

First record of genus *Lakshmia* Yakovlev, 2004 from India along with description of a new species (Lepidoptera: Cossidae, Zeuserinae)

Navneet Singh, Jalil Ahmad, Roman V. Yakovlev & Rahul Joshi

Abstract

The present manuscript deals with description of a new species of genus *Lakshmia* Yakovlev, 2004, *Lakshmia narayani* Singh, Ahmad, Yakovlev & Joshi, sp. nov. is described from specimens of Mizoram, India. This also represents the first record of genus *Lakshmia* from India. Images of the adult and genitalia along with a complete checklist of the species is also provided.

Keywords: Lepidoptera, Cossidae, Zeuserinae, *Lakshmia narayani*, new species, taxonomy, Mizoram, India.

Primer registro del género *Lakshmia* Yakovlev, 2004 de la India, junto con la descripción de una nueva especie (Lepidoptera: Cossidae, Zeuserinae)

Resumen

El presente manuscrito trata de la descripción de una nueva especie del género *Lakshmia* Yakovlev, 2004, *Lakshmia narayani* Singh, Ahmad, Yakovlev & Joshi, sp. nov. se describe a partir de ejemplares de Mizoram, India. También representa el primer registro del género *Lakshmia* en la India. Se proporcionan imágenes del adulto y de la genitalia junto con una lista completa de las especies.

Palabras clave: Lepidoptera, Cossidae, Zeuserinae, *Lakshmia narayani*, nueva especie, taxonomía, Mizoram, India.

Introduction

Genus *Lakshmia* Yakovlev, 2004, was established for placement of two new species, *Lakshmia zolotuhini* Yakovlev, 2004 (type species by original designation) and *L. hauensteini* Yakovlev, 2004 from Thailand. Yakovlev (2006) described two more species, *Lakshmia sirena* Yakovlev, 2006 (South Vietnam) and *L. dea* Yakovlev, 2006 (Nepal). However, *L. dea* was shifted under genus *Sansara* Yakovlev, 2004 in the world catalogue of Cossidae (Yakovlev, 2011). *Lakshmia pandava* Yakovlev & Nakao, 2013 was added in the genus from Thailand. The presence of an ochreous brown band on the forewing, elongate valvae with parallel edges, and a greatly reduced saccus in the male genitalia are diagnostic characters of *Lakshmia* (Yakovlev & Nakao, 2013). The genus comprises four species and is distributed in Thailand and Southern Vietnam.

In the present paper, a new species of genus *Lakshmia* is described from Mizoram, India that also represents the first record of this genus from India. Images of the adults and genitalia are provided. A complete checklist of the known species of genus *Lakshmia* is also provided.

Material and methods

Collection of adult moths was done from the Mizoram (Dampa Tiger Reserve) by using vertical

sheet light trap illuminated by 160W mercury vapor lamp. The collected specimens were processed as per standardized techniques in Lepidopterology. The collected specimens and slides of genitalia are deposited in the National Zoological Collections of Zoological Survey of India (NZCZI), Kolkata.

Taxonomy

Lakshmia Yakovlev, 2004

Lakshmia (*Zeuzerinae*) Yakovlev, 2004. *Atalanta*, 35(3/4), 347

Type species: *Lakshmia zolotuhini* Yakovlev, 2004

Distribution: Thailand and Southern Vietnam (Yakovlev, 2004), India (present study).

***Lakshmia narayani* Singh, Ahmad, Yakovlev & Joshi, sp. nov.** (Figures 1-6)

Material examined: Holotype: 1 ♂, INDIA, Mizoram, Aizawl, Dampa Tiger Reserve, Teirei Rest House, 03-XII-2019, (N 23°43'27.728, E 92°43'7.143) leg. Sandeep Kushwaha (Coll. NZCZSI). Paratype: INDIA, Mizoram, Aizawl, Dampa Tiger Reserve, Teirei Rest House, 1 ♂, 28-XI-2019, (N 23°43'27.728, E 92°43'7.143) leg. Sandeep Kushwaha (Coll. NZCZSI)

Description: Forewing length 19 mm. Antennae bipectinate. Head, thorax, and abdomen densely covered with pale yellow scales; basal area of abdomen with a tuft of dark brown hairs dorsally. Forewing brownish yellow with a broad oblique brown band, slightly interrupted in the middle towards inner margin; costal margin brown at base; marginal fringe dark brown at veins with pale yellow patches between them. Hindwing light yellow with some fuscous suffusion and fringe of hairs on inner margin; terminal patched similar to forewing. Male genitalia with uncus hood-like, narrowing towards apex; Juxta in the form of pair of long lateral processes; valva long with curved apex; saccus short; aedeagus long slightly shorter than valva; vesica with a sclerotized long patch present laterally. Female unknown.

Diagnosis: The new species, *Lakshmia narayani* Singh, Ahmad, Yakovlev & Joshi, sp. nov., is closely allied to *Lakshmia zolotuhini* Yakovlev, 2004 and *Lakshmia pandava* Yakovlev & Nakao, 2013. However, *Lakshmia narayani* sp. nov. is medium in size with forewing length 19 mm (22-24 mm in *L. zolotuhini* and 15 mm in *L. pandava*) and have uninterrupted and evenly curved black band on forewings (FW with band interrupted in the middle third in *L. zolotuhini* and is humped at upper angle of the cell in *L. pandava*). Male genitalia of *L. narayani* sp. nov. is having valves longer, going beyond tip of uncus (shorter than uncus in *L. zolotuhini* and *L. pandava*), and apex of valva is more evenly rounded (broader in broad in *L. zolotuhini* and saccular margin strongly curved before apex).

