

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. filigrana* (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. filigrana* (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. Fábíán, 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.



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 °C for 3 min, 95 °C for 30 s, 50 °C for 45 s, 72 °C for 1 min (steps 2-4 cycled 34 times) and 72 °C 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 gaschkewitschii: Daniel, 1965, 98

Marumba gaschkewitschii 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 chivilini 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 chivilini [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 zygophylli [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 rada (Herrich-Schäffer, 1845): Sheljuzhko, 1967, 224; Ronkay, 1983, 234; Gyulai & Ronkay, 1999, 711

Leucanitis rada: 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

Apopetes 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 ♂.

Acrionicta hemileuca Püngeler 1899

Acrionicta 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 tesorum Püngeler, 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 (Kyrgyzstan, Tajikistan), Pakistan, Mongolia.

Cucullia dimorpha Staudinger, 1896

Cucullia eumorpha var. ? *dimorpha* Staudinger, 1896, 268

Copicucullia dimorpha: Alberti, 1971, 372

Pseudopicucullia 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, Kyrgyzstan, Tajikistan, W. China), Mongolia.

Cucullia turkeстана L. Ronkay & G. Ronkay, 1987

Cucullia implicata Ronkay & Ronkay, 1987, 471

Cucullia turkeстана sp. *implicata* G. Ronkay et L. Ronkay, 2009, 107

Cucullia turkeстана: 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 adauca Butler, 1878

Chloridea maritima centralasiae Draudt, 1938: Varga, 1976, 186; Gyulai & Ronkay, 1999, 696

Heliothis maritima centralasiae: Bálint & Benedek, 2009, 8

Heliothis adauca: 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 *pekarSKIY* 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 *pekarSKIY* 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 & Schiffmüller], 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; Mühlberg 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: Mühlhemberg 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 palaeartica Hacker, 1998: Bálint et al. 2006, 103

Material: G-ATs - 1 ♂.

Anarta imperspicua (Hacker, 1998)

Hadula imperspicua mandshurica 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 lukhtanovororum 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 ♂.

Cardepija irrisoria (Erschoff, 1874)

Cardepija sociabilis irrisoria: Sheljuzhko, 1967, 213; Varga, 1973, 218; 1974, 293

Cardepija irrisor [sic!]: Alberti, 1971, 372

Cardepija 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 ♂.

Cardepija kaszabi Sukhareva & Varga, 1973

Cardepija 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 Ochseneimer, 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; Mühlberg 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, Kyrgyzstan, 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, Kyrgyzstan), 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: Zolotarevko, 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

? «*Dichagyris 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

Dichagyris [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

Dichagyris [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, Kyrgyzstan, 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: Zolotareno, 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 ipsilon [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.

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*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)

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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 NNW 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 NNW 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 NNW 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 NNW of Altai city	46.4250239N, 96.0726805E	10.VI.2023	-
UVK	Gobi Altai, Övörkhangaï Aimag, Khaïrkhandulaan Sum, 117 km SW of Arvaikheer	45.5246957N, 101.6923948E	12.VI.2023	2B
UVB1	Gobi Altai, Övörkhangaï Aimag, Bogd Sum, 14 km SE of Bogd, Arts-Bogd Mts. ridge	44.5697605N, 102.2884893E	16.VI.2023	2C
UVB2	Gobi Altai, Övörkhangaï 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

