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Article

Fauna of Psychidae (Lepidoptera) of the Ulyanovsk Oblast (Middle Volga, Russia)

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Abstract
A total of 21 species of the family Psychidae (Lepidoptera) are recorded from the Ulyanovsk Oblast as a result of a long-term field work. Two species are new records: *Apterona helicoidella* (Vallot, 1827) from the Ulyanovsk Oblast, and *Dahlica clathrella* (Fischer v. Röslerstamm, 1837) from Russia.

Key words: bagworm, distribution, new records, Volga-Ural Region.

Introduction

The family Psychidae includes 10 subfamilies, 241 genera, and over 1,300 species of bagworm moths worldwide (Sobczyk 2011). The richest and most diverse fauna is found in African and South American arid biotopes. Zaguliaev (1978) recorded for the Palaearctic a little more than 200 species, Arnscheid & Weidlich (2017) listed 253 species for Europe solely. About 150 species were recorded for the whole territory of the former USSR and about half of them for its European part (Zaguliaev 1978). The modern territory of Russia and its European part are inhabited by 88 and 67 species accordingly (Sinev & Lovtsova 2008; Lovtsova

2007). The fauna of bagworms of the Volga-Ural Region consists of 33 species (Anikin *et al*. 2017), 17 of which have been recorded for the Ulyanovsk Oblast (Zolotuhin & Volkova 2019, 2021).

Ulyanovsk Oblast is situated in the east of the European part of Russia in the basin of the middle stream of the Volga River between 52°32′ and 54°46′ N and 45°47′ and 50°15′ E. The oblast extends 250 km from north to south and 290 km from west to east. It is divided by the Volga River into two parts – the larger Right Bank, about three-fourths of the oblast territory, and the Left bank – one-fourth. The landscape is heterogeneous, the Right Bank is rather hilly with the highest point of 381 m, while the Left is flatter. Diverse heights determine the formation of microclimatic and microlandscape conditions, allowing the existence of species typical for taiga, steppe, and semi-desert (Artemyeva & Maslennikova, 2014). The climate is temperate continental with warm summer and moderately cold winter. In terms of precipitation, the oblast belongs to the zone of insufficient moisture, annual amount ranges from 500 mm on the north to 300 mm towards the south. Soil is diverse, there are five main types found: chernozems (northern part of the Right Bank), podzols (forests and forest steppes), humus-carbonate (chalk and limestone concentrations on the Right Bank), hydric (floodplains and floodplain terraces of river valleys), and saline soils. Forest vegetation types are pine, broad-leaved (oak, linden), pine-broad-leaved, small-leaved forests (birch, aspen), taiga forest types (pine green-moss, pine-blackberry, pine-lichen forests); steppes vegetation types are meadow, feather-grass, sandy, stony, as well as marshes and meadows (Figs 1–3). About 1760 vascular plant species are known for the Oblast (Rakov *et al.* 2014).

Numerous microhabitats are monitored every year. Since 2019, two species were recorded as new to the local fauna (Zolotuhin & Volkova 2019; 2021) and one for the Middle Volga Region (Zolotuhin & Volkova 2021). The present article aims to update the list of known bagworms for the oblast and the country.

Material and methods

The basis for the article is an entomological collection of the late Dr. V.V.Zolotuhin and material collected between 2019 and 2021. A total of about 100 specimens of bagworms were studied and processed. An annotated list of the species is given below, new records there are marked with asterisks: one (*) – for the fauna of the oblast, two (**) – for the fauna of the Middle Volga Region, and three (***) – for the fauna of Russia. Label data of the collected adults is listed for each species, and some aspects of biology are described. The photos of imagoes were taken with a Nikon D7200 camera with a Nikkor 40 mm 1:2.8G lens. Biotope photographs were taken with a Nikon P500 camera. The images were processed in Adobe Photoshop CC 2019.

Specimens from the following collections were examined:

MfNB Museum für Naturkunde (Berlin, Germany);
MWM Museum Witt Munich (Munich, Germany);
UlSPU Ulyanovsk State Pedagogical University (Ulyanovsk, Russia);
ZISP Zoological Institute of Russian Academy of Sciences (Saint Petersburg, Russia);
ZSM Bavarian State Collection of Zoology (Munich, Germany).

Taxonomy

Psychidae, Naryciinae

1. *Dahlica charlottae* (Meier, 1957)
(Figs 4–5, 30)

Material: ♀, Nikolaevka District, lake Svetloe, 52.901920N, 47.159298E, 12–14.V.2016, leg. Ju.S.Volkova (Fig. 48, site 10).

Biology. Inhabits beech and coniferous (mainly pine) forests. Caterpillars feed on mosses and lichens; they climb 2–3 meters up the tree trunks for pupation. Adults occur from the end of March to May.

Figures 1–3. Landscapes around collecting sites. 1. South taiga in Surskoe District (54.525350N, 46.897645E). 2. Nikolaevka District, chalk steppe near Kuroedovo (53.082607N, 47.439536E). 3. Fescue steppe with small plots of salt-marsh not far from Vyazovka in Radishchevo District (52.891408N, 48.421413E).

