

A new species of the genus *Epischnia* Hübner, 1825 from Kazakhstan (Lepidoptera: Pyraloidea, Pyralidae, Phycitinae)

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Abstract

Epischnia porphyrea Tsvetkov, sp. n. is described from Kyzylorda and Turkestan Provinces of Kazakhstan. The new species is related to *Epischnia albella* Amsel, 1954 and it is distinguished by the forewing pattern and by the male genitalia. The description is based on material collected by the author in Kazakhstan in 2019.

Keywords: Lepidoptera, Pyralidae, Phycitinae, *Epischnia*, new species, Kazakhstan.

Una nueva especie del género *Epischnia* Hübner, 1825 de Kazajistán
(Lepidoptera: Pyraloidea, Pyralidae, Phycitinae)

Resumen

Se describe de las provincias de Kyzylorda y Turkestan de Kazajistán *Epischnia porphyrea* Tsvetkov, sp. n. La nueva especie está relacionada con *Epischnia albella* Amsel, 1954 y se distingue por el dibujo de las alas y por la genitalia del macho. La descripción está basada sobre el material colectado por el autor en Kazajistán en 2019.

Palabras clave: Lepidoptera, Pyralidae, Phycitinae, *Epischnia*, nueva especie, Kazajistán.

Introduction

The genus *Epischnia* Hübner, 1825 includes about 35 species distributed in the Palaearctic. The species occur mostly in the southern regions and their habitats are often dry steppes and semi-deserts. The fauna of the genus is richly represented in Western and Central Asia.

An unknown species of the subfamily Phycitinae was collected by the author in June 2019 in Kazakhstan. During the collecting and moving along the Syrdarya river from the Aral Sea to Turkestan Province, the species was regularly attracted to light in a number of localities. So, it seemed rather common and widely distributed in Kazakhstan semi-deserts. The species was preliminary determined as *Ancylosis* sp. due to its peculiar pattern of the forewing much resembling the typical pattern in the latter genus. But after examination of the genitalia it was referred to *Epischnia* and was compared with a few related *Epischnia* ssp. based on literature sources (Amsel, 1949, 1954, 1958, 1961; Caradja, 1916; Leraut, 2014; Ragonot, 1893; Ragonot & Hampson, 1901; Vives Moreno & Gastón, 2017). Also, two paratypes (a male and a female) of *Epischnia albella* Amsel, 1954 were examined in the collection of Zoological Institute in St Petersburg. Finally, the reviewing of some little known species of the genera *Ancyloides* Ragonot, 1887, *Ancylosis* Zeller, 1839 and *Myelois* Hübner, 1825 made possible the description of new *Epischnia* species.

Epischnia porphyrea Tsvetkov, sp. n. (Figures 1-7)

Type material: Holotype ♂, KAZAKHSTAN, Kyzylorda Province, 13 km NW vill. Shieli, 44°16'12" N, 66°34'54" E, 20-VI-2019, leg. E. V. Tsvetkov (ZIN). Paratypes (1 ♂, 8 ♀♀): the same data as for holotype, 1 ♂, 3 ♀♀; KAZAKHSTAN, Kyzylorda Province, 5 km W vill. Akbai, bank of the lake, 1 ♀, 19-VI-2019, leg. E. V. Tsvetkov (ZIN). Turkestan Province, bank of Lake Kyzylkol, 43° 45' 44" N, E 69° 27' 35" E, 2 ♀♀, 28-VI-2019, leg. E. Tsvetkov; Turkestan Province, 33 km NE vill. Sozak, sands, 44° 25' 14" N, E 68° 38' 58" E, 2 ♀♀, 26-VI-2019, leg. E. Tsvetkov; Type material is deposited in the collection of Zoological Institute, St Petersburg (ZISP).

