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RESEARCH ARTICLE

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

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Abstract

New localities for six species of plants (*Achillea schmakovii*, *Botrychium lunaria*, *Cystopteris altajensis*, *Euphrasia altaica*, *Agrostis tuvinica* and *Calamagrostis* × *thyrsoidea*), five species of lichens (*Bacidina phacodes*, *Leptogium burnetiae*, *Melanelixia albertana*, *Tuckermannopsis chlorophylla*, *Tetramelas chloroleucus*) and nine species of Lepidoptera (*Parnassius apollo*, *Lampides boeticus*, *Limenitis sydyi*, *Maniola jurtina*, *Erebia kindermanni*, *Eudia pavonia*, *Proserpinus proserpina*, *Macroglossum stellatarum*, *Catocala elocata*) are reported for Altai Territory and Republic of Altai. Lichens *Bacidina phacodes*, *Tuckermannopsis chlorophylla*, *Tetramelas chloroleucus* and Lepidoptera *Lampides boeticus*, *Maniola jurtina*, *Proserpinus proserpina* and *Catocala elocata* are reported as new for Altai Territory, *Macroglossum stellatarum* and *Limenitis sydyi* are new for the Republic of Altai. Localities and ecological preferences are indicated for each species.

Keywords
Altai Mountains, biodiversity, fauna, flora, lichenized fungus, Red Data Book, Salair National Park, Tigirek Natural Reserve

Introduction

The biodiversity of the Altai Territory and the Republic of Altai is quite well studied. The territories, relatively rich in flora and fauna, has been traditionally attracting numerous researchers, which resulted in a comparatively complete study of plants and animals in these regions (Krasnoborov et al. 2003, 2012; Kamelin et al. 2005; Tshikolovets et al. 2009; Silantieva 2013; Anikin et al. 2019). Despite the good knowledge of the flora and fauna of Altai, the discovery of new species and the locations of rare species in this territory continues (Kipriyanova and Romanov 2021; Smirnov et al. 2021; Zolotov et al. 2022, etc.). However data on lichens is still incomplete (Davydov 2014). New records of protected lichens were published recently (Davydov et al. 2022). In the recent years we have obtained lots of new records on the distribution of a number of species of plants, lichens and insects in the Altai Territory and the Republic of Altai (including rare and protected ones), which are reported in this message.

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, as well as from the photographs registered on the site iNaturalist.org.

The material is kept in the following collections:

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

ESB – private collection of Egor Svirin (Barnaul)

OKB – private collection of Oleg Kudrov (Barnaul)

TZB – private collection of Timofey Zalutsky (Barnaul).

Result

Plants

Family Asteraceae

***Achillea schmakovii* Kupr.**
Figures 1–2

Material examined. Russia, Republic of Altai, Kosh-Agachsky District, the valley of Usay River at its left bank, N 49°30.461 E, 88°09.959, elev. 2512 m, alpine meadow, 07.viii.2018, P. Kosachev (www.gbif.org/occurrence/3873199159) (Fig. 1); Altai Territory, Zmeinogorsky District, Tigireksky Range, Razrabotnaya Mt., 51.01779 N, 83.03232 E, elev. 1630 m, 10.vii.2021. P. Kosachev (www.inaturalist.org/observations/96219660) (Fig. 2).

Distribution. A South Siberian – Dzungarian subendemic species. A very rare species throughout its distribution. The species is found in subalpine meadows in the upper part of the forest belt, known from Kazakhstan: Dzungarian Alatau and Russia: Kemerovo Region (Sheremetova et al. 2023); Republic of Altai: Seminsky Ridge – locus classicus, Sumultinsky Ridge (Kuprijanov 1995; Doronkin et al. 2003; Seregin 2023; Vaganov et al. 2023c, d, e), Kuraysky Range (Vaganov et al. 2023a, b), Altai Territory: Korgonsky and Tigireksky ranges, without exact locations (Shaulo 2003; Silantieva 2013) and from Korgonsky Range at the upper reaches of the Sentelek River (Smirnov 2016); Krasnoyarsk Territory: Sayans, Ergaki Park (Stepanov 2016).

