

<https://zoobank.org/urn:lsid:zoobank.org:pub:8FADBE83-2A03-40D8-B116-2D53C90EC2C7>

A new species of the genus *Morpheis* Hübner, [1820] from Brazil and Peru (Lepidoptera: Cossidae)

ARTEM E. NAYDENOV¹, ROMAN V. YAKOVLEV^{1,2,5*} & FERNANDO C. PENCO⁴

¹Altai State University, pr. Lenina 61, Barnaul, 656049, Russia. E-mail: naydenov.24@mail.ru

²Tomsk State University, Laboratory of Biodiversity and Ecology, Lenina pr. 36, 634050 Tomsk, Russia.

³PaleoData Lab., Institute of Archaeology and Ethnography SB RAS, Novosibirsk, Russia.

⁴Fundación 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.

E-mail: fernando_penco@hotmail.com

*Corresponding author. E-mail: yakovlev_asu@mail.ru

Received 15 May 2021 | Accepted by V. Pešić: 7 June 2021 | Published online 8 June 2021.

Abstract

The article describes a new species, *Morpheis humboldti* Naydenov, Yakovlev et Penco **sp. n.** From the western Brazil and Peru. The description is accompanied by a detailed diagnosis and illustrations.

Key words: Carpenter moths, biodiversity, species richness, Zeuserinae, taxonomy, Neotropics, Southern America.

Introduction

The carpenter moths of the Neotropical region are insufficiently studied. Recently, the most significant progress has been achieved in the study of the subfamily Zeuserinae Boisduval, [1828] (Penco *et al.* 2016; Yakovlev *et al.* 2016, 2017, 2019a, b, 2020; Naydenov *et al.* 2019).

The genus *Morpheis* Hübner, [1820] (type species *Sphinx pyracmon* Cramer, [1780]) is one of the richest genera of the Neotropical carpenter moths of Zeuserinae, and includes 12 species (Donahue 1980). The representatives of this genus are widely spread on the territory of the New World: from the south of the USA (Arizona) to the central part of Argentina (Buenos Aires, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Misiones, Salta, San Juan, San Luís, Santa Fe, Santiago del Estero, and Tucumán Provinces) (Penco & Yakovlev 2015). In this work we give a description of a new species from Brazil and Peru, found in the collections of The Natural History Museum, London, United Kingdom (later – NHMUK), Witt Museum, Munich, Germany (later – MWM) and Museum National d’Histoire Naturelle, Paris, France (MNHN). Comparative materials are kept in NHMUK, MWM and Carnegie Museum of Natural History, Pittsburg, USA (later – CMNH).

