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Three new species of the genus *Psychonoctua* Grote, 1865 from Argentina and the Caribbean Islands (Lepidoptera: Cossidae, Zeuzerinae)

R. V. Yakovlev, F. C. Penco & A. E. Naydenov

Abstract

The paper describes three new species, *Psychonoctua cracens* Yakovlev, Penco & Naydenov, sp. n. (type locality-Cayman), *P. ravida* Yakovlev, Penco & Naydenov, sp. n. (type locality-Barbados), and *P. diiorioi* Yakovlev, Penco & Naydenov, sp. n. (type locality-NW Argentina), with nine figures.

KEY WORDS: Lepidoptera, Cossidae, Zeuzerinae, *Psychonoctua*, new species, fauna, taxonomy, Neotropical.

Tres especies nuevas del género *Psychonoctua* Grote, 1865 de Argentina las islas del Caribe (Lepidoptera: Cossidae, Zeuzerinae)

Resumen

En este trabajo describen tres especies nuevas, *Psychonoctua cracens* Yakovlev, Penco & Naydenov, sp. n. (localidad tipo-Caimán), *P. ravida* Yakovlev, Penco & Naydenov, sp. n. (localidad tipo-Barbados), and *P. diiorioi* Yakovlev, Penco & Naydenov, sp. n. (localidad tipo NW Argentina), con nueve figuras.

PALABRAS CLAVE: Lepidoptera, Cossidae, Zeuzerinae, *Psychonoctua*, especies nuevas, fauna, taxonomía, Neotropical.

Introduction

The Cossidae of South and Central America are studied very poorly. New data on Cossidae taxonomy were obtained in the recent decades. Significant results were published on taxonomy of the subfamily Zeuzerinae (type genus *Zeuzera* Latreille, 1804). In particular, several new genera and species were described (SCHOORL 1990; NAYDENOV *et al.*, 2019; YAKOVLEV *et al.*, 2017, 2019a, 2020). Several poorly studied genera were redescribed (PENCO *et al.*, 2016; YAKOVLEV *et al.*, 2016, 2019b; NAYDENOV *et al.*, 2020) including the genus *Psychonoctua* Grote, 1865. The genus was described for *P. personalis* Grote, 1865 (Figs 1, 5, 9) from Cuba (GROTE, 1865). Later, a series of species from Central America and Caribbean region were described (SCHAUS, 1901, 1911; HAMPSON, 1904; BARNES & MCDUNNOUGH, 1910; DYAR, 1914, 1918, 1925, 1937; LINDSEY, 1926), which are now considered to belong to the genus *Psychonoctua* (SCHOORL, 1990: 127). In the course of examination of the specimens deposited in the museums and recent collections in Argentina, we have identified three new species of the genus *Psychonoctua*, which are described below.

Material and methods

Male genitalia were mounted in euparal on slides following LAFONTAINE (2004) and

examined with an Olympus SZX16 microscope. The images were taken with the Olympus SZX16 camera. Images of imago were taken by the digital camera of Apple iPhone 7, illuminated in Lightbox. The images were processed using CorelDraw software.

Abbreviations used in the text:

MACN - Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina

NHMUK - British Museum of Natural History, London, United Kingdom

ZISP - Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia

Descriptions of new species

Psychonoctua cracens Yakovlev, Penco & Naydenov, sp. n. (Figs 1, 2, 7)

Material: Holotype 1 ♂, 17-IV-26-VIII-1938. CAYMAN ISLANDS, Oxf. Un. Caymans. Biol. Exped. Coll. By. C. B. Lewis, G. H. Thompson. 22-V-1938, Cayman Brac. N coast of, Stakes Bay. Light trap A., B. M. 1967-147, Slide NHMUK010315486, individual number NHMUK 012832453 (NHMUK). Paratypes: 6 ♂♂, same locality (NHMUK).

Description: Length of fore wing 17 mm. Antenna bipectinate, distally not pectinate. Fore wing light-yellow, with mottled pattern of brown spots and transverse strokes throughout wing area (almost no spots in discal area), discal spot bright, S-shaped wide brown band postdiscally, fringe light-yellow. Hind wing light-yellow without pattern, fringe light-yellow.

Male genitalia: Uncus long, thin, poorly widened apically; gnathos arms thin, short, not fused; valve narrow, lanceolate, tapered to apex, costal edge slightly curved, abdominal edge with two poorly expressed semicircular cuts in basal and middle thirds; juxta with two long leaf-like lateral processes directed dorsally; saccus semicircular, small; phallus robust, slightly shorter than valve, poorly curved in middle third, with longitudinal folding in distal third, long finger-like cornutus in lateral surface of vesica.

