



# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Supplement 16

ISSN 0250-4413

Ansfelden, 16. Oktober 2009

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## **Moths of Vietnam**

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### **Preface**

The first contributions to the series “Moths of Vietnam” were published in April 1, 1997 as supplement 9 of Entomofauna. After a general introduction (by Alexander SCHINTLMEISTER), the families Micropterigidae (by Wolfram MEY), and Notodontidae

(by Alexander SCHINTLMEISTER) were monographically treated. The second part of contributions was published in April 30, 2000 as supplement 11 of Entomofauna and contained monographs of the notuid subfamily Camptolominae (by ZOLOTUHIN & WITT), of the Mirinidae (by ZOLOTUHIN & WITT), and Lasiocampidae (by ZOLOTUHIN & WITT).

The first contributions of 1997 considered especially the fauna of Mt. Fan-si-pan. In the meanwhile, more material was received from different regions of Vietnam. Therefore, 12 years later, it is possible to give now much broader faunistic informations, though not all regions within Vietnam are equally studied.

Outside the series, a review of the noctuid subfamilies Pantheinae and Acronictinae was published by SPEIDEL & KONONENKO (1998)<sup>1</sup>.

The present supplement contains treatments of the families Pterophoridae (by Peter USTJUZHANIN and Vasily KOVTUNOVICH), Limacodidae (by Alexey V. SOLOVYEV and Thomas J. WITT), Cossidae (by Roman V. YAKOVLEV and Thomas J. WITT), Bombycidae (by Vadim V. ZOLOTUHIN and Thomas J. WITT), and additions to Lasiocampidae (by Vadim V. ZOLOTUHIN and Viktor V. SINYAEV).

We slightly changed the concept of the previous Vietnam-supplements and placed the colour plates together at the end of the present fascicle. This will facilitate identifications and is more economic in production.

We refer to the introduction by Alexander SCHINTLMEISTER (Entomofauna, Supplement 9: 1-12) for more detailed general data to the moth fauna of Vietnam.

Thomas J. WITT and Wolfgang SPEIDEL  
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23th July 2009

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<sup>1</sup> SPEIDEL, W. & V. S. KONONENKO (1998): A review of the subfamilies Pantheinae and Acronictinae from North Vietnam with description of new species of *Tambana* Moore, 1882 and *Anacronicta* Warren, 1909 (Lepidoptera, Noctuidae). — *Esperiana* 6: 547-566, pl. T, U.

# The plume moths (Lepidoptera, Pterophoridae) of Vietnam, with description of a new species of *Xyroptila* MEYRICK, 1908

Peter USTJUZHANIN & Vasily KOVTUNOVICH

## Abstract

A checklist of 18 Pterophoridae species presently known from Vietnam is presented, including the first records for *Nippoptilia vitis* (SASAKI, 1913), *N. cinctipedalis* (WALKER, 1864), *Stenoptilodes taprobanes* (FELDER & ROGENHOFER, 1875), *Stenodacma wahlbergi* (ZELLER, 1851), and *Diacrotricha fasciola* ZELLER, 1852. A new species *Xyroptila kuznetzovi* **sp. n.** is described from Vietnam and Australia. *Pterophorus chionadelpha* (MEYRICK, 1929) is also reported for Thailand for the first time.

## Zusammenfassung

Die Arbeit enthält eine Checkliste von 18 Pterophoridae-Arten, die gegenwärtig aus Vietnam bekannt sind, einschließlich der Erstmachweise von *Nippoptilia vitis* (SASAKI, 1913), *N. cinctipedalis* (WALKER, 1864), *Stenoptilodes taprobanes* (FELDER & ROGENHOFER, 1875), *Stenodacma wahlbergi* (ZELLER, 1851) und *Diacrotricha fasciola* ZELLER, 1852. Eine neue Art, *Xyroptila kuznetzovi* **sp. n.**, wird aus Vietnam und Australien beschrieben. *Pterophorus chionadelpha* (MEYRICK, 1929) wird zusätzlich erstmals für Thailand angegeben.

## Introduction

At present, the plume moths of Vietnam are very poorly studied. There is only one special publication devoted to the Pterophoridae fauna of Tonkin in northern Vietnam (MEYRICK, 1929), where 6 species were reported, one of which, *Pterophorus (Alucita) chionadelpha* (MEYRICK, 1929), was described as a new one. Another species listed in this publication, *Trichoptilus adelphodes* MEYRICK, 1887, was later synonymised with *Megalorhipida leucodactylus* (FABRICIUS, 1794). *Ochyrotica concursa* WALSINGHAM, 1891, was erroneously reported; this species had been described from Sri Lanka and most probably is endemic to this island. The North of Vietnam is inhabited by another species, described later as *Ochyrotica yanoi* ARENBERGER, 1988. Ten species were reported from Vietnam in the world catalogue of the Pterophoridae by GIELIS (2003) without exact localities.

In addition to species already known from Vietnam, a new species of *Xyroptila* MEYRICK is described in this publication, and *Nippoptilia vitis* (SASAKI, 1913), *N. cinctipedalis* (WALKER, 1864), *Stenoptilodes taprobanes* (FELDER & ROGENHOFER), *Stenodacma wahlbergi* (ZELLER, 1851), *Diacrotricha fasciola* ZELLER, 1852, are reported from this country for the first time. Besides that, one more species remained unidentified because only females have been collected to date. There are no doubts that the real plume moth fauna of Vietnam is much richer than our current knowledge, which is very superficial. For example, 30 species of Pterophoridae are known for Taiwan (YANO & HEPPNER, 1992), so we may assume that their number in Vietnam should be similar.

The material for this article was obtained in different provinces of Vietnam by V. KUZNETZOV in 1988, A. SOCHIVKO in 2007, V. ZOLOTUHIN in 2006 as well as by V. ZOLOTUHIN and A. SOLOVYEV in 2008, and is kept now mostly in the collection of V. KOVTUNOVICH and P. USTJUZHANIN (Moscow and Novosibirsk, Russia). Other museums are stipulated and the following abbreviations are used for them in the text:

BMNH – the Natural History Museum, formerly the British Museum (Natural History) London, U. K.;

CVKPU – the collection of V. KOVTUNOVICH (Moscow) and P. USTJUZHANIN (Novosibirsk), Russia;

ZISP – Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia.

### **An annotated list of species of Vietnam**

#### ***Ochyrotica yanoi* ARENBERGER, 1988**

*Ochyrotica yanoi* ARENBERGER, 1988, Ent. Z., Frankfurt a. M. 98 (19): 276-279, fig. 3a-c. Type locality: Japan.

No material at our disposal. It was recorded from Vietnam by GIELIS (2003: 19).

Distribution: Japan, China, Vietnam, Taiwan, Philippines, India, Indonesia.

#### ***Stenoptilia zophodactyla* (DUPONCHEL, 1840)**

*Pterophorus zophodactylus* DUPONCHEL, 1840, in GODART & DUPONCHEL, Hist. nat. Lépid. Papillons Fr. 11: 668, pl. 314, fig. 4. Type locality: France.

The species was reported from Vietnam by MEYRICK (1929) and GIELIS (2003).

Distribution: Europe, Nepal, Japan, Rep. S. Africa, Kenya, Madagascar, Vietnam, Philippines, Australia, New Zealand, U.S.A., Mexico, Ecuador, Paraguay.

#### ***Stenoptilodes taprobanes* (FELDER & ROGENHOFER, 1875)**

*Amblyptilia taprobanes* FELDER & ROGENHOFER, 1875, Reise öst. Fregatte Novara (Zool.) 2 (Abt. 2): 2 (legend for Heterocera), plate 140, fig. 54. Type locality: Sri Lanka.

Material: 1 ♂, N. Vietnam, Ninh Binh Prov., Nho Quan Distr., Bong – Cuc Phuong vill., 360 m, N20°21', E 105°36', 6-9.X 2008, leg. V. ZOLOTUHIN (CVKPU).

Distribution: Everywhere in the tropics and subtropics.

***Nippoptilia vitis* (SASAKI, 1913)**

Colour plate 1, fig. 4

*Stenoptilia vitis* SASAKI, 1913, Gifu, Insect World: 3-5. Type locality: Japan.

*Oxyptilus formosanus* MATSUMURA, 1931, 6000 ill. Ins. Jap.: 1054, No. 2061. Type locality: [Formosa, Taito].

Material: 1 ♂, S. Vietnam, Da Lat vicinity, 1500-1700 m, 6.IV 2007, A. SOCHIVKO (CVKPU).

Distribution: Japan, Korea, Nepal, India, Thailand, Taiwan, Vietnam.

