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RESEARCH ARTICLE

A checklist of Lonchaeidae (Diptera) of the Republic of Mordovia, Russia, with the description of a new species

Список видов Lonchaeidae (Diptera) Республики Мордовия, Россия, с описанием нового вида

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Abstract. An annotated checklist of Lonchaeidae (Diptera) of the Republic of Mordovia (European Russia) is provided based on the materials collected from 2019 to 2021 mainly in beer traps at fixed heights in the forest canopy and with a Malaise trap. In total, 3254 specimens were examined, of which 2004 were identifiable to species level providing the records of 29 species in five genera. We have found 18 species of Lonchaeidae new to the fauna of Mordovia. *Lonchaea cervisiae* **sp. nov.** is described as new to science and *L. fraxina* MacGowan et Rotheray, 2000 is recorded as new to Russia. *Earomyia mordovia* MacGowan et Ruchin, 2022, **syn. nov.**, is synonymised with *E. schistopyga* Collin, 1953.

Резюме. Представлен аннотированный список видов семейства Lonchaeidae (Diptera) Республики Мордовия (европейская часть России), составленный на основе материалов, собранных в период с 2019 по 2021 гг. Основные сборы выполнены с помощью пивных ловушек, установленных на фиксированной высоте в пологе леса, а также с помощью ловушки Малеза. Всего было изучено 3254 экземпляра, из которых 2004 экз. удалось определить до уровня вида, что позволило зарегистрировать 29 видов, относящихся к пяти родам. Для фауны Республики Мордовия впервые указывается 18 видов Lonchaeidae. Описан новый вид *Lonchaea cervisiae* **sp. nov.**; *L. fraxina* МасGowan et Rotheray, 2000 впервые зарегистрирован для фауны России. *Earomyia mordovia* МасGowan et Ruchin, 2022, **syn. nov.**, синонимизирован с *E. schistopyga* Collin, 1953.

Key words: faunistics, Russian Federation, Palaearctic, Diptera, Lonchaeidae, *Lonchaea*, new species, new records, new synonymy

Ключевые слова: фаунистика, Российская Федерация, Палеарктика, двукрылые, Lonchaeidae, *Lonchaea*, новый вид, новые находки, новая синонимия

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Introduction

Aspects of the Lonchaeidae fauna of the Republic of Mordovia, situated in the central part of European Russia, have been covered in several recent publications (MacGowan et al., 2021; MacGowan & Ruchin, 2022; Ruchin et al., 2024). Based on these works and the results of further collecting, we present a checklist of the Lonchaeidae of Mordovia.

In order to put the Mordovian lonchaeid fauna into context, it is important to understand the fauna of Russia itself. There is, as far as we can ascertain, no modern comprehensive checklist of the Russian lonchaeid fauna and establishing which species are new to the Russian fauna depends largely on literature, which is more than four decades old. A considerable amount of taxonomic work on the family Lonchaeidae was carried out by Vladimir Kovalev (1974, 1976, 1978, 1981, etc.). Kovalev, who died in 1987, described some 20 species, all in the genus Lonchaea Fallén, 1820, from the territories of the former Soviet Union including its European part. Many of these species have been subsequently found in other parts of Europe and are included in this present checklist. Stakelberg (1970) compiled the Lonchaeidae chapter of the "Keys to the insects of the European part of the USSR". Stakelberg included in the key 66 species, 43 of which he listed from the territory of the USSR, mostly from different parts of European Russia. Nartshuk (2003) stated that there are about 75 species of Lonchaeidae in the fauna of Russia. In the Lonchaeidae chapter of the "Catalogue of Palaearctic Diptera", some 78 species are listed as occurring in the former USSR (Kovalev & Morge, 1984), although more recent additions to the fauna listed below mean that this figure is almost certainly underestimated.

In an earlier paper dealing with the lonchaeid fauna of Republic of Mordovia (MacGowan et al., 2021), eight species were listed, of which two, *Priscoearomyia withersi* (MacGowan, 2014) and *Lonchaea baechlii* MacGowan, 2016, were recorded from Russia for the first time. Subsequently, MacGowan & Ruchin (2022) described two new species from Mordovia, namely *Earomyia mordovia* MacGowan et Ruchin, 2022 (synonymised here) and *L. cryptica* MacGowan et Ruchin, 2022.