Distribution in Russia. Recorded from the Kola, European Northwestern, and European Central Regions (Sinev & Lovtsova 2008). In the Volga Region, a single female from the Ulyanovsk Oblast was recorded for the first time in 2019 (identification confirmed with the barcoding; Zolotuhin & Volkova 2019).

***2. *Dahlica clathrella* (Fischer v. Röslerstamm, 1837)**
(Figs 6–7, 31)

Material: ♂, Nikolaevka District, chalk-pit Kuroedovo, 53.082607N, 47.439536E, 26.VII.2019, leg. Ju.S.Volkova, V.V.Zolotuhin, S.N.Shestoperov (Fig. 48, site 12).

Biology. Inhabits xerothermic slopes, dry meadows and rocky river valleys. Adults occur in late March to April.

Distribution. Very local in eastern Austria, western Slovakia, Poland, Hungary, Ukraine, eastern Czech Republic. Recorded from Italy and Slovenia (Arnscheid & Weidlich, 2017). **New record** from the territory of Russia.

3. *Dahlica lichenella* (Linnaeus, 1761)
(Figs 8–9, 32)

Materal: ♂, Ulyanovsk District, environs of the village Arskoe, meadow-feather-grass slope, 54.302325N, 48.110596E, 30.V.2020, leg. Ju.S.Volkova, V.V.Zolotuhin, P.O.Pavlov (Fig. 48, site 4), 3♂, Ulyanovsk city, park of the Victory, 54.314192N, 48.403132E, 25.VI.1988, leg. V.V.Zolotuhin (Fig. 48, site 5); 2♂, Veshkayma District, village Beketovka, steppe, 54.085382N, 46.868863E, 30.IV.1994, leg. V.V.Zolotuhin, A.Yu.Isaev, V.B.Isaeva (Fig. 48, site 8); ♂, Radishchevo District, environs of the village Vyazovka, 52.855062N, 48.372751E, 5–8.V.2001, leg. D.Yu.Klevolgin (Fig. 48, site 17).

Biology. Inhabits sparse deciduous forests, gardens and parks. Caterpillars are found on tree trunks, wooden walls and fences; they feed on moss and lichen. Adults occur from March to May.

Distribution in Russia. Recorded from the European Northeastern, South Taiga, Central Chernozem, Middle Volga, and South Ural Regions (Sinev & Lovtsova 2008). In the Volga Region, it is known from Ulyanovsk, Samara, and Saratov Oblasts and the Republic of Tatarstan (Anikin *et al.* 2017).

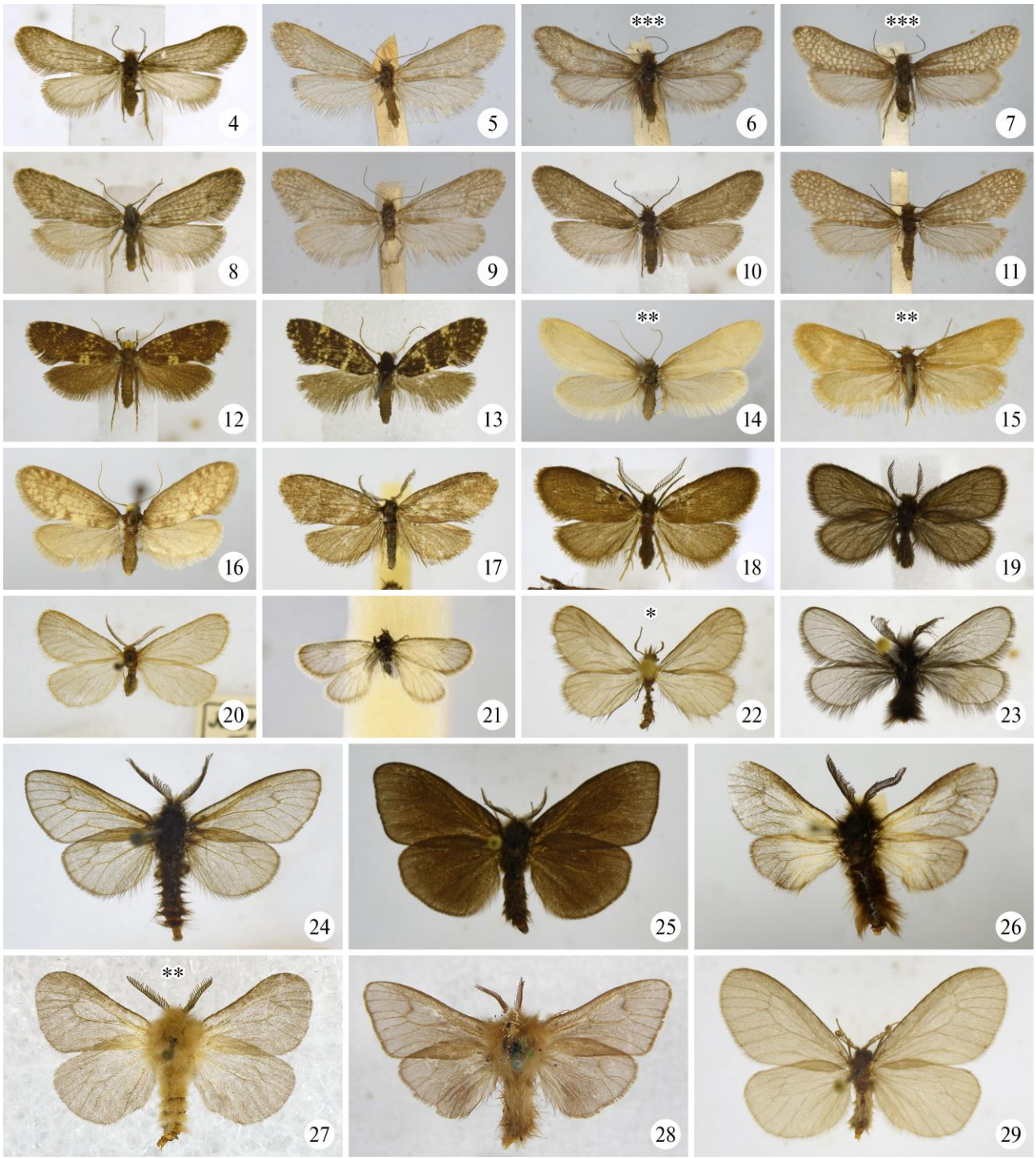
4. *Dahlica triquetrella* (Hübner, 1813)
(Figs 10–11, 33)

