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RESEARCH ARTICLE

New and noteworthy records of Plants, Lichens and Insects in Altai Territory and Republic of Altai (Southern Siberia). II.

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Abstract

This study reports new geographical occurrences for seven species of vascular plants (*Cyperus michelianus*, *Gymnocarpium continentale*, *Rhynchospora alba*, *Scheuchzeria palustris*, *Schoenoplectiella supina*, *Veronica* × *schmakovii*, and *V.* × *sessiliflora*), eight species of lichens (*Chaenotheca chlorella*, *Lathagrium dichotomum*, *Myrionora albidula*, *Scoliciosporum perpusillum*, *Physcia alnophila*, *P. tenella*, *Peltigera collina*, and *P. extenuata*), and nine species of Lepidoptera in the Altai Territory and the Republic of Altai. For each recorded species, localities and ecological preferences are detailed. Plants *Veronica* × *schmakovii*, *V.* × *sessiliflora*, and *Rhynchospora alba* are recorded for the first time in the Altai Territory; *Scheuchzeria palustris* and *Gymnocarpium continentale* for the second time. *Scheuchzeria palustris* and *Rhynchospora alba*, identified as rare fog-dependent plants, are recommended for inclusion in the Red Book of the Altai Territory. Lichen *Chaenotheca chlorella* is recorded as a new species for

Southern Siberia; *Lathagrium dichotomum* is recorded for the first time in the Altai Territory; *Myrionora albidula*, *Scoliciosporum perpusillum*, *Physcia alnophila*, and *P. extenuata* are reported as new lichen species for the Salair Ridge; *Physcia tenella* and *Peltigera collina* are new records for the Salair botanical-geographical province within the Altai Territory. New faunistic records for Lepidoptera include first reports for the Altai Territory of the tortricids *Cydia medicaginis*, *Cochylis pallidana*, and *Aethes cnicana*; the chimabachid *Dasystoma salicella*; the erebids *Catocala helena*, *Catocala bella*, and *Hypena crassalis*; the noctuid *Conistra rubiginea*; and the lasiocampid *Dendrolimus pini*. Additionally, the cossid *Dyspessa salicicola* is reported as a new species for Western Siberia. The sphingids *Agrius convolvuli* and *Macroglossum stellatarum* are newly recorded for the Republic of Altai, with the latter's spring discovery suggesting the potential formation of a stable local population. The noctuid *Orthosia cerasi* is also reported for the first time in the Republic of Altai. Furthermore, this study contributes rare quantitative data on population dynamics, presenting an estimated population size for a newly documented locality of the lichen *Lathagrium dichotomum*. This information is crucial for conservation planning and assessing the status of this Red Data Book listed species.

Keywords
Altai, Biodiversity, Lichenized fungus, Red Data Book, Salair National Park, Salair Ridge, Tigirek Strict Reserve

Introduction

The present material continues the series of publications on the biodiversity of the Altai Territory and the Republic of Altai (Davydov et al. 2022, 2023; Kosachev and Albach 2022) and represents new records on the distribution of a number of species of vascular plants, lichens, and insects in the Altai Territory and the Republic of Altai, including species requiring special protection. While not all species documented in this study are currently designated for special protection, the identification of new or historically underrepresented populations of rare taxa underscores the critical need for up-to-date distributional data. Accurate and comprehensive information on the geographical spread and ecological preferences of species, particularly those with limited distributions or recognized conservation concern, is fundamental for their effective protection. This knowledge is essential for identifying priority areas for conservation, developing targeted protection strategies, and making informed decisions regarding their inclusion or status within regional and national Red Books. The present work aims to contribute to this vital effort by documenting new occurrences and ecological parameters for some vulnerable species, thereby providing essential evidence for conservation planning and enabling conservation efforts to be more precise and impactful.

Materials and methods

The paper contains data obtained from the materials collected using traditional methods in various localities of the Altai Territory and the Republic of Altai.

The material is kept in the following collections:

ALTB – the herbarium of Altai State University (Barnaul) and its unit TIGZ – the herbarium of Tigirek Natural Reserve (Barnaul);

ESB – private collection of Egor Svirin (Barnaul);

OKB – private collection of Oleg Kudrov (Barnaul);

RYB – research collection of Roman Yakovlev (Barnaul);

TZB – private collection of Timofey Zalutsky (Barnaul).

Results

Plants

During 2023, significant floristic discoveries were made within the Altai Territory. In a challenging-to-access sector of the Tigirek Nature Reserve (Beloretsk Floristic District), situated in the Belaya River valley, two species belonging to the genus *Veronica* (*V.* × *sessiliflora* and *V.* × *schmakovii*) were documented for the first time for the region's flora. Concurrently, the northern part of Altai Territory yielded two additional new species for the regional flora from the family Cyperaceae (*Rhynchospora alba* and *Schoenoplectiella supina*). Moreover, analysis of collected specimens and corresponding data from iNaturalist.org revealed the presence of four plant species previously considered rare within the Altai Territory: *Gymnocarpium continentale*, *Scheuchzeria palustris*, *Cyperus michelianus*, and *Drosera rotundifolia*. Three more new records were discovered during a study of coastal aquatic habitats in the plain part of the Altai Territory.

Family Cystopteridaceae

***Gymnocarpium continentale* (Petrov) Pojark.**
Figure 1

Material examined. Russia, Altai Territory, Charyshskii District, upper reaches of the Kholodny Klyuch stream, a tributary of the Bolshoi Tigirek River, 51°04′47.48″ N, 83°00′05.23″ E, elev. 1264 m, cracks in granite rocks, 07.vii.2021, P. Kosachev (www.inaturalist.org/observations/96068979) (Fig. 1a, b); in the same place. 16.vii.2020. P.V. Golyakov (www.inaturalist.org/observations/53705977).

Distribution. Circumboreal species.

Note. The species is rare in the Altai Mountain Country; in the Altai Territory only one location is known on the Sinyukha Mt. (Kurinsky District) (Shmakov 2005).

Family Plantaginaceae

***Veronica* × *schmakovii* Kosachev**
Figures 2–3

Material examined. Russia, Altai Territory, Zmeinogorsky District, the basin of the Belaya River, the valley of the Strizhanka River, 50°56'17.54″ N, 82°54'53.03″ E, elev. 630 m, bushy slope with southern exposure, rocks, 16.vii.2023, leg. P. Kosachev (TIGZ; www.inaturalist.org/observations/175151992; Fig. 2a–d) Russia, Altai Territory, Zmeinogorsky District, valley of the Belaya River near the mouth of the Krakhalikha River, 50°57′25.3″ N, 82°51′51.0″ E, elev. 576 m, floodplain meadow, bushy mountain slope, 19.vii.2023, leg. P. Kosachev (TIGZ; www.inaturalist.org/observations/175487299; Fig. 3a–c).

Distribution. This hybrid is endemic to the Altai Mountain Country.

Note. This is the first record of the species in the Altai Territory. *V.* × *schmakovii* previously known from 23 locations from the Republic of Altai, Republic of Tuva, Kazakhstan and Mongolia (Kosachev and Albach 2022).

***Veronica* × *sessiliflora* Bunge**
Figure 4

Material examined. Russia, Altai Territory, Zmeinogorsky District, valley of the Belaya River near the mouth of the Krakhalikha River, 50°57′25.3″ N, 82°51′51.0″ E, elev. 576 m, floodplain meadow, bushy mountain slope, 19.vii.2023, leg. P. Kosachev (TIGZ; www.inaturalist.org/observations/175491652; Fig. 4a, b).

Distribution. Endemic to the Altai Mountain Country.

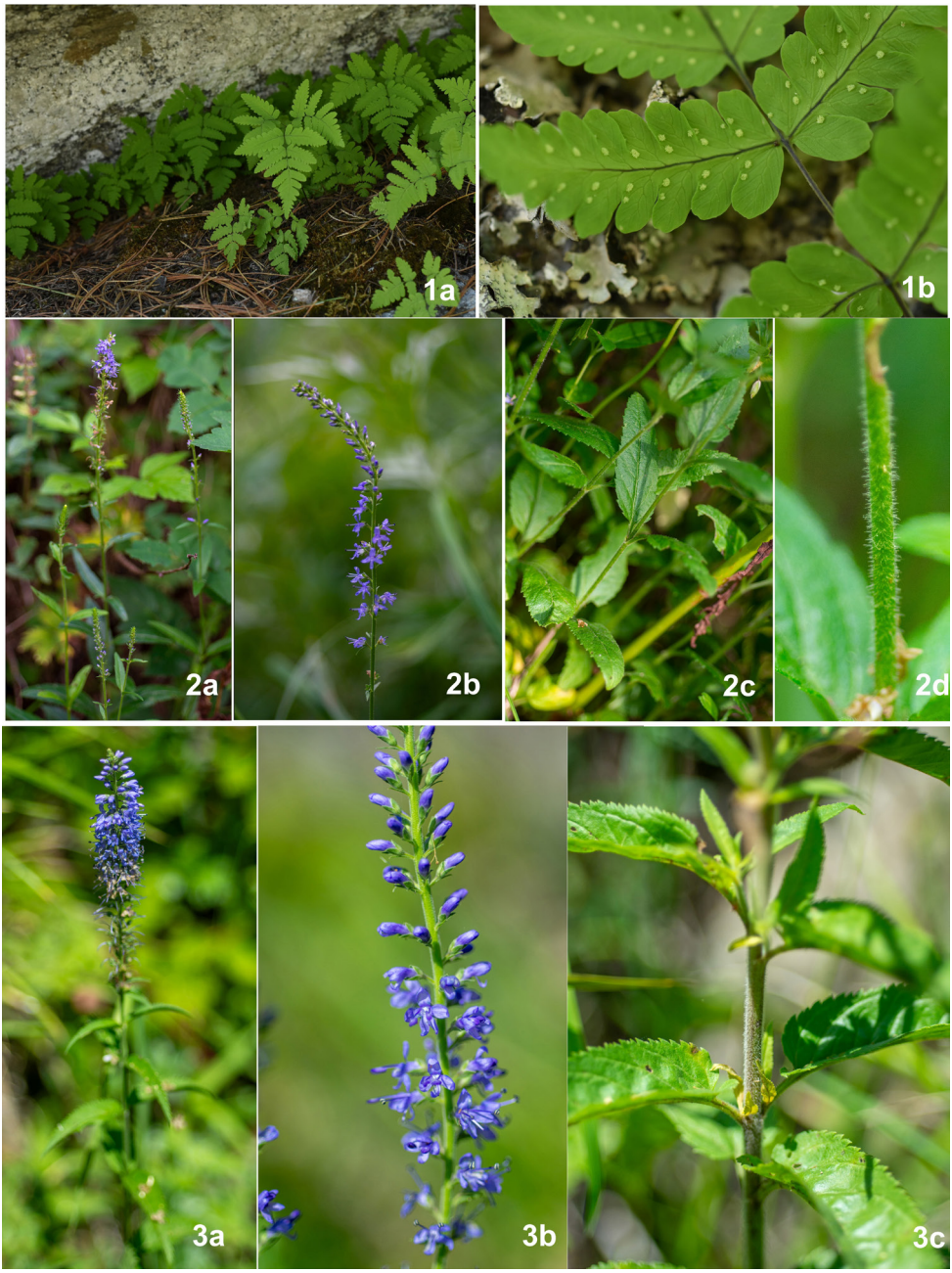
Note. This is the first record of the species in the Altai Territory. In total, 21 locations were known within the Altai Mts. (Kosachev and Albach 2022).

