

Results of the entomological expedition of Altai State University to Pamir in 2023: Nolidae, Erebidae sensu stricto and Noctuidae (Lepidoptera)

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Abstract

We present the faunal list of Nolidae, Erebidae sensu stricto and Noctuidae (Lepidoptera) of Mountain-Badakhshan Autonomous Region of the Republic of Tajikistan, including 184 species. Two species: *Hadena chrysocyanea* Boursin, 1961 and *Chilodes distracta* (Eversmann, 1848) (Noctuidae: Noctuinae) are reported for Tajikistan for the first time.

Keywords

Biodiversity, Central Asia, Tajikistan, species richness, fauna, Noctuoidea

Introduction

As part of a program to study the fauna of terrestrial Arthropoda in Central Asia, a team of zoologists from the Altai State University (Prof. Roman Yakovlev, Yuri Dyachkov and Alexandr Fomichev, all from Barnaul) and amateur-entomologist Vyacheslav Doroshkin (Chelyabinsk) undertook an expedition to the Mountain-Badakhshan Autonomous Region of the Republic of Tajikistan. The results of the expedition work have already been partially published (Dyachkov 2023, 2024a, b; Fomichev 2024a, b; Fomichev and Zamani 2024; Marusik and Fomichev 2024). The Lepidoptera of Tajikistan have been studied relatively well. Their lists have been published for a number of groups: Papilionoidea, Pterophoridae and Noctuoidea (Tshikolovets 2003; Ustjuzhanin and Kovtunovich 2016; Rajabova and Matov 2020; Benedek et al. 2021; Davlatov 2024).

The first reports of Tajik Noctuoidea appeared in literature after the trip of A.P. Fedchenko (1869–1871) in Middle Asia. Among his entomological collections were Lepidoptera including Noctuidae, which were processed by the famous lepidopterist N.G. Erschoff (1874). In the later works (Alphéraky 1889; Grum-Grshimailo 1890) 50 species of Noctuoidea are listed across the territory of Tajikistan based on collection materials of G.E. Grum-Grshimailo from 1884 to 1887 during 4 expeditions to Southern Bukhara (as most of the territory of modern Tajikistan was then called), the Kokand Khanate and Kashgaria. O. Herz (1900) reported 100 Noctuidae species collected in Zeravshan Valley. At the beginning of the 20th century, studies of the noctuid fauna began not only in Northern Tajikistan, but also in the Pamirs. A.P. Berezskij from 1909 to 1911 collected the noctuids in Khorog, which was then a border post of the Russian Empire. In 1928, a Russian-German Pamir expedition worked in the Pamirs, with the participation of A.N. Reichardt and N.P. Gorbunov. Their collections of Lepidoptera, including moths, were processed by N.N. Filipjev (1931), who also published some data from Berezskij's collections. Berezskij's materials were later used by I.V. Kozhantschikov in the book "Agrotinae Fauna of the USSR" (1937).

The study of the Lepidoptera of the Pamirs, interrupted during the Second World War, was resumed in 1950. Since 1955, V.I. Degtyareva began studying Lepidoptera that harm various trees and shrubs in Tajikistan – first in the Gissar Valley and Gissar Range, and then in the Western Pamirs (Peter I Range, Karategin Range). The results of these studies were published in a number of articles and monographs, in particular in a monograph on Lepidoptera associated with fruit trees (Degtyareva 1981).

From 1965 to 1971, the Director of the Pamir Botanical Garden (from 1971 to 1990, the junior research fellow) was M.L. Zaprjagaev. Annually and throughout the season, he collected moths on the territory of the garden, gathering a huge and unique material from this most interesting territory. These specimens were added to the collection of the Moscow amateur entomologist, Doctor of Chemical Sciences, A.A. Bundel, who himself also traveled to Khorog many times to collect Lepidop-

tera. He described a new species of noctuid moth from the Pamirs (Bundel 1966). In addition to his own materials and the specimens from Zaprjagaev, Bundel's collection was supplemented with a part of materials from the Moscow collector A.V. Tsvetaev, who also collected in the Pamirs and most of his specimens are kept in the collection of the Zoological Museum of Moscow University. Subsequently, the entire Bundel collection was transferred to the funds of the Zoological Institute (Saint Petersburg), but the data on the vast majority of these materials have not been published anywhere until recently. In order to fill this significant gap, Z. Rajabova and A.Y. Matov prepared a monograph summarizing all the literary data and collection data known to the authors on the fauna of Nolidae, Erebidae sensu stricto, Euteliidae and Noctuidae in Tajikistan (Rajabova and Matov 2020). This book indicated for Tajikistan 705 species of the families Nolidae (12 species), Erebidae (103 species), Euteliidae (1 species) and Noctuidae (589 species). Of these, a total of 149 species are listed by them as new for Tajikistan. For all the listed species, the collection locations are indicated, including those from the Pamir territory. Soon, the colleagues from Hungary published an article with additions to the fauna of Noctuoidea of Tajikistan (Benedek et al. 2021), where 4 species of Erebidae and 21 species of Noctuidae are for the first time indicated for the country.