Material and Methods

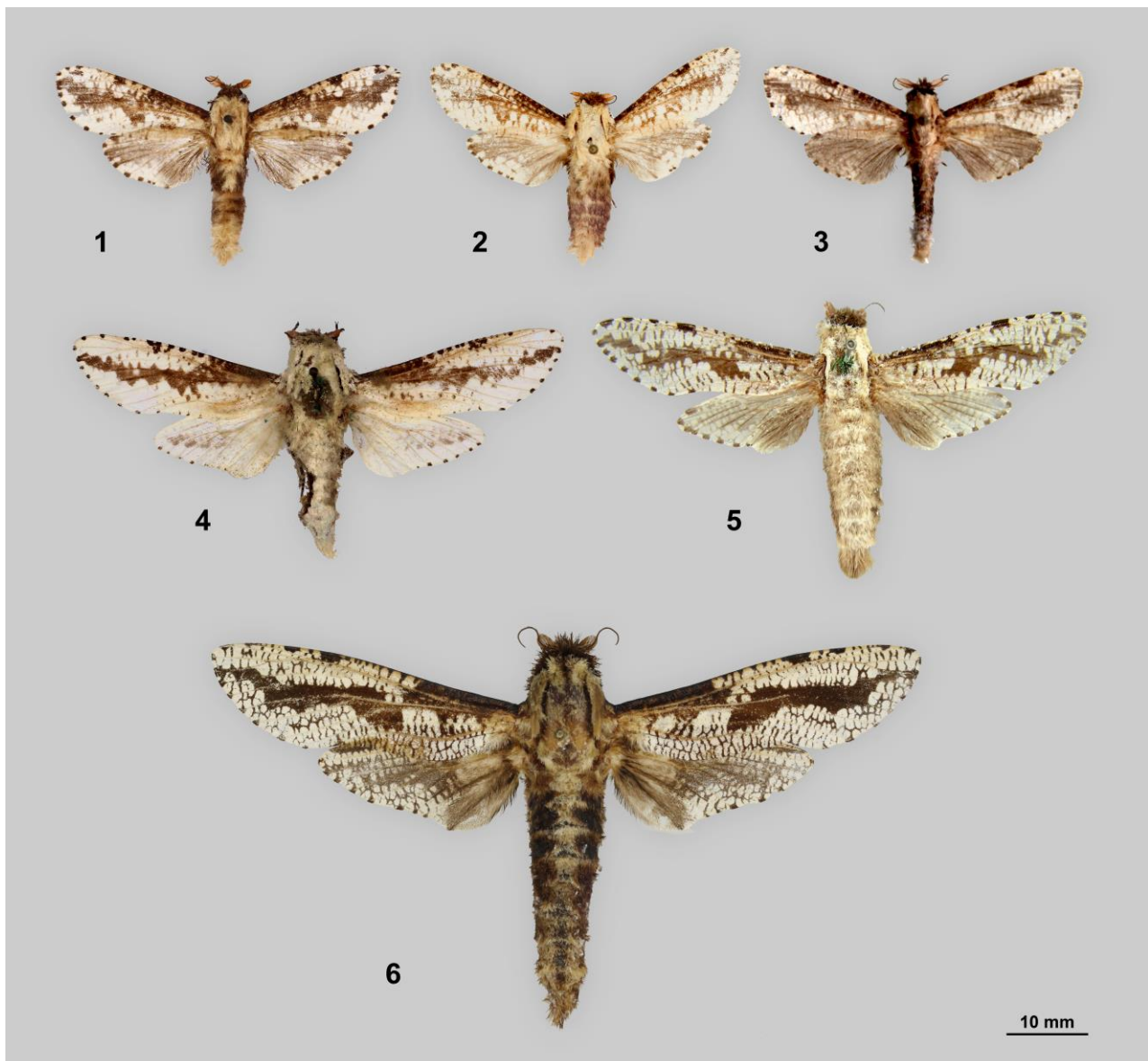
Images of adults were taken by the camera of Canon EOS 70D illuminated in lightbox. The male genitalia slides (Lafontaine 2004) were examined with a Zeiss Stemi 2000 C microscope and Olympus SZX16 microscope. The images were taken with the Olympus SZX16 camera. Photos were enhanced and arranged to plates with CorelDraw software.

Taxonomical part

Morpheis humboldti Naydenov, Yakovlev et Penco sp. n.

<https://zoobank.org/urn:lsid:zoobank.org:act:FC5C6E34-8A29-4791-9514-6DD08416C2F4>

Figs 1–3, 7–8



Figures 1–6. *Morpheis*, adults: **1.** *M. humboldti* sp. n., ♂, holotype, Brazil, Amazonas state, Fonte Boa, NHMUK 012832417 (NHMUK); **2.** *M. humboldti* sp. n., ♂, paratype, Peru, Huánuco Province, Yuyapichis, ACP Panguana (MWM); **3.** *M. humboldti* sp. n., ♂, paratype, Brazil, Rondônia state, Rio Mamore (MNH); **4.** *M. cognatus* (Walker, 1856), ♂, holotype, Honduras (NHMUK); **5.** *M. comisteus* (Schaus, 1911), ♂, paratype, Costa Rica, Six[a]ola Riv[er], Sept[ember] (CMNH); **6.** *M. pyracmon* (Cramer, [1780]), ♂, Venezuela, Prov. Yaracuy, Cordillera de la Costa (MWM).

Material examined: Type material. Holotype ♂: **Brazil:** Amazonas state, Fonte Boa, July 1906, leg. S.M. Klages, SLIDE NHMUK 010315450, NHMUK 012832417 (NHMUK). Paratypes: **Brazil:** 2 ♂♂, same locality (NHMUK); 1 ♂, Rondônia state, Rio Mamore, Yata, aval de Guajara-Mirim, May 1966, coll. Moinier (MNHN); **Peru:** 1 ♂, Huánuco Province, Yuyapichis, ACP Panguana, 9°36'S 74°56'W, 220 m, June 2013, leg. Hubert Thöny, GenPr-Heterocera MWM 36.977 (MWM).