Family Scheuchzeriaceae

***Scheuchzeria palustris* L.**
Figures 5–6

Material examined. Russia, Altai Territory, Talmensky District, 53°50′11.68″ N, 83°46′47.06″ E. Sphagnum bog with *Andromeda polifolia* L. and *Oxycoccus palustris* Pers., 29.x.2023, leg. P.V. Golyakov (www.inaturalist.org/observations/189323785); Altai Territory, Talmensky District, near the community of Vypolzovo, Klyukvennoye Lake, 53°50′11.6″ N, 83°46′46.1″ E, cranberry-sphagnum bog, 01.vii.2025, leg. P.V. Golyakov (ALTB, TIGZ).

Distribution. Holarctic plant. The species grows in sphagnum bogs in the forest zone.



Figures 1–3. 1. *Gymnocarpium continentale* (upper reaches of the Kholodny Klyuch River): **a** – fern in natural habit, **b** – part of a frond with soruses on the underside. **2.** *Veronica* × *schmakovii* (the valley of the Strizhanka River): **a** – flowering shoots, **b** – inflorescence, **c** – stems in the middle part, **d** – pubescence of the stem with glandular hairs. **3.** *Veronica* × *schmakovii* (near the mouth of the Krakhalikha River): **a** – flowering shoots, **b** – inflorescence, **c** – stems in the middle part. **1**, **2**, **3** – field photo by P.A. Kosachev.

Figure 4. *Veronica* × *sessiliflora* (near the mouth of the Krakhalikha River): **a** – inflorescence, **b** – stems in the middle part (glandular pubescence is visible). Field photo by P.A. Kosachev.

Note. This is the second record of the species in the region. The first report was made by Silantyeva (2013) for the Pervomaysky District near the village of Bayunovskie Klyuchi on the Klyukvennoye bog. This is a rare plant in Russia, listed in some regional Red Books in the European part (Red Books of Tambov, Lipetsk, Penza, Voronezh, Moscow regions, the Republic of Mordovia and some others) (Red Book... 2019). The limiting factor for the distribution of the species in the southern regions is the limited number of biotopes – sphagnum bogs. Such habitats are typical for more northern regions of Siberia, and in the Altai Territory they are known only in the northern regions. In the Republic of Altai, the plant has also been collected from a site on the Lebed' River (Krasnoborov and Korotkova 1988; Gerasimovich 2012).

Due to the insignificant area of sphagnum bogs and their degradation, the only location of the plant in the region, we recommend a species for inclusion in the Red Book of the Altai Territory.

Figure 5. *Scheuchzeria palustris*. P.V. Golyakov, herbarium specimen (ALTB). Photo by P.A. Kosachev.

Figure 6. *Scheuchzeria palustris*. P.V. Golyakov, infructescence (TIGZ). Photo by E.A. Davydov. Scale = 1 mm.

Family Cyperaceae

***Cyperus michelianus* (L.) Delile**
Figure 7

Material examined. Russia, Altai Territory, Kalmanskii District, settlement Buranovo, bank of the Obi River, 53°2′33″ N, 83°37′35″ E, sandbank, 23.viii.2024, leg. P.V. Golyakov (ALTB; www.inaturalist.org/observations/237493344).

Distribution. Eurasia.

Note. A rare species in Siberia, where it is known only from 6 regions: Omsk, Tomsk, Novosibirsk, Chuta, Republic of Buryatia, and Altai Territory. In Novosibirsk Region, the species is listed in the Red Book (Artemov 2018). In Altai Territory, the plant was collected very rarely: in the floodplain of the Chumysh River (Talmensky District), Lake Shirokoe (Zarinsky District), the floodplain of the Obi River (Pervomaysky District), the vicinity of the village of Stan-Bekhtemir (Biysky District) (Silantieva 2013). The present record supplements the distribution of this rare species in Altai Territory.

Figure 7. *Cyperus michelianus*. Field photo by P.V. Golyakov.

***Rhynchospora alba* (L.) Vahl**
Figure 8

Material examined. Russia, Altai Territory, Talmensky District, near the village of Vypolzovo, Klyukvennoye Lake, 53°50′11.6″ N, 83°46′46.1″ E, cranberry-sphagnum bog, 01.vii.2025, leg. P.V. Golyakov (ALTB).

Distribution. This species is widely distributed across the temperate zone of the Northern Hemisphere, with a preference for its southern regions, and is considered a circumpolar bog inhabitant.

Note. This represents the first record of the species in Altai Territory. In Siberia, it grows on *Sphagnum* or occasionally *Hypnum* bogs, at the edges of overgrowing lakes, and in waterlogged forests. It is found in eight Siberian regions: Tyumen, Omsk, Tomsk, and Irkutsk regions, Republic of Buryatia, Krasnoyarsk and Trans-Baikal Territories, and Yakutia (Timokhina and Bondareva 1990).

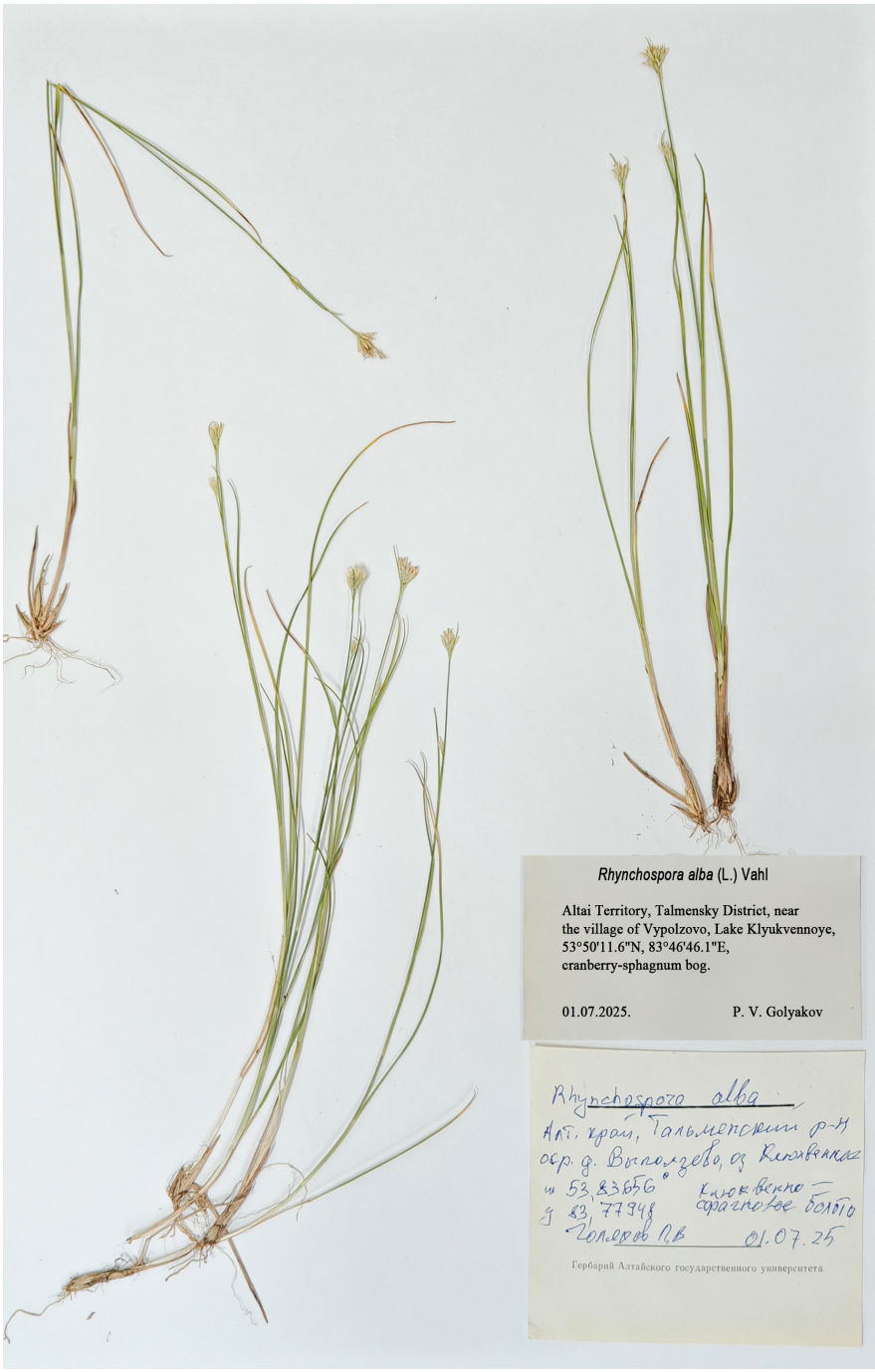


Figure 8. *Rhynchospora alba* (L.) Vahl. P.V. Golyakov, herbarium specimen (ALTB). Photo by P.A. Kosachev.

