

New records of Lepidoptera on the South of the West Siberian Plain: report on 2024 field season

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Abstract

Fourteen species of Sesiidae, Pieridae, Lycaenidae, Satyridae, Geometridae, Arctiidae, Erebidae and Noctuidae are reported from the territory of Omsk and Novosibirsk Regions of Russia. *Chamaesphecia crassicornis* Bartel, 1912 is new to Asian part of Russia, *Synanthedon altaica* O. Gorbunov, 2018 and *Gonospileia munita* (Hübner, 1813) are new to the Russian Part of the West Siberian Plain. Five species are reported from the territory of Omsk Region for the first time. Nine species are new to the fauna of Novosibirsk Region. The first record of *Triphysa nervosa* Motschulsky, 1866 on the South of the West Siberian Plain provided.

Keywords

Lepidoptera, Sesiidae, Pieridae, Lycaenidae, Satyridae, Geometridae, Arctiidae, Erebidae, Noctuidae, West Siberia, Omsk Region, Novosibirsk Region, fauna, new records

Introduction

Our research on the Lepidoptera fauna in the south of Western Siberia has been greatly developed in recent years. As a result, we have published a number of faunal articles (Knyazev et al. 2017; 2019; Knyazev 2020; Knyazev and Ponomarev 2020; Knyazev and Mironov 2021; Ivonin et al. 2021; Knyazev et al. 2021; 2022; 2024a; 2024b). In the 2024 field season, we found some species that had not previously

been observed in the studied regions. Some of the species turned out to be new to Western Siberia. These materials became the basis of this article.

Materials and methods

All material processed within the framework of this article was collected on the territory of the Omsk and Novosibirsk regions in 2024 by authors using standard method by butterfly net and by using mercury lamps 250W; Sesiidae specimens were attracted on pheromones (Pherobank) and caught by air butterfly net near dispensers. The identification of the material was carried out using modern keys and taxonomic revisions.

Therefore, we also use the data freely available on the popular iNaturalist (2024) platform for citizen science. The links to an iNaturalist observation has the following format: <http://www.inaturalist.org/observations/x>, where 'x' is its unique numeral (of variable number of digits). These unique numerals are provided in parentheses in the text below. All photographic records are geo-tagged; the coordinates are provided below in the decimal degree format.

All specimens are stored in personal collections of Svyatoslav Knyazev (SKO, Omsk, Russia), Konstantin Ponomarev (KPO, Omsk, Russia) and Vadim Ivonin (VIN, Novosibirsk, Russia).

Geographical coordinates of the collecting localities (in alphabetical order) are presented below:

Omsk Region:

Bol'shaya Bitcha – Ust'-Ishim district, 3 km NW of Bol'shaya Bitcha village, 57°53'29.03"N, 70°34'21.05"E;

Buzan – Russko-Polyansky district, 2 km SE of Buzan village, 53°54'38.93"N, 73°57'9.98"E;

Elita – Omsky district, Omsk City, Elita gardens, 55°01'48.8"N, 73°32'54.3"E;

Shukhovo – Znamensky district, 3 km S of Shukhovo village, 57°12'12.51"N, 73°27'53.11"E;

Tatarka – Cherlasky district, 1 km NW of Tatarka, 53°58'34.47"N, 75°2'17.44"E;

Novosibirsk Region:

Beryozovskiye Skaly – Maslyanino district, 6 km NE of Beryozovo village, 54°33'07.58"N, 84°02'09.43"E;

Chebachye – Karasuk district, lake Chebachye near Alybai village, 53°42'46"N, 78°09'37"E;

Iskitimsky Bor – Iskitim district, Iskitim town suburbs, right bank of the river Berd', 54°36'40"N, 83°20'52"E;

Karasuk – Karasuk district, Karasuk town suburbs, 53°43'01.68"N, 78°06'37.16"E;

Khorosheye (Fig. 1) – Karasuk district, Khorosheye village vicinities, 54°33'12"N, 75°50'41"E;