This work continues the research of the Pamir noctuid fauna, indicating the additional collection sites and species new for the fauna.

Materials and methods

This article is based on materials collected by Roman Yakovlev and Vyacheslav V. Doroshkin in the ten localities of Pamir Mountains (Fig. 1). A total of 184 species of Noctuoidea were identified, of which two were found for the first time (marked “*” in the table).

List of collecting localities (collectors in all points Roman Yakovlev and Vyacheslav Doroshkin):

1. Tajikistan, Western Pamir, Yazgulem Valley, 1600 m, 38°21'51" N 71°11'5" E, 6.07.2023 (Fig. 2);
2. Tajikistan, Western Pamir, Rushan district, Bartang river Valley, 37°58'36" N 71°50'19" E, 2300 m, 7–8.07.2023 (Fig. 3);
3. Tajikistan, Central Pamir, Khorog botanical garden, 37°28'42.61" N 71°35'47.45" E, 2300 m, 9–10.07.2023 (Fig. 4);
4. Tajikistan, Southern Pamir, 8 km N Ishkashim, tugai forest, 36°47'44" N 71°34'11" E, 2510 m, 11–12.07.2023 (Fig. 5);
5. Tajikistan, Southern Pamir, South Alichur Range, 37°7'20" N 72°43'28" E, 3500 m, 14.07.2023 (Fig. 6);
6. Tajikistan, Eastern Pamir, 30 km W Murgab, Murgab river valley, tugai forest, 3520 m, 38°9'11" N 73°37'6" E, 18.07.2023 (Fig. 7);

7. Tajikistan, Eastern Pamir, between Alichur and Murgab, 27 km SW of Murgab, 4050 m, 37°57'39" N 73°50'42" E, 20.07.2023 (Fig. 8);

8. Tajikistan, Eastern Pamir, 5 km N Koy-Tezek pass, 37°30'19" N, 72°44'53"E, 4040 m, 21–22.07.2023 (Fig. 9);

9. Tajikistan, Western Pamir, near Rivak village, 2600 m, 37°37'59" N 71°48'11" E, 23.07.2023 (Fig. 10);

10. Tajikistan, Western Pamir, Khozratishoh Range, Khaburobot pass, 3350 m, 38°37'13" N 70°43'8" E, 26–27.07.2023 (Fig. 11).

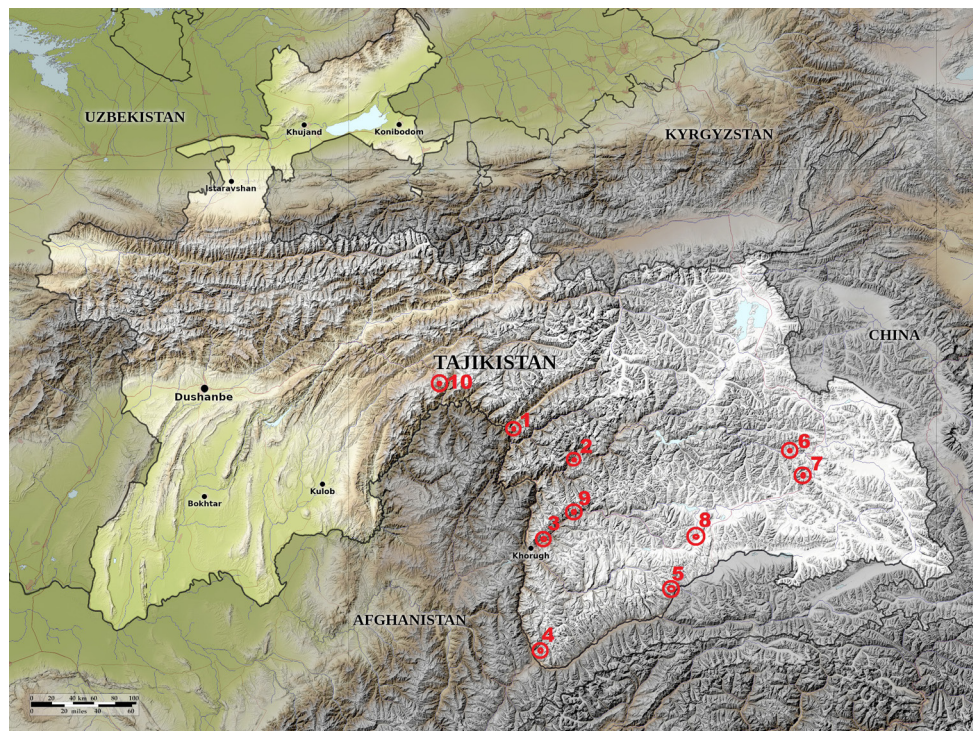


Figure 1. Map of collecting localities.

