

A new *Synersaga* species from Cambodia (Lepidoptera, Lecithoceridae), with a world catalogue of the genus

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Abstract

A new species of the genus *Synersaga* Gozmány, *S. mondulkiriensis* **sp. n.**, is described from Cambodia. The genus is diagnosed, and a global catalogue for the genus is provided.

Keywords

Lepidoptera, Lecithoceridae, *Synersaga*, new species, Cambodia, taxonomy

Introduction

The family Lecithoceridae (Lepidoptera, Gelechioidea) is characterized by the very long antenna, usually longer than the forewing, and the male genitalia with gnathos bent downwards or absent. These characters are useful to differentiate from other gelechioid-moths. With respect to Lecithoceridae biology, larvae are known to feed on dead plant materials. A few Australian species have been reported to be reared on leaf litters of eucalypt (Common 1996). Recently, Komai et al. (2011) reported that two species of Lecithocerinae (*Homaloxestis myeloxesta* Meyrick, 1932 and *Lecithocera*

thiodora (Meyrick, 1914)) and three species of Torodorinae (*Athymoris martialis* Meyrick, 1935, *Deltoplastis apostatis* (Meyrick, 1932), and *Halolaguna sublaxata* Gozmány, 1978) were reared from dead leaves of several unknown broadleaved trees in Japan. The family is mostly distributed in the Oriental and Australian Regions, around 1,200 described species (van Nieukerken et al. 2011).

Synersaga Gozmány, 1978 is a small genus belonging to the subfamily Lecithocerinae that comprises six species only in the Oriental Region: the type species, *S. pseudocathara* (Diakonoff, 1952) described from Myanmar, and five more species from East and Southeast Asia (Gozmány 1978; Park 2007, 2009; Park et al. 2007). Herein a new species, *S. mondulkiriensis* sp. nov., is described from Cambodia. Moths have usually unicolorous forewing with yellowish-brown to dark-fuscous ground color.

The genus is allied to *Lecithocera* Herrich-Schäffer, 1853 and is defined by the combination of following characters: vein R_3 on the forewing is separate or connate and the male genitalia have the cucullus fairly elongated and usually expanded distally, and well-developed caudal processes of the juxta. On the other hand, for several species of *Lecithocera* known from Sri Lanka, which have male genitalia resembling *Synersaga*, e.g. *L. capnaula* Meyrick, 1911, *L. haemylopsis* (Meyrick, 1911), *L. nubigena* (Meyrick, 1911), *L. paroena* (Meyrick, 1906), and *L. paroristis* (Meyrick, 1911), the generic placement should be reconsidered by examining the forewing venation.

Material and methods

The present study is based on recent material collected by the authors in Cambodia, from the result of an entomological expedition to Cambodia by the Environmental Ministry, Korea. The wingspan is measured from the left wing apex to the right wing apex, including fringe. The color standard for the description of adults follows Kernerup and Wanscher (1978). Types are deposited in the University of Incheon, Korea (UIK) on indefinite loan from Cambodia. Abbreviations for museums: HMNH= Hungarian Museum of natural History, Budapest, Hungary; KNA= Korea National Arboretum, Pocheon, Korea; UIK= University of Incheon, Korea; OPU= Osaka Prefectural University, Osaka, Japan; NRS= Naturhistoriska Riksmuseet, Stockholm, Denmark.

Taxonomic Accounts

Genus *Synersaga* Gozmány, 1978

<http://species-id.net/wiki/Synersaga>

Synersaga Gozmány, 1978: 141; Wu, 1997: 174; Park et al., 2007: 206; Park, 2009: 2. Type species: *Lecithocera pseudocathra* Diakonoff, 1951: 76. Type locality: Myanmar = *Anamimnesis* Gozmány, 1978:143. Type species: *Anamimnesis bleszynskii* Gozmany, 1978: 143 (synonymized by Park 2000).

Note. *Synersaga* is characterized by the forewing characters: forewing slightly broader distally with round apex, evenly colored, with yellowish brown or blackish ground color; venation with R_3 free or connate with R_{4+5} ; M_3 and CuA_2 short-stalked or connate. However, the forewing color patterns of the known species are very similar to each other and they can be differentiated from one another by the shape of the uncus and the caudal processes of the juxta in the male genitalia. The abdominal tergites are densely spinose, and the seventh tergite is uniquely specialized, produced laterally with a sclerotized anterior margin.

