SHILAP Revista de lepidopterología, 52 (207) septiembre 2024: 579-617 eISSN: 2340-4078 ISSN: 0300-5267
https://doi.org/10.57065/shilap.962 https://shilap.org

Lepidoptera collected in southern and southwestern Mongolia during expeditions in Mongolian Altai and Gobi Altai in 2022-2023 (Lepidoptera: Bombycoidea, Noctuoidea)

Ilya A. Makhov, Alexej Yu. Matov &Vladimir A. Lukhtanov

Abstract

A brief historical outline of lepidopterological research in Mongolia is presented. An annotated checklist of Sphingidae, Notodontidae, Erebidae, Nolidae and Noctuidae collected during 2022 and 2023 in southern and southwestern Mongolia is provided. In total 6 species of Sphingidae, 2 species of Notodontidae, 37 species of Erebidae, 1 species of Nolidae and 119 species of Noctuidae are recorded. Eleven species are recorded as new for the fauna of Mongolia: *Hypocala subsatura* Guenée, 1852, *Eublemma fugitiva* (Christoph, 1877), *Nola acutula* Püngeler, 1902, *Cucullia aksuana* Draudt, 1934, *C. vicina* A. Bang-Haas, 1912, *Lacanobia praedita* (Hübner, [1813]), *Hadena intensa* Boursin, 1962, *H. filograna* (Esper, 1788), *Lasionycta buraetica* Kononenko, 1988, *Dichagyris ulrici* (Corti & Draudt, 1933), *Euxoa uigurica* Gyulai, Ronkay & Varga, 2002. Habitus is illustrated for ten of these species. Four Noctuidae species were DNA-barcoded, COI sequence of *Xenophysa sharhu* Varga, 1989 is published for the first time.
Keywords: Lepidoptera, Bombycoidea, Noctuoidea, new records, Mongolian Altai, Gobi Altai, Mongolia.

Lepidoptera recolectados en el sur y suroeste de Mongolia durante las expediciones en el Altay mongol y Gobi Altay en 2022-2023 (Lepidoptera: Bombycoidea, Noctuoidea)

Resumen

Se presenta una breve reseña histórica de la investigación lepidopterológica en Mongolia. Se proporciona una lista anotada de Sphingidae, Notodontidae, Erebidae, Nolidae y Noctuidae recolectadas durante 2022 y 2023 en el sur y suroeste de Mongolia. En total se registran 6 especies de Sphingidae, 2 especies de Notodontidae, 37 especies de Erebidae, 1 especie de Nolidae y 119 especies de Noctuidae. Once especies son nuevas para la fauna de Mongolia: *Hypocala subsatura* Guenée, 1852, *Eublemma fugitiva* (Christoph, 1877), *Nola acutula* Püngeler, 1902, *Cucullia aksuana* Draudt, 1934, *C. vicina* A. Bang-Haas, 1912, *Lacanobia praedita* (Hübner, [1813]), *Hadena* Boursin, 1962, *H. filograna* (Esper, 1788), *Lasionycta buraetica* Kononenko, 1988, *Dichagyris ulrici* (Corti & Draudt, 1933), *Euxoa uigurica* Gyulai, Ronkay & Varga, 2002. Se ilustra el hábitat de diez de estas especies. Se ha codificado el ADN de cuatro especies de Noctuidae y se publica por primera vez la secuencia COI de *Xenophysa sharhu* Varga, 1989.
Palabras clave: Lepidoptera, Bombycoidea, Noctuoidea, nuevos registros, Altay Mongol, Gobi Altay, Mongolia.

Introduction

Mongolia appears to be an important center of diversification for some characteristic xeromontane and eremic Lepidoptera taxa. The boundaries of some major faunal types with antagonistic dynamics,

some of which overlap, run through the country (Varga et al. 1989). These factors make the Mongolian lepidopterous fauna an attractive research subject to this day. Well-known collectors of the late XIX and early XX centuries (e.g. Hans Leder, Grigory Grum-Grshimailo, Fritz Dörries) were pioneers in entomological research of Mongolia. The material collected by them, and other collectors was examined by O. Staudinger, S. Alphéraky and G. Ye. Grum-Grshimailo, who published several papers at the end of the XIX century (Staudinger, 1892, 1895, 1896; Alphéraky, 1888, 1885; Grum-Grshimailo, 1906, 1911). Detailed historical reviews of entomological studies in Mongolia until the second half of the XX century (including those relating to Lepidoptera) were published by Cendsuren (1972) and Kerzhner (1972).

A large-scale and systematic study of the fauna of Mongolian Lepidoptera began only in the second half of the XX century. The foundation for this long-term work was laid through two international projects: Dr. Kaszab expeditions to Mongolia, under the aegis of the Mongolian and the Hungarian Academy of Sciences between 1963-1968, and the Soviet-Mongolian joint zoological expeditions between 1967-1978 (after 1969 - Joint Soviet-Mongolian complex biological expeditions).

Six expeditions of the former general director of the Hungarian Natural History Museum, Dr. Zoltán Kaszab resulted in more than one thousand collecting events, detailed information on which is available in special series of publications (Kaszab, 1963, 1965a, b, 1966, 1967, 1968). The late Dr. Kaszab himself collected an enormous amount of insect material, including about 41,000 specimens of Lepidoptera (Peregovits, 1989). The taxonomic and faunistic results of the treatment of the material collected during these expeditions have been published in a long series (more than five hundred) of scientific papers (Bálint et al. 2006). Numerous new taxa described from materials collected during these expeditions, were named in honor of Z. Kaszab.

The Kaszab expeditions were followed by a “second wave” of Hungarian entomologists most of the participants of which were lepidopterists (L. Peregovits, G. Fábián, P. Gyulai, M. Hreblay, G. Ronkay, Z. Varga, A. Orosz, T. Stéger and C. Szabóky). Their trips took place between 1986-1988. During these expeditions more than 50,000 samples were collected and then identified (Peregovits, 1989), a number of faunistic reports were subsequently published based on these materials.

Joint Soviet-Mongolian expeditions were led by employees of the Zoological Institute of the Russian Academy of Sciences A. F. Emelyanov (in 1967, 1968, 1970 and 1971), I. M. Kerzhner (in 1969) and I. A. Kozlov (in 1975, 1976, 1978 and 1980). During these travels, more than 850 collecting events were conducted and approximately 26000 Lepidoptera specimens were collected (Emelyanov et al. 1968, 1973, 1977; Kerzhner et al. 1982; Emelyanov & Kozlov, 1980). The results of entomological research of joint Soviet-Mongolian expeditions were published in various periodicals, as well as in the 11 volumes of the book series “Insects of Mongolia” (1972-1990), where about 50 articles devoted to Lepidoptera were published (e. g. Sukhareva, 1974, 1980; Derzhavets, 1977, 1979).

Over the past three decades, both works reflecting the results of individual expeditions (Gyulai & Ronkay, 1999; Bálint et al. 2006; Bálint & Benedek, 2009; Benedek & Bálint, 2013; Korsun et al. 2012; Morozov et al. 2016; Knyazev et al. 2020; Gorbunov, 2023), and general summaries on Mongolian Heterocera (Efetov et al. 2012; Yakovlev, 2015; Yakovlev et al. 2015; Enkhtur et al. 2021a, c; Gorbunov, 2024) have been published. However, despite significant progress in the study of the Lepidoptera fauna of Mongolia, the knowledge of this territory (especially the western part of the country) remains insufficient.

In 2019, 2022 and 2023, V. Lukhtanov, I. Makhov and E. Pazhenkova organized and carried out three expeditions to central (2019), southwestern (2022) and southern (2023) Mongolia. The purpose of these expeditions was to study the lepidopteran fauna of Mongolia and the Gobi Altai. The results of the first expedition (2019) have been published (Knyazev et al. 2020). This work included a review of 8 families of Macroheterocera. The results of the second expedition were presented last year (Makhov et al. 2023) and concerned the findings of geometrid moths. This paper reports the faunal results of the 2022 and 2023 expeditions and examines the five families of Bombycoidea (1) and Noctuoidea (4). We reviewed all available literature data on occurrences of representatives of these families and included relevant references in the provided checklist to identify previously unknown taxa in this area.

Figure 1. Map of collecting localities. Red circles - the first trip (2022); green circles - the second trip (2023); white circles - administrative centers of the aimags.

Material and methods

Material sampling

The moths were sampled by the first author using standard methods. The vast majority of lepidopterans was collected at night (usually since twilight coming to 4-5 am) with a Sylvania HSL-BW 250W E40 mercury vapor lamp powered from a FUBAG TI 1000 petrol generator, and a portable

screen made of white cotton canvas. The small part of moths was caught at daytime by an entomological net. All collected moth are deposited in the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia).

DNA BARCODING

For some noctuid moths, namely several *Athaumasta* specimens and one *Xenophysa* specimen, we obtained DNA barcodes to verify our identifications. For DNA extraction we used the dry material; three legs of each specimen were used. The legs were crushed before lysis, and the lysis reaction proceeded overnight. DNA extraction was carried out using the DNeasy Blood & Tissue Kit (μIAGEN, Germany), according to the manufacturer's protocol. DNA elution was performed with 150 μL elution buffer. Amplification of a 658-bp-long COI fragment was performed using the primers HCO2198 (5'-TAAACTTCAGGGTGACCAAAAAATCA-3') (Folmer et al. 1994) and LCO1490 (5'-GGTCAACAAATCATAAAGATATTGG-3') (Folmer et al. 1994). The polymerase chain reaction (PCR) profile used for this marker was as follows: 95 ºC for 3 min, 95 ºC for 30 s, 50 ºC for 45 s, 72 ºC for 1 min (steps 2-4 cycled 34 times) and 72 ºC for 10 min. The samples were sequenced at Evrogen JSC (Moscow).

Obtained COI sequences were blasted against the complete sequence database of the Barcode of Life Data systems (BOLD) in order to infer the closest matches using the BOLD Identification Engine (http://www.boldsystems.org/index.php/IDS_OpenIdEngine). All sequences obtained were uploaded to GenBank; their accession numbers are provided in the annotated checklist (in the parentheses next to the corresponding specimens).

Results

In the species list below, we provide the data on the findings of Bombycoidea and Noctuoidea made in 2022 and 2023 in 24 localities of southern and southwestern Mongolia (Table 1). The taxonomic order follows the one presented in Classification of Erebidae and Noctuidae based on the classification of European fauna (Witt & Ronkay, 2011) and compilative classifications in the books on Noctuidae of Central Asia (Korb et al. 2017; Radzhabova & Matov, 2020). Literature references are given for each species with the corresponding combination. In the section "Material" the data on the location, the number of collected moths and their sex are given. Species new for Mongolia are marked with an asterisk. For these taxa we give updated information on their distribution in a separate section.

Checklist of species

SPHINGIDAE

Marumba gaschkewitschii (Bremer & Grey, 1853)
Marumba gaschkewitschi: Daniel, 1965, 98
Marumba gaschkewitschi discreta Derzhavets, 1977, 643; 1984, 610; Bálint et al. 2006, 100
Marumba gaschkewitschii: Knyazev et al. 2020, 194; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: UVB2 - 17 ♂, US2 - 1 ♂, 1 ♀.

Sphinx ligustri Linnaeus, 1758
Sphinx ligustri constricta Butler, 1885: Daniel, 1967, 206; Derzhavets, 1977, 643
Sphinx ligustri: Derzhavets, 1984, 606; Bálint et al. 2006, 100; Mühlenberg et al. 2011, 207; Yakovlev et al. 2015, 469; Knyazev et al. 2020, 194; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 375
Material: KB3 - 3 ♂, US2 - 2 ♀, UVB1 - 1♂.

Hyles exilis Derzhavets, 1979
Hyles chuvilini Eitschberger, Danner & Surholt, 1998: Danner et al. 1998, 275; Saldaitis & Ivinskis, 2006, 321; Enkhtur et al. 2021a, Supplementary material (Table S2)
Hyles exilis: Zolotuhin & Saldaitis, 2011, 74; Yakovlev et al. 2015, 470
Hyles chivulini [sic!]: Enkhtur et al. 2021b, Supplementary material (Table S2)
Material: KD - 2 ♂; UMB1 - 10 ♂, 2 ♀.

Hyles livornica (Esper, 1780)
Hyles livornica: Yakovlev et al. 2015, 471
Material: KB1 - 1 ♀.

Hyles zygophylli (Ochsenheimer, 1808)
Celerio zygophylii [sic!]: Daniel, 1970, 198
Celerio zygophylli xanthoxyli Derzhavets, 1977, 647
Hyles zygophylli: Derzhavets, 1984, 619; Saldaitis & Ivinskis, 2006, 321; Yakovlev et al. 2015, 472; Knyazev et al. 2020, 194
Material: KB1 - 1 ♂.

Choerocampa porcellus (Linnaeus, 1758)
Pergesa porcellus: Alberti, 1957, 6
Deilephila porcellus: Mühlenberg et al. 2011, 207; Yakovlev et al. 2015, 472
Deilephila pocellus [sic!]: Enkhtur et al. 2021c, 375
Material: KB1 - 1 ♂, KB3 - 3 ♂.

NOTODONTIDAE

Pterotes eugenia (Staudinger, 1896)
Pteroma eugenia: Staudinger & Rebel, 1901, 111; Daniel, 1965, 98; Viidalepp, 1979, 36
Pterosoma eugenia: Daniel, 1967, 207; 1969, 274; 1970, 198
Pterotes eugenia: Zolotuhin, 1994, 22; Schintlmeister, 2008, 385; Knyazev et al. 2020, 194
Pterostoma eugeniae [sic!]: Bálint et al. 2006, 100
Material: KA - 1 ♂, KB2 - 1 ♂, KD - 1 ♂, UVB2 - 1 ♂, UVK - 1 ♂, KE - 1 ♂, G-AY - 6 ♂.

Cerura przewalskii (Alphéraky, 1882)
Cerura przewalskii: Daniel, 1969, 273; Bálint et al. 2006, 100; Schintlmeister, 2008, 117; Mühlenberg et al. 2011, 207
Material: KA - 2 ♂, 1 ♀.

EREBIDAE

Thylacigyna antiquoides (Hübner, [1822])
Thylacigyna antiquoides: Knyazev et al. 2020, 194; Gorbunov, 2024, 51
Material: US2 - 2 ♂.

Teia dubia (Tauscher, 1806)
Orgyia dubia: Knyazev et al. 2020, 194
Teia dubia: Gorbunov, 2024, 51
Material: KB1 - 1 ♂.

Gynaephora kaszabi (Daniel, 1969)
Dasychira kaszabi Daniel, 1969, 269; Bálint et al. 2006, 101

Gynaephora kaszabi: Gorbunov, 2024, 53
Material: KA - 10♂, KU - 1♂.

Gynaephora angelus (Tschetverikov, 1904)
Dasychira fascelina angelus: Daniel, 1965, 96; 1967, 205; 1969, 271; 1970, 197; Bálint et al. 2006, 101
Olene angelus: Viidalepp, 1979, 29
Gynaephora angelus: Knyazev et al. 2020, 194; Gorbunov, 2024, 52
Dicallomera angelus: Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 370
Material: KD - 1 ♂.

Gynaephora fascelina (Linnaeus, 1758)
Dasychira fascelina obscurata Staudinger, 1900: Daniel, 1969, 271
Dasychira fascelina: Staudinger & Rebel, 1901, 115
Dasychira fascelina moto Bryk, 1949: Daniel, 1969, 271
Olene fascelina: Viidalepp, 1979, 29
Calliteara fascelina: Zolotuhin, 1994, 122
Gynaephora fascelina: Gorbunov, 2024, 52
Material: KM2 - 1 ♂, BS - 2 ♀, UMG1 - 2 ♂, 1 ♀, US1 - 2 ♂ 1♀.

Euproctis kargalika (Moore, 1878)
Euproctis kargalika: Daniel, 1969, 272; Gorbunov, 2024, 55
Material: KB3 - 2 ♂.

Setina irrorella (Linnaeus, 1758)
Setina irrorella insignata Staudinger, 1881: Staudinger, 1892, 343; Daniel, 1969, 266; Bálint et al. 2006, 100
Setina irrorella: Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: KA - 1 ♂, KB2 - 1 ♂.

Stigmatophora micans (Bremer & Grey, 1852)
Stigmatophora micans: Staudinger, 1895, 350; Daniel, 1967, 202; 1969, 266; Bálint et al. 2006, 100; Knyazev et al. 2020, 194; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 369
Material: UMG1 - 1 ♂, 1 ♀.

Coscinia cribraria (Linnaeus, 1758)
Emydia cribrum sibirica Staudinger, 1892, 346
Coscinia cribraria sibirica: Daniel, 1969, 267; Bálint et al. 2006, 101
Coscinia cribraria: Knyazev et al. 2020, 194
Material: KA - 2 ♂, BS - 3 ♀.

Arctia flavia (Fuessly, 1779)
Arctia flavia sartha Staudinger, 1886: Staudinger, 1895, 350
Arctia flavia: Daniel, 1965, 96; Knyazev et al. 2020, 194; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Arctia flavia lederi Bang-Haas, 1927: Daniel, 1967, 204; 1969, 269; 1970, 197; Bálint et al. 2006, 101
Material: BS - 1 ♂.