Distribution: India, Mizoram (present study).

Etymology: The new species is named after Vedic deity Narayan (husband of goddess Lakshmi).

Checklist of the species in genus *Lakshmia*

Genus *Lakshmia* Yakovlev, 2004

Lakshmia (*Zeuzerinae*) Yakovlev, 2004. *Atalanta*, 35(3/4), 347

Type species *Lakshmia zolotuhini* Yakovlev, 2004 (by original designation).

Lakshmia hauensteini Yakovlev, 2004

Lakshmia hauensteini Yakovlev, 2004. *Atalanta*, 35(3/4), 350

Type material: (holotype) in the private collection of Armin Hauenstein (Untermünkheim, Germany).

Type locality: North Thailand, Prov. Chiang Mai, 450 m, Mok Fa Garden Resort.

Distribution: N. Thailand.

***Lakshmia narayani* Singh, Ahmad, Yakovlev & Joshi, sp. nov.**

Type material: (holotype) in NZCZSI.

Type locality: India, Mizoram, Aizawl, Dampa Tiger Reserve, Teirei Rest House.

Distribution: India, Mizoram.

Lakshmia pandava Yakovlev & Nakao, 2013

Lakshmia pandava Yakovlev & Nakao, 2013. *Zootaxa*, 3736(2), 198

Type locality: Thailand, Chiang Mai, Chae Son National Park.

Type material: (holotype) in Museum Witt (Munich, Germany).

Distribution: N. Thailand.

Lakshmia sirena Yakovlev, 2006

Lakshmia sirena Yakovlev, 2006. *Tinea*, 19(3), 208

Type locality: Süd Vietnam, Bao Lok, Rung Kat Tien.

Type material: (holotype) in Museum Witt (Munich, Germany).

Distribution: South Vietnam (Yakovlev, 2014).

Lakshmia zolotuhini Yakovlev, 2004

Lakshmia zolotuhini Yakovlev, 2004. *Atalanta*, 35(3/4), 348

Type locality: Thailand, Changwat Nan, 5 km E of Bo Luang.

Type material: (holotype) in Museum Witt (Munich, Germany).

Distribution: N. Thailand.

Acknowledgements

The authors are thankful to Dr. Dhriti Banerjee, Director, Zoological Survey of India (ZSI) for providing necessary facilities; to forest officials of Mizoram state and DFO of Dampa Tiger reserve, Mizoram for help during the survey tour.

References

- Yakovlev, R. V. (2004). Cossidae of Thailand. Part 1. (Lepidoptera: Cossidae). *Atalanta*, 35(3-4), 335-351. <https://doi.org/10.37828/em.2020.35.1>
- Yakovlev, R. V. (2006). New *Cossidae* (Lepidoptera) from Asia, Africa and Macronesia. *Tinea*, 19(3), 188-213.
- Yakovlev, R. V. (2011). Catalogue of the Family Cossidae of the Old World. *Neue Entomologische Nachrichten*, 66, 1-129.
- Yakovlev, R. V. (2014) Descriptions of three new species of Cossidae (Lepidoptera) from Vietnam, with an updated annotated checklist. *Zootaxa*, 3802(2), 240-256. <https://doi.org/10.11646/zootaxa.3802.2.6> PMID:24871005
- Yakovlev, R. V., & Nakao, K. (2013) A new species of *Lakshmia* Yakovlev, 2004 (Lepidoptera: Cossidae) from northern Thailand with a world catalogue of the genus. *Zootaxa*, 3736(2), 198-200. <https://doi.org/10.11646/zootaxa.3736.2.7> PMID:25112623

Navneet Singh
Lepidoptera Section
Zoological Survey of India
New Alipore
Kolkata- 700053, West Bengal
INDIA / *INDIA*
E-mail: nsgill007@gmail.com
<https://orcid.org/0000-0002-6657-7983>

Jalil Ahmad
Lepidoptera Section
Zoological Survey of India
New Alipore
Kolkata- 700053, West Bengal
INDIA / *INDIA*
E-mail: jalilahmad23046@gmail.com
<https://orcid.org/0000-0001-7719-864X>

Roman V. Yakovlev
Altai State University
Lenina, 61
RF-656049 Barnaul
RUSSIA / *RUSSIA*
E-mail: yakovlevcossidae@gmail.com
<https://orcid.org/0000-0001-9512-8709>

*Rahul Joshi
Lepidoptera Section
Zoological Survey of India
New Alipore
Kolkata- 700053, West Bengal
INDIA / *INDIA*
E-mail: joshiarctiidae@gmail.com
<https://orcid.org/0000-0001-8514-1272>

y / and

Tomsk State University
Lenina pr. 36, 634050
Tomsk
RUSSIA / *RUSSIA*

*Autor para la correspondencia / *Corresponding author*

(Recibido para publicación / *Received for publication* 30-V-2023)

(Revisado y aceptado / *Revised and accepted* 30-VIII-2023)

(Publicado / *Published* 30-VI-2024)

Derechos de autor: El autor(es). Este es un artículo de acceso abierto distribuido bajo los términos de la Licencia de Reconocimiento 4.0 Internacional de Creative Commons (CC BY 4.0), que permite el uso, distribución y reproducción sin restricciones en cualquier medio, siempre que se cite al autor original y la fuente. / **Copyright:** The author(s). This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

