Some new Asian Saturniidae (Lepidoptera)

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Abstract: 11 species of the family Saturniidae (Lepidoptera) are described as new to science. The following taxa are described: *Saturnia (Rinaca)* ***simloides*** **n. sp.,** *S. (R.)* ***thibetomima*** **n. sp.,** *S. (R.)* ***ngoclinhensis*** **n. sp.,** *Lemaireia* ***mediovietnama*** **n. sp.** [female HT], *Cricula* ***sokola*** **n. sp.,** *Cr.* ***acuta*** **n. sp.** [female HT], *Actias* ***laovieta*** **n. sp.,** *Antheraea (Antheraea)* ***scida*** **n. sp.,** *Anth. (Anth.)* ***luteofrithi*** **n. sp.,** *Rhodinia* ***extremaustralis*** **n. sp.,** and *Coscinocera* ***misoolensis*** **n. sp.** They belong to the genera *Saturnia* von Paula Schrank, 1802 (subgenus *Rinaca* Walker, 1855), *Lemaireia* Nässig & Holloway, 1987, *Cricula* Walker, 1855, *Actias* Leach, 1815, *Antheraea* Hübner, 1819 ("1816"), *Rhodinia* Staudinger, 1892 and *Coscinocera* Butler, 1879. All holotypes (males if not indicated differently) will be deposited within the Rainer Seegers Foundation in the collections of ZMHU, Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany. Most of the new species originate from south and central Vietnam, one species has an additional distribution in the southern provinces of Laos, and one taxon, the new species of *Coscinocera,* is described from the Indonesian Island of Misool, located in the Raja Ampat Archipelago off the southwestern coast of West Papua. Holotypes and most allotypes are figured in colour. More detailed work on the involved taxa is planned for future generic revisions, by now we just intend to make the names available for other purpose.

Einige neue Saturniidae-Arten aus Asien (Lepidoptera)

Zusammenfassung: Es werden 11 neue Arten der Familie Saturniidae (Lepidoptera) beschrieben. Die folgenden Arten werden beschrieben: *Saturnia (Rinaca)* ***simloides*** **n. sp.,** *S. (R.)* ***thibetomima*** **n. sp.,** *S. (R.)* ***ngoclinhensis*** **n. sp.,** *Lemaireia* ***mediovietnama*** **n. sp.** [weiblicher HT], *Cricula* ***sokola*** **n. sp.,** *Cr.* ***acuta*** **n. sp.** [weiblicher HT], *Actias* ***laovieta*** **n. sp.,** *Antheraea (Antheraea)* ***scida*** **n. sp.,** *Anth. (Anth.)* ***luteofrithi*** **n. sp.,** *Rhodinia* ***extremaustralis*** **n. sp.,** and *Coscinocera* ***misoolensis*** **n. sp.** in den Gattungen *Saturnia* von Paula Schrank, 1802 (subgenus *Rinaca* Walker, 1855), *Lemaireia* Nässig & Holloway, 1987, *Cricula* Walker, 1855, *Actias* Leach, 1815, *Antheraea* Hübner, 1819 ("1816"), *Rhodinia* Staudinger, 1892 und *Coscinocera* Butler, 1879. Alle Holotypen (männlich, sofern nicht anders angegeben) werden in der Rainer-Seegers-Stiftung in den Sammlungen des ZMHU, Museum für Naturkunde der Humboldt-Universität zu Berlin, deponiert. Die meisten neuen Taxa stammen allesamt aus den südlichen und zentralen Provinzen von Vietnam, eine Art wurde darüber hinaus auch in den südlichen Provinzen von Laos nachgewiesen. Die neue *Coscinocera*-Art stammt von der indonesischen Insel Misool im Raja-Ampat-Archipel, südlich von Westpapua gelegen. Alle Holotypen und die meisten Allotypen werden farbig abgebildet. Detailliertere Bearbeitungen sind in zukünftigen Gattungsrevisionen geplant, hier sollen nun vorab lediglich die Namen für die Wissenschaft verfügbar gemacht werden.

Introduction

In this work we describe 11 species of Saturniidae (Lepidoptera) as new to science. Differing from our usual procedure in taxonomic papers we just herewith make the names available by showing illustrations, deliver short descriptions and diagnoses, and shall not handle the topics with longer discussion or in the form of complete revisions of species-groups or genera as published by, e.g., Naumann & Nässig (2010a, 2010b) or Naumann et al. (2012). Some more extensive papers with additional details on certain of the here described taxa are in preparation, but these still will take their time to be completed. So some of our results are published here already now prior to those papers to make the names available for other purposes and colleagues.

The taxa described here originate mainly from central and southern Vietnam (historically: Annam), partly also from southern Laos, and one from Eastern Indonesia. Descriptions are based on morphology (external and genitalia; the ♂♂ – where available – of all species have been dissected) and results of the DNA barcoding campaign of the University of Guelph, but also on zoogeographical reasons. Preimaginal instars of all taxa remain currently unknown.

All holotypes will be deposited within the Rainer Seegers Foundation in the collections of ZMHU, Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany. Some paratypes of longer series will later be donated to SMFL.

The Indochinese Peninsula (consisting mainly of the present states of Vietnam, Laos and Cambodia) has a long history of undisturbed and highly diverse tropical rainforest cover and is also geologically diverse; limestone mountains, big rivers and other factors contribute to a zoogeographical subdivision into many small subprovinces. Obviously the mountain chains in Vietnam and Laos are separated for a sufficiently long time from the Subhimalayan areas in SE Asia that many taxa, especially of higher elevations, could separate from their northern counterparts occuring in northern Vietnam, northern Laos, or China, as well

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[2] 90th contribution to the knowledge of the Saturniidae (89th contribution: Nässig, W. A., Naumann, S., & Löffler, S. (2017): Revisional notes on the subgenera *Saturnia (Perisomena)* and *Saturnia (Neoris)* stat. rev. (Lepidoptera: Saturniidae). Part B: *Neoris*. – Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **37** (4): 179–216 [Correction: *Saturnia (Neoris) clasnaumanni* nom. nov., *in:* Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **38** (1): 52].)

as from the Himalayan fauna, and developed to more or less well-separated morphospecies. They generally do not differ strongly in external morphology but are widely separated by the COI marker gene in the DNA barcoding results, and by small but consistent morphological details which we here try to define.

Especially in the genus *Cricula* Walker, 1855 a wide separation took place which already resulted in the description of several taxa from this area (see Naumann & Löffler 2010a), but also in other genera new taxa from this southern area were earlier separated, as, e.g., *Actias australovietnama* Brechlin, 2000, a counterpart to the northern *A. angulocaudata* Naumann & Bouyer, 1997; *Samia vuvanlieni* Naumann et al., 2014, versus *S. watsoni* Oberthür, 1914; *Archaeoattacus vietnamensis* Naumann et al., 2016 versus *Arch. edwardsii* (White, 1859) and *Arch. malayanus* Kurosawa & Kishida, 1994.

Material and methods

Material lists used for this study see below under the taxa dealt with. Morphological studies followed standard procedures.

In the paratype lists we generally use the labelling of the included specimens for "central" and "southern" Vietnam as provided by the collectors; by this, some intermediate provinces sometimes are mentioned as "central" and sometimes as "southern", but here generally are transitions.

Acronyms used

CSLL	Collection Swen Löffler, Lichtenstein, Germany.
CSNB	Collection Stefan Naumann, Berlin, Germany.
SMFL	Senckenberg-Museum, Lepidoptera collection, Frankfurt am Main, Germany.
ZMHU	Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany.