Krasnozerskoye – Krasnozersky district, Krasnozerskoye village vicinity, river Karasuk, 53°59'1.20"N, 79°13'58.57"E;

NGPU – Novosibirsk City, Oktyabr'sky district, Vybornaya street, forest, 53°59'41"N, 83°00'16"E;

Osinovka – Karasuk district, Osinovka village vicinities, 53°42'39.49"N, 77°42'38.01"E;

Polyanovo – Tshistoozernyi district, environs of the village Polyanovo, 54°34'20.36"N, 75°53'57.71"E;

Seyatel' – Novosibirsk City, Sovetsky district, Seyatel' rail station, 54°52'22.13"N, 83°04'01.42"E;

Shipunikha – Iskitim district, 67 km rail station, river Shipunikha bank, 54°32'28"N, 83°20'51"E



Figure 1. Habitat of *Plebejides pylaon* in Novosibirsk Region, Karasuk district, Khorosheye village vicinities, 12.06.2024, photo by V.V. Ivonin.

Results

Species list

Sesiidae

Synanthedon altaica O. Gorbunov, 2018

Fig. 16

Material examined. Novosibirsk Region: 1♂, Iskitimsky Bor, 13.07.2007, V.V. Ivonin (VIN); 1♂, NGPU, 17.07.2015 (photo by S.I. and A.I. Misheniny).

Photographic records on iNaturalist (2024) (identification numbers for specific observations are given in parenthesis). Novosibirsk Region: 1♂, Novosibirsk, Sovetsky district, Nizhnyaya El'tsovka, 54.88868, 83.05883, 21.07.2019, egorgavrilov, (251067822); 1♂, Novosibirsk, Sovetsky district, Nizhnyaya El'tsovka, 54.88555, 83.10401, 13.07.2024, onotole, (229014798); 1♂, Novosibirsk, Zael'tsovsky district, dendropark, 55.06116, 82.86952, 15.07.2023, Ilya Sukhov (173152087).

Remark. First record on the territory of the West Siberian Plain and in Novosibirsk Region. The species was described from Altai Republic (Gorbunov 2018) and has not been recorded anywhere else in Russia (Gorbunov 2019). The specimens found mainly in pine forests. In the valley of the Berd' River it was collected in a clearing in a shaded, moist biotope, on the inflorescence of *Aegopodium podagraria* (Linnaeus, 1753). In the Inyushinsky forest, the specimen also fed on the inflorescence of *A. podagraria*. The caterpillars develops in the trunks of Rosaceae, possibly *Prunus padus* (Linnaeus, 1753) (personal communication by O. Gorbunov).

Dipchasphecia altaica O.Gorbunov, 1991

Figs 2, 17

Material examined. Omsk Region: 3♂, Elita, at pheromones, 1.VII.2024, S.A. Knyazev (SKO). Novosibirsk Region: 1♂, Shipunikha, 21.06.2000, V.V. Ivonin (VIN); 1♂, 8♀, Shipunikha, 15.06.2008, V.V. Ivonin (VIN); 9♂, 2♀, Shipunikha, 09.06.2009, V.V. Ivonin (VIN); 2♀, Polyanovo, 27.06.2022, V.V. Ivonin (VIN); 1♂, 2♀, Chebachye, 17.06.2023, V.V. Ivonin (VIN).

Remark. New to Omsk and Novosibirsk Regions. The species is distributed on the South of the West Siberian Plain, in Altai and Tyva Republics (Gorbunov 2019). In the Omsk region, specimens were collected about 16 hours on the right bank of the Om' River near a small plantation of *Goniolimon speciosum* (L.) Boiss. In the Novosibirsk region, specimens were active in the bright sun closer to Midday. By the Shipunikha River, they kept to the settled rocky southern slope with *G. speciosum*, occasionally visiting its inflorescences, sat down on dry blades of grasses. After 16 o'clock, they came across sitting on *G. speciosum* inflorescences.

