

# *Ceuroma* Yakovlev, Naydenov & Penco, gen. n. - new Genus of Neotropical Zeuserinae (Lepidoptera: Cossidae)

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

## Abstract

The article describes a new genus of Cossidae (Lepidoptera) from South America, *Ceuroma* Yakovlev, Naydenov & Penco, gen. n. (Type species *Cossus mucoreus* Herrich-Schäffer, [1853]). The new genus is mostly close to the Neotropical genus *Allocriptobia* Viette, 1951; a detailed diagnosis is given. The apomorphic feature of the new genus is the presence of two small clasper or harpe in the middle third on the abdominal edge of the valve. The distribution map is provided and 12 figures.

KEY WORDS: Lepidoptera, Cossidae, *Ceuroma*, *Allocriptobia*, fauna, taxonomy, Neotropical.

*Ceuroma* Yakovlev, Naydenov & Penco, gen. n. – género nuevo de Zeuserinae Neotropical  
(Lepidoptera: Cossidae)

## Resumen

El artículo describe un género nuevo de Cossidae (Lepidoptera) de Suramérica, *Ceuroma* Yakovlev, Naydenov & Penco, gen. n. (Especie tipo *Cossus mucoreus* Herrich-Schäffer, [1853]). El género nuevo está próximo al género Neotropical *Allocriptobia* Viette, 1951; se da una detallada diagnosis. La característica apomórfica del género nuevo es la presencia de dos pequeños cláspes o harpa en el tercio medio sobre el borde abdominal de la valva. Se proporciona un mapa de distribución y 12 figuras.

PALABRAS CLAVE: Lepidoptera, Cossidae, *Ceuroma*, *Allocriptobia*, fauna, taxonomía, Neotropical.

## Introduction

Cossidae (Lepidoptera) is a family of primitive Ditrysian Lepidoptera with a worldwide distribution except for high latitudes. The representatives inhabiting the Neotropics are still poorly studied. The subfamily Zeuserinae (type genus *Zeusera* Latreille, 1804) is relatively well studied. In the recent years, a series of new species and genera have been described, the taxonomic position of several species and generic group taxa has been clarified (SCHOORL 1990; PENCO *et al.*, 2016; NAYDENOV *et al.* 2019, 2020; YAKOVLEV *et al.*, 2016, 2017, 2019a; 2020). In particular, the poorly studied Neotropical genus *Allocriptobia* Viette, 1951 (YAKOVLEV *et al.*, 2019b) was redescribed. Originally, the genus *Cryptobia* was established for *Cryptobia musae* Herrich-Schäffer, [1854] (type locality: Rio Grande) with the second species *Cossus mucoreus* Herrich-Schäffer, [1853] (type locality: Brasil) added later (HERRICH-SCHÄFFER, 1850-1858). However, the name *Cryptobia* Herrich-Schäffer, [1854] appears to be a junior homonym of *Cryptobia* Leidy, 1846 (Kinetoplastida, Cryptobiidae) (LEIDY, 1846), and *Allocriptobia* was proposed as an objective replacement name (VIETTE, 1951: 38). YAKOVLEV *et al.* (2019b) redescribed the genus *Allocriptobia*, indicated the

lectotypes *Cryptobia musae* and *Cossus mucoreus*. *C. mucoreus* was provisionally assigned to the genus *Alloccryptobia*, as at that moment the authors did not have the materials from NHMUK. Later, these materials were examined (including the unique known male from Venezuela), and it was established that the males of *C. mucoreus* significantly differ from the males of *C. musae*, which allows to allocate for them a monotypic genus. Its illustrated description and diagnosis is given below.

## Material and methods

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

NHMUK	Natural History Museum (London, United Kingdom)
MNHN	Muséum National d'Histoire Naturelle (Paris, France)
USNM	United States National Museum of Natural History (Smithsonian Institution) (Washington, USA)
ZISP	Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia)
ZSM	Zoologische Staatssammlung (Munich, Germany).