***Nippoptilia cinctipedalis* (WALKER, 1864)**

*Oxyptilus cinctipedalis* WALKER, 1864, List Specimens lepid. Insects Colln Br. Mus. 30: 935. Type locality: [Australia] "Moreton Bay".

*Nippoptilia minor* HORI, 1933, Oyo Dobutsugaku Zasshi 5 (2): 68, 70, fig. 4. Type locality: Japan.

*Trichoptilus eochrodes* MEYRICK, 1935, List of Microlepidoptera of Cheking, Kiangsu und Hunan: 45. Type locality: [China] "Hunan, Hoeng-Shan".

*Oxyptilus caryornis* MEYRICK, 1935 List of Microlepidoptera of Cheking, Kiangsu und Hunan: 46. Type locality: [China] "Tien-Mu-Shan".

Material: 1 ♂, N. Vietnam, Ninh Binh Prov., Nho Quan Distr., Bong – Cuc Phuong vill., 360 m, N20°21', E 105°36', 6-9.X 2008, leg. V. ZOLOTUHIN (CVKPU).

Distribution: Australia, Japan, China, Vietnam, Micronesia.

***Stenodacma wahlbergi* (ZELLER, 1852)**

*Pterophorus wahlbergi* ZELLER, 1852, Linn. Ent. 6: 346-348. Type locality: Rep. S. Africa.

Material: 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Me Linh Biological station, 60 m, N21°23', E 105°43', 11-13.X 2008, leg. V. ZOLOTUHIN (CVKPU).

Distribution: Saudi Arabia, Iran, Pakistan, Republic South Africa, Cameroon, St. Helena Island, Swaziland, Zimbabwe, Tanzania, Kenya, Madagascar, Comores, Reunion Island, Rodriguez Island, Mauritius, Seychelles, Vietnam.

***Stenodacma pyrrhodes* MEYRICK, 1889**

*Trichoptilus pyrrhodes* MEYRICK, 1889, Proc. Linn. Soc. N. S. Wales (2) 4: 1113. Type locality: Australia.

*Oxyptilus kinbane* MATSUMURA, 1931, 6000 ill. Ins. Jap.: 1054, No. 2063. Type locality: Japan.

The species was reported from Vietnam by GIELIS (2003).

Distribution: Pakistan, Nepal, Korea, Japan, Sri Lanka, India, Thailand, Vietnam, China, Taiwan, Australia.

***Xyroptila oenophanes* MEYRICK, 1908**

*Xyroptila oenophanes* MEYRICK, 1908, Trans. ent. Soc. Lond.: 480. Type locality: India, Bombay.

*Xyroptila tectonica* MEYRICK, 1914, Suppl. Entomologica 3: 46. Type locality: Taiwan.

The species was reported from Vietnam by MEYRICK (1929) from Cho ganh as *Xyroptila tectonica* and cited therefore later by GIELIS (2003).

Distribution: India, Indonesia, Vietnam, China, Taiwan.

***Xyroptila kuznetzovi* sp. n.**

Colour plate 1, figs 1, 2

Material: Holotype, ♂, S. Vietnam, 900 m, Sialai-Kontun, Tramlag Prov., 20 km N of Duenluoi, 26.II 1988, V. KUZNETZOV (ZISP). Paratypes: 1 ♂, Queensland, Brisbane, 14.IV 1899, DODD, WALSINGHAM Collection, B.M. 1910-427 (BMNH, Gen. pr. 21850); 1 ♂, Queensland, Toowong, 16.III 1898, DODD, WALSINGHAM Collection, B.M. 1910-427 (BMNH, Gen. pr. 21875).

Male (plate 1, fig.1). Fore wing length 10.5 mm. The head and tegulae dark-brown. Labial palpi evenly brown, 2 times longer than eye diameter, straight. Antennae chequered, dark-brown and light. Fore wings dark-brown with slight ochraceous spots. Wing apical part processed, outer margin of only the second lobe concave. Cilia on fore wing brown inside cleft, brown with two patches of light hairs along outer margin; there is a patch of dark scales at middle of hind margin. Hind wing evenly dark-brown, the 3<sup>rd</sup> lobe 2.5 times shorter than the 2<sup>nd</sup> one, 3<sup>rd</sup> lobe with a well expressed bunch of dark scales on its apex. Hind legs dark-brown, with white spots and rings.

Male genitalia (Colour plate 1, fig. 2). Valvae symmetrical, long and narrow. Tegumen wide at base and strongly narrowed to pointed apex. Uncus absent. Aedeagus relatively long, slender, strongly bent at apex.

Diagnosis. The new species is close to *Xyroptila oenophanes* MEYRICK in the male genitalia, shape of the valva and absence of uncus, but differs well from it by the absence of the sacculus on the valva and by different shape of the tegumen and aedeagus.

Etymology. The species is named in honour of the well-known Russian lepidopterologist Vladimir Ivanovich KUZNETZOV who collected the holotype of the new species in Vietnam.

***Sphenarches anisodactylus* (WALKER, 1864)**

*Oxyptilus anisodactylus* WALKER, 1864, List Specimens lepid. Insects Colln Br. Mus. 30: 934. Type locality: Sri Lanka.

Material: 1 ♀, C. Vietnam, Nighe An Prov., Pu Mat NP, Phuc Son vill., 130 m, N18°49', E104°58', 29.IX – 3.X 2008, leg. V. ZOLOTUHIN (CVKPU).

Distribution: Nepal, Japan, China, Sri Lanka, India, Taiwan, Thailand, Vietnam, Malaysia, Indonesia, Solomon Islands, New Guinea, Bismarck Islands, Australia, Cameroun, Seychelles, Reunion Island, Madagascar, Kenya, Tanzania, Zaire, Gambia, Guinea, Nigeria, Chad, Malawi, Swaziland, Ivory Coast, U.S.A., Brazil, Dominica, Grenada, Panama, Virgin Islands, Bahamas, St. Thomas, Puerto Rico, Peru, Paraguay, Fiji Islands, New Hebrides, Tonga Islands, New Caledonia, Palau, Bonin Island, Guam.

***Oxyptilus regulus* MEYRICK, 1906**

*Oxyptilus regulus* MEYRICK, 1906, J. Bombay nat. Hist. Soc. 17: 135. Type locality: Sri Lanka.

The species was recorded from Vietnam by MEYRICK (1929) and GIELIS (2003).

Distribution: Nepal, Sri Lanka, Vietnam, Australia.

***Megalorhipida leucodactylus* (FABRICIUS, 1794)**

*Pterophorus leucodactylus* FABRICIUS, 1794, Ent. Syst. 3(2): 346. Type locality: Virgin Islands.

*Trichoptilus adelphodes* MEYRICK, 1887, Trans. ent. Soc. Lond. 1887: 266. Type locality: Australia.

The species was recorded from Vietnam by MEYRICK (1929) as *Trichoptilus adelphodes* and cited therefore later by GIELIS (2003).

Distribution: Spain, Morocco, Israel, Lebanon, Jordan, Saudi Arabia, Yemen, Dubai, Oman, Iran, Pakistan, Somalia, Congo, Nigeria, Ivory Coast, Cameroun, Chad, Liberia, Sierra Leone, Gambia, Nigeria, Cape Verde Islands, Kenya, Tanzania, Swaziland, Rep. S. Africa, Uganda, Madagascar, Seychelles, Reunion, Mauritius, Ethiopia, China, Taiwan, Vietnam, Thailand, Malaysia, India, Sri Lanka, Maledives, New Guinea, Solomon Islands, Australia, U.S.A., Argentina, Chile, Paraguay, Brazil, Ecuador, Colombia, Panama, French Guyana, Mexico, Peru, Venezuela, Bahamas, Jamaica, St. Thomas, St. Vincent, Puerto Rico, Virgin Islands, Surinam, Galapagos Islands, Mariana Islands, Wake Island, Marshall Islands, Gilbert Islands.

***Diacrotricha fasciola* ZELLER, 1852**

Colour plate 1, fig. 3

*Diacrotricha fasciola* ZELLER, 1852, Linn. Ent. 6: 399. Type locality: Indonesia, Java.

Material: 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Me Linh Biological station, 60 m, N 21°23', E 105°43', 11-13.X 2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CVKPU).

Distribution: Indonesia, Philippines, Taiwan, China, Malaysia, Sri Lanka, India, New Guinea, Vietnam.

***Hellinsia lienigianus* (ZELLER, 1852)**

*Pterophorus lienigianus* ZELLER, 1852, Linn. Ent. 6: 380. Type locality: Lettland.