Chamaesphecia crassicornis Bartel, 1912

Fig. 3

Material examined. 1♂, Buzan, at pheromones, 28.VI.2024, K.B. Ponomarev (KPO).

Remark. First record of the species in Asian Part of Russia, in Siberia and in Omsk Region. The species is distributed on the territory of Russia in the Middle and Lower Volga region, as well as in the Crimea (Gorbunov 2019). The new finding is located ca 2000 km to the East from the previously known distribution area of the species. The single male was attracted at pheromones in the steppe on the South of Omsk Region, near *Euphorbia* sp. plantations.

Pieridae

Colias erate (Esper, 1803)

Fig. 15

Material examined. 1♂, Krasnozerskoye, 29.07.2024, A. Mironenko (the specimen is missing).

Remark. New to Novosibirsk Region. Central Palaearctic species which is rare in Western Siberia. In the neighboring Omsk region, this species is also rare and was encountered only once, in 2007, when 9 specimens were collected (Knyazev 2009). It is obvious that the northern border of the distribution area of the species passes here and pulsates in different years. Further south, the species becomes more common according to the personal observations of the authors.

Lycaenidae

Plebejides pylaon (Fischer de Waldheim, 1832)

Figs 4, 5

Material examined. 2♂, 3♀, Khorosheye, 12-13.06.2024, V.V. Ivonin (VIN).

Remark. Rare and local species in Novosibirsk Region. Two males were collected on June 12 and 13, 1899 by the expedition of Professor N.F. Kashchenko to the Baraba steppe, at the Ubinskaya railway station (Meinhard 1905). Since then, the species has not been registered in the Novosibirsk region. A small population of *P. pylaon* was found in the south-west of the Region 125 years later. The butterflies kept to a small area of the steppe, visiting the inflorescences of the *Oxytropis pilosa* L., (identification by O.E. Kosterin). It was reported from the Southern Urals, Kuznetsk Highlands, Altai Territory (Ivonin et al. 2011), also from Omsk region (Knyazev 2020) in Western Siberia.

Satyridae

Triphysa nervosa Motschulsky, 1866

Figs 6–9

Material examined. 1♂, 4♀, Shukhovo, 16.VI.2024, S.A. Knyazev (SKO).

Remark. New to Omsk Region. The main range of the species extends from the mountains of southern Siberia to the Russian Far East, also in N Korea and NE China. The isolated small populations of *T. nervosa* were known from the NW Part of the West Siberian Plain in Khanty-Mansi Autonomous district (Dubatolov et al. 2016). A new find in the Omsk Region indicates the possible widespread distribution of the species in the swamps of the West Siberian Plain.

Geometridae

Eupithecia veratraria Herrich-Schäffer, 1848

Material examined. 1 ♀, Bol'shaya Bitcha, 8-9.VII.2024, S.A. Knyazev, S.M. Saikina (SKO).

Remark. New to Omsk Region. Transpalaeartic species. It was reported from Baraba forest-steppe on the territory of the West Siberian Plain (Vasilenko 2006). The larval food plants are *Veratrum* species (Belyaev 2016).

Eupithecia thalictrata (Püngeler, 1902)

Material examined. 1 ♂, Seyatel', 16.06.2016, V.V. Ivonin (VIN); 1 ♂, Beryozovskiy Skaly, 19.05.2022, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. Transpalaeartic species. In West Siberia it was reported from Omsk Region (Knyazev and Mironov 2015; Knyazev 2020). The larval food plants are *Thalictrum* species (Mironov 2003).

Arctiidae

Manulea pygmaeola (Doubleday, 1847)

Fig. 14

Material examined. 1 ♂, Osinovka, 11.07.2022; 2 ♂, Khorosheye, 09.07.2024 and 17.07.2024, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. The species is widely distributed in Russia from European Part to Altai Mountains. On the territory of the West Siberian Plain *M. pygmaeola* was reported from Omsk Region (Knyazev 2020) and from Altai Territory (Pavlova 2024). Few specimens were collected in the steppe near small grove in the south-west of the Novosibirsk Region.