## Taxonomy part

### *Ceuroma* Yakovlev, Naydenov & Penco, gen. n.

Type species: *Cryptobia mucoreus* Herrich-Schäffer, [1853] (Figs 1-4, 8, 10, 12)

Description. 1 ♂, Big size (fore wing length of male from Venezuela 22 mm). Antenna basally bipectinate, distal half simple filiform. Thorax and abdomen densely covered with dark brown scales. Fore wing long, narrow, relatively sharp apically, brown, poorly noticeable longitudinal dark brown lines and strokes postdiscally between veins; poorly expressed dark brown strokes throughout wing area. Hind wing short, apically sharp, coal-black, outer edge semi-transparent.

Male genitalia: Uncus elongated, apically slightly narrowing, semicircular, with small bulge; tegumen robust; gnathos arms thin, belt-like, not fused; valve lanceolate, relatively wide, slightly narrowing to apex, costal edge slightly curved, abdominal edge with notch in basal third; two small mastoid harpes equal in size on abdominal edge (in middle third); juxta robust, with two belt-like long lateral processes directed dorsally; saccus semicircular, wide; phallus short (shorter than valve), thick, basally very wide, big finger-like cornutus in vesica.

Female: Big size. Length of fore wing 24-28 mm. Antenna filiform, fore wing elongated, light-brown, with pattern of dark brown strokes and thin longitudinal lines between veins postdiscally. Hind wing bright-orange with relatively wide black rim, black reticulated pattern at anal angle.

Female genitalia: Ovipositor very long, ostium poorly submerged, cup-like; ductus thick, of medium length; bursa oval, with small stellate signum on lateral surface, ductus seminalis thin, departs from top of bursa; anterior apophyses significantly shorter than posterior ones; transverse oblique cuts on lateral surface of ovipositor; papillae anales semicircular.

Composition: The genus is monotypic, includes one species, *C. mucorea* (H.-S.).

Diagnosis: The new genus is mostly close to South-American *Alloccryptobia* (Figs 6-7, 9, 11), from which it clearly differs in a series of features: pronounced sexual dimorphism, very narrow fore wing, semi-transparent outer edge on the male hind wing, bright-orange hind wing in females, two small harpes in middle third of the abdominal edge of the valve (this feature is apomorphic for the new genus).

Distribution: Brazil, Venezuela, Peru, Paraguay?

Etymology: “Ceuroma” is an anagram of the species name “mucorea”.

*Ceuroma mucorea* (Herrich-Schäffer, [1853]), **comb. n.**

*Cossus mucoreus* Herrich-Schäffer, [1853] 1850-1858. *Samml. Aussereur. Schmett.*, **1**: 58, pl. [9], fig. 39 LT: [Brasil]

Material examined: Lectotype, ♀, [Brasil] (ZISP); 1 ♂, 1 ♀, VENEZUELA: Valencia (BMNH); 3 ♀♀, PERU: Chanchamayo, 1000-1500 m. (BMNH); 1 ♀, BRAZIL (BMNH); 1 ♀, Caracas, Berg Avila, P. Cor. Vogl, 19-22-VII-[19]31 (ZSM); 1 ♀, (paralectotype) Porto Cabello (MNHN).

Besides, we have at our disposal a photo of the holotype of *Cryptobia phobifera* Dyar, 1940 (Fig. 5) from Paraguay: Villa Rica, III-1922, Jorgensen (USNM). Its synonymy with *C. mucorea* remains doubtful, as the finding is very far from the basic habitat (Fig. 12).

