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NEW RECORDS OF YPONOMEUTOID MOTHS (LEPIDOPTERA, YPONOMEUTIDAE, ARGYRESTHIIDAE, YPSOLOPHIDAE, PLUTELLIDAE) FROM THE PALAEARCTIC REGION

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New Records of Yponomeutoid Moths (Lepidoptera, Yponomeutidae, Argyresthiidae, Ypsolophidae, Plutellidae) from the Palaearctic Region. Gershenson, Z. S. — The following four species of moths are recorded for the first time: *Kessleria saxifragae* (Stainton, 1868) and *Paradoxus osyridellus* Stainton, 1869 (Yponomeutidae) — from Ukraine; *Argyresthia communana* Moriuti, 1969 (Argyresthiidae) — from Russia; *Ypsolopha albiramella* (Mann, 1861) (Ypsolophidae) — from Mongolia. For two rare species which are *Argyresthia kurenzovi* Gershenson, 1988 (Argyresthiidae) and *Pseudoplutella porrectella* (Linnaeus, 1758) (Plutellidae) new finds in Russia are noted.

Key words: Lepidoptera, Yponomeutidae, Argyresthiidae, Ypsolophidae, Plutellidae, Ukraine, Russia, Mongolia.

Introduction

Yponomeutoid moths represent a worldwide distributed phytophagous group which occurs in many different landscapes such as forests, steppes, mountains, lowlands, deserts and agricultural coenoses. These moths appear to pose various biological problems that make them suitable for evolutionary and in particular phylogenetic studies such as molecular phylogeny (Pavliček & Nevo, 1995; Menken, 1996; Ulenberg, 2009; Turner et al., 2010; Sohn et al. 2013; Lewis & Sohn, 2015). However, the relationships within this group of phytophagous Microlepidoptera was not fully investigated till now, and one of the reasons is that its taxonomic diversity has not been sufficiently studied yet. Thus, the prerequisite for further studies is the knowledge of taxonomic diversity and distribution which is the topic of this paper.

Material and methods

The moths were collected by means of netting or in the light trap. The specimens studied are stored in the collection of the Department of General and Applied Entomology, Schmalhausen Institute of Zoology National Academy of Sciences of Ukraine (Kyiv). Habitus drawings were made by V. A. Kozhevnikova (senior laboratory worker of the same Department). This assistance is gratefully acknowledged.

The taxonomic status of the families mentioned in this paper is given according to Sohn et al. (2013). Later this classification has been adopted for the recent World Catalogue of Insects (Lewis and Sohn, 2015).

Family ARGYRESTHIIDAE

Argyresthia kurenzovi Gershenson, 1988 (fig. 1)

Material. Russia: Krasnojarsk Krai, Abacan; 53°43' N 31°25' E, 23.07.1986, 1 ♀ (Gershenson).

Distribution. Russia: (Primorsk Krai, district Ussuriysk) (Gershenson, 1988; Sinev, 2008); (Krasnojarsk Krai, Abakan).

Diagnosis. Wingspan 13–14 mm. Head and thorax white dusted with yellowish coloration. Forewings pale yellow-whitish with well distinct black spot (fig. 1, 1). Cilia greyish-fuscous, and pale yellow in the apical part. Hindwings and their cilia pale yellow-whitish.