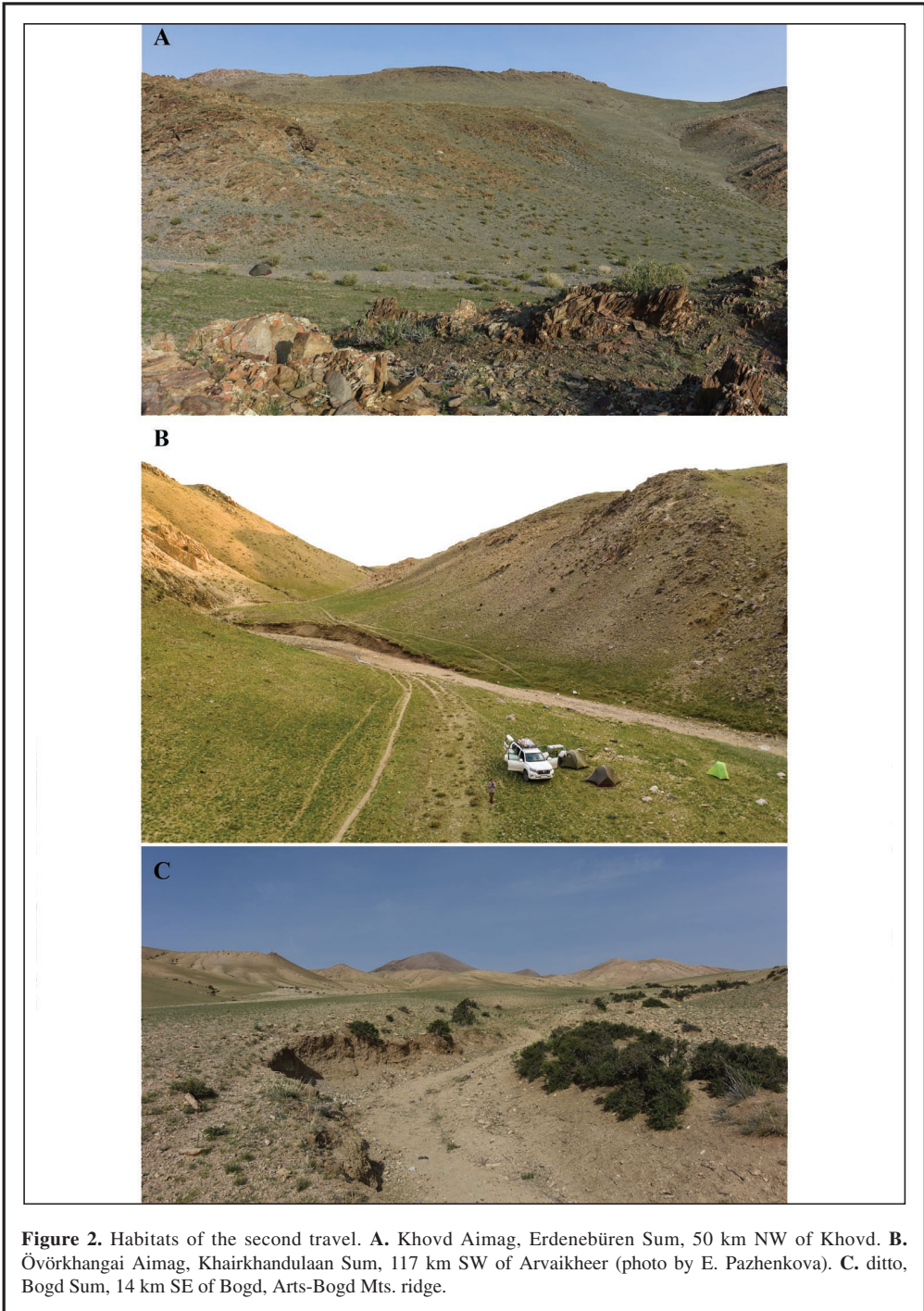
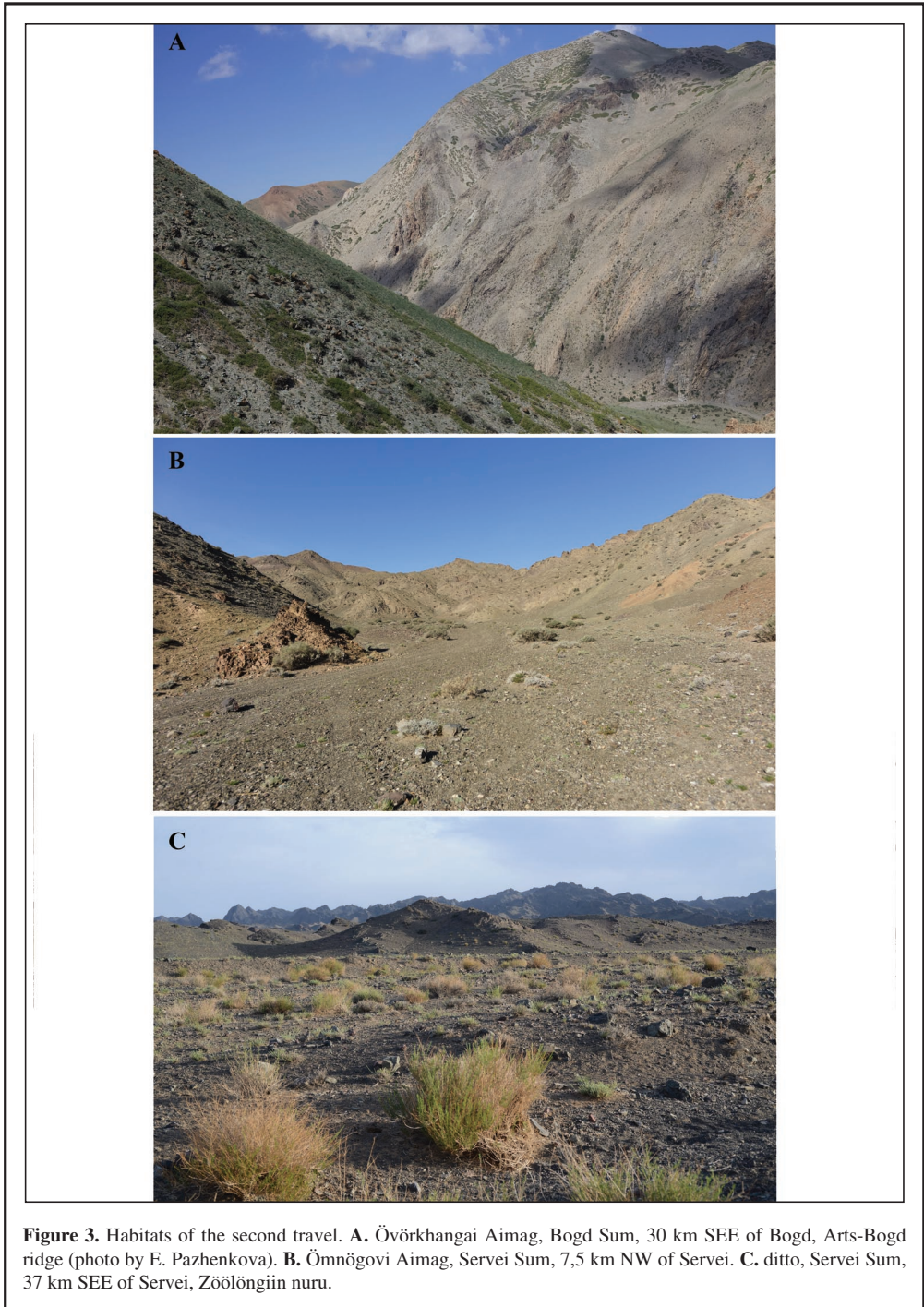