## Discussion

Having the harpes on the abdominal edge of the valve, the genus *Ceuroma* belongs to the generic group of the Zeuserinae subfamily, which includes South-American genera: *Brypocitia* Schoorl, 1990 (type species *Xyleutes strigifer* Dyar, 1910), *Morpheis* Hübner, [1820] (type species *Phalaena pyracmon* Cramer, 1782) and the group of Australian species combined by KALLIES & HILTON (2012) into the “*Sympnynodes digitata* group”. Additionally, the same feature is found in the Central-African genus *Acosma* Yakovlev, 2011 (type species *Acosma gurkoi* Yakovlev, 2011), revised later (YAKOVLEV, 2019).

## Acknowledgments

The authors express their gratitude to Th. J. Witt (†) (Munich), to Geoff Martin, Alessandro Giusti (NHMUK, London), Dr. Sergey Sinev (ZISP, Sant Petersburg), and Dr. Joël Minet (MNHN, Paris) for their kind assistance provided during studying the type material of the Natural History Museum. The genital preparations were made by Xenia Proskuryakova (Moscow). The author is grateful to Anna Ustjuzhanina (Tomsk) for the help in translation of the paper.

## BIBLIOGRAPHY

- HERRICH-SCHÄFFER, G. A. W., 1850-1858.– *Sammlung neuer oder wenig bekannter aussereuropäischer Schmetterlinge*, **1**: 84 pp., 120 pls. G. J. Manz, Regensburg.
- KALLIES, A. & HILTON, D. J., 2012.– Revision of Cossinae and small Zeuserinae from Australia (Lepidoptera: Cossidae).– *Zootaxa*, **3454**: 1-62. DOI: 10.11646/zootaxa.3454.1.1.
- LEIDY, J., 1846.– Description of a new genus and species of Entozoa.– *Proceedings of the Academy of Natural Sciences of Philadelphia*, **3**: 100-101.
- NAYDENOV, A. E., YAKOVLEV, R. V., PENCO, F. C. & WITT, TH. J., 2019.– A new genus and species of the subfamily Zeuserinae Boisduval, [1828] (Lepidoptera: Cossidae) from Brazil.– *Russian Entomological Journal*, **28**(1): 82-83. DOI: 10.15298/rusentj.28.1.13.
- NAYDENOV, A. E., YAKOVLEV, R. V. & PENCO, F. C., 2020.– Taxonomic status of genus *Voousia* Schoorl, 1990 (Lepidoptera: Cossidae: Zeuserinae).– *Russian entomological Journal*, **29**(1): 93-96. DOI: 10.15298/rusentj.29.1.13.
- PENCO, F. P., YAKOVLEV, R. V. & WITT, TH. J., 2016.– Taxonomic notes on the genera *Brypocitia* Schoorl, 1990 and *Schreiteriana* Fletcher & Nye, 1982 (Lepidoptera, Cossidae).– *Zootaxa*, **4205**(3): 297-300. DOI: 10.11646/zootaxa.4205.3.10.
- SCHOORL, J. W., 1990.– A phylogenetic study on Cossidae (Lepidoptera: Ditrysia) based on external adult morphology.– *Zoologische Verhandlungen*, **263**: 1-295.
- VIETTE, P. E. L., 1951.– Contribution à l'étude des Cossidae (2e note). Les genres et leur espèce type.– *Lambillionea*, **51**: 37-43, 58-60, 68-72.