Description. Wingspan 41–42 mm. Length of fore wing 19–19,5 mm. Antenna bipectinate in proximal half, filiform in distal half. Thorax covered with light-yellow scales from above, abdomen laterally covered with black scales, top of abdomen covered with light-yellow scales. Fore wing relatively short, apically rounded, light-creamy, wide brown portion with uneven edges from base to outer edge of wing, brown strokes along costal edge, poorly expressed brown pattern of strokes cubitally, small bright brown dots along outer edge of wing at veins, fringe mottled (brown at veins, light-creamy between veins). Hind wing short, brown, with more or less expressed light-creamy portion along outer edge of wing, small bright brown dots at veins along outer edge of wing, fringe mottled (brown at veins, light-creamy between veins).

Male genitalia. Uncus short, narrowing from base to apex, slightly acute apically; gnathos arms very robust, strongly sclerotized, shaped as wide plates adherent to tegumen; gnathos ribbon-like, thin; valve relatively short, lanceolate, with almost smooth costal edge, saccular edge slightly curved, semicircular, apex of valve semicircular, small fold in medium third of valve (closer to saccular edge); juxta robust, semicircular, with long lanceolate lateral processes directed dorsally; saccus wide, semicircular; phallus shorter than valve, thick, with clearly expressed longitudinal folds in distal half; vesica without cornuti.

Female unknown.

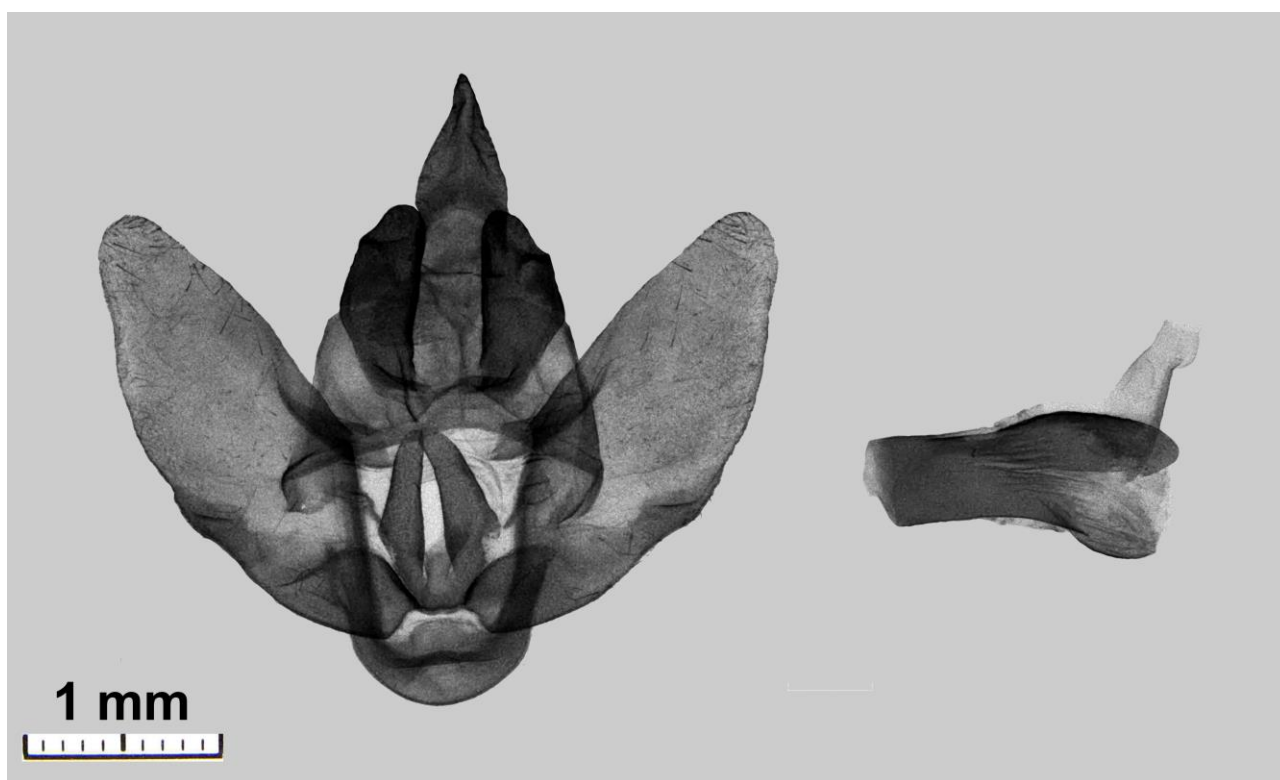


Figure 7. Male genitalia of *M. humboldti* sp. n., holotype, Brazil, Amazonas state, Fonte Boa, SLIDE NHMUK 010315450 (NHMUK).