Other abbreviations used

AT	Allotype.
BC	COI barcode (with number).
HT	Holotype.
PT	Paratype.
Fw.	Forewing.
Fwl.	Forewing length (measured in a straight line from the wing base to the most distant point of the apex).
GP	Genitalia preparation (with dissection no.).
Hw.	Hindwing.
Hwl.	Hindwing length (measured in a straight line from the wing base to the point where vein Cu_1 reaches the outer wing margin, i.e., measured across the outer anal rim of the Hw. ocellus).

The new taxa

Saturnia (Rinaca) simloides n. sp.

Holotype ♂ (Fig. 1): Vietnam (S), Lam Dong Prov., Da Lat, xi. 2015, leg. local collector, via Dang Ngoc Van (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 13 ♂♂, 7 ♀♀), all from South and Central Vietnam: 1 ♀ (AT), Vietnam (C), Thua Thien Hue Prov., Bach Ma Mt., 1400 m, xi. 2015, leg. local collector, via Le Luong Thanh, BC SNB 5850 (Fig. 2). 1 ♀, Vietnam (C), Kon Tum Prov., Kontum env., vi. 2013, leg. Le Xuan Xung, BC SNB 5289. 1 ♀, Vietnam (C), Quang Ngai Prov., Bato Mt., 950 m, ix. 2014, leg. local collector, via Le Luong Thanh; 2 ♀♀, same data (in CSLL). 1 ♂, same locality, but 1200 m, xi. 2014, leg. local collector, via Le Luong Thanh. 7 ♂♂, 2 ♀♀, same locality, 500 m, i. 2015, leg. local collector, via Le Luong Thanh. 3 ♂♂, same locality, 1200 m, iii. 2015 (in CSLL). 1 ♂, Vietnam (S), Lam Dong Prov., Di Linh Mt., 900 m, x. 2013, leg. local collector, via Le Luong Thanh. 1 ♂, Vietnam (S), same data as HT, GP 2551/18 SNB. – These all in CSNB, if not indicated differently for a specimen.

Derivatio nominis: The name *simloides* refers to the overall similarity with its nearest relative, *S. (R.) simla* Westwood, [1847].

Description

♂ (Figs. 1a, 1b). Fwl. 68–79 mm (HT 79 mm). Fw. with rounded apex. Antennae quadripectinate, of ochreous colour, length: 14–15 mm, longest rami 2.1 mm. Ground colour vivid purple and reddish brown, with typical pattern elements of *S. (R.) simla,* such as dark antemedian area, light pinkish median area, and again darker postmedian area. The Fw. ocellus, with its proximal margin crossing the straight postmedian line, is of ovoid form, and has proximal a broad black portion. Marginal area of Fw. reddish brown, separated from postmedian area by blackish zigzag line (purple in *S. (R.) simla*). Hw. again mainly intense pink in ground colour, median area surrounding the large rounded Hw. ocellus (of 12 mm maximum diameter). Ventral side purplish grey, of more intense colours than *S. (R.) simla,* postmedian band of Fw. and Hw. distinct, that of Fw. in costal area greyish black instead of brown in *S. (R.) simla*. Head, thorax and ventral abdomen in ground colour, dorsal parts of thorax light purplish brown.

♀ (Figs. 2a, 2b). Fwl. 67–82 mm (AT 82 mm). Antennae quadripectinate, ochreous, 17– 20 mm long, longest rami 1.2 mm. Very similar to the ♂♂ including all specific characters mentioned there already, but differing by the typical sexual dimorphic characters such as rounded fw, larger size of abdomen, and thinner antennae. In all known specimens the Fw. postmedian line is bent, while ♂♂ have a straight one, and the Hw. postmedian area is completely reddish brown while ♂♂ are dark greyish violet in the upper parts.

♂ genitalia. Uncus bifid, subapical process of the valves bulb-like, rounded at its tip. Juxta narrow, phallus with a large lateral sclerite and long lateral thorn at the end of the vesica, longer than in *S. (R.) simla*.

Preimaginal instars unknown.

Remarks. *S. (R.) simloides* n. sp. in general is very similar to the closest and widespread relative *S. (R.) simla* and differs in both sexes from this taxon by a little more

Plate 1, Figs. 1–10: Specimens of *Saturnia (Rinaca), Lemaireia* & *Cricula*. Fig. **a** = dorsal, **b** = ventral view of the same specimen. If not indicated otherwise, types in coll. CSNB, to be deposited in ZMHU. — **Fig. 1–2:** *S. (R.) simloides* sp. n. **Fig. 1:** ♂ HT. **Fig. 2:** ♀ PT. — **Fig. 3–4:** *S. (R.) thibetomima* sp. n. **Fig. 3:** ♂ HT. **Fig. 4:** ♀ PT. — **Fig. 5–6:** *S. (R.) ngoclinhensis* sp. n. **Fig. 5:** ♂ HT. **Fig. 6:** ♀ PT. — **Fig. 7:** *L. mediovietnama* sp. n., ♀ HT. — **Fig. 8:** *C. acuta* sp. n., ♀ HT. — **Fig. 9–10:** *C. sokola* sp. n. **Fig. 9:** ♂ HT. **Fig. 10:** ♀ PT. — Specimens not to the same scale; scale bars 1 cm. — All specimen photos S.N.

vivid and intense groud colour, little larger size on average, more ovoid-formed Fw. ocelli, and some details in ♂ genitalia structures. It is well defined by its barcode (COI marker gene), due to its geographical and genetic isolation in the mountain areas of southwestern Vietnam.

Saturnia (Rinaca) thibetomima n. sp.

Holotype ♂ (Fig. 3): Vietnam (S), Quang Ngai Prov., Bato Mt., 1200 m, XI. 2014, leg. local collector, via LE LUONG Thanh (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer SEEGERS Foundation in the collections of ZMHU.

Paratypes (in total 31 ♂♂, 1 ♀♀), all from south and central Vietnam: 11 ♂♂, same data as HT, GP 2552/18 SNB. 4 ♂♂, same locality as HT, but 950 m, X. 2014. 4 ♂♂, same data as HT, 950 m, XI. 2014, BC SNB 5775. 1 ♂, 1 ♀ (AT; Fig. 4), same data as HT, but XII. 2014, ♀ BC SNB 5781. 1 ♂, same data as HT, but 500 m, I. 2015. 3 ♂♂, same data as HT, 1200 m, II. 2015 (in CSLL). 1 ♂, same data as HT, 1200 m, III. 2015. 2 ♂♂, Vietnam (C), Da Nang Prov., Hoa Vang Dist., Ba Na Mts., 15.9921° N, 107.9848° E, 1500 m, 4. XII. 2009, leg. A. SOLOVYEV, received from V. ZOLOTUHIN, BC SNB 5114 & 5149. 1 ♂, same locality, 1450 m, VI. 2014, leg. local collector, via LE LUONG Thanh. 3 ♂♂, Lam Dong Prov., Da Lat, XI. 2013 & V. 2014, leg. local collector, via DANG Ngoc Van. — These all in CSNB, if not indicated differently for a specimen.

Derivatio nominis: The name *thibetomima* refers to the overall similarity with its relative *S.* (*R.*) *thibeta*.

Description

♂ (Figs. 3a, 3b). Fwl. 62–69 mm (HT 67 mm). Antennae quadripectinate, in ochreous colour, 13–14 mm long, longest rami 2.0 mm. Ground colour whitish ochreous brown, with several shades of grey, with all typical pattern elements of the complex of *S. (R.) thibeta,* such as dark antemedian line, several zigzag lines in median and postmedian areas of Fw. and Hw., and purplish pink basal part of the upper Hw. Fw. antemedian line almost straight, of purplish colour; median area in costal half greyish, with ovoid Fw. ocellus; postmedian area reddish brown, Fw. apex rounded and prominent, the costal apical black patch large. Hw. ornamentation of intense purplish pink colour, central Hw. ocellus almost rounded; postmedian area intensively speckled reddish brown. Ventral side of much lighter colours, most antemedian and median zigzag lines missing, only developed in the postmedian area which generally is darker and contrasted with the basal parts of the wings. Fw. apical black patch again very prominent. Head dark grey, similar to the basal costal parts, thorax and abdomen in light ochreous ground colour, the abdomen with two lateral purple lines of hair tufts.

