

A new species of the genus *Empis* Linnaeus, 1758 (Diptera: Empididae) from the Caucasus

Новый вид рода *Empis* Linnaeus, 1758 (Diptera: Empididae) с Кавказа

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KEY WORDS: Diptera, Empididae, *Empis*, Palaearctic, Russia, Caucasus, new species.

КЛЮЧЕВЫЕ СЛОВА: Diptera, Empididae, *Empis*, Палеарктика, Россия, Кавказ, новый вид.

ABSTRACT. A new species of the genus *Empis* L. is described from the Caucasus: *Empis (Empis) hamatophallus* sp.n. (Russia: Adygea, Krasnodar Territory). A key to species of *Empis* (s.str.) from the Caucasus is provided.

РЕЗЮМЕ. Дано описание нового вида рода *Empis* L. с Кавказа: *Empis (Empis) hamatophallus* sp.n. (Россия: Адыгея, Краснодарский край). Составлена определительная таблица видов *Empis* (s.str.) Кавказа.

Introduction

The species of nominative subgenus *Empis* s. str. are generally small to mid-sized (2–5 mm) greyish black flies. They can be readily recognised by structure of labella of the proboscis which are scarcely distinguishable, strongly sclerotised and only microscopically pubescent. The adults are frequently found on flowers where they suck the nectar [Chvála, 1994]. In the Palaearctic the group includes 117 species known mostly from Europe and Mediterranean [Chvála & Syrovátka, 1989; Chvála & Wagner, 1989; Syrovátka, 1991a, b, 1995, 2000]. The subgenus is purely studied from the territory of Russia where only 27 species have been found. Currently, 10 species of *Empis* s. str. are recorded from the Caucasus, including a species described below [Shamshev & Kustov, 2006; Gladun, 2012].

Material and methods

The present paper is based on examination of Empididae collections deposited in the Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia (ZIN) and Biological Department of Kuban State University, Krasnodar, Russia (KSU). Terms applied for

adult structures primarily follow those of McAlpine [1981] although the terminology for the antenna is taken from Stuckenberg [1999]. Homologies for the male terminalia follow Sinclair [2000]. To facilitate observations, the terminalia were macerated in 10% KOH and immersed in glycerine. Drawings of morphological features were made with a camera lucida attached to a compound microscope.

Taxonomic part

Empis (Empis) hamatophallus sp.n.

Fig. 1

MATERIAL. Holotype ♂, RUSSIA: Adygea Republic, Maykopskiy District, Caucasus State Nature Biosphere Reserve, mountain Tybga, 1850–2000 m, 31.07.2011, Gladun V.V. (deposited in ZIN). PARATYPES: 2 ♂♂, same locality as in holotype, 12.08.2009, Gladun V.V.; 2 ♂♂, same locality as in holotype, 31.07.2011, Gladun V.V., Babichev M.M.; 2 ♀♀, Adygea Republic, Maykopskiy District, Caucasus State Nature Biosphere Reserve, alpine pasture Abago, 1780 m, 10.08.2009, Gladun V.V.; 31 ♂♂, 87 ♀♀, Adygea Republic, Maykopskiy District, Caucasus State Nature Biosphere Reserve, plateau Lagonaki, springhead Kurdzhips, 1550 m, Malaise trap, 16.06–17.09.2011, Mikhaylichenko T.V.; 1 ♀, Russia, Krasnodar Territory, Apsheronkiy District, biological station “Kamyshanova polyana”, 1240 m, 07.07.2009, Gladun V.V.; 5 ♂♂, same locality, 06.07.2010, Gladun V.V.; 1 ♂, same locality 13.07.2012, Kustov S.Yu.; 9 ♂♂, Russia, Krasnodar Territory, Sochinskiy District, Caucasus State Nature Biosphere Reserve, around lake Kardivach, 1–2.08.2010, Kustov S.Yu.; 12 ♂♂, Russia, Krasnodar Territory, Sochinskiy District, Caucasus State Nature Biosphere Reserve, around lake Kardivach, 1–2.08.2010, Gladun V.V.; 3 ♂♂, Russia, Krasnodar Territory, Sochinskiy District, Caucasus State Nature Biosphere Reserve, around lake Mid Kardivach, 4.08.2010, Gladun V.V. (deposited in ZIN and KSU).

DESCRIPTION. Length of body 3.8–4.2 mm; length of wing 4.2–4.5 mm.

