Leptogaster* Meigen, 1803, and especially from the closely related species *L. subtilis* Loew, 1847 are shown. The species is characterized by the presence of very characteristic features, which are not observed in other members of *Leptogaster* species occurring in the Caucasus. The new species differs from *L. armeniaca* Paramonov, 1930, *L. calceata* Engel, 1925, *L. cylindrica* (De Geer, 1776) and *L. pubicornis* Loew, 1847 in the shape of the epandrium with a distinct spine medio-posteriorly, by the presence of numerous black hairs and strong bristles at the tip of the epandrium, and the lateral processes of gonostyli sharply curved and bent down. The new species has two extensive apubescent areas on the mesoscutum, reaching the middle of the mesonotum and also clearly distinguished from *Leptogaster subtilis* by the presence of the distinct spine medio-posteriorly on the epandrium.

Резюме. Описан новый вид *Leptogaster rutulica* **sp. n.** из Юго-Западного Дагестана с подробными фотографиями деталей внешнего строения и описанием гениталий самца. Показаны отличия от других видов рода *Leptogaster* Meigen, 1803 и в особенности от близкого вида *L. subtilis* Loew, 1847. Новый вид имеет по бокам от срединной бурой полосы два длинных лишенных пыльцы участка, доходящих до середины среднеспинки и также хорошо отличается от *Leptogaster subtilis* небольшим отчетливым заостренным выступом по медиальному краю половин эпандрия.

According to recent data, the genus *Leptogaster* Meigen, 1803 accounts for 254 species in the world fauna and 54 species in the Palaearctic [Hasbenli et al., 2006]. Representatives of the Leptogastrinae subfamily are not waiting for the prey sitting still, but rather catch their prey while flying in dense vegetation. Various arthropods seated on plants (small dipterans, leafhoppers, grasshoppers larvae, bugs, aphids, and sometimes spiders [Lehr, 1961]) can serve as prey.

When studying collections from Dagestan provided by K.A. Grebennikov, we found a male of a species previously unknown to science. The identification of the specimen using the available identification keys for the Caucasus and the nearest territories [Richter, 1968, 1969; Lehr, 1961; Astakhov, 2015], as well as a comparison with reliably determined and typical specimens of various species of the genus *Leptogaster* in the collection of the Zoological Institute of the Russian Academy of Sciences (St Petersburg,

Figs 1–2. *Leptogaster rutulica* **sp. n.**, male, holotype.
1 – general view; 2 – legs, lateral view. Scale bars 1 mm.
Рис. 1–2. *Leptogaster rutulica* **sp. n.**, самец, голотип.
1 – общий вид; 2 – ноги, вид сбоку. Масштабные линейки 1 мм.