Eucharia festiva (Hufnagel, 1766)
Arctia festiva: Alberti, 1957, 6
Arctia hebe interrogationis (Ménétriés, 1863): Daniel, 1965, 96; 1969, 269; 1970, 197
Arctia hebe Linnaeus, 1767: Alberti, 1971, 370
Ammobiota festiva interrogationis: Zolotuhin, 1994, 121
Arctia festiva interrogationis: Bálint et al. 2006, 101
Eucharia festiva: Knyazev et al. 2020, 194
Material: US2 - 1 ♂.

Centrarctia mogolica (Alphéraky, 1888)
Micrarctia mogolica: Daniel, 1965, 94; 1967, 203; 1969, 268; Alberti, 1971, 375; Zolotuhin, 1994, 122; Bálint et al. 2006
? *Chelis mongolica*: Enkhtur et al. 2021a, Supplementary material (Table S2)
Material: BS - 1 ♂, US2 - 1 ♂.

Phragmatobia fuliginosa (Linnaeus, 1758)
Phragmatobia fuliginosa pulverulenta (Alphéraky, 1889): Daniel, 1967, 203; 1969, 268
Phragmatobia fuliginosa: Zolotuhin, 1994, 121
Arctia fuliginosa: Mühlenberg et al. 2011, 200
Material: KA - 3 ♂, UVB2 - 1 ♂.

Hypena obesalis Treitschke, 1829
Hypena obesalis: Ronkay, 1983, 243; Gyulai & Ronkay, 1999, 711; Bálint et al. 2006, 107; 2014, 119; Mühlenberg et al. 2011, 205; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Material: G-AY - 1 ♂.

* *Hypocala subsatura* Guenée, 1852
Material: UVB2 - 1 ♂ (Figure 7A); UMB2 - 1 ex. (visual observation).
Distribution: East, South and South-East Asia (from India, China and Russian Far East to Malaysia and Indonesia), Mongolia.

Eublemma uniformis (Staudinger, 1878)
‡*Porphyrinia uniformis* ab. *subrosea* Wiltshire, 1969, 131
Eublemma uniformis: Bálint et al. 2014, 102
Material: KB1 - 5 ♂, 2 ♀, UMG2 - 3 ♂, G-ATg - 2 ♂, 4 ♀.

* *Eublemma fugitiva* (Christoph, 1877)
Material: KB1 - 1 ♂, UMG2 - 1 ♀.
Distribution: Transcaucasia (Armenia, Azerbaijan), Central Asia (Kazakhstan, Turkmenistan, Uzbekistan), Mongolia.

Eublemma gratiosa (Eversmann, 1854)
Porphyrinia gratiosa: Alberti, 1971, 373; Sukhareva, 1980, 409
Eublemma gratiosa: Bálint et al. 2006, 107; 2014, 101
Material: KU - 1 ♂, KB4 - 1 ♀, KB3 - 2 ♂, 1 ♀.

Eublemma porphyrina (Freyer, 1844)
Porphyrinia porphyrina: Sukhareva, 1980, 408
Eublemma porphyrina: Knyazev et al. 2020, 194
Material: KB2 - 2 ♂, 4 ♀.

Eublemma rosea (Hübner, 1790)
Porphyrinia rosea: Sheljuzhko, 1967, 223; Sukhareva, 1980, 408

Eublemma rosea: Ronkay, 1983, 229; Bálint & Benedek, 2009, 7; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Eublemma rosea decolorata Wagner, 1913: Bálint et al. 2014, 102
Material: KB2 - 2 ♂, 4 ♀, KM2 - 1 ♂, KA - 1 ♂, KB4 - 1 ♀.

Catocala remissa Staudinger, 1892
Catocala remissa: Sukhareva, 1980, 410; Ronkay, 1983, 232; Gyulai & Ronkay, 1999, 710; Bálint et al. 2006, 107; Sviridov, 2008, 96; Bálint & Benedek, 2009, 5; Bálint et al. 2014, 76; Knyazev et al. 2020, 194
Material: UMG1 - 38 ♂, BS - 2 ♂.

Drasteria langi (Erschoff, 1874)
Drasteria langi obscurata (Staudinger, 1882): Matov & Korb, 2019, 24
Material: KB3 - 14 ♂, 1 ♀.

Drasteria chinensis (Alphéraky, 1892)
Leucanitis chinensis: Staudinger & Rebel, 1901, 243
Drasteria chinensis: Ronkay, 1983, 234; Gyulai & Ronkay, 1999, 711; Bálint et al. 2006, 107; 2014, 95; Bálint & Benedek, 2009, 7; Benedek & Bálint, 2013, 150; Matov & Korb, 2019, 49; Knyazev et al. 2020, 196; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: KB2 - 1 ♂, KB1 - 1 ♀, BS - 1 ♀, UMG1 - 3 ♂, 2 ♀, UMG2 - 1 ♂, UMB1 - 4 ♂, 5 ♀, US1 - 1 ♂, 1 ♀, US2 - 7 ♂, 5 ♀, UMB2 - 2 ♂, 10 ♀, UVB2 - 2 ♂.

Drasteria antiqua (Staudinger, 1889)
Drasteria antiqua: Matov & Korb, 2019, 65
Material: UMG2 - 1 ♂.

Drasteria rada (Boisduval, 1848)
Drasteria roda (Herrich-Schäffer, 1845): Sheljuzhko, 1967, 224; Ronkay, 1983, 234; Gyulai & Ronkay, 1999, 711
Leucanitis roda: Remm & Viidalepp, 1979, 76
Leucanitis rada: Sukhareva, 1980, 411
Drasteria rada: Bálint et al. 2006, 107; Bálint & Benedek, 2009, 7; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 370; Knyazev et al. 2020, 196
Drasteria rada sibirica (Kozhantschikov, 1925): Bálint et al. 2014, 96
Drasteria rada altivaga Alphéraky, 1894: Matov & Korb, 2019, 34
Material: KM1 - 4 ♂, 1 ♀, KM2 - 13 ♂, 4 ♀, KB2 - 1 ♂, KB1 - 1 ♂, UMG1 - 1 ♂, BS - 1 ♂, US1 - 1 ♂, US2 - 1 ♂.

Drasteria caucasica (Kolenati, 1848)
Drasteria caucasica: Ronkay, 1983, 238; Bálint & Benedek, 2009, 7
Material: KB1 - 1 ♂.

Drasteria mongoliensis Wiltshire, 1969
Drasteria mongoliensis Wiltshire, 1969, 133; Bálint & Benedek, 2009, 57; Bálint et al. 2014, 95; Matov & Korb, 2019, 73
Material: UVB2 – 2 ♂.

Clytie gracilis (A.Bang-Haas, 1907)

Clytie syriaca suppura Wiltshire, 1969, 133; Ronkay, 1983, 233; Bálint et al. 2014, 81
Clytie syriaca, nec (Bugnion, 1837): Sukhareva, 1980, 411
Clytie gracilis sp. suppura: Hacker, 2001, 331
Clytie gracilis: Knyazev et al. 2020, 196
Material: KB1 - 2 ♂, 1 ♀.

Clytie sublunaris (Staudinger, 1889)
Clytie sublunaris: Hampson, 1913, 295; Ronkay, 1983, 232; Gyulai & Ronkay, 1999, 710; Hacker, 2001, 332; Bálint et al. 2014, 81
Material: UMG2 - 6 ♂.

Anumeta dentistrigata (Staudinger, 1877)
Anumeta dentistrigata languida Warren, 1913: Bálint et al. 2014, 60
Material: KB2 - 1 ♂.

Anumeta fractistrigata (Alphéraky, 1882)
Anumeta fractistrigata mongolica Ronkay, 1983, 239; Gyulai & Ronkay, 1999, 711; Bálint et al. 2014, 60
Material: UMG2 - 1 ♂, US2 - 2 ♂.

Anumeta cestis (Ménétriés, 1849)
Anumeta cestis: Ronkay, 1983, 239; Bálint et al. 2014, 60
Material: UMG2 - 2 ♂.

Lygephila lubrica (Freyer, 1846)
Toxocampa lubrica var. *sublubrica* Staudinger, 1896, 271; Staudinger & Rebel, 1901, 252
Lygephila lubrica sublubrica: Sheljuzhko, 1967, 225; Ronkay, 1983, 241; Gyulai & Ronkay, 1999, 711; Bálint et al. 2014, 127
Lygephila lubrica: Bálint et al. 2006, 107; Bálint & Benedek, 2009, 9; Knyazev et al. 2020, 196
Material: KB1 - 2 ♂.

Autophila tetrastigma Boursin, 1940
Autophila tetrastigma: Sheljuzhko, 1967, 220; Ronkay, 1983, 243; Gyulai & Ronkay, 1999, 711; Bálint et al. 2006, 107; 2014, 67; Bálint & Benedek, 2009, 5; Ronkay et al. 2014, 67; Knyazev et al. 2020, 196
Material: KB2 - 3 ♂, KB4 - 1 ♂.

Autophila asiatica (Staudinger, 1888)
Autophila asiatica: Bálint & Benedek, 2009, 5; Knyazev et al. 2020, 196
Material: KE - 2 ♂, G-AY - 2 ♂.

Autophila glebicolor (Erschoff, 1874)
Spintherops glebicolor: Staudinger, 1896, 269
Autophila glebicolor: Sheljuzhko, 1967, 220; Sukhareva, 1980, 404; Ronkay, 1983, 241; Gyulai & Ronkay, 1999, 711; Bálint et al. 2006, 107; Bálint & Benedek, 2009, 5; Ronkay et al. 2014, 25; Knyazev et al. 2020, 196
Material: KB1 - 1 ♂, UMB2 - 1 ♂.

Autophila vespertalis (Staudinger, 1896)
Spintherops vespertalis Staudinger, 1896, 270
Apopestes vespertalis: Staudinger & Rebel, 1901, 151

Autophila vespertalis: Ronkay, 1983, 239; Gyulai & Ronkay, 1999, 711; Bálint & Benedek, 2009, 5; Bálint et al. 2014, 67; Ronkay et al. 2014, 30; Knyazev et al. 2020, 196.

Material: BS - 1 ♂.

NOLIDAE

* *Nola acutula* Püngeler, 1902

Material: KU - 1 ♂, KB3 - 1 ♂, 1 ♀.

Distribution: Central Asia (Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan, W. China), Mongolia.

NOCTUIDAE

Abrostola kaszabi Dufay, 1971

Abrostola kaszabi Dufay, 1971, 269; Ronkay, 1987, 218; Bálint et al. 2006, 106; 2014, 49; Bálint & Benedek, 2009, 4; Knyazev et al. 2020, 196

Material: UMB1 - 1 ♂.

Acontia trabealis (Scopoli, 1763)

Emmelia trabealis: Sheljuzhko, 1967, 223; Sukhareva, 1980, 409; Bálint et al. 2006, 107; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)

Acontia trabealis: Enkhtur et al. 2021c, 372

Material: KB1 - 2 ♂.

Armada panaceorum (Ménétriés, 1849)

Tarachephia panaceorum: Ronkay, 1983, 239; Bálint et al. 2014, 63

Material: UVB1 - 1 ♂; US2 - 1 ♂ (Figure 7B).

Simyra nervosa ([Denis & Schiffermüller], 1775)

Simyra nervosa argentacea Herrich-Schäffer, [1848]: Staudinger & Rebel, 1901, 134

Simyra nervosa expressa A.Bang-Haas, 1912: Alberti, 1971, 373; Varga, 1976, 184; Gyulai, 1989, 108; Gyulai & Ronkay, 1999, 708; Bálint et al. 2006, 101

Simyra nervosa: Knyazev et al. 2020, 196; Enkhtur et al. 2021b, Supplementary material (Table S2); Enkhtur et al. 2021c, 372

Material: KM2 - 1 ♂, G-AY - 3 ♂.

Simyra splendida Staudinger, 1888

Simyra splendida: Varga, 1976, 184; Sukhareva, 1980, 404; Gyulai & Ronkay, 1999, 708; Bálint et al. 2014, 161

Material: US2 - 1 ♂.

Acronicta hemileuca Püngeler 1899

Acronicta hemileuca: Bálint et al. 2006, 101; Knyazev et al. 2020, 196

Material: UVB1 - 1 ♂, UVB2 - 3 ♂, 1 ♀, UVB2 - 1 ♀.

Cucullia absinthii (Linnaeus, 1761)

Cucullia absinthii: Bálint & Benedek, 2009, 6; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)

Material: KB3 - 1 ♂.

Cucullia tescorum Pungeler, 1909

Cucullia tescorum: Sheljuzhko, 1967, 219; Alberti, 1971, 372; Varga, 1976, 177; Gyulai & Ronkay, 1999, 706; Bálint et al. 2006, 103; 2014, 87; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 49; Benedek & Bálint, 2013, 150, 151; Knyazev et al. 2020, 197

Material: KD - 1 ♂, KE - 2 ♂, BS - 4 ♂, US1 - 3 ♂, US2 - 7 ♂.

Cucullia infuscata Tshetverikov, 1925
Cucullia cineracea, nec Freyer, 1841: Staudinger, 1896, 268; Staudinger & Rebel, 1901, 215
Cucullia cineracea infuscata: Sheljuzhko, 1967, 219; Varga, 1976, 178; Gyulai & Ronkay, 1999, 705; Bálint et al. 2006, 102; 2014, 85
Cucullia infuscata: Bálint & Benedek, 2009, 6; Ronkay & Ronkay, 2009, 54; Knyazev et al. 2020, 196

Material: KB3 - 2 ♂, BS - 3 ♂, UMB1 - 1 ♂, UMB2 - 1 ♂, UVB1 - 1 ♂, UVB2 - 1 ♂, UVK - 1 ♂.

Cucullia splendida (Cramer, 1777)
Cucullia splendida: Staudinger, 1896, 269; Staudinger & Rebel, 1901, 217; Sheljuzhko, 1967, 218; Varga, 1976, 176; Sukhareva, 1980, 402; Gyulai & Ronkay, 1999, 705; Bálint et al. 2006, 102; 2014, 87; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 56; Korsun et al. 2012, 22; Benedek & Bálint, 2013, 149; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021b: 372; Knyazev et al. 2020, 196
Argyromata splendida: Alberti, 1971, 372

Material: G-AT - 1 ♂, BS - 2 ♂, 2 ♀.

Cucullia biradiata W. Kozhantschikov, 1925
Cucullia biradiata: Varga, 1976, 178; Remm & Viidalepp, 1979, 61; Sukhareva, 1980, 403; Gyulai, 1989, 108; Bálint et al. 2006, 102; 2014, 85; Bálint & Benedek, 2009, 6; Ronkay & Ronkay, 2009, 62; Knyazev et al. 2020, 196; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)

Material: G-AY - 2 ♂, US1 - 1 ♂, US2 - 1 ♂, UVB2 - 2 ♂.

Cucullia biornata Fischer von Waldheim, 1840
Cucullia biornata: Varga, 1976, 178; Bálint et al. 2006, 102; Bálint & Benedek, 2009, 6; Ronkay & Ronkay, 2009, 71; Benedek & Bálint, 2013, 153

Material: KA - 1 ♂; UVB2 - 1 ♂.

Cucullia papoka G. Ronkay & L. Ronkay, 1986
Cucullia papoka: Ronkay & Ronkay, 1986, 354; Gyulai & Ronkay, 1999, 706; Bálint et al. 2006, 102; 2014, 86; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 75; Benedek & Bálint, 2013, 150; Knyazev et al. 2020, 196

Material: KM1 - 2 ♂, KA - 2 ♂, KD - 2 ♂, G-AT - 2 ♂, KM2 - 2 ♂, BS - 3 ♂, UMG1 - 2 ♂, UMB1 - 2 ♀, UMB2 - 1 ♂, UVB1 - 6 ♂, UVK - 2 ♂ 1 ♀, KE - 2 ♂.

Cucullia hannemanni Varga, 1976
Cucullia hannemanni Varga, 1976, 179; Gyulai & Ronkay, 1999, 706; Bálint et al. 2006, 102; 2014, 86; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 78; Knyazev et al. 2020, 196

Material: KM1 - 6 ♂, KM2 - 3 ♂, 1 ♀, G-AT - 9 ♂, G-ATs - 2 ♂, UMB1 - 4 ♂, UMB2 - 1 ♂, UVB1 - 3 ♂, 1 ♀, UVK - 1 ♂, 6 ♀, KE - 1 ♂.

Cucullia maracandica Staudinger, 1888
Cucullia maracandica: Bálint et al. 2006, 102; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 78; Knyazev et al. 2020, 196

Material: KM1 - 3 ♂, KB1 - 1 ♂, G-AT - 1 ♂, KM2 - 3 ♂, 1 ♀, G-ATs - 4 ♂, BS - 5 ♂, 1 ♀, US2 - 1 ♂, UVB2 - 1 ♂, KE - 1 ♂, G-AY - 2 ♂.

Cucullia umbristriga Alphéraky, 1892
Cucullia umbristriga: Bálint et al. 2006, 103; Bálint & Benedek, 2009, 7; Ronkay & Ronkay, 2009, 87; Knyazev et al. 2020, 197
Material: KM2 - 3 ♂; KM1 - 1 ♂, UMG1 - 1 ♂, UMB1 - 1 ♂, UMB2 - 4 ♂, 3 ♀.