Material: ♂, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 11.V.2019, leg. Ju.S.Volkova, V.V.Zolotuhin (Fig. 48, site 2); ♂, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 11.VI.2019, leg. Ju.S.Volkova, P.O.Pavlov, S.N.Kryuchkov, A.N.Matveev (Fig. 48, site 2); ♂, Staraya Maina District, village Kryukovka, 54.038038N, 48.001738E, 30.IV.2001, leg. D.Yu.Klevolgin (Fig. 48, site 9); ♂, Novospasskoe District, environs of the village Surulovka, steppe, 53.089087N, 47.742807E, 23.V.1996, leg. V.V.Zolotuhin (Fig. 48, site 13); ♂, Radishchevo District, village Solovchikha, 52.947403N, 47.788783E, 10–11.V.1993, leg. V.V.Zolotuhin (Fig. 48, site 14).

Biology. Inhabits xerotherm and beech forests. Caterpillars are found on trunks of coniferous trees and less often on deciduous trees, as well as on rocks, dead wood, grapes, and meadow vegetation. Adults occur from March to April or from June to July, males are found rarer than females.

Distribution in Russia. Recorded from the European Northwestern and Central Regions, and under the question mark (?) from the Kaliningrad Oblast and Western Caucasian region (Sinev & Lovtsova, 2019). In

the Volga Region, it is known from the Ulyanovsk Oblast (Anikin *et al.* 2017) and the Republic of Chuvashia (Lastukhin 2010).



Figures 4–29. Male adults of Psychidae. 4–11. *Dahlica* spp. 4–5. *D. charlottae*. 4. MfNB. 5. MWM/ZSM. 6–7. *D. clathrella* (MWM/ZSM). 8–9. *D. lichenella*. 8. MfNB. 9. MWM/ZSM 10–11. *D. triquetrella*. 10. MfNB. 11. MWM/ZSM. 12. *Diplodoma laichartingella* (MfNB). 13. *Narycia duplicella* (MfNB). 14–17. *Taleporia* spp. 14–15. *T. politella*. 14. MfNB. 15. ZISP. 16. *T. tubulosa* (MWM/ZSM). 17–18. *Psyche* spp. 17. *P. betulina* (MWM/ZSM). 18. *P. casta* (MfNB). 19. *Epichnopterix plumella*. 20. *Rebelia nocturnella* (MfNB). 21. *Reisseronia staudingeri* (ZISP). 22. *Apterona helicoidella* (MfNB). 23. *Ptilocephala plumifera* (MfNB). 24. *Acanthopsyche atra* (MfNB). 25. *Canephora hirsuta* (MfNB). 26–27. *Megalophanes* spp. 26. *M. graslinella* (MWM/ZSM). 27. *M. stetinensis* (MWM/ZSM). 28. *Pachythelia vilosella* (ZISP). 29. *Sterrhopterix fusca* (MfNB). One asterisk (*) is for the species new for the fauna of the Ulyanovsk Oblast, two (**) for the Middle Volga Region, and three (***) for Russia.

5. *Diplodoma laichartingella* (Goeze, 1783)
(Figs 12, 34)

Material: ♂, Surskoe District, Bolshoi Kuvai, 54.620761N, 47.096874E, 9.VII.2003, leg. S.V.Nedoshivina (Fig. 48, site 3).

Biology. Inhabits mixed and deciduous forests. Caterpillars feed on mosses, lichens, mushrooms, and sometimes on dead insects in case of starvation. They are found on old tree trunks, crevices in walls and rocks. Adults occur from May to August. They are active from late night to early morning, sometimes attracted by light.