Imago: Head (Figure 3). Frons convex. Chaetosemata present behind ocelli (whitish scales). Proboscis well developed. Labial palps about 1.5 diameters of eye. First segment short and narrow; second segment pointed up and ahead, 2.5 times as long as the first and 1.5-1.6 times broader; third segment pointed ahead, small, elongate ovoid, 2.1-2.2 times narrower and 3.1-3.2 times shorter than the second segment. Maxillary palps very small, reaching the edge of clypeus, segments drop-like. Antennae nearly 2/3 of the forewing. Scape about 1.5 times as long as wide, flattened. Flagellum flattened, narrowing; male flagellum broader than in females; base of male flagellum (1-7) slightly bent with tiny hitinous spine-like protrusions on flagellomeres 5-7; cilia very short in both sexes. Head and body light brown, covered with light brown, dark grey and whitish scales, sometimes with admixture of reddish scales.

Wings (Figures 1-2): Venation within the genus *Epischnia* Hulst, 1888; M_2 and M_3 veins of the hindwing rather short on a long common stalk. Forewing 7.5-8.5 mm, relatively broad, costal margin in distal 1/3 and termen bent. Sexual dimorphism is not expressed in appearance. Forewing pale brown, covered with mixture of white and reddish-brown scales or sometimes white, dark brown, and light reddish-brown scales; intensity of reddish tinge varies. Antemedial and postmedial dark brown or reddish-brown lines bold, as stripes with blurred edges; antemedial line slightly bent, postmedial oblique line straight. Discal spots absent. White costal streak reaches postmedial line, divided by antemedial line, partly dusted by reddish-brown scales. Area along termen dark brown. Space between Cu stalk and hind margin dusted with reddish scales in some specimens (Figure 1). Fringe brown (white tipped brown scales). Forewing underside partly dark brown, partly whitish in area between Cu stalk and hind margin; white costal streak of the same length as on the upperside. Hindwing whitish brown with darker marginal area, fringe whitish or whitish brown with brown basal stripe. Hindwing underside unicolourous brown.

Male genitalia (Figures 4-5): Uncus elongate triangular with sharply rounded apex. Anal tube well sclerotised, cylindrical. Gnathos flattened dorsoventrally, oblanceolate, heavily sclerotised; branches less sclerotised, very short and broad, abruptly broadening to their ends. Tegumen bears tiny side lobes. Transtilla components as weakly sclerotised semicircular plates. Valva elongate with rounded apex; costal arm with broad (1/4-1/3 of valva width) well sclerotised part reaching nearly 3/8 of costal edge of valva; clasper as small well sclerotised process broadened at its base; sacculus occupies nearly 1/2 of ventral edge of valva; cucullus covered by fine setae; very long hair-like setae on costal arm basally. Aedeagus conical, broadest proximally, flattened dorsoventrally; ductus ejaculatorius arises from proximal end (Figure 5). Vesica with three clusters of cornuti and finely granulated membranous wrapping in proximal part. Two clusters of cornuti small, each consisting of several tiny spine-like cornuti joined together. Another cluster larger, narrowing ribbon-like, occupies up to 4/9 of aedeagus length and consists of spine-like cornuti of different size. Anterior margin of eighth sternum arched and well sclerotised, posterior margin with large apically rounded median process; culcita present (Figure 6).

Female genitalia (Figure 7): Papillae anales elongate, weakly sclerotised, densely covered by setae. Posterior apophyses thin, not much longer than papillae anales and slightly shorter than anterior

apophyses. Anterior apophyses broadened basally, more strong than posterior apophyses. Eighth tergum broad, posterior margin straight, anterior margin strongly convex. Antrum membranous; weakly sclerotised elongate plate is present on the dorsal wall. Ductus bursae membranous. Corpus bursae elongate membranous with a cluster of very small thorn-like signa of different size located anteriorly on the right side; two (sometimes merged) sclerotised plates in posterior part on ventral surface; irregularly curved plate with partly spiny surface inside corpus bursae at junction with ductus bursae. Ductus seminalis arises from protrusion of corpus bursae on the right side.