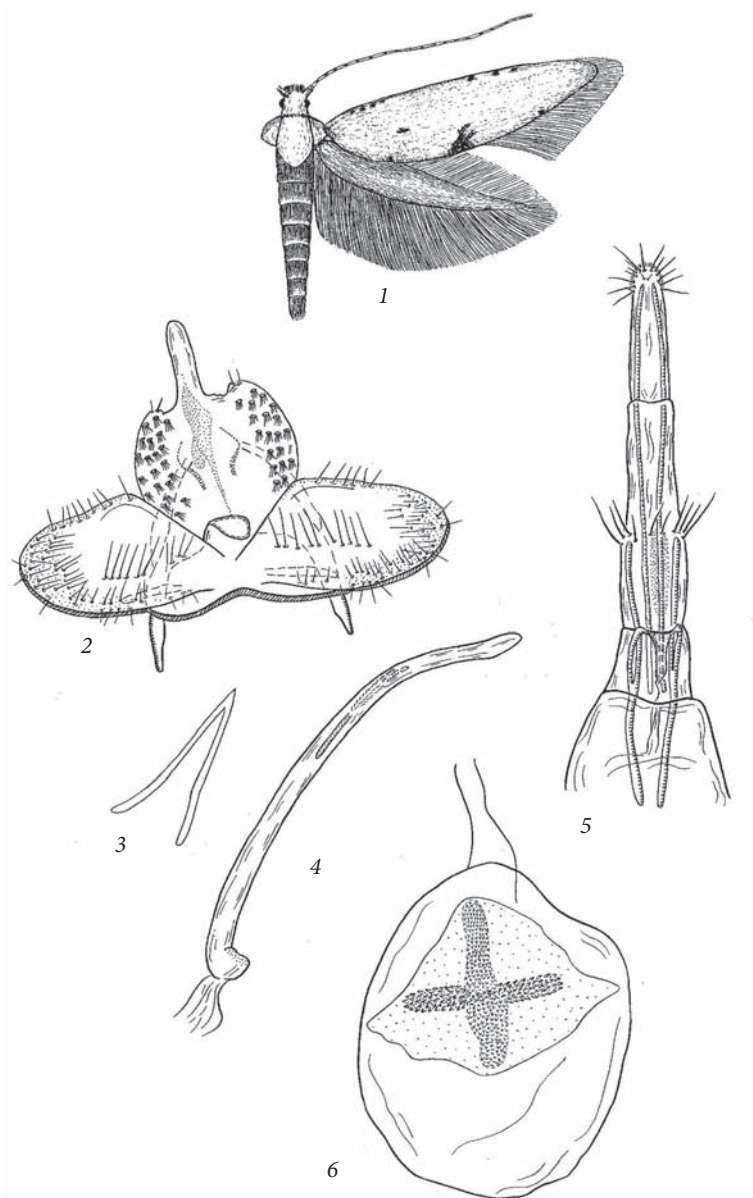


Fig. 1. *Argyresthia kurenzovi*: 1 — forewing pattern; 2–4 — male genitalia (2 — ventral view, 3 — ventral plate, 4 — aedeagus); 5 — female genitalia; 6 — bursa copulatrix with signum.

Male genitalia (fig. 1, 2–4). Valva of nearly oval shape (fig. 1, 2). The arms of ventral plate almost as long as the length of valva (fig. 1, 3). Aedeagus more than twice as long as valva (fig. 1, 4).

Female genitalia (fig. 1, 5, 6). Lobes of vaginal plate indistinct. Apophyses anterior shorter than apophyses posterior (fig. 1, 5). Signum of bursa copulatrix with many denticles (fig. 1, 6).

Remarks. This species can be recognized by its conspicuous forewing pattern with distinct black spot. Recorded from Krasnojarsk Krai (Siberia) for the first time.