- YAKOVLEV, R. V., 2019.– Review of the Genus *Acosma* Yakovlev, 2011 (Lepidoptera, Cossidae).– *Far Eastern Entomologist*, **386**: 1-7. DOI: 10.25221/fee.386.1.
- YAKOVLEV, R. V., NAYDENOV A. E. & PENCO F. C., 2020.– *Klagesiana* gen. n. - new genus of Carpenter-Moths (Lepidoptera: Cossidae: Zeuzerinae) from Brazil.– *Ecologica Montenegrina*, **27**: 69-73.
- YAKOVLEV, R. V., PENCO, F. C. & WITT, TH. J., 2016.– Redescription of genus *Psychonoctua* Grote, 1865 (Insecta: Lepidoptera, Cossidae, Zeuzerinae).– *Biological Bulletin of Bogdan Chmelniyskiy Melitopol State Pedagogical University*, **6**(3): 46-50. DOI: 10.15421/201669.
- YAKOVLEV, R. V., PENCO, F. C. & WITT, TH. J., 2017.– Five new species of the genus *Schreiteriana* Fletcher et Nye, 1982 (Lepidoptera: Cossidae) from Peru and Columbia (South America).– *Russian Entomological Journal*, **26**(4): 339-342.
- YAKOVLEV, R. V., PENCO, F. & WITT, TH., 2019a.– Review of the Genus *Brypocxia* Schoorl, 1990 (Lepidoptera, Cossidae) with Descriptions of Five New Species from Central and South America.– *Zoologicheskii Zhurnal*, **98**(1): 28-36. DOI: 10.1134/S0044513419010185.
- YAKOVLEV, R. V., SINEV, S. YU., NAYDENOV, A. E., PENCO, F. C. & WITT, TH. J., 2019b.– Redescription of the genus *Allocriptobia* Viette, 1951 (Lepidoptera: Cossidae).– *SHILAP Revista de lepidopterología*, **47**(186): 261-268.

\*R. V. Y.  
Altai State University  
pr. Lenina, 61  
RUS-656049 Barnaul  
RUSSIA / RUSSIA  
E-mail: yakovlev\_asu@mail.ru  
<https://orcid.org/0000-0002-9409-1200>

A. E. N.  
Altai State University  
pr. Lenina, 61  
RUS-656049 Barnaul  
RUSSIA / RUSSIA  
E-mail: colias24@mail.ru  
<https://orcid.org/0000-0001-9367-3578>

y / and

Tomsk State University  
Laboratory of Biodiversity and Ecology  
Lenin pr. 36  
RUS-634050 Tomsk  
RUSSIA / RUSSIA