Diagnosis: The new species is mostly close to *M. cognatus* (Walker, 1856) (Fig. 4), *M. comisteus* (Schaus, 1911) (Fig. 5), and *M. pyracmon* (Cramer, [1780]) (Fig. 6) however it has distinctive differential characters:

- from *M. pyracmon* (Cramer, [1780]) it differs in the smaller size and more rounded apex of the fore and hind wing; the dark longitudinal portion on the fore wing is much more contrasting; the wavy pattern on the dark longitudinal portion is less expressed; the smoking with poor undulated pattern on the hind wing is more expressed; the dark dots located along the outer edge of the fore and hind wing are more contrasting;
- from *M. comisteus* (Schaus, 1911) it differs in the smaller size and more rounded apex of the fore and hind wing, the undulated pattern outside the area of consolidation is less expressed;
- from *M. cognatus* (Walker, 1856) it differs in the more rounded apex of the fore and hind wing; the undulated pattern on the wing periphery is less expressed, there is a large smoky portion with blurred edges on the hind wings.

From all the species of the genus, the new species differs in the practically reduced harpe on the valve.

Distribution. Peru (Huánuco Province), Brazil (Amazonas and Rondônia states) (Fig. 5).



Figure 8. Map of distribution of *M. humboldti* sp. n.

Etymology. The new species is named after Friedrich Wilhelm Heinrich Alexander von Humboldt (1769–1859), was a German polymath, geographer, naturalist and explorer who made a significant scientific contribution to the study of South America.

Acknowledgments

The authors express their gratitude to Joël Minet (MNHN) and Geoff Martin (NHMUK). The authors are grateful to late Prof. Thomas J. Witt (Munich) for invaluable research assistance. We also thank Anna Ustjuzhanina (Tomsk) for language improvements

References

- Donahue, J.P. (1980) Resurrection of the genus *Morpheis* (Cossidae), with description of a new species in the *cognatus* group from southern Arizona. *Journal of the Lepidopterists' Society*, 34 (2), 173–181.

- Lafontaine, J.D. (2004) Noctuoidea, Noctuidae (part), Noctuinae (part–Agrotini). R.W. Hodges (ed.). *The Moths of America North of Mexico*. Fasc. 27.1. The Wedge Entomological Research Foundation, Washington. 385 pp.
- Naydenov, A.E., Yakovlev, R.V., Penco F.C. & Witt, Th.J. (2019) A new genus and species of the subfamily Zeuzerinae Boisduval, [1828] (Lepidoptera: Cossidae) from Brazil. *Russian Entomological Journal*, 28 (1), 82–83. <https://doi.org/10.15298/rusentj.28.1.13>
- Penco F.C., Yakovlev R. (2015) Lista comentada de los Cossidae (Lepidoptera) de Argentina. *Historia Natural (Universidad Maimónides). Tercera Serie*, 5 (2), 79–94.
- Penco, F.P., Yakovlev, R.V. & Witt Th.J. (2016) Taxonomic notes on the genera *Brypoptia* Schoorl, 1990 and *Schreiteriana* Fletcher & Nye, 1982 (Lepidoptera, Cossidae). *Zootaxa*, 4205 (3), 297–300. <https://doi.org/10.11646/zootaxa.4205.3.10>
- 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. <https://doi.org/10.37828/em.2020.27.8>
- Yakovlev, R.V., Penco, F.C. & Witt, T.J. (2016) Redescription of genus *Psychonoctua* Grote, 1865 (Insecta: Lepidoptera, Cossidae, Zeuzerinae). *Biological Bulletin of Bogdan Chmelnytsky Melitopol State Pedagogical University*, 6 (3), 46–50.
- Yakovlev, R.V., Penco, F.C. & Witt, T.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., Sinev, S.Yu., Naydenov, A.E., Penco, F.C. & Witt, Th.J. (2019a) Redescription of the genus *Allocryptobia* Viette, 1951 (Lepidoptera: Cossidae). *SHILAP Revista de lepidopterologia*, 47 (186), 261–268.
- Yakovlev, R.V., Penco, F. & Witt, T. (2019b) Review of the genus *Brypoptia* Schoorl, 1990 (Lepidoptera, Cossidae) with descriptions of five new species from Central and South America. *Entomological Review*, 99 (3), 407–415. <https://doi.org/10.1134/S0013873819030138>