In the present paper, we add further two species to the Russian and Mordovian fauna, including one species new to science. In this paper, we draw together all the previously published data and, along with the results from further collecting, present a checklist of the Mordovian Lonchaeidae containing 29 species in five genera with one species still to be described.

Materials and methods

Collections were made in five districts of the Republic of Mordovia: Ichalki District, Staroe Shaigovo District, Temnikov District, Tengushevo District, and Zubova Polyana District (for further details, see Addenda). Most of sampling localities is situated in the Mordovia State Nature Reserve (MSNR, Temnikov District; see Addenda), a strict nature reserve (IUCN category I) covering over 321.6 km². About 89% of this protected area is covered by forests, representing the largest refugee for threatened arthropod species in this region (Ruchin & Khapugin, 2019). The MSNR is located within the coniferous-deciduous zone near the edge of the forest-steppe area. Pine (Pinus sylvestris L.) forests cover the largest area in the protected area, followed by birch (Betula pendula Roth) forests. Small areas are covered by lime Tilia cordata Mill., oak Quercus robur L., and spruce Picea abies (L.) H. Karst. forests. In 2010, large areas were damaged by wildfires; today they are covered by regenerating small-leaved deciduous trees (B. pendula, rarer Populus tremula L., and Alnus glutinosa (L.) Gaertn.). The details of the sampling procedures for the canopy beer traps are provided by Ruchin et al. (2024) and Esin et al. (2023). The Lonchaeidae specimens sorted from the trap material were preserved in ethanol and identified by the first author. The material is deposited at the National Museum of Scotland, Edinburgh.

Due to the difficulty of identifying females of all species of *Priscoearomyia* Morge, 1963 and many species of *Lonchaea*, these were not included in the data. For example, in the cases of two of the most common species, *Priscoearomyia withersi* (MacGowan, 2014) and *Lonchaea carpathica* Kovalev, 1974, only males are included in the data.

In the checklist, the sampling localities are briefly listed. More detailed data for each sampling locality including geographical coordinates are provided in Electronic supplementary material (see "Addenda" Section). The following abbreviations are used: MSNR, Mordovia State Nature Reserve; NPS, National Park "Smolny" (Ichalki District). The new distributional records are marked with an asterisk: (*) indicates a new record from Russia; (**) indicates a new record from the Republic of Mordovia.

Results

Systematics

Family Lonchaeidae

Genus Lonchaea Fallén, 1820

Lonchaea cervisiae MacGowan et Ruchin, sp. nov.

(Figs 1–2)

Holotype. Male, **Russia**, Republic of Mordovia, Mordovia State Nature Reserve, quarter 373, 54.7771°N 43.4455°E, beer trap, edge of mire, 14–27 May 2020, A.B. Ruchin leg. (deposited at the National Museum of Scotland, specimen NMS–10021679).

Description. Small, heavily dusted species with black fringed calypter and obscurely yellow tarsomeres.

Head. Eve bare. Frons at narrowest point above lunule approximately 0.6 times as wide as eve, matt black covered with grey dusting. Frontal and interfrontal setulae long, approximately 0.6 times as long as orbital seta. Orbital plate dulled by microsculpture (not shining), bare apart from orbital seta. Lunule with two setulae on each side, its ground colour black. Face slightly grey dusted, parafacial more intensely grey dusted. Anterior genal setulae forming a single, regularly spaced, row of 3–4 setulae along mouth margin, these slightly stronger than other setulae on genae. Palp black, covered with numerous bristly setulae of equal length. Antenna entirely black; postpedicel covered with minute white setulae, not guite reaching mouth margin, length to depth ratio 1:0.54. Arista entirely black, slightly swollen on basal quarter, its pubescence as long as width of arista.

Thorax. Scutum subshining black, grey dusted as thoracic sclerites, with covering of rather dense long black setulae being approximately 0.7 times as long as orbital seta. Anepisternum grey dusted, with 5-6 setae in a row along posterior margin; anterior setae difficult to distinguish from other numerous long setulae on sclerite. Proepisternum and proepimeron each with one seta. Katepisternum subshining black, with single seta located near dorsal margin, but this seta scarcely discernible from other long setulae on sclerite. Anepimeron bare. Scutellum subshining black, all setae and setulae missing apart from a pair of setulae situated between bases of apical setae.