Cucullia duplicata Staudinger, 1882
Cucullia duplicata: Staudinger, 1896, 268; Sheljuzhko, 1967, 218; Varga, 1976, 177; Sukhareva, 1980, 402; Gyulai & Ronkay, 1999, 705; Bálint et al. 2006, 103; 2014, 85; Bálint & Benedek, 2009, 6; Ronkay & Ronkay, 2009, 88; Benedek & Bálint, 2013, 150, 151; Knyazev et al. 2020, 196
Material: KM1 - 10 ♂, KD - 2 ♂, G-AT - 1 ♂, KU - 2 ♂, KB3 - 1 ♂, KB2 - 1 ♂, KA - 3 ♂, BS - 1 ♂, UMB1 - 1 ♂, UMB2 - 1 ♂, UVK - 1 ♂.

* *Cucullia aksuana* Draudt, 1934
Material: KU - 3 ♂ (Figure 7C), 1 ♀; KA - 1 ♂.
Distribution: Central Asia (Kyrghyzstan, Tajikistan), Pakistan, Mongolia.

Cucullia dimorpha Staudinger, 1896
Cucullia eumorpha var.? *dimorpha* Staudinger, 1896, 268
Copicucullia dimorpha: Alberti, 1971, 372
Pseudocopicucullia dimorpha: Varga, 1976, 175
Cucullia dimorpha: Gyulai & Ronkay, 1999, 706; Bálint et al. 2006, 103; 2014, 85; Bálint & Benedek, 2009, 6; Ronkay & Ronkay, 2009, 92; Benedek & Bálint, 2013, 149, 151; Knyazev et al. 2020, 196
Material: KA - 1 ♂; KE - 1 ♂.

* *Cucullia vicina* A. Bang-Haas, 1912
Material: KB3 - 2 ♂ (Figure 7D).
Distribution: Central Asia (Kazakhstan, Kyrghyzstan, Tajikistan, W. China), Mongolia.

Cucullia turkestana L. Ronkay & G. Ronkay, 1987
Cucullia implicata Ronkay & Ronkay, 1987, 471
Cucullia turkestana sp. *implicata* G. Ronkay et L. Ronkay, 2009, 107
Cucullia turkestana: Knyazev et al. 2020, 197
Material: KU - 6 ♂; KB3 - 5 ♂; KB2 - 1 ♂, 1 ♀, BS - 7 ♂, UMB1 - 4 ♂, US1 - 3 ♂, US2 - 3 ♂.

Cucullia amota Alphéraky, 1887
Cucullia amota: Varga, 1976, 181; Bálint et al. 2006, 103; 2014, 85; Kononenko, 2016, 29
Material: UVB1 - 1 ♂.

Calophasia lunula (Hufnagel, 1766)
Calophasia lunula: Varga, 1976, 181; Sukhareva, 1980, 403; Gyulai, 1989, 108; Bálint et al. 2014, 73
Material: UMB1 - 1 ♂.

Lophoterges varians Ronkay, 2005
Lophoterges varians Ronkay, 2005, 28
? *Lophoterges centralasiae* (Staudinger, 1901): Varga, 1976, 181; Bálint et al. 2006, 103
Material: KB1 - 1 ♂, KB3 - 2 ♂, 4 ♀.

Aedophron eos Varga & L. Ronkay, 1991
Aedophron eos: Varga & Ronkay, 1991b, 263
Material: KU - 2♂.

Pyrrhia umbra (Hufnagel, 1766)
Pyrrhia umbra: Varga, 1976, 186; Bálint et al. 2014, 156; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: KB3 - 1 ♂.

Protoschinia scutosa ([Denis & Schiffermüller], 1775)
Chloridea scutosa: Sheljuzhko, 1967, 223
Protoschinia scutosa: Varga, 1976, 186; Sukhareva, 1980, 408; Bálint et al. 2014, 154; Knyazev et al. 2020, 197; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: UVB2 - 2 ♂, UVB1 - 2 ♂, 1 ♀.

Heliothis adaucta Butler, 1878
Chloridea maritima centralasiae Draudt, 1938: Varga, 1976, 186; Gyulai & Ronkay, 1999, 696
Heliothis maritima centralasiae: Bálint & Benedek, 2009: 8
Heliothis adaucta: Knyazev et al. 2020, 197; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Material: UVB2 - 1 ♂.

Helicoverpa armigera (Hübner, [1808])
Helicoverpa armigera: Gyulai & Ronkay, 1999, 696; Bálint et al. 2014, 115; Knyazev et al. 2020, 197
Material: KA - 2 ♂.

Bryophila kaszabi Pekarsky, Volynkin & Matov, 2014
Bryophila kaszabi Pekarsky, Volynkin & Matov, 2014: Pekarsky et al. 2014, 145
Material: KB2 - 7 ♂ (Figures 7F), KU - 1 ♂ (Figures 7E).

Bryophila orthogramma (Boursin, 1954)
Cryphia orthogramma: Sheljuzhko, 1967, 220; Varga, 1976, 185; Gyulai & Ronkay, 1999, 709; Bálint et al. 2006, 101; 2014, 84; Bálint & Benedek, 2009, 6; Benedek & Bálint, 2013, 152, 153; Mühlenberg et al. 2011, 204
Bryophila orthogramma: Knyazev et al. 2020, 197; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: KB1 - 1 ♂, KB2 - 1 ♂, US1 - 1 ♂.

Victrix fabiani Varga & Ronkay, 1989
Victrix fabiani: Bálint et al. 2006, 101; 2014, 170
Material: KA - 10 ♂, KM2 - 6 ♂, UMG1 - 1 ♂.

Victrix bogdoana Matov, Fibiger et Ronkay, 2009
«*Micromima bogdoana* Alphéraky, 1895»: Bálint et al. 2006, 101
Victrix bogdoana Matov, Fibiger et Ronkay, 2009: Fibiger et al. 2009, 308
Material: KB2 - 1 ♂ (Figure 7G).

Athaumasta arida Volynkin & Saldaitis, 2019
Athaumasta arida: Volynkin et al. 2019, 17
Material: G-AY - 13 ♂, KB3 - 6 ♂ (GenBank ID: OR864686-OR864688) 1 ♀, G-AT - 6 ♂, KM1 - 1 ♂, KE - 2 ♂, UVK - 4 ♂, 1 ♀, UMB2 - 3 ♂, G-ATs - 1 ♂.

Remark: Delimitation of the some *Athaumasta* species based on external features and even on the characteristics of the male genitalia is extremely difficult. We used molecular data obtained from *Athaumasta* samples collected from several locations. The results of comparison of COI sequences with

sequences obtained by Volynkin and co-authors (2019) were decisive in identification of the moths from the *expressa* species-group.

Athaumasta splendida O. Bang-Haas 1927
Athaumasta splendida: Bálint et al. 2006, 101; Bálint & Benedek, 2009, 5
Material: G-AT - 2 ♂, KB3 - 5 ♂, KA - 1 ♂, KM1 - 2 ♂.

Athaumasta golomto Volynkin & Gyulai, 2018
Athaumasta golomto Volynkin & Gyulai, 2018, 594; Volynkin et al. 2019, 3
Material: KA - 4 ♂ (Figure 7H, GenBank ID: OR864682-OR864685), KB3 - 1 ♂.
Remark: The results of comparison of COI sequences with sequences obtained by Volynkin and co-authors (2019) were decisive in identification of the moths from the *pekarskyi* species-group.

Athaumasta dzhungarica Volynkin & Saldaitis, 2019
Athaumasta dzhungarica Volynkin & Saldaitis, 2019: Volynkin et al. 2019, 4
Material: G-AY - 1 ♂; UVK - 3 ♂; KB3 - 2 ♂ (GenBank ID: OR864689).
Remark: The results of comparison of COI sequences with sequences obtained by Volynkin and co-authors (2019) were decisive in identification of the moths from the *pekarskyi* species-group.

Caradrina petraea Tengström, 1869
Caradrina grisea (Eversmann, 1848): Varga, 1982, 221
Platyperigea grisea: Gyulai & Ronkay, 1999, 705
Platyperigea grisea sp. *fuscifusa* Varga et Ronlay, 1991: Varga & Ronkay, 1991b, 303; Bálint et al. 2014, 151
Material: KB3 - 1 ♂.

Caradrina albina Eversmann, 1848
Caradrina quadripunctata var. *congesta* (Lederer, 1853): Staudinger, 1896, 265
Caradrina albina: Varga, 1982, 221; Gyulai, 1989, 109; Knyazev et al. 2020, 197
Platyperigea albina: Gyulai & Ronkay, 1999, 705; Bálint & Benedek, 2009, 9; Benedek & Bálint, 2013, 150; Mühlenberg et al. 2011, 206; Bálint et al. 2014, 151
Material: KA - 1 ♂, KB4 - 1 ♂, 1 ♀.

Caradrina montana Bremer, 1861
Caradrina cinerascens apatetica Püngeler, 1914: Varga, 1982, 221; Gyulai, 1989, 109; Gyulai & Ronkay, 1999, 705
Platyperigea montana: Bálint et al. 2006, 102; 2014, 151; Bálint & Benedek, 2009, 9
Platyperigea montana apatetica: Mühlenberg et al. 2011, 206
Caradrina montana: Knyazev et al. 2020, 197; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: UVK - 1 ♂.

Chilodes distracta (Eversmann, 1848)
? Senta distracta: Staudinger, 1896, 265
Chilodes distracta: Varga, 1982, 220; Bálint et al. 2014, 79
Material: UMB2 - 1 ♂, 4 ♀.

Athetis funesta (Staudinger, 1888)
Athetis funesta: Varga, 1982, 223; Bálint & Benedek, 2009, 5; Kononenko, 2016, 102; Knyazev et al. 2020, 197
Athetis funesta centralasiatica L. Ronkay & G. Ronkay, 2023: Ronkay et al. 2023: 78
Material: UMB1 - 1 ♂, UVB1 - 2 ♀, UVB2 - 1 ♂, US1 - 1 ♀, UMG1 - 1 ♂, 1 ♀.

Apamea leucodon (Eversmann, 1837)
Hadena leucodon: Staudinger & Rebel, 1901, 173
Apamea leucodon: Sheljuzhko, 1967, 220; Sukhareva, 1980, 405; Varga, 1982, 209; Gyulai, 1989, 109; Bálint et al. 2006, 102; 2014: 61; Bálint & Benedek, 2009, 5; Knyazev et al. 2020, 197
Material: KB3 - 1 ♂.

Apamea ingloria (A. Bang-Haas, 1912)
Apamea ingloria: Varga, 1982, 210; Bálint et al. 2006, 102; Bálint & Benedek, 2009, 5; Knyazev et al. 2020, 197
Material: G-AT - 6 ♂, G-ATs - 1 ♂.

Apamea furva ([Denis & Schiffermüller], 1775)
Apamea furva: Varga, 1982, 209; Gyulai, 1989, 109; Bálint et al. 2006, 101; 2014, 61
Material: KB3 - 5 ♂, 1 ♀, UMB1 - 2 ♂.

Resapamea vulpecula (Eversmann, 1852)
Hadena subornata Staudinger, 1896, 262; Staudinger & Rebel, 1901, 174
Sidemia subornata: Alberti, 1971, 373
Apamea subornata: Sukhareva, 1980, 405
Mesapamea hedeni (Graeser, 1888): Varga, 1982, 210; Gyulai, 1989, 109; Gyulai & Ronkay, 1999, 703; Mühlenberg et al. 2011, 205; Bálint et al. 2014, 130
Resapamea hedeni: Varga & Ronkay, 1992, 114; Bálint et al. 2006, 102; Bálint & Benedek, 2009, 10; Benedek & Bálint, 2013, 149, 150
Resapamea vulpecula: Knyazev et al. 2020, 197; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Risapamea [sic!] *hedeni*: Enkhtur et al. 2021c, 374
Material: KB3 - 2 ♂, 1 ♀, G-ATs - 1 ♂.

Boursinia kaszabi (Boursin, 1967)
Luperina kaszabi Boursin, 1967, 96; Varga, 1982, 215
Boursinia kaszabi: Knyazev et al. 2020, 197
Material: KA - 5 ♂, UMG1 - 1 ♂, BS - 4 ♂, UVB1 - 1 ♂, UVB2 - 10 ♂, 4 ♀.

Rhiza laciniosa (Christoph, 1887)
Chloanta laciniosa: Staudinger, 1896, 264; Staudinger & Rebel, 1901, 183; Sukhareva, 1980, 407
Pseudohadena laciniosa: Alberti, 1971, 373.
Pseudohadena laciniosa odontographa Ronkay & Varga, 1989, 344
Graphantha laciniosa odontographa, Gyulai & Ronkay, 1999, 702; Bálint et al. 2006, 103
Rhiza laciniosa odontographa: Bálint & Benedek, 2009, 10; Bálint et al. 2014, 157
Material: US2 - 1 ♂.

Eremohadena adscripta (Püngeler, 1914)
Pseudohadena adscripta: Alberti, 1971, 373
Pseudohadena siri adscripta: Varga, 1982, 214
Eremohadena adscripta: Gyulai & Ronkay, 1999, 703; Bálint et al. 2006, 103; Knyazev et al. 2020, 197
? *Pseudohadena siri*: Staudinger, 1896, 262
Material: KB4 - 1 ♀, KB2 - 1 ♀, G-AT - 1 ♂, 6 ♀; KB1 - 1 ♀, G-ATs - 12 ♂, 1 ♀.

Polymixis acharis (Püngeler, 1901)
Polymixis acharis: Bálint et al. 2006, 103

Eremophysa acharis: Bálint & Benedek, 2009, 7
Material: KB3 - 1 ♀.

Mniotype lama (Staudinger, 1900)
Mniotype lama: Mühlenberg et al. 2011, 205
Mniotype lama sp. *etugen* Volynkin, Matov & Behounek, 2014: Volynkin et al. 2014, 4
Material: KB3 - 1 ♂, 1 ♀, KB2 - 1 ♀, G-AT - 1 ♂, G-AY - 1 ♀, KE - 1 ♀.

Mniotype adusta (Esper, 1790)
Mniotype adusta: Bálint et al. 2014, 131; Volynkin et al. 2014, 6
Material: UMB1 - 1 ♀.

Anarta insolita (Staudinger, 1889)
Hadula insolita: Varga, 1974, 300
Hadula insolita uigurica Hacker, 1998: Bálint et al. 2006, 103; 2014, 113
Anarta insolita: Knyazev et al. 2020, 199
Material: KM1 - 4 ♂, 5 ♀, G-AT - 1 ♂, 1 ♀; KA - 1 ♀, G-ATs - 2 ♂, G-AY - 1 ♀.

Anarta sabulorum (Alphéraky, 1882)
Hadula sabulorum: Gyulai & Ronkay, 1999, 699; Hacker et al. 2002, 23; Benedek & Bálint, 2013, 150; Bálint et al. 2014, 113
Hadula sabulorum distincta Hacker, 1998: Bálint et al. 2006, 103; Bálint & Benedek, 2009, 8
Material: KM1 - 4 ♂, KE - 2 ♂, UMG1 - 1 ♂, BS - 1 ♂, KE - 2 ♂.

Anarta ptochica (Püngeler, 1900)
Mamestra ptochica: Sukhareva, 1974, 231
Hadula ptochica: Varga, 1974, 298; Gyulai & Ronkay, 1999, 699; Benedek & Bálint, 2013, 151; Bálint et al. 2014, 113
Material: KB1 - 1 ♂, UMG2 - 1 ♂.

Anarta odontites (Boisduval, 1829)
Discestra marmorosa (Borkhausen, 1792): Varga, 1974, 296
Material: KM1 - 3 ♂, G-AT - 1 ♂, 1 ♀, KD - 1 ♂, KM2 - 1 ♂, 4 ♀, G-ATs - 4 ♂.

Anarta farnhami (Grote, 1873)
Mamestra furca Eversmann, 1852: Staudinger, 1896, 255
Discestra furca: Sheljuzhko, 1967, 213; Varga, 1974, 296; Gyulai, 1989, 106
Hadula farnhami palaearctica Hacker, 1998: Bálint et al. 2006, 103
Material: G-ATs - 1 ♂.

Anarta imperspicua (Hacker, 1998)
Hadula imperspicua mandschurica Hacker, 1998: Bálint et al. 2006, 103; Bálint & Benedek, 2009, 8
Hadula imperspicua: Bálint et al. 2014, 113
Material: KA - 4 ♂, 1 ♀, UMB2 - 1 ♂, 1 ♀, G-AY - 1 ♂, UMB2 - 1 ♂.

Anarta dianthi (Tauscher, 1809)
Discestra dianthi: Sheljuzhko, 1967, 213; Sukhareva, 1974, 229; Varga, 1974, 295; Remm & Viidalepp, 1979, 53
Hadula dianthi lukhtanovorum Hacker, 1998: Gyulai & Ronkay, 1999, 699; Bálint et al. 2006, 103
Anarta dianthi: Knyazev et al. 2020, 199
Material: KM2 - 4 ♂, 2 ♀, BS - 2 ♂, 1 ♀, KE - 1 ♀.

Anarta trifolii (Hufnagel, 1766)
Mamestra trifolii: Staudinger, 1896, 256
Discestra trifolii: Sheljuzhko, 1967, 213; Sukhareva, 1974, 228; Varga, 1974, 297; Mühlenberg et al. 2011, 204; Bálint et al. 2014, 95
Hadula trifolii: Bálint et al. 2006, 103; Mühlenberg et al. 2011, 205
Anarta trifolii: Korsun et al. 2012, 22; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); Knyazev et al. 2020, 199
Anarta trifoli [sic!]: Enkhtur et al. 2021c, 372
Material: KM1 - 1 ♂, KB1 - 1 ♂, KM2 - 1 ♀, G-AT - 1 ♀, BS - 1 ♂, UMG2 - 1 ♂, US1 - 1 ♀, UVK - 1 ♀, KE - 1 ♂.