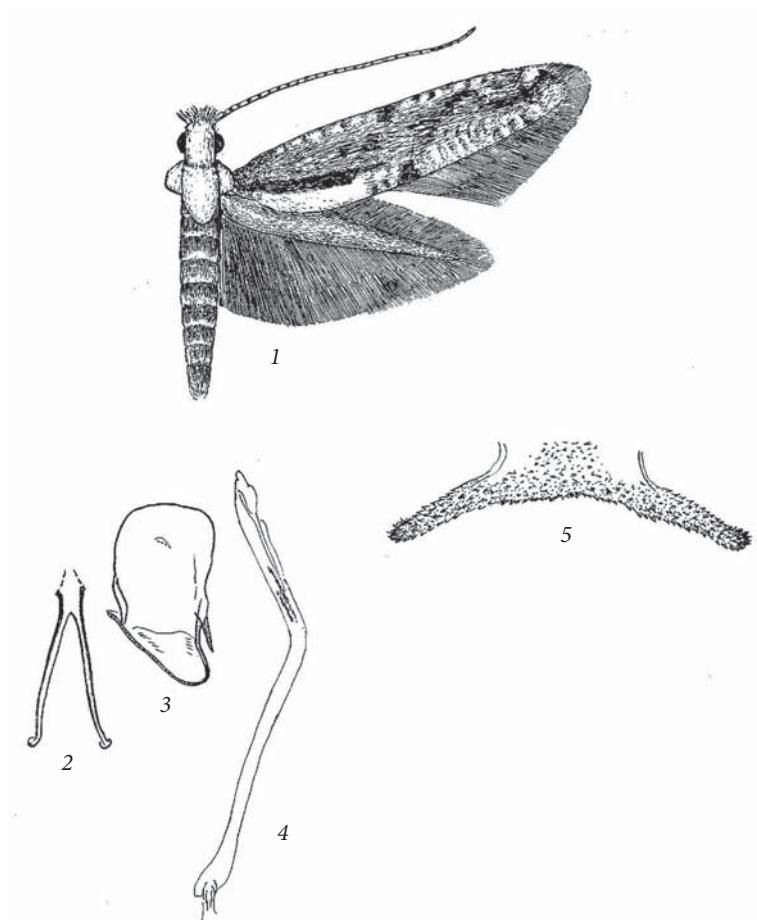


Fig. 2. *Argyresthia communana*: 1 — forewing pattern; 2–4 — male genitalia (2 — ventral plate, 3 — valva, 4 — aedeagus); 5 — bursa copulatrix.

Argyresthia communana Moriuti, 1969 (fig. 2)

Material. **Russia:** District Sakhalin, Aniva; 46°01' N 142°52' E, 16.07.1973, 1 ♀ (Ermolenko).

Distribution. **Russia** (district Sakhalin, Aniva); Japan (Honshu, Kyushu) (Moriuti, 1969).

Diagnosis. Wingspan 10–11 mm. Head and thorax white, dusted with pale grey-ochreous coloration. Labial palpi pale ochreous. Forewings grey, suffused with dark fuscous dots: a whitish costal spot before apex, and a whitish dorsal streak are diagnostic characters (fig. 2, 1). Cilia grey.

Male genitalia (fig. 2, 2–4). Valva nearly of trapezoid shape (fig. 2, 3). The arms of ventral plate as long as the length of valva (fig. 2, 4).

Female genitalia. Bursa copulatrix with signum in form of a widely spaced sclerotized formation (fig. 3, 5).

Remarks. Externally resembles *Argyresthia conjugella* Zell., but can be readily distinguished from it by the colour of thorax, forewing pattern as well as a shape of valva in the male genitalia.

This species was unknown in Russia till now.

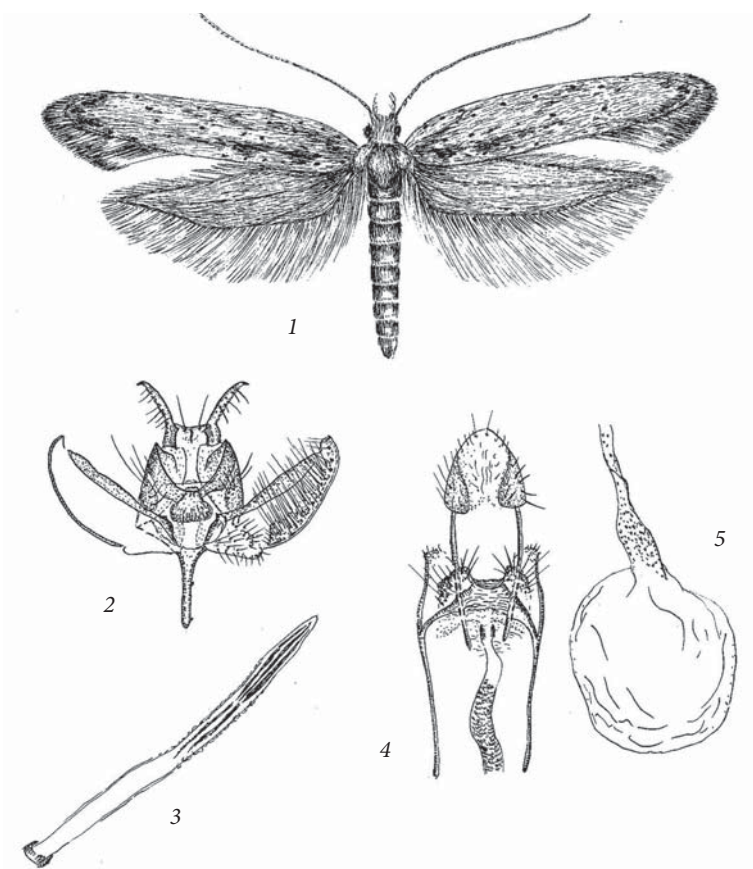


Fig. 3. *Paradoxus osyridellus*: 1 — moth (habitus, dorsal); 2 — male genitalia (ventral view); 3 — aedeagus; 4 — female genitalia; 5 — bursa copulatrix.