Erebidae

Gonospileia munita (Hübner, 1813)

Fig. 10

Material examined. 1 ♂, Tatarka, 27-28.VI.2024, S.A. Knyazev, S.M. Saikina (SKO).

Remark. First record of the species in Russian Part of the West Siberian Plain and in Omsk Region. Previously known distribution of this species is in Volga-Don Region, Lower Volga and Southern Urals in Russia (Matov et al. 2019). Also *G. munita* was reported from Pavlodar Region in NE Kazakhstan (Titov et al. 2017). The single specimen was collected on the South of Omsk Region on the right bank of the river Irtysh. The larval food plants of *G. munita* are members of the family Fabaceae: *Glycyrrhiza* and *Trifolium* (Matov and Kononenko 2012).

***Catocala bella* Butler, 1877**

Fig. 11

Material examined. 7♂, 3♀, Karasuk, 29.07.2024 and 07.08.2024, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. This Far Eastern species was discovered in Western Siberia in the Omsk region and is now gradually colonizing its territory (Knyazev et al. 2010; Knyazev 2020; Knyazev et al. 2022). In the Novosibirsk region, one population of this species was found near a forest plantation of *Populus*, *Malus* and *Ulmus* trees near the Karasuk-2 railway station. One specimen attracted at light was visually observed on August 4, 2022, not so far from this place. The main food plants of caterpillars of *C. bella* are *Malus* and *Pyrus* (Matov and Kononenko 2012) which means that further settlement of the species in Siberia can take place through plantings and natural places of *Malus* trees growth.

Noctuidae***Cosmia affinis* (Linnaeus, 1767)**

Fig. 12

Material examined. 1♀, Karasuk, 29.07.2024, V.V. Ivonin (VIN).