Diagnosis: The new species is well distinguished from the other congeners by its peculiar forewing pattern: the presence of two transverse lines is characteristic for *E. porphyrea*. *Epischnia albella* is similar in the genitalia with no visible differences in females. In males of *E. albella*, the vinculum is relatively narrower and longer, it is much narrower distally with almost straight side edges; the clusters of cornuti are larger in the vesica. In males of *E. porphyrea*, the vinculum is relatively broader and shorter, it is much broader distally and is significantly narrowed in the middle; side edges of the vinculum are sinuate and the clusters of cornuti are smaller in the vesica. Two species from Central Asia, *Epischnia nervosella* Ragonot, 1887 and *Epischnia maracandella* Ragonot, 1887, are quite different in habitus from the described species.

Several *Epischnia* species, *E. albella*, *Epischnia arabica* Amsel, 1949, *Epischnia parvella* Amsel, 1954, *Epischnia hofufella* Amsel, 1958 and *Epischnia unicornutella* Amsel, 1961 show the morphology of the male genitalia similar to morphology in *E. porphyrea*. Males of these species and males of the new species also have the same structure of the culcita with very small differences from each other. They, as a rule, differ in the shape of the vinculum, the clasper (also in its location), the juxta and the sclerite structure in the vesica. The mentioned species are known, except for *E. albella*, only from the southern areas of Western Asia.

Etymology: The name of the species is derived from the Ancient Greek adjective πορφύρεος (=porphýreos). It is associated with the forewing colouration.

Biology: In Kazakhstan *E. porphyrea* inhabits various sand steppes and semi-deserts at low altitudes. No material was collected in mountain areas.

References

- Amsel, H. G. (1949). On the Microlepidoptera collected by E. P. Wiltshire in Irak and Iran in the years 1935 to 1938. *Bulletin de la Société Fouad Ier d'Entomologie*, 33, 271-351, pls 1-12.
- Amsel, H. G. (1954). Die Microlepidopteren der Brandt'schen Iran-Ausbeute. 4. Teil. *Arkiv för Zoologi*, 6(16), 255-326, pls 1-33.
- Amsel, H. G. (1958). Kleinschmetterlinge aus Nordost-Arabien der Ausbeute A. S. Talhouk. *Beiträge zur Naturkundlichen Forschung in Südwestdeutschland*, 17(1), 61-82, pl. 5.
- Amsel, H. G. (1961). Die Microlepidopteren der Brandt'schen Iran-Ausbeute. 5. Teil. *Arkiv för Zoologi*, 13(17), 323-445, pls. 1-9.
- Caradja, A. (1916). Beitrag zur Kenntnis der geographischen Verbreitung der Pyraliden und Tortriciden des europäischen Faunengebietes, nebst Beschreibung neuer Formen. *Deutsche entomologische Zeitschrift Iris*, 30(1), 1-88.
- Leraut, P. (2014). *Moths of Europe. Pyralids 2* (Vol. 4). N. A. P. Editions.
- Ragonot, E. L. (1893). Monographie des Phycitinae et des Galleriinae. In N. M. Romanoff. *Mémoires sur les lépidoptères* (Vol. 7). St. Pétersbourg.
- Ragonot, E. L., & Hampson, G. F. (1901). Monographie des Phycitinae et des Galleriinae. In N. M. Romanoff. *Mémoires sur les lépidoptères* (Vol. 8). St. Pétersbourg.
- Vives Moreno, A., & Gastón, F. J. (2017). Contribución al conocimiento de los Microlepidoptera de España, con la descripción de una especie nueva (Insecta: Lepidoptera). *SHILAP Revista de lepidopterología*, 45(178), 317-342.

