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Description of a new species *Eumerus vadimi* sp.n. (Diptera, Syrphidae) from Tajikistan

Описание нового вида *Eumerus vadimi* sp.n. (Diptera, Syrphidae) из Таджикистана

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Key words: new species*, Eumerus*, Central Asia, morphology.

Ключевые слова: новый вид, *Eumerus*, Средняя Азия, морфология.

Abstract. Description of a new species of the genus *Eumerus* Meigen, 1822 from the *tricolor* species group is given. The new species morphologically close to *Eumerus sinuatus* Loew, 1855 and *Eumerus coeruleus* (Becker, 1913), but differs from both by set of following characters, namely: antenna black, vertex with white pilis, eyes distinctly dichoptic, tarsi completely black, sternum VIII with white pilis. Furthermore, the new species has a different structure of the male's genitalia. For all three species mentioned above, illustrations of taxonomically significant characters, including male genitalia, are provided.

Резюме. Дано описание нового вида из рода *Eumerus* Meigen, 1822 группы видов *tricolor*. Новый вид морфологически близок к *Eumerus sinuatus* Loew, 1855 и *Eumerus coeruleus* (Becker, 1913), но отличается набором следующих признаков: усики чёрные, темя с чёрными волосками, глаза отчётливо дихоптические, лапки полностью чёрные. VIII стернит с белыми волосками. Кроме того, новый вид имеет иное строение гениталий самца. Для всех трёх указанных выше видов приведены рисунки таксономически значимых признаков, в том числе гениталий самцов.

Introduction

This article is a continuation of a series of publications describing new species from the genus *Eumerus* Meigen, 1822 discovered during the preparation of a key to this genus within the Asian part of the Palearctic region. 34 new taxa have been described in recent articles [Mutin, Barkalov, 1999; Mutin, 2019, 2025; Barkalov, 2020, 2025a, b; Gilassian et al., 2020, 2022; Barkalov, Mutin, 2022, 2024 a, b; Barkalov, Rakhimov, 2026 a,b]. As a result, the total number of species in the Asian part of the Palaearctic region reached 136. But this number does not reflect the final abundance, as there is insufficient material from a large area, or it is completely absent. Furthermore, some taxa have been described based on females, which makes it impossible to identify them, since, given the current taxonomic capabilities, species identification within the studied genus is primarily based on the males' genitalia. Undoubtedly, this situation greatly hinders the study of the faunal richness of local territories and requires a solution.

The work uses material from the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, ZIN). Identification was based on the keys of Stackelberg [1961], Gilasian et al. [2020].

Nomenclatural act introduced in the present work is registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:C9E5D126-8FEC-4D24-889C-6DAC886D588D

Results

Syrphidae Latreille, 1802
Eristalinae Newman, 1834
Merodontini Edwards, 1915
Eumerus Meigen, 1822
Eumerus vadimi Barkalov et Rakhimov, **sp.n.**
Figs 1–6.

urn:lsid:zoobank.org:act:572129CF-51BB-42B9-9F2F-B8370C2B93D2

Material. **Tajikistan:** Holotype, ♂ — 60 km NE Muminabad, Iokundzha river, h~2500 m a.s.l., 5.IX.1964, V. Zaitzev leg. (ZIN). Original label: "250 м, р. Иокунджа, 60 км с-в. Муминабада, Тадж. В. Зайцев 5.IX.964".