World catalogue of *Synersaga*

<i>bleszynskii</i> (Gozmány, 1978: 143)	China
TL (Type locality): Chekiang, China. Type in HMNH.	
Fig.: Gozmány (1978, Taf. 8, 37, Fig. 86; Park (2000, Figs 20, 20a)	
<i>caradjai</i> (Gozmány, 1978: 143)	Taiwan
TL: Kosempo, Taiwan. Type in HNHM.	
Fig.: Gozmány (1978, Taf. 8, 37, Fig. 85)	
<i>kuni</i> Park, 2007: 206	Vietnam
TL: Cuc Phoung, N. Vietnam. Type in KNA.	
Fig.: Park et al. (2007, Figs 8, 17, 17a)	
<i>mondulkiriensis</i> sp. n.	Cambodia
TL: Mondulkiri, Cambodia. Type in UIK.	
Fig.: Park & Bae (2012, Figs 4–12)	
<i>nigriptera</i> Park, 2007: 208	Vietnam
TL: Babe, N. Vietnam. Type in KNA.	
Fig.: Park et al. (2007, Figs 9, 18, 18a, 22)	
<i>phuruaensis</i> Park, 2009:2	Thailand
TL: Loei, China. Type in OPU.	
Fig.: Park (2009, Figs 4–6, 8, 8a, 10)	
<i>pseudocathra</i> (Diakonoff, 1951: 76)*	Myanmar
Ark. Zool. 1951, 3: 76. TL: Kambaiti, Myanmar. Type in NRS.	
Fig.: Diakonoff (1951, Figs 13 (male), 15 & 16 (female))	

Synersaga mondulkiriensis sp. n.

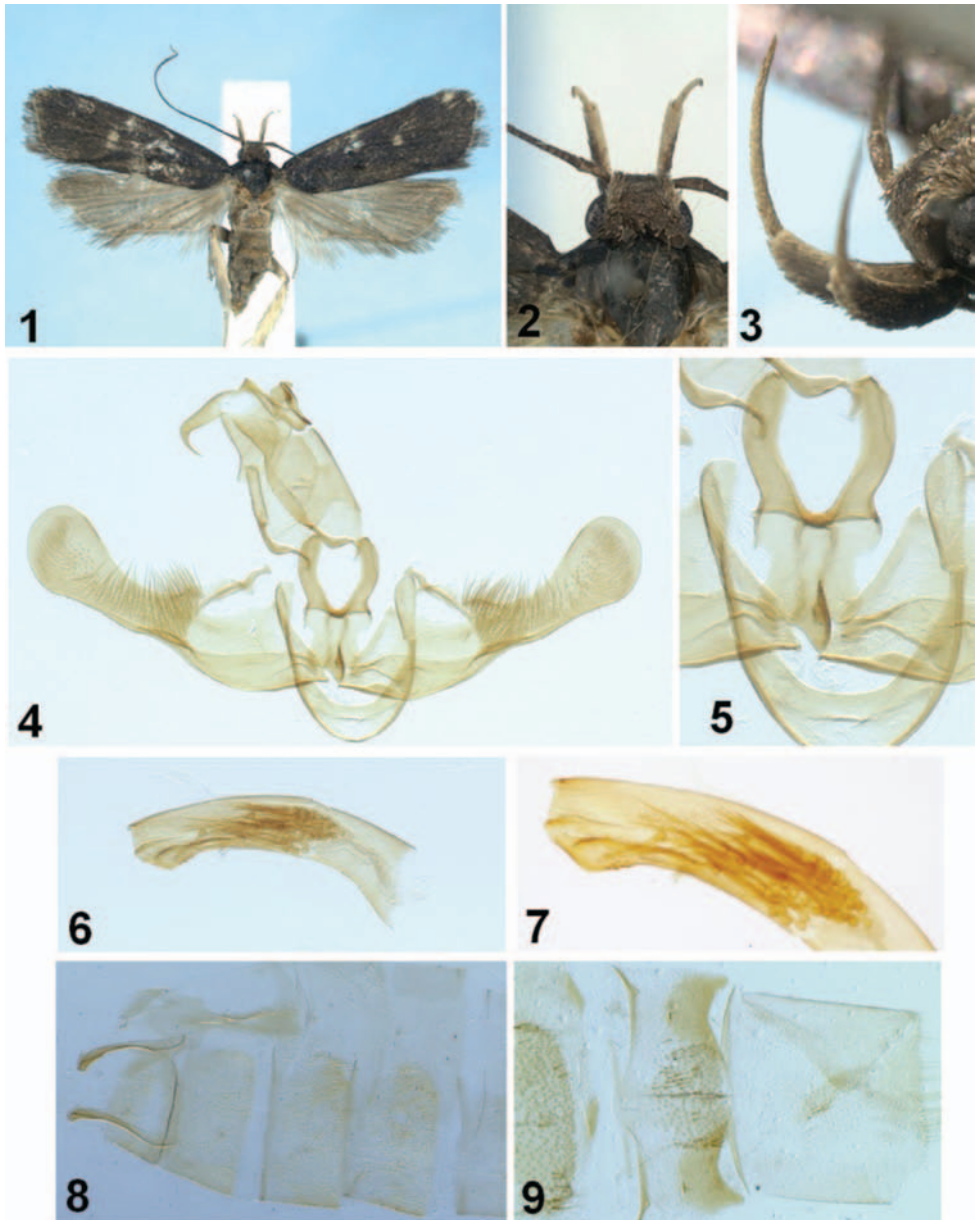
urn:lsid:zoobank.org:act:839DA14C-9E99-4CEC-A7A0-24E0826F8454