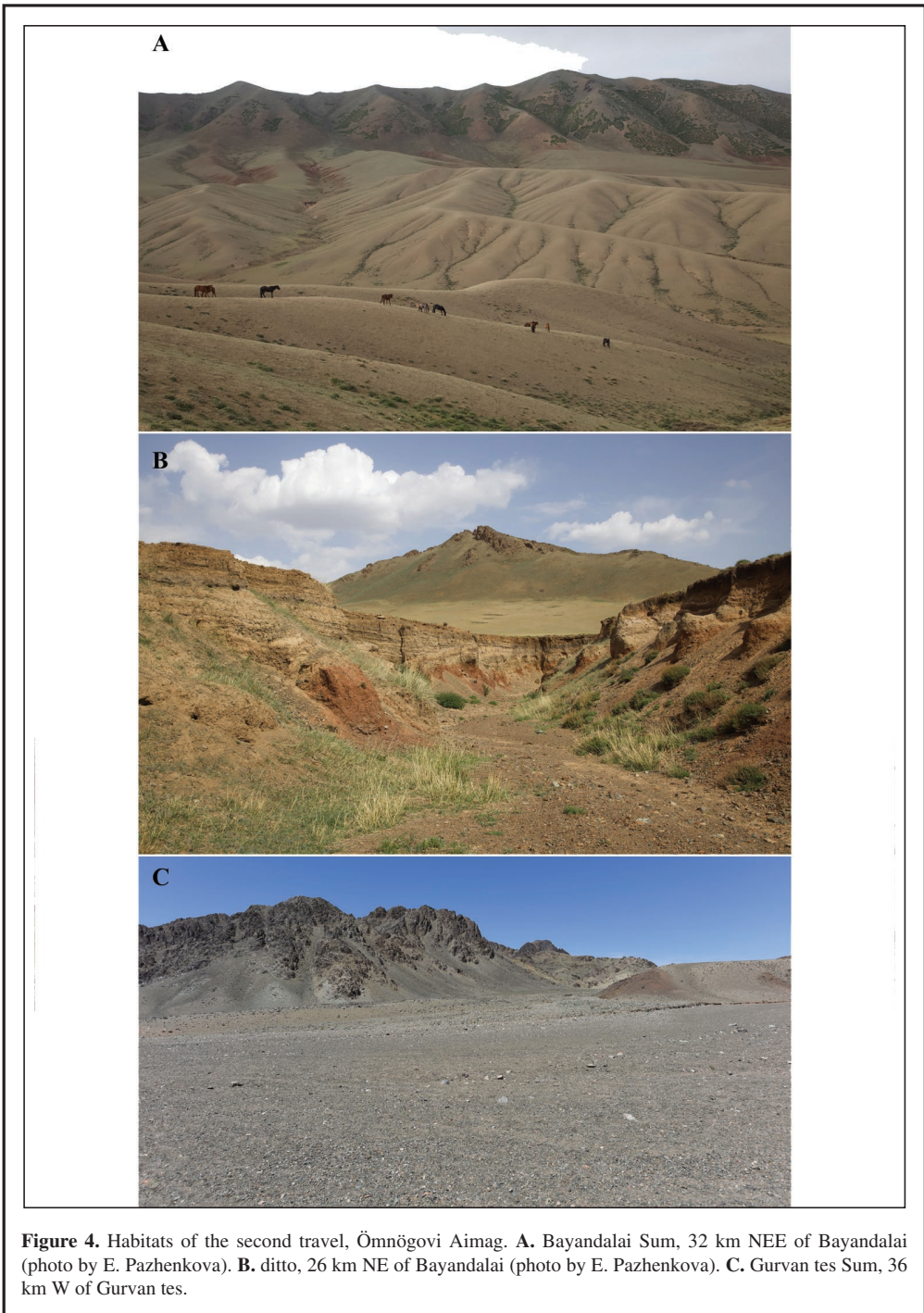