Distribution in Russia. Recorded from the Karelian, European Northwest, European Central, Middle Volga, Volga-Don, Western Caucasian, Northern Ural Regions and Krasnoyarsk Oblast (Sinev & Lovtsova 2009). In the Volga Region, it is known from Volgograd, Saratov, Samara, and Ulyanovsk Oblasts (Anikin *et al.* 2017).

6. *Narycia duplicella* (Goeze, 1783)
(Figs 13, 35)

Material: ♂, Ulyanovsk city, ecological park "Black lake," 54.29965N, 48.34837E, 4.V.1995, leg. V.B.Isaeva (Fig. 48, site 5).

Biolgy. Inhabits forests, forest-steppes, and open landscapes up to 1000 m above sea level. Caterpillars are found on tree trunks, rarely on dead and old wood, walls, rocks, and fences; they feed on algae and lichens. Adults occur from mid-April until late June or mid-July at night in temperate zone.

Distribution in Russia. Recorded from the Middle Volga, Volga-Don, West Caucasian, and North Ural Regions (Sinev & Lovtsova 2009). In the Volga Region, it is known from Volgograd, Saratov, and Ulyanovsk Oblasts (Anikin *et al.* 2017).

Psychidae, Taleporiinae

****7. *Taleporia pr. politella* (Ochsenheimer, 1816)**
(Figs 14–15, 36)

Material: 4♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 16.V.2021, leg. S.N.Kryuchkov, Ju.S.Volkova (Fig. 48, site 2).

Biology. In Europe, inhabits xeroterms and open landscapes with rocks. In Russia, it is found in the southern taiga subzone. Caterpillars feed on algae, lichens, and mosses. Adults occur from April to May very early in the morning. Identification of this species from the territory of Ulyanovsk Oblast is preliminary and needs to be confirmed by the barcoding.

Distribution in Russia. Recorded from the Chuvash Republic (Lastukhin, 2010), under the question mark (?) from the Karelian and European Northwestern Regions (Sinev & Lovtsova, 2019). **New record** from the Volga-Ural Region.

8. *Taleporia tubulosa* (Retzius, 1783)
(Figs 16, 37)

Material: 2♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 11.V.2019, leg. Ju.S. Volkova, V.V. Zolotuhin (Fig. 48, site 2); ♀, Ulyanovs city, ecological

park “Black lake,” 54.29965N, 48.34837E, 11.VIII.2020, leg. Ju.S. Volkova, V.V. Zolotuhin (Fig. 48, site 5); ♂, Staraya Maina District, environs of the village Verkhnyaya Matrosovka, biologic station of UlSPU, 54.647334N, 49.053498E, 4.VI.2016, leg. Ju.S. Volkova, V.V. Zolotuhin (Fig. 48, site 6); ♀, Radishchevskoe District, station Ryabina, 52.913645N, 48.312420E, 29.IV–3.V.1996, leg. D.Yu. Klevolgin (Fig. 48, site 16).

Biology. Usually inhabits forest and forest-steppe biotopes, also found in mesophilic forests and open landscapes. Caterpillars feed on lichens; they climb up rocks, tree trunks, and walls to pupate. Adults occur from May to July; at night are well attracted by light.

Distribution in Russia. Widespread species, recorded from the Kaliningrad Oblast to the Primorskii Krai with a disjunction between the Tuva Oblast and Middle Amur Region (Sinev & Lovtsova 2019). In the Volga Region, it is recorded from the Astrakhan, Volgograd, Saratov, Samara, and Ulyanovsk Oblasts (Anikin *et al.* 2017).

Psychidae, Psychinae

9. *Psyche betulina* (Zeller, 1839)
(Figs 17, 38)

Material: 2♂, Surskoe District, Bolshoi Kuvai, 54.620761N, 47.096874E, 30.V–3.VI.1996, leg. V.V. Zolotuhin (Fig. 48, site 3); 4♂, Radishchevo District, village Srednikovo, 52.958303N, 48.089018E, 23.V.1996, leg. V.V. Zolotuhin (Fig. 48, site 15).

Biology. Inhabits forests, steppes, and marshes. Caterpillars often live on tree trunks of birches, willows, and pines; sometimes they aggregate together in numbers. Polyphagous. Adults occur from May to June, mainly in the evening.

Distribution in Russia. Widespread species. It is recorded from the territory of the Karelian, European Northwest, South Taiga, Central, Middle Volga, Volga-Don, East Caucasian, South Ural, Southwest Siberian, Tuva, Baikal, Middle and Lower Amur Regions, and Primorskii Krai (Sinev and Lovtsova 2019). In the Volga Region, it is known in the Ulyanovsk, Samara, Saratov, and Volgograd Oblasts and the Republic of Tatarstan (Anikin *et al.* 2017).