The collections were carried out by manual collection during the daytime and at dusk, as well as on light screens Naturaliste-180 (using lamps OSRAM-160, 250 W) and autonomous light traps ENTOSPHINX lamp UV LED 12 V/19.2W (equipped with diodes 240 UV LED). The form of the map of Tajikistan was taken from an open Internet resource (<https://www.bluegreenatlas.com>).

The examined material is kept in the collections: Zoological Institute (Saint-Petersburg, Russia), and private collections of Roman Yakovlev (Barnaul, Russia) and Balázs Benedek (Mohács, Hungary).



Figures 2–3. Collecting localities (photo by Roman Yakovlev): **2.** Western Pamir, Yazgulem Valley, 1600 m, 38°21'51" N 71°11'5" E; **3.** Western Pamir, Rushan district, Bartang river Valley, 37°58'36" N 71°50'19" E, 2300 m.



Figures 4–5. Collecting localities (photo by Roman Yakovlev): **4.** Central Pamir, Khorog botanical garden, 37°28'42.61" N 71°35'47.45" E, 2300 m; **5.** Southern Pamir, 8 km N Ishkashim, tugai forest, 36°47'44" N 71°34'11" E, 2510 m.



Figures 6–7. Collecting localities (photo by Roman Yakovlev): 6. Southern Pamir, South Alichur Range, $37^{\circ}7'20''$ N $72^{\circ}43'28''$ E, 3500 m; 7. Eastern Pamir, 30 km W Murgab, Murgab river valley, tugai forest, $38^{\circ}9'11''$ N $73^{\circ}37'6''$ E, 3520 m.



Figures 8–9. Collecting localities: **8.** Eastern Pamir, between Alichur and Murgab, 27 km SW of Murgab, 4050 m, 37°57'39" N 73°50'42" E; **9.** Eastern Pamir, 5 km N Koy-Tezek pass, 37°30'19" N, 72°44'53" E, 4040 m.



Figures 10–11. Collecting localities (photo by Roman Yakovlev): **10.** Western Pamir, near Rivak village, 2600 m, 37°37'59" N 71°48'11" E; **11.** Western Pamir, Khozratishoh Range, Khaburobot pass, 3350 m, 38°37'13" N 70°43'8" E.

[illegible]

