

Taxonomic status of the genus *Hamilcara* Barnes et McDunnough, 1910 (Lepidoptera: Cossidae: Zeuzerinae)

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ABSTRACT: Basing on the study of the type specimens morphology and additional materials, we establish the new synonymy, *Hamilcara* Barnes et McDunnough, 1910 = *Psychonoctua* Grote, [1866] syn.n., and the new combination, *Psychonoctua atra* (Barnes et McDunnough, 1910) comb.n.

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KEY WORDS: carpenter moths, entomology, fauna, biodiversity, taxonomy, Neotropical Region, *Psychonoctua*.

Таксономический статус рода *Hamilcara* Barnes et McDunnough, 1910 (Lepidoptera: Cossidae: Zeuzerinae)

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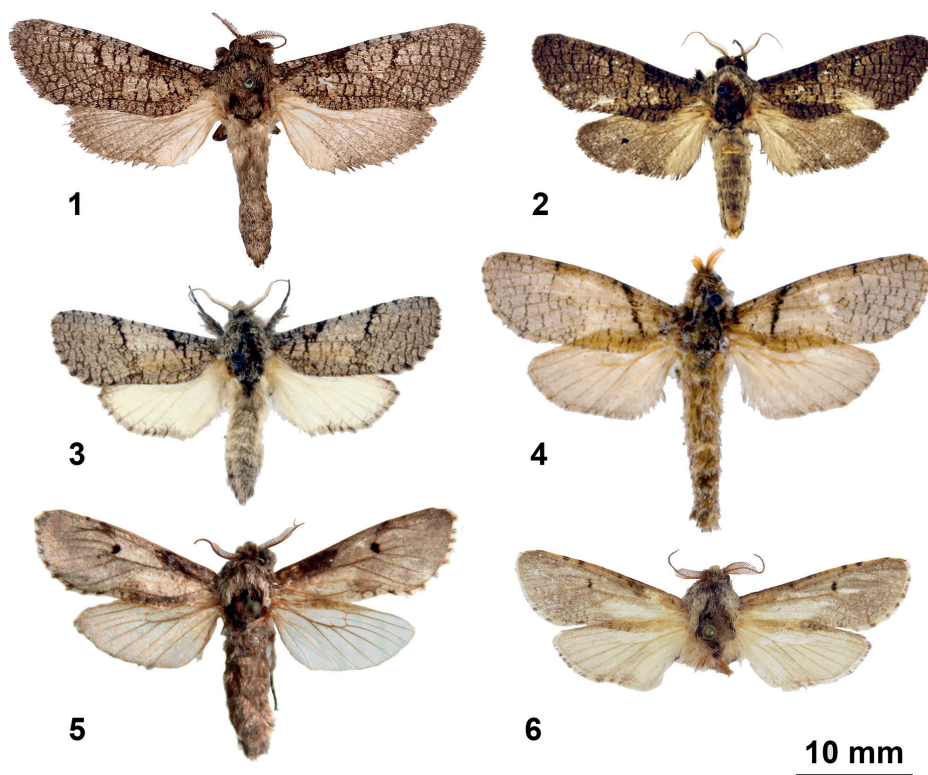
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РЕЗЮМЕ: На основании исследования морфологии типовых экземпляров и дополнительного материала устанавливается новая синонимия *Hamilcara* Barnes et McDunnough, 1910 = *Psychonoctua* Grote, [1866] syn.n. и новая комбинация: *Psychonoctua atra* (Barnes et McDunnough, 1910) comb.n.

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КЛЮЧЕВЫЕ СЛОВА: древооточцы, энтомология, фауна, биоразнообразие, таксономия, Неотропический регион, *Psychonoctua*.



