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Article

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Two new *Dyspessa* Hübner (Lepidoptera, Cossidae, Cossinae) from Central Asia

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Abstract
Two new species *Dyspessa milkoi* **sp. n.** (Type locality: Kyrgyzstan, Tash-Kumyr) and *Dyspessa skrylniki* **sp. n.** (Type locality: Tajikistan, Gissar Mts., Anzob Pass) are described. The article is illustrated with imagoes of type specimens and genitalia of both new species.

Key words: biodiversity, fauna, taxonomy, Tian-Shan, Gissar, Kyrgyzstan, Tajikistan.

Introduction

Dyspessa Hübner, [1820] 1816 (Lepidoptera, Cossidae: Cossinae) (type species: *Phalena pantherina* Hübner, 1790, by subsequent designation by Kirby, 1892) is the largest Palaearctic genus of Carpenter Moths, including over 80 valid species. The species of the genus are widely distributed in western Palaearctic, they are spread to east up to Altai and western China. Many representatives of the genus are local endemics of certain mountain systems or deserts of Middle East and Central Asia (Daniel 1962, 1964; Yakovlev 2011, 2015; Yakovlev & Dubatolov 2013; Yakovlev et al. 2016, 2020; Alipanah et al. 2021; Rajaei et al. 2022). Currently, 17 species of the genus *Dyspessa* are reported from Central Asia (Yakovlev & Naydenov 2022; Yakovlev et al. 2022).

Material and methods

Male genitalia were mounted in euparal on slides following Lafontaine and Mikkola (1987). The imagoes were photographed using digital camera of iPhone 7. The genitalia preparations were photographed using an Olympus DP74 camera attached to an Olympus SZX16 stereomicroscope. The morphological terminology used in the description follows Kristensen (2003). The images were processed using Corel Photo-Paint 2017 software. The distribution map was generated using SimpleMappr software (Shorthouse 2010).

The material is deposited in the Zoological Institute, St. Petersburg, Russia (ZISP), Institute of Biology, Bishkek, Kyrgyzstan (IBBK) and private collection of first author, Barnaul, Russia (RYB).

Taxonomical part

Descriptions of new species

***Dyspessa milkoi* Yakovlev & Shapoval, sp. n.**
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Figs 1−4, 7

Material. Holotype, male, Kirgizia, Tash-Kumyr, 600 m, 19.vi.2004, leg. M. Danilevsky; slide AN 120 (ZISP).

Paratypes. 9 males, 5 females, same locality and data (ZISP, RYB); 1 male, Kirgizia, Ketmen-Tyube, 800 m, 17.vi.2004, leg. M. Danilevsky (RYB); 5 females, Kyrgyzstan, Toktogul Dam, 41°44′N 72°51′E, 915 m, 28.vi.2008, P. Ustjuzhanin (RYB); 1 male, S. Kirg.[izia], Fergana Mt. R., Bekechal Ravine, on light, 950 m, 41°32′N 72°30′E, 4.vi.2008, leg. D. Milko (IBBK).

Description. Male. Length of fore wing 9 mm in holotype, 8.5−10 mm in paratypes. Antenna slightly longer than half of fore wing in length, bipectinate, setae 2.5 times longer than antenna stem in diameter. Thorax and abdomen densely covered with light-brown scales. Fore wing brown, with sputtering of light-brown scales basally and along costal edge, without pattern, border thin, ocher, fringe brown. Hind wing brown, without pattern, border thin, ocher, fringe brown.

Male genitalia. Uncus relatively short, tapered, slightly narrowing from base to apex, apex semicircular; gnathos arms thin, of medium length; gnathos small; valve narrow, apical third membranous, apex lanceolate,costal edge of valve (on border between medium and distal thirds) with small semicircular crest with smooth edge; transtilla process basally wide, sharply narrowing to apex, apical third of process very thin, curved, apex acute; juxta tiny, with pair of small oval lateral processes; saccus tiny; phallus about 4/5 of valve in length, phallus of the same thickness from base to middle of length, from middle smoothly narrowing to apex, vesica aperture in dorso-apical position, about 2/5 of phallus in length, vesica without cornuti.

Female. Slightly bigger than male, length of fore wing 11−15 mm, antenna filiform, about ½ of fore wing in length, wing pattern analogous to that of male, ovipositor very long. Genitals not examined.

Diagnosis. The new species differs sharply from all the known Central Asian species of the genus Dyspessa in the poorly modified wing pattern. Additionally, an important character is the relatively long antenna in the males (longer than 1/2 of fore wing). There are also important distinguishing features in the male genital structure: the transtilla process sharply narrows to the apex, the apical third of the process is very thin, curved, the apex is acute.