Cardepia irrisoria (Erschoff, 1874)
Cardepia sociabilis irrisoria: Sheljuzhko, 1967, 213; Varga, 1973, 218; 1974, 293
Cardepia irrisor [sic!]: Alberti, 1971, 372
Cardepia irrisoria nigrescens Hacker, 1998: Gyulai & Ronkay, 1999, 699; Bálint et al. 2006, 103; 2014: 74; Bálint & Benedek, 2009, 5; Benedek & Bálint, 2013, 150
Material: KA - 2 ♂, KM2 - 1 ♂, 1 ♀, KD - 1 ♂, KB4 - 1 ♂, KB2 - 3 ♂, BS - 2 ♂, UMG2 - 1 ♂, US2 - 2 ♂, UVB1 - 2 ♂, KE - 6 ♂.

Cardepia kaszabi Sukhareva & Varga, 1973
Cardepia kaszabi Sukhareva & Varga, 1973: Varga, 1973, 215; Sukhareva, 1974, 229; Varga, 1974, 294; Gyulai & Ronkay, 1999, 699; Bálint et al. 2006, 103; 2014, 74; Benedek & Bálint, 2013, 150
Material: KD - 1 ♂; UVB1 - 3 ♂, UMG2 - 1 ♂, UVB1 - 1 ♂, UVB2 - 1 ♂.

Polia bombycina (Hufnagel, 1766)
Mamestra advena var. (ab.) *adjuncta* Staudinger, 1888: Staudinger, 1892, 364
Mamestra advena var. *mongolica* Staudinger, 1896, 253; Staudinger & Rebel, 1901, 155
Polia bombycina: Sukhareva, 1974, 230; Korsun et al. 2012, 23; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Polia bombycina mongolica: Varga, 1974, 302; Gyulai & Ronkay, 1999, 700; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 10; Mühlenberg et al. 2011, 206
Polia bombycina sp. *psammochroa* Varga, 1974, 302; Gyulai & Ronkay, 1999, 700
Polia bombycina advenina (Bryk, 1949): Varga, 1974, 302; Gyulai, 1989, 106; Gyulai & Ronkay, 1999, 700
Polia bombycina amurensis (Staudinger, 1892): Bálint et al. 2014, 152
Material: KB3 - 2 ♀.

Polia subcontigua (Eversmann, 1852)
Mamestra altaica (Lederer, 1853): Staudinger, 1892, 365; 1896, 255; Staudinger & Rebel, 1901, 156
Polia altaica monotona (A.Bang-Haas, 1912): Sheljuzhko, 1967, 214; Varga, 1974, 304; Gyulai, 1989, 106; Gyulai & Ronkay, 1999, 700; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 10; Mühlenberg et al. 2011, 206
Polia altaica: Sukhareva, 1974, 230; Bálint et al. 2014, 152; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Polia subcontigua: Knyazev et al. 2020, 199
Material: G-AT - 1 ♂, UMB2 - 1 ♂.

Polia serratilinea Ochsenheimer, 1816
Polia serratilinea sp. *eremorealis* Varga, 1974, 306; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 10
Material: KB3 - 4 ♂, 3 ♀, KD - 1 ♂, UMG1 - 1 ♂.

Pachetra sagittigera (Hufnagel, 1766)
Pachetra sagittigera bombycina (Eversmann, 1847): Sheljuzhko, 1967, 215; Gyulai, 1989, 106; Bálint et al. 2014, 145
Pachetra sagittigera: Varga, 1974, 308; Hacker et al. 2002, 58
Material: KB2 - 1 ♂.

Ctenoceratoda scotosparsa Varga, Ronkay & Ronkay 2018
Ctenoceratoda scotosparsa: Varga et al. 2018, 63
Material: KM1 - 1 ♂, 1 ♀, KM2 - 10 ♂ (Figures 8A, 8B), 10 ♀ (Figures 8C-8F), KE - 1 ♂.

Ctenoceratoda cyanochrea Varga, Gyulai, Ronkay & Ronkay, 2018
Ctenoceratoda cyanochrea: Varga et al. 2018, 63
Material: KB1 - 2 ♂, 2 ♀, KB3 - 1 ♂ (Figure 8G), 1 ♀, KB4 - 5 ♂, 1 ♀, KA - 1 ♂.

Ctenoceratoda persephone Varga, Ronkay & Ronkay, 2018
Ctenoceratoda persephone: Varga et al. 2018, 59
Material: KA - 1 ♂ (Figure 8H).

Ctenoceratoda peregovitsi Varga & Gyulai, 1999
Ctenoceratoda peregovitsi: Varga & Gyulai, 1999, 174
Material: G-AT - 1 ♂, KB1 - 1 ♂, 1 ♀, KU - 1 ♀, KB2 - 1 ♀, KD - 1 ♂, 1 ♀, KM2 - 1 ♂, KM1 - 2 ♂, 2 ♀, KA - 5 ♂, 2 ♀, BS - 2 ♂, 2 ♀, UMB1 - 2 ♀, UMB2 - 2 ♀, KE - 1 ♂, 1 ♀.

Ctenoceratoda argyrea Varga, 1992
Ctenoceratoda argyrea Varga, 1992, 98; Bálint & Benedek, 2009, 6; Benedek & Bálint, 2013, 150; Bálint et al. 2014, 84; Knyazev et al. 2020, 199
Material: BS - 2 ♂, 1 ♀, UMG1 - 4 ♂, US2 - 15 ♂, 2 ♀.

Lasianobia lauta (Püngeler, 1900)
Lasianobia lauta sajanensis (Kononenko, 1996): Bálint et al. 2006, 104
Material: G-AY - 2 ♀.

Lacanobia suasa ([Denis & Schiffermüller], 1775)
Mamestra suasa: Sheljuzhko, 1967, 216; Sukhareva, 1974, 231; Varga, 1974, 312
Lacanobia suasa: Behounek, 1992, 57; Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104
Dianobia suasa: Bálint et al. 2014, 89
Material: KD - 1 ♂.

Lacanobia aliena (Hübner, [1808])
Lacanobia aliena: Varga, 1974, 312; Behounek, 1992, 38; Bálint et al. 2006, 103; Mühlenberg et al. 2011, 205; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Diataraxia aliena: Bálint et al. 2014, 91
Material: KA - 2 ♂, KB3 - 1 ♂.

* *Lacanobia praedita* (Hübner, [1813])
Material: KA - 1 ♂ (Figure 9A).

Distribution: Europe, Caucasus, Transcaucasia, Middle and Near East, Iran, Central Asia, Afghanistan, Pakistan, North India, Mongolia.

Papestra biren (Goeze, 1781)
Mamestra biren: Varga, 1974, 313
Papestra biren: Bálint et al. 2006, 104; 2014, 147; Mühlenberg et al. 2011, 206
Material: G-ATs - 1 ♂.

Cornutifera simplex (Staudinger, 1889)
Sideridis simplex: Sheljuzhko, 1967, 215; Sukhareva, 1974, 230; Varga, 1974, 308; Gyulai, 1989, 106
Cornutifera simplex: Varga & Ronkay, 1991a, 166; Bálint et al. 2006, 104; 2014, 83; Bálint & Benedek, 2009, 6
Material: KM2 - 2 ♂; KM1 - 3 ♀, G-ATs - 21 ♂, UMB1 - 4 ♂, 4 ♀, UMB2 - 6 ♂, 5 ♀, KE - 2 ♂.

Sideridis egena (Lederer, 1853)
Mamestra egena: Staudinger, 1896, 255
Mamestra albicolon v. *egena*: Staudinger & Rebel, 1901, 156
Trichoclea egena: Alberti, 1971, 372
Sideridis egena: Varga, 1974, 309; Gyulai, 1989, 106; Varga & Ronkay, 1991a, 164; Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104; 2014, 160; Bálint & Benedek, 2009, 10; Knyazev et al. 2020, 199; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: G-AT - 1 ♂, 1 ♀, KB4 - 1 ♀, KM2 - 2 ♂, KM1 - 1 ♂, 1 ♀, KU - 1 ♀, G-ATs - 4 ♂, 4 ♀, UVB1 - 6 ♂, 2 ♀, UVB2 - 1 ♂, G-AY - 3 ♂, 1 ♀, US2 - 1 ♀, UMG1 - 2 ♂, KE - 2 ♂.

Sideridis turbida (Esper, 1790)
Mamestra albicolon (Hübner, [1813]): Staudinger, 1896, 255; Staudinger & Rebel, 1901, 156
Sideridis albicolon: Sheljuzhko, 1967, 215; Sukhareva, 1974, 230; Varga, 1974, 308; Gyulai & Ronkay, 1999, 701; Mühlenberg et al. 2011, 206
Trichoclea albicolon: Alberti, 1971, 372
Sideridis turbida: Bálint et al. 2014, 160; Knyazev et al. 2020, 199; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: G-ATs - 1 ♂, US2 - 1 ♂, UVB1 - 1 ♀.

Heliophobus mongoliensis Simonyi, 2015
? *Mamestra reticulata* var. *unicolor* (Alphéraky, 1889): Staudinger, 1896, 256; Staudinger & Rebel, 1901, 159; Bálint et al. 2014, 115
? *Heliophobus reticulata unicolor*: Sheljuzhko, 1967, 216; Gyulai, 1989, 108; Gyulai & Ronkay, 1999, 701
Heliophobus reticulata (Goeze, 1781): Sukhareva, 1974, 230
? «*Hadena reticulata* Vill.»: Alberti, 1971, 372
? *Heliophobus unicolor*: Bálint et al. 2006, 104; Bálint & Benedek, 2009, 8
? *Sideridis reticulatus*: Mühlenberg et al. 2011, 206
Heliophobus mongoliensis: Simonyi et al. 2015, 167; Knyazev et al. 2020, 199
? *Sideridis reticulata*: Enkhtur et al. 2021c, 373
Material: KA - 3 ♂, 1 ♀, KM2 - 1 ♀.

Saragossa demotica (Püngeler, 1902)
Sideridis peculiaris demotica: Sheljuzhko, 1967, 215
Sideridis demotica: Varga, 1974, 310
Saragossa demotica: Hacker et al. 2002, 87

Material: KA - 4 ♂ (Figure 9B), KB2 - 1 ♂, 2 ♀, KB3 - 2 ♂, KB4 - 1 ♂.

Saragossa incerta (Staudinger, 1896)
Dianthoecia (*Mamestra?*) *incerta* Staudinger, 1896, 258
Saragossa incerta: Sheljuzhko, 1967, 214; Varga, 1974, 292; Gyulai, 1989, 106; Varga & Ronkay, 1991a, 167; Gyulai & Ronkay, 1999, 697; Bálint et al. 2006, 104; 2014, 159; Bálint & Benedek, 2009, 10; Knyazev et al. 2020, 199
Material: G-AT - 5 ♂, KM2 - 1 ♂, 1 ♀, UMG1 - 2 ♂, US1 - 1 ♂, US2 - 2 ♂, UVK - 1 ♂.

Conisania leineri (Freyer, 1836)
Mamestra leineri var. *albina* Staudinger, 1896, 254; Staudinger & Rebel, 1901, 158
Material: G-AT - 2 ♂, KA - 7 ♂, 1 ♀, KB3 - 1 ♂, KM2 - 1 ♀, KB1 - 2 ♂.

Conisania arida (Lederer, 1855)
Mamestra arida: Staudinger, 1896, 255
Conisania arida: Sheljuzhko, 1967, 216; Varga, 1974, 310; Gyulai, 1989, 106; Varga & Ronkay, 1991a, 171; Bálint et al. 2014, 81; Knyazev et al. 2020, 199; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Trichoclea arida: Alberti, 1971, 372
Material: KU - 1 ♀, UMB1 - 3 ♂, 1 ♀, UVB1 - 5 ♂, 2 ♀, UVB2 - 11 ♂, 1 ♀, UVK - 3 ♂, 1 ♀, UMB1 - 2 ♂, UMG1 - 2 ♂.

Enterpia picturata (Alphéraky, 1882)
Enterpia picturata: Gyulai & Ronkay, 1999, 701; Hacker et al. 2002, 109; Bálint et al. 2006, 104
Material: KA - 1 ♂, 1♀, KU - 1 ♂, KB2 - 1 ♂.

Hadena magnolii (Boisduval, [1828])
Hadena magnolia: Bálint et al. 2006, 104
Material: KA - 1 ♀, KB3 - 2 ♂, 1 ♀.

Hadena confusa (Hufnagel, 1766)
Dianthoecia nana (Rottemburg, 1776): Staudinger, 1892, 365; Staudinger & Rebel, 1901, 162
Hadena confusa nana: Mühlenberg et al. 2011, 204; Enkhtur et al. 2017, Supplementary data (Table A1); 2021c, 372
Material: UMB1 - 2 ♂, 3 ♀, UMB2 - 1 ♀.

Hadena albimacula (Borkhausen, 1792)
Hadena albimacula: Bálint et al. 2006, 104; Bálint & Benedek, 2009, 8; Mühlenberg et al. 2011, 204
Material: KB3 - 1 ♂.

* *Hadena intensa* Boursin, 1962
Material: KB3 - 3 ♀ (Figure 9C).
Distribution: Central Asia (Kazakhstan, Kyrghyzstan, Tajikistan, W. China), Mongolia.

* *Hadena filograna* (Esper, 1788)
Material: KB3 - 2 ♀ (Figure 9D).
Distribution: Europe, North Africa (Morocco), Caucasus, Transcaucasia, Asia Minor, Central Asia (Kazakhstan, Kyrghysztan), SW Siberia, Mongolia.

Hadena corrupta (Herz, 1898)
Hadena corrupta: Sheljuzhko, 1967, 216; Varga, 1974, 314; Gyulai, 1989, 108; Hacker, 1992, 298; Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 8; Mühlenberg et al. 2011, 204; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 372
Anepia corrupta: Bálint et al. 2014, 85
Material: G-AT - 1 ♂, UMB1 - 1 ♂, 3 ♀, UMB2 - 1 ♂, UVB1 - 1 ♂.

Hadena aberrans (Eversmann, 1856)
Hadena aberrans: Sheljuzhko, 1967, 217; Varga, 1974, 314; Hacker, 1992, 272; Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 8; Benedek & Bálint, 2013, 150; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 372; Knyazev et al. 2020, 199
Anepia aberrans: Bálint et al. 2014, 85
Material: BS - 1 ♂, UVK - 2 ♂, 2 ♀.

Hadena strouhali (Boursin, 1955)
Hadena strouhali oxygrapha Hacker et Ronkay, 1992: Hacker, 1992, 319; Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104; 2014, 85; Bálint & Benedek, 2009, 8
Hadena strouhali: Knyazev et al. 2020, 199
Material: KM2 - 7 ♂, 2 ♀, KM1 - 5 ♂, 3 ♀, KA - 4 ♂, KB3 - 2 ♂, KB1 - 2 ♂, G-AT - 6 ♂, UMB1 - 7 ♂, 5 ♀, UMG1 - 8 ♂, 9 ♀, G-ATs - 1 ♂, UMB2 - 2 ♂, 1 ♀, UVK - 4 ♂, 1 ♀, KE - 4 ♂, 7 ♀.

Mythimna anderreggii (Boisduval, 1840)
Mythimna anderreggii: Bálint et al. 2014, 132
Material: KB3 - 1 ♂.

Mythimna opaca (Staudinger, 1900)
Mythimna opaca: Sheljuzhko, 1967, 217; Varga, 1974, 319; Gyulai, 1989, 108; Bálint et al. 2006, 105; 2014, 135; Mühlenberg et al. 2011, 205; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2).
Material: KA - 1 ♀, KB3 - 1 ♂, 5 ♀, KB2 - 4 ♀.

Lasionhada orientalis (Alphéraky, 1882)
Dianthoecia proxima var. *uniformis* Staudinger, 1896, 256
Lasionycta orientalis: Gyulai & Ronkay, 1999, 701; Bálint et al. 2006, 104; Bálint & Benedek, 2009, 9
Material: KB3 - 1 ♂, 4 ♀, KU - 1 ♀.

* *Lasionycta buraetica* Kononenko, 1988
Material: G-ATs - 1 ♂ (Figure 9E).
Distribution: S. Siberia, Mongolia.

Actebia laetifica (Staudinger, 1889)
Agrotis laetifica: Staudinger, 1896, 247; Staudinger & Rebel, 1901, 144
Rhyacia laetifica: Alberti, 1971, 371
Parexarnis laetifica: Kovács & Varga, 1971, 317; Sukhareva, 1980, 400; Gyulai & Ronkay, 1999, 693; Bálint et al. 2006, 105; Bálint & Benedek, 2009, 9
Actebia laetifica: Knyazev et al. 2020, 199

Material: KA - 1 ♂, 1 ♀, KM2 - 1 ♀, G-AT - 2 ♀, KB3 - 1 ♂, KD - 2 ♀, G-ATs - 1 ♂, 3 ♀.

Actebia squalida (Guenée, 1852)
Agrotis squalida: Staudinger & Rebel, 1901, 136
Protexarnis squalida: Zolotarenko, 1970, 274; Sukhareva, 1980, 400; Gyulai & Ronkay, 1999, 693; Bálint et al. 2006, 105
Actebia squalida: Knyazev et al. 2020, 199; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Material: KM2 - 1 ♀, KB4 - 2 ♂, G-AT - 1 ♂, KB3 - 2 ♂, KB2 - 2 ♂, KB1 - 1 ♂.