***Schoenoplectiella supina* (L.) Lye**

Material examined. Russia, Altai Territory, near the city of Barnaul, Obi River floodplain, 53°15′53″ N, 83°52′13″ E, swampy meadow, 06.viii.2024, leg. P.V. Golyakov (ALTB; www.inaturalist.org/observations/234189067).

Distribution. The native range of this species is Europe to Central Siberia and Himalaya, Africa, Brazil to north-east Argentina.

Note. This is the first record of the species in the Altai Territory. It is an annual and grows primarily in the temperate biome. In Siberia, the species is very rare, noted only in two habitats in two provinces: Western Siberia Hemiboreal and Altai-Yenisei Mountain-Hemiboreal (Krasnoyarsk Territory). In addition, as an alien species, the plant is noted in Manchurian Continental province (Shekhovtsova 2024).

Family Droseraceae

***Drosera rotundifolia* L.**
Figure 9

Material examined. Russia, Altai Territory, Talmensky District, near the village of Vypolzovo, Lake Klyukvennoye, 53°50′11.6″ N, 83°46′46.1″ E, cranberry-sphagnum bog, 01.vii.2025, leg. P.V. Golyakov (ALTB).

Distribution. Occurs in most regions of the Holarctic.

Note. This species is rare in the Altai Territory, with only 11 occurrences previously known in the region (Terekhina and Kopytina 2016). The main habitats of *Drosera rotundifolia* are acidic bogs and poor fens, although it has also been recorded in intermediate-rich and extreme-rich fens. It predominantly grows in *Sphagnum*-dominated communities (Baranyai and Joosten 2016). Due to the ongoing degradation of sphagnum bogs in the Altai region, *D. rotundifolia* faces a threat of extinction within the Altai Territory.

Lichens

Family Collemataceae

***Lathagrium dichotomum* (With.) Otálora, P.M. Jørg. & Wedin**
Figure 10

Material examined. Russia, Altai Territory, Zmeinogorsky District, Tigirek Strict Reserve, Tigirek Range, Belaya River, near Krokhalikha River mouth, on boulder in the water, leg. E.A. Davydov (19442) and Y.V. Storozhenko (TIGZ).

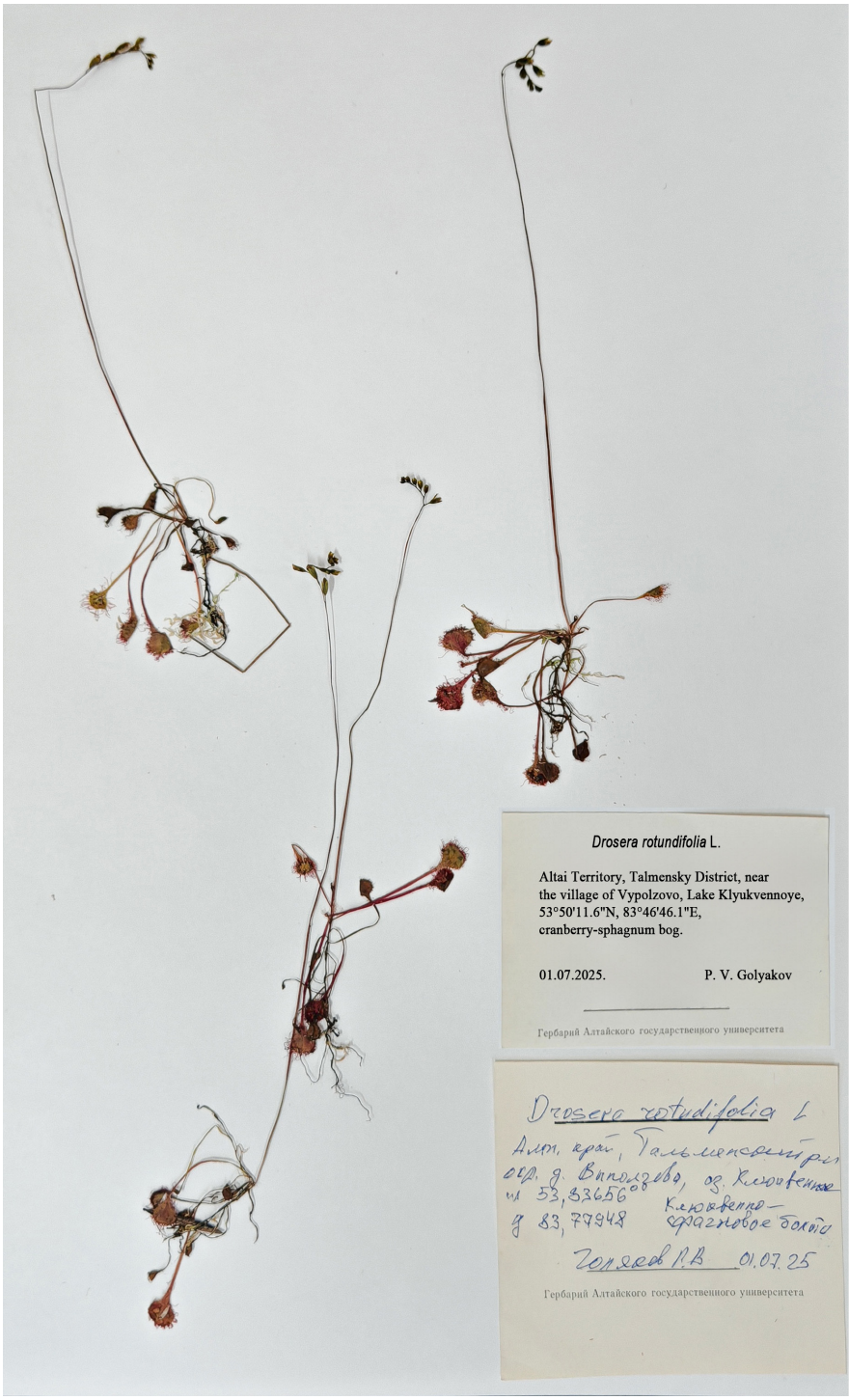


Figure 9. *Drosera rotundifolia* L. P.V. Golyakov, herbarium specimen (ALTB). Photo by P.A. Kosachev.

Distribution. This species exhibits a circumboreal distribution, occurring across Europe, Asia, and North America. Within Russia, it is documented in the Urals (Paukov and Teptina 2012), Eastern and Southern Siberia (Zhurbenko 2000; Makryi 2008; Vershinina et al. 2012; Urbanavicius and Stepanov 2022), and the northern European part, including Karelia (Thüs and Schultz 2009).

Notes. During a survey of approximately 22 km of the Belaya River channel between the tributaries Kazach'ya Slesarka and Strizhanka, only one population of *L. dichotomum* was observed near the mouth of the Krokhalikha River. The area occupied by this population was approximately 25 dm^2, estimated to comprise around 250 individuals.

Lathagrium dichotomum has been recently included in the Red Data Book of the Russian Federation (2024); the report for the Altai Territory was based on unpublished data by Yakovchenko and lacked adequate scientific documentation. Here we amend this inaccuracy by providing detailed evidence of *L. dichotomum* as a new and confirmed record for the Altai Territory.

This is a widespread but infrequently recorded freshwater species. It thrives on permanently inundated siliceous boulders in clear, cold mountain streams, rivers, large creeks, and lakes with relatively slow-moving water (Nimis et al. 2018). It can also rarely occur in the splash zone of watercourses that experience very infrequent drying (Thüs and Schultz 2009).

Family Coniocybaceae

***Chaenotheca chlorella* (Ach.) Müll. Arg.**
Figure 11

Material examined. Russia, Altai Territory, Eltsovsky District, Salair Ridge, at 6.5 km N from the Kaltyk settlement, at the vicinity of Ivanovka former settlement, 53°17′04″ N, 86°27′44.2″ E, elev. 341 m, 17.vi.2019, swampy spruce (*Picea obovata* Ledeb.) forest with *Carex* sp., on wood, leg. E.A. Davydov (22210) and L.S. Yakovchenko (TIGZ).

Distribution. Widely distributed in cool temperate and temperate areas of both the Northern and Southern Hemispheres. Within Russia, this species has been recorded from the Northern and Central European parts, the Northern Urals, and Western Siberia (Urbanavichus 2010; Urbanavichene and Urbanavichus 2019).

Notes. New record for the South Siberia.

Figures 10–11. 10. *Lathagrium dichotomum*. Underwater field photo by E. A. Davydov. **11.** *Chaenotheca chlorella*. E.A. Davydov 22210 and L. S. Yakovchenko (TIGZ). Photo by Yu.V. Storozhenko. Scale = 1 mm, scale in the box = 0.5 mm.

Family Lecanoraceae

***Myrionora albidula* (Willey) R.C. Harris**
Figure 12

Material examined. Russia, Altai Territory, Zarinsky District, Salair Ridge, at 13 km to NE from the Novoiushino, Togul River bassin, 53°41′50.6″ N, 85°59′29.3″ E, elev. 317 m, linden (*Tilia sibirica* Bayer) forest, on bark the fallen *Tilia sibirica* tree, 21.viii.2020, leg. E.A. Davydov (21413) and Yu.V. Storozhenko (TIGZ).

Distribution. This species inhabits the deciduous and coniferous forest belts of the northern temperate zone. In Russia, it was previously known from the European part (Kostroma, Leningrad, and Tver Regions), the Urals, Siberia (Altai and Trans-Baikal Territoried), and the southern Russian Far East (Palice et al. 2013; Urbanavichene and Urbanavichus 2019; Kotkova et al. 2023). It has been published under the name *Biatora albidula* Willey for the Caucasus (Urbanavichus et al. 2021). Within the Altai Territory, it was found in Soloneshensky District (Palice et al. 2013).