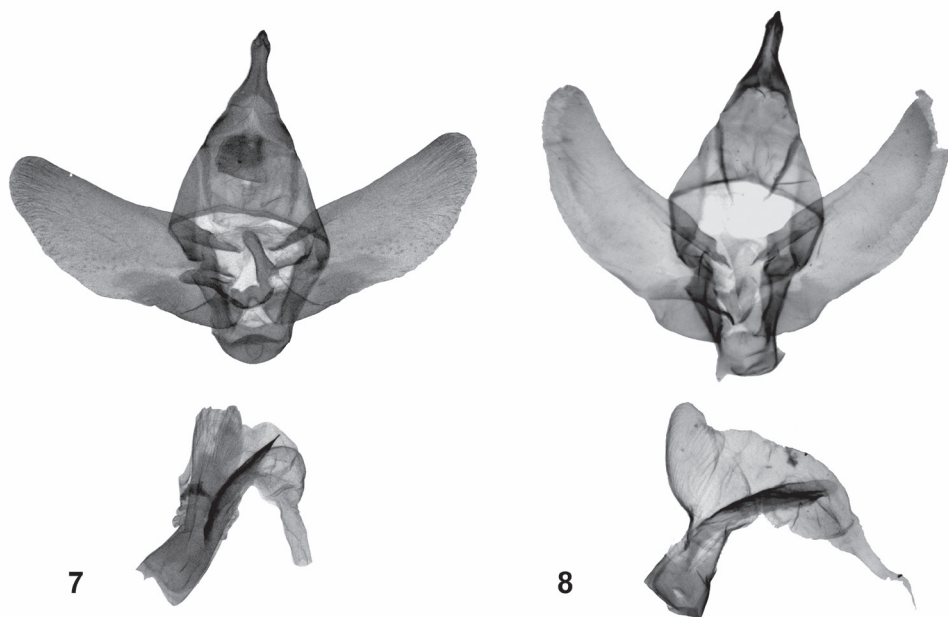
Figs 1–6. *Psychonoctua* spp., adults: 1 — *P. atra* (Barnes et McDunnough, 1910), ♂, USA, Arizona, Pima Co., NHMUK 012832452, (NHMUK); 2 — *P. atra*, holotype ♂, USA, Arizona, Pinal Co., USNMMENT 01198140 (USNM); 3 — *P. gilensis* (Barnes et McDunnough, 1910), holotype ♂, USA, Arizona, Gila Co., USNMMENT 01198200 (USNM); 4 — *P. unilinea* Dyar, 1925, holotype ♂, Mexico, Colima, USNMMENT 01198215 (USNM); 5 — *P. personalis* Grote, [1866], ♂, Cuba, Baracoa (MNHN); 6 — *P. personalis*, ♂, Cuba, Prov. Holguin (MWM).

Рис. 1–6. *Psychonoctua* spp., имаго: 1 — *P. atra* (Barnes et McDunnough, 1910), ♂, США, Аризона, окр. Пима, NHMUK 012832452 (NHMUK); 2 — *P. atra*, голотип ♂, США, Аризона, окр. Пинал, USNMMENT 01198140 (USNM); 3 — *P. gilensis* (Barnes et McDunnough, 1910), голотип ♂, США, Аризона, окр. Хила, USNMMENT 01198200 (USNM); 4 — *P. unilinea* Dyar, 1925, голотип ♂, Мексика, Колима, USNMMENT 01198215 (USNM); 5 — *P. personalis* Grote, [1866], ♂, Куба, Баракоса (MNHN); 6 — *P. personalis*, ♂, Куба, пров. Ольгин (MWM).

Introduction

The genus *Hamilcara* was described by Barnes and McDunnough (1910) basing on the morphological characters of the head, thorax and wing venation. Originally, it included two species, *H. atra* Barnes et McDunnough, 1910 (type species by original designation) and *H. gilensis* Barnes et McDunnough, 1910. Later (Barnes, McDunnough, 1911), one more species was added to the genus: *Zeuzera ramuscula* Dyar, 1906.

Dyar (1940: 1266–1268) regarded *Z. ramuscula* Dyar, 1906 as a younger synonym of *Xyleutes ramosus* (Schaus, 1892) in the composition of the genus *Xyleutes* Hübner, 1816, and included into the “Untergruppe” *Psychonoctua* Grote, [1866] the species *P. atra* and *P. gilensis*. Schoorl (1990) did not comment on the opinion of Dyar (1940) about the synonymy of the genus *Hamilcara*, but agreed about including the species *P. gilensis* into the genus *Psychonoctua*. Thus, the genus *Hamilcara* is currently considered a monotypic



Figs 7–8. *Psychonoctua* spp., male genitalia: 7 — *P. atra* (Barnes et McDunnough, 1910), ♂, USA, Arizona, Pima Co., NHMUK 012832452, Slide NHMUK 010315485 (NHMUK); 8 — *P. personalis* Grote, [1866], ♂, Cuba, Prov. Holguin, GenPr Heterocera MWM: 28.557 (MWM).