Family Botrychiaceae

***Botrychium lunaria* (L.) Sw.**
Figure 3

Material examined. Altai Territory, Zmeinogorsky District, Tigireksky Range, Skalnaya Mt., 51.0436 N, 83.000729 E, elev. 1560 m, 11.vii.2022, P. Kosachev (www.gbif.org/occurrence/3873199159).

Distribution. It is a widespread mainly forest species found in Eurasia, North and South America, and Australia.

Notes. It is a rare species in the Altai Territory, listed in the Red Data Book of the Altai Territory with the status 3b. In total, 10 locations are known in the region two of them were on the Tigirek Range (Chaynaya Mt. – Smirnov et al. 2005; Tigireksky Range – Usik and Usik 2005; Shmakov 2016a). The location reported here with geographical coordinates complements and clarifies the distribution of the species in the Altai Territory.

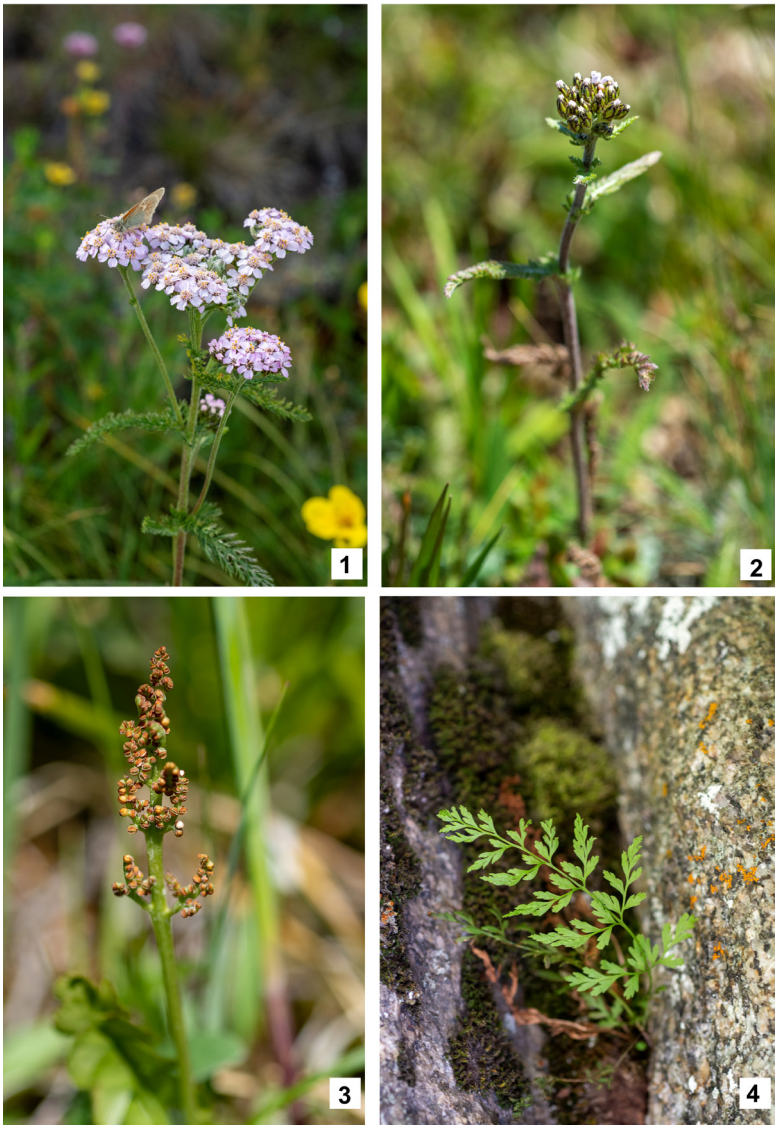
Family Cystopteridaceae

***Cystopteris altajensis* Gureeva**
Figure 4

Material examined. Altai Territory, Zmeinogorsky District, Tigireksky Range, Razrabotnaya Mt., south-west slope, 51.028151N, 83.026428E, elev. 1900 m, 14.vii.2021, Kosachev P. (www.inaturalist.org/observations/96756155).