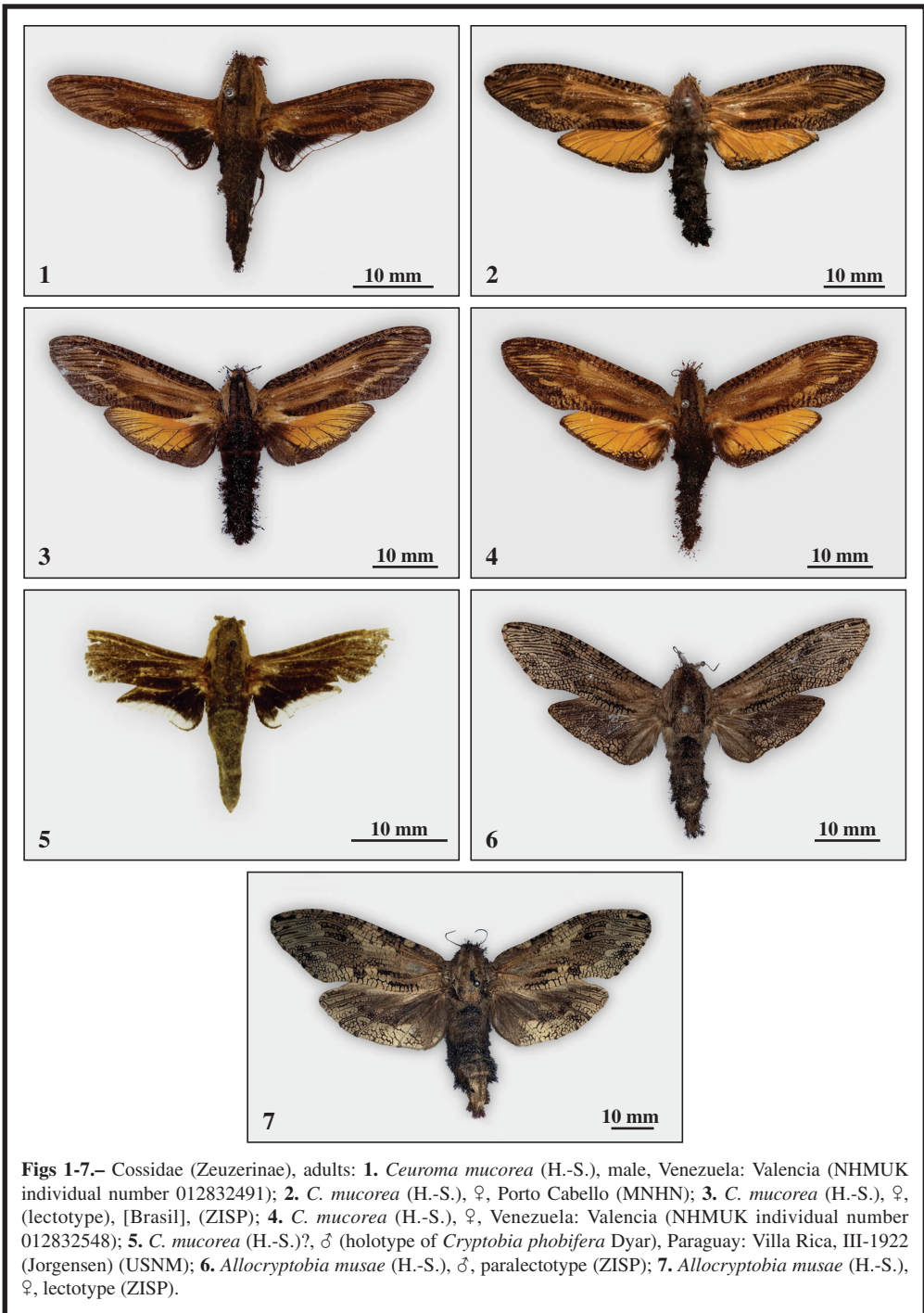
F. C. P.  
Fundación de Historia Natural “Félix de Azara”  
Departamento de Ciencias Naturales y Antropología  
Universidad Maimónides  
Hidalgo 775 piso 7 (1405BDB)  
Ciudad Autónoma de Buenos Aires  
ARGENTINA / ARGENTINA  
E-mail: fernando\_penco@hotmail.com  
<https://orcid.org/0000-0002-3463-2183>

