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Articles

New records of Macroheterocera (Insecta, Lepidoptera) on the South of West Siberia. Result of expeditions in 2022–2023

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This article considers 12 species from the families of Geometridae, Notodontidae, Erebidae, Noctuidae reported from the territory of Omsk and Novosibirsk Regions of Russia. 5 species are new to Omsk Region, among them, *Horisme aemulata* (Hübner, 1813), *Herminia grisealis* ([Denis & Schiffermüller], 1775), *Hydraecia osseola* (Staudinger, 1882), *Euxoa hastifera* (Donzel, 1847), *Agrotis robusta* Eversmann, 1856. 7 species are new to Novosibirsk Region, among them, *Limeria macraria* Staudinger, 1892, *Scopula tessellaria* (Boisduval, 1840), *Cerura przewalskyi* (Alheraky, 1882), *Pachetra sagittigera* (Hufnagel, 1766), *Hadena christophi* (Möschler, 1862), *Mythimna anderreggii* (Boisduval, 1840), *Agrotis robusta* Eversmann, 1856. The presence of *Phaiogramma etruscaria* (Zeller, 1849) in Novosibirsk Region confirmed by new materials.

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Keywords

Lepidoptera, Heterocera, Geometridae, Notodontidae, Erebidae, Noctuidae, West Siberia, Omsk Region, Novosibirsk Region, Fauna, new records, biodiversity

Introduction

In the last two decades, the authors have been actively researching the Lepidoptera fauna in the south of Western Siberia. In 2023, the first author made expeditions to the northern regions of Omsk region, as well as to the south near the border with Kazakhstan. The second author made several expedition trips to the steppe territories in the south-west of Novosibirsk region in 2022-2023. Extensive collection materials were collected, including species not previously recorded in the studied regions. These materials became the basis of this article.

Materials and methods

All materials processed within the framework of this article was collected on the territory of Omsk and Novosibirsk Regions mainly in 2022-2023 by authors using standard methods by butterfly net and by using mercury lamps 250W. The identification of the material was carried out using modern keys and taxonomic revisions. All specimens deposited in collections of Svyatoslav Knyazev (SKO, Omsk, Russia) and Vadim Ivonin (VIN, Novosibirsk, Russia). A list of species made in accordance with the system of the Catalog of Lepidoptera of Russia (Sinev 2019).

Geographical coordinates of the collecting sites:

Omsk Region

Atmas – Cherlacksky district, 2 km N of Malyi Atmas vill., river Irtysh, 54° 0'48.74"N, 74°56'39.91"E;

**Bol`shaya Bitcha** (Fig.1) – Ust`-Ishimsky 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 vill., 53°54'40''N, 73°57'31''E;

Elnichnoye – Sedelnikovsky district, 1 km S of Elnichnoye vill., river Ui, 56°54'38.46"N, 76° 9'32.94"E;

Tleusai (Fig.2) – Russko-Polyansky district, 8 km SW of Khlebodarovka vill., river Tleusai, 53°42'7.53"N, 73°25'11.71"E;

Novosibirsk Region

Burla (Fig.3) – Karasuk district, river valley southwest of Khoroshoe village, 53°32'05.74"N, 78°28'19.07"E;

Karasart – Karasuk district, environs of Karasart village, valley of the Chuman River, steppe near the forest belt, 53°36'29.14"N, 78°19'13.10"E;

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

Khorosheye – Karasuk district, Khorosheye village vicinities, 53°36'13.73"N, 78°26'22.67"E;

Oktyabrskoye (Fig.4) – Karasuk district, 3,5 km South of Oktyabrskoye village, 53°28'12.72"N, 77°48'38.39"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;

Shagalovsky – Kochenevsky district, right bank of the river Tschik, 4 km SW of the Shagalovsky electric train rail station, Zarechnoye gardens community, 54°58'37"N, 82°21'23"E;

Solenoye (Fig.5) – Karasuk district, Lake Solenoye, east of the village Khorosheye, 53°33'59.86"N, 78°36'08.81"E.