Figure 2. Habitats of the second travel. **A.** Khovd Aimag, Erdenebüren Sum, 50 km NW of Khovd. **B.** Övörkhangai Aimag, Khairkhandulaan Sum, 117 km SW of Arvaikheer (photo by E. Pazhenkova). **C.** ditto, Bogd Sum, 14 km SE of Bogd, Arts-Bogd Mts. ridge.





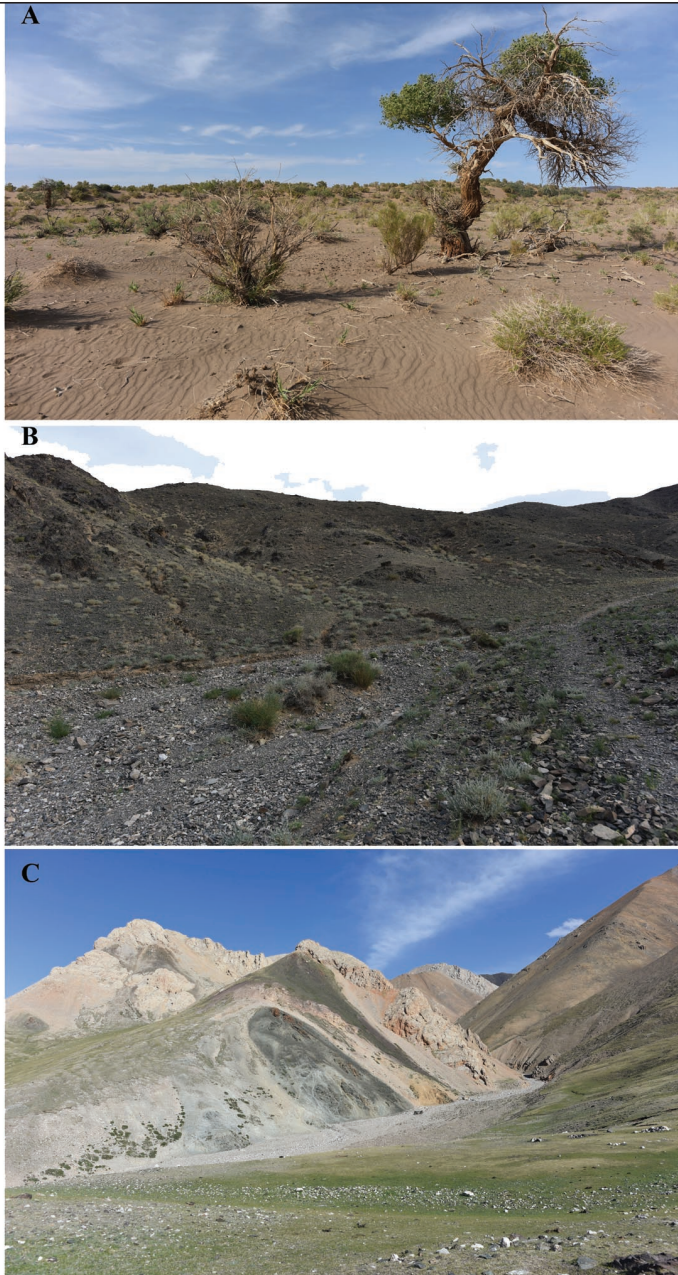


Figure 5. Habitats of the second travel. **A.** Ömnögovi Aimag, Gurvan tes Sum, 92 km SWW of Gurvan tes. **B.** Bayankhongor Aimag, Shinejinst Sum, 27 km SE of Shinejinst. **C.** Govi-Altai Aimag, Tsogt Sum, 36 km NEE of Tsogt, 2840 m.a.s.l.