Distribution. South-Western Kyrgyzstan (Ferganskyi Mt. Range) (Fig. 10).

Etymology. The new species is named after the famous Kyrgyz entomologist Dmitry Milko (Bishkek), an excellent expert on the Central Asian entomofauna.

Figures 1−6. Adult specimens of *Dyspessa*: 1. *D. milkoi* sp. n., Holotype (ZISP); 2. *D. milkoi* sp. n., paratype, male, S. Kirg.[izia], Fergana Mt. R., Bekechal Ravine, on light, 950 m, 41°32′N 72°30′E, 4.vi.2008, leg. D. Milko (IBBK); 3. *D. milkoi* sp. n., paratype, female, Kirgizia, Tash-Kumyr, 600 m, 19.vi.2004, leg. M. Danilevsky (RYB); 4. *D. milkoi* sp. n., paratype, female, Kyrgyzstan, Toktogul Dam, 41°44′N 72°51′E, 915 m, 28.vi.2008, P. Ustjuzhanin (RYB); 5. *D. skrylniki*, Holotype (ZISP); 6. *D. skrylniki*, paratype, female (RYB). Scale bar = 10 mm.

***Dyspessa skrylniki* Yakovlev & Shapoval, sp. n.**
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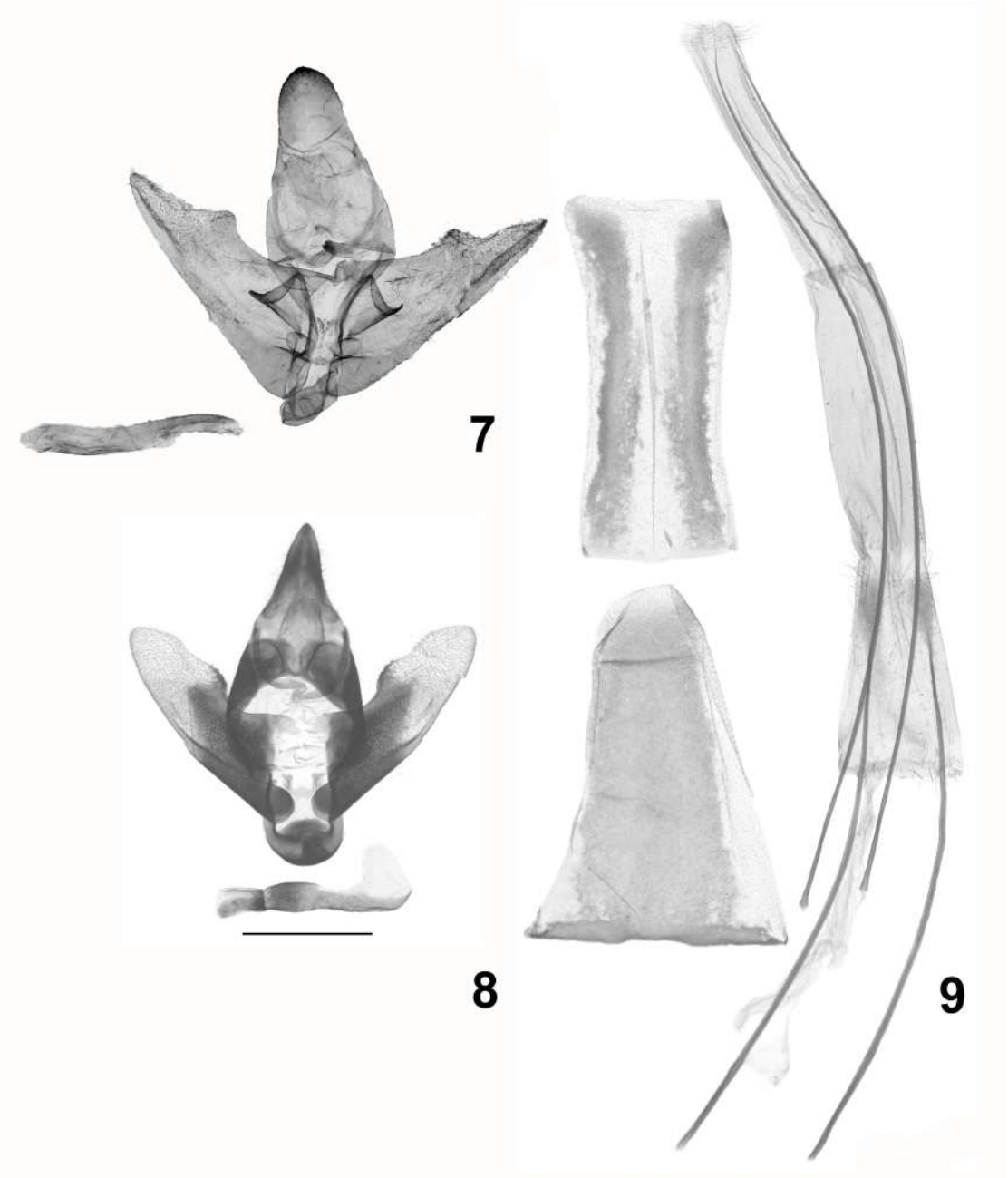
Figs 5−6, 8−9