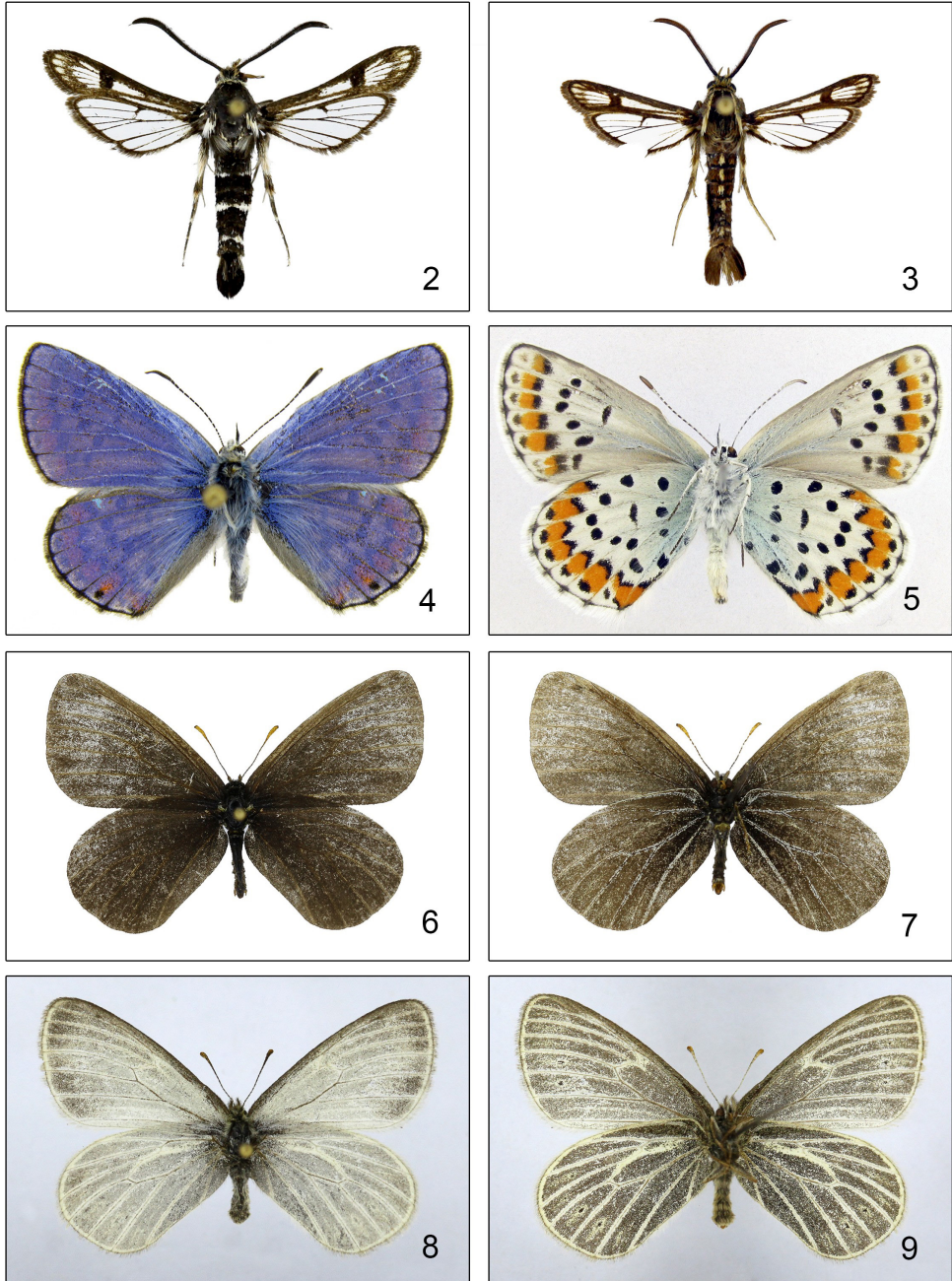
Remark. New to Novosibirsk Region where it is rare. This transpalearctic species is widely distributed in Russia from European Part to the Far East with the gap in Eastern Siberia (Matov et al. 2019). In West Siberia *C. affinis* was reported from different localities in Omsk Region (Knyazev et al. 2010; Knyazev 2020) and from Altai territory (Zolotarev and Dubatolov 2000). The single specimen was collected in the saline steppe near small grove in the south-west of the Novosibirsk Region. The larval food plants are different trees: *Quercus*, *Betula*, *Populus*, *Salix*, *Tilia*, *Celtis*, *Ulmus*, *Zelkova*, *Prunus* (Matov and Kononenko 2012).

***Hadena magnolii* (Boisduval, 1829)**

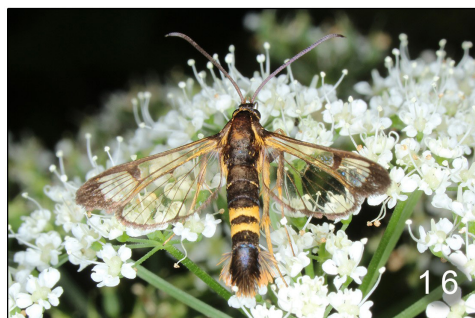
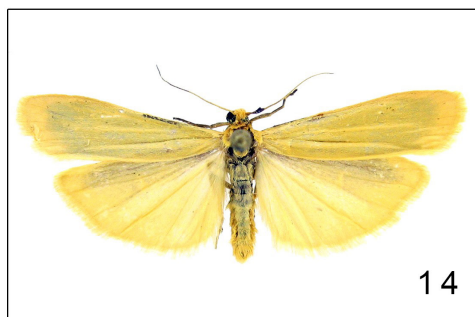
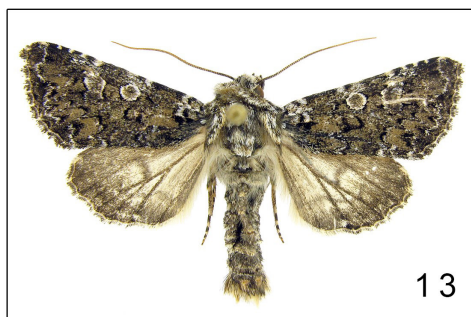
Fig. 13