http://species-id.net/wiki/Synersaga_mondulkiriensis

Figs 1–12

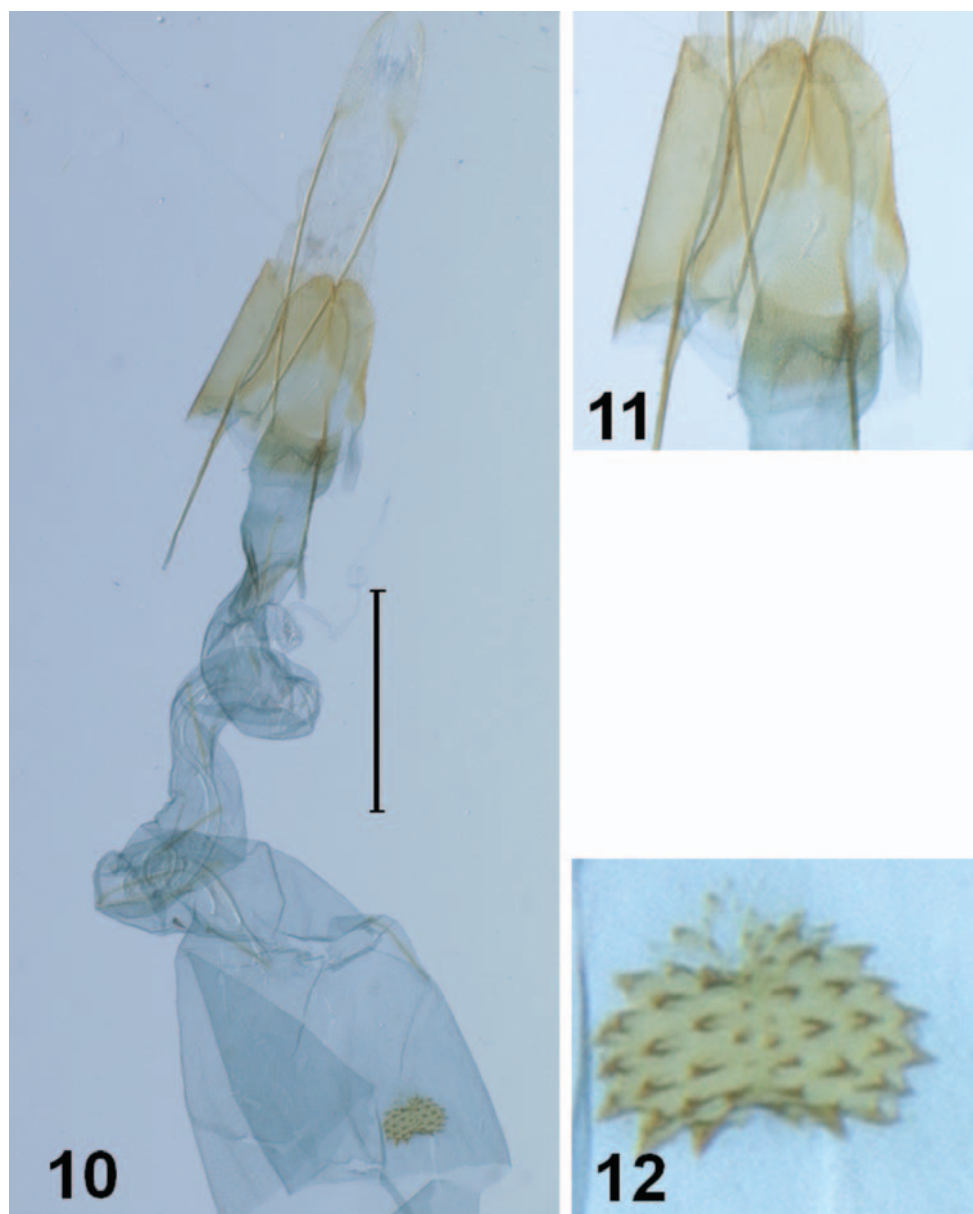
Type material. Holotype ♂ – Cambodia, Prov. Mondulkiri, Seima Biodiversity Conservation Area, 12°57'N, 107°10'E, 3–8 July 2009 (Bae & Chae), gen. slide no. CIS-6072/Park. Paratype – 3♂, 1♀, same locality, 7 Oct. 2010.