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

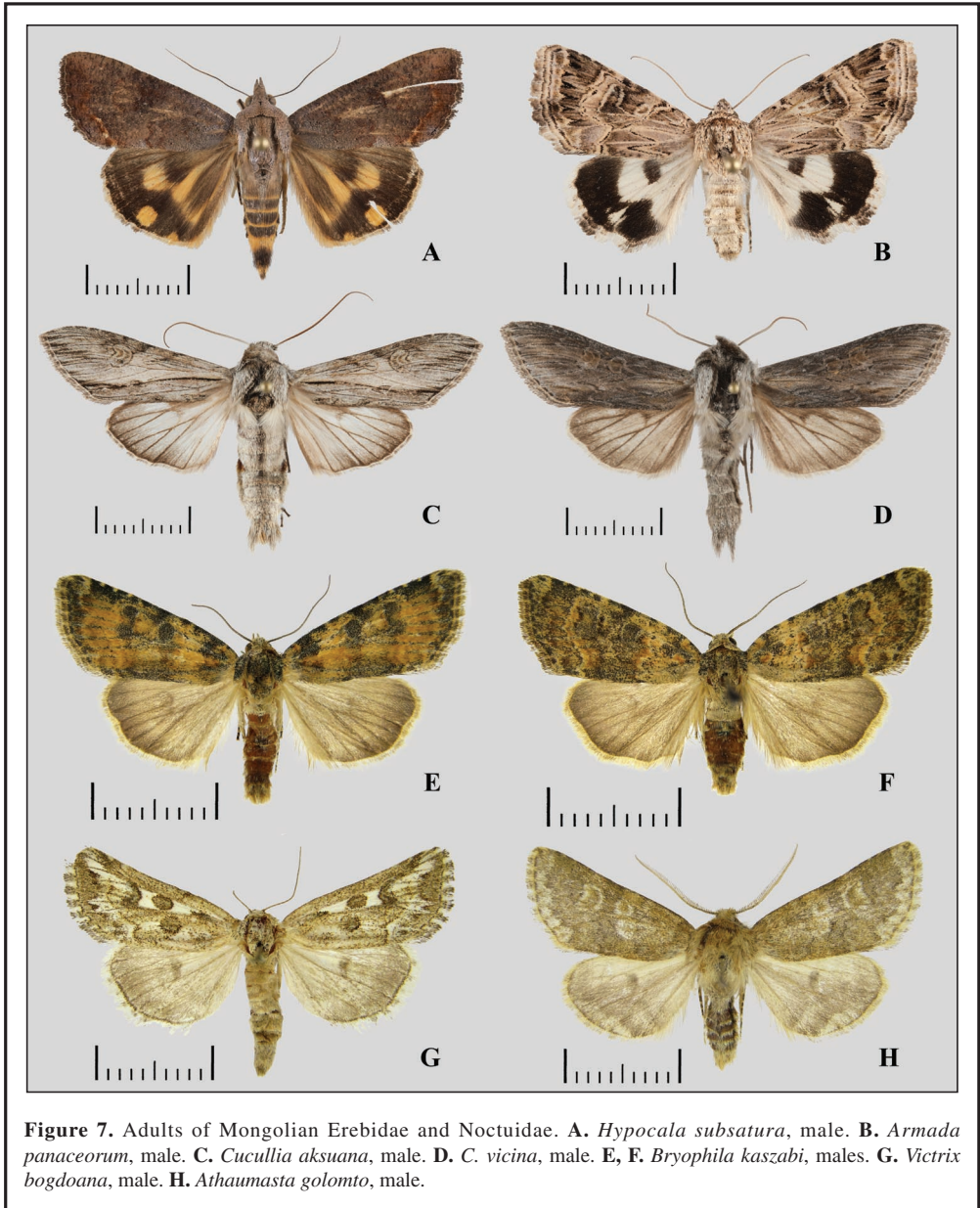


Figure 7. Adults of Mongolian Erebidae and Noctuidae. **A.** *Hypocala subsatura*, male. **B.** *Armada panaceorum*, male. **C.** *Cucullia aksuana*, male. **D.** *C. vicina*, male. **E, F.** *Bryophila kaszabi*, males. **G.** *Victrix bogdoana*, male. **H.** *Athaumasta golomto*, male.