Figure 1. *Habitat of Horisme aemulata, Herminia grisealis. Omsk region, Ust`-Ishimsky district, 3 km NW of Bol`shaya Bitcha village, 7.VI.2023, photo by S.A. Knyazev.*

Figure 2. *Habitat of Hydraecia osseola, Euxoa hastifera, Agrotis robusta. Omsk region, Russko-Polyansky district, 8 km SW of Khlebodarovka vill., river Tleusai, 26.VIII.2023, photo by S.A. Knyazev.*

Figure 3. *Habitat of Phaiogramma etruscaria, Hydraecia osseola. Novosibirsk region, Karasuk district, Burla river valley southwest of Khoroshoe village, 9.IX.2023, photo by V.V. Ivonin.*

Figure 4. *Habital of Phaiogramma etruscaria, Agrotis robusta. Novosibirsk region, Karasuk district, 3,5 km South of Oktyabrskoye village, 2. XI.2023, photo by V.V. Ivonin.*

Result

Family Geometridae

Horisme aemulata (Retzi Hübner, 1813)

Fig. 6

Material examined. Omsk Region: 1♀, Bol`shaya Bitcha, 7-8.VI.2023, at light, S.A. Knyazev, S.M. Saikina (SKO); 1♀, Elnichnoye, 26-27.VI.2014, at light, S.A. Knyazev (SKO).

Remark. New to Omsk Region and to the South-West Siberian Region in Catalogue of Lepidoptera

of Russia. This species was previously known from Middle-Ob` and Pre-Altai Regions (Sinev 2019) in West Siberia. The nearest known localities are in Tyumen` Region (Knyazev and Galich 2021). Outside of Siberia this species is sporadically distributed from Europe to Amur Region on the Russian Far East and Northern Mongolia (Hausmann and Viidalepp 2012). The single female was collected on a forest clearing in taiga zone (with the main forest-forming species of *Pinus sibirica*, *Pinus sylvestris*, *Picea abies*, *Betula pendula*, *Populus tremula*, *Tiliacordata*) on the North-West of Omsk Region.

***Limeria macraria* Staudinger, 1892**

Material examined. Novosibirsk Region: 1♂, Khorosheye, 02.VIII.2023, at light, V.V.Ivonin (VIN); Omsk Region: 1♂, Atmas, 17-18.VII.2020, at light, S.A. Knyazev (SKO).

Remark. New to Novosibirsk Region. Second record in Omsk Region. Rare and local small steppe species. This is the third discovery of the moth in Western Siberia. This species known from Omsk Region and Altai Territory (Knyazev et al. 2019; Knyazev 2020; Sinev 2019).

***Scopula tessellaria* (Boisduval, 1840)**

Fig. 7

Material examined. Novosibirsk Region: 1♂, Polyanovo, 13.VI.2022, at light, V.V.Ivonin (VIN); Omsk Region: 1♂, Buzan, 1.VI.2020, at light, S.A. Knyazev (SKO).

Remark. New to Novosibirsk Region. Second record in Omsk Region. Rare forest-steppe species. The single specimen in Novosibirsk Region was collected in the western part of the Barabinsk forest-steppe. In West Siberia it is known from Omsk Region and Altai Territory (Knyazev 2020; Sinev 2019).

***Phaiogramma etruscaria* (Zeller, 1849)**

Fig. 8

Material examined. Novosibirsk Region: 2♂, Osinovka, 03.VIII.2022; 2♂, Karasuk, 22.VIII.2022; 1♀, Karasart, 23.VIII.2022; 2♂, Oktyabrskoye, 02.IX.2023; 2♂, Khorosheye, 12. VII.2022, 15.VII.2022, 04.VIII.2022, 05.VIII.2022, 24.VIII.2022; 4♂3♀, Burla, 20.VIII.2023, 21.VIII.2023, 01.IX.2023, at light, V.V. Ivonin (VIN).

Remark. New material to Novosibirsk Region. Subboreal steppe species. *P. etruscaria* was indicated as possible species for Barabinskaya forest-steppe but materials are missing (Vasilenko 2006). So far it has been found by us in Kulunda steppe, where it is quite common and widespread.

Family Notodontidae

***Cerura przewalskyi* (Alphéraky, 1882)**

Material examined. Novosibirsk Region: 2♂, Karasuk, 01.VII.2023, 1♂, Shagalovsky, 15.V.2009, at light, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. This species was previously reported from the Omsk region in West Siberia (Knyazev et al. 2012; Knyazev 2020). In Novosibirsk region it was found in the forest-steppe areas of the left bank of the Ob` river.

Family Erebidae

***Herminia grisealis* ([Denis Schiffermüller], 1775)**

Fig. 9

Material examined. Omsk Region: 1♂, Bol`shaya Bitcha, 7-8.VI.2023, at light, S.A. Knyazev, S.M. Saikina (SKO).

Remark. New to Omsk Region. It was previously reported from Kurgan, Novosibirsk, Tomsk Regions and Altai territory in West Siberia (Zolotarenko and Dubatolov 2000).