Calypter pale with dark margin and dark fringe of uniform length. Wing: length 2.6 mm; veins light brown, membrane slightly darkened by numerous microtrichia; intercostal section of wing, between insertion of Sc and R_1 , approximately twice as long as cross-vein r-m. Legs black; basal, second and third tarsomeres of each leg dull yellow, covered with small black setulae; apical segments darkened.

Abdomen with 1st sternite bare.

Male terminalia (Fig. 2). In lateral view, epandrium approximately 1.5 times as wide as high, with several strong setae on posterior and ventral margins. Cercus large and rounded apically, half the height of epandrium, without usual fringe of apical setulae but with numerous short setulae scattered over surface. Surstylus extending ventrally beyond shell of epandrium, posteriorly as rather blunt triangular process and slightly ventrally for most of its length. Inner surface of surstylus: posterior half including most of posterior projection densely covered with elliptical pad of small spicules, anteriorly with a scatter of approximately seven well-spaced setae on inner surface with additional setae along slightly serrated ventral margin. Phallus two-segmented; basiphallus J-shaped; distiphallus narrower, S-shaped with slight basal lobe.

Comparison. With bare eyes, anterior genal setae in a single row, tarsomeres partly pale, the calvpter with a dark fringe of uniform length and the proepimeron with a single seta, this species belongs to the *Lonchaea mallochi* species-group as defined by Withers & MacGowan (2014). Within this group, L. cervisiae sp. nov., with its twosegmented phallus and short, strongly S-shaped distiphallus, is most similar to L. caledonica Mac-Gowan et Rotheray, 2000 and L. tibialis Mac-Gowan, 2004. However, the new species differs from *L. caledonica* in the antennae entirely black and the cerci less massive and rectangular. The pattern of setae and spicules on the inner surface of the surstylus is also clearly distinctive with L. caledonica lacking the pad of small spicules which are found in L. cervisiae sp. nov. Lonchaea tibialis, a Mediterranean species, apart from the differences in the male genitalia, has the postpedicel with an orange coloration at medial base,



Fig. 1. Lonchaea cervisiae sp. nov., holotype (male), in lateral view. Scale bar: 1 mm.

which extends along the half of the ventral surface and the tarsi yellow apart from slight dusky coloration on tarsomeres 4 and 5. The new species also shows some resemblance to *L. cryptica* Mac-Gowan et Ruchin, 2022, which was also described from the specimens collected in the Mordovia State Nature Reserve. However, in *L. cryptica* the phallus is long and sinuous with a bifurcated apex unlike the two-segmented phallus in *L. cervisiae* **sp. nov.**

Etymology. The specific name is a noun in genitive case, derived from the Latin word of Gallic origin *cervisiae* (bread brew or wheat beer). It refers to the fact that this species was caught in a beer trap.

Annotated checklist

Family Lonchaeidae Loew, 1862

Subfamily Dasiopinae Morge, 1963

Genus Dasiops Rondani, 1856

**Dasiops appendiculus Morge, 1959

Material examined. MSNR (Inorskiy cordon), 20–25 May 2021, 1 female.

Larval ecology. Unknown.

**Dasiops mucronatus Morge, 1959

Material examined. MSNR (Inorskiy cordon), 18–22 June 2021, 1 female.



Fig. 2. *Lonchaea cervisiae* **sp. nov.**, holotype, male terminalia. **A**, epandrium and associated structures, lateral view; **B**, inner surface of surstylus showing the pattern of setae and spinules; **C**, phallus, lateral view.

Larval ecology. Chandler (1998) indicated that this species is found mainly in open habitats with the larvae developing in the stems or roots of herbaceous plants.

Subfamily Lonchaeinae

Genus Chaetolonchaea Czerny, 1934

**Chaetolonchaea pallipennis (Zetterstedt, 1855)

Material examined. MSNR (Inorskiy cordon), 11–31 May 2021, 2 males, 6 females.

Larval ecology. The larvae of species in this genus develop in the bulbs and stems of meadow plants and cultivated species such as chives *Allium schoenoprasum* L. and garlic *Allium sativum* L.

Genus Earomyia Zetterstedt, 1842

Earomyia schistopyga Collin, 1953

Earomyia mordovia MacGowan et Ruchin, 2022, **syn. nov.**

Material examined. MSNR (quarters 340, 345, 398), 14 May – 1 June 2020, 5 males.