The species was reported from Vietnam by GIELIS (2003).

Distribution: West Europe, Russia, Japan, China, Korea, Taiwan, Philippines, Vietnam, Australia.

***Adaina microdactyla* (HÜBNER, [1813])**

*Alucita microdactyla* HÜBNER, [1813], Samml. eur. Schmett. 9: pl. 5, figs 26, 27. Type locality: Europe.

*Adaina subflavescens* MEYRICK, 1930, Exotic Microlepidoptera: 568. Type locality: Sumatra.

Material: 4 ♂♂, 2 ♀♀, N. Vietnam, prov. Lao Cai, Fan- Si-Pan Mts, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVKPU); 2 ♂♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Me Linh Biological station, 60 m, N 21°23', E 105°43', 11-13.X 2008, leg. V. ZOLOTUHIN & A. SOLOVYEV (CVKPU).

Distribution: Europe, Russia (the European part), Turkey, Israel, Iran, Georgia, Nepal, China, Japan, Vietnam, Indonesia, Philippines, Taiwan, New Guinea, Solomon Islands.

### ***Pterophorus albidus* (ZELLER, 1852)**

*Aciptilus albidus* Zeller, 1852, Linn. Ent. 6: 397. Type locality: South Africa.

*Aciptilia suffiata* Yano, 1963, Pacific Insects 5(1): 200-202, figs 4c, 94-96. Type locality: Japan, Okinawa.

The species was listed from Vietnam by GIELIS (2003).

Distribution: Japan, South Africa, Gambia, Mozambique, Nigeria, Kenya, Malawi, Tanzania, Zaire, Uganda, Cameroon, Chad, Ivory Coast, Zimbabwe, Zanzibar, Madagascar, Reunion Island, Thailand, Vietnam, Indonesia, Philippines, Kei, Irian Jaya, Australia, Fiji Islands.

### ***Pterophorus chionadelpha* (MEYRICK, 1929)**

*Alucita chionadelpha* MEYRICK, in de JOANNIS, 1929, Annl. Soc. ent. France 98: 707-708. Type locality: Cho ganh, Vietnam.

Distribution: Vietnam, Thailand (for the first time indicated here based on the following material collected by O. KOSTERIN: Thailand, Chon Buri Province, Pattaya env., Jomtien beach, in grass and herbage on a pond bank: 11. I 2006 – 2 ♂♂, 1 ♀; 14.I 2006 – 1 ♀; 21.I 2006 – 1 ♂).

### ***Pterophorus* sp.**

Material: 1 ♀, N. Vietnam, Lao Cai prov., Fan-Si-Pan Mts., 1500 m, 10-20.V 2006, V. ZOLOTUHIN (CVKPU); 1 ♀, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Me Linh Biological station, 60 m, N 21°23', E 105°43', 11-13.X 2008, leg. V. ZOLOTUHIN (CVKPU).

Two females at our disposal resemble *Pterophorus chionadelpha* (MEYRICK) and *Pterophorus lactipennis* (WALKER) externally, but with genetelia which differs significantly from the aforementioned species. Perhaps the present two females belong to *Pterophorus nigropunctatus* ARENBERGER, known from India and Thailand, but the female of that species is unknown so far.

Besides these 18 species of Pterophoridae, several other species which are new to science are found in Vietnam. Their descriptions are in preparation, but as some additional comparative material is needed, they will be discussed in detail in a future publication.

## **Acknowledgements**

We would like to express our sincere thanks to Vadim ZOLOTUHIN & Alexey SOLOVYEV (Uljanovsk) and Andrei SOCHIVKO (Moscow) for the field collecting in Vietnam, to Oleg



KOSTERIN for the translation of this text into English as well as to Vadim ZOLOTUHIN (Uljanovsk) for technical support during the preparation of this paper.

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# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Supplement 16

ISSN 0250-4413

Ansfelden, 16. Oktober 2009

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## The Carpenter Moths (Lepidoptera, Cossidae) of Vietnam

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### Abstract

This paper is an annotated list of the fauna of Cossidae of Vietnam, including 2 subfamilies, 16 genera and 30 species.

3 new genera, *Roepkiella* **gen. n.** (type-species *Cossus rufidorsia* HAMPSON, 1905), *Hollowiella* **gen. n.** (type-species *Hollowiella chanwu* YAKOVLEV & WITT, sp. n.), *Roerichiora* **gen. n.** (type-species *Zeuzera stigmatica* MOORE, 1879) and 3 new species, *Catopta tropicalis* **sp. n.**, *Hollowiella chanwu* **sp. n.**, and *Phragmacossia fansipangi* **sp. n.** are described from Vietnam. Moreover, the following species are described from adjacent regions: *Roepkiella siamica* **sp. n.** from Thailand and Myanmar, *Hollowiella bajin* **sp. n.** from Myanmar, and *Aholcocerus ihleorum* **sp. n.** from Thailand.

The following new combinations are proposed: *Aholcocerus verbeeki* (ROEPKE, 1957), **comb. n.**, *Roepkiella rufidorsia* (HAMPSON, 1905), **comb. n.**, *Roepkiella subfuscus* (SNELLEN, 1895), **comb. n.**, *Roepkiella celebensis* (ROEPKE, 1957), **comb. n.**, *Roepkiella javana* (ROEPKE, 1957), **comb. n.**, *Roepkiella loeffleri* (YAKOVLEV, 2006), **comb. n.**, *Hollowiella rama* (YAKOVLEV, 2006), **comb. n.**, *Chinocossus acronyctoides* (MOORE, 1879), **comb. n.**, *Phragmacossia dudgeoni* (ARORA, 1974), **comb. n.**, *Roerichiora stigmatica* (MOORE, 1879), **comb. n.**, *Roerichiora clara* (BRYK, 1950), **comb. n.**

12 species of Cossidae: *Wittocossus mokanshanensis* (DANIEL, 1945), *Roepkiella rufidorsia* (HAMPSON, 1905), *Chinocossus acronyctoides* (MOORE, 1879), *Zeuzera yuennani* DANIEL, 1940, *Zeuzera lineata* GAEDE, 1933, *Zeuzera rhabdota* JORDAN, 1932, *Xyleutes persona* LE GUILLOU, 1841, *Phragmataecia gummata* SWINHOE, 1892, *Phragmataecia innotata* (WALKER, 1865), *Roerichiora stigmatica* (MOORE, 1879), *Roerichiora clara* (BRYK, 1950), *Relluna nurella* (SWINHOE, 1894), *Panau adusta* (ROEPKE, 1957), *Panau stenoptera sumatrana* (ROEPKE, 1957) are reported for the fauna of Vietnam for the first time.

### Zusammenfassung

Die vorliegende Arbeit ist eine kommentierte Liste der Cossidae-Fauna von Vietnam, die 2 Subfamilien, 16 Gattungen und 30 Arten umfaßt.

3 neue Gattungen, *Roepkiella* **gen. n.** (Typus-Art *Cossus rufidorsia* HAMPSON, 1905), *Hollowiella* **gen. n.** (Typus-Art *Hollowiella chanwu* YAKOVLEV & WITT, sp. n.), *Roerichiora* **gen. n.** (Typus-Art *Zeuzera stigmatica* MOORE, 1879) und 3 neue Arten, *Catopta tropicalis* **sp. n.**, *Hollowiella chanwu* **sp. n.** und *Phragmacossia fansipangi* **sp. n.** werden aus Vietnam beschrieben. Ausserdem werden folgende Arten von angrenzenden Gebieten beschrieben: *Roepkiella siamica* **sp. n.** aus Thailand und Myanmar, *Hollowiella bajin* **sp. n.** aus Myanmar und *Aholcocerus ihleorum* **sp. n.** aus Thailand.