Male. *Head* black, greyish pollinose, clypeus shining. Eyes holoptic, upper ommatidia enlarged. Ocellar tubercle with pair of long and several fine short setae. Occiput covered with numerous fine black setae of varying lengths, with some pale hair-like setae behind mouth-opening (sometimes ab-

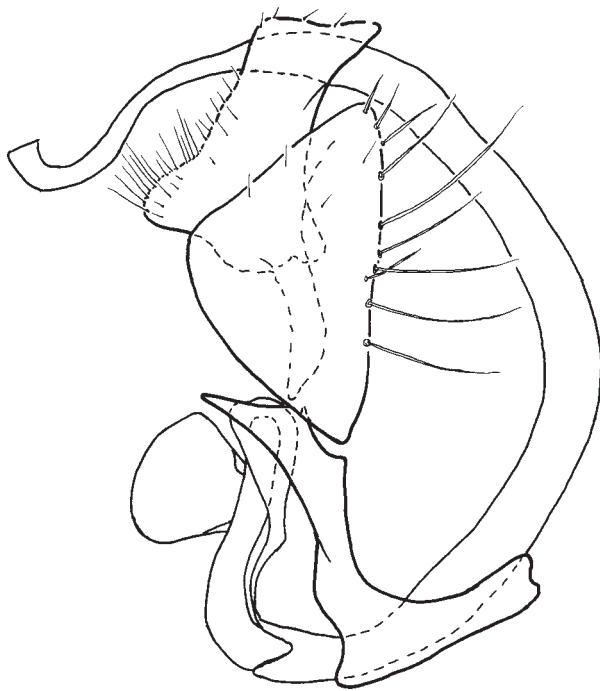


Fig. 1. *Empis (Empis) hamatophallus* sp.n., male genitalia, lateral view.

Рис. 1. *Empis (Empis) hamatophallus* sp.n., гениталии самца, сбоку.

sent). Antenna black; postpedicel conical with ventral depression, 2–2.5 times longer than wide; stylus long, nearly 3/4 of postpedicel length. Labrum brown, 2–2.5 times as long as head is high; palpus black, with scattered, short, black setae.

Thorax uniformly black in ground-colour, scutum (dorsal view) subshining, finely brownish-grey pollinose, without distinct stripes; black setose. Prosternum bare. Proepisternum with tuft of hair-like setae on lower part and several similar setae on upper part. Antepronotum with several long setae on each side. Postpronotal lobe with 1 long strong and several short fine setae. Mesonotum with 1 long presutural supra-alar, 3 strong notopleurals, 3–4 postsutural supra-alars of different lengths, 1 postalar and 4 scutellars (apical pair long, lateral pair short); additionally, several hair-like setae present on anterior part of notopleuron; acrostichals short, arranged in 2 close, irregular rows, absent on prescutellar depression; dorsocentrals 1–2-serial, slightly laterocline on middle part of scutum, 3 pairs of prescutellars longest; laterotergite with black setae; anterior and posterior spiracles dark brown.

Legs uniformly black, shining (only coxae greyish dusted), with black setae. Coxae and trochanters with ordinary setae of different lengths. Fore femur with unmodified setae, anteroventral and posteroventral setae minute. Fore tibia with rather long, thin, dorsal setae (about 1.5 times as long as tibia is wide), bearing circle of short subapical setae. Fore basitarsus unmodified, about 1/2 of tibia length, covered with relatively short setae. Mid femur with 4–5 long anterodorsal setae on basal half, bearing rows of anteroventral and posteroventral setae becoming longer toward femur base (longest setae 2–3 times as long as femur is wide). Mid tibia with 3 long dorsal setae (except subapicals) and rather short ventral setae. Mid tarsomeres unmodified. Hind femur unmodified,

with long anterodorsal setae. Hind tibia slightly thickened and curved, with longer setae dorsally. Hind basitarsus somewhat swollen, only slightly narrower than hind tibia on apex; with numerous spine-like ventral setae of different lengths.

Wing hyaline, veins mostly brownish, yellow closer to base; 1 long costal seta; stigma narrow, pale brown; anal vein complete. Squama brown with blackish fringe. Halter yellow.

Abdomen black in ground-colour; tergites (dorsal view) subshining, covered with black setae; posteromarginal setae thin; tergite 8 without projections; sternites densely greyish pollinose. Terminalia (Fig. 1) with cercus, epandrium and hypandrium black, covered with black setae; cerci relatively small, pointed apically; with long, dark, hair-like setae on basal part and shorter, pale, hair-like setae apically; epandrial lamella subtriangular, with several long setae on lower margin; hypandrium subrectangular, bare; phallus almost entirely visible, yellow, evenly curved, narrowed in apical quarter, with recurved apex.

Female. Frons broad, densely greyish pollinose, with several marginal setulae; all ommatidia of equal size; occipital and ocellar setae stronger than in male; acrostichals and dorsocentrals slightly shorter than in male; fore leg without pinnate or flattened setae; mid femur with long anterodorsal setae, closer to apex with several relatively long flattened setae; mid tibia covered with short ordinary setae; hind femur with dense dorsal fringe and on apical half with moderately long flattened setae; hind tibia with ordinary setae longer ventrally; wing slightly brownish; abdominal tergites 6–8 densely greyish pollinose; cercus black, long, narrow, with short setulae.

ETYMOLOGY. This species is named in reference to the shape of the phallus.