Larval ecology. There are several European records of this species being bred from *Picea* sp. cones.

Note. Based on further examination of *Earomyia* specimens from Mordovia, *E. mordovia* is now considered to be conspecific with *E. schistopyga*.

Genus *Lonchaea* Fallén, 1820

**Lonchaea affinis Malloch, 1920

Material examined. MSNR (quarter 427), 18 May – 1 June 2020, 1 male.

Larval ecology. This species has been reared from larvae found under the bark of *Picea* spp. and *Pinus sylvestris* in Russia and Finland (MacGowan & Rotheray, 2008).

Lonchaea baechlii MacGowan, 2016

Material examined. MSNR (quarters 299, 275, 307, 347, 361, 386, 426, 427, 438, 439, 440), 5 June – 28 Aug. 2019–2020, 59 males.

Larval ecology. A central European species; the larval ecology is unknown but the larvae are most probably saproxylic.

**Lonchaea bukowskii Czerny, 1934

Material examined. 6 km W of Barashevo Vill., MSNR (Inorskiy cordon, quarters 143, 299, 340, 342, 343, 345, 362, 373, 375, 384, 387, 419, 425, 426, 427, 428, 438, 439), 6 May – 17 Oct. 2019–2021, 24 males, 12 females.

Larval ecology. Máca & Barták (2001) reported that the larvae are saprophagous on *Salix* species.

Lonchaea carpathica Kovalev, 1974

Material examined. 6 km W of Barashevo Vill., Bugro-Klyuchi Vill., MSNR (Inorskiy cordon, quarters 143, 145, 170, 172, 206, 249, 258, 307, 318, 319, 320, 321, 322, 330, 342, 347, 357, 360, 361, 362, 373, 375, 384, 385, 386, 387, 419, 424, 425, 426, 427, 428, 435, 438, 439, 440, 442), NPS (Alexandrovskoe forestry, quarter 39; Lvovskoe forestry, quarter 70; Kemlyanskoe forestry, quarters 3, 11, 47). 16 May – 11 Sept. 2019–2021, 738 males.

Larval ecology. Kovalev (1974) reported collecting larvae and puparia in rotting beech (*Fagus* sp.) timber in the Transcarpathia (Zakarpattia Province of Ukraine). In the United Kingdom, the larvae probably develop in tree rot holes (Godfrey, 2017), a fact which may in part explain its abundance in canopy traps.

**Lonchaea caucasica Kovalev, 1974

Material examined. Letki Vill., MSNR (quarters 145, 249, 342, 362, 426, 435, 438, 439), 12 May – 28 Aug. 2019–2020, 15 males.

Larval ecology. Kovalev (1974) bred the type material from larvae collected on the surface of a fungus growing on a *Fagus* tree in the northwestern Caucasus, Russia. In the United Kingdom, it has been reared from a puparium found in the soft decaying heartwood of *Betula* spp. and has been taken as an adult on a bracket fungus on *Fagus sylvatica* L.

**Lonchaea cervisiae MacGowan et Ruchin, sp. nov.

Material examined. MSNR (quarter 373), 14–27 May 2020, 1 male (holotype).

Larval ecology. Unknown, presumed to be saproxylic.

Lonchaea chorea (Fabricius, 1781)

Material examined. MSNR (Inorskiy cordon), 30 July – 2 Aug. 2021, 1 female.

Larval ecology. This is a species whose larvae inhabit a range of decaying organic material including manure and rotting vegetables.

**Lonchaea contigua Collin, 1953

Material examined. Letki Vill., MSNR (quarters 321, 340, 357, 362, 384, 386, 387, 426, 428, 439), 12 May – 11 Sept. 2020, 30 males.

Larval ecology. Most of rearing records are from *Fagus sylvatica* and *Fraxinus excelsior* L., but it has also been recorded from *Carpinus betulus* L., *Acer pseudoplatanus* L., *Betula* spp., and *Populus tremula* (MacGowan & Rotheray, 2008).

**Lonchaea corusca Czerny, 1934

Material examined. MSNR (Inorskiy cordon), 8–13 Sept. 2021, 1 female.

Larval ecology. This species has been bred from a fallen *Fagus sylvatica* and from under the bark of a decaying *Alnus glutinosa* (MacGowan & Rotheray, 2008).