♀ (Figs. 4a, 4b). Fwl. of the only known specimen (AT) 68 mm. Antennae quadripectinate, ochreous, 12 mm long, longest rami 0.8 mm. Very similar to the ♂♂, including all specific characters mentioned there already, but differing by the typical sexually dimorphic characters such as larger size in general, rounded forewings, larger size of abdomen, and thinner antennae.

♂ **genitalia.** Uncus bifid, strongly sclerotized. Subapical process of the valves acute and short, the valves with dorsal apical tip. Saccus long and slender, juxta with two lateral rounded processes, phallus right lateral with long thorn along the vesica, left lateral with large dentate sclerite.

Preimaginal instars unknown.

Remarks. *S. (R.) thibetomima* n. sp. in general is very similar to its probably closest relative *S. (R.) thibeta,* but shows as many (or more) distinctive features to that species as, e.g., *S. (R.) okurai* (OKANO, 1960) or *S. (R.) arctica* (YANG, 1978), both taxa which are meanwhile widely accepted on full species rank. The new species differs from the subhimalayan populations, e.g. from northern Vietnam, by its little smaller size in general, the more slender Fw. apex (in ♂♂) with prominent black patch, the more intense colouration (especially the upper Hw. pink parts and ventral Fw. and Hw. postmedian areas), and more ovoid shaped Fw. and Hw. ocelli.

Saturnia (Rinaca) ngoclinhensis n. sp.

Holotype ♂ (Fig. 5): Vietnam (S), Kon Tum Prov., Ngoc Linh, VII. 2015, leg. local collector, via DANG Ngoc Van; BC SNB 5805 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer SEEGERS Foundation in the collections of ZMHU.

Paratypes (in total 9 ♂♂, 2 ♀♀), all from Vietnam (S), Kon Tum Prov., same data as HT, but: 1 ♂, VI. 2015. 3 ♂♂, 1 ♀ (AT; Fig. 6), VII. 2015. 3 ♂♂, 1 ♀, VIII. 2015, one ♂ GP 2553/18 SNB; ♀ BC SNB 5803; all these in CSNB. 2 ♂♂, 1 ♀, same data as HT, 1700 m, IV. 2013, the ♀ BC SNB 5145 (all three in CSLL).

Derivatio nominis: The name *ngoclinhensis* refers to the type locality of the new taxon, the only place from where it is now currently known in southern Vietnam.

Description

♂ (Figs. 5a, 5b). Fwl. 74–80 mm (HT 74 mm). Fw. with almost triangular apex. Antennae quadripectinate, of ochreous colour, 21–22 mm long, longest rami 1.2 mm. Ground colour dark purplish to blackish grey, with typical pattern elements of *S. (R.) lesoudieri* LE MOULT, 1933, such as a dark brown antemedian area, light grey median area, and again darker greyish to olive brown postmedian area in the fw, and huge intense pink portion in the Hw. The Fw. ocellus concave, with broad basal purple line, of 10 mm maximum diameter. Postmedian area of the Fw. very narrow in the central part. The black patch of the Fw. ocellus very prominent. Hw. intensively coloured, upper pink portion very prominent. Parts around the abdominal margin very dark, Hw. ocellus large, rounded, 11 mm maximum diameter, and very dark. Ventral side dark, purple scales suffused with white and olive brown, zigzag lines of the upperside almost absent. Head, thorax and proximal three segments of the abdomen blackish purple, separated from each other by a broad band of yellowish white hair, the first three abdominal segments also intersegmental with white tufts, posterior part of the abdomen in pinkish grey with dark purple tufts on

laterodorsal side. Ventral side of thorax and abdomen purple, legs olive brown.

♀ (Figs. 6a, 6b). Fwl. 77 mm (AT 77 mm). Antennae quadripectinate, ochreous, 17 mm long, longest rami 1.2 mm. Very similar to the ♂♂ including all specific characters mentioned there already, but differing by the typical sexual dimorphic characters such as larger size in general, rounded forewings, larger size of abdomen, and thinner antennae.

♂ **genitalia.** Generally of very large size. Uncus bifid, with two short sclerotized acute processes, bent to ventral side. Valves with acute dorsal apex, with subapical large bent thorn-like process. Juxta broad, heavily sclerotized, with two acute processes. Phallus right lateral with long acute thornlike process, right lateral with dentate sclerite.

Preimaginal instars unknown.

Remarks. *S. (R.) ngoclinhensis* n. sp. in general resembles very much the pattern of its nearest relative, *S. (R.) lesoudieri* from Northern Vietnam, Northern Laos, PR China, Northern Thailand, and Myanmar, but differs in both sexes from that species by its more intense and darker colours, the slightly larger size of the Fw. and Hw. ocellus, the more narrow Fw. postmedian area and details in ♂ genitalia morphology; it is well defined by its COI barcode and geographically well isolated in the mountain chain of Ngoc Linh in South Central Vietnam. More easily it can be separated by the smaller subhimalayan taxon *S. (R.) zuleika* Hope, 1843 by its indented, concave Hw. ocellus, as shown e.g. in the revisional work by Naumann & Nässig (2010b). Astonishingly this subhimalayan taxon has more similar ♂ genitalia structures than the superficially so similar *S. (R.) lesoudieri.*

Lemaireia mediovietnama n. sp.

Holotype ♀ (Fig. 7): Vietnam (C), Ha Tinh Prov., Huong Son District, Vu Quang N.P., 900 m, iii. 2014, leg. local collector, via Le Luong Thanh, BC SNB 5488 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

No paratypes.

Derivatio nominis: The new *Lemaireia* species is named after its origin in central Vietnam.

Description

♀ (Figs. 7a, 7b). Fwl. 40 mm. The wings are of typical ♀ rounded form, with acute apical Fw. tip. Length of antennae 7.8 mm. Ground colour intense yellow, with lots of orange brown pattern elements. Fw. on dorsal side with antemedian area in orange brown, divided into two parts by yellow zigzag line. Yellow median area separated basally and marginally by a tiny black line, and with central ovoid ocellus of orange colour, bordered with greyish scales. Postmedian area again almost orange, divided by a yellow zigzag line, marginally a row of dark grey dots, apical area with violet scales. Hw. with some tuffs of orange hair on anal margin, ocellus round, 4.7 mm diameter, with black, blue and orange circle and clear center. Postmedian area with tiny black zigzag line, a row of prominent orange brown spots, and a row of black dots towards the margin. Ventral side of both Fw. and Hw. with less orange brown pattern, almost only yellow suffused with dark brown scales. Typical pattern elements are the ante- and postmedian zigzag line and a row of dark grey dots in the marginal area. Fw. and Hw. ocellus more or less a shade of the dorsal side, Fw. postmedian and marginal area dark violet brown. Head, thorax, and abdomen yellow with orange hair on dorsal side, ventral side with legs lighter, almost yellow.

♂ and **preimaginal instars** unknown.