Notes. New record for the Salair Ridge.

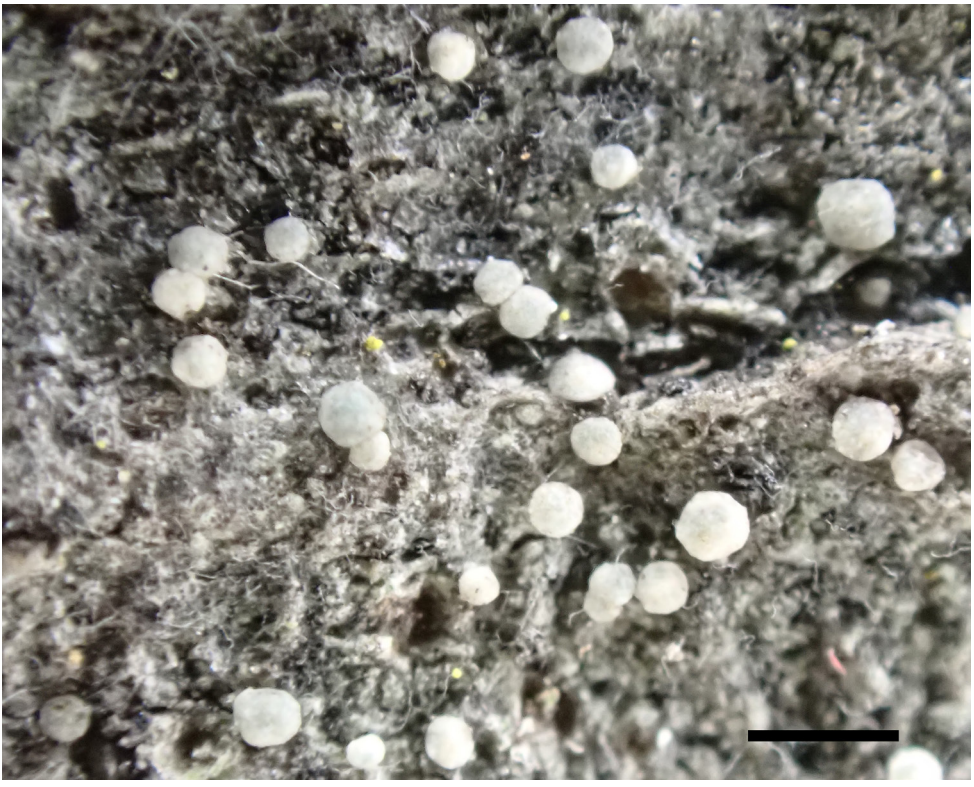


Figure 12. *Myrionora albidula.* Davydov 21413 and Y.V. Storozhenko (TIGZ). Scale = 2 mm. **P**hoto by Y.V. Storozhenko.

***Scoliciosporum perpusillum* L.Lahm ex Körb.**

Material examined. Russia, Altai Territory, Eltsovsky District, Salair Ridge, at 6.5 km N from the Kaltyk settlement, at the vicinity of former Ivanovka settlement, 53°17′04″ N, 86°27′44.2″ E, elev. 341 m, swampy spruce (*Picea obovata*) forest with *Carex* sp., on bark *Padus avium* Mill., 17.vi.2019, leg. E.A. Davydov (21529) and L.S. Yakovchenko (TIGZ).

Distribution. Within Russia, it is known from several regions in the southern, northern, and central European parts. In Siberia, it has been recorded from the Republic of Altai and Buryatia (Kharpukhaeva and Urbanavichus 2015, Urbanavichus and Urbanavichene 2022). In the Altai Territory, it has been reported for the North-Western Altai (Davydov and Printzen 2012). Outside of Russia, this species is recorded from Central and Northern Europe (Dymytrova 2011).

Notes. New record for the Salair Ridge.

Family Peltigeraceae

***Peltigera collina* (Ach.) Schrad.**
Figure 13

Material examined. Russia, Altai Territory, Eltsovsky District, Salair Ridge, 4.2 km N of Benzherep II settlement, left bank of the Chumysh River, 53°18′6″ N, 86°47′52″ E, elev. 235 m, alone *Salix* sp. near the road, on soil, 15.vi.2019, leg. E.A. Davydov (17998) and L.S. Yakovchenko (TIGZ).

Distribution. This species is mainly distributed in the temperate zone of the northern hemisphere. In Russia: Arctic, European part, Caucasus, Urals, Siberia and Far East. (Urbanavichus 2010). In the Altai Territory the species has been reported for North-Western and Northern Altai (Davydov 2001; Davydov and Konoreva 2015). On the Salair Ridge the species was known from the Novosibirsk Region (Sedelnikova 2007).

Notes. New record for the Salair botanical-georgaphical province of the Altai Territory.

***Peltigera extenuata* (Nyl. ex Vain.) Lojka**

Material examined. Russia, Altai Territory, Zarinsky District, Salair Ridge, ca. 1 km SE of Alambai Settlement, 54°01′38″ N, 85°54′06″ E, elev. 235 m, *Abies sibirica* – *Pinus sibirica* forest with *Populus tremula* and *Betula pendula*, on rocks, 13.ix.2019, leg. E.A. Davydov (22321) and L.S. Yakovchenko (TIGZ).

Distribution. Cosmopolitan species widely distributed in Russia, where it was recorded in the Caucasus, Central Russia, Siberia, Kamchatka (Urbanavichus 2010; Ismailov 2021; Muchnik and Kazakova 2020). In the Altai Territory was found in North-West Altai (Davydov 2001).

Notes. New record for the Salair Ridge.

Figure 13. *Peltigera collina.* E.A. Davydov 17998 and L. S. Yakovchenko (TIGZ). Scale = 5 cm. **P**hoto by Y.V. Storozhenko.

Family Physciaceae

***Physcia alnophila* (Vain.) Loht.et al.**
Figure 14

Material examined. Russia, Altai Territory, Eltsovsky District, Salair Ridge, at 6.5 km N from the Kaltyk settlement, at the vicinity of former Ivanovka settlement, 53°16′50.6″ N, 86°27′53.7″ E, elev. 341 m, riparian willow thickets, on branches of *Salix* sp., 17.vi.2019, leg. E.A. Davydov (21434) and L.S. Yakovchenko; Zarinsky District, at 13 km to NE from the Novoiushino, Togul River bassin, 53°41′50.9″ N, 85°59′48.5″ E, elev. 310 m, linden (*Tilia sibirica*) forest, on the bark of *Tilia sibirica*, 21.viii.2020, leg. E.A. Davydov (21495, 21534) and Yu.V. Storozhenko (TIGZ).

Distribution. The species is widespread, occurring in Europe, Asia, and North America. In Russia, *Physcia alnophila* is common in the northern European part, the Urals, Siberia, and throughout the Russian Far East (Urbanavichene 2008; Stepanchikova et al. 2010, Galanina et al. 2017). Within the Altai Territory, it has been found in the northwestern part of the region, including Tigirek Strict Reserve (Davydov 2012).

Notes. New record for the Salair Ridge. Specimens of this species are often kept in herbarium under different species names, mainly *Physcia aipolia* (Galanina et al. 2017).

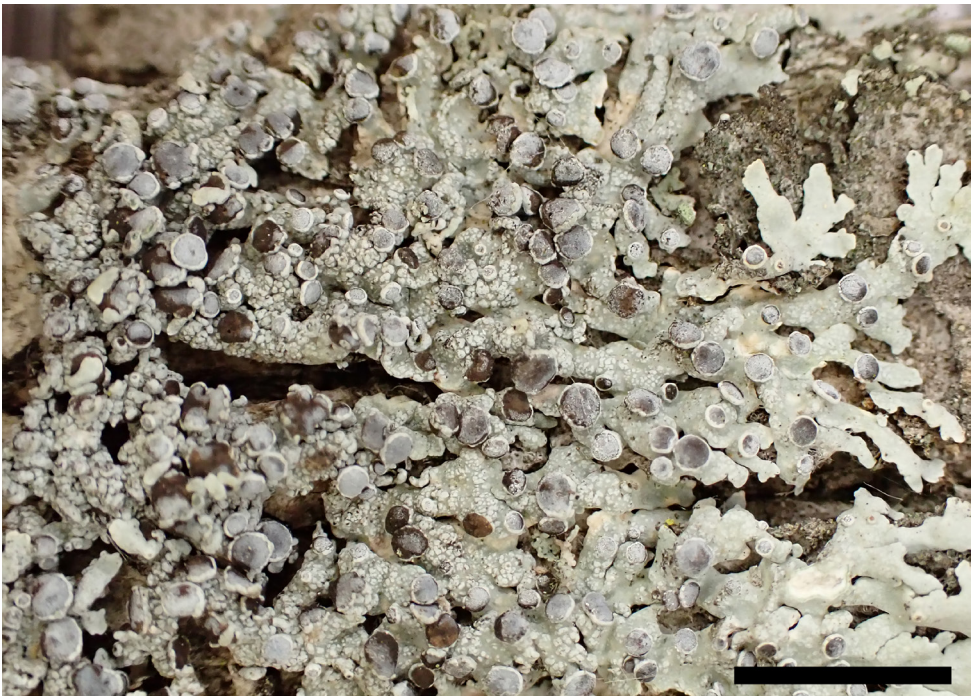


Figure 14. *Physcia alnophila*. E.A. Davydov 21495 and Y.V. Storozhenko (TIGZ). Scale = 5 mm. **P**hoto by Y.V. Storozhenko.

***Physcia tenella* (Scop.) DC.**
Figure 15

Material examined. Russia, Altai Territory, Zarinsky District, at 13 km to NE from the Novoiushino, Togul River basin, 53°41′58″ N, 85°59′50″ E, elev. 330 m, 11.v.2022, linden (*Tilia sibirica*) forest, on the bark of of *Tilia sibirica*, leg. E.A. Davydov and Yu.V. Storozhenko; Togulsky District 3.5 km to NE from the Shumikha, Togul River basin, right bank of the river Togul, between the river Togul and the river Mochishche, 53°38′32.4″ N, 86°01′37.9″ E, elev. 221 m, 18.vi.2019, aspen (*Populus tremula* L.) forest leg. E.A. Davydov (22183, 21533) and L.S. Yakovchenko (TIGZ).