10. *Psyche casta* (Pallas, 1767)
(Figs 18, 39)

Material: ♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 16.V.2021, leg. S.N. Kryuchkov, Ju.S. Volkova (Fig. 48, site 2); ♀, Ulyanovsk city, Vinnovskaya Grove, 54.2717N, 48.346E, 20.VIII.2021, leg. Ju.S. Volkova, I.S. Leontyev (Fig. 48, site 5); 5♂, Staraya Maina District, environs of the village Verkhnyaya Matrosovka, biologic station of UlSPU, 54.647334N, 49.053498E, 4.VI 2016, leg. Ju.S. Volkova, V.V. Zolotuhin (Fig. 48, site 6).

Biology. Inhabits forests and open landscapes. Males are active in the evening and often may be attracted by light. Caterpillars feed on herbaceous plants, sometimes on moss and lichen.

Distribution in Russia. Widespread species, recorded from almost everywhere: from Kaliningrad Oblast to Primorskii Krai (Sinev and Lovtsova 2019). In the Volga Region, it is known for the Ulyanovsk, Samara, Saratov, and Volgograd Oblasts, the Republics of Kalmykia, Tatarstan, and Chuvashia (Anikin *et al.* 2017).

Psychidae, Epichnopteryginae

11. *Epichnopterix plumella* ([Denis & Schiffermüller], 1775)
(Figs 19, 40)

Material: 4♀, ♂, Radishchevo District, station Ryabina, 52.913645N, 48.312420E, 15.VI.1993, leg. V.V. Zolotuhin (Fig. 48, site 16); ♂, Radishchevo District, river Dalnyaya Chernava, forest edge, 52.781468N, 48.305597E, 1.V.2002, V.B. Isaeva (Fig. 48, site 18).

Biology. Inhabits xerothermic habitats. Adults occur from May to June, active in the evening and sometimes attracted by light.

Distribution in Russia. Widespread species, recorded from the Kaliningrad Oblast to Lower Amur region (Sinev & Lovtsova 2019). In the Volga Region, it is known from Saratov, Samara, and Ulyanovsk Oblasts (Anikin *et al*. 2017).

12. *Rebelia nocturnella* (Alphéraky, 1876)
(Fig. 20)

Meterial: ♂, Surskoe District, village Surskoe, 54.479654N, 46.723696E, 18.V.1991, V.V. Zolotuhin (Fig. 48, site 1); ♂, Nikolaevka District, Akulovka (Kuroedovo), 53.082607N, 47.439536E, 17.V.1998, V.V. Zolotuhin (Fig. 48, site 12).

Biology. Inhabits xerothermic sites in karst areas. Adults occur from mid-April until mid-May, active in the evenings and at night; they are often attracted by light. Caterpillars feed on dry grass.

Distribution in Russia. Recorded from the European Central Chernozem, Middle Volga, Volga-Don, Western and Eastern Caucasian, and Middle and Southern Ural Regions. In the Volga Region, it is known from the Astrakhan, Volgograd, Saratov, Samara, and Ulyanovsk Oblast (Anikin *et al*. 2017).

Figures 30–47. Cases of Psychidae. 30–33. *Dahlica*. 30. *D. charlottae* (MWM/ZSM). 31. *D. clathrella* (MWM/ZSM). 32. *D. lichenella* (MWM/ZSM). 33. *D. triquetrella* (MWM/ZSM). 34. *Diplodoma laichartingella* (MfNB). 35. *Narycia duplicella* (MfNB). 36–37. *Taleporia*. 36. *T. politella* (ZISP). 37. *T. tubulosa* (UlSPU). 38–39. *Psyche*. 38. *P. betulina* (MWM/ZSM). 39. *P. casta* (MfNB). 40. *Epichnopterix plumella* (MfNB). 41. *Acanthopsyche atra* (MfNB). 42. *Apterona helicoidella* (UlSPU). 43. *Canephora hirsuta* (MfNB). 44. *Megalophanes graslinella* (UlSPU). 45. *Megalophanes stetinensis* (UlSPU). 46. *Ptilocephala plumifera* (MfNB). 47. *Sterrhopterix fusca* (MfNB). One asterisk (*) is for the species new for the fauna of the Ulyanovsk Oblast and two (**) for the Middle Volga Region.

13. *Reisseronia staudingeri* (Heylaerts, 1879)
(Fig. 21)

Material: ♂, Radishchevo District, environs of the village Srednikovo, 52.958303N 48.089018E, 28.VI.1996, V.V. Zolotuhin (Fig. 48, site 15).

Biology. Inhabits xerothermic biotopes and open landscapes. Adults occur from the beginning of May, active in the morning hours. The caterpillars feed on herbaceous plants.

Distribution in Russia. Recorded from the Volga-Don Region (Sinev & Lovtsova, 2019). In the Volga Region, it is known from the Astrakhan, Saratov, and Ulyanovsk Oblast (Anikin *et al.*, 2017).

Psychidae, Oiketicinae

14. *Acanthopsyche atra* (Linnaeus, 1767)
(Figs 24, 41)

Material: ♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 16.V.2021, S.N. Kryuchkov, Ju.S. Volkova (Fig. 48, site 2); 2♂, Staraya Maina District, environs of the village Verkhnyaya Matrosovka, biologic station of UlSPU, 54.647334N, 49.053498E, 10.VI.2017, Ju.S. Volkova (Fig. 48, site 6).