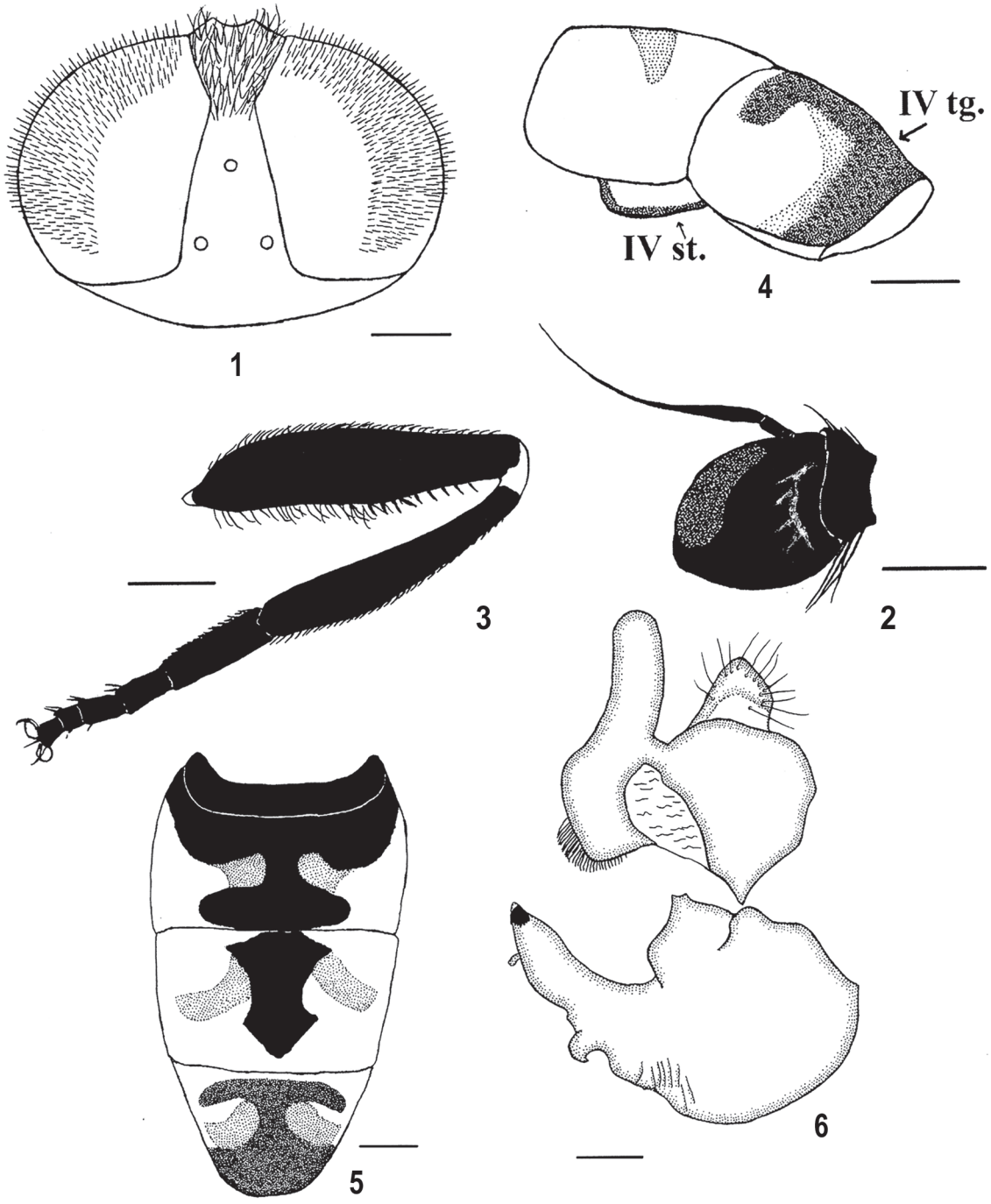
Description. Male. Head. Face narrow with almost parallel sides, black with distinct bluish reflection, covered with erect white pili; frons and vertex narrow, shiny-bluish, covered with

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white pili. Eyes distinctly dichoptic (Fig. 1), narrowest distance between eyes slightly shorter postpedicel width. Antenna small black, postpedicel with long transverse sulcus and with 4 short longitudinal sulcate (Fig. 2). Frons, vertex and occiput with long white pili, ocellar triangle isosceles (Fig. 1).

