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# New species of the Genus *Mirocossus* Schoorl, 1990 from Republic of Equatorial Guinea (Lepidoptera: Cossidae, Cossinae)

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**Abstract**

The article describes *Mirocossus chukovskyi* Yakovlev, sp. n. (Lepidoptera, Cossidae: Cossinae), distributed in the Bioko Island (Republic of Equatorial Guinea). The article discusses the endemism in the Mount Cameroon and Bioko montane forests Ecoregion; we suggest a significant difference in the entomofauna of the insular and continental portions of the ecoregion. The article has two illustrations.
KEY WORDS: Lepidoptera, Cossidae, Cossinae, biodiversity, species richness, taxonomy, new species, Equatorial Guinea.

**Nueva especie del género *Mirocossus* Schoorl, 1990 de la República de Guinea Ecuatorial (Lepidoptera: Cossidae, Cossinae)**

**Resumen**

El artículo describe a *Mirocossus chukovskyi* Yakovlev, sp. n. (Lepidoptera, Cossidae: Cossinae), distribuido en la isla de Bioko (República de Guinea Ecuatorial). El artículo discute el endemismo en la ecorregión de los bosques montanos del Monte Camerún y Bioko; se sugiere una diferencia significativa en la entomofauna de las porciones insulares y continentales de la ecorregión. El artículo tiene dos ilustraciones.
PALABRAS CLAVE: Lepidoptera, Cossidae, Cossinae, biodiversidad, riqueza de especies, taxonomía, nueva especie, Guinea Ecuatorial.

## Introduction

The genus *Mirocossus* Schroorl, 1990 (Lepidoptera, Cossidae: Cossinae) was established for *Brachylia badiala* Fletcher, 1968 (by original designation and monotype) (type locality: [UGANDA], Ruwenzori Range, Mahoma River) (FLETCHER, 1968). Currently, according to the database of Afromoths (DE PRINS & DE PRINS, 2022) the genus has 10 registered species distributed in all the northern and Equatorial Afrotropical region (YAKOVLEV, 2011; YAKOVLEV & LENZ, 2013; YAKOVLEV & MURPHEY, 2013; YAKOVLEV & WITT, 2019) One species is known from the south of the Arabian Peninsula (YAKOVLEV, 2019). Thus, the genus *Mirocossus* is one of the few Cossidae genera, distributed in the south and south-west of the Arabian Peninsula and also widely spread in the Afro-tropics (YAKOVLEV & DUBATOLOV, 2013a, b). These genera include *Afrikanetz* Yakovlev, 2009 (type species - *Afrikanetz inkubu* Yakovlev, 2009), *Brachylia* Felder, 1874 (type species - *Brachylia terebroides* Felder, 1874), *Camellocossus* Yakovlev, 2009 (type species - *Cossus abyssinica* Hampson, 1910), *Aethalopteryx* Schoorl, 1990 (type species - *Phragmatoecia atrireta* Hampson, 1910),

*Afroarabiella* Yakovlev, 2008 (type species - *Cossus tahamae* Wiltshire, 1949), and *Meharia* Chrétien, 1915 (type species - *Meharia incurvariella* Chrétien, 1915). Their distribution is described in detail in a series of publications (WILTSHIRE, 1990; YAKOVLEV *et al.*, 2013; YAKOVLEV, 2014, 2019; HACKER, 2016).

Examining the materials in Natural History Museum, London (NHMUK) I found a new species of the genus *Mirocossus* Felder, 1874 from the Bioko Island (Republic of Equatorial Guinea), its description is given in this article.

## Material and methods

The male genitalia were mounted in Euparal on slides following LAFONTAINE & MIKKOLA (1987). The slides were photographed using an Olympus DP74 camera attached to an Olympus SZX16 stereomicroscope at the Altai State University. The type material is deposited in the NHMUK. The images were processed using Corel Photo-Paint 2017 software.

## Taxonomical part

DESCRIPTION OF NEW SPECIES

### *Mirocossus chukovskyi* Yakovlev sp. n. (Figs 1-2)

Material Holotype (Fig. 1) 1 (&&), Fernando Póo, W. Cooper. BM 1926-337. Individual number NHMUK: 012832476, slide NHMUK: 010315507 (NHMUK).

Description: Male. Length of fore wing 15 mm. Antenna bipectinate, setae processes three times longer than antenna rod diameter. Fore wing apically acute, light brown at root, transverse dark-brown strokes on border between discal and postdiscal areas, wide light-grey portion postdiscally and submarginally, with thin grey wavy bands on light background. Hind wing brown with poorly noticeable transverse dark-brown strokes.

Male genitalia (Fig. 2): Uncus triangular, thin, apically strongly sclerotized; gnathos arms short, thick; gnathos large, covered with tiny spikes; valve wide, apically slightly narrowing, with toothed comb on costal margin of valve in distal third, apex membranous, semicircular (membranous part about 1/6 of valve in length); transtilla process hook-like, long, apically acute; juxta large with wide lobe-like lateral processes, diverged at blunt angle; saccus robust, semicircular; phallus equal to valve in length, thick, slightly curved in medium third, vesica aperture in dorso-apical position, in length about 1/3 of phallus, vesica without cornuti.