Remarks. *L. mediovietnama* n. sp. is the forth species in a group consisting of *L. inexspectata* Nässig, 1996 from south Vietnam, *L. naessigi* Brechlin, 2001 from southeastern Myanmar, and the Chinese Hainan Island endemic *L. hainana* Nässig & Wang, 2006. Morphologically it can be separated from its probably closest relative, *L. inexspectata* from southern Vietnam, by its smaller size, less acute Fw. apex, smaller Hw. ocellus, a higher percentage of dark pattern elements of the Fw, and a row each of large orange brown spots and black dots in the Hw. postmedian area. Specimens of *L. hainana* are of much paler yellow colour and larger size.

Cricula sokola n. sp.

Holotype ♂ (Fig. 8): Vietnam (C), Da Nang Prov., Ba Na Mt., 950 m, iii. 2014, leg. local collector, via Le Luong Thanh, BC SNB 5479 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 4 ♂♂, 4 ♀♀), all from south central Vietnam: 2 ♀♀ (one AT, Fig. 9), Quang Ngai Prov., Bato Mt., 950 m, ix. 2014, leg. local collector, via Le Luong Thanh, BC SNB 5620 & 5639. 1 ♂, Quang Ngai Prov., Bato Mt., 1200 m, iii. 2015, leg. local collector, via Le Luong Thanh. 1 ♀, Kon Tum Prov., Ngoc Linh Mt., 1700 m, x. 2015, leg. local collector, via Le Luong Thanh, BC SNB 5973. 3 ♂♂, Lam Dong Prov., Ba Na Mt., 850 m, iii. 2014, leg. local collector, via Le Luong Thanh, one GP 2554/18 SNB, BC SNB 5972. 1 ♀, Da Nang Prov., Ba Na Mt., 1450 m, x. 2015, leg. local collector, vie Le Luong Thanh. – All in CSNB.

Derivatio nominis: The new taxon is named after its typical overall chocolate-brown colour. "Sokola" is the Vietnamese word for chocolate.

Description

♂ (Figs. 8a, 8b). Fwl. 31–32 mm (HT 31 mm). The wings are a little square-like and have a falcate apex. Length of antennae 7.0 mm, of dark brown colour, longest rami 1.8 mm. Both Fw. and Hw. are of chocolate brown ground colour (name!), the HT is the lightest of all known specimens with some orange shades. The pattern elements, the ante- and postmedian lines, the ocellus surroundings and two additional costal dots on the Fw. as well as the outer marginal part of the postmedian area towards the Fw. apex are of dark grey colour. The Hw. ante- and

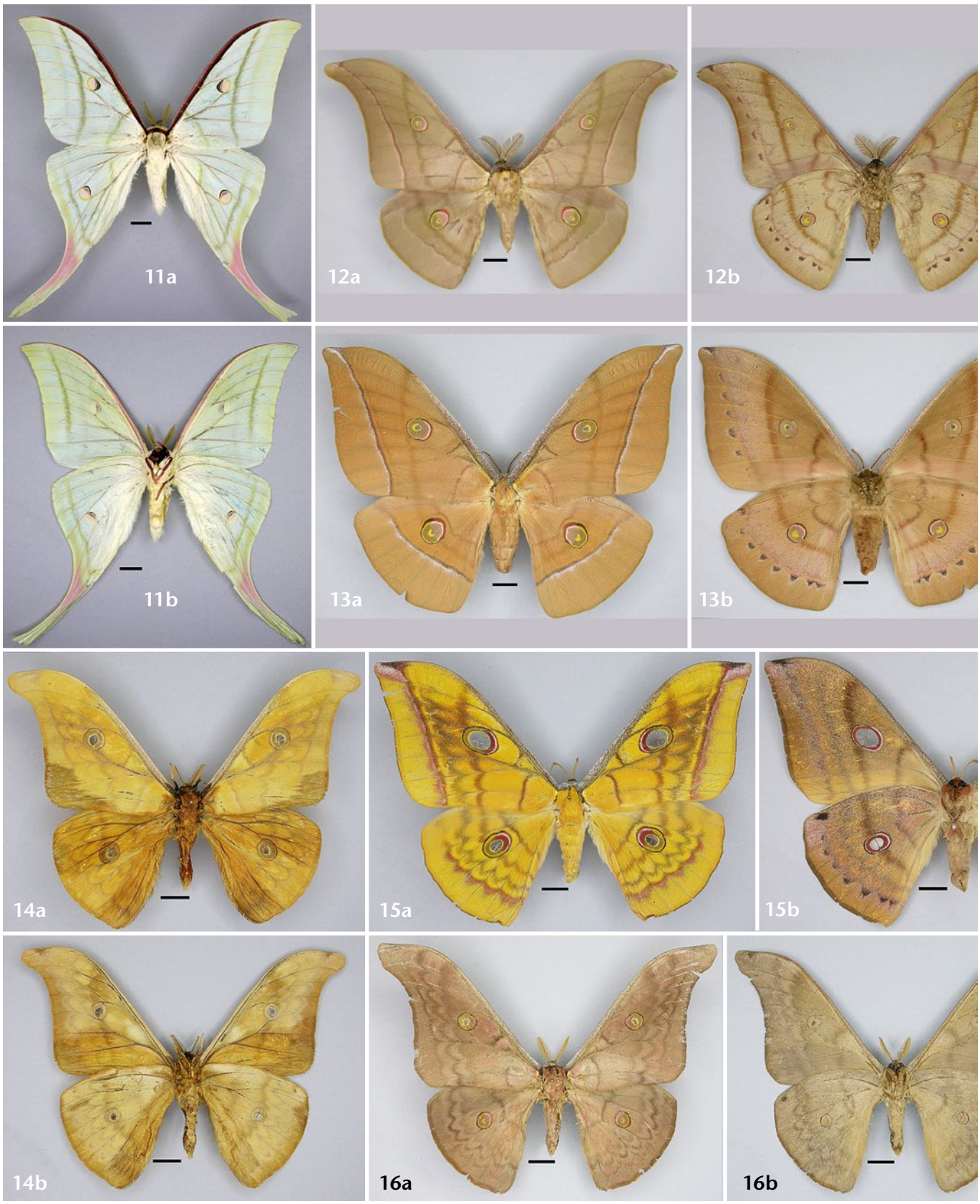

Plate 2, Figs. 11–16: Specimens of *Actias* & *Antheraea*. **Fig. 11:** *Actias laovieta* sp. n., ♂ HT. — **Fig. 12–13:** *Anth. (Anth.) scida* sp. n. **Fig. 12:** ♂ HT. **Fig. 13:** ♀ PT. — **Fig. 14–16:** *Anth. (Anth.) luteofrithi* sp. n. **Fig. 14:** ♂ HT. **Fig. 15:** ♀ PT. **Fig. 16:** ♂ PT, grey morph.

postmedian lines are always well separated from and never touch each other; the median area shows one central dark patch which has a very small hyaline center in most specimens. Ventral side in ground colour, with a reduced antemedian line, the postmedian line undulate. Thorax, abdomen and legs completely in ground colour.