Biology. Inhabits dry meadows, rocky slopes, forest clearings, steppes, marshes and peat bogs. It is found at heights up to 2000 m above sea level. Adults occur from mid-April until late June, active midday, during sunny weather. Caterpillars are polyphagous, live on grass.

Distribution in Russia. Widespread species, recorded from the Kaliningrad Oblast to Baikal Region (Sinev & Lovtsova 2008). In the Volga Region, it is known from the Ulyanovsk Oblast only (Zolotukhin & Volkova 2021).

***15. *Apterona helicoidella* (Vallot, 1827)**
(Figs 22, 42)

Material: ♀, Radishchevo District, Vyazovskie Balki reserve, 52.855062N, 48.372751E, 11.VIII.2021, Ju.S. Volkova, S.N. Krychkov (Fig. 48, site 17).

Biology. Cases with feeding caterpillars are found from May until the end of June; later they move to solitary standing tree trunks and telegraph poles, where they pupate at a height of 1.5–2.5 m. Interestingly, some populations of the species are parthenogenetic.

Distribution in Russia. Recorded from the European Central, Volga-Don, West and East Caucasian, and North Ural Regions (Sinev & Lovtsova 2019). In the Volga Region, it is known from Astrakhan, Volgograd, and Saratov Oblasts (Anikin *et al.* 2017). **New record** from the territory of the Ulyanovsk Oblast.

16. *Canephora hirsuta* (Poda, 1761)
(Figs 25, 43)

Material: 7♂, Radishchevo District, 8 km S village Vyazovka, steppe, 52.855062N, 48.372751E, 9.V.2000, V.V. Zolotuhin (Fig. 48, site 17).

Biology. Inhabits open landscapes: dry meadows, mountain slopes, forest clearings, roadsides, steppes, and alpine meadows. Adults occur from mid-February until the end of July, active during the daytime.

Distribution in Russia. Widespread species, recorder from almost everywhere: from Kaliningrad Oblast to Primorsky Krai (Sinev & Lovtsova 2019). In the Volga Region, it is known for Saratov, Volgograd, Astrakhan, Nizhny Novgorod, Ulyanovsk, and Samara Oblasts and the Republics of Tatarstan and Chuvashia (Anikin *et al*. 2017).

17. *Megalophanes graslinella* (Boisduval, 1852)
(Figs 26, 44)

Material: ♂, Ulyanovsk city, ecological park "Black lake," in cobweb, 54.29965N, 48.34837E, 22.IV.2001, A.V. Rohletsova (Fig. 48, site 5).

Biologia. Inhabits swampy areas, peat bogs, steppes, and xerothermic areas up to 2300 m above sea level. Adults occur from the end of April until the end of June, active in sunny weather during the daytime. Male cases are usually found on the ground in grass, while female cases are higher up; in northern Europe, they are usually found between the needles on young pines in peat bog areas. Caterpillars are polyphagous, feed on grass preferring heather (Ericaceae).

Distribution in Russia. Recorded from the Kaliningrad Oblast to Baikal Region (Sinev and Lovtsova, 2008). In the Volga Region, the species is known from Volgograd, Saratov, and Ulyanovsk Oblasts and the Republic of Kalmykia (Anikin *et al.*, 2017).

****18. *Megalophanes pr. stetinensis* (Hering, 1846)**
(Figs 27, 45)

Material: ♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 16.V.2021, S.N.Kryuchkov, Ju.S.Volkova (Fig. 48, site 2).

Biology. Inhabits open landscapes in humid meadows, moorlands, often found near rivers in the altitudes up to 450 m above sea level. Polyphagous on grass. Adults occur from May until late June. Identification of this species from the territory of Ulyanovsk Oblast is preliminary and needs to be confirmed by the barcoding.

Distribution in Russia. Previously, it was recorded only from the European Central Region (Sinev & Lovtsova, 2019). **New record** from the Volga-Ural Region.

19. *Pachythelia villosella* (Ochsenheimer, 1810)
(Figs 28)

Material: ♂, Inza District, Yulovo, 53.963394N, 46.477890E, 6.VII.1993, V.V. Zolotuhin (Fig. 48, site 7).

Biology. Inhabits open areas: dry meadows, slopes, steppes, roadsides, marshes in the altitudes up to 2000 m above sea level. Polyphagous, found on herbaceous plants and heathers (Ericaceae). Cases with pupating females are found on tree trunks; cases with males remain on the ground, which makes them difficult to find. Adults occur from the end of April until early July, active from the afternoon until the evening, attracted by light.

Distribution in Russia. Recorded from almost everywhere, from the Republic of Karelian to South Ural Region (Sinev & Lovtsova 2019). In the Volga Region, it is known from the Ulyanovsk, Saratov, and Volgograd Oblasts, the Republics of Tatarstan and Chuvashia (Anikin *et al.* 2017).