\*Autor para la correspondencia / *Corresponding author*

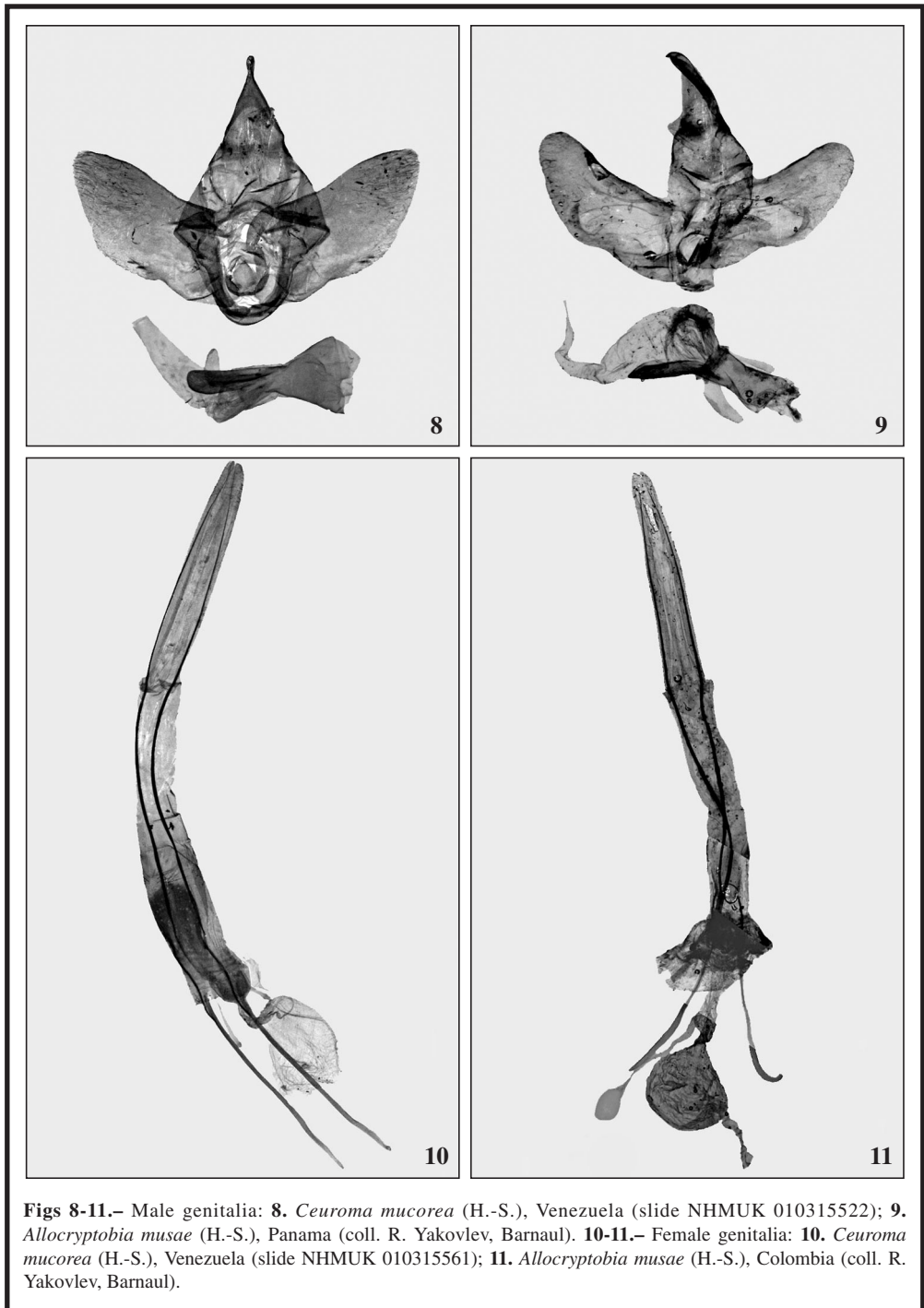
(Recibido para publicación / *Received for publication* 2-V-2020)

(Revisado y aceptado / *Revised and accepted* 12-V-2020)

(Publicado / *Published* 30-IX-2020)



**Figs 1-7.**— Cossidae (Zeuzerinae), adults: **1.** *Ceuroma mucorea* (H.-S.), male, Venezuela: Valencia (NHMUK individual number 012832491); **2.** *C. mucorea* (H.-S.), ♀, Porto Cabello (MNHN); **3.** *C. mucorea* (H.-S.), ♀, (lectotype), [Brasil], (ZISP); **4.** *C. mucorea* (H.-S.), ♀, Venezuela: Valencia (NHMUK individual number 012832548); **5.** *C. mucorea* (H.-S.)?, ♂ (holotype of *Cryptobia phobifera* Dyar), Paraguay: Villa Rica, III-1922 (Jorgensen) (USNM); **6.** *Allocryptobia musae* (H.-S.), ♂, paralectotype (ZISP); **7.** *Allocryptobia musae* (H.-S.), ♀, lectotype (ZISP).



**Figs 8-11.**– Male genitalia: **8.** *Ceuroma mucorea* (H.-S.), Venezuela (slide NHMUK 010315522); **9.** *Allocryptobia musae* (H.-S.), Panama (coll. R. Yakovlev, Barnaul). **10-11.**– Female genitalia: **10.** *Ceuroma mucorea* (H.-S.), Venezuela (slide NHMUK 010315561); **11.** *Allocryptobia musae* (H.-S.), Colombia (coll. R. Yakovlev, Barnaul).