Family YPONOMEUTIDAE

Paradoxus osyridellus Stainton, 1869 (fig. 3)

Material. **Ukraine: the Crimea**, Nikitsky Botanical Garden; 44°30' N 34°13' E, 12.07.1967, 1 ♂ (Gershenson)

Distribution. Ukraine (the Crimea), France (Cannes), Greece, Portugal, Italy (Sardinia), Spain (Malaga), Croatia (Dalmatia) — former Jugoslavia, Turkey (Stainton, 1869; Levis and Sohn, 2015).

Diagnosis. Wingspan about 18 mm. Head pale grey or whitish-grey, the scales projecting in front like two tufts. Labial palpi long, bent, pale grey, second joint is densely tufted. Forewings elongate, grey with numerous very small black dots arranged in four irregular rows; a dark lines goes round the apex of the wing to the anal angle (fig. 3, 1). Cilia grey. Hind, wings and their cilia grey.

Male genitalia (fig. 3, 2, 3). Saccus less than twice as long as valva. Aedeagus with 3 cornuti, more than twice as long as valva.

Female genitalia (fig. 3, 4, 5). Lobes of vaginal plate moderate and not closely to each other. Apophyses posterior shorter than apophyses anterior. Dorsal branch of apophyses anterior shorter than their common stem. Ductus bursae with sclerotization. Bursa copulatrix without signum.

Remarks. This species can be easily recognized by its above mentioned external characters as well as by the structures of male and female genitalia.

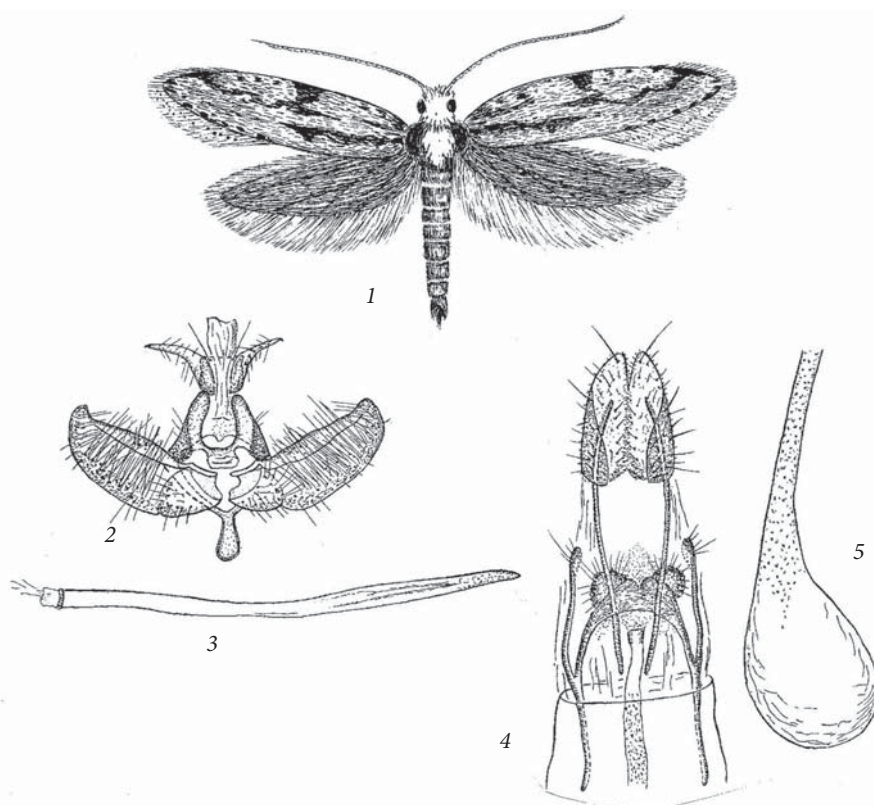


Fig. 4. *Kessleria saxifragae*: 1 — moth (habitus, dorsal); 2 — male genitalia (ventral view); 3 — aedeagus; 4 — female genitalia; 5 — bursa copulatrix.