Distribution. A rare species, endemic to Altai Mountains.

Notes. It is listed in the Red Book of the Altai Territory (Shmakov 2016b). Only nine locations are known in the region. The closest points to our observation are indicated for the left bank of the Bolshoy Tigirek River (Zmeinogorsky District) by S.V. Smirnov et al. (2005), as well as without precise indication by N.A. Usik and S.A. Usik (2005) for the Beloretsky District of the Tigirek Reserve. Our data supplement and clarify the distribution of the species in Altai.



Figures 1–4. Plants from Altai Territory: **1.** *Achillea schmakovii*, field photo by P.A. Kosachev; **2.** *A. schmakovii*, field photo by P.A. Kosachev; **3.** *Botrychium lunaria*, field photo by P.A. Kosachev; **4.** *Cystopteris altajensis*, field photo by P.A. Kosachev.

Family Orobanchaceae

***Euphrasia altaica* Serg.**
Figure 5

Material examined. Altai Territory, Zmeinogorsky District, Tigireksky Range, Skalnaya Mt., 51.046096 N, 82.993126 E, elev. 1570 m, 17.vii.2022, P. Kosachev (ALTB: TIGZ; www.inaturalist.org/observations/127998747).

Distribution. South Siberian mountain species.

Notes. For the Republic of Altai, it is a common species in the high-mountain belt, where it grows in meadows and in mountain tundra. The species was only once recorded to the Altai Territory from the Soloneshensky District: Bashchelak Range, the watershed of the Shchepeta and Bashchelak rivers (Strelnikova 2000; Silantieva 2013).

Family Poaceae

***Agrostis tuvinica* Peschkova**
Figures 6–7

Material examined. Altai Territory, Zmeinogorsky District, Tigireksky Range, Skalnaya Mt., 51.046096 N, 82.993126 E, elev. 1580 m, herbs-sedge-cereals mountain tundra. 20.vii.2021, P. Kosachev (ALTB: TIGZ).

Distribution. The species is distributed in the middle and upper mountain belts of Southern Siberia and Northern Mongolia on subalpine meadows and forest clearings, rocky slopes (Tzvelev and Probatova 2019).

Notes. This is the second location of the species in the Altai Territory. The species was first recorded by D.V. Zolotov (2019) also from the Tigireksky Range (between the streem Babiy Klyuch and the left tributary of the River Krakhalikha). It is about 3–4 km west of our location.

***Calamagrostis* × *thyrsoidea* K. Koch**
Figures 8–9

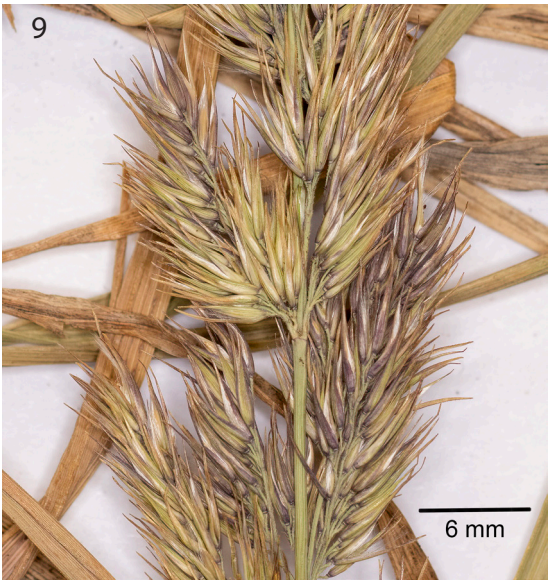
Material examined. Altai Territory, Tigireksky Range, surroundings of the village of Tigirek, Chaynaya Mt., southeastern slope and the summit, 51.135225 N, 83.030095 E, elev. 500–700 m, petrophytic meadow steppe and thickets of shrubs on the slope, dry steppe and rock outcrops near the summit. 09.vii.2022, P. Kosachev (ALTB: TIGZ).