Species	Localities									
	1	2	3	4	5	6	7	8	9	10
<i>Caradrina armeniaca</i> (Boursin, 1936)	-	-	-	+	-	-	-	-	-	-
<i>Caradrina genitalana</i> Hacker, 2004	-	+	-	-	+	-	-	-	-	-
<i>Caradrina naumanni</i> Hacker, 2004	+	+	+	-	-	-	-	-	-	-
<i>Caradrina ammoxantha</i> Boursin, 1957	+	+	-	-	-	-	-	-	-	-
<i>Caradrina clavipalpis</i> (Scopoli, 1763)	-	+	-	-	-	+	-	-	-	-
<i>Caradrina vicina hunza</i> Hacker, 1992	-	-	-	+	-	-	-	-	-	-
<i>Hoplodrina levis</i> (Staudinger, 1888)	-	-	-	+	-	-	-	-	+	-
* <i>Chilodes distracta</i> (Eversmann, 1848) (Figs 18–20, 24)	-	-	-	-	-	+	-	-	-	-
<i>Phoebophilus amoenus</i> Staudinger, 1888	-	-	-	-	+	-	-	-	-	-
<i>Auchmis deterrentis</i> (Staudinger, 1897)	-	+	+	-	-	-	-	-	-	-
<i>Auchmis curva</i> (Staudinger, 1889)	-	-	-	-	-	+	-	-	-	-
<i>Auchmis peterseni</i> (Christoph, 1887)	-	-	+	-	-	-	-	-	-	-
<i>Bryoxena centralasiae</i> (Staudinger, 1882)	-	-	-	-	+	+	+	+	+	+
<i>Bryoxena tenuicornis</i> (Alphéraky, 1887)	-	-	-	-	+	-	-	+	+	+
<i>Bryopolia tsvetaevi</i> Varga et L. Ronkay, 1990	-	-	-	-	-	-	-	-	-	+
<i>Bryopolia chamaeleon</i> (Alphéraky, 1887)	-	-	-	-	-	-	-	-	-	+
<i>Longalatedes elymi</i> (Treitschke, 1825)	-	-	-	-	-	+	-	-	-	-
<i>Photedes extrema</i> (Hübner, [1809])	-	+	-	+	-	-	-	-	-	-
<i>Luperina imbellis</i> (Staudinger, 1888)	-	-	-	-	-	-	-	-	-	+
<i>Apamea furva</i> ([Denis et Schiffermüller], 1775)	-	-	-	-	-	-	-	-	-	+
<i>Apamea lateritia</i> (Hufnagel, 1766)	-	-	+	+	+	+	-	-	-	+
<i>Apamea nekrasovi</i> Mikkola, Varga et Gyulai, 1995	-	-	-	-	-	+	+	-	-	-
<i>Apamea oblonga</i> (Haworth, 1809)	-	-	-	-	+	-	-	-	-	-
<i>Apamea extincta</i> (Staudinger, 1889)	-	-	-	-	-	-	-	+	-	-
<i>Apamea sordens</i> (Hufnagel, 1766)	-	+	-	-	-	-	-	-	-	-
<i>Litoligia literosa</i> (Haworth, 1809)	-	-	+	-	-	-	-	-	+	-
<i>Cosmia subtilis</i> (Staudinger, 1888)	-	+	-	-	-	-	-	-	-	-
<i>Fergana oreophila</i> Staudinger, 1892	-	-	-	-	-	-	+	+	-	+
<i>Pamirorea eberti</i> L. Ronkay et Varga, 1990	-	-	-	-	-	+	-	-	-	-
<i>Dasypolia shugnana</i> Varga, 1982	-	-	-	-	-	-	-	+	-	-
<i>Mniotype juldussica</i> (Draudt, 1934)	-	+	-	-	-	-	-	-	-	-
<i>Mniotype lama</i> (Staudinger, 1900)	-	+	-	-	-	-	-	-	-	-
<i>Mniotype leucocyma</i> (Hampson, 1907)	-	-	-	-	+	-	-	-	+	-
<i>Polymixis acharis</i> (Püngeler, 1901)	-	+	-	-	+	+	-	-	+	-
<i>Anarta sabulorum</i> (Alphéraky, 1882)	-	-	-	-	-	+	-	-	-	-
<i>Anarta farnhami shandura</i> (Hacker, 1998)	-	-	-	-	+	+	-	-	-	+