Female unknown.

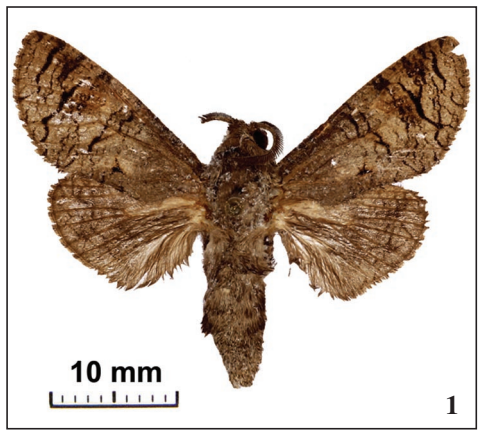
Diagnosis: Externally, the new species is most close to *M. haritonovi* Yakovlev, 2011 (type locality - Uganda, Fort Portal) and *M. mordkovitchi* Yakovlev, 2011 (type locality - "Ost Nigeria, Obudu Kattle Ranch") from which it differs in a series of characters: - in *M. haritonovi* Yakovlev, 2011 (YAKOVLEV, 2011: fig. 12) the valve is significantly more narrower, the comb on the costal margin of the valve is more expressed, the phallus is poorly extended apically; - in *M. mordkovitchi* Yakovlev, 2011 (YAKOVLEV, 2011: fig. 15) the saccus is slightly smaller, the phallus is slightly longer than valve.

Distribution: Equatorial Guinea (Bioko Island).

Etymology: The new species is named after the famous Russian children's poet, essayist, literary critic, and translator Korney I. Chukovsky (1882-1969). In one of his most popular children's poems, "Doktor Aybolit [Dr. Ouch, [it] hurts!]" there are lines "We live in Zanzibar, In the Kalahari and the Sahara, On Mount Fernando Po, Where Hippo Po walks Along the wide Limpopo", reading which for the first time, the author of the article (at the age of five) became interested in the geography and nature of Africa, to the study of which he later devoted his life.

Discussion: The new species is an endemic of the Mount Cameroon and Bioko montane forests

Ecoregion. In the recent years, the new species *Gumilevia timora* Yakovlev, 2011 was described from Bioko Island, and the new genus and species *Geraldocossus durrelli* Yakovlev & Sáfián, 2016 - from Mount Cameroon (YAKOVLEV, 2011; YAKOVLEV & SÁFIÁN, 2016). Currently, the lepidopteran biodiversity of this ecoregion is being actively studied, numerous new taxa have been described (HERBULOT, 1999; PRZYBYŁOWICZ, 2013; SÁFIÁN & TROPEK, 2016; PRZYBYŁOWICZ *et al*., 2019; SÁFIÁN *et al*., 2019; PARK & KARISH, 2021), for certain groups, the faunal lists have been published (SPEARMAN *et al*., 2000; KARISCH, 2001). It is extremely interesting that the center of species diversity of the family Alucitidae was found on Cameroon Mount (USTJUZHANIN *et al*., 2018, 2020), where our colleagues discovered over a quarter of Alucitidae species richness in Africa, wherein 16 (!) species of 22 are endemics. All the species were traditionally described in the genus *Alucita* Linnaeus, 1758 (type species: *Alucita hexadactyla* Linnaeus, 1758), but it is obvious that the species *A. longipenis* Ustjuzhanin & Kovtunovich, 2018 with its extremely long worm-like aedeagus, *A. bokwango* Ustjuzhanin & Kovtunovich, 2020 with its long acicular uncus and the clavately extended apices of the valves; *A. ludmila* Ustjuzhanin & Kovtunovich, 2018 with pronounced pubescence, the special pattern on the wings and the triangular valves, and the group of species with completely reduced valves (*A. fokami* Ustjuzhanin & Kovtunovich, 2018, *A. janeceki* Ustjuzhanin & Kovtunovich, 2018, *A. zuza* Ustjuzhanin & Kovtunovich, 2020, *A. deja* Ustjuzhanin & Kovtunovich, 2020) sharply differ morphologically from the typical European and Asian *Alucita*, Probably, they represent the genera new to science, also endemic for Mount Cameroon. Wherein, no endemic species of Alucitidae are known from Bioko. Thus, we now know significant differences in the fauna of Lepidoptera on the continental and insular parts of the Mount Cameroon and Bioko montane forests Ecoregion. Further study of the entomofauna (primarily, of the endemic taxa) of this richest region will raise the question of dividing the ecoregion into two parts: continental and insular.





**Figures 1-2.– 1**. *Mirocossus chukovskyi* Yakovlev sp. n. - holotype, adult male, Cote d'Ivoire, Marahoué Region, individual number NHMUK: 012832476 (NHMUK). **2**. *Mirocossus chukovskyi* Yakovlev sp. n. - holotype, male genitalia (slide NHMUK: 010315507).

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