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Elephantomyia edwardsi Lackschewitz, 1932 (Diptera: Limoniidae) in the fauna of the Caucasus: distribution and ecology

Elephantomyia edwardsi Lackschewitz, 1932 (Diptera: Limoniidae) в фауне Кавказа: распространение и экология

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Ключевые слова: Diptera, Limoniidae, *Elephantomyia edwardsi*, распространение, экология, Северо-Западный Кавказ.

Abstract. The presence of *Elephantomyia edwardsi* Lackschewitz, 1932 (Diptera: Limoniidae) in the North Caucasus is confirmed. Patterns of the species' distribution and ecology in the Caucasus are presented.

Резюме. Подтверждается обитание на Северном Кавказе популяции *Elephantomyia edwardsi* Lackschewitz, 1932 (Diptera: Limoniidae), представлены данные о распространении и экологии вида.

The world fauna of the genus *Elephantomyia* Osten Sacken, 1860 consists of 132 species and subspecies, of which 116 (88%) species inhabit the tropical zone. The genus includes 1 Nearctic and 11 East Palearctic species. Six species of the genus are known from the Russia currently. Among them, *Elephantomyia (Elephantomyia) zonata* Savchenko, 1976 is endemic to Sakhalin and Kuril Islands, *Elephantomyia (Elephantomyia) hokkaidensis* Alexander, 1924, *Elephantomyia (Elephantomyia) subterminalis* Alexander, 1954 and *Elephantomyia (Elephantomyia) tetracantha* Alexander, 1954 range across the Far East of Russia and Japan. Amphipalaearctic *Elephantomyia (Elephantomyia) krivosheinae* Savchenko, 1976 was described from the Russian Far East and Tuva, and additionally it was found in the Altai Mountains, in the European part of Russia (Moscow and Vologda Regions, South Ural) and in Central Europe [Savchenko, 1976, 1986, 1989; Oosterbroek, 2014]. The only strictly European species, *Elephantomyia (Elephantomyia) edwardsi* Lackschewitz, 1932, was described from Latvia [Lackschewitz, 1932] and later was found in a number of other European countries [Tjeder, 1953; Oosterbroek, 2014]. In the Russian territory this species was found in Leningrad Region [Stakelberg, 1951], Karelia [Polevoi, 2006] and the North Caucasus (Guseripl) [Savchenko, 1986].

New data on distribution of *E. edwardsi* in the North Caucasus and its habitat in this region are presented in the paper.

The standard practice of collecting specimens was used (netting). The typology of variants of altitudinal zonation in the Caucasus is given according to Sokolov and Tembotov [1989].

Elephantomyia (Elephantomyia) edwardsi Lackschewitz, 1932
(Figs 1–6)

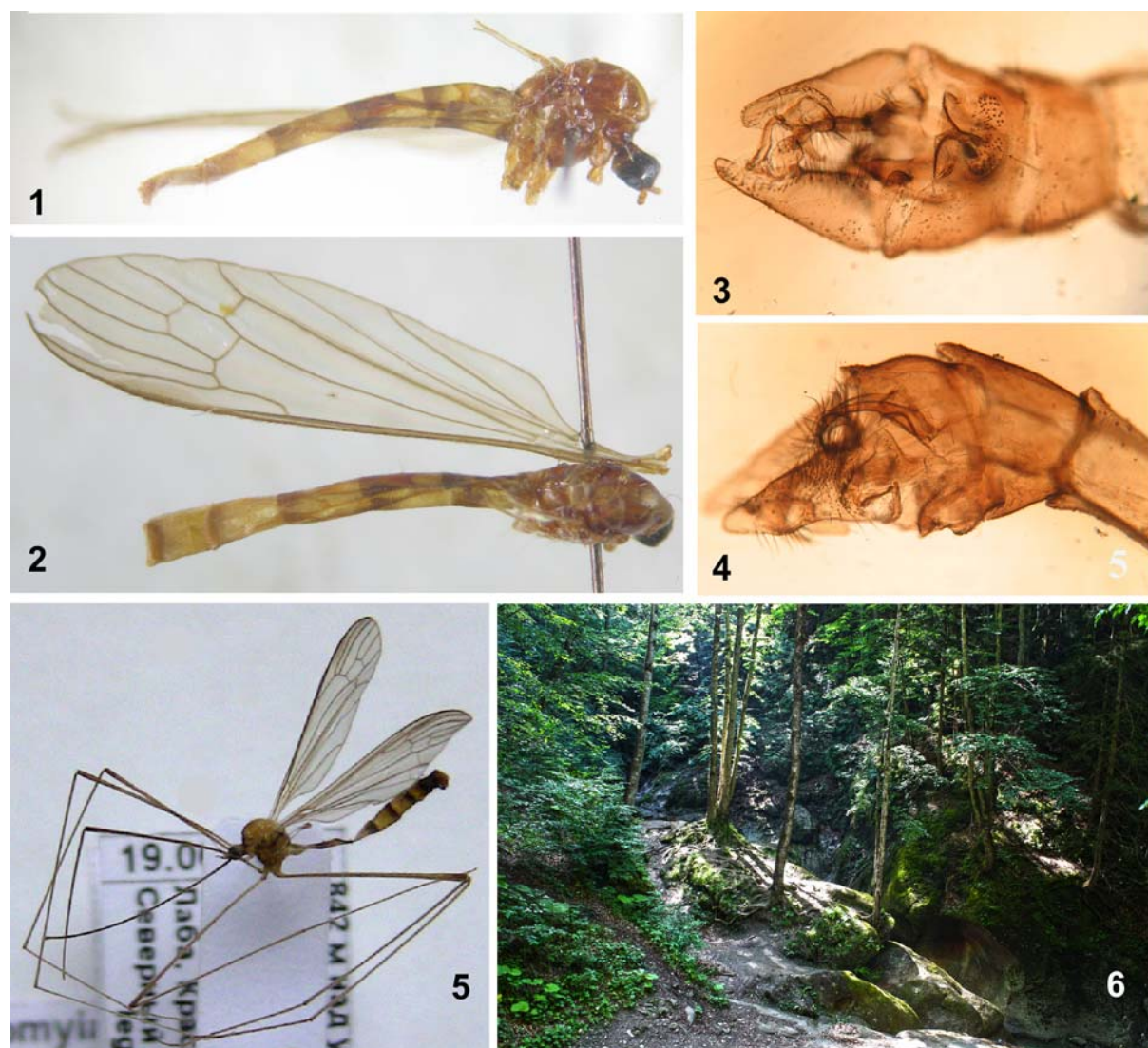
Material. 1♂, 1♀ with labels in Cyrillic: "Краснодарск. кр., Гузерипль, Суворовский корд. 18–20 VI.1963. М. Гиляров." (Krasnodar Region, Guseripl, Suворovskiy cordon. 18–20 VI.1963. M. Ghilarov), "у ручья" (near stream), (materials of Zoological museum of National Museum of Natural History of the National Academy of Sciences of Ukraine, Kiev, Box 131; identification label is absent on the specimens. Determination of other specimens of the series is made by E.N. Savchenko. Specimens are considerably damaged (Figs 1, 2). Preparation of male genitalia is pinned (Figs 3, 4).). 1♂ with labels in Cyrillic (Fig. 5): "в 10 км на Ю от Псебая, пос. Никитино, правый берег реки Никитинка – нижнее течение (правый приток р. Малая Лаба), N 43°57'741", E 40°43'353, Мостовской р-н Краснодарского края, Северо-Западный Кавказ, Россия, 19.06.2013. В. Ланцов leg" (10 km to S from Psebay, village Nikitino, right bank of Nikitinka River – lower course (right bank of Malaya Laba River), Mostovskoy District, Krasnodar Region, N 43°57'741", E 40°43'353, the North-West Caucasus, Russia, 19.06.2013. V. Lantsov leg.), "заросли ольхи клейкой, 842 м над ур. м." (bushwood of alder, 842 m a.s.l.), "*Elephantomyia (Elephantomyia) edwardsi* Lackschewitz, 1932. В. Ланцов det., 2014" (*Elephantomyia (Elephantomyia) edwardsi* Lackschewitz, 1932. V. Lantsov det., 2014).