Lonchaea cryptica MacGowan et Ruchin, 2022

Material examined. 3 km W of Marlyay Vill., MSNR (quarters 172, 287, 340, 342, 345, 362, 375, 398), 14 May – 4 July 2020, 18 males.

Larval ecology. Unknown, presumed to be saproxylic.

*Lonchaea fraxina MacGowan et Rotheray, 2000

Material examined. MSNR (Inorskiy cordon), 17–20 May 2021, 1 male.

Larval ecology. The larvae of this species are primarily associated with the decaying wood of *Fraxinus excelsior*.

Note. This species is recorded from Russia for the first time.

**Lonchaea freyi Czerny, 1934

Material examined. MSNR (quarter 340), 16 May – 1 June 2020, 1 male.

Larval ecology. Unknown, but may be associated with *Populus* sp.

**Lonchaea fugax Becker, 1895

Material examined. MSNR (quarter 126), 2–16 July 2020–2021, 1 male.

Larval ecology. This species has been reared from larvae found under the decaying bark of a wide range of deciduous trees (MacGowan & Rotheray, 2008).

Lonchaea hackmani Kovalev, 1981

Material examined. MSNR (quarter 299), 2–9 July 2019, 1 male.

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Larval ecology. Larvae develop under the bark of fallen *Populus tremula*, *P. ×canescens* (Aiton) Sm. and *Populus alba* L. (Kovalev, 1981) (Mac-Gowan & Rotheray, 2008).

Lonchaea limatula Collin, 1953

Material examined. Romanovo Vill., MSNR (quarters 143, 145, 170, 206, 249, 299, 307, 318, 319, 321, 330, 347, 357, 360, 361, 362, 381, 385, 386, 387, 428, 439, 440), 20 May – 2 Aug. 2019–2020, 94 males.

Larval ecology. Kovalev (1976) found the larvae of this species in soft decayed wood of *Betula* sp. in Russia. In the United Kingdom, this species has been reared from fungus softened heartwood in large, dead standing and fallen *Betula* sp. Females have been observed ovipositing into decaying heartwood made accessible at a broken branch end and were captured sitting on the fungus *Fomes fomentarius* (L.) Fr. on a decaying birch stump (MacGowan & Rotheray, 2008).

**Lonchaea nitidissima Kovalev, 1978

Material examined. MSNR (quarters 172, 440), 20 June – 28 Aug. 2020, 2 males, 1 female.

Larval ecology. A species whose larvae are associated with conifers. The type material of *L. nitidissima* was collected in the Moscow Province of Russia. Adults were reared from the larvae found beneath the bark of a dead standing *Pinus* sp., where they fed on fungal mycelium (Kovalev, 1978).

**Lonchaea palposa Zetterstedt, 1847

Material examined. MSNR (Inorskiy cordon), 25 June – 15 July 2020–2021, 1 male, 1 female.

Larval ecology. A species common throughout much of Europe; the larvae are associated with decaying *Populus* sp.

**Lonchaea ragnari Hackman, 1956

Material examined. MSNR (Inorskiy cordon, quarters 340, 428), 17 May – 1 June 2020–2021, 2 males, 1 female.

Larval ecology. A species of northern European birch woods; the larvae develop in soft decaying heartwood of *Betula* sp.

**Lonchaea scutellaris Rondani, 1875

Material examined. MSNR (quarters 426, 439, 440), 2 June – 11 Sept. 2020, 5 males.

Larval ecology. Kovalev (1978) indicated that in Russia this species develops under the bark of *Quercus* sp., *Salix* spp. and *Populus tremula*. Kovalev also stated that this species has been reared from pine and spruce but its association with conifers requires verification.

**Lonchaea stackelbergi Czerny, 1934

Material examined. MSNR (quarter 375), 14–27 May 2020, 1 female.

Larval ecology. An uncommon northern species; the larval ecology is unknown, but it is presumed that they are saproxylic.

**Lonchaea subneatosa Kovalev, 1974

Material examined. MSNR (Inorskiy cordon), 2–31 May 2021, 3 females.

Larval ecology. An uncommon species; the larvae are usually associated with decaying *Populus* sp.

Lonchaea sylvatica Beling, 1873

Material examined. MSNR (Inorskiy cordon, quarter 299), 18 June – 13 Sept. 2019–2021, 1 male, 12 females.