Die folgenden Neukombinationen werden vorgeschlagen: *Aholcocerus verbeeki* (ROEPKE, 1957), **comb. n.**, *Roepkiella rufidorsia* (HAMPSON, 1905), **comb. n.**, *Roepkiella subfuscus* (SNELLEN, 1895), **comb. n.**, *Roepkiella celebensis* (ROEPKE, 1957), **comb. n.**, *Roepkiella javana* (ROEPKE, 1957), **comb. n.**, *Roepkiella loeffleri* (YAKOVLEV, 2006), **comb. n.**, *Hollowiella rama* (YAKOVLEV, 2006), **comb. n.**, *Chinocossus acronyctoides* (MOORE, 1879), **comb. n.**, *Phragmacossia dudgeoni* (ARORA, 1974), **comb. n.**, *Roerichiora stigmatica* (MOORE, 1879), **comb. n.**, *Roerichiora clara* (BRYK, 1950), **comb. n.**

12 Cossidae-Arten, *Wittocossus mokanshanensis* (DANIEL, 1945), *Roepkiella rufidorsia* (HAMPSON, 1905), *Chinocossus acronyctoides* (MOORE, 1879), *Zeuzera yuennani* DANIEL, 1940, *Zeuzera lineata* GAEDE, 1933, *Zeuzera rhabdota* JORDAN, 1932, *Xyleutes persona* LE GUILLOU, 1841, *Phragmataecia gummata* SWINHOE, 1892, *Phragmataecia innotata* (WALKER, 1865), *Roerichiora stigmatica* (MOORE, 1879), *Roerichiora clara* (BRYK, 1950), *Relluna nurella* (SWINHOE, 1894), *Panau adusta* (ROEPKE, 1957), *Panau stenoptera sumatrana* (ROEPKE, 1957), werden erstmals für die Fauna von Vietnam gemeldet.

### Introduction

Nowadays Cossidae are one of the least studied groups of Macroheterocera. Examination of Asian carpenter moths in museums of Germany involved abundant collections from Vietnam preserved mostly in Thomas WITT Museum, Munich (MWM). Hitherto data on

Cossidae of Vietnam and adjacent territories were mentioned only in few papers (TAMS, 1924; CANDÈZE, 1927; de JOANNIS, 1929a, b; ROEPKE, 1957; SCHOORL, 1990; YAKOVLEV, 2004a, b, c, 2006). Hereby we communicate data on the distribution in Vietnam of 23 species, of which 12 are reported for the first time for that country, describe the following new taxa (3 new genera, 3 new species): *Roepkiella* YAKOVLEV & WITT, gen. n., *Hollowiella* YAKOVLEV & WITT, gen. n., *Roerichiora* YAKOVLEV & WITT, gen. n., *Hollowiella chanwu* YAKOVLEV & WITT, sp. n., *Catopta tropicalis* YAKOVLEV & WITT, sp. n., *Phragmacossia fansipangi* YAKOVLEV & WITT, sp. n. Additionally we describe 3 new species: *Roepkiella siamica* YAKOVLEV & WITT, sp. n., *Aholcocerus ihleorum* YAKOVLEV & WITT, sp. n. from N. Thailand and *Roepkiella bajin* YAKOVLEV & WITT, sp. n. from Myanmar.

### Abbreviations

- BMNH – The Natural History Museum (London, G.B.)  
IRSN – Koninklijk Belgisch Instituut voor Natuurwetenschappen (Bruxelles, Belgique)  
[Institut royal des Sciences naturelles de Belgique]  
MHUB – Museum für Naturkunde der Humboldt-Universität (Berlin, Germany)  
MNHN – Muséum National d’Histoire Naturelle (Paris, France)  
MNHS – Museum Natural History (Stockholm, Sweden)  
MSW – collection of Manfred STRÖHLE (Weiden, Germany)  
MWM – Museum of Thomas J. WITT (München, Germany)  
RMNH – Nationaal Natuurhistorisch Museum (Leiden, The Netherlands)  
RYB – collection of Roman V. Yakovlev (Barnaul, Russia)  
ZMUO – Zoological Museum of Oxford University (Oxford, G.B.)  
ZMUT – Zoological Museum of Tokio University (Japan)  
ZFMK – Zoologisches Forschungsinstitut und Museum A. Koenig (Bonn, Germany)

## Annotated list of species

### Family Cossidae LEACH, [1815]

### Subfamily Cossinae LEACH, [1815]

### *Catopta* STAUDINGER, 1899

#### *Catopta tropicalis* YAKOVLEV & WITT, sp. n.

Colour plate 2, fig. 1

Material. Holotype, ♂, Vietnam (N), Mt. Fan-si-pan, W-side, Chapa, 1700 m, 22°20'N, 103°40'E, 1600-1800 m, 15-25.04.1995, SINYAEV & loc. collectors leg. (MWM). Paratypes: 67 ♂♂, 15 ♀♀, the same locality (MWM); 1 ♂, N. Vietnam, Lao Cai Prov., Pass north of Mt. Fansipang, 1800 m, 9.10.1994, leg. Mamoru OWADA (ZMUT); 1 ♂, N. Vietnam, Lao Cai Prov., Sa Pa, Deo O Quy Ho, 1750 m, 14-17.05.1995, leg. Mamoru OWADA (ZMUT).

Description. Forewing length 16-18 mm. Forewing dark with a complicated streaky pattern characteristic for the genus. Transversal streaks are more expressed in basal, discal and submarginal wing zones. Postdiscal zone with a steel-grey area outwardly stressed with a diffuse ochraceous streak. Fringe evenly dark. Hindwing grey with an even fringe.

Male genitalia (Genitalia plate 1, fig. 1) of the shape typical for the genus, uncus and gnathos massive, uncus with a rounded apex, valvae broad with a processus on costal margin closer to its distal end. Juxta long, carina-shaped with two long lateral processes. Aedeagus short, thick, with an area densely set with short knobs in its central part; vesica with 11-13 spine-like cornuti.

Most close to *Catopta birmanopta* Bryk from which differs reliably by somewhat smaller size, a wider valva and presence of a large processus on the valva costal margin.

Distribution. Only known so far from the Fan-si-pan Mts in northern Vietnam.

### *Wittocossus* YAKOVLEV, 2004

#### *Wittocossus mokanshanensis* (DANIEL, 1945)

Colour plate 2, fig. 2

*Cossus mokanshanensis* DANIEL, 1945, Mitt. münch. ent. Ges. **35-39**: 227, pl. 1: fig. 2. Type locality: Mokanshan, Prov. Chekiang, China. Holotype: male (ZFMK) [examined].

Material. 1 ♂, Nordvietnam, prov. Hoa Binh, Tan Son, 74 km westl. Hoa Binh, 20°43'N; 105°00'E, M. HOFFMANN (MSW); 3 ♂♂, N. Vietnam, Ninh Binh Prov., Nho Quan distr., Bông-Cúc Phuong vill., 360 m, 20°21'N, 105°36'E, 6-9.X.2008, leg. V. ZOLOTUHIN (RYB); 1 ♂, Nord Vietnam, Ba Be Lake N.P., Prov. Cao Bang Phuc., 300 m, leg. Thomas IHLE, 12/2007, coll. Siegfried IHLE (RYB).

Distribution. S. China (Hubei, Sichuan, Guizhou, Chekiang, Kiangsu, Yunnan), N. Thailand (Chiangmai), N. Vietnam. This species is here reported from Vietnam for the first time.

***Roepkiella* YAKOVLEV & WITT, gen. n.**

Type species: *Cossus rufidorsia* HAMPSON, 1905, here designated.

Description. Moths small or intermediate in size. Thorax and abdomen densely covered with dark hairs. Antennae unipectinate with short branches. Forewing brown, wide, with rounded apex. Hindwing grey, without pattern.

Male genitalia: uncus triangular, pointed apically; tegumen small; gnathos arms intermediately thick and rather short, forming a small gnathos; valva oblong triangular with a membranous end and with a small crest at border of sclerotised and membranous parts; arms of transtilla thin, slightly curved, pointed apically. Juxta small. Saccus small, rounded. Aedeagus straight, rather short; vesica without cornuti, its opening occupying a dorsoapical position.

Diagnosis. The new genus well differs from the closely related genera: from *Pygmeocossus* YAKOVLEV, 2005 (type species – *Pygmeocossus tonga* YAKOVLEV, 2005) by unsplit valva, shorter arms of transtilla, absence of harpe; from *Hollowiella* YAKOVLEV & WITT, gen. n. by absence of lateral processes on the aedeagus, a pectinate antenna, a simple valva. As it will be shown elsewhere (YAKOVLEV, in litt.), the genus *Paracossus* HAMPSON, 1904 (type species – *Paracossus furcatus* HAMPSON, 1904) belongs to a quite different group characterised by a bipectinate antenna, bifurcate uncus and a peculiar process on the costal margin of the valva. A complete revision of the Indo-Malayan Cossinae must be undertaken later.

Presently the new genus includes the following species: *Roepkiella rufidorsia* (HAMPSON, 1905), **comb. n.**, *Roepkiella subfuscus* (SNELLEN, 1895), **comb. n.**, *Roepkiella celebensis* (ROEPKE, 1957), **comb. n.**, *Roepkiella javana* (ROEPKE, 1957), **comb. n.**, *Roepkiella loeffleri* (YAKOVLEV, 2006), **comb. n.**, *Roepkiella artushka* (YAKOVLEV, 2006), **comb. n.** and *Roepkiella thaika* (YAKOVLEV, 2006), **comb. n.**

Distribution. From India to Sulawesi.

