



<http://zoobank.org/urn:lsid:zoobank.org:pub:37128BED-61EA-4ECB-99B9-493BDCDA372C>

Review of the genus *Sundacossus* Yakovlev, 2006 (Lepidoptera: Cossidae) with description of one new species from Lombok Island (Indonesia)

ROMAN V. YAKOVLEV^{1,2}, ANDREI I. KORZEEV³

¹Altai State University, Lenina pr. 61, Barnaul, 656049, Russia.

²Tomsk State University, Lenina pr. 36, 634050, Tomsk, Russia.  <https://orcid.org/0000-0001-9512-8709>;
e-mail: yakovlev_asu@mail.ru.

³St. Petersburg University, 7/9 Universitetskaya Emb., St Petersburg 199034, Russia.  <https://orcid.org/0000-0001-7733-4760>; e-mail: korzeev@gmail.com

Received 25 February 2022 | Accepted by V. Pešić: 4 March 2022 | Published online 6 March 2022.

Abstract

The article describes a new species, *Sundacossus rinjaniensis* sp. n. (Lepidoptera: Cossidae) from Lombok Island (Indonesia). All the species of the genus *Sundacossus* Yakovlev 2006 are illustrated, the map of the species distribution is given.

Key words: biodiversity, Wallacea, Lesser Sunda Islands, Cossidae, taxonomy.

Introduction

Sundacossus timur Yakovlev, 2006, described from the island of Flores (East Nusa Tenggara Province, Indonesia) (Yakovlev 2006). Later, Yakovlev (2008) described *Sundacossus gauguini* Yakovlev, 2008, from the island of Sumba (East Nusa Tenggara Province, Indonesia).

When processing the materials from Indonesia, we found a new species from the island of Lombok (West Nusa Tenggara Province, Indonesia). Its description is given below.

Materials and methods

Images of imago were taken by the camera of Canon EOS 70D illuminated in Lightbox. The genital preparations were made according to Lafontaine & Mikkola (1987). The genitalia slides were examined with a Zeiss Stemi 2000 C microscope. The images were taken with the camera of Canon EOS 70D. Photos were enhanced and arranged to plates with Corel PHOTO-PAINT 2017 software. Morphological terminology used

in the description follows Kristensen (2003). The map was made using open source software (<https://www.simplemappr.net/>).

Abbreviation list:

MWM – Museum Witt, Munich (Germany)
 RYB – private collection of first author, Barnaul (Russia)
 ZISP – Zoological Institute, St. Petersburg (Russia).

Results

Description of new species

***Sundacossus rinjaniensis* Yakovlev & Korzeev, sp. nov.**

<http://zoobank.org/urn:lsid:zoobank.org:act:17147E45-32DD-4C76-A4F1-4E0D70618CD6>

Figs 1, 4–5

Material. Holotype, male, Indonesia, Lombok Island, Senaru, at light, 08°18'21"S 116°24'11"E, 31.viii.2012, leg. A. Korzeev, slide Naydenov # 409 (ZISP).

Description. Wingspan 47 mm, length of fore wing 22 mm. Antenna unipectinate, setae twice longer than antenna rod diameter. Thorax and abdomen densely covered with dark-brown scales, tegulae and patagia dark-brown, bundles of grey scales at base of abdomen from upside. Fore wing elongated, apically acute, light-grey, ocher-brown portion and tiny black spots basally, wide semicircular grey band postdiscally, crescent grey spot submarginally (at veins R₁₋₄), postdiscal and submarginal area light-grey with dense grey wavy pattern of thin transverse grey strokes between veins, fringe mottled (dark-grey at veins, white between veins). Hind wing short, grey, fringe mottled (dark-grey at veins, white between veins).

Male genitalia. Uncus robust, short, apically semicircular, strongly sclerotized; gnathos arms short, very thick; gnathos robust, roller-shaped; valve basally wide, gradually narrowing to apex, distal end membranous, with relatively narrow lanceolate apex, costal edge in the zone of transmission of sclerotized part into membranous part – a small semicircular crest with smooth edge; transtilla arms very short, shaped as small sclerotized fold; juxta very robust, strongly sclerotized, saddle-like, with pair of long lanceolate lateral processes directed dorsally, apices acute; saccus very large, semicircular; phallus thick, slightly shorter than valve, almost straight, of equal thickness, apically obliquely cut; vesica aperture in dorso-apical position, about 1/3 of phallus in length, two small cuneal cornuti in vesica.