Distribution. A rare hybrid, until recently found only in the Russian Caucasus and in the Amur region (Tzvelev and Probatova 2019). It occurs in places where parent species (*C. epigeios* (L.) Roth and *C. pseudophragmites* (Haller f.) Koeler) grow together. Zolotov et al. (2022b) listed five locations in the Altai Territory.

Notes. Our record new for the Krasnoshchokovsky District complements the distribution of this rare hybrid.

Figure 5. *Euphrasia altaica*, field photo by P.A. Kosachev.

Figures 6–7. Plants from Altai Territory: **6.** *Agrostis tuvinica*, herbarium material: general appearance (TIGZ). Photo by P.A. Kosachev; **7.** *Agrostis tuvinica*, herbarium material: part of the general inflorescence with spikelets in the middle part (TIGZ). Photo by P.A. Kosachev.



Figures 8–9. Plants from Altai Territory: **8.** *Calamagrostis* × *thyrsoidea*, herbarium material: general appearance (TIGZ). Photo by P.A. Kosachev; **9.** *Calamagrostis* × *thyrsoidea*, part of the general inflorescence with spikelets in the middle part (TIGZ). Photo by P.A. Kosachev.

Lichens

Family Ramalinaceae

***Bacidina phacodes* (Körber) Vězda**

Material examined. Russia, Altai Territory, Togulsky District, Salair Ridge, at 13 km to NE from the Novoiushino, Togul River bassin, 53°42′03,9″N, 85°59′38,3″E, elev. 330 m, 24.viii.2020, linden (*Tilia sibirica*) forest, on bark *Populus tremula*, leg. E.A. Davydov (21730) and Y.V. Storozhenko (TIGZ).

Distribution. The species was reported from Europe, Asia, North America and New Zealand; widely distributed throughout Russia (Urbanavichus 2010, 2018).

Notes. New record for the Altai Territory.

Family Collemataceae

***Leptogium burnetiae* C.W. Dodge**
Figure 10

Material examined. Russia, Altai Territory, Krasnoshchokovsky District, Tigirek-sky Range, left bank of the Malyi Tigirek River, 51°07′21″N, 83°02′23″E, elev. 530 m, 5.iii.2016, on bark of *Sorbus sibirica*, leg. E.A. Davydov 15916 (ALTB); Krasnosh-

chokovsky District, Tigireksky Range, at 5 km SSW of the Tigirek village, right bank of Bol′shoi Tigirek River, right bank of L′vinyi Kamen′ stream, 51°06′30″N, 82°59′E, elev. 500–600 m, 08.v.2007, Chern′ forest, on bark *Sorbus sibirica*, leg E.A. Davydov 17480 (ALTB); left bank of the Malyi Tigirek River at 2.3 km SE from the Tigirek village, 51°07′40″N, 83°02′30″E, elev. 517 m, 3.iii.2016, on bark of an old *Salix* sp., leg. E.A. Davydov 16697 (ALTB); right bank of Dragunsky Klyuch Stream, *Salix-Betula* forest, 51°11′01.2″N, 82°58′26.3″E, elev. 808 m, 06.v.2007, on bark of *Salix* sp., leg. E.A. Davydov 14529 (ALTB); western part, *Abies sibirica – Betula pendula* fern – tall grass forest, 51°06′49″N, 83°01′01″E, elev. 1000 m, 12.vii.2006, on bark of *Populus tremula*, leg. E.A. Davydov 14535, 14521, 14522 (ALTB); Soloneshensky District, Bashchelaksky range, velley of Shinok River, downtream of the waterfall, mixed forest, 51°21′43″N, 84°35′18″E, elev. 950 m, 22.vii.2015, on *Salix caprea*, leg. E.A. Davydov 12277 (ALTB); Smolensky District, Cherginsky Range, at 13 km SE of Belokuriha City, headwaters of the Chernovaya River, big granite boulder in the *Pinus sylvestris* forest, 51°54′45″N, 84°50′50″E, elev. 800 m, 11.vii.2016, on mossed rocks, leg. E.A. Davydov 16559 (ALTB); Charyshsky District, Tigireksky range, at 3.5 km SW from the community of Tigirek, right bank of the Lvinyi Kamen′ Stream, *Abies sibirica* subnemoral forest (Chern′ forest), 51°06′49″N, 83°01′02″E, elev. 600 m, 26.vi.2014, leg. E.A. Davydov (14528) and L.S. Yakovchenko (ALTB); Togulsky District, Salair Ridge, headwaters of the Malaya Mostovaya River at 10.5 km NEE from the Novokamenka settlement, *Abies sibirica* dominanted subnemoral forest, 53°23′28″N, 86°27′47″E, elev. 400 m, 15.ix.2022, on mossed trunk of fallen *Populus tremula*, leg. E.A. Davydov (21743), Y.V. Storozhenko (TIGZ).