Etymology. The new genus is named in honour of W. ROEPKE, a prominent Dutch entomologist who did so much for the exploration of Indonesian Lepidoptera.

***Roepkiella rufidorsia* (HAMPSON, 1905), comb. n.**

Colour plate 2, figs 3-4

*Cossus rufidorsia* HAMPSON, 1905, J. Bombay nat. Hist. Soc., **16**: 194. Type locality: Sikkim [E. India, Sikkim prov.]. Holotype: male (BMNH) [examined].

Material. 1 ♂, South Vietnam, Bao Loc, 20-27 April 1993, SINYAEV leg. (MWM); 1 ♂, N. Vietnam, Vinh Phu prov., Tam Dao, 930 m, 22-26.09.1994, Mamoru OWADA leg. (ZMUT); 1 ♂, Vietnam, Ninh Binh Gia Vien, Cuc Fuong, 160 m, 24-26.05.1995, M. OWADA leg. (ZMUT); 12 ♂♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1-4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB).

Distribution. From India to the Philippines. This is a new record for the fauna of Vietnam.

***Roepkiella siamica* YAKOVLEV & WITT, sp. n.**

Colour plate 2, fig. 5

Material. Holotype, ♂, Thailand, Changwat Nan, 30 km E of Pua, 1700 m, 1.03.1998, HREBLAY & SZABOKY leg. (GPrMWM-11798); Paratype, 1 ♂, Myanmar (Burma), 40 km N Myitkyina, Chano Kand vill., 235 m, 23-24.04.1998, MURZIN & SINYAEV leg. (GPrMWM-11802).

Description. Forewing length 18-22 mm. Thorax covered with white hairs above, abdomen with grey hairs. Forewing quite elongate, with relatively pointed apex. Fringe chequered, dark at veins and light between them. Forewing grey with a reticulate ornament throughout. Wing base darkened. There is only a narrow band going in postdiscal zone from costal margin to tornal angle. A dark area is situated in discal zone where a weakly expressed yellowish spot is visible in radial space. There is a light area basally of discal zone. Hindwing evenly dark-grey with an evenly grey fringe.

Male genitalia (Genitalia plate 1, fig. 2): Uncus triangular, quite wide, pointed apically; tegumen small, gnathos arms thick, short and forming a small gnathos covered with fine spinules; valva triangular, strongly narrowing towards apex; on its costal margin with a small finger-like crest at border between sclerotised and membranous part; arms of transtilla slightly curved, relatively stout with a pointed apex. Juxta small, saddle-shaped. Saccus small, rounded. Aedeagus straight, short and stout; vesica without cornuti, opening of vesica occupies a dorsoapical position extending for about half of aedeagus length.

Diagnosis. The new species well differs from all the known species of the genus and is most closely related to *Roepkiella javana* (ROEPKE, 1957), comb. n., described from Java, from which it differs by the absence of a broad dark area in the central part of the forewing and longer gnathos arms.

Distribution. Known so far only from Thailand and Myanmar.

***Roepkiella loeffleri* (YAKOVLEV, 2006), comb. n.**

Colour plate 2, fig. 6

*Paracosus loeffleri* YAKOVLEV, 2006, *Tinea*, Tokyo, **19** (3): 194, figs 7, 43. Type locality: C. Vietnam, Prov. Thua Thien - Hue, Kreis A Luoi, Gemeinde A Rong, Dorf Khe Cha Lenh.

Material. Holotype, ♀, "C. Vietnam, Prov. Thua Thien - Hue, Kreis A Luoi, Gemeinde A Rong, Dorf Khe Cha Lenh, 809 m, Naturschutzgebiet - Regenwald, 16°05.374'N; 107°27.559', 12.-13.08.2004, leg. S. LOEFFLER, P. SPONA & T. FREDERKING" (MSW).

Distribution. C. Vietnam, prov. Thua Thien.

***Hollowiella* YAKOVLEV & WITT, gen. n.**

Type species: *Hollowiella chanwu* YAKOVLEV & WITT, sp. n., here designated.

Description. Small dark-coloured moths. Thorax and abdomen covered with dark hairs. Antenna unpectinated. Forewing brownish, wide, with rounded apex. Hindwing dark, patternless. Uncus wide, triangular, ending in a sclerotised patch; gnathos arms intermediate in length and by fusion forming a small gnathos covered with sparse



spinules. Valva with a wide base and gradually tapering to apex; with a membranous caudal end. A processus or processes present on valval costal margin at border between sclerotised and membranous parts and a small sclerotised crest on valval inner margin. Arms of transtilla narrow, long, with a pointed apex, slightly curved and diverging sidewise. Juxta with lateral processes with sharply upturned rounded apices. Saccus small. Aedeagus stout, intermediate in length, with small lateral processes at sides of vesica opening, which occupies a dorso-apical position; vesica with a small cornutus.

Diagnosis. The new genus well differs from the close genera *Pygmeocossus* YAKOVLEV, 2005 (type species – *Pygmeocossus tonga* YAKOVLEV, 2005) and *Roepkiella* YAKOVLEV & WITT, **gen. n.** by the unpectinated antenna, dark coloration, presence of a cornutus on the vesica and lateral processes on the aedeagus.

The genus includes 4 species: *Hollowiella chanwu* YAKOVLEV & WITT, **sp. n.**, *Hollowiella xishuanbannaensis* (CHOU & HUA, 1986), **comb. n.**, *Hollowiella bajin* YAKOVLEV & WITT, **sp. n.**, and *Hollowiella rama* (YAKOVLEV, 2006), **comb. n.**

Distribution. Thailand, Vietnam, Myanmar.

Etymology. The new genus is named in honour of J. D. HOLLOWAY, a prominent British entomologist, biogeographer, and expert in the insular faunas.

***Hollowiella chanwu* YAKOVLEV & WITT, sp. n.**

Colour plate 2, fig. 7

Material. Holotype, ♂, N. Vietnam, Yen Bai, An-Chy, 21°42N, 104°18E, primary forest, 05.1996, ex coll. SCHINTLMEISTER (GPrMWM-11806) (MWM); Paratype: 1 ♂, same data (MWM).

Description. Forewing length 15 mm. Thorax and abdomen densely covered with dark hairs. Forewing wide with a rounded apex, brown with slight streaky pattern more expressed in postdiscal area; discal zone with a wide dark-brownish area. Hindwing brown, patternless.

Male genitalia (Genitalia plate 1, fig. 3): Uncus wide, triangular, ending with a small sclerotised patch. Gnathos arms medium-long, forming a small gnathos sparsely covered with spinules. Valvae with broad bases and gradually tapering apically, hard to spread. At border between sclerotised and membranous valva parts, there are two small processes on costal margin and a thin sclerotised crest on inner surface. Arms of transtilla thin and long with a pointed apex, slightly curved and sidewise diverging. Juxta with lateral processes with apices sharply upturned and rounded, and also with a small processus below. Saccus small. Aedeagus relatively thick, medium-long, with two lateral processes at sides of vesica opening; vesica with a small cornutus. Vesica opening occupies a dorso-apical position and extends for one fourth of aedeagus length.

Distribution. Only known from northern Vietnam.

Etymology. Chanwu – the sacral Vietnamese kingdom.

***Hollowiella bajin* YAKOVLEV & WITT, sp. n.**

Colour plate 2, fig. 8

Material. Holotype, ♂, Myanmar (Burma), 25 km E Putao, env. Nan Sa Bon vill., 800 m, 6-9.05.1998, MURZIN & SINYAEV leg. (GPrMWM-11797); Paratypes: 2 ♂♂, the same data (MWM).

Description. Forewing length 14-15 mm. Forewing with a black discal band, brownish proximally and grey distally of it, with a black streaky ornament. Hindwing dark grey, patternless.

Male genitalia (Genitalia plate 2, fig. 4) as in the previous species but juxta much smaller, its upper lateral processes club-like, there are also small pointed lateral processes directed below and one central lower triangular processus. Teeth on valval costal margin smaller, arms of transtilla slightly curved, almost straight.

Distribution. Only known from the type locality in Myanmar.

Etymology. Bajin – the sacral Burman king.

### ***Chinocossus* YAKOVLEV, 2006**

#### ***Chinocossus vjet* YAKOVLEV, 2006**

Colour plate 2, fig. 9

*Chinocossus vjet* YAKOVLEV, 2006, Tinea, Tokyo, **19** (3): 197, figs 10, 46. Type locality: Vietnam, Hanoi.