Female unknown.

Diagnosis: The new species significantly differs externally from the known representatives of the genus by its mottled pattern of the fore wing, the uncus poorly widened apically, and the two poorly expressed semicircular cuts in the basal and middle thirds on the abdominal edge of the valve.

Distribution: Cayman Islands.

Etymology: *Cracens* (lat.) slim, graceful.

Psychonoctua ravida Yakovlev, Penco & Naydenov, sp. n. (Figs 1, 4, 8)

Material: Holotype 1 ♂, BARBADOS, R. E. Frampton. 93-195, Slide NHMUK010315480, individual number NHMUK 012832447 (NHMUK).

Description: Length of fore wing 18 mm. Antenna bipectinate, distally not pectinate. Fore wing grey-yellow, with pattern of brown spots. Submarginally, band of individual brown spots; postdiscally, brown strokes from costa to M_1 ; discal spot C-shaped, brown; in discal area, wide oblique brown stroke from costa to medial trunk; fringe mottled (brown at veins, light-yellow between veins). Hind wing light-yellow, without pattern, fringe mottled (brown at veins, light-yellow between veins).

Male genitalia: Uncus long, slightly narrowing in middle third, apically sharp; gnathos arms thin, short, not fused; valve narrow, long, lanceolate, poorly narrowing to apex, costal edge practically even, poorly expressed semicircular cut in basal third of abdominal edge; juxta with two long, leaf-like lateral processes directed dorsally; saccus semicircular, relatively massive; phallus robust, slightly shorter than valve, poorly curved in middle third, long finger-like cornutus in lateral surface of vesica.

Female unknown.

Diagnosis: The new species differs from the known species externally: in the brown bands and strokes in submarginal, postdiscal and discal areas of the fore wing, and in the male genital structure: the narrow elongated valve with almost even costa.

Distribution: Barbados.

Etymology: *Ravidus* [lat.] - greyish, grey-yellow.

***Psychonotua diiorioi* Yakovlev, Penco & Naydenov, sp. n. (Figs 1, 5, 9)**

Material: Holotype 1 ♂, NW ARGENTINA, Jujuy Prov., 25 km NE Palma Sola, 23°48'53.7" S 0641°12'44.7" W, H-454 m, 23-X-2019, leg. R. V. Yakovlev, Genital preparation n°174, coll. A. E. Naydenov (ZISP). Paratype: 1 ♂, [ARGENTINA], Chaco, Depto. Chacabuco, Charata, 08-I-1992, coll. O. Di Iorio, Prep. Gen. FCP N°14. (MACN).

Description: Length of fore wing 12 mm. Antenna bipectinate, distally not pectinate. Fore wing brownish-grey, with pattern of brown thin undulated transverse lines, discal spot shaped as wide brown transverse stroke from costa to Cu-trunk, oblique wide brown band basally, fringe mottled (brown at veins, light-yellow between veins). Hind wing light-yellow, without pattern, fringe white.

Male genitalia: Uncus elongated, edges even, apically sharp; gnathos arms thin, short, not fused; valve relatively wide, poorly narrowing to apex, apically semicircular, costal and abdominal edge almost even; juxta with two long leaf-like lateral processes directed dorsally; saccus semicircular, relatively massive; phallus robust, short, twice shorter than valve, large finger-like cornutus in lateral surface of vesica.

Female unknown.

Diagnosis: The new species significantly differs from the known species of the genus in several features: a small size, the discal spot shaped as a wide brown transverse stroke from the costa to Cu-trunk, the basal oblique wide brown band, the wide valve with almost even costal and abdominal edges and a very short phallus.

Distribution: Argentina (Chaco and Jujuy Provinces).

Etymology: The new species is named after Osvaldo Di Iorio, one of the most prolific and passionate entomologist of Argentina, who recently died in 2016.

Discussion

Currently, there are nine known taxa of the species group, the status of which is still not clear; they are widely distributed on the islands of the Caribbean sea and are locally found in the continental regions of South America (French Guiana, Brazil (Amazonas Prov.), Colombia, Central (Panama) and North America (Mexico, south of the USA - Arizona) (SCHOORL, 1990; DONAHUE, 1995). Taking into account the description of *P. diiorioi*, the range of the genus is significantly extended south, to the north regions of Argentina.

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