* Figure by Diakonoff (1951) was erroneously numbered: Fig. 14 is that of *L. pallax* Meyrick; and Gozmány (1978) cited erroneously “Daikonoff (1951)” as “Diakonoff (1952)”.



Figures 1–9. *Synersaga mondulkiriensis* sp. n., holotype **1** adult, holotype **2** head in dorsal view **3** labial palpus **4** male genitalia **5** close-up of juxta **6** aedeagus **7** close-up of cornuti **8** 1st–4th abdominal segments **9** close-up of 6th–8th abdominal segments. Scale bar: 1 mm.

Diagnosis. This new species is similar to *S. pseudocathara* from Myanmar, and *S. kuni* and *S. nigripecta* from Vietnam in the external and male genitalic characters. It can be distinguished from them by the shape of cucullus and the caudal processes of the juxta in the male genitalia. The caudal processes of the juxta of the new species are



Figures 10–12. Female genitalia of *Synersaga mondulkiriensis* sp. n. **10** genitalia **11** 8th segment **12** genitalia. Scale bar: 1 mm.

similar to those of *S. nigriptera*, but longer and arched inwardly, and the distal portion of the cucullus is more or less clavate.

Description. Adult (Figures 1, 2, 3). Wingspan, 17–18 mm. Head and thorax dark fuscous dorsally. Antenna dark fuscous throughout, relatively thick. Second segment of labial palpus fairly thickened, dark fuscous on outer surface with orange white

apex, orange white on inner surface; 3rd segment slender, as long as 2nd segment, orange white all around. Forewing covered with dark fuscous scales throughout; two blackish discal spots well developed: one in middle, the other larger one at end of cell; apex rounded; termen slightly concave medially; venation with R_1 arising from middle of cell; R_2 nearer to R_3 than R_1 at base; R_3 free; R_4 and R_5 stalked for basal 3/5 length; R_5 reaching just beyond apex; M_3 arising from half between M_2 and CuA_{1+2} at base; CuA_1 and CuA_2 stalked for basal 1/5. Hindwing broader than forewing, pale brownish orange; apex more or less obtuse; termen sinuate; fringe concolorous, with narrow orange white basal line; venation with M_3 and CuA_1 short stalked. Hind tibia clothed with orange gray scales.

Male genitalia (Figures 4, 5, 6, 7). Uncus broad, short, obtuse, not exceeding basal stalk of gnathos, with small median lobe on caudal margin. Median process of gnathos strongly bent beyond middle, with acute apex. Valva broad basally, with triangular process near base on costa; costa gently concave; ventral margin gently arched outward in basal half; cucullus elongate, broadly expanded with round outer margin; dense long setae in basal half of cucullus, fairly setose beyond. Juxta with caudal processes long, gently arched inward, while the processes in *S. nigriptera* nearly straight, clavate. Aedeagus gently curved, shorter than valva+cucullus, with finely dentate along ventral and dorsal margins apically; cornuti consist of a series of numerous needle-like cornuti. Abdominal segments in Figures 8 and 9.

Female genitalia (Figures 10, 11, 12). Similar to those of *S. nigriptera*. Caudal margin of eighth abdominal sternite with deep Y-shaped medial emargination. Dorsal surface of ostial plate with dense spinules; caudal margin of ostium bursae concave. Antrum weakly sclerotized, cup-shaped. Ductus bursae coiled twice, slightly longer than corpus bursae, nearly same width throughout, with several needle-like spines internally. Corpus bursae elongate; signum a semiovalate plate denticulate throughout.

Distribution. Cambodia (Mondulkiri).

Etymology. The species name is derived from the type locality.

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