Distribution. This species is primarily distributed within the temperate zone of the Northern Hemisphere. In Russia, it is found across the Arctic, European part, Caucasus, Urals, Siberia, and the Far East. The species is widespread throughout Russia (Urbanavichus 2010). Within the Altai Territory, the species is reported for the North-Western and Northern Altai regions (Davydov 2001; Davydov and

Konoreva 2015). On the Salair Ridge, it is known from the Novosibirsk Region (Sedelnikova 2007).

Notes. New record for the Salair botanical-georgaphical province of the Altai Territory.

Cosmopolitan, with wide distribution throughout Russia. The species is recorded in the Caucasus, Central Russia, Siberia, and Kamchatka (Urbanavichus 2010). In the Altai Territory, it was found both in the plain and mountainous part (Davydov 2014).

Figure 15. *Physcia tenella*. E.A. Davydov 22183 and Y.V. Storozhenko (TIGZ). Scale = 2 mm. **P**hoto by Y.V. Storozhenko.

Insects, Lepidoptera

Family Tortricidae

***Cydia medicaginis* (Kuznetzov, 1962)**
Figures 16, 30

Material examined. 1 male, Russia, Altai Territory, Krasnoshchekovo District, Chinetinsky Reserve, 14 km SE of village Chineta, Forest-steppe, 775 m, 24.vii.2023, 51.23720° N, 83.17714° E, leg. P. Pavlova (RYB).

Distribution. Euro-Siberian species (Anikin et al. 2019).
Notes. New to Altai Territory.

***Cochylis pallidana* Zeller, 1847**
Figures 17, 31

Material examined. 1 male, Russia, Altai Territory, Charysh District, 8 km S of village Pokrovka, lake Ozernoe, 1500 m, 17–18.vii.2025, 51.045834° N, 83.645250° E, leg. P. Pavlova (RYB).
Distribution. Trans-Palearctic species (Anikin et al. 2019).
Notes. New to Altai Territory.

***Aethes cnicana* (Westwood, 1854)**
Figures 18, 32

Material examined. 1 male, Russia, Altai Territory, Salair Mts., Togul District, 31 km NE of village Togul, linden (*Tilia sibirica*) forest, 370 m, 17.ix.2023, 53.69726° N, 85.99494° E, leg. P. Pavlova (RYB).
Distribution. Trans-Palearctic species (Anikin et al. 2019).
Notes. New to Altai Territory.

Family Chimabachidae

***Dasystoma salicella* (Hübner, 1796)**
Figure 19

Material examined. 2 males, Altai Territory, Tal'menka district, Tal'menka village vicinity, Chumysh river valley, 53.795159 N, 83.544224 S, 15.iv.2025, S.A. Knyazev (CSKO).
Distribution. From Europe to Far East (Anikin et al. 2019). In Siberia known from Omsk Province, Republic of Altai (Knyazev 2022; Knyazev and Ivonin 2025) and Altai Territory.
Notes. New to Altai Territory. Males were attracted at pheromones.

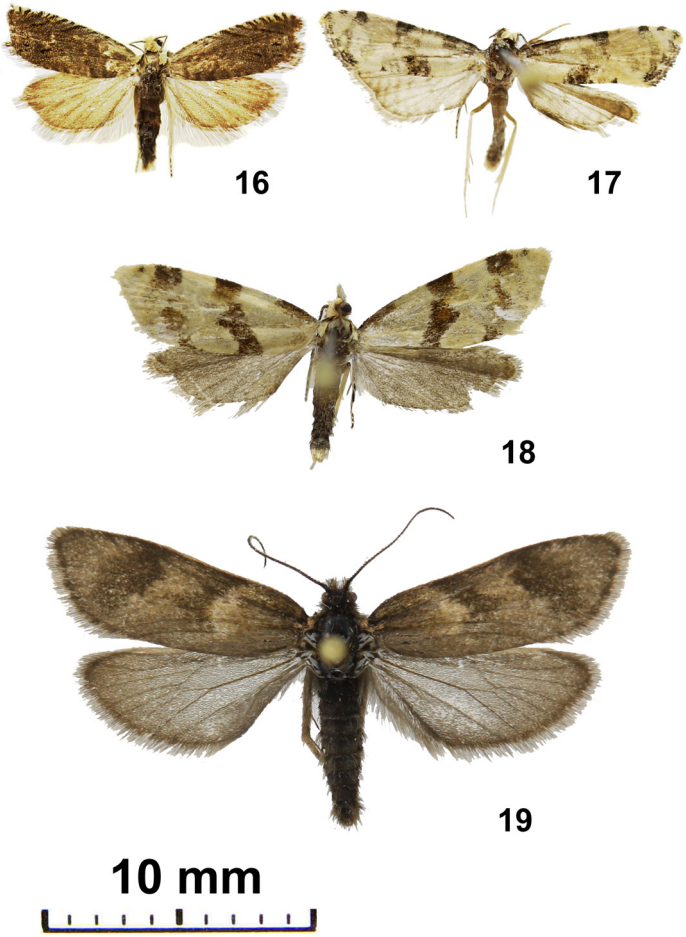
Family Cossidae

***Dyspessa salicicola* (Eversmann, 1848)**
Figure 20

Material examined. 2 males, Russia, Altai Territory, near Barnaul, South-Siberian Botanical Garden, 53.263832° N, 83.671093° E, 18.vi.2025, leg. A. Slepchenko (RYB).

Distribution. Nominative subspecies distributed in Bulgaria, Macedonia, Albania, Greece, Ukraine, SW Russia, Transcaucasia, Turkey, Central Kazakhstan (Romanoff 1885; Spuler 1910; Silbernagel 1944; Daniel 1962; Didmanidze 1978; Didmanidze and Zurashvili, 1981; de Freina 1983, 1996; Efetov and Budashkin 1990; de Freina and Witt, 1990; Yakovlev 2004, 2005, 2009, 2011; Didmanidze and Yakovlev, 2007; Kazenas and Baizanov 2009; Bayanov et al. 2015; Yakovlev et al. 2015, 2020, 2022; Yakovlev and Witt, 2016; Streltzov et al. 2022).

Notes. New species for Western Siberia. Possibly introduced accidentally.



Figures 16–19. Lepidoptera, adult specimens: **16.** *Cydia medicaginis* (RYB); **17.** *Cochylis pallidana* (RYB); **18.** *Aethes cnicana* (RYB); **19.** *Dasystoma salicella* (CSKO).

Family Erebidae

***Catocala helena* Eversmann, 1856**
Figure 21

Material examined. 15 specimens, Russia, Altai Territory, near Novoaltaisk, 53.444054° N, 83.939779° E, 2–13.viii.2024, 27.vii–27.viii.2025, leg. A. Slepchenko (RYB).

Distribution. Manchurian nemoral-subboreal species historically distributed in East Palaearctic (China, Korea, Mongolia, south of the Russian Far East and Transbaikalia) (Kononenko 2010). The species was recently found in West Siberia, South Ural and the south of the European part of Russia and Kazakhstan (Karaganda and Pavlodar Provinces) (Knyazev 2011; Ismagilov and Krivosheev 2020; Knyazev et al. 2021; Titov et al. 2022).

Notes. New species for Altai Territory.

***Catocala bella* Butler, 1877**
Figure 22

Material examined. 1 male, Russia, Altai Territory, near Novoaltaisk, 53.444054° N, 83.939779° E, 12.viii.2025, leg. A. Slepchenko (RYB).

Distribution. Manchurian nemoral-subboreal species historically distributed in East Palaearctic (China, Korea, Mongolia, south of the Russian Far East and Transbaikalia) (Kononenko 2010). The species was recently found in West Siberian Plain (Knyazev 2020; Knyazev et al. 2022).

Notes. New species for Altai Territory.

***Hypena crassalis* (Fabricius, 1787)**
Figure 23

Material examined. 1 male, Russia, Altai Territory, near Novoaltaisk, 53.444054° N, 83.939779° E, 13.vi.2025, leg. A. Slepchenko (RYB).

Distribution. European species. In Siberia known from Baikal Region and Altai Territory (Matov and Belova 2016; Gordeev et al. 2022)

Notes. New species for Altai Territory.

Family Noctuidae

***Conistra rubiginea* (Denis & Schiffermüller, 1775)**
Figure 24

Material examined. 19 specimens, Russia, Altai Territory, Barnaul, 53°15′07.0″ N, 83°44′22.5″ E, 6–7.v.2022, 28.iv–5.v.2024, 26.iv.2025, leg. T. Zalutsky (TZB); 1 specimen, Altai Territory, Barnaul, 53°12′09.4″ N, 83°41′32.0″ E, 2.v.2022, leg. O. Kudrov (OKB); 22 specimens, Russia, Altai Territory, Rebrikha village, 28–30.iv.2024, 53°05′14.9″ N 82°22′37.4″ E, leg. E. Svirin (ESB).

Distribution. European species. From Asia was previously known from Kurgan (Zolotarenko and Dubatolov 2000) and Omsk (Knyazev 2020) regions of West Siberia, also in Pavlodar Region in Kazakhstan (Titov et al. 2017).

Notes. New species for Altai Territory.

***Acronicta major* (Bremer 1861)**
Figure 25

Material examined. 2 specimens, Russia, Altai Territory, near Novoaltaisk, 53.444054° N, 83.939779° E, 7.vi.2025, 4.vii.2025, leg. A. Slepchenko (RYB); 1 male, Altai Territory, near Barnaul, South-Siberian Botanical Garden, 53.263832°N, 83.671093°E, 18.vi.2025, leg. A. Slepchenko (RYB)

Notes. New localities for protected species.