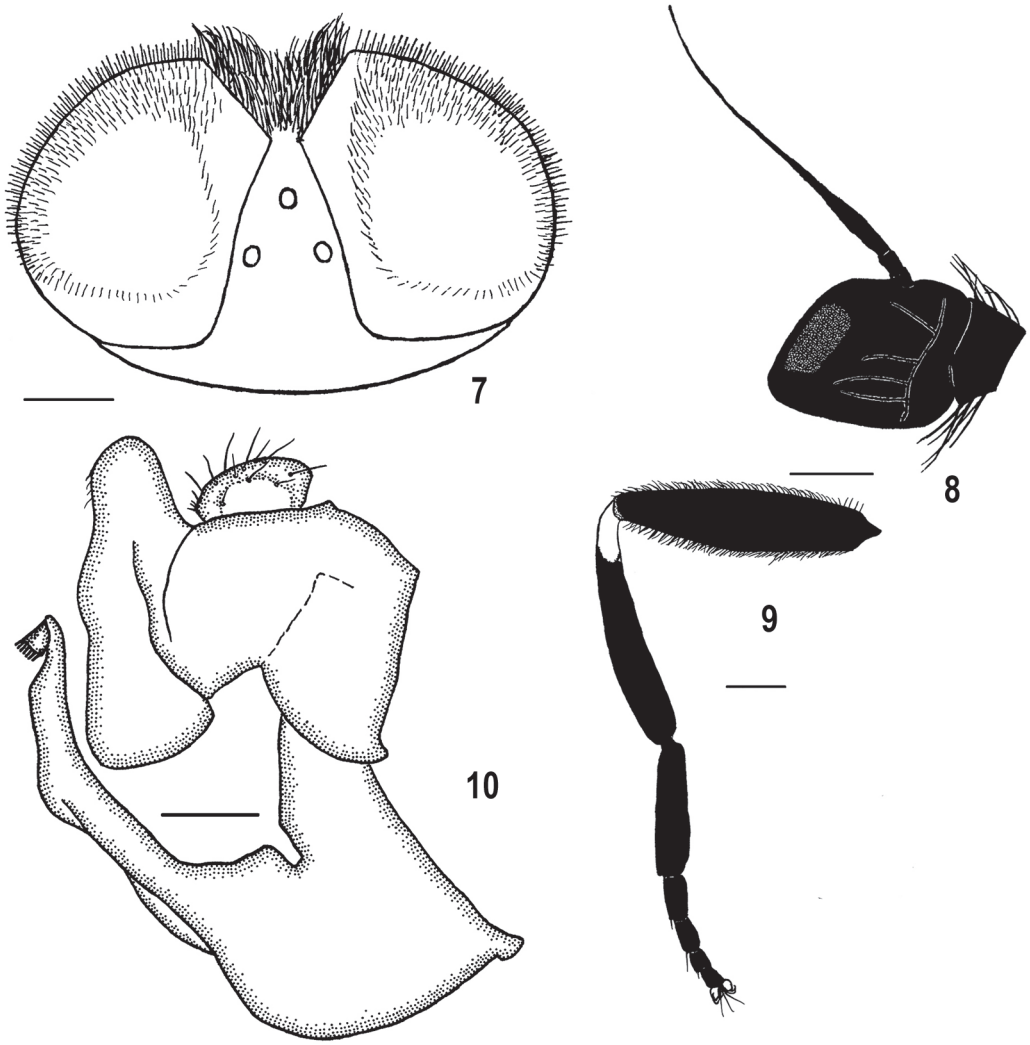
Thorax bluish, shiny without any tomentum, covered with erect white pili; legs mostly black, only tibiae brownish in basal third; metafemur slightly swollen, with short pili and with setose carina in apical half (Fig. 3). Wing completely covered with microtrichia, slightly brownish medially, but without distinct black spot. Sguama and halter white.

Abdomen mostly orange with 3 pare of grey spots of tomentum (Fig. 5); tergum I black, terga II–IV with black central part and orange lateral part; covered with short white pili on orange part and with short, depressed black pili on black part. Sternum I black, sterna II–III orange with black medial



Figs 1–6. Details of male morphology of *Eumerus vadimi* Barkalov, Rakhimov sp.n. 1 — head; 2 — pedicel and postpedicel; 3 — metaleg; 4 — tip of abdomen; 5 — abdomen; 6 — genitalia; 1, 5 — dorsal view; 2–4, 6 — lateral view. Designations: tg — tergum, st. — stermum. Scale bars: 1, 3, 5 — 0.45 mm, 2 — 0.26 mm, 6 — 0.23 mm.

Рис. 1–6. Детали строения самца *Eumerus vadimi* Barkalov, Rakhimov sp.n. 1 — голова; 2 — второй и третий членики усика; 3 — задняя нога; 4 — вершина брюшка; 5 — брюшко; 6 — гениталии; 1, 5 — сверху; 2–4, 6 — сбоку. Обозначения: tg — тергит, st. — стернит. Масштаб: 1, 3, 5 — 0,45 мм, 2 — 0,26 мм, 6 — 0,23 мм.



Figs 7–10. Details of male morphology of *Eumerus sinuatus* Lw. 7 — head; 8 — pedicel and postpedicel; 9 — metaleg; 10 — genitalia; 7 — dorsal view; 8–10 — lateral view. Scale bars: 7, 8, 10 — 0.23 mm, 9 — 0.45 mm.

Рис. 7–10. Детали строения самца *Eumerus sinuatus* Lw. 7 — голова; 8 — второй и третий членики усика; 9 — задняя нога; 10 — гениталии; 7 — сверху; 8–10 — сбоку. Масштаб: 7, 8, 10 — 0,23 мм, 9 — 0,45 мм.

spot; lateral edges of the third tergum extend onto the inner side of the abdomen and cover the genitalia (Fig. 4); sternum IV raised in the shape of keel; sternum VIII with white pili. Genitalia without anterior lobe of surstylus, hypandrium with characteristic hook (Fig. 6).

Size: body length 8.9 mm, wing length 7.8 mm.