Distribution. In the Altai Territory it is known from the Krasnoshchokovsky and Charyshsky Districts (Davydov 2016). In Russia, it is found in the Caucasus, the Urals, throughout Siberia and the Far East. Outside of Russia, it is common in the mountains of Southern Europe, foreign Asia, Africa, North and South America, on the Hawaiian Islands (Makryi 2008).

Notes. *Leptogium burnetiae* is included to the Red Data Book of the Russian Federation (Makryi 2008). The species has been reported for Altai Territory in the Red Data Book of the Altai Territory (Davydov 2016) basing on unpublished data of the author, i.e. without adequate documentation in the scientific literature. Here we amend this inaccuracy and cite labels of all collected specimens. The species reported here for the first time for North Altai and Salair botanical-georgaphical provinces of Altai Territory.

Family Parmeliaceae

***Melanelixia albertana* (Ahti) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch**
Figure 11

Material examined. Russia, Altai Territory, Togulsky District, Salair Ridge, 3.5 km to NE from the Shumikha, Togul River basin, right bank of the Togul River, between

the Togul and the Mochishche rivers, aspen (*Populus tremula*) forest, 53°38′32.4″N, 86°01′37.9″E, elev. 221 m, 18.vi.2019, leg. E.A. Davydov (21249) and L.S. Yakovchenko (TIGZ).

Distribution. In the Altai Territory, it is known from the Altaisky and Zmeinogorsky Districts (Davydov 2001; Davydov and Konoreva 2015). *Melanelixia albertana* is a rare Asian-North American species with a disjunctive distribution area; in Russia it is recorded for the Baical area, Altai and the Caucasus (Urbanavichene and Urbanavichus 1998; Urbanavichus and Urbanavichene 2020).

Notes. The species is included to the Red Data Book of the Altai Territory (Davydov 2016) and reported here for the first time for Salair botanical-georgaphical province of the Altai Territory.

Tuckermannopsis chlorophylla (Willd.) Hale

Material examined. Russia, Altai Territory, Zarinsky District, Salair Ridge, at 11 km SE of Alambai, left bank of the Togul River near its mouth, *Pinus sibirica* – *Picea obovata* – *Abies sibirica* forest, 53°56′00″N, 85°52′16″E, elev. 340 m, 14.ix.2019, on bark of *Pinus sibirica*, leg. E.A. Davydov 21233 (ALTB).

Distribution. This very common lichen is widespread with a mainly in cool-temperate, bipolar distribution; rare in tropical regions (Smith et al. 2009). In Russia it was recorded in many regions from the European part of the Far East (Urbanavichus 2010).

Notes. New record for the Altai Territory.

Figure 10. *Leptogium burnetiae* on mossed bark of *Populus tremula*, field photo by E. A. Davydov. Scale = 5 mm.