Species	Localities									
	1	2	3	4	5	6	7	8	9	10
<i>Anarta insperata</i> (Gyulai et Hacker, 1998)	-	-	-	-	-	+	-	-	-	-
<i>Anarta schneideri</i> (Staudinger, 1900)	-	-	-	-	-	+	-	-	-	-
<i>Anarta odontites turkestanica</i> (Hacker, 1998)	-	-	-	-	+	+	+	+	-	-
<i>Anarta trifolii</i> (Hufnagel, 1766)	-	+	-	+	+	-	-	-	-	-
<i>Polia lama</i> (Staudinger, 1896)	-	+	-	+	-	-	-	-	-	-
<i>Polia serratilinea spalax</i> (Alphéraky, 1887)	-	-	-	-	+	-	-	+	-	-
<i>Ctenoceratoda psychrogena</i> Varga et Gyulai, 1999	-	-	-	-	-	+	-	-	-	-
<i>Ctenoceratoda weigerti</i> (Hacker et Varga, 1990)	-	-	-	-	-	+	+	-	-	-
<i>Ctenoceratoda contempta</i> (Püngeler, 1914)	-	-	-	+	+	+	-	-	-	-
<i>Ctenoceratoda zetina</i> (Staudinger, 1900)	-	-	-	-	+	+	+	+	-	-
<i>Lacanobia glaseri</i> Gaal-Haszler, Lödl, G. Ronkay, L. Ronkay et Varga, 2012	-	+	+	+	+	+	-	-	-	-
<i>Lacanobia oleracea</i> (Linnaeus, 1758)	-	-	-	+	-	-	-	-	-	-
<i>Lacanobia praedita</i> (Hübner, [1813])	-	-	-	+	-	-	-	-	-	-
<i>Mamestra brassicae</i> Linnaeus, 1758	-	-	+	-	-	-	-	-	-	-
<i>Cornutifera simplex</i> (Staudinger, 1889)	-	-	-	-	+	-	-	+	-	-
<i>Conisania xanthotrix</i> Boursin, 1960	-	-	-	-	-	-	+	+	-	-
<i>Sideridis egena</i> (Lederer, 1853)	-	-	-	+	-	-	-	-	-	-
<i>Conisania vidua</i> (Staudinger, 1888)	-	-	+	+	-	-	-	-	+	-
<i>Enterpia alpherakyi</i> Hacker, 1996	-	+	+	-	-	-	-	-	-	-
<i>Hecatera dysodea</i> ([Denis et Schiffermüller], 1775)	+	+	-	-	-	+	-	-	+	-
<i>Hecatera filipjevi</i> (Draudt, 1934)	-	-	-	-	-	-	-	+	-	-
<i>Hadena zaprjagaevi</i> Hacker et Nekrasov, 1996	-	-	-	-	-	-	-	+	-	-
<i>Hadena afghana</i> (Brandt, 1947)	+	+	+	-	-	-	-	-	+	+
<i>Hadena badakhshana</i> Hacker, 1996	-	-	-	-	-	-	-	-	-	+
<i>Hadena aureomixta</i> Draudt, 1934	-	-	-	-	-	-	+	+	-	-
<i>Hadena canescens</i> Brandt, 1947	-	-	-	-	+	-	-	-	-	-
* <i>Hadena chrysocyanea</i> Boursin, 1961 (Figs 16–17, 22–23)	-	-	-	-	-	-	+	+	-	-
<i>Hadena karagaia</i> (Bang-Haas, 1912)	-	-	+	-	+	-	-	+	-	+
<i>Hadena difficilis</i> Hacker, 1996	-	-	+	-	-	-	-	-	-	-
<i>Hadena wiltshirei</i> (Brandt, 1947)	-	+	+	-	-	-	-	+	+	-
<i>Hadena strouhali permixta</i> Hacker, 1992	-	-	-	-	+	+	+	-	-	-
<i>Hadena macilenta</i> (Brandt, 1947)	-	-	-	-	+	-	+	+	-	+
<i>Mythimna melania</i> (Staudinger, 1889)	-	+	+	+	-	-	-	-	+	-
<i>Mythimna thomasi</i> Hacker, Hreblay et Plante, 1992	-	-	+	-	-	-	-	-	-	-

Species	Localities									
	1	2	3	4	5	6	7	8	9	10
<i>Mythimna l-album</i> (Linnaeus, 1767)	+	+	+	-	-	-	-	-	-	-
<i>Lasionhada orientalis</i> (Alphéraky, 1882)	-	+	-	-	+	+	+	+	-	+
<i>Heliophobus reticulata</i> Goeze, 1781	-	-	-	-	-	-	-	-	-	+
<i>Hada extrita</i> Staudinger, 1888	-	-	-	-	+	-	+	+	-	+
<i>Actebia squalida</i> (Guenée, 1852)	-	-	-	-	+	-	-	-	-	-
<i>Actebia confinis</i> (Staudinger, 1881)	-	-	-	-	-	-	-	-	-	+
<i>Actebia laetifica</i> (Staudinger, 1889)	-	-	-	-	-	+	-	+	-	-
<i>Dichagyris lasciva pamirpsychra</i> Gyulai, 2021	-	-	-	-	-	+	+	+	-	+
<i>Dichagyris candelisequa rana</i> (Lederer, 1853)	-	-	+	-	-	-	-	-	-	+
<i>Dichagyris vallesiaca venosa</i> I. Kozhantshikov, 1930	-	+	+	-	+	-	-	-	+	-
<i>Dichagyris fuscashmiriana</i> Varga, Ronkay & Ronkay, 2020	-	+	+	-	+	-	-	-	-	-
<i>Dichagyris tyrannus</i> (Bang-Haas, 1912)	+	+	+	+	+	-	-	+	-	-
<i>Dichagyris grisescens</i> (Staudinger, 1879)	+	+	+	-	-	-	-	-	-	-
<i>Dichagyris leucomelas</i> Brandt, 1941	+	+	+	+	-	-	-	-	-	-
<i>Dichagyris celebrata pashtu</i> Varga, 1996	+	+	+	+	+	-	-	-	+	-
<i>Dichagyris clara</i> (Staudinger, 1888)	-	-	-	-	-	-	-	+	-	-
<i>Dichagyris himalaensis</i> (Turati, 1933)	-	+	+	+	+	-	+	-	+	+
<i>Dichagyris chrysopyga</i> (Boursin, 1963)	-	+	+	+	-	-	-	-	-	-
<i>Dichagyris verecunda</i> (Püngeler, 1898)	+	-	-	+	-	-	-	-	-	-
<i>Dichagyris nachadira</i> (Brandt, 1941)	-	+	+	+	+	-	-	-	-	-
<i>Dichagyris disturbans</i> (Püngeler, 1914)	-	+	-	-	-	-	-	+	+	-
<i>Dichagyris unifica</i> (Kozhantschikov, 1937)	+	+	+	-	-	-	-	-	+	-
<i>Dichagyris acutijuxta</i> (Boursin, 1957)	-	+	+	-	-	-	-	-	+	-
<i>Dichagyris nekrasovi</i> Varga et Gyulai, 2001	-	-	-	+	-	-	-	-	-	-
<i>Dichagyris turana</i> (Staudinger, [1892])	+	+	+	-	-	-	-	-	+	-
<i>Dichagyris pudica griseola</i> Staudinger, 1895	-	+	-	+	-	-	-	-	-	-
<i>Dichagyris hypotacta</i> Varga, Ronkay & Ronkay, 2021	-	-	-	-	-	-	+	+	-	-
<i>Dichagyris plumbea</i> (Alphéraky, 1887)	-	-	-	+	-	+	-	+	-	-
<i>Hemiexarnis berezskii</i> (Kozhantschikov, 1937)	-	-	-	-	+	-	-	-	-	-
<i>Euxoa adumbrata</i> (Eversmann, 1842)	-	-	-	-	-	-	-	+	-	-
<i>Euxoa difficillima</i> Draudt, 1937	-	-	-	-	+	-	+	-	+	+
<i>Euxoa ochrogaster</i> (Guenée, 1852)	-	-	-	+	+	+	-	-	-	+
<i>Euxoa conspiciua</i> (Hübner, 1824)	-	-	-	-	-	-	-	-	-	+
<i>Euxoa aquilina</i> ([Denis et Schiffermüller], 1775)	-	+	+	+	+	-	-	-	-	-
<i>Euxoa mustelina</i> (Christoph, 1877)	-	-	+	+	+	+	-	+	-	-