Actebia poecila (Alphéraky, 1888)
Agrotis poecila Alphéraky, 1888, 67; Staudinger & Rebel, 1901, 144
Agrotis superba Staudinger 1889: Staudinger, 1896, 246
Parexarnis poecila: Sheljuzhko, 1967, 211; Kovács & Varga, 1971, 316; Gyulai & Ronkay, 1999, 693; Bálint et al. 2006, 105; 2014, 148; Bálint & Benedek, 2009, 9; Benedek & Bálint, 2013, 151
Rhyacia poecila: Alberti, 1971, 371
Parexarnis poecilia [sic!]: Sukhareva, 1980, 400
Actebia poecila: Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373; Knyazev et al. 2020, 199
Material: KA - 1 ♀, G-AT - 1 ♀, KB2 - 1 ♀, KB4 - 1 ♀, UMB2 - 1 ♀.

Actebia obumbrata (Staudinger, 1889)
Parexarnis obumbrata: Kovács & Varga, 1971, 317; Bálint et al. 2006, 105; Bálint & Benedek, 2009, 9
Material: KB3 - 1 ♂, 1 ♀, KB4 - 1 ♀, KB2 - 1 ♂, KB1 - 1 ♂ (Figure 9F), 3 ♀, KE - 1 ♂, G-ATs - 1 ♂, 1♀.

Dichagyris candelisequa ([Denis & Schiffermüller], 1775)
Dichagyris candelisequa: Volynkin, 2012, 165
Material: KB3 - 3 ♀.

Dichagyris kaszabi Varga, 1973
? *Rhyacia umbrifera*: Alberti, 1971, 371
? «*Dichargyris kaszabi*»: Kovács & Varga, 1971, 308
Dichagyris kaszabi Varga, 1973, 195; Gyulai & Ronkay, 1999, 692; Bálint et al. 2006, 105; 2014, 92; Bálint & Benedek, 2009, 7; Knyazev et al. 2020, 199
Material: KA - 3 ♂, KB1 - 1 ♂, KB4 - 1 ♂, KU - 2 ♂, BS - 8 ♂, 1 ♀, UMG1 - 6 ♂, 1 ♀, US1 - 1 ♀ , US2 - 2 ♂, 1 ♀, UMB2 - 2 ♂.

Dichagyris pudica (Staudinger, 1895)
Agrotis pudica Staudinger, 1895, 351; Staudinger, 1896, 247; Staudinger & Rebel, 1901, 143
Dichargyris [sic!] *pudica*: Kovács & Varga, 1971, 308
Dichagyris pudica: Bálint et al. 2014, 83
Material: KA - 3 ♂, BS - 8 ♂, UMG1 - 1 ♂, UMB2 - 1 ♂, US1 - 2 ♂, US2 - 4 ♂, 1 ♀.

Dichagyris multicuspis (Eversmann, 1852)
Ochropleura (Dichagyris) multicuspis aequicuspis (Staudinger, 1899): Sheljuzhko, 1967, 211
Euxoa multicuspis: Alberti, 1971, 371
Dichargyris [sic!] *multicuspis aequicuspis* Kovács & Varga, 1971, 311

Dichagyris multicuspis: Bálint et al. 2006, 105; Knyazev et al. 2020, 199
Dichagyris multicuspis aequicuspis: Bálint et al. 2014, 92
Material: KA - 1 ♂, KB1 - 2 ♂, 4 ♀, KB2 - 1 ♂, KB4 - 1 ♂, UMG1 - 1 ♀, US1 - 4 ♂, 4 ♀, US2 - 4 ♂, 7 ♀, UVB1 - 1 ♂, UVB2 - 1 ♂.

* *Dichagyris ulrici* (Corti & Draudt, 1933)
Material: KB4 - 1 ♂ (Figure 9G).
Distribution: Central Asia (Kazakhstan, Uzbekistan, Kyrghyzstan, Tajikistan), Mongolia.

Euxoa phantoma I. Kozhantshikov, 1928
Euxoa phantoma: Volynkin, 2012, 169; Enkhtur et al. 2017, Supplementary data (Table A1); 2021c, 373; Knyazev et al. 2020, 201
Material: KB1 - 2 ♂, KB3 - 1 ♀, UMB1 - 1 ♂.

Euxoa adumbrata (Eversmann, 1842)
Agrotis adumbrata: Staudinger, 1896, 251
Euxoa lidia adumbrata: Sheljuzhko, 1967, 210; Kovács & Varga, 1971, 289; Sukhareva, 1980, 396; Gyulai & Ronkay, 1999, 689; Bálint et al. 2006, 105; Bálint & Benedek, 2009, 8
Euxoa adumbrata: Mühlenberg et al. 2011, 204; Knyazev et al. 2020, 199
Material: KB2 - 1 ♂, KB3 - 1 ♀, KB1 - 1 ♂, UMB - 1 ♂.

Euxoa cursoria (Hufnagel, 1766)
Agrotis cursoria currens Staudinger, 1896, 249; Staudinger & Rebel, 1901, 148
Euxoa cursoria: Zolotarenko, 1970, 368; Remm & Viidalepp, 1979, 52; Sukhareva, 1980, 397; Korsun et al. 2012, 23; Bálint et al. 2014, 106; Enkhtur et al. 2017, Supplementary data (Table A1); 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373; Knyazev et al. 2020, 199
Euxoa cursoria currens: Kovács & Varga, 1971, 295; Gyulai, 1989, 105
Euxoa currens: Gyulai & Ronkay, 1999, 690
Material: UMB1 - 1 ♂.

* *Euxoa uigurica* Gyulai, Ronkay & Varga, 2002
Material: G-ATs - 1 ♂ (Figure 9H).
Distribution: Central Asia (W. China), Mongolia.

Rhyacia electra (Staudinger, 1888)
Rhyacia electra: Bálint et al. 2006, 106
Material: KB2 - 2 ♂ (Figure 10A).

Agrotis clavis (Hufnagel, 1766)
Agrotis vestigialis amurensis Staudinger, 1892, 362
Scotia clavis amurensis: Sheljuzhko, 1967, 210; Kovács & Varga, 1971, 301
Agrotis clavis: Sukhareva, 1980, 398; Bálint et al. 2014, 52; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2); 2021c, 373
Agrotis clavis amurensis: Gyulai, 1989, 105; Gyulai & Ronkay, 1999, 692; Bálint et al. 2006, 105; Bálint & Benedek, 2009, 4; Benedek & Bálint, 2013, 153; Mühlenberg et al. 2011, 203
Material: G-AT - 1 ♀.

Agrotis desertorum Boisduval, 1840
Agrotis ripae var. *desertorum*: Staudinger, 1896, 249; Staudinger & Rebel, 1901, 148
Scotia ripae albovenosa (Tshetverikov, 1925): Sheljuzhko, 1967, 211
Agrotis ripae: Zolotarenko, 1970, 342; Sukhareva, 1980, 399
Scotia ripae: Kovács & Varga, 1971, 304
Agrotis desertorum: Korsun et al. 2012, 23; Knyazev et al. 2020, 201
Material: KD - 6 ♂, G-AT - 1 ♂, 1 ♀, KM2 - 2 ♂, KB1 - 1 ♂.

Agrotis ipsilon (Hufnagel, 1766)
Agrotis ypsilon [sic!]: Sukhareva, 1980, 398; Gyulai & Ronkay, 1999, 692
Agrotis ipsilon: Gyulai, 1989, 105; Bálint et al. 2014, 53; Knyazev et al. 2020, 201; Enkhtur et al. 2021a, Supplementary material (Table S2); 2021b, Supplementary material (Table S2)
Material: G-ATs - 1 ♂, US2 - 1 ♂, UVB1 - 1 ♂, 1 ♀.

Xestia senescens (Staudinger, 1881)
Pachnobia senescens: Kovács & Varga, 1971, 336
Xestia senescens: Bálint et al. 2006, 106; Bálint & Benedek, 2009, 11
Material: G-ATs - 1 ♂, 1 ♀.

Xestia herrichschaefferi (Alphéraky, 1895)
Agrotis herrich-schaefferi Alphéraky, 1895, 19; Staudinger, 1896, 245; Staudinger & Rebel, 1901, 142
Estimata herrichschaefferi: Kovács & Varga, 1971, 340; Sukhareva, 1980, 401; Gyulai & Ronkay, 1999, 696; Bálint et al. 2006, 106; Bálint & Benedek, 2009, 7
Estimaja herrichschaefferi: Remm & Viidalepp, 1979, 45
Xestia herrichschaefferi: Bálint et al. 2014, 174
Material: G-ATs - 1 ♂.

Ammogrotis suavis Staudinger, 1895
Ammogrotis suavis Staudinger, 1895, 358; 1896, 261; Zolotarenko, 1970, 272; Gyulai & Ronkay, 1999, 695; Bálint et al. 2006, 106; 2014, 54; Bálint & Benedek, 2009, 5; Knyazev et al. 2020, 201
Eugraphe suavis: Kovács & Varga, 1971, 332
Material: KA - 5 ♂, KB3 - 3 ♂, KM2 - 1 ♂, BS - 3 ♂, UMG1 - 3 ♂.

Xenophysa sharhu Varga, 1989
Xenophysa sharhu: Varga, 1989, 10; Bálint et al. 2006, 106; Bálint & Benedek, 2009, 10; Varga, 2011, 9.
Material: KM2 - 11 ♂ (Figures 10B-10D, 10F, GenBank ID: OR864690), 1 ♀ (Figure 10E), G-AT - 2 ♂, KB3 - 6 ♀.
Remark:The DNA barcode obtained by us from *X. sharhu* had no matches in any of the databases. COI sequence for this species is published for the first time.

Isochlora herbacea Alphéraky, 1895
Isochlora herbacea Alphéraky, 1895, 195; Varga, 1976, 187; Gyulai & Ronkay, 1999, 696; Bálint et al. 2006, 106; 2014, 121
Material: G-ATs - 62 ♂ (Figure 6C).

Acknowledgments

We thank Elena Pazhenkova for help in the field studies. The current study was performed within the framework of state project no. 122031100272-3 (analysis of the material) and also was funded by Russian Science Foundation to the Zoological Institute of the Russian Academy of Sciences RAS,

project number 19-14-00202 (field trips, collecting the material, molecular-genetic study). The work was partially performed using the equipment of the "Chromas" Core Facility and the Centre for Molecular and Cell Technologies of St. Petersburg State University, Russia.

References

Alberti, B. (1957) Eine kleine Lepidopteren Ausbeute aus der Mongolischen Volksrepublik. *Mitteilungen Deutschen Entomologischen Gesellschaft*, *16*(1), 5-6. https://doi.org/10.1002/mmnd.4820160107

Alberti, B. (1971). Lepidopteren aus der Mongolischen Volksrepublik. Ergebnisse der Mongolisch-Deutschen Expeditionen seit 1962, Nr. 58. *Deutsche Entomologische Zeitschrift, Iris, 18*, 361-376.

Alphéraky, S. (1888). Neue Lepidopteren. *Stettiner Entomologische Zeitung, 49,* 66-69.

Alphéraky, S. (1895). Lépidoptères nouveaux. *Deutsche Entomologische Zeitschrift Iris*, *8*, 180-202.

Bálint, Z, Katona, G., & Gubányi, A. 2014. *A life for Noctuidae. The owlet moths of Márton Hreblay (1963-2000). Names, specimens, and types*. Hungarian Natural History Museum.

Bálint, Z., & Benedek, B. (2009). New contributions to the knowledge of the Macrolepidoptera fauna of Mongolia (Lepidoptera: Hesperiidae, Lycaenidae, Noctuidae, Nymphalidae, Pieridae). *Folia Entomologica Hungarica, 70*, 1-12.

Bálint, Z., Benedek, B., & Csõvári, T. (2006). Contributions to the knowledge of the Macrolepidoptera fauna of Mongolia. *Folia Entomologica Hungarica, 67*, 93-108.

Behounek, G. (1992). Die holarktischen Arten der Gattung *Lacanobia* Billberg, 1820 (Lepidoptera: Noctuidae, Hadeninae). *Esperiana, 3*, 33-65.

Benedek, B., & Bálint, Z. (2013). Data to the Lepidoptera fauna of Mongolia: report on a high summer trip in 2010. *Folia Entomologica Hungarica, 74*, 147-156.

Boursin, C. (1967). Description de 26 espèces nouvelles de Noctuidae Trifinae palearctiques et d'un sous-genre nouveau de la sous-famille des Apatelinae-contributions à l'etude des Noctuidae Trifinae, 160 (suite et fin). *Entomops, 11*, 85-108.

Cendsuren, A. (1972). Investigations of the insect fauna of the Mongolian Peoples's Republic by Mongolian entomologists. *Insects of Mongolia, 1*, 50-56. [In Russian]

Daniel, F. (1965). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei, 53. Bombyces et Sphinges I. *Reichenbachia, 7*, 93-102.

Daniel, F. (1967). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei, 117. Bombyces et Sphinges II. *Reichenbachia, 9*: 201-208.

Daniel, F. (1969). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei, 165. Bombyces et Sphinges III. *Reichenbachia, 11*, 265-277.

Daniel, F. (1970). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei, 200. Bombyces et Sphinges IV. *Reichenbachia, 13*, 193-204.

Danner, F., Eitschberger, U., & Surholt, B. (1998). Die Schwärmer der westlichen Paläarktis. Bausteine zu einer Revision (Lepidoptera: Sphingidae). *Herbipoliana, 4*, 199-304.

Derzhavets, Yu. A. (1977). Hawkmoths (Lepidoptera, Sphingidae) of Mongolia. *Insects of Mongolia, 5*, 642-648. [In Russian]

Derzhavets, Yu. A. (1979). Taxonomic status of *Hyles costata* Nordmann (Lepidoptera, Sphingidae). *Insects of Mongolia, 6*, 404-412. [In Russian]

Derzhavets, Yu. A. (1984). An account of the classification of the sphinx moths (Lepidoptera, Sphingidae) with a list of species of the fauna of the USSR. *Entomological Review, 63*(3), 604-620.

Dufay, C. (1971). Description d'*Abrostola kaszabi* n. sp. de Mongolie, et note synonymique sur les *Abrostola* asiatiques. Ergebnisse der zoologischen forschungen von Dr. Z. Kaszab in der Mongolei (Lepidoptera, Noctuidae, Plusiinae). *Reichenbachia, 13*, 269-273.

Efetov, K. A., Gorbunov, O. G., & Tarmann, G. M. (2012). Zygaenidae of Mongolia (Lepidoptera). *Nachrichten des entomologischen Vereins Apollo, 32*(3/4): 159-164.

Emelyanov, A. F., & Kozlov, M. A. (1980). Joint Soviet-Mongolian investigations of insect fauna of the Mongolian People's Republic during 1978. *Insects of Mongolia, 7*, 7-13. [In Russian]

Emelyanov, A. F., Kerzhner, I. M., & Kozlov, M. A. (1973). Joint Soviet-Mongolian investigations of insect fauna of the Mongolian People's Republic in 1968-1971. *Entomological Review, 52*(4), 466-483.

Emelyanov, A. F., Kerzhner, I. M., & Kozlov, M. A. (1977). Joint Soviet-Mongolian investigations of insect fauna of the Mongolian People's Republic during 1975 and 1976. *Insects of Mongolia, 5*, 7-16. [In Russian]

Emelyanov, A. F., Zaitsev, V. F., & Kerzhner, I. M. (1968). Expedition of entomologists from the Zoological Institute of the USSR Academy of Sciences to the Mongolian People's Republic in 1967. *Entomological Review, 47*(4), 942-946.

Enkhtur, K., Brehm, G., Boldgiv, B., & Pfeiffer, M. (2021a). Alpha and beta diversity patterns of macro-moths reveal a breakpoint along a latitudinal gradient in Mongolia. *Scientific Reports, 11*, 15018. https://doi.org/10.1038/s41598-021-94471-3 PMid:34294812 PMCid:PMC8298579

Enkhtur, K., Brehm, G., Boldgiv, B., & Pfeiffer, M. (2021b). Effects of grazing on macromoth assemblages in two different biomes in Mongolia. *Ecological Indicators, 133*, 108421. https://doi.org/10.1016/j.ecolind.2021.108421

Enkhtur, K., Munkhbat, U., Boldgiv, B., & Pfeiffer, M. (2021c). Diversity of moths (Lepidoptera: Heterocera) in north-central Mongolia. *Erforschung biologischer Ressourcen der Mongolei / Exploration into the Biological Resources of Mongolia, 14*, 361-377. https://digitalcommons.unl.edu/biolmongol/263/

Enkhtur, K., Pfeiffer, M., Lkhagva, A., & Boldgiv, B. (2017). Response of moths (Lepidoptera: Heterocera) to livestock grazing in Mongolian rangelands. *Ecological Indicators, 72*, 667-674. https://doi.org/10.1016/j.ecolind.2016.08.053

Fibiger, M., Ronkay, L., Steiner, A., & Zilli, A. 2009. *Noctuidae Europaeae. Pantheinae-Bryophilinae* (Vol. 11). Entomological Press.

Folmer, O., Black, M., Hoeh, W., Lutz, R., & Vrijenhoek, R. (1994). DNA primers for amplification of mitochondrial cytochrome with oxidase subunit I from diverse metazoan invertebrates. *Molecular Marine Biology and Biotechnology, 3*, 294-299.