Family Caliciaceae

***Tetramelas chloroleucus* (Körber) A. Nordin**
Figure 13

Material examined. Russia, Altai Territory, Zmeinogorsky District, Tigireksky Range, right bank of the Strizhanka River, stream flowing from the unnamed Mt. (elev. 1043 m), *Abies sibirica* dominanted mountain taiga subnemoral forest, 50°55′59″N, 82°57′25″E, elev. 720-800 m, 15.vii.2005, on bark of *Abies sibirica*, leg. E. A. Davydov 14624 (TIGZ); Eltsovsky District, Salair Ridge, 6.5 km north of the village Kaltyk, floodplain thickets of willow (*Salix* sp.), 53°16′50.6″N, 86°27′53.7″E, elev. 332 m, 17.vi.2019, on bark of *Salix* sp., leg. E.A. Davydov 21726 and L.S. Yakovchenko (TIGZ).

Distribution. Widely distributed in forests in European mountains (Alps, Carpathians, Pyrenees), it is also found in Fennoscandia and the Baltic countries. In Russia, it is recorded for the European (Murmansk and Leningrad regions) and Asian parts (Himelbrant et al. 2017; Czarnota and Tanona 2020).

Notes. New record for the Altai Territory.

Figure 11. *Melanelixia albertana*. E. A. Davydov (21249) and L.S. Yakovchenko (TIGZ). Photo by E. A. Davydov. Scale = 5 mm.

Figures 12–13. Lichens from Altai Territory: **12.** *Tuckermannopsis chlorophylla* on bark of *Pinus sibirica*, field photo by E. A. Davydov. Scale = 1 cm.; **13.** *Tetramelas chloroleucus*. E. A. Davydov 14624 (TIGZ). Photo by E. A. Davydov. Scale = 5 mm.

Insects

Family Papilionidae

***Parnassius apollo* (Linnaeus, 1758)**

Distribution. Widely distributed in Altai Territory (Yakovlev et al. 2016), the most vulnerable are the populations of the subspecies *P. a. meinhardi* Sheljuzhko, 1924, character for the steppe and forest-steppe territories in Tyumen, Novosibirsk, Omsk and Altai Territories and Northern Kazakhstan. In Altai Territory, the subspecies was known from Pankrushikha and Topchikha Districts (Volgin and Yakovlev 2018). A population of *P. apollo meinhardi* was found by Egor Svirin in the environs of Mamontovo village (Mamontovo District).

Family Nymphalidae

***Limenitis sydyi* Kindermann in Lederer, 1853**
Figures 14–15

Material examined. 1 female, Russia, Republic of Altai, near Turochak village, 52°16′56.2″N 87°07′51.6″, 333 m, 8.vii.2022, leg. T. Zalutsky (TZB); 1 female, Russia, Altai Territory, near Barnaul, Belmesyovo, 53°10′52.1″N, 83°42′59.4″, 140 m, 26.vii.2022, leg. T. Zalutsky (TZB); 1 male, Russia, Altai Territory, near Barnaul, Belmesyovo, 26.vi.2022, leg. O.A. Kudrov (OKB).

Distribution. Species with a disjunctive Altai–Far East habitat. The Russian part of the western portion of the habitat includes Zmeinogorskiy, Kuryinskiy and Charyshskiy Districts of Altai Territory (Standel 1957; Lukhtanov et al. 2007; Gallo and Della Bruna 2013; Yakovlev and Naydenov 2014; Anikin et al. 2019).

Notes. Included in the Red Data Book of the Altai Territory (Perunov et al. 2016). In the Altai – nominative subspecies (Volynkin, Yakovlev 2015). New Record for the Republic of Altai.

***Maniola jurtina* (Linnaeus, 1758)**
Figures 16–19

Material examined. 1 male, Russia, Altai Territory, Zalesovo District, Borisovo vill., near the Tatarka River, leg. O. Kudrov (OKB); 1 female, Russia, Altai Territory, near Barnaul, Belmesyovo, 16.vii.2022, leg. O.A. Kudrov (OKB).