Distribution and ecology. Savchenko [1986] previously mentioned in a footnote the finding of *E. edwardsi* in Guseripl in Krasnodar Region. This information was given in the context of the distribution of the species in Ukraine. Subsequent papers do not contain information about distribution of *E. edwardsi* in the North Caucasus [Savchenko, 1989; Savchenko et al., 1992].

The presence of *E. edwardsi* in Malaya Laba River basin and its absence in the Central and East Caucasus may indicate that this species' range in the Caucasus is most probably restricted by its western part (south of Krasnodar Region) and belongs to so called Kuban variant of altitudinal zonation.

Small number of specimens collected in the North Caucasus indicates a small population size and probably vulnerability of the species to changes in hydrothermal regime of habitats caused by deforestation, which leads to aridization.

Larvae of the genus *Elephantomyia* are saproxylic and develop "in stratum of humid friable fiber wood" [Krivosheina, 2009: 129] and, consequently, are very sensitive to the degree of humidity. Transcarpathian larvae of *E. edwardsi* were reared from moist wood of beech



Figs 1–6. *Elephantomyia edwardsi* Lackschewitz, 1932.

1, 5 – imago, lateral view; 2 – body, dorsal view; 3 – genitalia, ventral view; 4 – genitalia, lateral view; 6 – Nikitinka River valley: beech-hornbeam forest, the habitat of *E. edwardsi*. 1–4 – male from Guzeripl; 5 – male from Nikitino Village.

Рис. 1–6. *Elephantomyia edwardsi* Lackschewitz, 1932

1, 5 – имаго, вид сбоку; 2 – имаго, вид сверху; 3 – половой аппарат самца, вид снизу; 4 – то же, вид сбоку; 6 – долина реки Никитинка, буково-грабовое сообщество, местообитание *E. edwardsi*. 1–4 – самец, Гузерипль; 5 – самец, село Никитино.

and spruce [Krivosheina, 2009; Krivosheina Krivosheina, 2011].

A male of *E. edwardsi* was found in forb-nettle phytocenosis (general projective cover of grass stand 100%) among riverside black alder (*Alnus glutinosa* (L.) Gaertn.), dominants: *Urtica dioica* L., *Telekia speciosa* (Schreber) Baumg., *Arctium lappa* L., *Mentha longifolia* (L.) Huds., *Galega orientalis* Lam. and *Carex divulsa* Stokes. The dominant community in the woodland where the species was found is beech-hornbeam forest (Fig. 6) with hazel grove in undergrowth, the phytocenosis is mesophytic with thick ground litter and with abundance of decaying arboreous debris.

According to Savchenko [1976] *E. edwardsi* belongs to a group of tertiary relict species, which is very rare in

the European part of Russia. More number of species of the genus inhabited Europe in the Eocene, 4 species were described from Baltic amber [Alexander, 1931; Evenhuis, 2014].

The restricted range of *E. edwardsi* in the North Caucasus, its very low occurrence and abundance, exotic habitus (rostrum is very elongate and as long as abdomen), as well as its relict status are justifications to include this species in the regional Red Book.

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