Material. Holotype, ♂, Vietnam, Hanoi, 6.1979, M. Hlava leg., coll. KR. KRUSEK (ZFMK).

Distribution. Known only from the type locality.

#### ***Chinocossus acronyctoides* (MOORE, 1879), comb. n.**

Colour plate 2, figs 10-11

*Brachylia acronyctoides* MOORE, 1879, Proc. zool. Soc. Lond. **1879**: 411. Type locality: Bombay [India]. Syntype: male (BMNH) [examined].

Material. 1 ♂, N. Vietnam, Yen Bai, An-Chy, 21°42'N, 104°18'E, primary forest, 05.1996, ex coll. SCHINTLMEISTER (GPrMWM-11800); 1 ♂, N. Vietnam, Vinh Phu prov., Tam Dao, 930 m, 22-26.09.1994, Mamoru OWADA leg. (ZMUT); 5 ♂♂, N. Vietnam, Ninh Binh Prov., Nho Quan distr., Bông-Cúc Phuong vill., 360 m, 20°21'N, 105°36'E, 6-9.X.2008, leg. V. ZOLOTUHIN (RYB).

Distribution. Pakistan, India, China (Yunnan), Vietnam (new record).

Note. A study of the BMNH collection allowed to correct the taxonomical position of *Brachylia acronyctoides* MOORE, 1879 (Type locality: Bombay). The genitalia structure (Genitalia plate 1, fig. 5) left no doubt that this species belongs to the genus *Chinocossus* YAKOVLEV, 2006. So we propose a new combination: *Chinocossus acronyctoides* (MOORE, 1879), **comb. n.** According to our and literature data, this little-known species is distributed in India, Pakistan (ARORA, 1976), S. China (Yunnan (HUA et al., 1990), Hainan Isl., Guanxi) and N. Vietnam.

### ***Aholcocerus* YAKOVLEV, 2006**

#### ***Aholcocerus ihleorum* YAKOVLEV & WITT, sp. n.**

Colour plate 2, fig. 12

Material. Holotype, ♂, N. Thailand, Doi Kham, Chiang Mai, 400 m, 19.04.2006, leg. Thomas IHLE, coll. Siegfried IHLE (GPrWMW-11783); Paratype, ♂, same data (MWM).

Description. Forewing length 16-17.5 mm. Antenna unpectinated. Thorax and abdomen densely covered with grey hairs. Forewing rather long and with a relatively pointed apex; grey with a reticulate pattern. There are two narrow dark bands going from costal margin: postdiscal one (directed towards tornus) and discal one (parallel to postdiscal one and directed towards the hind margin of the wing). There is a dark area between these bands with a weakly expressed yellowish spot in radial space. Proximally of discal band there is a light-grey area, wing base somewhat darkened. Fringe chequered. Hindwing patternless, dark grey, with chequered fringe.

Male genitalia (Genitalia plate 1, fig. 6) typical for the genus. Uncus blunt triangular, apically with a small strongly sclerotised hook. Gnathos arms not long, narrow, forming a small rounded gnathos covered with spinules. Valva not long, apically narrowed in a lancet-like manner, consisting of a sclerotised proximal and membranous distal parts, which occupy about one third of valva length; there is a crest with transversal wrinkling on valval costal margin. Arms of transtilla long, narrow, sable-like curved and strongly pointed. Juxta triangular with two long lateral widely diverging processes. Saccus small, and reaching relatively far behind. Aedeagus relatively thick, shorter than valva, straight; vesica opening occupies a dorso-apical position and comprises about half of aedeagus length. Vesica without cornuti.

Female unknown.

Diagnosis. The new species well differs from the two other known representatives of the genus, *Aholcocerus ronkayorum* YAKOVLEV, 2006 (type locality: Islamabad, Pakistan) and *Aholcocerus verbeeki* (ROEPKE, 1957), **comb. n.** (type locality: Java) by a number of characters: two, not three bands on forewing, presence of a small ochraceous spot on the forewing, the gnathos arms substantially shorter and somewhat thicker.

Distribution. This species is known only from 2 specimens from N. Thailand.

Etymology. The new species is named in honour of German entomologists Thomas IHLE and Siegfried IHLE.

Note. There is no doubt that a specimen from the Nikobar islands mentioned by ARORA (1976: 41-43) belongs to the genus *Aholcocerus* YAKOVLEV, 2006.

## Subfamily Zeuzerinae BOISDUVAL, [1828]

### *Zeuzera* LATREILLE, 1804

#### *Zeuzera multistrigata* MOORE, 1881

Colour plate 2, fig. 13

*Zeuzera multistrigata* MOORE, 1881, Proc. zool. Soc. Lond. **1881**: 327. Type locality: Darjeeling. Holotype: male (BMNH) [examined].

Literature: de JOANNIS, 1929b: 559-560.

Reported by de JOANNIS for Hoang so phi, Lao kay and Cha pa.

Material. 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 1-5.5.1993, SINYAEV, SIMONOV leg. (MWM); 315 ♂, 2 ♀♀, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, 22°15'N, 103°46'E; 06.1994, SINYAEV & einheim. Sammler leg. (MWM); 2 ♂♂, Vietnam, Sa Fa, 8-12.06.1990, KAFTAN leg. (MSW).

Distribution. SE. Russia (Primorskii Krai), Japan, Korea, Nepal, India, Myanmar, Vietnam, Thailand, Pakistan, China, Laos.

***Zeuzera yuennani* DANIEL, 1940**

Colour plate 2, fig. 14

*Zeuzera yuennani* DANIEL, Mitt. münch. ent. Ges. **30**: 1016. Type locality: North Yunnan, Li-Kiang. Holotype: male (ZFMK) [examined].

Material. 1 ♂, Vietnam, Thue Thien Hue prov., 37 km W Hue, Phong Dien Nat. Res., 16°31'N, 107°13'E, disturbed forest, 22.03.-6.04.2001, R. de JONG leg. (RMNH).

Distribution. China (Sichuan, Yunnan), Vietnam (new record).

***Zeuzera coffeae* NIETNER, 1861**

Colour plate 2, figs 15-16

*Zeuzera coffeae* NIETNER, 1861, Enemies of Coffee Tree: 21-22. Type locality: Ceylon. Holotype: larva [lost, not examined].

Literature: de JOANNIS, 1929b: 559.

Reported by de JOANNIS for Hanoi, Phu lang thuong and Cho ganch.

Material. 1 ♂, North Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, 22°15'N, 103°46'E; 06.1994, SINYAEV & einheim. Sammler leg. (MWM); 1 ♂, Vietnam (N), Ben Nat, Park 40 km SW Than Hoa, 18°40'N, 105°40'E, 200 m, SINYAEV & SIMONOV leg. (MWM); 1 ♂, S. Vietnam, Ma Dom, 9.1.1990 (MWM); 1 ♂, Vietnam, Ha Tay prov., Ao Vua, 70 m, 27.04.1995, M. OWADA leg. (ZMUT); 1 ♂, Vietnam, Ninh Binh Gia Vien, Cuc Fuong, 160 m, 26-28.04.1996, M. OWADA leg. (ZMUT); 5 ♂♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 11-13.X.2008, leg. V. ZOLOTUHIN (RYB); 12 ♂♂, N. Vietnam, Ninh Binh Prov., Nho Quan distr., Bông-Cúc Phuong vill., 360 m, 20°21'N, 105°36'E, 6-9.X.2008, leg. V. ZOLOTUHIN (RYB).

Distribution. From S. Pakistan to New Guinea and the Solomons Isl.

***Zeuzera conferta* WALKER, 1885**

Colour plate 2, fig. 17

*Zeuzera conferta* WALKER, 1856, List Lep. Het. Brit. Mus. **7**: 1536. Type locality: Silhet. Holotype: female (BMNH) [examined].

Literature: de JOANNIS, 1929b: 559.

Noted by de JOANNIS for Hanoi.

Material. 1 ♂, Hoa, Tonkin (IRSN); 1 ♂, Vietnam, Ninh Binh Gia Vien, Cuc Fuong, 160 m, 2.05.1999, Y. KISHIDA leg. (ZMUT).

Distribution. Laos, Thailand, India, Indonesia, Brunei, Vietnam.

***Zeuzera lineata* GAEDE, 1933**

Colour plate 3, fig. 18

*Zeuzera lineata* GAEDE, 1933, in Seitz, Gross-Schmett. Erde **10**: 812. Type locality: Kina Balu, Borneo. Holotype: male (MHUB) [examined].