Species	Localities									
	1	2	3	4	5	6	7	8	9	10
<i>Euxoa flavisignata</i> Corti, 1932	-	+	-	+	-	-	-	-	-	-
<i>Euxoa transcaspia catervaria</i> (Corti, 1929)	+	+	+	+	-	-	-	-	-	-
<i>Euxoa subconspicua</i> (Staudinger, 1888)	-	-	-	-	+	+	+	-	-	-
<i>Euxoa perierga dichagyroides</i> Varga, 1979	-	+	-	-	-	-	-	-	-	-
<i>Agrotis viguraea</i> (Hampson, 1903)	-	-	-	+	+	-	-	-	-	-
<i>Agrotis exclamationis</i> (Linnaeus, 1758)	-	+	+	+	+	+	+	-	+	+
<i>Agrotis segetum</i> ([Denis et Schiffermüller], 1775)	-	-	-	+	-	-	-	-	-	-
<i>Agrotis incognita</i> Staudinger, 1888	-	-	-	-	-	-	-	-	-	+
<i>Agrotis turbans</i> Staudinger, 1888	-	+	-	+	+	-	+	+	-	-
<i>Agrotis ipsilon</i> (Hufnagel, 1766)	-	-	+	-	-	-	-	-	-	-
<i>Diarsia obuncula</i> (Hampson, 1903)	-	-	-	-	-	+	-	-	-	-
<i>Rhyacia nyctymerina</i> (Staudinger, 1888)	-	-	-	-	-	-	-	+	-	+
<i>Rhyacia oxytheca</i> Boursin, 1957	-	-	-	-	-	-	-	+	-	+
<i>Rhyacia oromys</i> Varga, 1990	-	-	-	-	+	-	-	+	-	-
<i>Rhyacia junonia</i> (Staudinger, 1881)	-	-	-	-	-	-	+	+	-	-
<i>Rhyacia ignobilis</i> (Staudinger, 1888)	-	-	-	-	-	-	-	-	-	+
<i>Chersotis acutangula</i> (Staudinger, 1892)	-	-	-	-	-	-	-	-	-	+
<i>Chersotis firdussi</i> Schwingenschuss, 1937	-	-	-	-	+	-	-	-	-	-
<i>Noctua orbona</i> (Hufnagel, 1766)	-	-	-	-	-	-	-	-	-	+
<i>Eugnorisma deleasma</i> Boursin, 1967	-	-	-	-	-	-	-	-	-	+
<i>Eugnorisma trigonica</i> (Alphéraky, 1882)	-	+	-	-	-	-	-	-	-	-
<i>Goniographa discussa</i> Varga et L. Ronkay, 2002	-	-	-	-	-	-	-	-	-	+
<i>Spaelotis restricta</i> Boursin, 1967	-	-	-	-	+	-	-	-	-	-
<i>Xestia c-nigrum</i> (Linnaeus, 1758)	-	+	+	+	-	+	-	-	-	-
<i>Xestia erschoffi</i> (Staudinger, 1897)	-	-	-	-	-	-	-	+	-	+
<i>Xenophysa agnostica</i> Varga, 1989	-	-	-	-	-	-	+	+	-	+
<i>Xenophysa poecilogramma</i> Varga, 1985	-	+	-	-	+	-	-	+	-	-
<i>Isochlora viridissima</i> Staudinger, 1882	-	-	-	-	-	-	-	-	-	+