COMPARISON. Considering the type of male genitalia the new species belongs to the *E. pennipes* species complex [Syrovátka, 1980; Chvála, 1994]. Sharing yellow halteres, black setae on laterotergite and complete anal vein *E. hamatophallus* sp.n. is most similar to *E. ciliatopennata* Strobl, 1893, *E. plebeja* Loew, 1873 and *E. pseudofasciculata* Syrovátka, 2000. However, *E. ciliatopennata* (known from Central and South Europe) has a distinct, broad, dark vitta down acrostichal setae (vs. unvittate in the new species) and only 2 long dorsal setae on the mid tibia (vs. 3) [Syrovátka, 1995]. In *E. pseudofasciculata* (known from mountains of Slovakia) dorsocentral setae are irregularly 3-serial, the abdomen is covered with yellowish setae and the wings are infusate in both sexes [Syrovátka, 2000]. *Empis plebeja* (known from Central Europe) has densely pollinose scutum with 3 distinct dark vittae down acrostichal and dorsocentral setae and strongly pinnate mid and hind legs in female [Syrovátka, 1991].

DISTRIBUTION. Russia (Adygea, Krasnodar Territory). Collected from the end of June to the beginning of September, common along the border of forest and on glades of subalpine zone (1200–2100 m).

KEY TO SPECIES OF *EMPIS* S. STR. FROM THE CAUCASUS

- | | |
|---|------------------------|
| 1. Male | 2 |
| – Female | 11 |
| 2. Halteres black to brown, at least darkened | 3 |
| – Halteres pale to yellow | 7 |
| 3. Anal vein incomplete, not reaching wing margin | 4 |
| – Anal vein complete, reaching wing margin | 5 |
| 4. Abdominal tergite 8 with finger-like projection on each side. Abdomen with pale setation | |
| <i>E. consobrina</i> Syrovátka | |
| – Abdominal tergite 8 ordinary, without lateral projections. Abdomen with black setation | <i>E. aestiva</i> Loew |

5. Wings whitish. Abdomen with pale setation. Smaller (2.5–3.5 mm) *E. prodromus* Loew
 – Wings brownish. Abdomen with black setation. Larger (about 5.0 mm) 6
6. Proboscis with labrum about 2.0 times as long as head is high. Acrostichals and dorsocentrals multiserial; scutellum with 8–10 setae. Phallus mostly hidden by cerci and epandrium *E. hirta* Loew
 – Proboscis with labrum about 3.0 times as long as head is high. Acrostichals 2-serial, dorsocentrals 1–2-serial; scutellum with 2–4 setae. Phallus very long, evenly bowed, mostly free *E. pennipes* L.
7. Anal vein incomplete, not reaching wing margin. Scutum with two vittae running between rows of acrostichal and dorsocentral setae. Laterotergite with black setae
 *E. socrus* Syrovátka
 – Anal vein complete, reaching wing margin 8
8. Laterotergite with black setae. Scutum (dorsal view) subshining, without distinct stripes. Legs entirely black, shining. Abdominal tergite 8 without projections. Phallus long, mostly free, evenly bowed *E. hamatophallus* sp.n.
 – Laterotergite with pale setae (sometimes single dark setae present). Scutum denser pollinose, with dark vittae down acrostichals and dorsocentrals. Different combination of characters 9
9. Abdominal tergite 8 with slender finger-like projection on each side. Smaller (3.0–3.3 mm) *E. tenera* Syrovátka
 – Abdominal tergite 8 ordinary, without lateral projections. Larger (4.0–5.0 mm) 10
10. All legs with femora near apex, tibiae and basitarsi near base yellowish. Wings somewhat brownish. Phallus short, thick *E. genualis* Strobl
 – Legs entirely black to blackish brown. Wings hyaline. Phallus remarkably long thread-like *E. acinerea* Chvála
11. Halteres black to brown, at least darkened 12
 – Halteres pale to yellow 16
12. Anal vein incomplete, not reaching wing margin 13
 – Anal vein complete, reaching wing margin 14
13. Wings greyish. Abdomen densely dark grey pollinose, with pale setation *E. consobrina* Syrovátka
 – Wings brownish. Abdomen subshining, with black setation *E. aestiva* Loew
14. Smaller (2.5–3.5 mm). Abdomen with pale setation
 *E. prodromus* Loew
 – Larger (5–5.5 mm). Abdomen with black setation 15
15. Scutellum with 8–10 setae. Legs with simple ciliation
 *E. hirta* Loew
 – Scutellum with 2–4 setae. Legs strongly pinnate
 *E. pennipes* L.
16. Anal vein incomplete, not reaching wing margin
 *E. socrus* Syrovátka
 – Anal vein complete, reaching wing margin 17
17. Laterotergite with black setae *E. hamatophallus* sp.n.
 – Laterotergite with pale setae (sometimes single dark setae present) 18
18. Wings greyish. Smaller (3.0–3.3 mm)
 *E. tenera* Syrovátka
 – Wings brownish. Larger (4.3–5.0 mm) 19
19. Mid and hind coxae with flattened setae on outer side .
 *E. genualis* Strobl
 – Mid and hind coxae with ordinary setae
 *E. acinerea* Chvála

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