***Orthosia cerasi* (Fabricius, 1775)**
Figure 26

Material examined. 2 male, Russia, Republic of Altai, Elekmonar village, 51°27′10.8″ N, 86°02′39.4″ E, 30.v.2025, leg. T. Zalutsky (TZB).

Distribution. Euro-Siberia species (Anikin et al. 2019).

Notes. New species for Republic of Altai.

Family Lasiocampidae

***Dendrolimus pini* (Linnaeus, 1758)**
Figure 27

Material examined. 2 females, Russia, Altai Territory, Tal'menka district, Ozerki village, 53°38′52.6″ N, 83°37′15.6″ E, 17–18.vi.2025, leg. O. Kudrov (OKB).

Distribution. Euro-Siberian species. From Siberia was previously known from Krasnoyarsk and Baikal Regions (Zolotuhin 2015; Anikin et al. 2019).

Notes. New species for Altai Territory.

Figures 20–27. Lepidoptera, adult specimens: **20.** *Dyspessa salicicola* (RYB); **21.** *Catocala helena* (RYB); **22.** *Catocala bella* (RYB); **23.** *Hypena crassalis* (RYB); **24.** *Conistra rubiginea* (TZB); **25.** *Acronicta major* (RYB); **26.** *Orthosia cerasi* (TZB); **27.** *Dendrolimus pini* (OKB); **28.** *Agrius convolvuli* (TZB); **29.** *Macroglossum stellatarum* (TZB).

Family Sphingidae

***Agrius convolvuli* (Linnaeus, 1758)**
Figure 28

Material examined. 2 male, Russia, Altai Territory, Belokurikha, 52°00′00.6″N, 85°01′13.6″ E, 13.viii.2024, leg. T. Zalutsky (TZB).

Distribution. Cosmopolitan species. Eurasia, Africa, Australia and Oceania (Pittaway 2020; Pittaway and Kitching 2020). Though in Siberia and the adjacent countries it was recorded only locally. Thus, for Mongolia, the species is known on the unique specimen collected in the Trans-Altai Gobi (Yakovlev et al. 2015). It is regularly found in Omsk region (Knyazev 2020). The first find in Altai Territory was published in Yakovlev and Volgin 2020.

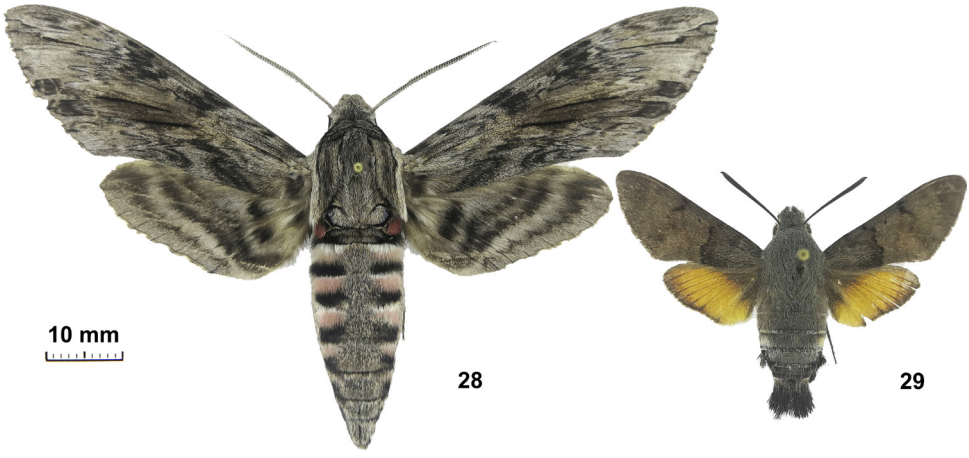
Notes. Second record for Altai Territory.

***Macroglossum stellatarum* (Linnaeus, 1758)**
Figure 29

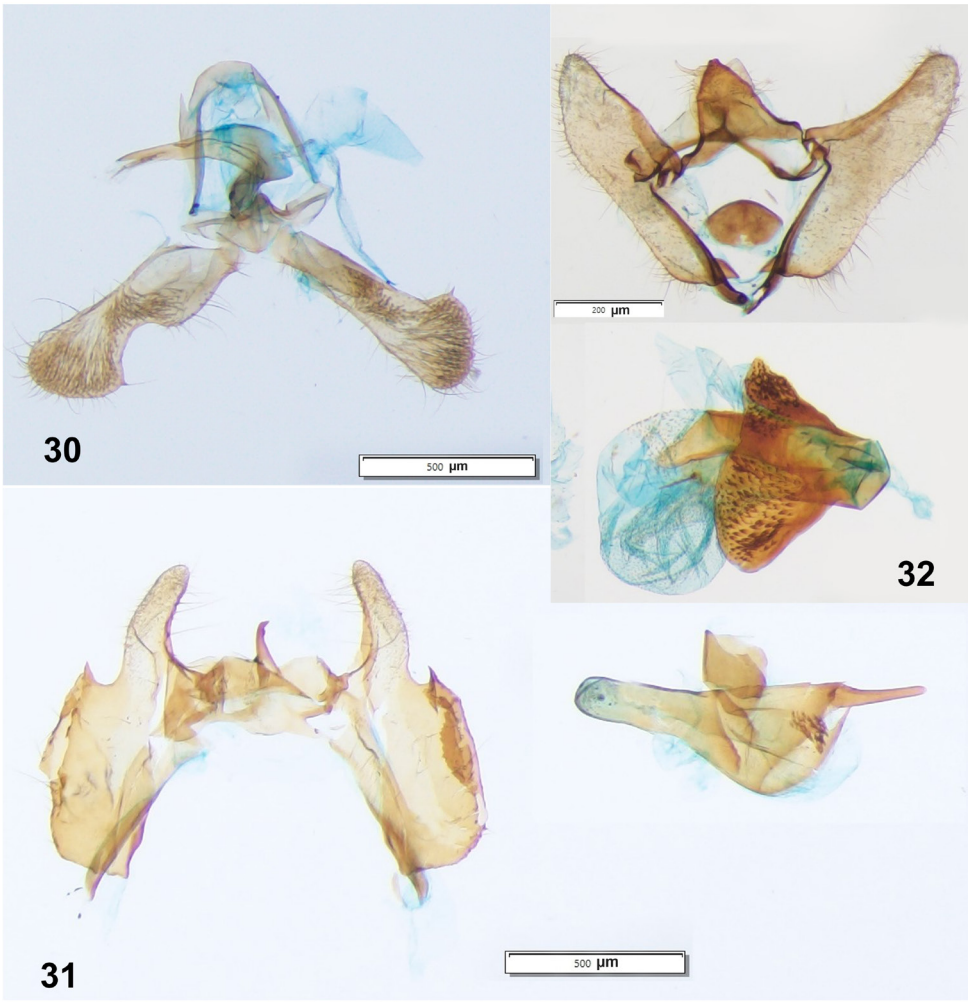
Material examined. 2 male, Russia, Republic of Altai, Uznenya village, 51°31′50.7″ N, 85°56′01.6″ E, 31.v.2025, leg. T. Zalutsky (TZB).

Distribution. Transpalearctic species, a noted summer migrant to the north (Yakovlev et al. 2015; Anikin et al. 2019; Pittaway and Kitching 2023).

Notes. The spring discovery may indicate the formation of stable populations in the Republic of Altai.



Figures 28–29. Lepidoptera, adult specimens: **28.** *Agrius convolvuli* (TZB); **29.** *Macroglossum stellatarum* (TZB).



Figures 30–32. Genitalia of Tortricidae: **30.** *Cydia medicaginis* (RYB); **31.** *Cochylis pallidana* (RYB); **32.** *Aethes cnicana* (RYB).

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References

Anikin VV, Baryshnikova SV, Beljaev EA, Budashkin YuI, Van Nieukerken EI, Dubatolov VV, Efetov KA, Zolotuhin VV, Knyazev SA, Kovtunovich VN, Kozlov MV, Kononenko VS, Lovtsova JuA, Lukhtanov VA, Lvovsky AL, Matov AYu, Mironov VG, Nedoshivina, S.V., Ponomarenko MG, Sviridov VA, Sinev SYu, Solovjev AV, Streltsov AN, Trofimova TA, Ustjuzhanin PY, Shovkoon DF, Yakovlev RV (2019) Catalogue of the Lepidoptera of Russia. St. Petersburg, 448 pp. [In Russian]

Artemov IA (2018) *Dichostylis micheliana* (L.) Nees (1834). In: Red Book of the Novosibirsk Region: Animals, Plants and Fungi. Andrey Khristolyubov Printing House, Novosibirsk, 376 p. [In Russian]

Baranyai B, Joosten H (2016) Biology, ecology, use, conservation and cultivation of round-leaved sundew (*Drosera rotundifolia* L.): a review. Mires and Peat 18: 1–28.

Bayanov MG, Kniss VA, Khabibulin VF (2015) Catalogue of Animals of Bashkortostan. Ufa, 348 pp. [In Russian]

Daniel F (1962) Monographie der palaearktischen Cossidae. VI. Genus *Dyspessa* Hbn. Erster Teil. Mitteilungen der Münchner Entomologischen Gesellschaft 52: 1–38.

Didmanidze EA (1978) Lepidoptera of arid landscapes of Georgia (Heterocera). Tbilisi, 318 pp. [In Russian]

Didmanidze EA, Yakovlev RV (2007) Cossidae (Lepidoptera) of Georgia. Entomofauna 28(1): 1–16.