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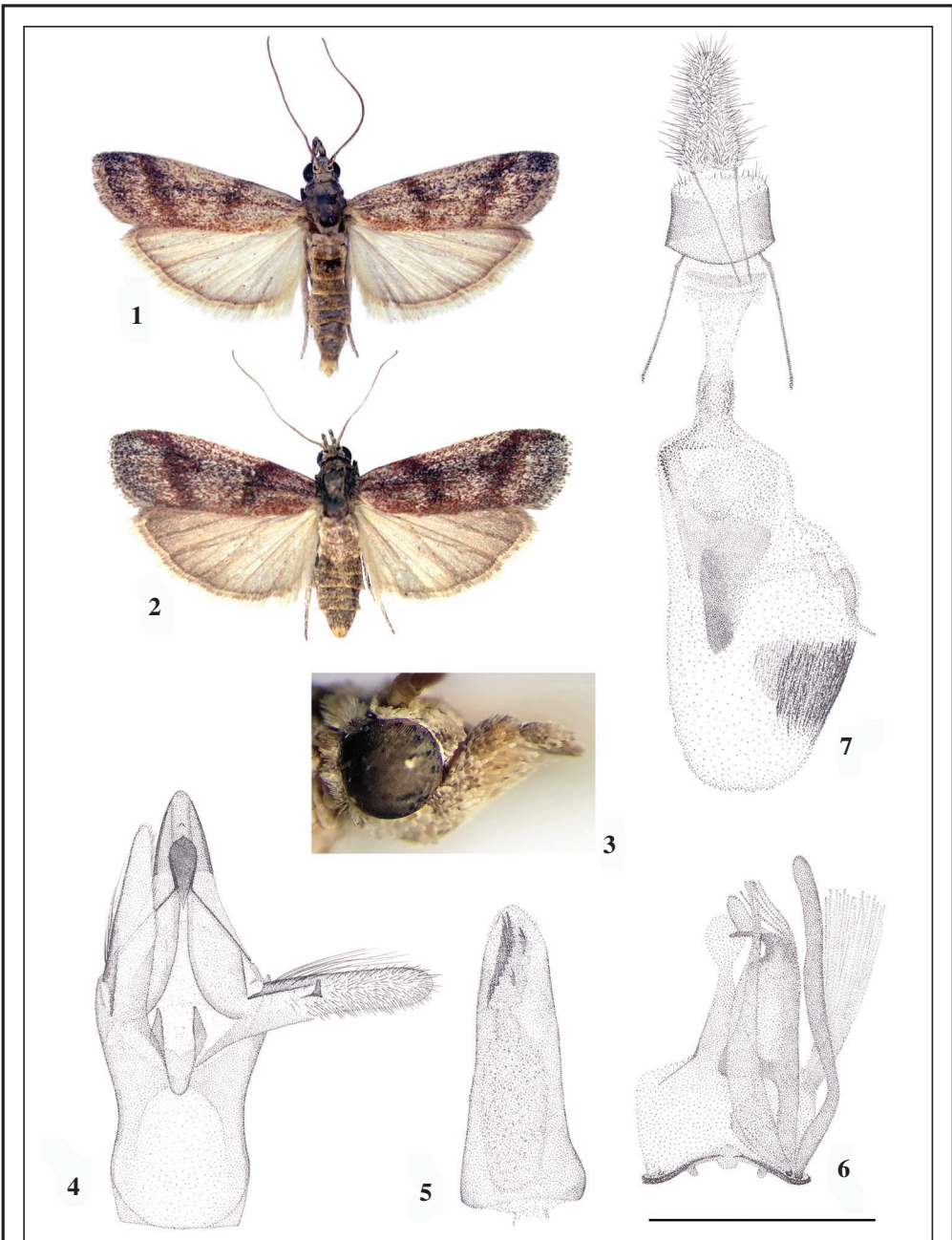
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Figures 1-7. 1. *Epischnia porphyrea* Tsvetkov, sp. n., holotype. 2. Idem, paratype (female). 3. Idem, head laterally (male). 4-7. Idem, genitalia (scale 1 mm). 4. male genitalia (aedeagus extracted). 5. aedeagus. 6. eighth sternum (male, left part of culcita removed). 7. female genitalia.