Material. Holotype, male, W. Tajikistan, Gissar Mts., Anzob pass, 3345 m, 39°4′55.15″N 68°51′52.14″ E, 2.vii.2015, leg. Yu. Skrylnik; slide Prozorov 2023/0582 (ZISP).

Paratypes. 3 females, same locality and data; slide Prozorov 2023/0583 (RYB).

Description. Male. Length of fore wing 10 mm. Thorax and abdomen densely covered with coal-black scales. Antenna bipectinate, setae 1.5−2 times longer than antenna stem in diameter; antenna about 2/5 of fore wing in length. Fore wing covered with rare black scales, minor sputtering of ocher scales noticeable along costal edge, at top of discal cell, postdiscally and discally along veins, fringe black. Hind wing covered with rare black scales, small round ocher spot at top of discal cell, fringe black.

Male genitalia. Uncus narrow, pyramidal, sharply narrowing from base to apex, apex triangular; gnathos arms thin, of medium length; gnathos ribbon-like, poorly structured; valve narrow, apically lanceolate, distal half of valve membranous, costal edge of valve (on border between proximal and distal halves) with small semicircular crest with numerous tiny teeth on edge; transtilla process very short, triangular, apex obtuse; juxta tiny, saddle-like, with small notch on abdominal edge and pair of short lamellar lateral processes directed perpendicular to juxta axis; saccus big, semicircular; phallus equal to 2/3 of valve in length, thick, almost straight, proximal half of phallus of uniform thickness, distal half slightly narrowing to apex, vesica aperture spoon-like, about 1/2 of phallus in length, vesica without cornuti.



Figures 7−9. Genitalia of *Dyspessa*: 7. *D. milkoi*, Holotype (ZISP); 8. *D. skrylniki*, Holotype (ZISP); 9. *D. skrylniki*, Paratype, female. Scale bar = 1 mm.

Female. Length of fore wing 10−11 mm. Antenna with short setae processes, length of process about 1/2 of antenna stem in diameter. Fore wing dark-brown with sputtering of very rare light-grey scales throughout all wing area, without pattern, fringe dark-brown. Hind wing dark-brown, slightly lighter than fore wing, without pattern, fringe dark-brown.

Female genitalia. Ovipositor very long and thin, papillae anales cylindric, transverse oblique notching on edges of ovipositor, posterior apophyses slightly longer than anterior ones, ostium cup-like, membranous, ductus long, membranous, bursa copulatrix bag-like, small, without signa.

Diagnosis. Externally, the new species is similar to the recently described highland species *Dyspessa igoripljushtchi* Yakovlev & Naydenov, 2022 (Type locality: Tajikistan, Darvaz Mts., Khaburabot pass), from which it sharply differs in a series of characters:
- the poorly expressed light elements of the fore wing pattern in the male,
- the narrow valve,
- the significantly less developed crest on the costal edge of the valve,
- the significantly bigger saccus.

Distribution. Tajikistan (Gissar).

Etymology. The new species is named after the famous Ukrainian entomologist Yuri E. Skrylnik (Kharkov) who made a significant contribution to the study of the entomofauna of Afghanistan and Tajikistan.

Notes. The holotype arrived for study severely damaged; the specimen is missing the right fore wing.

Discussion

The new findings increase the number of the genus *Dyspessa* representatives in Central Asia to 19 species. *D. skrylniki* together with D. *igoripljushtchi* form a specific group of high-mountain species (both recorded above 3100 m), characterized by very dark coloration, relatively simple male genitals and pronounced pigmentation of the genital fittings. Further molecular genetic research of species of this group is of great interest; the DNA sequences have already been obtained for most taxa, they will be analyzed in subsequent works.

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