♀ (Figs. 9a, 9b). Fwl. 35–39 mm (AT 38 mm). The wings are of typical ♀ rounded form, with acute apical Fw. tip. Length of antennae 6.0 mm. Both Fw. and Hw. are on dorsal and on ventral side of typical dark orange to dark brown ground colour. On dorsal side the postmedian area is suffused with some violet scales, and ante- and

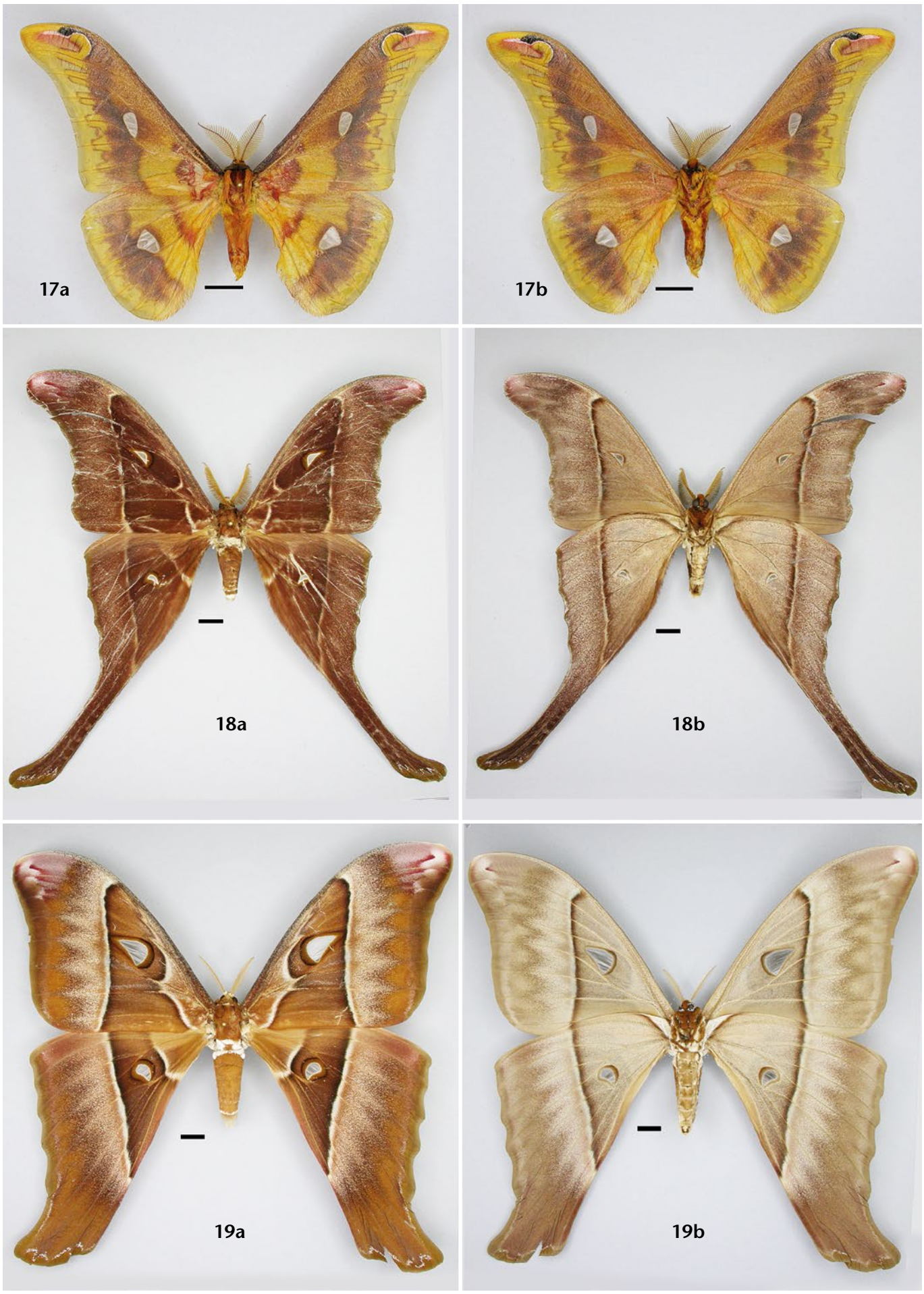

Plate 3, Figs. 17–19: *Rhodinia* and *Coscinocera* specimens. — **Fig. 17:** *Rhod. extremaustralis* sp. n., ♂ HT. — **Fig. 18:** *Cosc. misoolensis* sp. n., ♂ HT. **Fig. 19:** *C. misoolensis* sp. n., ♀ PT (AT).

postmedian lines are of dark sepia colour. The Fw. has three fenestrae, surrounded by dark grey patches; Hw. with one rounded fenestra. Outer margin in ground colour. On ventral side the median area is suffused with violet scales, the postmedian lines of both Fw. and Hw. light violet. Thorax, abdomen and legs completely in ground colour.

♂ **genitalia.** Uncus bifid, the two lateral processes slightly sclerotized and bent to ventral side. Valves with a short lateral process and dorsal apical tip. Gnathos almost rectangular, prominent, juxta with two long ventral lateral processes and two dorsolateral rounded labide-like processes. Vesica with four bulbs, each ending with an acute sclerite, all directed to ventral side.

Preimaginal instars unknown.

Remarks. *C. sokola* n. sp. resembles very much *C. sponai* Löffler & Naumann, 2010, also described from central Vietnam, but can morphologically be separated from this taxon in the ♂♂ by two instead of one additional dark patch on the costal Fw. area, the always separated Hw. ante- and postmedian lines which are confluent in *C. sponai,* the larger Hw. patch, and details in genitalia structures (form of juxta plus orientation and form of the vesica sclerites). ♀♀ differ by their more square-like wing form, little larger size in general and of the Hw. fenestra, plus broader postmedian area. The dark chocolate brown ground colour obviously is a character of several *Cricula* taxa in Vietnam; aside from *C. sponai* and *C. sokola* n. sp. there were found very similar dark specimens of *C. hoabinhnguyeni* Löffler & Naumann, 2010 since its description in northern Vietnam. Aside from morphology the here described species is also well defined by its COI marker gene.

Cricula acuta n. sp.

Holotype ♀ (Fig. 10): Vietnam (C), Kon Tum prov., Kontum env., v. 2013. leg. local collector, via Nguyen, BC SNB 5168 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 6 ♀♀), all from central Vietnam, Kon Tum Prov: 1 ♀, Kontum env., vi. 2013, leg. local collector, via Le Xuan Xung, BC SNB 5290. 1 ♀, Ngoc Linh, iv. 2015, leg. local collector, via Nguyen Son. 1 ♀, Ngoc Linh, 1700 m, vi. 2015, leg. local collector, via Le Luong Thanh. 1 ♀, Ngoc Linh, 1700 m, iv. 2016, leg. local collector, via Le Luong Thanh. 1 ♀, Ngoc Linh, 1700 m, v. 2016, leg. local collector, via Le Luong Thanh. All these in CSNB. – 1 ♀ [probably mislabelled?], Vietnam (N), Lao Cai Prov., Sapa Mt., 1800 m, ix. 2012, BC SNB 5146 (in CSLL).

Derivatio nominis: The new taxon is named after its extremely acute forewing apex (in females).

Description

♀ (Figs. 10a, 10b). Fwl. 39–43 mm (HT 43 mm). The wings are of typical ♀ rounded form, with very acute apical Fw. tip (name!). Length of antennae 8.0 mm (HT, in most PT specimens broken). Both Fw. and Hw. are on dorsal and on ventral side of typical dull orange brown ground colour. On dorsal side the antemedian area is little lighter, the postmedian area suffused with some violet scales, and ante- and postmedian lines are of dark sepia colour. Fw. in most specimens only with two small fenestrae, one PT has three fenestrae; Hw. with one rounded fenestra. Outer margin yellow. On ventral side the median area is suffused with violet scales, the postmedian lines of both Fw. and Hw. light violet. Thorax, abdomen and legs completely in ground colour.

♂ and **preimaginal instars** unknown.

Remarks. *C. acuta* n. sp. resembles somewhat the ♀♀ of *C. jordani* Bryk, 1944 from Myanmar, Kachin State, and of *C. schintlmeisteri* Naumann & Löffler, 2010 from northern Vietnam. While ♀♀ of *C. jordani* are larger and have more Fw. fenestrae, those of *C. schintlmeisteri* are smaller and more reddish coloured, but also share only two Fw. fenestrae. The singleton of *C. acuta* in CSLL labelled to originate from "Fan Si Pan" may be mislabelled by Vietnamese dealers but from its barcode and general morphology is a typical specimen of *C. acuta*.