Faunistic and systematic notes

Hypena opulenta (Christoph, 1877) (Fig. 12) – the second finding of this species for Tajikistan. The first (in Darvaz Mts.) was published by Benedek & al. (2021).

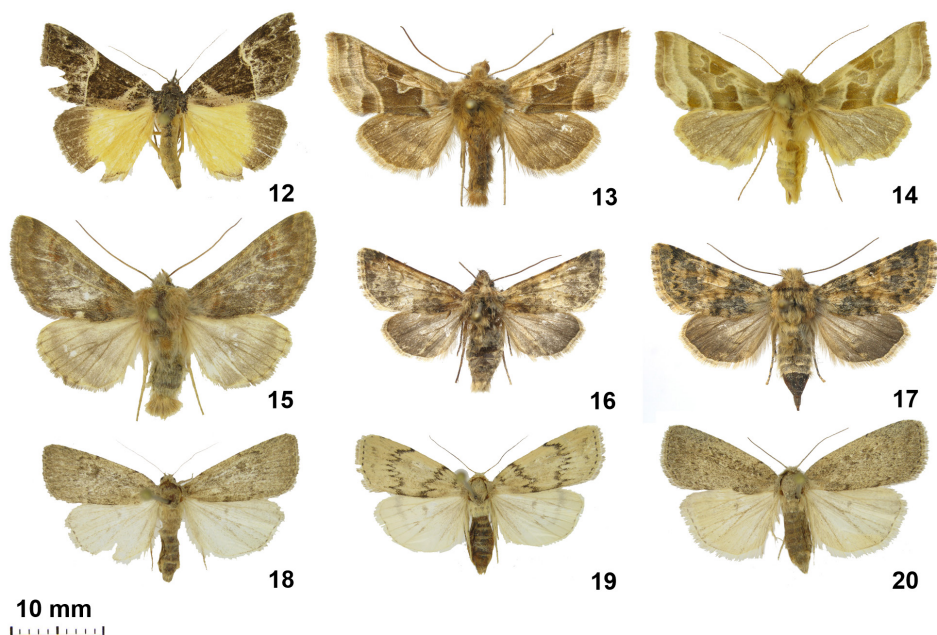
Euchalcia bactrianae Dufay, 1968 (Figs 13, 21) – these are the first confirmed records since a very few historical specimens of this poorly known high mountain species. Known only from Afghanistan and Tajikistan.

Euchlalcia cashmirensis Moore, 1881 (Fig. 14) – the determination of this species (a single male was collected) is preliminary. Its male genitalia show some differences from *E. cashmirensis* figured in the work of Ronkay et al. (2008) – the valvae are wider and more triangular in shape with triangular tooth on the ventral margin. It is very possible that population from Tajikistan belongs to other undescribed species.