Female unknown.

Diagnosis. Externally, the new species resembles *S. gauguini*, in the light-brown portion on the fore wing basally, but differs in the male genital structure:

- the lanceolate apex of the valve (in *S. gauguini* – the apex of the valve is blunt),
- the common sclerotization of the costal edge of the valve (in *S. gauguini* – the costal edge of the valve is strongly sclerotized from base to crest on the border of the sclerotized and the membranous part),
- the acute lateral processes of the juxta (in *S. gauguini* – the lateral processes of the juxta are apically semicircular).

Etymology: This epithet is based on the type locality, Mt. Rinjani.

Distribution. Indonesia, Lombok Island.

Catalogue of the Genus *Sundacossus* Yakovlev, 2006

Genus *Sundacossus* Yakovlev, 2006

Tinea 19 (3): 194.

Type species (by original designation): *Sundacossus timur* Yakovlev, 2006).

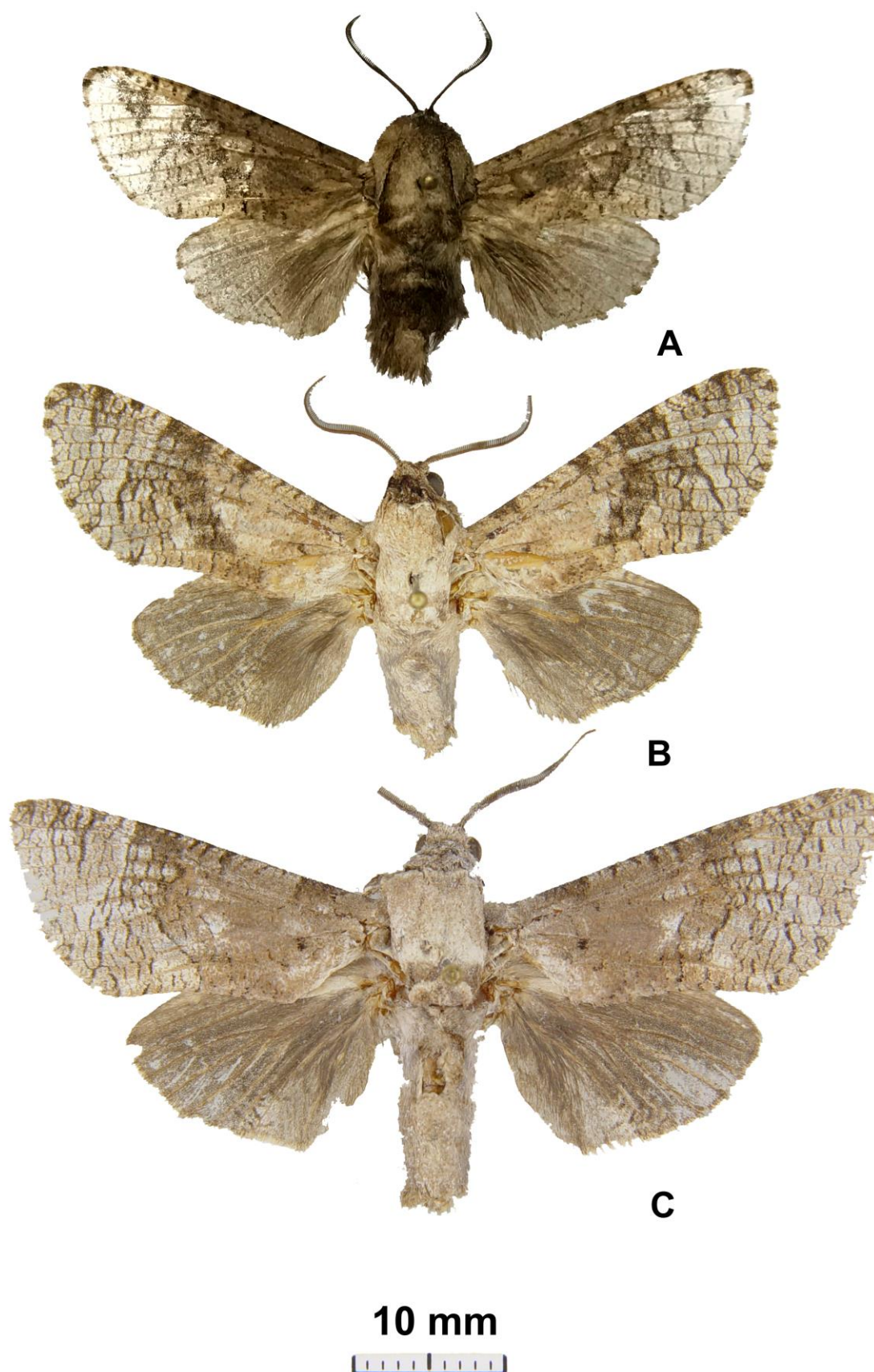


Figure 1. Adult males of *Sundacossus* (all holotypes): A. *S. rinjaniensis* (ZISP), B. *S. gauguini* (MWM), C. *S. timur* (MWM).

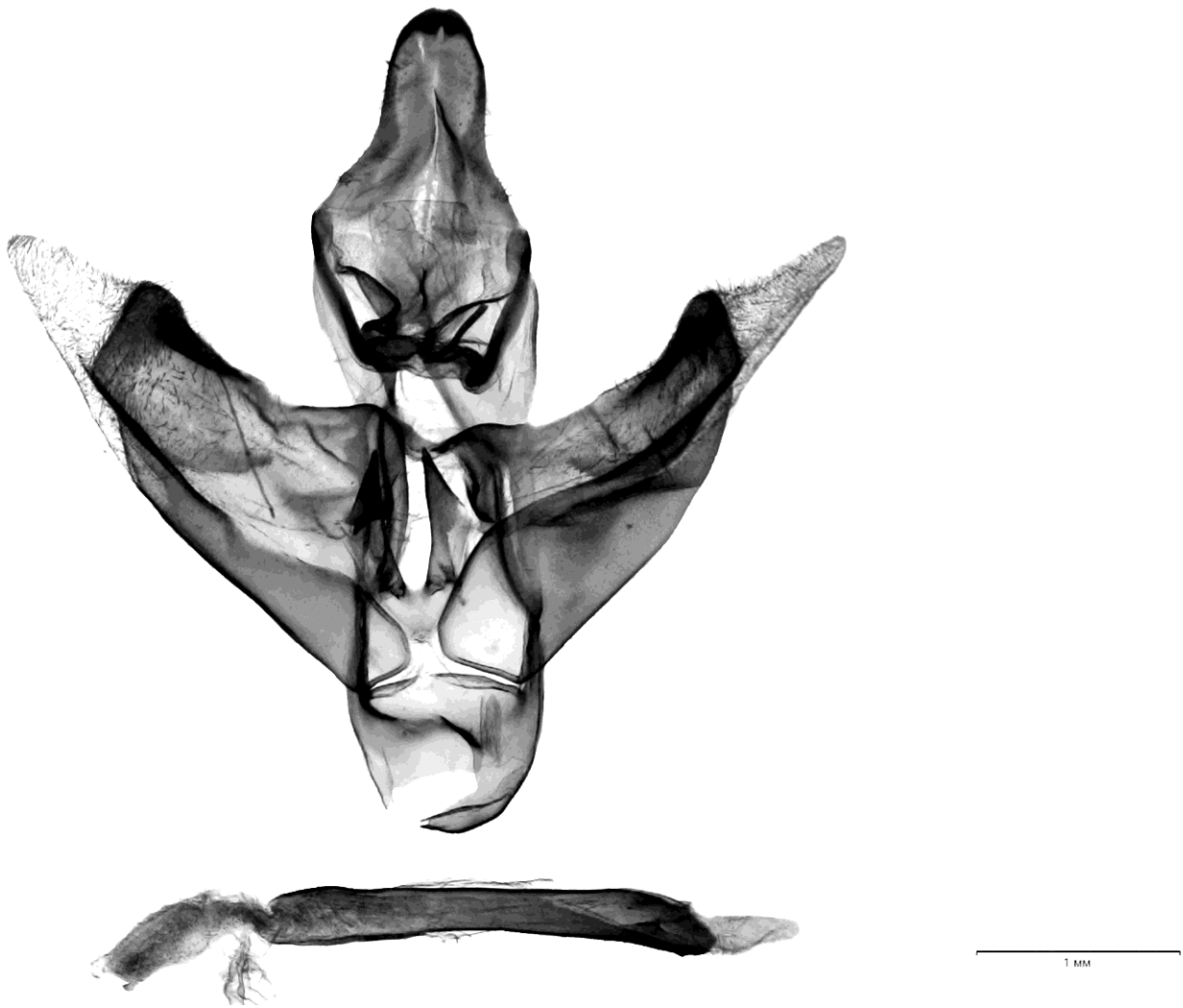


Figure 2. Male genitalia of *Sundacossus rinjaniensis*.