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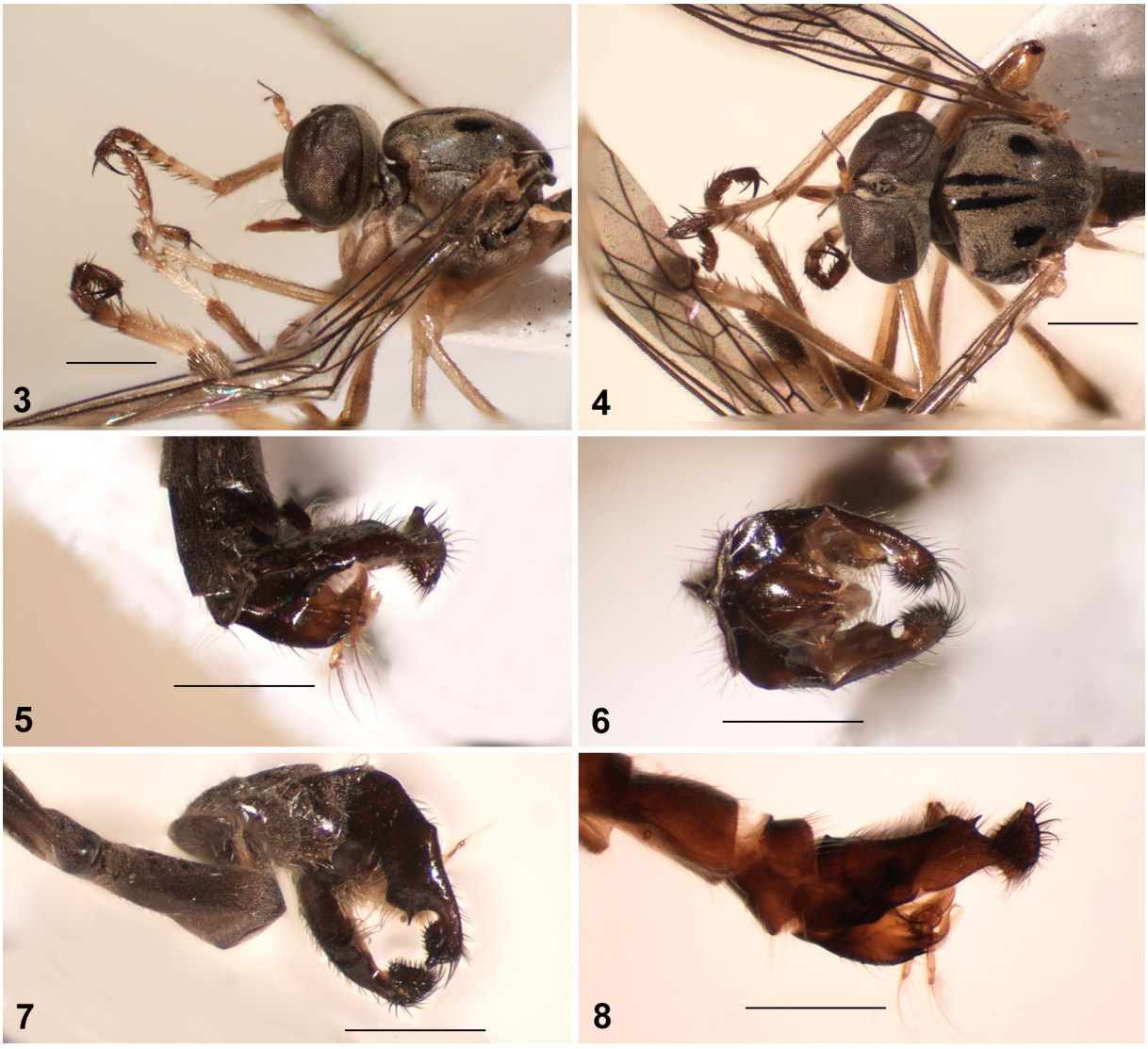
Russia) did not allow determining the species of this specimen. Richter [1968] lists for 4 species of *Leptogaster* (*L. armeniaca* Paramonov, 1930, *L. calceata* Engel, 1925, *L. cylindrica* (De Geer, 1776) and *L. pubicornis* Loew, 1847) for the fauna of the Caucasus. In the neighbouring Lower Volga region 6 species of *Leptogaster* (*L. cylindrica* (De Geer, 1776), *L. fumipennis* Loew, 1871, *L. guttiventris* Zetterstedt, 1842, *L. nartshukae* Lehr, 1961, *L. pubicornis* Loew, 1847, *L. stackelbergi* Lehr, 1961 [Astakhov, 2015]) have been discovered. The new species is not similar to any of these species and has completely different male genitalia structures. The closest in structure of the male genitalia is *L. subtilis* Loew, 1847, which is known from Western and Eastern Europe (Spain, France, Belgium, Germany, Switzerland, Italy, Austria, Czech Republic, Slovakia) [Engel, 1930; Lehr, 1988; Weinberg, Bächli, 2005, 2008]. Lehr [1961, 1988] records *L. subtilis* in Tajikistan, which is considered erroneous and the specimens apparently belong to the species *L. lehri* Hradsky et Hüttinger, 1983, described from Afghanistan [Hradsky, Hüttinger, 1983; Weinberg, Bächli, 2005]. We took detailed photos of the male *L. rutulica* **sp. n.** appearance and genitalia structures. The holotype of the new species is deposited in the collection of the Zoological Institute of the Russian Academy of Sciences.

Leptogaster rutulica **sp. n.**
(Figs 1–11)

Material. Holotype, ♂: Russia, Dagestan, Rutul District, W of Kufa vill., 41.566 N / 47.361 E, 1400 m, 1.07.2018 (leg. K.A. Grebennikov).

Description. Face covered in silvery-white pubescence, mystax composed of four macrosetae, arranged in one row; occiput covered in brownish-gray pollen; scape, pedicel and proximal half of postpedicel reddish-yellow, distal half of postpedicel and style brown; proboscis reddish-yellow (Figs 1–4). Mesoscutum covered with grayish-brown pollen with two black, shiny round spots



Figs 3–8. *Leptogaster rutulica* **sp. n.**, male, holotype.
3–4 – head and thorax: 3 – lateral view, 4 – dorsal view; 5–8 – genitalia: 5, 8 – lateral view, 6 – ventral view, 7 – dorsal view. Scale bars 0.5 mm.
Рис. 3–8. *Leptogaster rutulica* **sp. n.**, самец, голотип.
3–4 – голова и грудь: 3 – вид сбоку, 4 – вид сверху; 5–8 – гениталии: 5, 8 – вид сбоку, 6 – вид снизу, 7 – вид сверху. Масштабные линейки 0.5 мм.

laterally and two black shiny stripes in middle, not reaching distal margin (Figs 1–4); pleurae covered with brownish-gray pollen (Figs 1, 2). Wings uniformly slightly brownish darkened. Coxae reddish-yellow; legs are in short light with a slight admixture of black hairs and setae; fore and mid femora reddish-yellow with black tips; hind femora with distinct black ring in near distal tip; fore and mid tibiae reddish-yellow; hind tibiae with black tip; proximal 2 tarsomeres of hind tarsus reddish-yellow, tip brown, other tarsomeres completely brown (Figs 1, 2); abdomen covered with grayish-brown pollen and thin silvery-white hairs (Fig. 1).