According to Sattler & Tremevan (1973): “The name *Paradoxus* has been erroneously attributed to Millière by Friese (1960). *Paradoxus* originated from Millière but was used and unintentionally made available by Stainton prior to its proposal and generic description by Millière”. Therefore although Stainton wrote in his papers “*Paradoxus osyridellus* Millière” the name *Paradoxus* and *osyridellus* must be attributed to Stainton.

Recorded from Ukraine (the Crimea) for the first time.

***Kessleria saxifragae* (Stainton, 1868) (fig. 4)**

Material. Ukraine: Transcarpathian district, Rakhov mountain (h = 1800 m above sea level); 47°57' N 24°28' E, 10.07.1977, 1 ♀ (Gershenson).

Distribution. Ukraine (Transcarpathian district), Austria, England, France, Germany, Ireland, Israel, Italy, Poland, Portugal, Romania, Russia (Zabaykalsk), Slovakia, Spain, Switzerland, (former) Yugoslavia (Levis & Sohn, 2015).

Diagnosis. Wingspan 9–16 mm. Head white with brownish scales. Thorax pale fuscous. Forewings white, suffused whitish brown and dark fuscous dots (fig. 4, 1).

Male genitalia (fig. 4, 2, 3). Valva of elongated elliptoid shape with large sacculus (fig. 4, 2). Aedeagus long, about three times as long as valva (fig. 4, 3).

Female genitalia (fig. 4, 4, 5). Lobes of vaginal plate moderate and not close to each other. Apophyses posterior almost equal to apophyses anterior (fig. 4, 4). Bursa copulatrix without signum (fig. 4, 5).

Remarks. This species can be recognized by the forewing coloration and above mentioned characters of the genitalia.

Recorded from Ukraine for the first time.

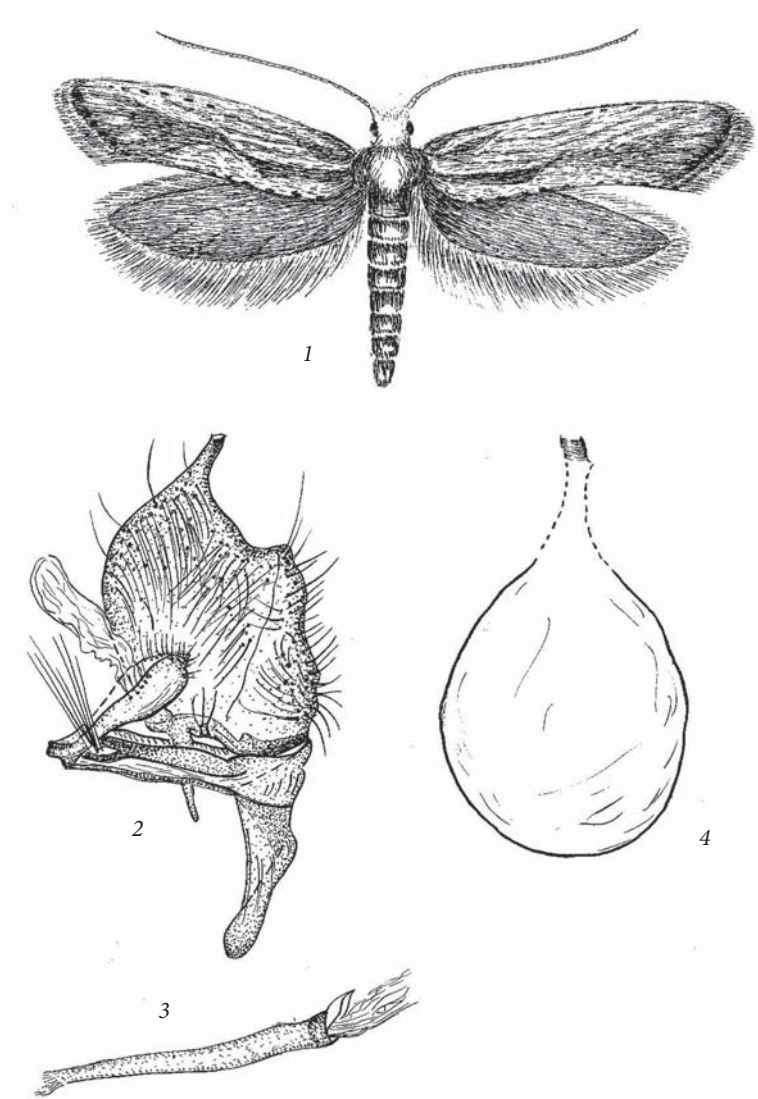


Fig. 5. *Pseudoplutella porrectella*: 1 — moth (habitus, dorsal); 2 — male genitalia (lateral view); 3 — aedeagus; 4 — bursa copulatrix.