Рис. 7–8. *Psychonoctua* spp., гениталии самцов: 7 — *P. atra* (Barnes et McDunnough, 1910), ♂, США, Аризона, окр. Пима, NHMUK 012832452, Slide NHMUK 010315485 (NHMUK); 8 — *P. personalis* Grote, [1866], ♂, Куба, пров. Ольгин, GenPr Heterocera MWM: 28.557 (MWM).

genus, including the sole species *H. atra* (Schoorl, 1990; Donahue, 1995). Examining the external characters and genital morphology, we found out that *Hamilcara atra* Barnes et McDunnough, 1910 does not have significant differences from the representatives of the genus *Psychonoctua* Grote, [1866], partially revised by us before (Yakovlev *et al.*, 2016, 2020).

Material and methods

Photographs of the adult species (imago) were captured using the Canon EOS 70D and Canon EOS 600D cameras, both illuminated in Lightbox. The genitalia slides were inspected using a Zeiss Stemi 2000 C microscope and an Olympus SZX16 microscope, and the images were captured with the Olympus DP74 camera and Canon EOS 70D. Subsequently, the photos were edited and organized into plates using Adobe Photoshop software.

Abbreviations used in the text: MWM — Museum of Thomas Witt, Munich, Germany; NHMUK — The

Natural History Museum of United Kingdom, London, UK; MNHN — Museum National d’Histoire Naturelle, Paris, France; USNM — United States National Museum of Natural History (Smithsonian Institution), Washington, USA.

Results

Taxonomical part

Genus *Psychonoctua* Grote, [1866]

Psychonoctua Grote, [1866]: 249–251

Type species (by monotypy): *Psychonoctua personalis* Grote, [1866]: 251 (Figs 5–6, 8)

= *Hamilcara* Barnes et McDunnough, 1910: 465–466
syn.n. Type species (by original designation): *Hamilcara atra* Barnes et McDunnough, 1910: 466.

Psychonoctua atra (Barnes et McDunnough, 1910) **comb.n.**
 Figs 1–2, 7.

TYPE LOCALITY. USA, Arizona, Pinal County, Santa Catalina Mountains.

TYPE MATERIAL. Holotype, male in USNM, examined.

DISTRIBUTION. USA, Arizona.

MATERIAL EXAMINED. Type material. Holotype ♂: USA, Arizona, Pinal Co., Santa Catalina Mts., holotype No.68128 USNM, USNMENT 01198140 (USNM). — Further material. 1 ♂, USA, Arizona, Pima Co., Babaquiyera Mts., (Poling), 13–30.XIII. [19]23, NHMUK 012832452, Slide NHMUK 010315485 (NHMUK).

DESCRIPTION of male genitalia. Uncus long, slightly narrowing, distal end club-shaped, apex semicircular; gnathos arms ribbon-like, slightly narrowing from base to apex; gnathos absent; valve simple, costal edge almost smooth, apical end rounded, abdominal edge crescent, slightly serrated; juxta wide, lamellar, with pair of long leaf-like lateral processes; saccus semicircular; phallus 1/3 shorter than valve, thick, slightly curved in medium third, long lamellar cornutus in lateral surface of vesica.

TAXONOMIC NOTES. In the external characters and morphology (medium size, poorly modified fore wing pattern, simple valve, juxta with pair of long lateral processes, special phallus structure) the species belongs to the genus *Psychonoctua*. Mostly close to the species *P. gilensis* (Barnes et McDunnough, 1910) (Fig. 3), also described from the state Arizona (the USA) and *P. unilinea* Dyar, 1925 (Fig. 4), described from Colima (Mexico).

Compliance with ethical standards

Authors declare that they did not violate or omit ethical or legal norms in this research.

CONFLICTS OF INTEREST: The authors declare no conflict of interest.

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