Family Noctuidae

***Hydraecia osseola* (Staudinger, 1882)**

Fig. 10

Material examined. Omsk Region: 1♂, Tleusai, 27.VIII.2023, at light, S.A. Knyazev (SKO); **Novosibirsk Region:** 9♂ 2♀, Burla , 20.VIII.2023, 21.VIII.2023, 01.IX.2023, 09.IX.2023, at light, V.V. Ivonin (VIN).

Remark. New to Omsk Region. This species was known from Novosibirsk and Pavlodar Regions in West Siberia (Knyazev et al. 2022; Titov et al. 2017). A single male was collected in steppe on the South of Omsk Region, near the Kazakhstan border. In Novosibirsk region in 2023 this species was common on the border with Altai Territory in steppe biotopes.

***Pachetra sagittigera* (Hufnagel, 1766)**

Fig. 11

Material examined. Novosibirsk Region: 1♂1♀, Karasuk, 22.V.2023; 5♂, Khorosheye, 20-23.V.2023, at light, V.V. Ivonin (VIN); **Omsk region:** 6 specimens, Tleusai, 31.V.2023, at light, S.A. Knyazev (SKO).

Remark. New to Novosibirsk Region. New locality in Omsk region. In Western Siberia it is previously known from Omsk region (Knyazev et al. 2010; Knyazev 2020) and from Altai Territory (Volynkin 2012).

Figure 5. *Habital of Agrotis robusta. Novosibirsk region, Karasuk district, Lake Solenoye, east of the village Khorosheye, 22.VIII.2023, photo by V.V. Ivonin.*

***Hadena christophi* (Möschler, 1862)**

Material examined. Novosibirsk Region: 1♀, Khorosheye, 23.V.2023, at light, V.V. Ivonin (VIN).

Remark. New to Novosibirsk Region. Rare on the south of West Siberia, where it was known from Omsk region (Knyazev et al. 2011).

***Mythimna anderreggii* (Boisduval, 1840)**

Fig. 12

Material examined. Novosibirsk Region: 11♂4♀, Khorosheye, 20-23.05.2023, at light, V.V. Ivonin (VIN); **Omsk region:** 2♀, Tleusai, 31.V.2023, at light, S.A. Knyazev (SKO).

Remark. New to Novosibirsk Region. On the territory of West Siberian Plain this species was known from Omsk region (Knyazev et al. 2022). It was common in the south of the Kulunda steppe in May of 2023.

***Euxoa hastifera* (Donzel, 1847)**

Material examined. Omsk Region: 4♂, Tleusai, 27.VIII.2023, at light, S.A. Knyazev (SKO).

Remark. New to Omsk Region. Previously this species was known from Novosibirsk and Tomsk Regions of West Siberia (Zolotarenko and Dubatolov 2000).