Actias laovieta n. sp.

Holotype ♂ (Fig. 11): Vietnam (S), Lam Dong Prov., Lam Ha area, Nam Ban village, 11°49.791′ N, 108°21.016′ E, ca. 970 m, "Kulturhochland", 15./16. viii. 2004, leg. S. Löffler, P. Spona & T. Frederking, BC SNB 0877 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 31 ♂♂, 5 ♀♀): **Vietnam (S):** 1 ♂, same data as HT, GP 2555/18 SNB. 5 ♂♂, same data as HT (CSLL). 1 ♀, same locality, 15. vii. 2002, leg. S. Löffler (CSLL). 1 ♂, Lam Dong Prov., Lam Ha, Nam Ban, Ta Nung, 30. iv.–1. v. 2003, leg. Hoa Binh Nguyen (CSLL). 1 ♀, Lam Dong Prov., Lam Ha, Bhu Son, 1320 m, 9.–12. vi. 2005, leg. Hoa Binh Nguyen (CSLL). 1 ♂, Lam Dong Prov., Lam Ha, Phu Son, Phu Mi, 27.–29. iv. 2003, leg. Hoa Binh Nguyen (CSLL). 1 ♂, Lam Dong Prov., Duc Trong, 10 km [road] Duc Trong to Dak Lak, 865 m, 8. vii. 2002, leg. S. Löffler (CSLL). 2 ♂♂, 2 ♀♀, Lam Dong Prov., Bao Loc, ix. 2013, leg. local collector. 2 ♂♂, 1 ♀ (AT), Lam Dong Prov., Bao Loc, 900 m, ix. 2014, leg. local collector, via Dang Ngoc Van. 2 ♂♂, Lam Dong Prov., Da Lat, v. 2016, leg. local collector, via Dang Ngoc Van. – **Vietnam (C):** 3 ♂♂, Thua Thien Hue Prov., Bach Ma Mt., 1400 m, i. 2016, leg. local collector, via Le Luong Thanh. 3 ♂♂, same locality, iii. 2016, leg. local collector, vie Le Luong Thanh. – **Laos (S):** 1 ♂, Xekong Prov., ca. 51 km N Xekong, Ho Chi Minh trail, 580 m, 15°48.1′ N, 106°39.3′ E, 13.–15. v. 2010, leg. S. Jakl, BC SNB 4305. 4 ♂♂, Attapu Prov., Annam Highlands, Dong Amphan NBCA, ca. 1150 m, Nongfa (crater lake) env., 15°5.9′ N, 107°25.6′ E, 30. iv.–6. v. 2010, leg. S. Jakl, BC SNB 3638. 5 ♂♂, Champasak Prov., Bolaven Plateau, ca. 5 km W Ban Nongmek, Pakxe, 520 m, 1.–12. v. 2003, leg. T. Ihle (CSLL). – All PT specimens in coll. CSNB, if not explicitely indicated differently for one or more specimen[s].

Derivatio nominis: The name *laovieta* is a combination of the two countries where the taxon has been found so far: southern Laos and nearby provinces of southern Vietnam.

Description

♂ (Fig. 11a, 11b). Fwl. 69–76 mm (HT 75 mm), Fw. falcate with apical tip. Length of antennae 13 mm, of light

ochreous colour, longest rami 2.6 mm. Both Fw. and Hw. are of bluish or greenish white ground colour, with only few markings, such as purple Fw. costa, olive ante- and postmedian lines of Fw. and Hw., and a yellowish grey shade of band in the postmedian area which turns on the Hw. into a pink area of the tail; tip of the tail again in ground colour. Fw. and Hw. ocellus almost round, of pink and yellow colour, to the proximal side bordered by a black halfmoon-shaped line with inner bluish line. Fw. ocellus 6 mm maximum diameter, Hw. ocellus 5.5 mm. On ventral side of same colour, antemedian lines and black and pink portion of the ocellus missing, rest similar to dorsal side. Head and thorax separated by broad purple collum, legs purplish as well, thorax and abdomen whitish.

♀. Fwl. 80–83 mm (AT 83 mm). Antennae quadripectinate, ochreous, length not measured because always incomplete, longest rami (as far as available) 1.6 mm. Very similar to the ♂♂ including all specific characters mentioned there already, but differing by the typical sexually dimorphic characters such as larger size in general, rounded Fw., larger size of abdomen, and thinner antennae.

♂ genitalia. Uncus long, bifid, with two short bent apical processes, which are dentate on dorsal side. Gnathos centrally with two short processes. Valves with large, acute and slender lateral process and broad rounded apical tip, juxta with two lateral long, dentate processes which are of same size on both right and left side. Phallus with ventral dentate margin, and a distal long process of the vesica.

Preimaginal instars unkown.

Remarks. *A. laovieta* n. sp. is externally almost indistinguishable from its nearest relatives, the Chinese and northern Vietnamese *A. ningpoana* C. & R. Felder, 1862, and the subhimalayan *A. selene* (Hübner, "1806" [1807]) which both were for the first time separated from each other on species rank in a cladistic analysis by Ylla et al. (2005). These authors mention as differences for *A. ningpoana* and *A. selene* in adults the straight versus concave outer margin (of the Fw., in ♂♂[?]) and the length of the antenna being longer than thorax in *A. ningpoana* and not longer in *A. selene;* two characters which we could not confirm in longer series of both taxa; in addition to this they found some differences in the larval frons and dorsal thoracal tubercles of the larva. After our knowledge these two taxa are mainly to be separated by characters in their preimaginal instars, some details of ♂ genitalia structures (length of saccus and processes of the valves), for zoogeographic reasons, and finally by results of DNA barcoding; here the new taxon *A. laovieta* n. sp. clusters clearly as a separate entry.

We have no knowledge yet of preimaginals of the new species, but ♂ genitalia structures also show differences (such as the lateral processes of the juxta and form of the uncus), so we decided to apply a name for the population from the highlands of southern Laos and southern Vietnam. The specimens mentioned for central Laos by Brosch et al. (1999) are representatives of the subhimalayan *A. selene* and not conspecific with the here described taxon; their identity was confirmed by barcoding results.

Antheraea (Antheraea) scida n. sp.

Holotype ♂ (Fig. 12): Vietnam (C), Kon Tum Prov., Kontum env., vi. 2013, leg. local collector, via Le Xuan Xung, GP 2556/18 SNB, BC 5286 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 6 ♂♂, 2 ♀♀), all from south and central Vietnam: 2 ♂♂, 1 ♀ (AT; Fig. 13), same data as HT, ♀ BC SNB 5287. 1 ♀, Kon Tum Prov., Ngoc Linh Mt., 1700 m, viii. 2016, leg. local collector, via Le Luong Thanh. 1 ♂, Lam Dong Prov., Di Linh Mt., 900 m, x. 2013, leg. local collector, via Le Luong Thanh. – All these in CSNB. – 3 ♂♂, Kon Tum Prov., Ngoc Linh Mt., 1700 m, v. 2015, in CSLL.

Derivatio nominis: The new taxon is named after the typical reddish brown line on ventral wing side. *Scida* is the ablativus of the Latin word scida and means „with stripe".