Larval ecology. A common European species whose larvae utilise a wide variety of tree species, deciduous as well as coniferous. It has been reared from under bark of fallen *Acer, Aesculus, Betula, Fagus, Fraxinus, Larix, Picea, Pinus,* and *Quercus* (MacGowan & Rotheray, 2008).

Lonchaea xylophila Kovalev, 1978

Material examined. MSNR (quarter 299), 19–25 June 2019, 1 female.

Larval ecology. A little-known northern European species associated with birch woodlands. In the Moscow Province of Russia, a specimen was reared from a puparium found in the waterlogged timber of *Betula* sp. (Kovalev, 1978).

**Lonchaea sp. X

Material examined. MSNR (Inorskiy cordon), 25–28 June 2021, 1 male.

Note. This undescribed species corresponds to material from Germany, which is awaiting publication.

Genus Priscoearomyia Morge, 1963

Priscoearomyia nigra (Meigen, 1826)

Material examined. 6 km E of Dachnyy Vill., Romanovo Vill., Rosstanie Vill., NPS (Lvovskoe forestry: quarter 70), MSNR (quarter 299), 25 May – 3 July 2019–2021, 7 males.

Larval ecology. Larvae of this genus are thought to develop in the stems, roots and tubers of meadow plants.

Priscoearomyia withersi (MacGowan, 2014)

Material examined. 6 km E of Vysha Vill., 3 km W of Marlyay Vill., 6 km E of Dachnyy Vill., 6 km W of Barashevo Vill., Bugryo-Klyuchi Vill., Novotroitskoye Vill., Romanovo Vill., Udevo Vill., 4 km E of Vysha Vill., NPS (Aleksandrovskoe forestry: quarter 39; Lvovskoe forestry: quarter 70; Kemlyanskoe forestry: quarters 3, 11, 47), MSNR (Inorskiy cordon, quarters 145, 170, 171, 172, 318, 319, 321, 330, 340, 342, 345, 347, 357, 361, 362, 370, 375, 385, 408, 419, 426, 427, 428, 438, 439, 440), 28 Apr. – 28 Aug. 2019–2021, 644 males.

Larval ecology. Larvae of this genus are thought to develop in the stems, roots and tubers of meadow plants.

Discussion

The 29 species recorded from Mordovia, of which 18 species are recorded for the first time in the region, represent what might be considered a typical fauna for a forested area in this part of Europe. Large numbers of specimens of species such as *L. carpathica*, *L. baechlii* and *L. caucasica* are indicative of an eastern influence whilst species such as *L. freyi*, *L. stackelbergi* and *L. xylophila* are more characteristic of the boreal forest zone.

The great majority of the records come from beer traps located at varying canopy heights in the forests of MSNR. The checklist does however include specimens captured in a Malaise trap operating at Inorskiy cordon located in a forest glade on the lake shore. It is noticeable that the Malaise trap captured eight species not recorded elsewhere, namely *Dasiops appendiculus*, *D. mu*- cronatus, Chaetolonchaea pallipennis, Lonchaea chorea, L. corusca, L. fraxina, L. subneatosa, and L. sp. X. This highlights the importance of sampling by differing methods in a range of habitats in order to establish the number of species present. It also indicates that beer trapping in the forest canopy only captures a relatively narrow range of the lonchaeid species present in an area.

Of the species listed in this checklist, Priscoearomuia withersi and Lonchaea baechlii were recorded from Russia for the first time based on the specimens from Mordovia by MacGowan et al. (2021) and subsequently L. cryptica by MacGowan & Ruchin (2022). A further species previously described as new by MacGowan & Ruchin (2022), Earomyia mordovia, is established here as a junior synonym of *E. schistopyga*. The species new to Russia in this checklist are L. fraxina and L. cervisiae sp. nov. At present, the lonchaeid fauna of the Republic of Mordovia represents less than half of that of Russia but the discovery of at least two undescribed species during the course of the survey work does indicate that there is still much to be discovered about the fauna of the region.

Addenda

Electronic supplementary material. The details of sampling sites.