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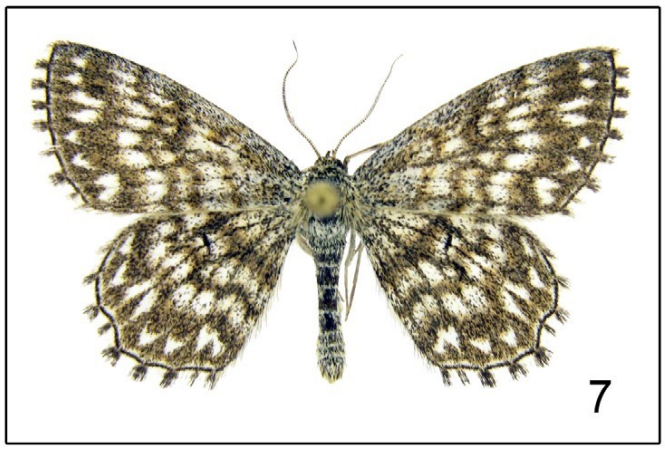
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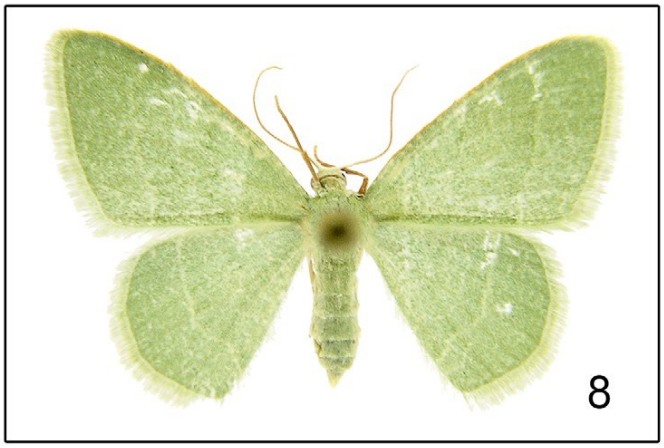
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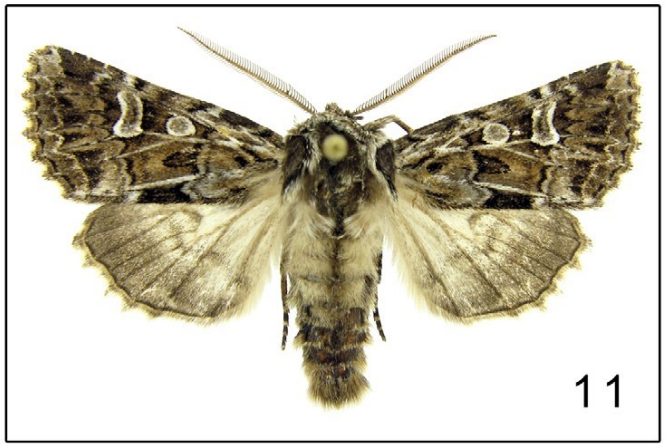
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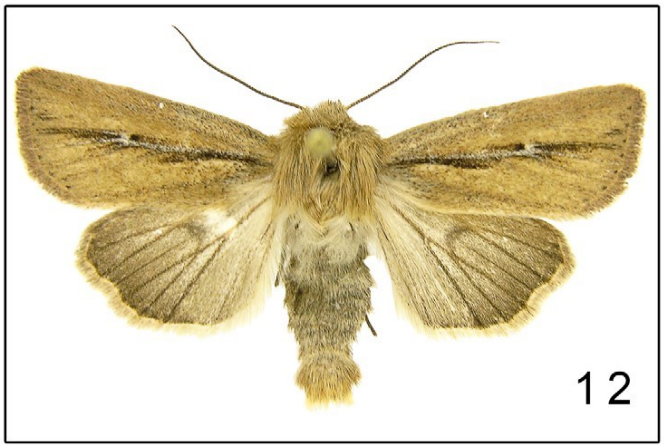
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Figure 6. ***Figures 6–13.*** *Macroheterocera from Omsk and Novosibirsk regions. Adutls, general view.* ***6*** *– Horisme aemulata, Bol`shaya Bitcha, 7-8.VI.2023 (SKO);* ***7*** *– Scopula tessellaria, Polyanovo, 13.VI.2022 (VIN);* ***8*** *– Phaiogramma etruscaria, Khorosheye, 15.VII.2022 (VIN);* ***9*** *– Herminia grisealis, Bol`shaya Bitcha, 7-8.VI.2023 (SKO);* ***10*** *– Hydraecia osseola, Tleusai, 27.VIII.2023 (SKO);* ***11*** *– Pachetra sagittigera, Karasuk, 22.V.2023 (VIN);* ***12*** *– Mythimna anderreggii, Khorosheye, 23.V.2023 (VIN);* ***13*** *– Agrotis robusta, Tleusai, 27.VIII.2023 (SKO).*

Agrotis robusta **Eversmann, 1856**

Fig. 13

Material examined. Omsk Region: 7♂, Tleusai, 27.VIII.2023, at light, S.A. Knyazev (SKO); **Novosibirsk Region:**1♂, Karasuk, 22.VIII.2022, 1♂, Oktyabrskoye, 02.IX.2023, 1♂ 2♀, Khorosheye, 23.VIII.2023, 2♂, Solenoye, 22.VIII.2023, at light, V.V. Ivonin (VIN).

Remark. New to Omsk and Novosibirsk Regions. This species distributed on South Ural, in Altai Republic, Krasnoyarsk territory, Khakassia and Tyva Republic, Irkutsk Region, also on Russian Far East, in China, Korea (Sinev 2019; Fibiger 1990) and NE Kazakhstan (Titov et al. 2017). *A. robusta* was reported from West Siberian Plain as *A. characteristica* Alphéraky, 1892 (Kononenko 2005) but this indication was omitted for the South-West Siberian region in the catalogue of Lepidoptera of Russia (Sinev 2019). Short series of this species was collected in typical steppes on the South of Omsk and Novosibirsk Regions.

Conclusion

Thus, the fauna of Macrolepidoptera of Omsk Region now includes 1008 species. The number of Geometridae species in the fauna of Omsk Region is 263 species, Erebidae – 52 species, Noctuidae – 375 species. The number of Lepidoptera species in Novosibirsk Region has been replenished with 7 species and now includes: Geometridae – 282 species, Notodontidae – 26 species, Noctuidae – 394 species.

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