Redescription

Size medium. Antenna unipectinate. Fore wing relatively long, apically sharp. Fore wing basally grey, almost without pattern, with distinct reticulated pattern of thin dark transverse bands on grey background from discal area to outer edge. Hind wing without pattern.

Male genitalia. Uncus robust, apically with sclerotized zone; gnathos arms short; gnathos robust, covered with tiny spikes; valve relatively long, with more or less expressed crest on costal edge on border between sclerotized and membranous part; transtilla arms small, reduced, triangular; juxta robust, with long, strongly sclerotized lateral processes, directed relative to each other at an acute angle; saccus robust, semicircular; phallus shorter than valve, almost straight; distal aperture of phallus in dorso-apical position, about 1/3–1/2 of phallus in length, phallus apically acute, two large cuneal cornuti in vesica.

Female unknown.

Diagnosis. The genus is very isolated among the oriental representatives of the subfamily Cossinae, it differs in the almost complete reduction of the transtilla arms, the well developed lateral processes of the juxta and the two cuneal cornuti in the vesica.

Composition. The genus includes three species: *S. rinjaniensis* sp. n., *S. gauguini* and *S. timur*.

Distribution. Lesser Sunda Islands (Indonesia: West and East Nusa Tenggara Provinces).

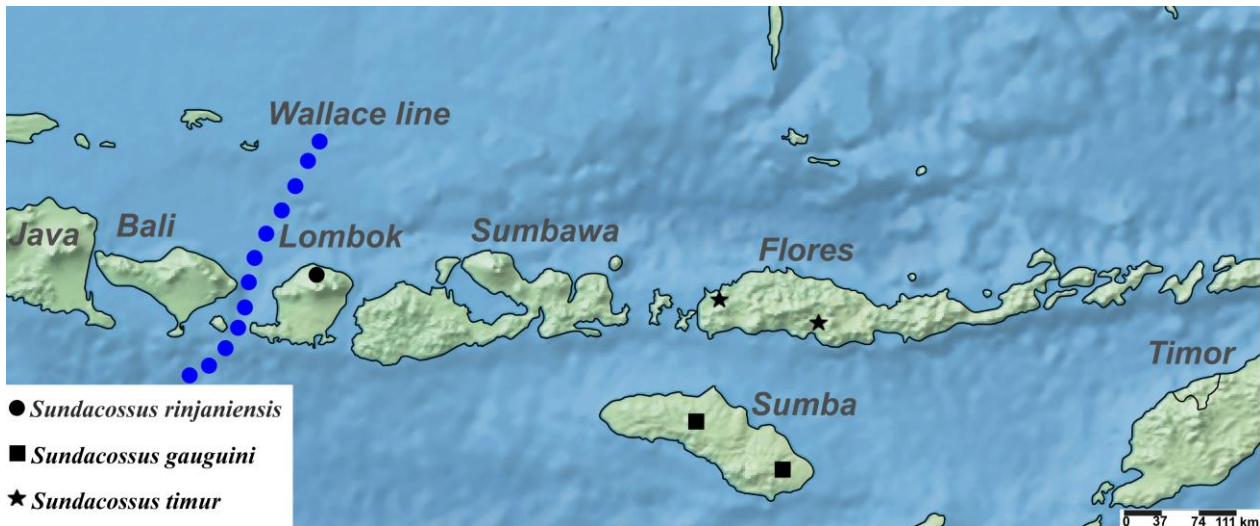


Figure 3. Distributional map of *Sundacossus*.

***Sundacossus rinjaniensis* Yakovlev & Korzeev, sp. nov.**

Figs 1, 4–5

Distribution. Indonesia, Lombok Island.