Description

♂ (Figs. 12a, 12b). Fwl. 70–80 mm (HT 80 mm), Fw. quite falcate with apical rounded tip. Length of antennae 14.5–16 mm, of ochreous colour, longest rami 3.6 mm. Both Fw. and Hw. are of homogenous greyish olive brown, with some darker pattern elements: On dorsal side collum and costa in the proximal half purplish grey, the Fw. antemedian band purple, in the median area a straight dark grey median line, passing the ocellus marginally, postmedian line concave, bent along the margin, of purple colour with white marginal shadow. Hw. antemedian band almost absent, median line and wavy postmedian line of similar colour as on Fw. Outer margin with row of yellow fringes. Both Fw. and Hw. ocellus almost round, on proximal side with red and pink portion, marginal part with black and yellow circle, inner part ochreous brown with inner yellow margin and very tiny translucent part. Ocellus of Fw. with 8.0 mm maximum diameter, that of the Hw. with 8.5 mm maximum diameter. Ventral side in ground colour as well, but with more intense markings: Fw. and Hw. with purple ante- and postmedian lines, the postmedian line followed by a row of purple patches, outer margin dark, with row of marginal yellow fringes. The median line (name!) very prominent, orange brown. Thorax with legs and abdomen in ground colour.

♀ (Figs. 13a, 13b). Fwl. 85–90 mm (AT 85 mm). Antennae quadripectinate, ochreous, 14–15 mm long, longest rami 1.4 mm. Very similar to the ♂♂ including all specific characters mentioned there already, but differing by the typical sexual dimorphic characters such as larger size in general, rounded forewings with almost rectangular apex, larger size of abdomen, and thinner antennae. The two known ♀♀ lack the greyish olive brown ground colour and are of light reddish brown colour. The ocelli are of much larger size, on the Fw. with a maximum diameter of 10 mm, on the Hw. of 11.5 mm, but bear the typical

yellow inner portion and very tiny translucent part. The postmedian line of both Fw. and Hw. and both on dorsal and ventral side is of more greyish colour, bordered by a white portion to marginal zone.

♂ **genitalia.** Juxta with a small central knob-like projection and two lateral large processes, directed to ventral side and there with two tips. Valves with a long ventral process, and a long dorsal one with seven bristles. Labide rounded at its end, quite long, juxta rounded, phallus and saccus very long and slender.

Preimaginal instars unknown.

Remarks. *A. (A.) scida* n. sp., a member of the *Antheraea roylei*-subgroup of the *frithi*-group (sensu Nässig 1991), can easily be separated from *A. vietnamensis* Brechlin & Paukstadt, 2010 by the more acute Fw. apex in the ♂♂, the tiny inner translucent part of Fw. and Hw. ocelli in both sexes, and the typical intense orange brown median line on ventral sides of *A. scida* n. sp. There exist also small differences in ♂ genitalia structures (juxta and form of dorsal process of the valves). Although *A. vietnamensis* is described from northern Vietnam, it occurs syntopically with the here described taxon in Kon Tum and Lam Dong provinces. Aside from morphology the here described taxon is well defined by its COI marker gene and thereby well-separated from all other members of the subgroup.

We do not go conform with any of the pseudotaxonomic acts winthin the genus *Antheraea* published by D'Abrera (2012) as all the taxonomic changes suggested there lack any scientific and phylogenetic substantiation.

Antheraea (Antheraea) luteofrithi n. sp.

Holotype ♂ (Fig. 14): Vietnam (SC), Lam Dong Prov., Di Linh Mt., 900 m, iv. 2014, leg. local collector, via Le Luong Thang; BC SNB 5722 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 9 ♂♂, 6 ♀♀), all from south and central Vietnam: 1 ♂, same data as HT, but x. 2013. 1 ♀, Lam Dong Prov., Bao Lam, Dambri, ix. 2014, leg. local collector, via Dang Ngoc Van. 1 ♀, Gia Lai Prov., Kon Ka Kinh N.P., viii. 2015, leg. local collector, via Dang Ngoc Van. 1 ♀ (AT, Fig. 15), Kon Tum Prov., Ngoc Hoi, vii. 2015, leg. local collector, via Dang Ngoc Van, BC SNB 5804. 4 ♂♂, Quang Ngai Prov., Bato Mts., 1× 950 m, iv. 2014; 1× 950 m, x. 2014; 1× 950 m, ix. 2014; 1× 1200 m, ii. 2015, leg. local collector, via Le Luong Thanh; of one GP 2557/18 SNB; of two BC SNB 5690 & 5777. 1 ♀, Quang Nam Prov., Tay Giang Mt., 1300 m, v. 2014, leg. local collector, via Le Luong Thanh, BC SNB 5721. 1 ♀, Thua Thien Hue Prov., Bach Ma Mt., 1400 m, xi. 2015, leg. local collector, via Le Luong Thanh. – All these in CSNB. – 4 ♂♂, 1 ♀, Quang Ngai Prov., Bato Mt., 1200 m, ii. & iii. 2015, in CSLL.

Derivatio nominis: The new taxon *luteofrithi* is named after the typical overall yellow ground colour in both sexes of most know specimens and the close similarity to *Antheraea (Antheraea) frithi* Moore, 1859.

Description

♂ (Figs. 14a, 14b, 16a, 16b). Fwl. 66–70 mm (HT 68 mm), Fw. quite falcate with rounded apex. Length of antennae 12 mm, ochreous, longest rami 3.2 mm. Both Fw. and Hw. yellowish orange (aside of one greyish specimen which is confirmed by DNA COI analysis to be conspecific), with more or less intense greyish markings. Costa grey, Fw. antemedian line purplish grey, median area with a curved median band, indented to proximal side along the veins, followed by a zigzag double postmedian line. Postmedian area in ground colour, with greyish shade. Hw. with similar markings. There exists a singleton of purplish grey colour, where all markings are dark grey, but otherwise it is of similar pattern (Fig. 16). Fw. ocellus of 7.0 mm diameter, round, outer circle tiny black, followed by proximal pink and marginal ochreous olive portion, inner part hyaline; Hw. ocellus of 8.0 mm diameter, round as well, also with outer black circle, followed by an inner ochreous-olive part, to proximal side with small pinkish portion, inner part hyaline with a small yellow circle. Ventral side of same ground colour, but all markings more suffused, and generally more homogenous, dark markings missing. Head, thorax with legs, and abdomen completely in ground colour.

♀ (Figs. 15a, 15b). Fwl. 72–79 mm (AT 79 mm). Antennae quadripectinate, ochreous, 12–12.5 mm long, longest rami 1.2 mm. Very similar to the ♂♂ including all specific characters mentioned there already, but differing by the typical sexual dimorphic characters such as larger size in general, rounded forewings with almost rectangular apex, larger size of abdomen, and thinner antennae. All known ♀♀ are of the same yellow ground colour as the ♂♂ and have the same pattern elements. The marginal, second postmedian line is more straight and prominent, followed to marginal side by a purplish portion. The ocelli are of same colour details, but have a larger diameter, the Fw. ocellus 14 mm, the Hw. ocellus 12 mm.

♂ **genitalia.** As already mentioned in many papers on the genus *Antheraea* (e.g. Nässig 1991), the differences of ♂ genitalia within the *frithi*-subgroup are only very minor between the different species. So, due to similar basic "architecture", generally only minor differences between different related species in size and form of certain structures can be found. The more astonishing is that *A. luteofrithi* n. sp. really shows distinctive structures: juxta long and slender, with two lateral processes; gnathos tapering, strongly sclerotized; valves short with strong sclerotization to their dorsal margin, with one long process on ventral side and one dorsal rounded short process without bristles. The internal labide strongly sclerotized, long, prominent, and ending broadly. Juxta rounded, again strongly sclerotized, phallus slender.

Preimaginal instars unknown.