Material. 12 ♂♂, N. Vietnam, Tay Nguen Plateau, Mt. Ngoc Linh, 900-1400 m, 15°02'N, 107°59' E, 10-25.08.1996, SINYAEV & AFONIN leg. (MWM); 3 ♂♂, S. Vietnam, Bach-Ma Nat. Park, 16°10'N; 107°54' E, 1200 m, 26.07.-6.08.1996, SINYAEV & AFONIN leg. (MWM); 4 ♂♂, Nord-Vietnam, Yen Bai, An-chy, 21°42'N; 104°18' E, Mai 1996 (MWM).

Distribution. Borneo, continental Malaysia, Vietnam (new record).

***Zeuzera indica* HERRICH-SCHÄFFER, 1854**

Colour plate 3, fig. 19

*Zeuzera indica* HERRICH-SCHÄFFER, 1854, Samml. Aussereur. Schmett. 1: 58, fig. 166. Type locality: Silhet. Holotype: female (MNHN) [examined].

Literature: de JOANNIS, 1929b: 559.

Reported by de JOANNIS for Hanoi and Hoang su phi.

Material. 1 ♂, N. Vietnam, Vinh Phu prov., Tam Dao, 930 m, 22-26.09.1994, Mamoru OWADA leg. (ZMUT); 1 ♂, Vietnam, Ninh Binh Gia Vien, Cuc Fuong, 160 m, 2.05.1999, Y. KISHIDA leg. (ZMUT); 3 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB).

Distribution. India, Nepal, S. China, Vietnam, Myanmar, Laos, Thailand, Malaysia, the Philippines, Indonesia.

***Zeuzera rhabdota* JORDAN, 1932**

Colour plate 3, fig. 20

*Zeuzera rhabdota* JORDAN, 1932, Mem. Mus. Hist. Nat. Belg. 4 (6), hors serie: 24-25. Type locality: Sumatra. Holotype: male (IRSN) [examined].

Material. 1 ♂, N. Vietnam, Tam Dao, (Sek Wald), 60 km NW Hanoi, 950 m, 21°34'N 105°20'E, April 1995, V. SINYAEV leg. (MWM); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB); 1 ♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 16°02'N, 107°51'E, 19-22.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB); 1 ♂, N. Vietnam, Ninh Binh Prov., Nho Quan distr., Bông-Cúc Phuong vill., 360 m, 20°21'N, 105°36'E, 6-9.X.2008, leg. V. ZOLOTUHIN (RYB).

Distribution. Myanmar, Thailand, Vietnam (new record), the Philippines (Palawan Island), Malaysia, Indonesia (Sumatra, Borneo).

***Chalcidica* HÜBNER, 1816**

***Chalcidica minea* (CRAMER, 1779)**

Colour plate 3, figs 21-22

*Phalaena (Bombyx) minea* CRAMER, 1779, Papill. Exot. 2: 52, pl. 131, fig. D. Type locality: Batavia (now Jakarta). Type material is lost.

Literature: de JOANNIS, 1929a: 551.

Reported by de JOANNIS for Chi ne and Cho ganch.

Material. 2 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34N, 105°20E, 1-5.5.1993, SINYAEV, SIMONOV leg. (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, 22°15N, 103°46E; 06.1994, SINYAEV & einheim. Sammler leg. (MWM); 1 ♂, S. Vietnam, Bao Loc (Sec. Wald), Rung Cat Tien, 1500 m, 11°32 N; 107°48E, 10-20.12.1992, SINYAEV, SIMONOV leg. (MWM); 3 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB); 1 ♂, N. Vietnam, Ninh Binh Prov., Nho Quan distr., Bông-Cúc Phuong vill., 360 m, 20°21'N, 105°36'E, 6-9.X.2008, leg. V. ZOLOTUHIN (RYB).

Distribution. From India to New Guinea and the Solomon Isl.

### *Xyleutes* HÜBNER, 1816

*Xyleutes persona* LE GUILLOU, 1841      Colour plate 3, fig. 23, colour plate 4, fig. 24

*Xyleutes persona* Le Guillou, 1841, Revue Zool. 4: 257. Type locality: Samarang [Java]. Holotype: male (MNHN) [examined].

Material. 2 ♂♂, Vietnam sept., Plato Tay Nguen, Mt. Ngoc Linh, 900-1400 m, 15°02 N, 107°59 E, 10-25. 08.1996, SINYAEV & AFONIN leg. (MWM); 2 ♂♂, N. Vietnam, Yen Bai, Dorf An Fu, 800 m, 22°12N, 104°40E, Mai 1996, BURAKOV, SAVKIN & MISHUK leg. (MWM); 1 ♂, Nord-Vietnam, Mt. Fan-si-pan, Cha Pa, 1700 m, 22°15N, 103°46E; 06.1994, leg. SINYAEV & einheim. Sammler (MWM).

Distribution. From India to New Guinea. The species is indicated for Vietnam for the first time.

*Xyleutes strix* (LINNAEUS, 1758)      Colour plate 4, figs 25-26

*Phalaena Noctua strix* LINNAEUS, 1758, Syst. Nat. Ed. 10 (1): 508. Type locality: Java. Type material is lost.

Literature: de JOANNIS, 1929a: 551.

Reported by de JOANNIS for Hoang su phi.

Material. 1 ♂, Vietnam sept., Plato Tay Nguen, Mt. Ngoc Linh, 900-1400 m, 15°02 N, 107°59 E, 10-25. 08.1996, SINYAEV & AFONIN leg. (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34N, 105°20E, 1-5.5.1993, SINYAEV, SIMONOV leg. (MWM); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB).

Distribution. From India to New Guinea and the Solomons.

Note. The type locality is probably Java but this is, however, uncertain. A wrong locality (America meridionali – South America) is given in the original description, but LINNAEUS indicated by the letters M[usei] L[udovicae] U[lrica] that he had a specimen to examine. CLERCK (1764, Icones Insect. rariorum 2: pl. 51) illustrated this specimen. ROEPKE (1957) considered that CLERCK's figure possibly represented a female from Java, and so restricted the type locality to this island (PITKIN & JENKINS, 2007).

***Duomitus* BUTLER, 1880**

***Duomitus ceramicus* (WALKER, 1865)**

Colour plate 5, figs 27-28

*Zeuzera ceramica* Walker, 1865, List Specimens lepid. Insects Colln. Br. Mus. **32**: 587. Type locality: Ceram, Amboina. Holotype: male (ZMUO) [examined].

Literature: de JOANNIS, 1929a: 550-551.

Reported by de JOANNIS for Lao kay.

Distribution. From India to New Guinea and the Solomons Isl.

***Phragmataecia* NEWMAN, 1850**

***Phragmataecia impura* HAMPSON, 1891**

Colour plate 5, figs 29-30

*Phragmataecia impura* Hampson, 1891, Ill. Lep. Het. B. M. **8**: 66, pl. 144: fig. 7. Type locality: Nilgiris. Holotype: female (BMNH) [examined].

Literature: de JOANNIS, 1929a: 551.

Reported by de JOANNIS for An chau and Tuyen quang.

Material. 6 ♂♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, April 1995, SINYAEV leg. (MWM); 1 ♂, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, 2400 m, 22°15'N, 103°46'E; 8-29.05.1993, SINYAEV & SIMONOV leg. (MWM); 1 ♂, N. Vietnam, Vinh Phu Prov., Tam Dao, 930 m, 5-8.05.1999, leg. Y. KISHIDA (ZMUT); 1 ♂, N. Vietnam, Ha Tay prov., Ao Vua, 70 m, 27.04.1995, M. OWADA leg. (ZMUT).

Distribution. From India to Thailand and Vietnam.

***Phragmataecia gummata* SWINHOE, 1892**

Colour plate 5, figs 31-32

*Phragmataecia gummata* SWINHOE, 1892, Cat. Lep. Mus. Oxford: 285, pl. 8, fig. 14. Type locality: Java. Holotype: male (ZMUO) [examined].

Material. 2 ♂♂, Nord-Vietnam, Mt. Fan-si-pan, Cha Pa, 1700 m, 22°15'N, 103°46'E; 06.1994, SINYAEV & einheim. Sammler leg. (MWM); 1 ♂, 2 ♀♀, N. Vietnam, Yen Bai, An-chy, 21°42'N, 104°18'E, primary forest, ex coll. SCHINTLMEISTER (MWM); 4 ♂♂, 3 ♀♀, Süd Vietnam, Bao Lok, (Sek Wald), Rung Kat Tien, 1500 m, 11°32'N; 107°48'E, 10-20.12.1992, SINYAEV & SIMONOV leg. (MWM).

Distribution. From Myanmar to N. Indonesia. New record for Vietnamese Fauna.