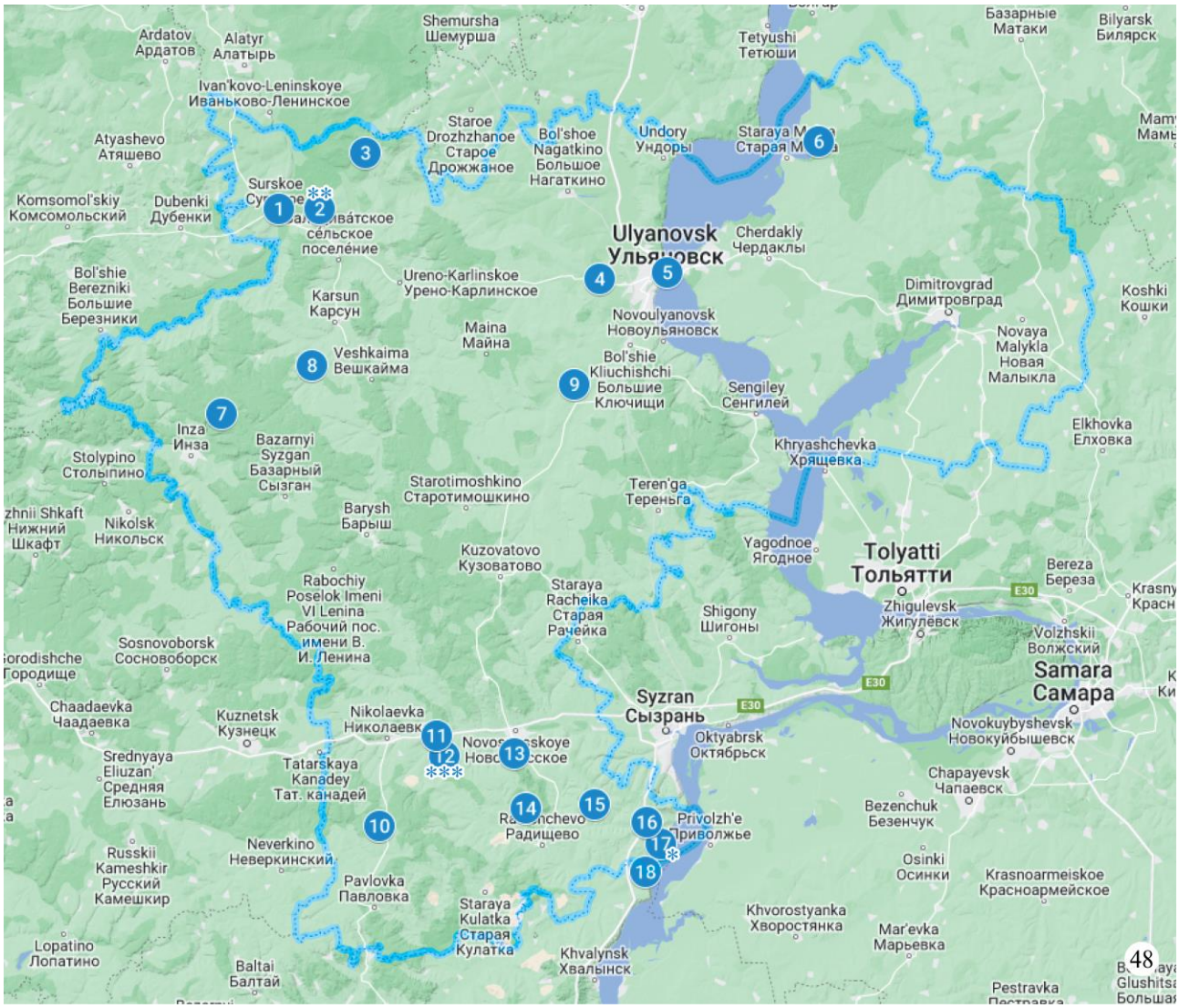


Figure 48. Collecting sites of Psychidae in the Ulyanovsk Oblast, for details visit https://bit.ly/3DIsqbL. 1–3. Surskoe District. 1. Village Surskoe. 2. Environs of the village Lava. 3. Bolshoi Kuvai. 4–5. Ulyanovsk District. 4. Environs of the village Arskoe. 5. Ulyanovsk city. 6. Staraya Maina District, environs of the village Verkhnyaya Matrosovka, biologic station of UlSPU. 7. Inza District, Yulovo. 8. Veshkayma District, village Beketovka, steppe. 9. Mayna District, village Kryukovka. 10–12. Nikolaevka District. 10. Lake Svetloe. 11. Environs of the village Praskovyino. 12. Kuroedovo. 13. Novospasskoe District, environs of the village Surulovka. 14–18. Radishchevo District. 14. Village Solovchikha. 15. Village Srednikovo. 16. Station Ryabina. 17. Vyazovka. 18. River Dalnyaya Chernava. One asterisk (*) is for the species new for the fauna of the Ulyanovsk Oblast, two (**) for the Middle Volga Region, and three (***) for Russia.