Distribution. Western Palearctic before Western Siberia (Eckweiler and Bozano 2011). In Western Siberia regularly found during the two last decades, actively moving to East (Yakovlev 1998a; Knyazev and Kosterin 2003; Kosterin et al. 2007; Tshikolovets et al. 2009; Knyazev 2009, 2020; Rud'ko and Kosterin 2010; Ivonin et al. 2016; Kostyunin and Klyueva 2020).

Notes. In Western Siberia ssp. *janira* (Linnaeus, 1758) (Eckweiler and Bozano 2011). Known from Novosibirsk, Omsk, Tyumen and Kemerovo Regions. New record for the Altai Territory.

Figures 14–19. Adult specimens of Papilionoidea: **14.** *Limenitis sydyi*, male, upperside, Altai Territory, near Barnaul, Belmesyovo, 26.vi.2022, leg. O.A. Kudrov (OKB); **15.** *L. sydyi*, male, underside; **16.** *Maniola jurtina*, male, upperside, Altai Territory, Zalesovo District, Borisovo vill. (OKB); **17.** *M. jurtina*, male, underside; **18.** *M. jurtina*, female, Russia, Altai Territory, near Barnaul, Belmesyovo, 16.vii.2022, leg. O.A. Kudrov (OKB); **19.** *M. jurtina*, female, underside.

***Erebia kindermanni* Staudinger, 1881**
Figures 20–21

Material examined. 1 female, Russia, Altai Territory, Zmeinogorsk District, Tigirek Reserve, 51.029335° N, 83.0269° E, 10.ix.2022 (photo by P. Kosachev) (www.inaturalist.org/observations/96687104).

Distribution. Endemic of Altai Mountains (Kosterin 1994; Yakovlev 1998b, 2004, 2012; Huang et al. 2000; Lukhtanov et al. 2007; Tshikolovets et al. 2009).

Notes. Rare, protected species (Kosterin et al. 2021). New locality for the Altai Territory.

Family Lycaenidae

***Lampides boeticus* (Linnaeus, 1767)**
Figure 22

Material examined. 1 male, Russia, Altai Territory, Krasnostchekovo District, near Tigirek village, 51.142619° N, 83.042396° E, 10.ix.2022 (photo by P. Golyakov) (https://www.inaturalist.org/observations/134452096).

Distribution. Subtropics and tropics of all the continents. In Russia as a migrant (Gorbunov 2001). In Siberia known from Novosibirsk Region and Buryatia Republic (Korshunov 1966; Tshikolovets et al. 2002; Ivonin et al. 2011; Anikin et al. 2019).

Family Saturniidae

***Eudia pavonia* (Linnaeus, 1758)**
Figure 23

Material examined. 1 female, Russia, Altai Territory, Belokurikha, 51.98761°N 84.97208°E, 1.v.2022 (photo by P. Pavlova).

Distribution. Transpalearctic species (Anikin et al. 2019), very rare in Western Siberia.

Family Sphingidae

***Proserpinus proserpina* (Pallas, 1771)**
Figure 24

Material examined. 1 male, Altai Territory, Rebrikha village, 53°05′12.6″N, 82°22′32.1″E, 28.v.2022, leg. E. Svirin (ESB).

Distribution. Occurs throughout central and southern Europe, east through Russia as far as Krasnoyarsk (Lavrov 1927; Izerskiy 1999; Danner et al. 1998; Anikin

et al. 2019; Maksimov et al. 2022). Also east from Turkey and Lebanon through northern Iraq, northern Iran, southern Turkmenistan and Uzbekistan, to the Pamir Mountains, Tian Shan, eastern Afghanistan and west Xizang/Tibet; thence northeast through eastern Kazakhstan to western Xinjiang. Also present in the Atlas Mountains of northwest Africa (Pittaway and Kitching 2023). New record for the Altai Territory.