Gorbunov, O. G. (2023). Two new species of the genus *Bembecia* Hübner, 1819 ["1816"] (Lepidoptera: Sesiidae) from Western Mongolia. *Russian Entomological Journal, 32*(2): 198-206. https://doi.org/10.15298/rusentj.32.2.10

Gorbunov, O. G. (2024). To the knowledge of the fauna of Lepidoptera of Mongolia. Family tussock moths (Lepidoptera: Noctuoidea: Lymantriidae). *Caucasian Entomological Bulletin, 20*(1): 47-59. https://doi.org/10.5281/zenodo.10869524

Grum-Grshimailo, G. Ye. (1906). Butterflies collected by P. S. Mikhno between Dzhida river and Lake Kosogol (scientific results of the Kosogol expedition). *Proceedings of the Troitskosavsk-Kyaktha Department of the Amur Division of the Imperial Geographical Society, 8*(3), 71. [in Russian]

Grum-Grshimailo, G. Ye. (1911). Butterflies collected in the vicinity of Troitskosavsk in 1896–1897 and in northern Mongolia in 1907. *Proceedings of the Troitskosavsk-Kyaktha Department of the Amur Division of the Imperial Geographical Society, 13*(1), 65-67. [in Russian]

Gyulai, P., & Ronkay, L. (1999). The Noctuidae (Lepidoptera) material collected by two Hungarian expeditions to Mongolia in 1996 and 1997. *Esperiana, 7*, 687-713.

Gyulai, P. (1989). The Noctuid Material of a Mongolian light-trap. *Atalanta*, *20*, 105-110.

Hacker, H. (1992). Revision der Gattung *Hadena* Schrank, 1802 (Lepidoptera) Teil I. *Esperiana, 3*, 243-361.

Hacker, H. (2001). Revision of genus *Clytie* Hübner, [1823]. *Esperiana, 8*, 316-357.

Hacker, H., Ronkay, L., & Hreblay, M. (2002). Hadeninae I. *Noctuidae Europaeae* (Vol. 4). Entomological Press.

Hampson, G. F. (1913*). Catalogue of the Lepidoptera Phalaenae in the British Museum XIII*. British Museum.

Kaszab, Z. (1963). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. 2. Liste der Fundorte *Folia Entomologica Hungarica, 16*(18), 285-307.

Kaszab, Z. (1965a). Ergebnisse der zoologischen Forschungen von Dr. Kaszab in der Mongolei. 25. Liste der Fundorte der II. Expedition. *Folia Entomologica Hungarica, 18*(2), 5-38.

Kaszab, Z. (1965b). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. 66. Liste der Fundorte der III. Expedition. *Folia Entomologica Hungarica, 18*(36), 587-625.

Kaszab, Z. (1966). Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. 107. Liste der Fundorte der IV. Expedition. *Folia Entomologica Hungarica, 19*(34), 569-620.

Kaszab, Z. (1968). Ergebnisse der zoologischen Forschungen von Dr. Kaszab in der Mongolei. 152. Liste der Fundorte der V. Expedition. *Folia Entomologica Hungarica, 21*(1), 1-44.

Kerzhner, I. M. (1972). Historical survey of studies of the insect fauna of the Mongolian People's Republic. *Insects of Mongolia, 1*, 57-112. [In Russian]

Kerzhner, I. M., Kozlov, M. A., & Korotyaev, B. A. (1982). Joint Soviet-Mongolian investigations of insect fauna of the Mongolian People's Republic during 1980 and 1981. *Insects of Mongolia, 8*, 7-15. [In Russian]

Knyazev, S. A., Makhov, I. A., Matov, A. Y., & Yakovlev, R. V. (2020). Checklist of Macroheterocera (Insecta, Lepidoptera) collected in 2019 in Mongolia by Russian entomological expeditions. *Ecologica Montenegrina, 38*, 186-204. https://doi.org/10.37828/em.2020.38.27

Kononenko, V. S. (2016) Noctuoidea Sibiricae. Noctuidae: Cuculliinae - Noctuinae, part (Lepidoptera). Part 3. *Proceedings of the Museum Witt Munich*, 5. Munich-Vilnius.

Korb, S., Matov, A., Pliushch, I., Klyuchko, Z., & Poltavsky, A. (2017). *The Noctuoid moths of Kyrgyzstan*. KMK.

Korsun, O. V., Akulova, G. A., Gordeev, S. Yu., Gordeeva, T. V., & Budaeva, A. A. (2012). Insects of the Onon-Balj National Park (Mongolia). *Amurian Zoological Journal, 4*(1), 18-25. [In Russian] https://doi.org/10.33910/1999-4079-2012-4-1-18-25

Kovács, L., & Varga, Z. (1971). Ergebnisse der zoologischen Forschungen von Dr. Kaszab in der Mongolei, 316. Noctuidae: Noctuinae (Lepidoptera). *Folia Entomologica Hungarica, 26*(2), 287-343.

Makhov, I. A., Lukhtanov, V. A., & Vishnevskaya, M. S. (2023). Lepidoptera collected in S. W. Mongolia during expedition in Mongolian Altai in 2022 (Lepidoptera: Geometridae). *SHILAP Revista de lepidopterología, 51*(204), 681-707.

Matov, A. Yu., & Korb, S. K. (2019). A revision of the genus *Drasteria* of Central Asia and Kazakhstan with special attention to the adjacent areas (Lepidoptera: Erebidae). *Zootaxa, 4673*(1), 1-104. https://doi.org/10.11646/zootaxa.4673.1.1 PMid:31716027

Morozov, P. S., Yakovlev, R. V., Doroshkin, V. V., & Beket, U. (2016). New Notodontidae species for Mongolian Fauna (Lepidoptera). *Russian Entomological Journal*, 25(2), 173-176.

Mühlenberg, M., Enkhmaa, A., & Mühlenberg-Horn, E. (2011). *Biodiversity Survey at Khonin Nuga Research Station West-Khentey*. Ulaanbaatar.

Pekarsky, O., Volynkin, A. V., & Matov, A. Yu. (2014). A new species of *Bryophila* Treitschke, 1825 from Mongolia (Lepidoptera, Noctuidae, Bryophilinae). *Zootaxa, 3856*(1), 143-148. https://doi.org/10.11646/zootaxa.3856.1.7 PMid:25284650

Peregovits, L. (1989). Past and present studies on the Mongolian Lepidoptera fauna. *Nota lepidopterologica, 12* (Suppl. 1), 52-53.

Radzhabova, Z., & Matov, A. Yu. (2020). *Annotated catalogue of owlet moths (Lepidoptera, Noctuidae) of Tajikistan.* Khuroson publishing house. [In Russian]

Remm, H., & Viidalepp, J. (1979). On the fauna of Lepidoptera of Tuva ASSR. III. Noctuidae. *Acta et commentationes Universitatis Tartuensis, 483*, 40-78. [In Russian]

Ronkay L., & Varga Z. (1989). Studies on the Palaearctic Noctuidae. Sect. Amphipyrinae (Lepidoptera), I. The genus *Pseudohadena* Alphéraky, 1889. The *laciniosa*-group. *Acta Zoologica Hungarica, 35*(3-4), 339-353.

Ronkay, G., & Ronkay, L. (1987). Taxonomic studies on the Palaearctic Cucullinae. Part II (Lepidoptera: Noctuidae). *Acta Zoologica Hungarica, 33*(3-4), 463-484.

Ronkay, G., & Ronkay, L. (2009). *Cuculliinae 1. A Taxonomic Atlas of the Eurasian and North African Noctuoidea* (Vol. 2). Heterocera Press.

Ronkay, L., & Ronkay, G. (1986). Taxonomic studies on the Palaearctic Cucullinae. Part 1: Description of four new species. *Acta Zoologica Hungarica, 32*(3-4), 351-360.

Ronkay, L. (1983). Noctuidae (Lepidoptera) from Mongolia. Noctuidae V: Quadrifinae. *Annales Historico-Naturales Musei Nationalis Hungarici, 75*, 229-246.

Ronkay, L. (1987). To new Plusiinae (Lepidoptera: Noctuidae) species from Mongolia. *Folia Entomologica Hungarica, 48*, 217-224.

Ronkay, L. (2005). Revision of the genus *Lophoterges* Hampson, 1906 (s. l.) (Lepidoptera, Noctuidae, Cuculliinae). Part II. *Acta Zoologica Academiae Scientiarum Hungaricae, 51*(1), 1-57.

Ronkay, L., Ronkay, G., & Landry B. (2023). The Jacques Plante Noctuidae collection. Part 2. Amphipyrinae, Psaphidinae, Cuculliinae, Oncocnemidinae, Acontiinae, Pantheinae, Dyopsinae, Raphiinae, Acronictinae, Bryophilinae, Heliothinae, Condicinae and Xyleninae. New taxa. *Mémoires de la Société de Physique et d'Histoire Naturelle de Genève, 49*(2), 19-428.

Ronkay, L., Ronkay, G., Gyulai, P., & Varga, Z. (2014). Erebidae I. *A Taxonomic Atlas of the Eurasian and North African Noctuoidea* (Vol. 7). Heterocera Press.

Saldaitis, A., & Ivinskis, P. (2006). A new species of *Hyles* (Lepidoptera, Sphingidae) from Mongolia with distributional notes on the other members of the genus. *Acta Zoologica Lituanica, 16*(4), 317-322. https://doi.org/10.1080/13921657.2006.10512748

Schintlmeister, A. (2008). Notodontidae. *Palaearctic Macrolepidoptera* (Vol. 1). Apollo-Book. https://doi.org/10.1163/9789004260993

Sheljuzhko, L. (1967). 112. Noctuidae der I. und der II. Expedition. Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei (Lepidoptera). *Reichenbachia, 9*, 209-227.

Simonyi, S. J., Ronkay, L., & Gyulai, P. (2015). A revision of the genus *Heliophobus* Boisduval, 1828 (Lepidoptera, Noctuidae, Hadeninae). *Acta Zoologica Academiae Scientiarum Hungaricae, 61*(2), 147-188. https://doi.org/10.17109/AZH.61.2.147.2015

Staudinger, O. (1892). Lepidopteren des Kentei-Gebirges. *Deutsche Entomologische Zeitschrift, Iris, 5*, 300-393.

Staudinger, O. (1895). Über Lepidopteren von Uliassutai. *Deutsche Entomologische Zeitschrift Iris, 8*, 344-366.

Staudinger, O. (1896). Über Lepidopteren von Uliassutai. *Deutsche Entomologische Zeitschrift, Iris, 9*, 240-283.

Staudinger, O., & Rebel, H. (1901). *Catalog der Lepidopteren des Palaearctischen Faunengebietes*. R. Friedlander & Sohn. https://doi.org/10.5962/bhl.title.120482

Sukhareva, I. L. (1974). On the fauna of Hadeninae (Lepidoptera, Noctuidae) of the Mongolian People's Republic. *Insects of Mongolia, 2*, 228-232. [In Russian]

Sukhareva, I. L. (1980). On the noctuid-moths fauna of Mongolia (Lepidoptera, Noctuidae). *Insects of Mongolia, 7*, 396-412. [In Russian]

Sviridov, A. V. (2008). A catalogue of the Underwing Moths (Lepidoptera, Erebidae, *Catocala*) of the Palearctic. *Proceedings of the Zoological Museum MSU, 49*, 70-100. [In Russian]

Varga, Z. (1973). Neue Noctuiden von Zentralasien aus der Zoologischen Staatssammlung München und aus dem Naturwissenschaftlichen Museum Budapest. Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei Nr. 338. *Mitteilungen der Münchner Entomologischen Gesellschaft*, *63*, 194-222.

Varga, Z. (1974). Hadeninae (Lepidoptera, Noctuidae) aus der Mongolei. *Annales Historico-Naturales Musei Nationalis Hungarici, 66*, 289-322.

Varga, Z. (1976). Noctuidae (Lepidoptera) aus der Mongolei, III. Die Subfamilien Cuculliinae, Apatelinae und Melicleptriinae. *Annales Historico-Naturales Musei Nationalis Hungarici, 68*, 175-189.

Varga, Z. (1982). Noctuidae (Lepidoptera) aus der Mongolei, IV. Subfamilie Amphipyrinae. *Folia Entomologica Hungarica, 43*(1), 205-227.

Varga, Z. (1989). Zweiter Beitrag zur Kenntnis der Gattung *Xenophysa* Boursin, 1969 (Lepidoptera: Noctuidae) mit der Beschreibung fünf neuer Arten. *Zeitschrift der Arbeitsgemeinschaft Österreichscher Entomologen, 41*(1/2), 1-18.

Varga, Z. (1992). Taxonomic notes on the genus *Haderonia* Staudinger, 1896 with descriptions of one new genus and four new species (Lepidoptera, Noctuidae). *Acta Zoologica Hungarica, 38*(1-2), 95-112.

Varga, Z. (2011). Revision of the genus *Xenophysa* Boursin, 1969 (Lepidoptera, Noctuidae). *Zootaxa, 3094*, 1-29. https://doi.org/10.11646/zootaxa.3094.1.1

Varga, Z., & Gyulai, P. (1999). Taxonomy of the genus *Ctenoceratoda* Varga, 1992 (Lepidoptera, Noctuidae) with the description of seven new species. *Acta Zoologica Academiae Scientiarum Hungaricae, 45*(2), 169-197.

Varga, Z., Gyulai, P., Ronkay, G., & Ronkay, L. (2018). Review of the species groups of the genus *Ctenoceratoda* Varga, 1992 with description of four new species and a new subspecies (Lepidoptera, Noctuidae). *Acta Zoologica Academiae Scientiarum Hungaricae, 64*(1), 51-74. https://doi.org/10.17109/AZH.64.1.51.2018

Varga, Z., & Ronkay, L. (1991a). Taxonomic studies on the genera *Sideridis* Hübner, *Saragossa* Staudinger and *Conisania* Hampson (Lepidoptera, Noctuidae: Hadeninae). *Acta Zoologica Hungarica, 37*(1-2), 145-172.

Varga, Z., & Ronkay, L. (1991b). Taxonomic studies on the Palaearctic Noctuidae (Lepidoptera) I. New taxa from Asia. *Acta Zoologica Hungarica, 37*(3-4), 263-312.

Varga, Z., & Ronkay, L. (1992). Studies on the Palaearctic Noctuidae, sect. Amphipyrinae, III. The *Mesapamea hedeni* Graeser complex (Lepidoptera). *Acta Zoologica Hungarica, 38*(1-2), 113-124.

Varga, Z., Ronkay, L., & Peregovits, L. (1989). Zoographical survey of the Mongolian Noctuidae fauna. *Nota lepidopterologica, 12* (Suppl. 1), 63-64.

Viidalepp, J. (1979). On the fauna of Lepidoptera of Tuva ASSR. II. Sphinges and Bombyces. *Acta et commentationes Universitatis Tartuensis, 483*, 17-39. [In Russian]

Volynkin, A. V., & Gyulai, P. (2018). A new species of *Athaumasta* Hampson, 1906 (Lepidoptera, Noctuidae, Bryophilinae) from the Altai Mountains of Mongolia and China. *Zootaxa, 4508*(4), 594-600. https://doi.org/10.11646/zootaxa.4508.4.10

Volynkin, A. V. (2012). Noctuidae of the Russian Altai (Lepidoptera). *Proceedings of the Tigirek State Natural Reserve, 5*, 1-239.

Volynkin, A. V., Matov, A. Yu., Behounek, G., & Han, H.-L. (2014). A review of the Palearctic *Mniotype adusta* (Esper, 1790) species-group with description of a new species and six new subspecies (Lepidoptera: Noctuidae). *Zootaxa, 3796*(1), 1-32. https://doi.org/10.11646/zootaxa.3796.1.1 PMid:24870663

Volynkin, A. V., Saldaitis, A., Titov, S. V., & Truuverk, A. (2019). Six new species of *Athaumasta* Hampson, 1906

(Lepidoptera, Noctuidae, Bryophilinae) from the mountains of Kazakhstan, Russian Altai, and Mongolia. *Ecologica Montenegrina*, *22*, 1-26. https://doi.org/10.37828/em.2019.22.1

Wiltshire, E. P. (1969). Neue Noctuidenarten und-formen, Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei. *Reichenbachia, 12*, 131-139.

Witt, T. J., & Ronkay, L. (2011). Lymantriinae - Arctiinae, including Phylogeny and Checklist of the Quadrifid Noctuoidea of Europe. *Noctuidae Europaeae* (Vol. 13). Entomological Press.

Yakovlev, R. V. (2015) Cossidae (Lepidoptera) of Mongolia. *Check List*, 11(5), 1736. doi: http://dx.doi.org/10.15560/11.5.1736

Yakovlev, R. V., Gus'kova, E. V., Doroshkin, V. V., & Titov, S. V. (2015). Sphingidae of the Mongolian Altai (Lepidoptera: Sphingidae). *SHILAP Revista de lepidopterología, 43*(171), 467-478. https://www.redalyc.org/pdf/ 455/45543215014.pdf

Zolotarenko, G. S. (1970) *Cutworms of West Siberia (Lepidoptera, Agrotinae)*. Nauka. [In Russian]

Zolotuhin, V. V., & Saldaitis, A. (2011). Does *Hyles chuvilini* Eitschberger, Danner & Surholt, 1998 present a taxonomic problem (Lepidoptera, Sphingidae). *Neue Entomologische Nachrichten, 67*, 73-78.