20. *Ptilocephala plumifera* (Ochsenheimer, 1810)

(Figs 23, 46)

Material: ♂, Nikolaevka District, environs of the village Praskovyino, 53.136409N, 47.406954E, 5.V.1998, V.V. Zolotuhin (Fig. 48, site 11); ♂, Radishchevskoe District, station Ryabina, 52.913645N, 48.312420E, 29.IV–3.V.1996, D.Yu. Klevolgin (Fig. 48, site 16).

Biology. Inhabits open landscapes both in xerotemporal and swampy areas. Adults occur from the end of April until June, active during daytime.

Distribution in Russia. Recorded from everywhere, from the European Central to Southwest Siberian Regions (Sinev & Lovtsova 2008). In the Volga Region, it is known from Volgograd, Saratov, and Ulyanovsk Oblasts (Anikin *et al.* 2017).

21. *Sterrhopterix fusca* (Haworth, 1829)
(Figs 29, 47)

Material: ♀, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 16.V.2021, S.N. Kryuchkov, Ju.S. Volkova (Fig. 48, site 2); ♂, Surskoe District, environs of the village Lava, bilberry-ledum marsh, 54.479973N, 46.901823E, 7.VI.2019, Ju.S.Volkova, P.O.Pavlov, S.N. Kryuchkov, A.N. Matveev (Fig. 48, site 2).

Biology. Inhabits forests, meadows and bogs. Polyphagous, found on grass and tree leaves. Adults occur from the end of May until the end of July, active at night and attracted by light.

Distribution in Russia. Widespread, recorded from the Kaliningrad Oblast to the Primorsky Krai (Sinev & Lovtsova, 2019). In the Volga Region, it is known from Volgograd, Saratov, Samara, and Ulyanovsk Oblasts (Anikin *et al.* 2017).

Conclusion

Thus, the fauna of the Ulyanovsk Oblast currently includes 21 species of bagworms: *Apterona helicoidella* is newly recorded from the Ulyanovsk Oblast, *Taleporia politella* and *Megalophanes stetinensis* from the Middle Volga Region, and *Dahlica clathrella* from Russia. The number of bagworm species of the Ulyanovsk Oblast surely will be increased in the course of further studies.

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References

Anikin, V.V., Sachkov, S.A. & Zolotuhin, V.V. (2017) *Fauna lepidopterologica Volgo-Uralensis, from P. Pallas to present days.* Proceedings of the Museum Witt Munich. Vol. 7. Munich-Vilnius, 693 pp.

Arnscheid, W.R. & Weidlich, M. (2017) *Psychidae. Microlepidoptera of Europe*. Vol. 8. Brill, Leiden-Boston, 423 pp.

Artemyeva, E.A. & Maslennikova, L.A. (2014) *Fundamentals of Biogeography. Textbook.* Korporatsya technology prodvishenya, Ulyanovsk, 303 pp. [In Russian]

Lastukhin, A.A. (2010) A new species of Lepidoptera for the Middle Volga region and Chuvashia Republic from Relict Arctic Alpine fauna of Ice Age. *Scientific proceedings of the State Nature Reserve «Prisursky».* 24, 75-80. [In Russian]

Lovtsova, Yu.A. (2007) A faunistic review of bagworms (Lepidoptera: Psychidae) of the European part of Russia. *Bulletin of Moscow Society of Naturalists. Biological series,* 112(6), 21–27. [In Russian]

Sinev, S.Yu. & Lovtsova, Yu.A. (2008) Family Psychidae. *In:* Sinev, S.Yu (Ed.), *Catalogue of Lepidoptera of Russia.* KMK Scientific press ltd, St. Petersburg-Moscow, 421 pp. [In Russian]

Sinev, S.Yu. & Lovtsova, Yu.A. (2019) Family Psychidae. *In:* Sinev, S.Yu (Ed.) *Catalogue of Lepidoptera of Russia. Second edition.* Zoological Institute of the Russian Academy of Sciences, St. Petersburg, 448 pp. [In Russian]

Sobczyk, T. (2011) Psychidae (Lepidoptera). *In:* Nuss, M. (Ed.), *World Catalogue of Insects*, Vol. 10. Apollo books, 467 pp.

Zaguliaev, A.K. (1978) Lepidoptera, Psychidae. *In:* Medvedev, G.S. (Ed.), *Key to insects in the European part of the U.S.S.R.* Vol. 4. Part 1. Nauka, Leningrad, 710 pp. [In Russian]

Zolotuhin,V.V. & Volkova Ju.S. (2019) Moths and butterflies species new for the Ulyanovsk Province with bionomic remarks on selected species (Lepidoptera). *Eversmannia*, 57, 32–39. [In Russian]

Zolotuhin,V.V. & Volkova Ju.S. (2021) New records of 106 moth species (Lepidoptera) for Ulyanovskaya Oblast of Russia, with notes on the biology of some species. Part 2. *Euroasian Entomological journal*, 20(1), 21–33. [In Russian]

Rakov, N.S., Saksonov, S.V., Senator, S.A. & Vasukov, V.M. (2014) *Vascular plants of the Ulyanovsk Province. Flora of the Volga River basin.* Vol. 2. Institute of Ecology of Volga River basin Togliatti branch of Russian Botanical society, 294 pp.