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References

- Chandler P.J. 1998. The British species of Dasiops Rondani, 1856 (Diptera, Lonchaeidae). Dipterists Digest (Second Series), 5: 34–43.
- Godfrey A. 2017. Lonchaea carpathica Kovalev (Diptera, Lonchaeidae) new to Britain and other Diptera from Cherkley Wood, Leatherhead, Surrey. *Dipterists Digest (Second Series)*, 24: 153–155.
- Esin M.N., Ruchin A.B., Gavryushin D.I., Xi Y.Q., Dvořák L. & Dvořáková K. 2023. Diptera species, new for the Republic of Mordovia, Russia. *Nature*

Conservation Research, 8(2): 98–105. https://doi. org/10.24189/ncr.2023.011

- Kovalev V.G. 1974. Species of the genus Lonchaea Fll. close to limatula Collin (Diptera, Lonchaeidae). *Entomologicheskoe Obozrenie*, 53(2): 447–453. (In Russian; English translation: *Entomological Re*view, 53(2): 149–153).
- Kovalev V.G. 1976. Faunistic and ecological material on flies of the genus Lonchaea (Diptera, Lonchaeidae) from Tuva. *Entomologicheskoe Obozrenie*, 55(4): 934–945. (In Russian; English translation: *Entomological Review*, 1977, 55(4): 141–148).
- Kovalev V.G. 1978. New and little-known species of Lonchaeidae (Diptera) from the Moscow region. *Entomologicheskoe Obozrenie*, 1979, 57(1): 188– 199. (In Russian; English translation: *Entomological Review*, 57(1): 131–139).
- Kovalev V.G. 1981. On European species of the group Lonchaea peregrina (Diptera, Lonchaeidae). Zoologicheskiy Zhurnal, 60(2): 221–228. (In Russian).
- Kovalev V.G. & Morge G. 1984. Family Lonchaeidae. In: Soós Á. & Papp L. (Eds). Catalogue of Palaearctic Diptera, 9 (Micropezidae – Agromyzidae): 247–259. Budapest: Akadémiai Kiadó.
- Máca J. & Barták M. 2001. Lonchaeidae. In: Barták M.
 & Vaňhara J. (Eds). Diptera in an industrially affected region (north-western Bohemia, Bílina and Duchcov environs), II. Folia Facultatis scientarium naturalium Universitatis Masarykianae Brunensis, Biologia, 105: 241–514.
- MacGowan I. & Rotheray G.E. 2008. British Lonchaeidae. Diptera, Cyclorrhapha, Acalyptratae. *Handbooks for the identification of British insects*, 10(15). 153 p. London: Royal Entomological Society.

- MacGowan I. & Ruchin A.B. 2022. Two new species of Lonchaeidae (Diptera: Schizophora) from the Republic of Mordovia, Russia. *Euroasian en*tomological Journal, 31(1): 83–86. https://doi. org/10.15298/rusentj.31.1.17
- MacGowan I., Vikhrev N.E., Krivosheina M.G., Ruchin A.B. & Esin M.N. 2021. New records of Diptera from the Republic of Mordovia, Russia. *Far Eastern Entomologist*, **423**: 9–20. https://doi. org/10.25221/fee.423.3
- Nartshuk E.P. 2003. Key to families of Diptera (Insecta) of the fauna of Russian [sic!] and adjacent countries. *Trudy Zoologicheskogo Instituta* [Proceedings of the Zoological Institute], **294**: 1–251. (In Russian).
- Ruchin A.B., Khapugin A.A. & Esin M.N. 2024. Vertical stratification of some families of Diptera in temperate deciduous forests (Centre of European Russia): The use of beer traps. *Redia*, **107**: 9–19. https://doi.org/10.19263/REDIA-107.24.02
- Stakelberg A.A. 1970. 75. Fam. Lonchaeidae. In: Stakelberg A.A. & Nartshuk E.P. (Eds). Opredelitel' nasekomykh evropeyskoy chasti SSSR [Keys to the insects of the European part of the USSR], 5(2): 222-232. (In Russian; English translation: Stakelberg A.A. 1989. Chapter 75. Lonchaeidae. In: Steyskal G.C. (Ed.). Keys to the insects of the European part of the USSR, 5(2): 358-373. Brill Archive).
- Withers P. & MacGowan I. 2014. A preliminary account of the lance flies (Diptera: Lonchaeidae) of continental France, with the description of a new species. *Studia dipterologica*, **21**(1): 3–10.

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