Family PLUTELLIDAE

Pseudoplutella porrectella (Linnaeus, 1758) (fig. 5)

Material. **Russia:** district Krasnoyarsk, reservation “Stolby”; 55°49' N 92°51' E, 1.09.1986, 1 ♀ (Gershenson).

Distribution. Europe (almost everywhere), the Caucasus, Transcaucasia, Russia (Southern Siberia, Far East), Asia Minor (Baraniak, 2007; Sinev, 2008).

Diagnosis. Wingspan 12–18 mm. Head white dusted with pale grey-brownish coloration. Labial palpi bent, the middle segment with a distinct tuft of brownish scales. Forewings white-yellowish with brownish pattern which consists stripes and dots (fig. 5, 1). Hindwings grey.

Male genitalia (fig. 5, 2, 3). Valva with distinctly narrow apical projection; saccus sclerotized, shorter than valva (fig. 5, 2). Aedeagus broadened at the apex, without cornuti (fig. 5, 3).

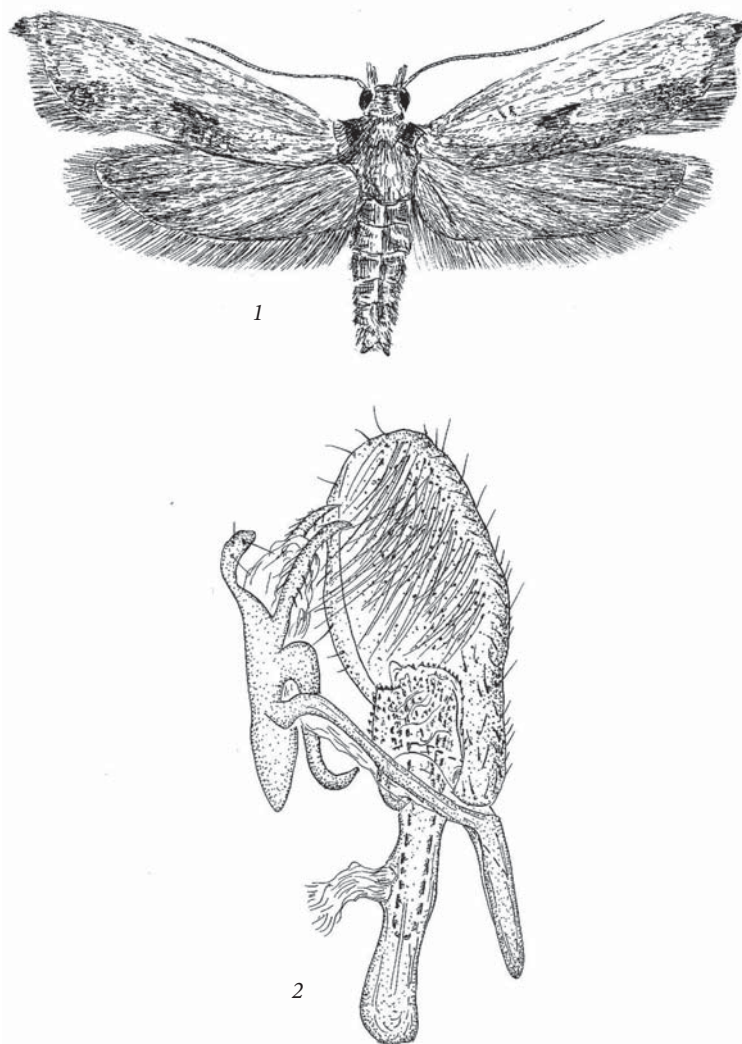


Fig. 6. *Ypsolopha albiramella*: 1 — moth (habitus, dorsal); 2 — male genitalia (lateral view).

Female genitalia. Apophyses posterior shorter than apophyses anterior. Bursa copulatrix of spherical shape, signum absent (fig. 5, 4).