Remarks. *A. luteofrithi* n. sp. is a close relative of the subhimalayan *A. frithi* Moore, 1859 (variability, preimaginals and ♂ genitalia shown in Peigler & Naumann 2016) and the Vietnamese *A. tonkinensis* Bouvier, 1936. It differs from *A. frithi* by the less developed markings overall, the missing yellow circle just beyond the black outer ring of both Fw. and Hw. ocellus, and details in ♂ genitalia; *A.*

tonkinensis is of deeper orange and brown colour in ♂♂ with an olive shade overall, and shows also differences in ♂ genitalia structures; all three taxa are separated by the results of DNA barcoding (COI marker gene). At least within the Vietnamese Quang Ngai Province both species, *tonkinesis* and *luteofrithi,* occur syntopically.

Rhodinia extremaustralis n. sp.

Holotype ♂ (Fig. 17): Vietnam (C), Quang Ngai Prov., Bato Mt., 950 m, x. 2014, leg. local collector, via Le Luong Thanh, BC SNB 5588 (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 5 ♂♂), all from Central Vietnam: 2 ♂♂, same data as HT, one GP 2558/18 SNB, one BC SNB 5589. 1 ♂, Vietnam (C), Thua Thien Hue Prov., Bach Ma Mt., 1400 m, xii. 2015, leg. local collector, via Le Luong Thanh. – All these in CSNB. – 2 ♂♂, same locality as HT, xi. 2014, in CSLL.

Derivatio nominis: The name *extremaustralis* refers to the most southeastern known distribution of the new *Rhodinia* species in the genus.

Description

♂ (Figs. 17a, 17b). Fwl. 64–66 mm (HT 64 mm), the Fw. elongate with rounded apex. Antennae 18 mm long, quadripectinate, of ochreous colour, longest rami 3.0 mm. Both Fw. and Hw. are of yellow orange ground colour, with typical *Rhodinia* pattern elements. Fw. antemedian area reddish, bordered with a purplish antemedian line, median area in the lower parts yellow, the costal half suffused with purplish scales. The Fw. ocellus droplike, at maximum 7.0 mm long, the huge hyaline part surrounded by a row of white scales; the margin of the ocellus is connected with the purple postmedian line, which becomes more lighter, of ground colour to marginal area which contains a tiny purple zigzag line on yellowish orange ground. The apex with a prominent costal black patch, outer margin olive. Hw. of same ornamentation, the median area lighter, yellow, the median area completely yellow, the Hw. ocellus almost triangular, again bordered with white scales, and of 7.0 mm maximum length. On ventral side the antemedian lines of both Fw. and Hw. are missing, median area darker orange, all other pattern elements as on dorsal side.

Head and thorax separated by a grey collum, thorax on dorsal side with purple hair, otherwise head, thorax and abdomen in ground colour, legs with purple shade.

♀ and preimaginal instars unknown.

♂ genitalia. Uncus very long, with two slender processes with apical sclerotization. Valves with short rectangular ventral process, short central slender one, and large dorsal rounded one. Gnathos rectangular, juxta rounded, small, phallus with strong thorn on left lateral side and two smaller thorns on the vesica in dorsoventral direction.

Remarks. *Rh. extremaustralis* n. sp. resembles overall northern Vietnamese populations of the very similar *Rh. newara* Moore, 1872, but can be separated from that species by its more elongate, drop-like Fw. ocelli (versus larger, more triangular ones in *Rh. newara*), the generally smaller size, a more falcate Fw. apex, and details in ♂ genitalia morphology (length of uncus, form of valve processes).

Coscinocera misoolensis n. sp.

Holotype ♂ (Fig. 18): Indonesia, Papua Barat Prov., Raja Ampat Archipelago, Misool Island, no further data, iii. 2016, leg. local collector (in CSNB). A red HT label will be fixed accordingly. The HT will be deposited within the Rainer Seegers Foundation in the collections of ZMHU.

Paratypes (in total 3 ♂♂, 1 ♀): 2 ♂♂, 1 ♀ (AT, Fig. 19), all with same data, but collected ii. 2016, one ♂ GP 2559/18 SNB, two BC SNB 6083, 6084. All these in CSNB. – 1 ♂, same data as HT (in CSLL).

Derivatio nominis: The new taxon *misoolensis* is named after its origin on Misool Island in the Raja Ampat Archipelago, Indonesia.

Description

♂ (Figs. 18a, 18b). Fwl. 91–110 mm (HT 93 mm), the Fw. elongate with rounded apex. Antennae 19 mm long, quadripectinate, of dark ochreous brown colour, longest rami 5.0 mm. Both Fw. and Hw. dorsally in dark chocolate brown ground colour with only a few markings: antemedian line tiny, white, median area completely in ground colour, with a very small, drop-like ocellus of 10 mm maximum length, directed with its tip to marginal side. It has an outer black line, followed by a broader olive portion, and the hyaline inner triangulum is surrounded by a row of white scales. Postmedian line almost straight, only bent backward in the last 5 mm towards the costal margin, of greyish white colour and small transparent intermediate patches. Postmedian area a little lighter, in ground colour, but suffused with some purple scales, apex with pink portion and carmine red patch.

Hw. of same colour and pattern, Hw. ocellus even smaller, more halfmoon-shaped, with maximum diameter of 5.0 mm. Hw. with a long tail, complete Hwl. from wing base to tip of the tail 125–135 mm. The end of the tail with some bluish white scales, margin of olive colour. Ventral side suffused with grey scales, thereby the colour is much lighter than on dorsal side. Antemedian line missing, ocelli without outer black and olive rings, but with tiny brown one instead. Postmedian line of both Fw. and Hw. dark brown, to the marginal area white. Tail completely dark grey. Head, thorax, and abdomen in ground colour, but thorax and abdomen and all abdominal segments separated from each other by white tufts. Abdomen on ventral side of light greyish colour, lateral with a row of white tufts around the stigmata.

♀ (Figs. 19a, 10b). Fwl. of the AT 110 mm (the second ♀ with damaged apices). Antennae quadripectinate, ochreous, 19 mm long, longest rami 2.1 mm. The ♀ differs by the typical sexual dimorphic characters such as larger size in general, almost rectangular forewing and shorter and broader Hw. tail, larger size of abdomen, and thinner antennae from the ♂♂. The two known ♀♀ are

of the same lighter brown ground colour but share the same pattern elements as ♂♂, with all markings broader and more intense. Fw. white antemedian band bordered black to median area, Fw. ocellus much larger than in ♂♂, of 20 mm maximum length. Postmedian line with black shade in the median area, then white and marginally with pinkish grey shade, followed by a more reddish brown area. Hw. with same pattern, ocellus large, almost rounded, of 10 mm diameter, tail broad and short, with broad row of white speckled scales. Ventral side of much lighter grey colour. The dorsal abdomen has no intersegmental tufts.

♂ genitalia. Uncus broad, with two processes directed to ventral side. Valves with small indention on their ventral margin, dorsoapical tip relatively acute. Juxta broad, with two broad lateral processes with acute tips. Saccus short, phallus broad, with a prominent dorsal "hook", the rounded vesica emerging to ventral side.

Preimaginal instars unknown.

Remarks. *C. misoolensis* n. sp. can easily be separated from all other known *Coscinocera* taxa by its combination of pattern elements, such as small Fw. and Hw. ocellus, straight postmedian Fw. line, and details in ♂ genitalia. It is zoogeographically well separated, even from the representative on the next nearby island, Obi, *C. jakli* Naumann, 2009, which is more colourful, has a bent Fw. postmedian line and larger ocelli. The more recently described *C. aruensis* Naumann & Löffler, 2010 from Aru Island cannot be mixed up with the taxon described here due to its larger size, bent postmedian line, details in ♂ genitalia, and by zoogeographic reasons. The population on Misool Island is well isolated and thereby easily determined on species rank; a similar handling was found with the recently described *Syntherata degroofi* Paukstadt et al., 2017, from the same island.

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