Notes. Very rare in Siberia. Known from Novosibirsk, Omsk, Tomsk and Krasnoyarsk territories.

***Macroglossum stellatarum* (Linnaeus, 1758)**
Figure 25

Material examined. 1 male, Russia, Republic of Altai, Barangol Village, 51°40′55.1″N, 85°46′46.3″E, 336 m, 9.ix.2022, 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). New record for the Republic of Altai.

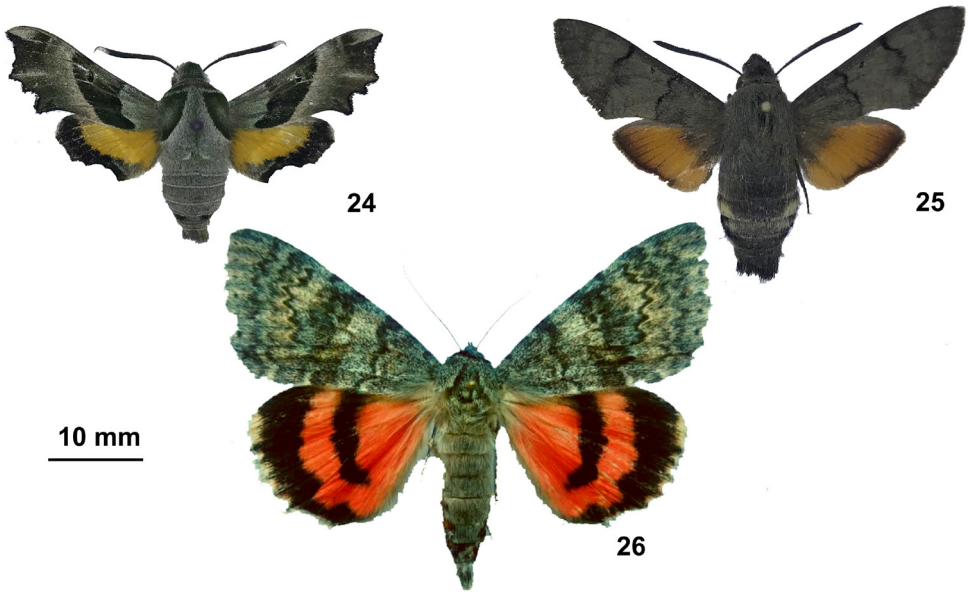
Figures 20–23. Adult specimens of Lepidoptera: **20.** *Erebia kindermanni*, female (photo by P.A. Kosachev); **21.** *E. kindermanni*, female (photo by P.A. Kosachev); **22.** *Lampides boeticus*, male (photo by P.V. Golyakov); **23.** *Eudia pavonia*, female (photo by P.A. Pavlova).

Family Erebidae

***Catocala elocata* (Esper, 1788)**
Figure 26

Material examined. 1 male, Russia, Altai Territory, Romanovo District, Tambovski village, 52°38′56.6″N 80°59′19.3″E, 20–30.viii.2022, E. Ashenbrenner leg. (ESB).

Distribution. From Central and Southern Europe to the Near and Middle East and Central Asia (Kravchenko et al. 2004). In Russia (to East) before Orenburg Region in Southern Ural (Anikin et al. 2017, 2019). New record for Siberia and the Altai Territory.



Figures 24–26. Adult specimens of Lepidoptera: **24.** *Proserpinus proserpina*, male, Altai Territory, Rebrikha village, 53°05′12.6″N 82°22′32.1″E, 28.v.2022, leg. E. Svirin (ESB); **25.** *Macroglossum stellatarum*, male, Russia, Republic of Altai, Barangol Village, 51°40′55.1″N 85°46′46.3″E, 336 m, 9.ix.2022, leg. T. Zalutsky (TZB); **26.** *Catocala elocata*, male, Russia, Altai Territory, Romanovo District, Tambovski village, 52°38′56.6″N 80°59′19.3″E, 20–30.viii.2022, leg. E. Ashenbrenner (ESB).

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