Zolotuhin, V. V. (1994). On the fauna of the Macrolepidoptera (Lepidoptera) of Mongolia. *Actias*, *1*(1-2), 121-123.

*Ilya A. Makhov
Laboratory of Insect Systematics
Zoological Institute
Russian Academy of Sciences
Universitetskaya, 1
RUS-199034 St. Petersburg
RUSIA / *RUSSIA*
E-mail: maakhov@mail.ru
https://orcid.org/0000-0002-3563-0139

Alexej Yu. Matov
Laboratory of Insect Systematics
Zoological Institute
Russian Academy of Sciences
Universitetskaya, 1
RUS-199034 St. Petersburg
RUSIA / *RUSSIA*
E-mail: Alexey.Matov@zin.ru
https://orcid.org/0000-0002-6066-6440

Vladimir A. Lukhanov
Laboratory of Insect Systematics
Zoological Institute
Russian Academy of Sciences
Universitetskaya, 1
RUS-199034 St. Petersburg
RUSIA / *RUSSIA*
E-mail: lukhtanov@mail.ru
https://orcid.org/0000-0003-2856-2075

*Autor para la correspondencia / *Corresponding author*

(Recibido para publicación / *Received for publication* 15-XII-2023)
(Revisado y aceptado / *Revised and accepted* 21-IV-2024)
(Publicado / *Published* 30-IX-2024)

Table 1. List of collection sites (in chronological order). The reference to figures in our previous paper (Makhov et al., 2023) are marked with asterisk. The reference to figures (in this article) illustrated collection localities in 2023 are in bold.

Abbr.	Locality	Coordinates	Date	Figure
KM1	Khovd aimag, Must Sum, 16 km NWW of Must, dry hills	46.7274700N, 92.5920415E	5.VI.2022	6C*
KA	Khovd aimag, Altai Sum, 22 km NNW of Altai, 1552 m.a.s.l.	46.006623N 92.356425E	6.VI.2022	3A*
KB1	Khovd aimag, Bulgan Sum, 36 km S of Bulgan, desert	45.7812698N, 91.1355541E	7.VI.2022	4C*
KU	Khovd aimag, Uyench Sum, 10 km NNE of Burenkhairkhan	46.1866290N, 91.6003534E	9.VI.2022	5C*
KB2	Khovd aimag, Bulgan Sum, 27 km NNW of Burenkhairkhan	46.3372557N, 91.4698368E	10.VI.2022	4A*
KB3	Khovd aimag, Bulgan Sum, 30 km NNE of Bulgan	46.4021527N, 91.1830443E	11.VI.2022	4B*
KB4	Khovd aimag, Bulgan Sum, 19 km NE of Bulgan, dry steppe	46.2548970N, 91.2569036E	12.VI.2022	3B*, 3C*
KM2	Khovd aimag, Must Sum, 16 km NWW of Must, 2280 m	46.7274700N, 92.5920415E	13.VI.2022	6A*, 6B*
G-AT	Govi-Altay aimag, Tonkhil Sum, 11 km W of Tonkhil village	46.2979918N, 93.7575660E	15.VI.2022	2A*, 2B*
KD	Khovd aimag, Darvi Sum, 14 km NWW of Darvi village, dry hills	46.958009N, 93.435621E	17.VI.2022	5A*, 5B*
KE	Mongolian Altai, Khovd Aimag, Erdenebüren Sum, 50 km NW of Khovd	48.344370N, 91.152424E	9.VI.2023	**2A**
G-AY	Mongolian Altai, Govi-Altai Aimag, Yesönbulag Sum, 15 km NWW of Altai city	46.4250239N, 96.0726805E	10.VI.2023	-
UVK	Gobi Altai, Övörkhangai Aimag, Khairkhandulaan Sum, 117 km SW of Arvaikheer	45.5246957N, 101.6923948E	12.VI.2023	**2B**
UVB1	Gobi Altai, Övörkhangai Aimag, Bogd Sum, 14 km SE of Bogd, Arts-Bogd Mts. ridge	44.5697605N, 102.2884893E	16.VI.2023	**2C**
UVB2	Gobi Altai, Övörkhangai Aimag, Bogd Sum, 30 km SEE of Bogd, Arts-Bogd ridge	44.5365397N, 102.5125336E	17.VI.2023	**3A**
US1	Gobi Altai, Ömnögovi Aimag, Servei Sum, 7,5 km NW of Servei	43.6357291N, 102.1156652E	19.VI.2023	**3B**
US2	Gobi Altai, Ömnögovi Aimag, Servei Sum, 37 km SEE of Servei, Zöölöngiin nuru	43.5066757N, 102.6328658E	20.VI.2023	**3C**
UMB1	Gobi Altai, Ömnögovi Aimag, Bayandalai Sum, 32 km NEE of Bayandalai	43.7592101N, 103.5698007E	21.VI.2023	**4A**
UMB2	Gobi Altai, Ömnögovi Aimag, Bayandalai Sum, 26 km NE of Bayandalai	43.6530916N, 103.7037193E	22.VI.2023	**4B**
UMG1	Gobi Altai, Ömnögovi Aimag, Gurvan tes Sum, 36 km W of Gurvan tes	43.1754582N, 100.5989524E	25.VI.2023	**4C**
UMG2	Gobi Altai, Ömnögovi Aimag, Gurvan tes Sum, 92 km SWW of Gurvan tes	43.1244064N, 99.9253519E	26.VI.2023	**5A**
BS	Gobi Altai, Bayankhongor Aimag, Shinejinst Sum, 27 km SE of Shinejinst	44.3717738N, 99.5200808E	29.VI.2023	**5B**
G-ATs	Gobi Altai, Govi-Altai Aimag, Tsogt Sum, 36 km NEE of Tsogt, 2840 m.a.s.l.	45.4266563N, 97.0989775E	1.VII.2023, 3.VII.2023	**5C** **6A**
G-ATg	Gobi Altai, Govi-Altai Aimag, Tögrög Sum, 70 km SWW of Tseel, foot of the hill, in daytime	45.3697830N, 94.9856093E	5.VII.2023	**6B**

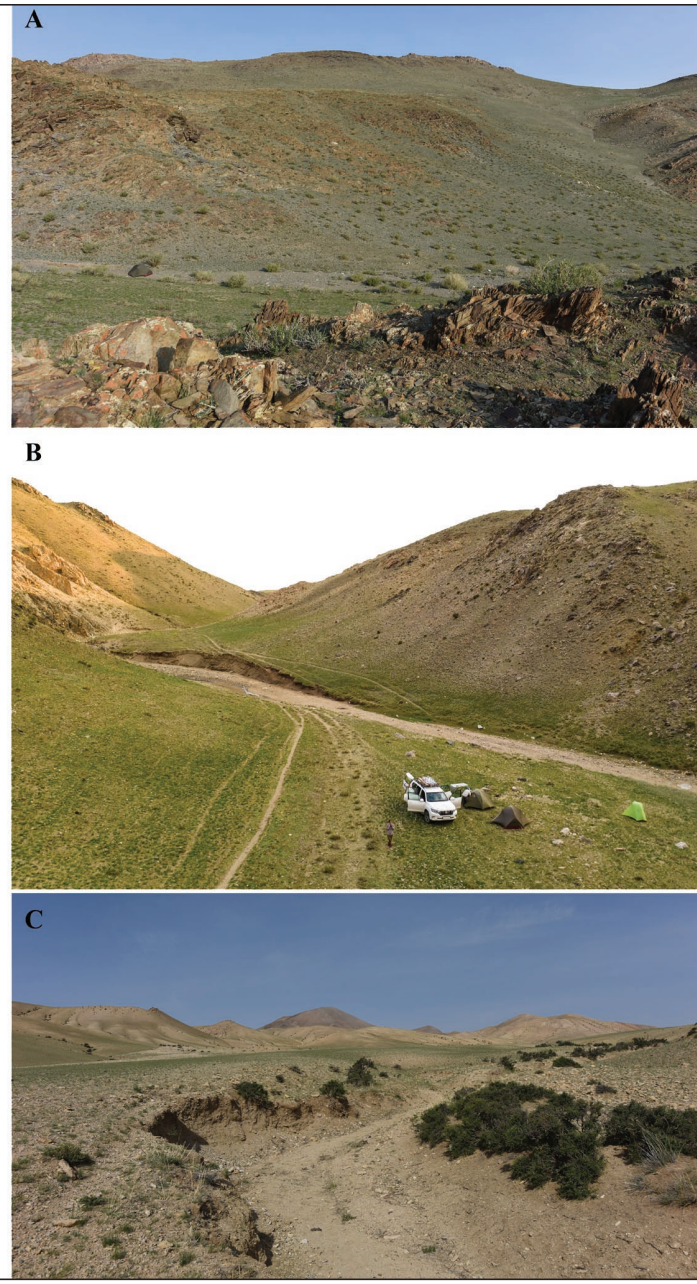

Figure 2. Habitats of the second travel. **A.** Khovd Aimag, Erdenebüren Sum, 50 km NW of Khovd. **B.** Övörkhangai Aimag, Khairkhandulaan Sum, 117 km SW of Arvaikheer (photo by E. Pazhenkova). **C.** ditto, Bogd Sum, 14 km SE of Bogd, Arts-Bogd Mts. ridge.

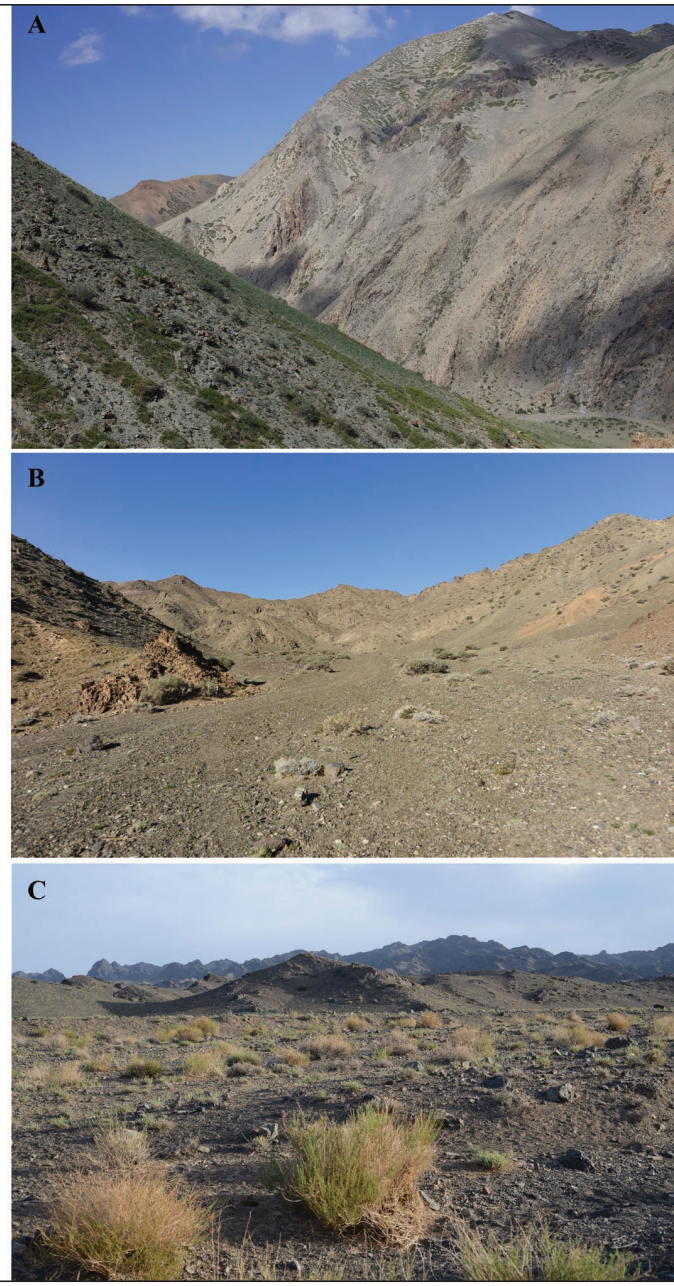

Figure 3. Habitats of the second travel. **A.** Övörkhangai Aimag, Bogd Sum, 30 km SEE of Bogd, Arts-Bogd ridge (photo by E. Pazhenkova). **B.** Ömnögovi Aimag, Servei Sum, 7,5 km NW of Servei. **C.** ditto, Servei Sum, 37 km SEE of Servei, Zöölöngiin nuru.

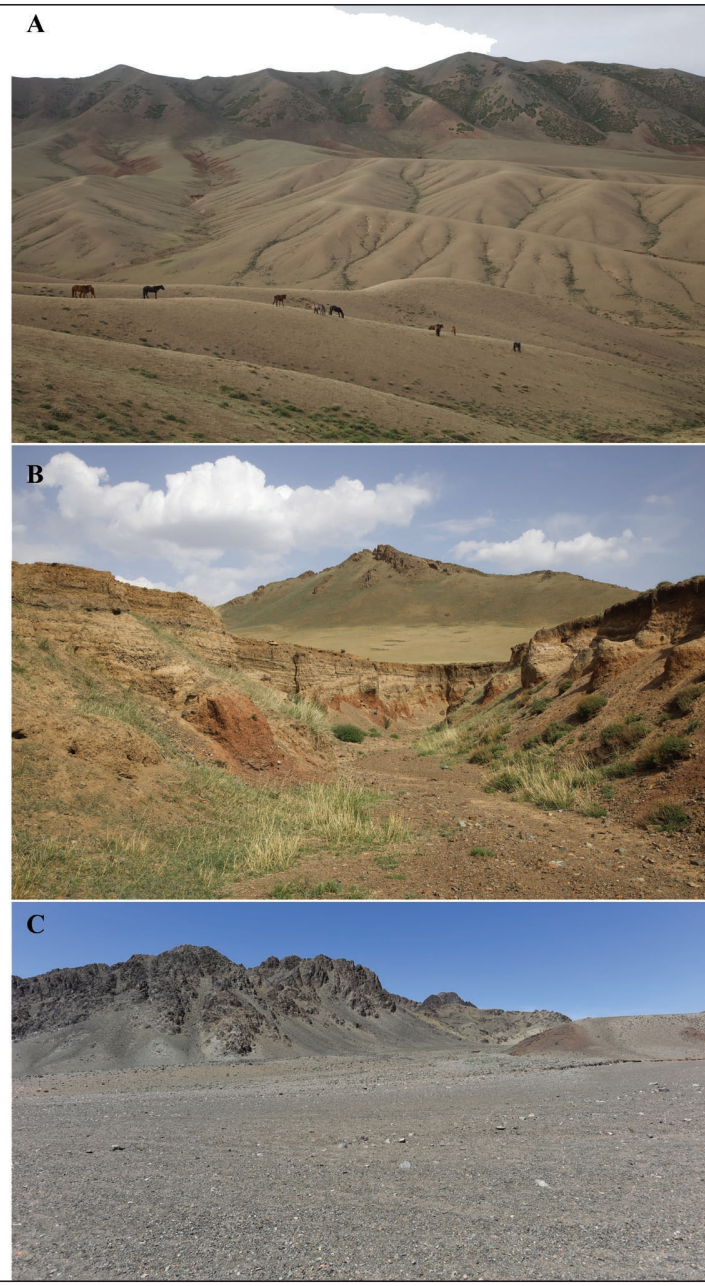

Figure 4. Habitats of the second travel, Ömnögovi Aimag. **A.** Bayandalai Sum, 32 km NEE of Bayandalai (photo by E. Pazhenkova). **B.** ditto, 26 km NE of Bayandalai (photo by E. Pazhenkova). **C.** Gurvan tes Sum, 36 km W of Gurvan tes.