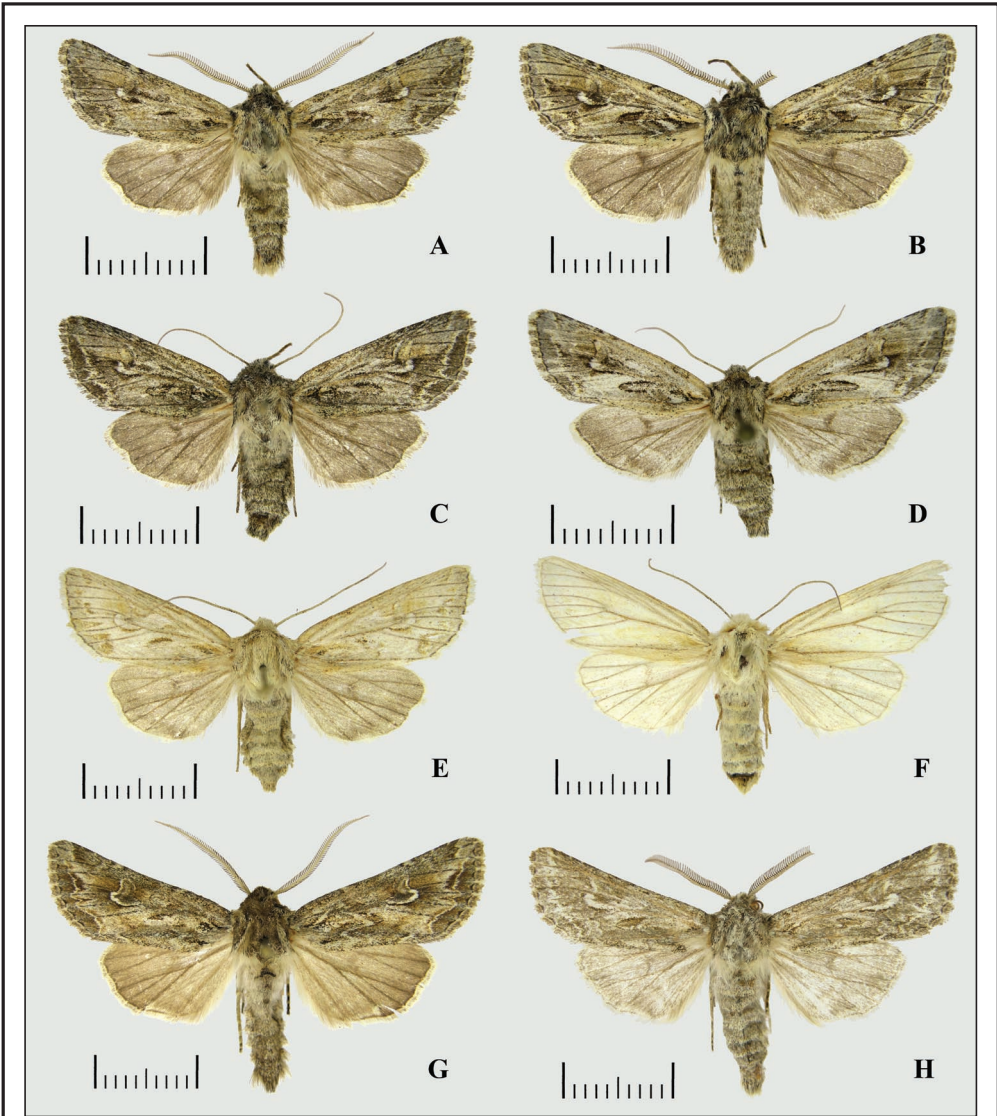
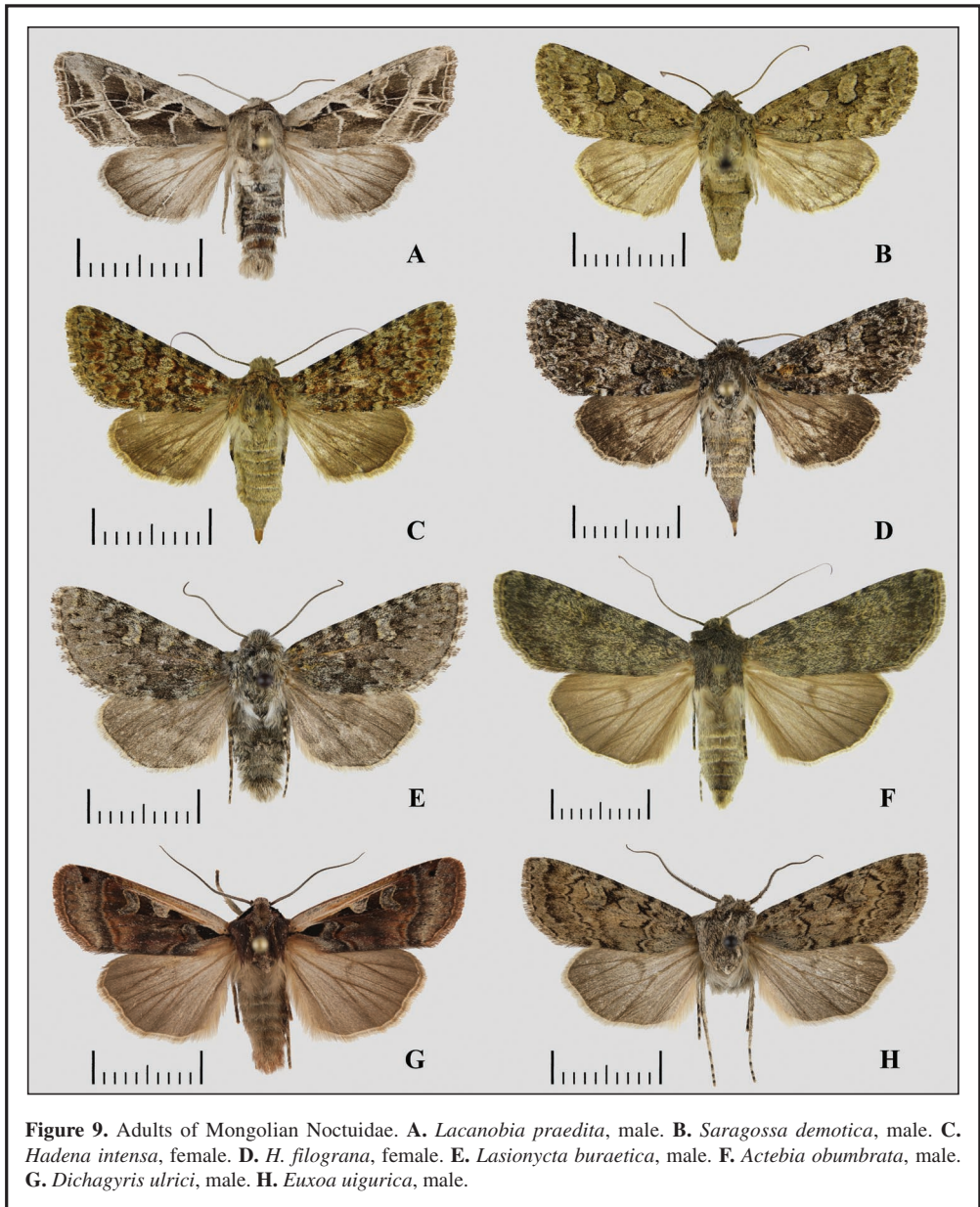


Figure 8. Adults of Mongolian Noctuidae. **A, B.** *Ctenoceratoda scotosparsa*, males. **C, D, E, F.** ditto, females. **G.** *Ctenoceratoda cyanochrea*, male. **H.** *C. persephone*, male.