Material examined. 1♂, Khorosheye, 12.06.2024, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region where it is rare. Central Palearctic steppe species. In Russia it is distributed on the South of European part, on Southern Urals (Matov et al. 2019) and on the South of Western Siberia where it was reported from Omsk Region (Knyazev 2020) and from Altai Territory (Pavlova 2024). Now, as expected and quite naturally, this species has been discovered in the saline steppe near small grove on the south-west of the Novosibirsk region. The larval food plants are *Melandrium* and *Silene* (Matov and Kononenko 2012).



Figures 2–9. Lepidoptera new to Omsk and Novosibirsk regions. 2 – *Dipchasphecia altaica*, Elita, 1.VII.2024, S.A. Knyazev (SKO); 3 – *Chamaesphecia crassicornis*, Buzan, 28.VI.2024, K.B. Ponomarev (KPO); 4 – *Plebejides pylaon*, ♂, upperside, Khorosheye, 12-13.06.2024, V.V. Ivonin (VIN); 5 – *Plebejides pylaon*, ♂, underside, same data, V.V. Ivonin (VIN); 6 – *Triphysa nervosa*, ♂, upperside, Shukhovo, 16.VI.2024, S.A. Knyazev (SKO); 7 – *Triphysa nervosa*, ♂, underside, same data, S.A. Knyazev (SKO); 8 – *Triphysa nervosa*, ♀, upperside, same data, S.A. Knyazev (SKO); 9 – *Triphysa nervosa*, ♀, underside, same data, S.A. Knyazev (SKO).



Figures 10–17. Lepidoptera new to Omsk and Novosibirsk regions. **10** – *Gonospileia munita*, Tatarka, 27-28.VI.2024, S.A. Knyazev, S.M. Saikina (SKO); **11** – *Catocala bella*, Karasuk, 6.08.2024, V.V. Ivonin (VIN); **12** – *Cosmia affinis*, Karasuk, 29.07.2024, V.V. Ivonin (VIN); **13** – *Hadenia magnolii*, Khorosheye, 12.06.2024, V.V. Ivonin (VIN); **14** – *Manulea pygmaeola*, Khorosheye, 09.07.2024, V.V. Ivonin (VIN); **15** – *Colias erate*, ♂, Krasnozerskoye, 29.07.2024, photo by A. Mironenko; **16** – *Synanthedon altaica*, NGPU, 17.07.2015, photo by S.I. and A.I. Misheniny; **17** – *Dipchasphecia altaica*, Chebacheye, 17.06.2023, photo by V.V. Ivonin.

Euxoa eruta (Hübner, 1827)

Material examined. 2♂, Osinovka, 03.06.2022 and 11.07.2022, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. Euro-Siberian subboreal species distributed in Russia from European part and Southern Urals to Western Siberia, Altai and Buryatia (Kononenko 2005, Volynkin 2012). On the territory of the West Siberian Plain it was reported from some localities on the South of Omsk Region (Knyazev 2020) in North Kazakhstan (Knyazev and Zuban` 2016) and in Pavlodar Region in North-East Kazakhstan (Titov et al. 2017). In Novosibirsk Region two specimens were collected in Kulunda steppe. The larval food plants unknown, possible different steppe grasses.

Conclusion

Thus, the fauna of Macrolepidoptera of Omsk Region now includes 1013 species. The number of Sesiidae species in the fauna of Omsk Region is 15, Satyridae – 28 species, Geometridae – 264 species, Erebidae – 53 species. The number of Lepidoptera species in Novosibirsk Region has been replenished with 9 species and now includes: Sesiidae – 13 species, Geometridae – 283, Arctiidae – 41, Erebidae – 51, Noctuidae – 397.

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