Male genitalia black-brown, with long thin light and black hairs (Figs 5–11); epandrial halves with small pointed spine medio-posteriorly and deep notch distally; epandrial halves distally enlarged and covered with numerous black hairs and strong setae; gonocoxite-hypandrial complex is covered with white hairs; gonostylus elongated and slightly curved in medially; lateral processes of gonostyli elongated, flattened and sharply bent downwards; aedeagus smoothly narrowed toward apex; ejaculatory apodeme small and elongated.

Body length 10 mm.

Comparative diagnosis. The species is characterized by the presence of very characteristic features, which are not observed in other members of *Leptogaster* species occurring in the Caucasus. The new species differs from *L. armeniaca*, *L. calceata*, *L. cylindrica* and *L. pubicornis* in the shape of the epandrium with a distinct spine medio-posteriorly (Figs 7–11), by the presence of numerous black hairs and strong bristles at the tip of the epandrium, and the lateral processes of gonostyli sharply curved and bent down (Figs 5, 8, 9). Among the external characters, noteworthy are the characteristic pattern on the mesoscutum and the colour of the hind tarsus (Figs 1–4). It also differs from the morphologically similar species *L. subtilis* by the presence of the distinct spine medio-posteriorly on the epandrium (Figs 7–11). *Leptogaster rutulica* **sp. n.** has two extensive apubescent areas on the mesoscutum, reaching the middle of the mesonotum (Fig. 4) whereas *L. subtilis* has significantly less extensive pubescent areas [Weinberg, Bächli, 2008]. Detailed drawings of the external morphology and details of the male genitalia of *L. subtilis* are well represented in the work of Weinberg and Bächli [2008: 233–239, figs 1–7]. The *L. subtilis* illustrations from this article and our photographs of *L. rutulica* **sp. n.** allow to reliably identify these two close species.

Etymology. The name is given by the place of collection, Rutul District.

Distribution. Southwestern Dagestan, Russia.

Figs 9–11. *Leptogaster rutulica* **sp. n.**, male genitalia, holotype.
9 – lateral view; 10 – dorsal view; 11 – ventral view. Scale bars 0.5 mm.
Рис. 9–11. *Leptogaster rutulica* **sp. n.**, гениталии самца, голотип.
9 – вид сбоку; 10 – вид сверху; 11 – вид снизу. Масштабные линейки 0.5 мм.

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References

Astakhov D.M. 2015. Robber flies (Diptera: Asilidae) of Lower Volga Area. *In:* Trudy Russkogo entomologicheskogo obshchestva. T. 86(1) [Proceedings of the Russian Entomological Society. Vol. 86(1)]. St Petersburg: Zoological Institute of the Russian Academy of Sciences: 1–410 (in Russian).

Engel E.O. 1930. 24. Asilidae: Diptera. *In:* Die Fliegen der Palaearktischen Region. Bd. IV 2. (E. Lindner ed.). Stuttgart: E. Schweizerbart'sche Verlagsbuchhandlung: 1–491.

Hasbenli A., Candan S., Alpay N. 2006. A new species of *Leptogaster* Meigen (Diptera, Asilidae) from Turkey with egg and spermatheca structure. *Zootaxa*. 1267: 49–57. DOI: 10.5281/zenodo.173189

Hradsky M., Hüttinger E. 1983. Eine neue Leptogaster-Art aus Afghanistan (Diptera, Asilidae). *Reichenbachia.* 21(9): 63-64.

Lehr P.A. 1961. The robber flies of the Leptogastrinae subfamily (Diptera, Asilidae) in the fauna of the USSR. *Entomologicheskoe obozrenie*. 50(3): 686–703 (in Russian).

Lehr P.A. 1988. Family Asilidae. *In:* Catalogue of Palaearctic Diptera. Vol. 5. Athericidae–Asilidae. Amsterdam: Elsevier Science Publishers: 197–326.

Richter V.A. 1968. Khishchnye mukhi-ktyri (Diptera, Asilidae) Kavkaza [Predatory Robber Flies (Diptera, Asilidae) of the Caucasus]. Leningrad: Nauka: 286 p. (in Russian).

Richter V.A. 1969. Family Asilidae. *In:* Opredelitel' nasekomykh evropeyskoy chasti SSSR. T. 5. Dvukrylye, blokhi. Ch. 1 [Key to the insects of the European part of the USSR. Vol. 5. Diptera, Siphonaptera. Part 1]. Leningrad: Nauka: 504–531 (in Russian).

Weinberg M., Bächli G. 2005. A new synonym of *Leptogaster subtilis* Loew, 1947 (Diptera, Asilidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*. 78(1–2): 19–22. DOI: 10.5169/seals-402882

Weinberg M., Bächli G. 2008. New morphological data on *Leptogaster subtilis* Loew, 1847 (Diptera, Asilidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*. 81(3–4): 231–241. DOI: 10.5169/seals-402974

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