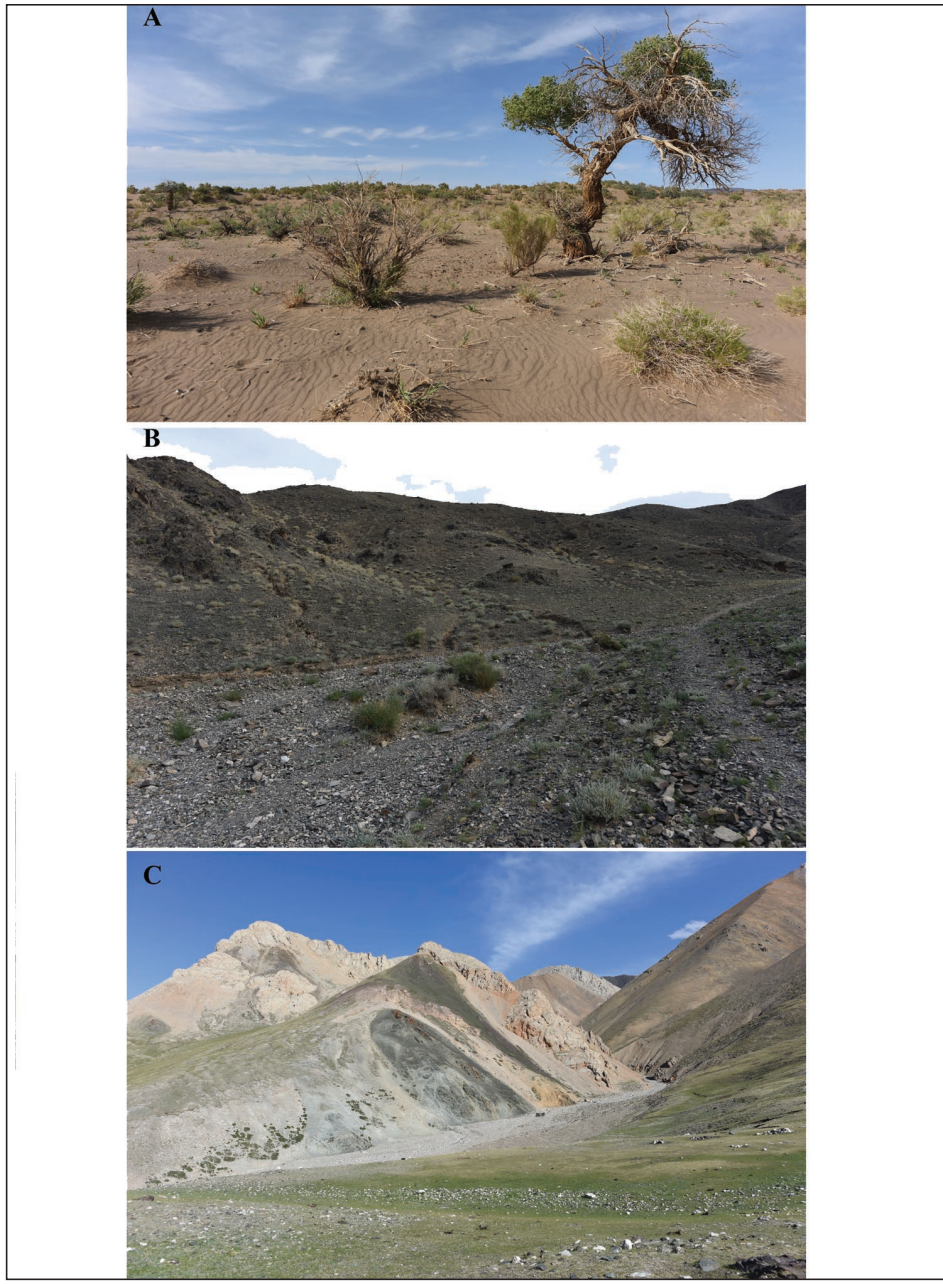

Figure 5. Habitats of the second travel. **A.** Ömnögovi Aimag, Gurvan tes Sum, 92 km SWW of Gurvan tes. **B.** Bayankhongor Aimag, Shinejinst Sum, 27 km SE of Shinejinst. **C.** Govi-Altai Aimag, Tsogt Sum, 36 km NEE of Tsogt, 2840 m.a.s.l.

Figure 6. Habitats of the second travel, Govi-Altai Aimag. **A.** Tsogt Sum, 36 km NEE of Tsogt, 2840 m.a.s.l. **B.** Tögrög Sum, 70 km SWW of Tseel, foot of the hill. **C.** *Isochlora herbacea*, Govi-Altai Aimag, Tsogt Sum, 36 km NEE of Tsogt, 2840 m.a.s.l., 1-VII-2023

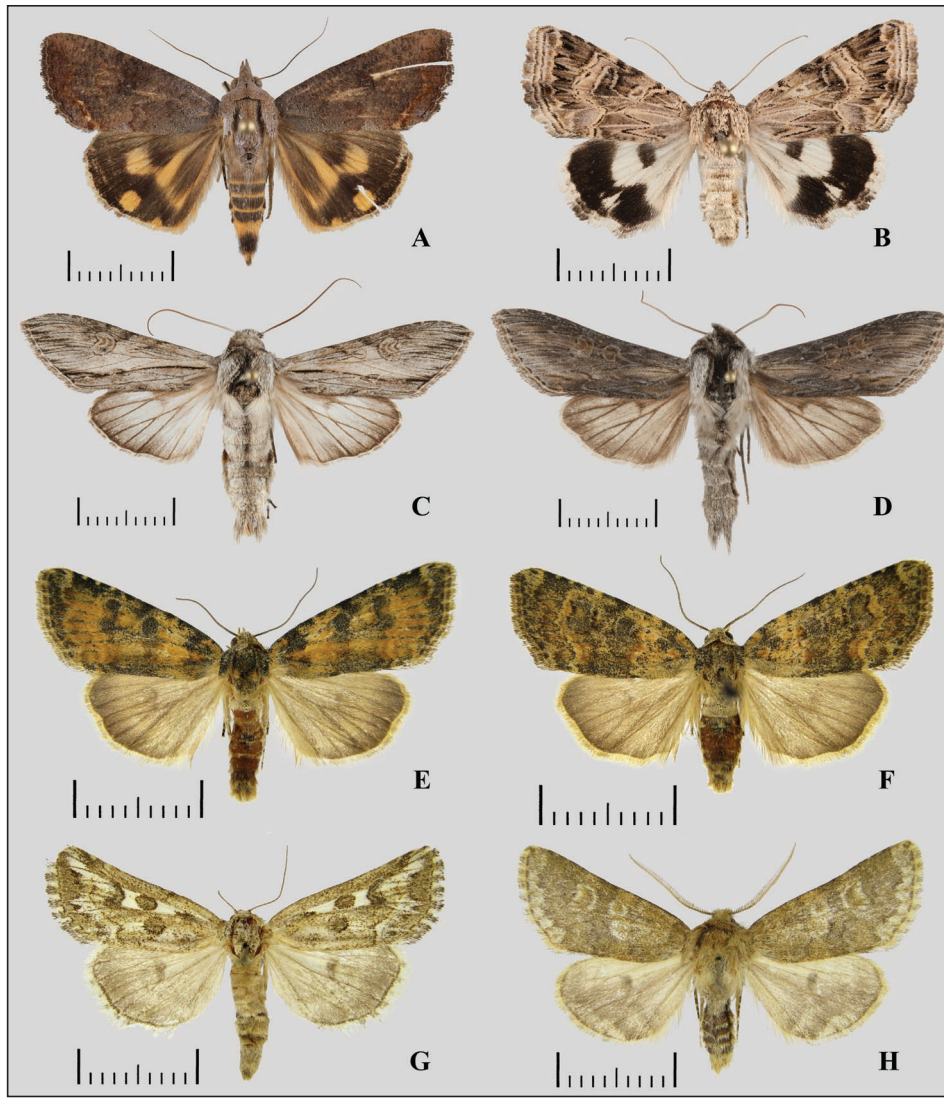

Figure 7. Adults of Mongolian Erebidae and Noctuidae. **A.** *Hypocala subsatura*, male. **B.** *Armada panaceorum*, male. **C.** *Cucullia aksuana*, male. **D.** *C. vicina*, male. **E, F.** *Bryophila kaszabi*, males. **G.** *Victrix bogdoana*, male. **H.** *Athaumasta golomto*, male.

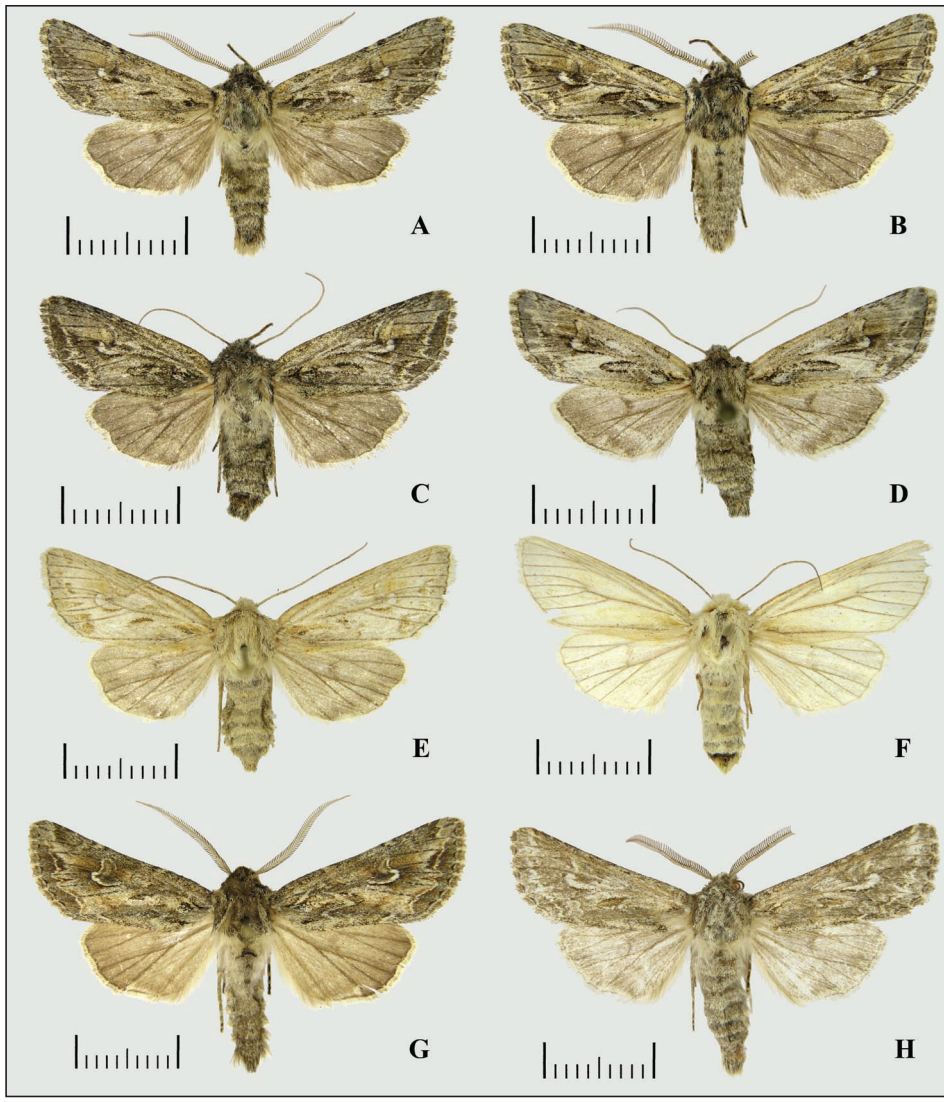

Figure 8. Adults of Mongolian Noctuidae. **A, B.** *Ctenoceratoda scotosparsa*, males. **C, D, E, F.** ditto, females. **G.** *Ctenoceratoda cyanochrea*, male. **H.** *C. persephone*, male.

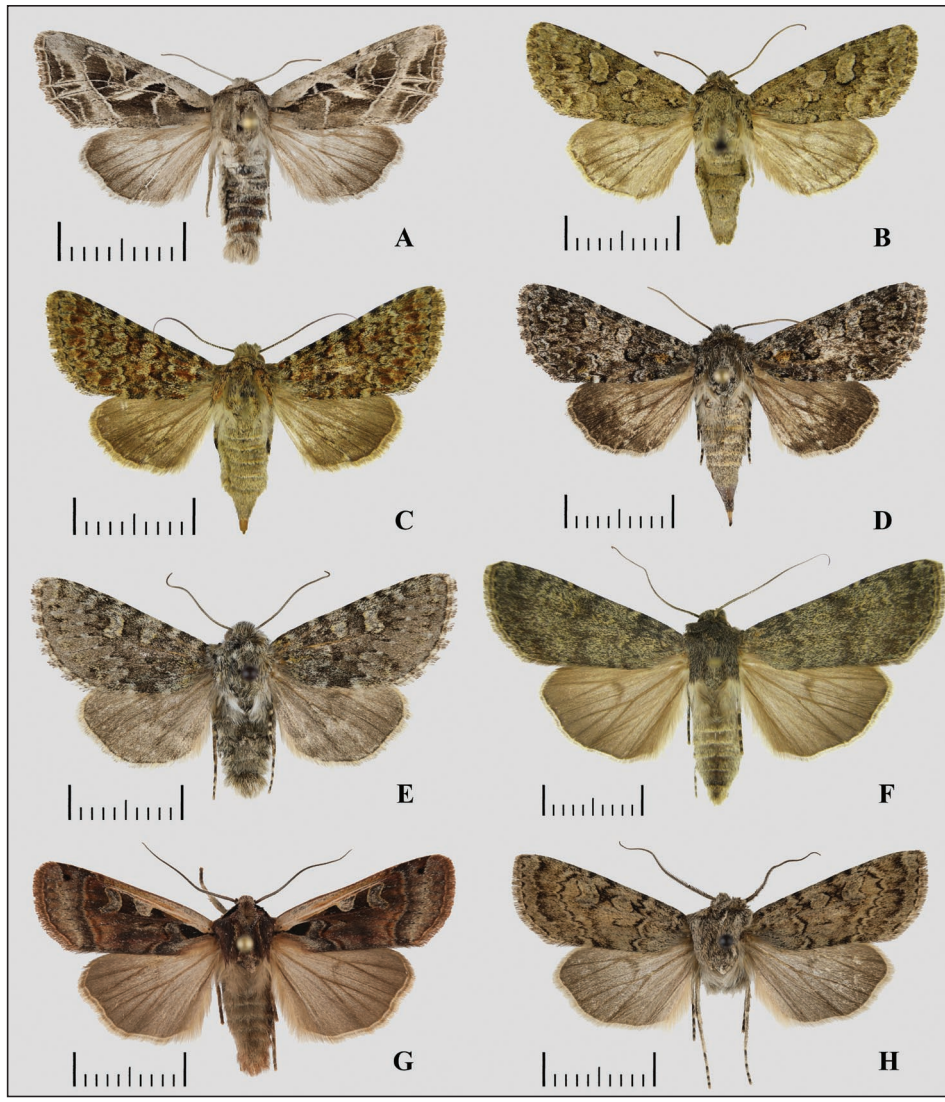

Figure 9. Adults of Mongolian Noctuidae. **A.** *Lacanobia praedita*, male. **B.** *Saragossa demotica*, male. **C.** *Hadena intensa*, female. **D.** *H. filograna*, female. **E.** *Lasionycta buraetica*, male. **F.** *Actebia obumbrata*, male. **G.** *Dichagyris ulrici*, male. **H.** *Euxoa uigurica*, male.

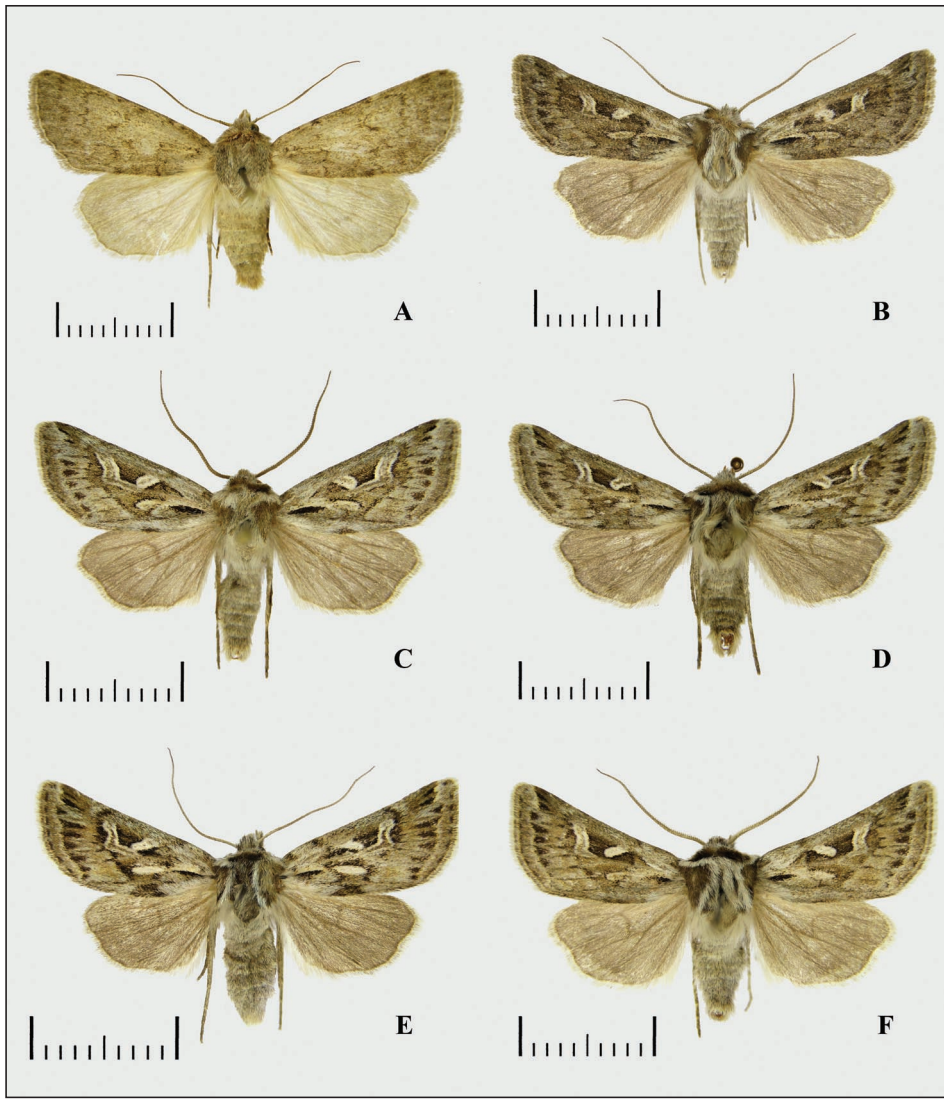

Figure 10. Adults of Mongolian Noctuidae. **A.** *Rhyacia electra*, male. **B, C, D, F.** *Xenophysa sharhu*, males. **E.** ditto, female.