***Sundacossus gauguini* Yakovlev, 2008**

Figs 2, 5

Atalanta 39 (1–4): 399.

Type locality: Indonesia, East Sumba, Luku Meloto N.P.

Type material (holotype, male) in MWM.

Material examined. 1 male (holotype), Indonesia, East Sumba, Luku Meloto N.P., 550 m, 29.06.–15.07.2005, leg. St. Jakl (MWM); 1 male, Indonesia, Sumba Island, Mount Langgaliru, x.2016 (RYB).

Distribution: Indonesia, Sumba Island.

Diagnosis. Externally, the species is close to *S. rinjaniensis*, from which it differs in the blunt apex of the valve, the strongly sclerotized costal edge of the valve and the semicircular apices of the lateral processes of the juxta.

***Sundacossus timur* Yakovlev, 2006**

Figs 3, 5

Tinea 19 (3): 194.

Type locality: Indonesia, Flores (W), prov. Nusa Tenggara, Timur, 15 km E. Labuhanbaja.

Type material (holotype, male) in MWM.

Material examined. 1 male (holotype), Indonesia, Flores (W), prov. Nusa Tenggara, Timur, 15 km E. Labuhanbaja, primarwäld, 200 m, 9–12.iv.1996, leg. Dr. R. Brechlin, GernitalPräparat Heterocera MWM: 10622 (MWM); 1 male, Indonesia, Flores Island, Bajawa, Wolokoro Ecolodge, heavily disturbed monsoon forests and eucalyptus plantings, 08°49'02"S, 120°56'03"E, 28–31.i.2020, V. Spitsyn leg. (RYB).

Distribution: Indonesia, Flores Island.

Diagnosis. Differs from the other species of the genus in the dark color, big size, practically smooth costal edge.

Discussion. Thus, the genus *Sundacossus* is an endemic of Lesser Sunda Islands and includes three species. It is a unique genus of the monotypic subfamily Cossinae, distributed in this region (Yakovlev 2015). The representatives of this genus are widespread in the Wallacea biodiversity hotspot (Myers 1988; Myers et al. 2000). The species of the genus are distributed in the ecoregions of Lesser Sunda Islands (Wikramanayake *et al.* 2002) as follows: the Lesser Sundas deciduous forests (*S. rinjaniensis* and *S. timur*), the Sumba deciduous forests (*S. gauguini*). In both ecoregions Tropical and subtropical dry broadleaf forests habitat type is represented.

References

- Kristensen, N.P. (2003) Skeleton and muscles. In: Kristensen, N.P. (Ed.), *Lepidoptera, Moths and Butterflies. Vol. 2. Morphology, Physiology, and Development. Handbuch der Zoologie/Handbook of Zoology IV/36*. Walter de Gruyter, Berlin, New York, pp. 39–131.
- Lafontaine, J.D. & Mikkola, K. (1987) Lock-and-key system in the inner genitalia of Noctuidae (Lepidoptera) as taxonomic character. *Entomologiske Meddelelser*, 55, 161–167.
- Myers, N. (1988) "Threatened biotas: "Hot spots" in tropical forests". *Environmentalist*, 8, 187–208. <https://doi.org/10.1007/BF02240252>
- Myers, N., Mittermeier, R.A., Mittermeier, C.G., da Fonseca, G.A.B. & Kent, J. (2000) Biodiversity hotspots for conservation priorities. *Nature*, 403 (6772), 853–858. <https://doi.org/10.1038/35002501>
- Wikramanayake, E., Dinerstein, E. & Loucks, C.J. (2002) *Terrestrial Ecoregions of the Indo-Pacific: a Conservation Assessment*. Washington, DC: Island Press, 824 pp.
- Yakovlev, R.V. (2006) New Cossidae (Lepidoptera) from Asia, Africa and Macronesia. *Tinea*, 19 (3), 188–213.
- Yakovlev, R.V. (2008) A new species of the genus *Sundacossus* Yakovlev, 2006. *Atalanta*, 39 (1–4), 399–400.
- Yakovlev, R.V. (2015) Patterns of Geographical Distribution of Carpenter Moths (Lepidoptera: Cossidae) in the Old World. *Contemporary Problems of Ecology*, 8 (1), 36–50. <https://doi.org/10.1134/S1995425515010151>