Didmanidze EA, Zurashvili TM (1981) Materials on study of Macrolepidoptera of Vashlovanskii Reserve. Zapovedniki Gruzii 5: 76–118. [In Russian]

Davydov EA (2001) An annotated list of lichens of the western part of Altai (Russia). Novosti sistematiki nizshikh rastenii [Novitates Systematicae Plantarum non Vascularium] 35: 140–161. [In Russian]

Davydov EA (2012) Lichens of the Tigirek Nature Reserve. Proceedings of the Tigirek Nature Reserve 4: 72–89. https://doi.org/10.53005/20767390_2011_4_72 [In Russian]

Davydov EA, Konoreva LA (2015) Lichens of North Altai Province (Altaisky krai). Vestnik Altaiskoy nauki 1: 197–201. [In Russian]

Davydov EA, Kosachev P, Golyakov P, Zalutsky T, Svirin E, Kudrov O, Pavlova P, Storozhenko Y, Yakovchenko L, Yakovlev R (2023) New and noteworthy records of Plants, Lichens and Lepidoptera in Altai Territory and Republic of Altai (Southern Siberia). Acta Biologica Sibirica 9: 243–264. https://doi.org/10.5281/zenodo.7865738

Davydov EA, Printzen Ch (2012) Additions to the lichen biota of the Altai Mountains (Siberia). III. Turczaninowia 15 (1): 85–91.

Davydov EA, Smirnova LY, Storozhenko YV, Zyatnina MV, Ryzhkova PY, Yakovchenko LS (2022) New localities of protected lichen species on the Salair Ridge

in Altai Territory. Acta Biologica Sibirica 8: 143–153. https://doi.org/10.5281/zenodo.7700540

Dymytrova LV (2011) Notes on the genus *Scoliciosporum* (Lecanorales, Ascomycota) in Ukraine. Polish Botanical Journal 56(1): 61–75.

Efetov KA, Budashkin YI (1990) Lepidoptera of Crimea (Macroheterocera). Tavria, Simferopol, 112 pp. [In Russian]

Freina JJ de (1983) 4. Beitrag zur systematischen Erfassung der Bombyces- und SphingesFauna Kleinasiens. Neue Kenntnisse über Artenspektrum, Systematik und Nomeklatur sowie Beschreibungen neuer Taxa. Mitteilungen der Münchner Entomologischen Gesellschaft 72: 57–127.

Freina JJ de (1996) Cossidae. In: Karsholt O, Razowski J (Eds) The Lepidoptera of Europe. A distributional Checklist. Apollo Books, Soro, 129–130.

Freina JJ de, Witt TJ (1990) Die Bombyces und Sphinges der Westpalaearktis (Insecta, Lepidoptera). Bd. 2. Cossoidea, Hepialoidea, Pyraloidea, Zygaenoidea. Edition Forschung & Wissenschaft, München, 134 p.

Galanina I, Ezhkin A, Yakovchenko L, Himelbrant D, Zheludeva E, Skirina I (2017) *Physcia alnophila* (Vain.) Loht. et al. in the Russian Far East. Turczaninowia 20(1): 99–106. https://doi.org/10.14258/turczaninowia.20.1.8

Gerasimovicz LV (2012) Scheuchzeriaceae. Key to plants of the Altai Territory. Publishing House of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 483 p. [In Russian]

Gordeev SY, Gordeeva TV, Rudykh SG (2022) Species Composition of Lepidoptera from Erebidae, Nolidae, and Noctuidae Families (Noctuoidea, Lepidoptera) in Western Transbaikalia (the Republic of Buryatia). Nature of Inner Asia 1(20): 7–71. https://doi.org/10.18101/2542-0623-2022-1-7-71 [In Russian]

Ismagilov NN, Krivosheev MM (2020) *Catocala helena* Eversmann, 1856 (Lepidoptera: Erebidae) – a new acclimatized species in the South Ural fauna. Rare and endangered species of animals and plants of the republic of Bashkortostan 30: 20–22. [In Russian]

Ismailov AB (2021) New species of lichens for Dagestan. Botanicheskiy Zhurnal 106(1): 77–80. [In Russian]

Kazenas VL, Bayzhanov MKh (2009) Insects of Korgalzhyn Reserve and adjacent territories. Almaty, 270 pp. [In Russian]

Kharpukhaeva TM (2017) Epiphytic lichens inhabiting *Chosenia arbutifolia* in the Republic of Buryatia. Priroda Vnutrennei Azii 1(2): 37–42. [In Russian]

Kharpukhaeva TM, Urbanavichyus GP (2015) Findings of new and rare species of lichens for the Republic of Buryatia. Botanicheskiy Zhurnal 100(8): 850–854. [In Russian]

Knyazev SA (2011) The first record of *Catocala helena* Eversmann, 1856 (Lepidoptera: Noctuidae) in Cisbaikalia. Eversmannia 27(8): 126. [In Russian]

Knyazev SA (2020) Catalogue of Lepidoptera of Omsk Oblast (Russia). Macrolepidoptera. Families: Hepialidae, Brachodidae, Cossidae, Sesiidae, Limacodidae, Zygaenidae, Thyrididae, Drepanidae, Uraniidae, Geometridae, Lasiocampidae,

Lemoniidae, Endromididae, Saturniidae, Sphingidae, Notodontidae, Lymantriidae, Arctiidae, Syntomidae, Erebidae, Nolidae, Noctuidae, Hesperiidae, Papilionidae, Pieridae, Lycaenidae, Nymphalidae, Satyridae. Acta Biologica Sibirica 6: 139–226. https://doi.org/10.3897/abs.6.e53005

Knyazev SA (2022) Catalogue of Lepidoptera of Omsk Region (Russia). Microlepidoptera. Families: Eriocraniidae, Nepticulidae, Opostegidae, Adelidae, Prodoxidae, Incurvariidae, Psychidae, Tineidae, Roeslerstammiidae, Bucculatricidae, Gracillariidae, Yponomeutidae, Argyresthiidae, Plutelliidae, Acrolepiidae, Glyphipterigidae, Ypsolophidae, Lyonetiidae, Bedelliidae, Ethmiidae, Depressariidae, Elachistidae, Parametriotidae, Scythrididae, Chimabachidae, Cryptolechiidae, Oecophoridae, Batrachedridae, Coleophoridae, Momphidae, Blastobasidae, Autostichidae, Cosmopterigidae, Gelechiidae, Pterophoridae, Epermeniidae, Choreutidae, Galacticidae, Tortricidae, Pyralidae, Crambidae. Acta Biologica Sibirica 8: 17–87. https://doi.org/10.5281/zenodo.7690616

Knyazev SA, Gorbunov PY, Melyakh SF, Nedoshivina SV, Grebennikov ND, Matov AY (2021) The first record of *Catocala helena* Eversmann, 1856 (Lepidoptera, Erebidae) in Europe with notes on its distribution in Russia. Ecologica Montenegrina 40: 68–74. https://doi.org/10.37828/em.2021.40.5

Knyazev SA, Ivonin VV (2025) New and interesting records of early spring and late autumn Heterocera species (Insecta, Lepidoptera) in Altai Republic (Russia, South Siberia). Acta Biologica Sibirica 11: 1077–1090. https://doi.org/10.5281/zenodo.17396816

Knyazev SA, Ivonin VV, Saykina SM (2022) New records of rare and local butterflies and moths (Insecta, Lepidoptera) in Omsk and Novosibirsk regions. Amurian Zoological Journal 14(2): 321–334. https://doi.org/10.33910/2686-9519-2022-14-2-321-334 [In Russian]

Kononenko VS (2010) Noctuidae Sibiricae. Vol. 2. Micronoctuidae, Noctuidae: Rivulinae – Agaristinae. Entomological Press, Sorø, 475 pp.

Konoreva L, Chesnokov S, Yakovchenko L, Ohmura Y, Davydov E (2020) New records to the lichen biota of Russia, 1 – Sakhalin Region, with new records for the Russian Far East and the Asian part of Russia. Botanica Pacifica 9(2): 161–173. https://doi.org/10.17581/bp.2020.09203

Kosachev PA, Albach DC (2022) Floristic novelties of *Veronica* subgenus *Pseudolysimachium* in Altai. Turczaninowia 25(3): 153–158. https://doi.org/10.14258/turczaninowia.25.3.14

Kotkova VM, Czernyadjeva IV, Davydov EA, Doroshina GY, Efimov DY, Efimova LA, Frolov IV, Gabiger YI, Glushchenko MY, Gorbunova IA, Himelbrant DE, Ignatenko ME, Kalinina LB, Kurbatova LE, Kushnevskaya HV, Lashchinsky NN, Lotiev KY, Moroz EL, Notov AA, Novozhilov YK, Otmakhov YS, Plikina NV, Popova NN, Potemkin AD, Putilina VA, Ryzhkova PY, Sambyla CN, Smirnova EV, Stepanchikova IS, Storozhenko YV, Troeva EI, Tsurykau AG, Vishnyakov VS, Vlasenko AV, Vlasenko VA, Volkova EA, Volosnova LF, Yakovchenko LS, Yatsenko-Stepanova TN, Zhuykov KA, Zueva AS (2023) New cryptogamic re-

cords. 11. Novosti sistematiki nizshikh rastenii 57(1): 155–204. https://doi.org/10.31111/nsnr/2023.57.1.155

Krasnoborov IM, Korotkova EI (1988) Scheuchzeriaceae. Flora Sibiriae. Lycopodiaceae – Hydrocharitaceae. Vol. 1. Nauka, Novosibirsk, 111 p. [In Russian]

Makryi TV (2008) Lichens. In: Cryptogams of the Baikal National Park. "Geo"Publishing House, Novosibirsk, 113–259.

Matov AY, Belova NA (2016) To the fauna and ecology of Bombycoidea and Noctuoidea Moths (Lepidoptera: Lasiocampidae, Endromididae, Sphingidae, Notodontidae, Erebidae, Nolidae, Noctuidae). Amurian Zoological Journal 8(1): 52–63. [In Russian]

Muchnik EE, Kazakova MV (2020) New finds of rare and protected lichens in the Ryazan region (Russia). Bulletin of Perm University. Series Biology 4: 264–271. https://doi.org/10.17072/1994-9952-2020-4-264-271

Palice Z, Printzen Ch, Spribille T, Svensson M, Tønsberg T, Urbanavichene I, Yakovchenko LS, Ekman S (2013) Taxonomy of the genus *Myrionora*, with a second species from the Southern Hemisphere. Lichenologist 45(2): 159–167. https://doi.org/10.1017/S0024282912000692

Paukov A, Teptina A (2012) New records of lichens from Middle Urals, Russia. Folia Cryptogamica Estonica 49: 39–43.