Remarks. Externally differs from other species by the forewing pattern. Can be distinguished by the elongated apex of valva in the male genitalia; by spherical shape of bursa copulatrix without signum. Rare species in Siberian region.

Family YPSOLOPHIDAE

Ypsolopha albiramella (Mann, 1861) (fig. 6)

Material. **Mongolia:** (Kobdo aimag), 47°25' N 92°14' E, 25.07.1969, 1 ♂ (Yu. Kostjuk).

Distribution. Transpalaearctic region. In particular: Ukraine (the Crimea), Spain, Greece, Russia, Armenia, Uzbekistan, Turkmenistan, Israel, Asia Minor, Mongolia.

Diagnosis. Wingspan 15–18 mm. Forewing color is variable, forewing pattern suffused whitish scales, blurred dark spot is present near the middle of wing (fig. 6, 1).

Male genitalia (fig. 6, 2). Valva of elongated — oval shape. Saccus more than 2 times shorter than valva. Aedeagus stout, more than 1.5 times longer than saccus.

Remarks. This species can be recognized by the forewing pattern and by the male genitalia structure, particularly by the broadened aedeagus which is more than 1.5 times longer than saccus.

Recorded from Mongolia for the first time.

References

- Baraniak, E. 2007. Taxonomic revision of the genus *Plutella* Schrank, 1802 (Lepidoptera: Plutellidae) from the Palaearctic region with notes on its phylogeny. *Polskie Pismo Entomologiczne*, **76**, Suppl., 1–122.
- Friese, G. 1960. Revision der Paläarktischen Yponomeutidae unter besonderer Berücksichtigung der Genitalien (Lepidoptera). *Beiträge zur Entomologie*, **10** (1/2), 1–131.
- Gershenson, Z. 1988. A New Species of the Moth Genus *Argyresthia* (Lepidoptera, Argyresthiidae) from Far East. *Vestnik zoologii*, **5**, 84–86 [In Russian].
- Lewis, J. A. & Sohn, J.-C. 2015. *Lepidoptera: Yponomeutoidea I (Argyresthiidae, Attevidae, Praydidae, Scythropiidae, and Yponomeutidae)*. *World Catalogue of Insects*. Vol. 12. Brill, Leiden, Boston, 1–253.
- Menken, S. B. J. 1996. Pattern and process in the evolution of insect plant associations: *Yponomeuta* as an example. *Entomologia Experimentalis et Applicata*, **80**, 297–305.
- Moriuti, S. 1969. Argyresthiidae of Japan. *Bulletin of the University of Osaka Prefecture. Series B*, **21**, 1–30.
- Pavliček, T. & Nevo, E. 1995. Genetic diversity and width of the food niche of phytophagous insects. *Biologia*, **50**, 143–149.
- Sattler, K. & Tremewan, W. G., 1973. The Entomological Publications of Pierre Millière (1881–1887). *Bulletin of the British Museum (Natural History). Historical series*, **4** (4), 221–280.
- Sinev, S. Y. 2008. Families: Yponomeutidae, Argyresthiidae, Plutellidae, Ypsolophidae. *Catalogue of the Lepidoptera of Russia*. KMK Press, St. Petersburg, Moscow, 45–58 [In Russian].
- Sohn, J.-C., Regier, J. C., Mitter, C., Davis, D., Landry, J.-F., Zwick, A., Cummings, M. P. 2013. A Molecular phylogeny for Yponomeutoidea (Insecta, Lepidoptera, Ditrysia) and Its Implication for Classification, Biogeography and the Evolution of Host Plant Use. *Plos one*, **8** (1), 1–23.
- Stainton, H. T. 1869. The Tineina of Southern Europe. *The Entomologist's Monthly Magazine*, **6** (42), 167–169.
- Turner, H., Lieshout, N., van Ginkel, W. E., Menken, S. B. J. 2010. Molecular Phylogeny of the Small Ermine Moth Genus *Yponomeuta* (Lepidoptera, Yponomeutidae) in the Palaearctic. *Plos one*, **5** (3), 1–10.
- Ulenberg, S. A., 2009. Phylogeny of the *Yponomeuta* species (Lepidoptera, Yponomeutidae) and the history of their host plant associations. *Tijdschrift voor Entomologie*, **152**, 187–207.

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