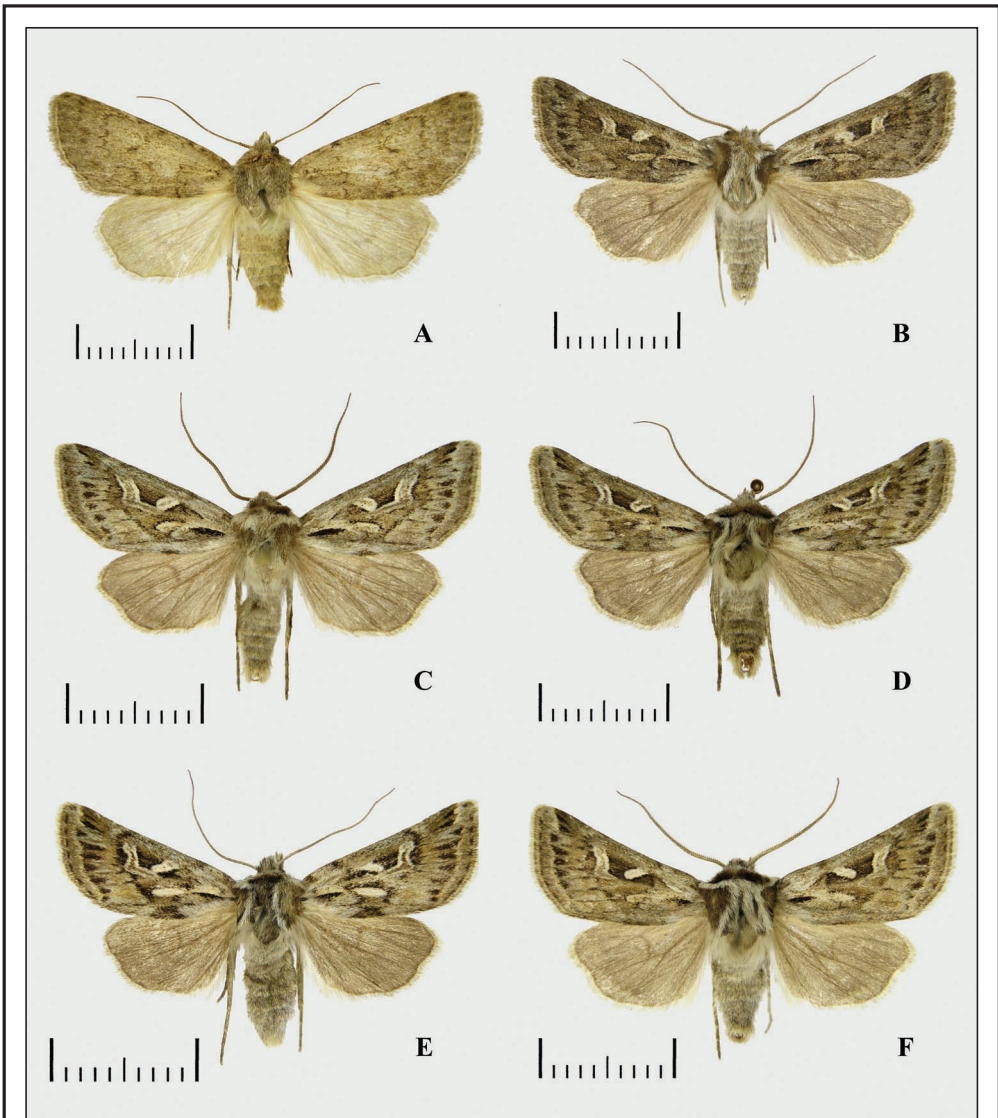


Figure 10. Adults of Mongolian Noctuidae. **A.** *Rhyacia electra*, male. **B, C, D, F.** *Xenophysa sharhu*, males. **E.** ditto, female.



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Shilap Revista de Lepidopterología
vol. 52, no. 207, p. 579 - 617, 2024
Sociedad Hispano-Luso-Americana de Lepidopterología,
ISSN: 0300-5267
ISSN-E: 2340-4078

DOI: <https://doi.org/10.57065/shilap.962>