Pittaway AR (2020) Sphingidae of Western Palearctic. http://tpittaway.tripod.com/sphinx/list.htm

Pittaway AR, Kitching IJ (2020) Sphingidae of the Eastern Palaearctic (including Siberia, the Russian Far East, Mongolia, China, Taiwan, the Korean Peninsula and Japan). http://tpittaway.tripod.com/china/china.htm

Red Book of the Tambov Region (2019) Mosses, vascular plants, fungi, lichens. Second edition. OOO "TPS", Tambov, 480 pp. [In Russian]

Romanoff NM (1885) Les Lepidopteres de la Transcaucasie. Deuxième partie. Mémoires sur les Lépidoptères par N. M. Romanoff 2: 1–118.

Sedelnikova NV (2007) Flora of the Salair Ridge. Lichens. "Geo" Publishing House, Novosibirsk, 98–136. [In Russian]

Seregin AP (Ed.) (2024) Digital herbarium of Moscow State University: Electronic resource. Access mode: https://doi.org/10.17581/bp.plant.depo.msu.ru/ (access date 05/04/2024.13S01)

Silantieva MM (2013) A checklist of the flora of the Altai region: monograph. Altai Publishing House, Barnaul, 520 pp. [In Russian]

Silbernagel A (1944) Die Schmetterlinge der Ochrid-Gegend in Macedonien. Zeitschrift der Wiener Entomologischen Gesellschaft 29: 184–187.

Shekhovtsova IN (2024) Cyperaceae. Checklist of vascular plants of Asien Russia. Botanica pacifica. A journal of plants science and conservation 13 (Special issue): 3–310.

Shmakov AI (2005) Cystopteridaceae. Flora Altaica. Vol. 1. AzBuka, Barnaul, 205–220. [In Russian]

Spuler A (1910) Die Schmetterlinge Europas, 2. E. Schweizerbart, Stuttgart, 523 pp.

Stepanchikova IS, Himelbrant DE, Kukwa MV, Kuznetsova ES (2010) Additions to the lichen flora of protected areas Gulf of Finland (within St. Petersburg). Novosti sistematiki nizshikh rasteniy [Novitates Systematicae Plantarum non Vascularium] 44: 237–244. https://doi.org/10.31111/nsnr/2010.44.237 [In Russian]

Streltzov AN, Ustjuzhanin PYa, Morozov PS, Naydenov AE, Spitsyn VM, Yakovlev RV (2022) Lepidoptera of South Ossetia (Northern Transcaucasia). Part II. Cossidae, Limacodidae, Erebidae (Lymantriinae, Arctiinae, Syntominae, Notodontinae), Lasiocampidae, Lemoniidae, Saturniidae, Sphingidae, Drepanidae and Cimeliidae. Acta Biologica Sibirica 8: 647–654. https://doi.org/10.14258/abs.v8.e40

Terekhina TA, Kopytina TM (2016) *Drosera rotundifolia* L. In: Red Data Book of the Altai Territory. Vol. 1. Rare and endangered plant and fungi species. Altai State University Publishing, Barnaul, 101 p. [In Russian]

Timokhina SA, Bondareva NV (1990) *Rhynchospora* Vahl – Ocheretnik. Flora Sibiriae. Cyperaceae. Vol. 3. Nauka, Novosibirsk, 31 p. [In Russian]

Titov SV, Volynkin AV, Dubatolov VV, Černila M, Reznichenko SM, Bychkov VS (2017) Noctuoid moths (Lepidoptera: Erebidae, Nolidae, Noctuidae) of North-East Kazakhstan (Pavlodar Region). Ukrainian Journal of Ecology 7(2): 142–164.

Titov SV, Volynkin AV, Pulikova GI, Kaptyonkina AG (2022). The first record of *Catocala helena* Eversmann, 1856 from Kazakhstan (Lepidoptera: Noctuoidea: Erebidae: Catocalini). Ecologica Montenegrina 52: 42–48. https://doi.org/10.37828/em.2022.52.6

Urbanavichene I, Urbanavichus G (2019) New records of lichens and allied fungi from the Kostroma Region, Russia. Folia Cryptogamica Estonica 56: 53–62. https://doi.org/10.12697/fce.2019.56.06

Urbanavichene IN (2008) Genus *Physcia* (Schreb.) Michx. In: Opredelitel lishaynikov Rossii [Handbook of lichen of Russia]. Nauka, St. Petersburg 10: 258–276. [In Russian]

Urbanavichus G (2010) A checklist of the lichen flora of Russia. Nauka, St. Petersburg, 194 pp. [In Russian]

Urbanavicius GP, Stepanov NV (2022) *Collema dichotomum*. In: Red Book of the Krasnoyarsk Territory. In 2 vols. Vol. 2: Rare and endangered species of wild plants and fungi. Siberian Federal University, Krasnoyarsk, 588 p. [In Russian]

Urbanavichus GP, Urbanavichene IN (2022) The core of the Kologriv Forest State Nature Reserve (Russia) is a hotspot of lichen biodiversity in the southern taiga of Eastern Europe. Nature Conservation Research 7(3): 46–63. https://doi.org/10.24189/ncr.2022.029 [In Russian]

Urbanavichus GP, Urbanavichene IN, Vondrák J, Ismailov A (2021) Epiphytic lichen biota of Prielbrusie national park (Northern Caucasus, Russia). Nature Conservation Research 6: 77–94. https://doi.org/10.24189/ncr.2021.048

Verkhozina AV, Biryukov RYu, Bogdanova ES, Bondareva VV, Chernykh DV, Dorofeev NV, Dorofeyev VI, Ebel AL, Efimov PG, Efremov AN, Erst AS, Fateryga AV, Gamova NS, Glazunov VA, Gudkova PD, Juramurodov IJ, Kapitonova OA, Ke-

chaykin AA, Khapugin AA, Kosachev PA, Krupkina LI, Kulagina MA, Kuzmin IV, Lian Lian, Koychubekova GA, Lazkov GA, Luferov AN, Mochalova OA, Murtazaliev RA, Nesterov VN, Nikolaenko SA, Novikova LA, Ovchinnikova SV, Plikina NV, Saksonov SV, Senator SA, Silaeva TB, Suleymanova GF, Hang Sun, Tarasov DV, Tojibaev KSh, Vasjukov VM, Wei Wang, Zibzeev EG, Zolotov DV, Zykova EYu, Krivenko DA (2021) Findings to the flora of Russia and adjacent countries: New national and regional vascular plant records. Botanica Pacifica 3 10 (1): 1–24. https://doi.org/10.17581/bp.2021.10110

Vershinina SE, Himelbrant DE, Kuznetsova ES, Gabysheva LM, Gabyshev EM (2012) The first data on the lichen flora of the Olekminsky State Reserve (Republic of Sakha-Yakutia). Bulletin of Tver State University. Series: Biology and Ecology 25(3): 13–149.

Yakovlev RV (2004) Carpenter-Moths (Lepidoptera, Cossidae) of Siberia. Euroasian entomological journal 3(2): 155–163. [In Russian]

Yakovlev RV (2005) New data on distribution and systematic of Cossidae (Lepidoptera) of Europe and adjacent territories. Eversmannia 3–4: 18–27. [In Russian]

Yakovlev RV (2011) Catalogue of the Family Cossidae of the Old World. Neue Entomologische Nachrichten 66: 1–129.

Yakovlev RV, Gus'kova EV, Doroshkin VV, Titov SV (2015) Sphingidae of the Mongolian Altai (Lepidoptera: Sphingidae). SHILAP Revista de lepidopterologia 43(171): 467–478.

Yakovlev RV, Poltavsky AN, Ilyina EV, Shchurov VI, Witt Th (2015) Cossidae (Lepidoptera) of the Russian Caucasus with the description of a new species. Zootaxa 4044(2): 270–288. http://dx.doi.org/10.11646/zootaxa.4044.2.5

Yakovlev RV, Shapoval NA, Ivonin VV, Knyazev SA, Kuftina GN, Masharskiy AE (2020) A new species of Carpenter Moths (Lepidoptera, Cossidae) from Tarbagatai (NE Kazakhstan) and Altai (SW Siberia, Russia) Mountains. Zootaxa 4896(1): 085–095. https://doi.org/10.11646/zootaxa.4896.1.3

Yakovlev RV, Shapoval NA, Shapoval GN, Naydenov AE (2022) Review of the *Dyspessa salicicola* (Eversmann, 1848) species group (Lepidoptera, Cossidae: Cossinae). Acta Biologica Sibirica 8: 693–712. https://doi.org/10.14258/abs.v8.e43

Yakovlev RV, Volgin IG (2020) New finding of Convolvulus hawkmoth – *Agrius convolvuli* (Linnaeus, 1758) (Lepidoptera, Sphingidae) in the south of Western Siberia. Ecologica Montenegrina 38: 155–157. http://dx.doi.org/10.37828/em.2020.38.23

Yakovlev RV, Witt TJ (2016) Carpenter-moths of Turkmenistan (Lepidoptera: Cossidae). Biological Bulletin of Bogdan Chmelnitskiy Melitopol State Pedagogical University 6(3): 164–173.

Zhdanov IS (2013) Additions to the lichen flora of Central Siberian Biosphere Reserve (Krasnoyarsk Territory). Novosti sistematiki nizshikh rastenii 47: 200–214. https://doi.org/10.31111/nsnr/2013.47.200 [In Russian]

Zhurbenko MP (2000) Lichens and lichenicolous fungi of the Putoransky Reserve. Flora and fauna of nature reserves 89: 55. [In Russian]

Zolotarenko GS, Dubatolov VV (2000) A check-list of Noctuidae (Lepidoptera) of the Russian Part of the West-Siberian Plain. Far Eastern Entomologist 94: 1–23.
Zolotuhin VV (2015) Lappet Moths (Lepidoptera: Lasiocampidae) of Russia and Adjacent Territories. Korporaciya tekhnologiy prodvizheniya, Ulyanovsk, 384 pp. [In Russian]