Differential diagnosis. According to Stackelberg's identification key to the Palaearctic species of the genus *Eumerus*, the new species goes to the couplet 45, which defines two species, *Eumerus sinuatus* Lw. and *Eumerus coeruleus* (Beck.). From both these species *Eumerus vadimi* sp.n. differs by set of following characters: antenna black, frons and vertex with white pilis, eyes distinctly dichoptic, tarsi completely black, sternum VIII with white pilis; sternum IV raised in the shape of keel. Furthermore, the new species has a different structure of the male's genitalia. In *E. sinuatus* occiput and VIII sternum with black pilis, eyes narrowly separated, protarsi and mesotarsi brownish-yellow (Figs 7–10). In *E. coeruleus* antenna brownish-yellow, eyes connected in one point, basal third of tibia and tarsi mostly yellow (Figs 11–15). The fourth sternum in both species not raised.

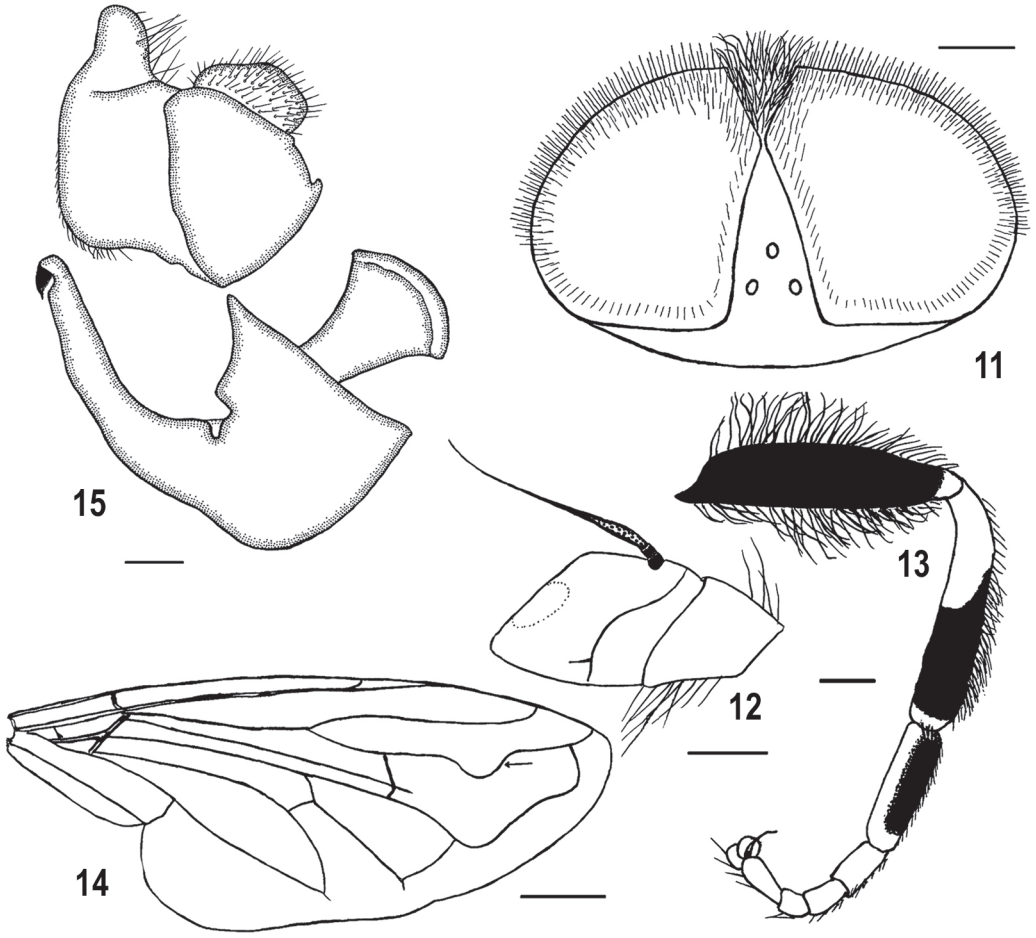
Etymology. The new species is named after collector, famous dipterologist Vadim Filippovich Zaitzev.

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Figs 11–15. Details of male morphology of *Eumerus coeruleus* (Beck.) 11 — head; 12 — pedicel and postpedicel; 13 — metaleg; 14 — wing; 15 — genitalia; 11, 14 — dorsal view; 12, 13, 15 — lateral view. Scale bars: 11 — 0.45 mm; 12, 15 — 0.23 mm; 13 — 0.5 mm; 14 — 0.86 mm.

Рис. 11–15. Детали строения самца *Eumerus coeruleus* (Beck.) 11 — голова; 12 — второй и третий членики усика; 13 — задняя нога; 14 — крыло; 15 — гениталии; 14 — сверху; 12, 13, 15 — сбоку. Масштаб: 11 — 0,45; 12, 15 — 0,23 мм; 13 — 0,5 мм; 14 — 0,86 мм.

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