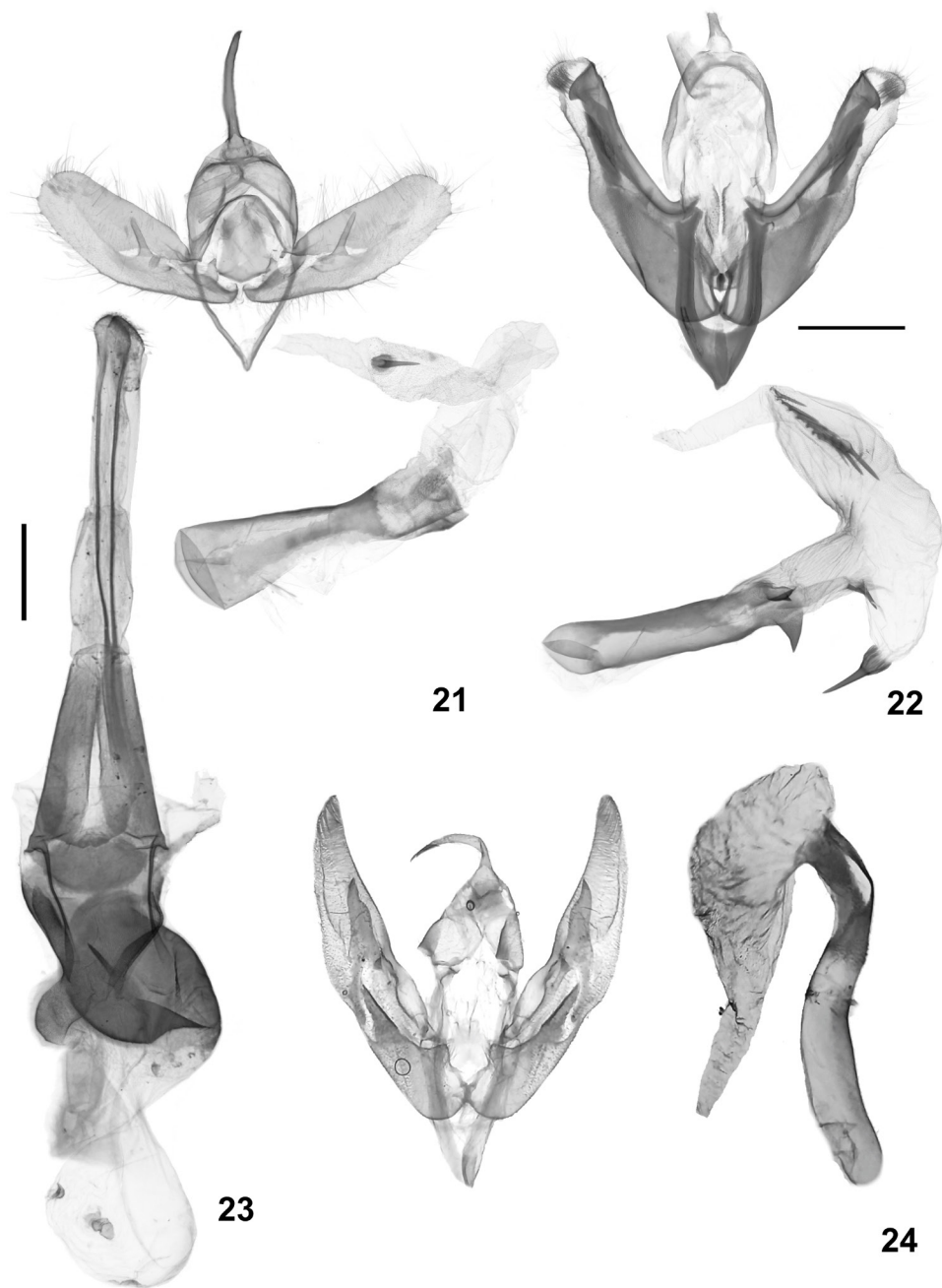
Euchalcia orophasma (Boursin, 1960) (Fig. 15) – a very rare and local Central Asiatic-western Himalayan species. Was indicated for Pamir only by Ronkay et al. (2008) but without exact locality. This indication was later cited by Rajabova and Matov (2020).

Hadena chrysocyanea Boursin, 1961 (Figs 16–17, 22–23) – new species for the fauna of Tajikistan. It was described and known only from Afghanistan (Hacker, 1996). 15 specimens, 9 males, 6 females from Koy-Tezek pass.

Chilodes distracta (Eversmann, 1848) (Figs 18–20, 24) – new species for the fauna of Tajikistan. 3 males and 3 females were collected. Euro-Siberian and Mongolian species, locally distributed also in Asia Minor, Transcaucasia and Central Asia (Kononenko, 2016).



Figures 12–20. Adult specimens of Lepidoptera, upperside (all in ZISP and private collection of B. Benedek): 12. *Hypena opulenta* (Christoph, 1877), male; 13. *Euchalcia bactrianae* Dufay, 1968, male; 14. *Euchlalcia cashmirensis* Moore, 1881, male; 15. *Euchalcia orophasma* (Boursin, 1960), male; 16. *Hadena chrysocyanea* Boursin, 1961, male; 17. *Hadena chrysocyanea* Boursin, 1961, female; 18. *Chilodes distracta* (Eversmann, 1848), male; 19. *Chilodes distracta* (Eversmann, 1848), female; 20. *Chilodes distracta* (Eversmann, 1848), female.



Figures 21–24. Genitalia of Lepidoptera: **21.** Male genitalia of *Euchalcia bactrianae* Dufay, 1968; **22.** Male genitalia of *Haden chrysocyanea* Boursin, 1961; **23.** Female genitalia of *Haden chrysocyanea* Boursin, 1961; **24.** Male genitalia of *Chilodes distracta* (Eversmann, 1848).

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