***Phragmataecia innotata* (WALKER, 1865)**

Colour pate 5, fig. 33

*Zeuzera innotata* WALKER, 1865, List Lep. Brit. Mus. **32** (Suppl. 2): 587. Type locality: Shanghai. Holotype: male (BMNH) [examined].

Material. 3 ♂♂, 1 ♀, Vietnam mer., Plateau TayNguyen Mt., NgocLinh, 900-1400 m, 10-25.8.1996, SINYAEV & AFONIN leg. (MWM); 1 ♂, S. Vietnam, Kon Tum prov., Dac Glei, 15°07'N, 107°42'E, 700 m, 8.8.1996, SINYAEV & AFONIN leg. (MWM); 2 ♂♂, N. Vietnam, Yen Bai, An-chy, 21°42'N, 104°18'E, primary forest, ex coll. SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mai-Chau, 20°50'N, 104°50'E, 40 km SE Mou-Chau, 1400 m, 7-14.4.1995, 1400 m, SINYAEV leg. (MWM); 1 ♂, N. Vietnam, Cao Bang prov., Cum Cuoi, 400 m, 30.09-2.10.1994, M. OWADA leg. (ZMUT); 3 ♂♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 11-13.X.2008, leg. V. ZOLOTUHIN (RYB).

Distribution. SE China, new record for Vietnam.

### ***Phragmataecia parvipuncta* (HAMPSON, 1893)**

Colour plate 5, figs 34-35

*Cossus parvipunctus* Hampson, 1893, Fauna Br. India (Moths) 1: 306. Type locality: Naga-Hills. Holotype: male (BMNH) [examined].

Literature: de JOANNIS, 1929a: 551

Was noted by de JOANNIS for Cho ganh, Phu tho, Yen bai, An chau and Hoang so phi.

Material. 8 ♂♂, N. Vietnam, 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.05.1993, SINYAEV & SIMONOV leg. (MWM); 1 ♂, N. Vietnam, Mai-Chau, 20°50'N, 104°50'E, 40 km SE Mou-Chau, 1400 m, 7-14.4.1995, 1400 m, SINYAEV leg. (MWM); 1 ♂, N. Vietnam, Fan-si-pan, Cha-pa, 2400 m, Maj 1993, SINYAEV & SIMONOV leg. (MWM); 2 ♂♂, N. Vietnam, Hoa Binh Prov., Mai Chau, Deo Thung He, 700 m, 29.04.1995, leg. OWADA (ZMUT); 1 ♂, N. Vietnam, Vinh Phu Prov., Tam Dao, 930 m, 16-17.06.1997, leg. OWADA (ZMUT); 1 ♂, N. Vietnam, Son La Prov., Truong Yen, 950 m, 30.04-1.05.1995, leg. OWADA (ZMUT); 1 ♂, N. Vietnam, Ha Tay prov., Ao Vua, 70 m, 27.04.1995, M. OWADA leg. (ZMUT).

Distribution. From India to Vietnam.

### ***Phragmacossia* SCHAWERDA, 1924**

#### ***Phragmacossia fansipangi* YAKOVLEV & WITT, sp. n.**

Colour plate 5, fig. 36

Material. Holotype, ♂, Nord Vietnam, Mt. Fan-si-pan, Cha pa, 22°17'N, 103°44'E; 25-30.03.1995, SINYAEV & SCHINTLMEISTER leg. (MWM); Paratypes: 1 ♀, the same data, 1700 m, 22°15'N, 103°46'E; 06.1994, leg. SINYAEV & einheim. Sammler (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, April 1995, SINYAEV leg. (MWM); 1 ♂, Hanoi, 4. 1979, M. HLAVA leg., ex coll. KRUŠEK (ZFMK).

Description. Forewing length 22-24 mm. Thorax and abdomen densely covered with yellowish hairs. Forewing yellowish with a suffusion of small black dots; discal zone with a narrow light-grey band; postdiscal zone with a row of small black streaks; fringe chequered, light between veins and dark at veins. Hindwing patternless, brownish-yellow, fringe chequered.

Male genitalia (Genitalia plate 2, fig. 7): Uncus long with a rounded apex; tegumen robust; gnathos completely reduced; valva long, curved, without processes or crests and with a small incision on its lower margin; juxta very large, with two ribbon-like



processes as long as half of valva length; saccus small, rounded. Aedeagus thick; vesica with a fine punctuation, with a long patch of sclerotisation and a robust cornutus.

Diagnosis. Closest to *Phragmacossia dudgeoni* (ARORA, 1974), **comb.n.** (Type locality: Bhutan), from which it differs by a light coloration, a peculiar grey band in the forewing discal zone, narrower lateral juxta processes and a somewhat longer uncus.

### ***Roerichiora* YAKOVLEV & WITT, gen. n.**

Type species: *Zeuzera stigmatica* MOORE, 1879, here designated.

Description. Medium- and large-sized moths. Antenna bipectinate throughout its length. In males, pectination long in its proximal half and very fine in distal half; female antenna very thin with a very fine pectination. Abdomen very long. Wings light-yellow with a very peculiar reticulate ornament and an orange spot in the discal zone of the forewing at cubital veins. Hindwing patternless, light yellow. Fringe evenly light on both wings.

Male genitalia (Genitalia plate 2, fig. 8, *Roerichiora stigmatica*; fig. 10, *Roerichiora clara*): Uncus triangular with a sclerotised apex; tegumen medium-sized; gnathos completely reduced; valva narrow, long, tapering to apex; juxta with two long up-directed lateral processes; saccus small, semicircular. Aedeagus thick, short with longitudinal ribs; vesica with a large cornutus.

Female genitalia (Genitalia plate 2, fig. 9, *Roerichiora stigmatica*) transformed into an ovipositor. Papillae anales conical, with ribs; apophyses anteriores shorter than apophyses posteriores. Ostium cup-like, immersed; ductus thick and relatively short; bursa sac-like, small, without signa, a small additional bursa emerging from its lateral surface.

Diagnosis. The new genus is closest to the genus *Lakshmia* YAKOVLEV, 2004 (type species: *Lakshmia zolotuhini* YAKOVLEV, 2004) from which it distinctly differs by the peculiar wing pattern, a broader uncus, narrow valva strongly narrowing towards apex, conical and pointed papillae anales.

Distribution. India, Nepal, Bhutan, N. Vietnam, Myanmar, N. Thailand.

Etymology. The new genus is named in honour of the ROERICH family (Nikolai, Elena, Svyatoslav), prominent Russian indologists, philosophers, ethnographers and artists.

### ***Roerichiora stigmatica* (MOORE, 1879), comb. n. Colour plate 5, figs 37-38**

*Zeuzera stigmatica* MOORE, 1879, Descr. Indian Lep. Atk.: 86. Type locality: Darjeeling. Holotype: male (MHUB) [examined].

Material. 1 ♂ & 6 ♀♀, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, 22°20N, 103°40E; 10.06.-6.07.1994, SINYAEV leg. (MWM); 1 ♀, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, 22°15N, 103°45E; 5.07.1994, BRECHLIN & SCHINTLMEISTER leg. (MWM).

Distribution. India, Nepal, Bhutan, N. Vietnam (new record), N. Thailand.

***Roerichiora clara* (BRYK, 1950), comb. n.**

Colour plate 5, fig. 39

*Xyleutes clara* Bryk, 1950, Ark. Zool., **42** A (19): 47, pl. III: fig. 1. Type locality: Mekane, 90 km E of Moulmein, Tenasserim, Burma. Holotype: male (MNHS) [examined].

Material. 2 ♂♂, Süd Vietnam, Bao Lok, (Sek. Wald), Rung Kat Tien, 1500 m, 11°32'N; 107°48'E, 10-20.12.1992, SINYAEV & SIMONOV leg., GPrMWM: 9057 (MWM); 1 ♂, C. Vietnam, Thua Thien Hue, Bah Ma, 1200 m, 7-11.06.2002, M. OWADA leg. (ZMUT).

Distribution. India, Nepal, Bhutan, Myanmar, Vietnam (new record).

***Bergaris* SCHOORL, 1990**

***Bergaris ruficeps* (de JOANNIS, 1929)**

Colour plate 5, fig. 40

*Azygophleps ruficeps* de JOANNIS, 1929a, Anns Soc. ent. France **48**: 551-552, pl. 3: fig. 18. Type locality: Hanoi. Holotype: male (MNHN) [examined].

Material. 1 ♂, N. Vietnam, Yen Bai, An-Chy, 21°42'N, 104°18'E, primary forest, 05.1996, ex coll. SCHINTLMMEISTER (MWM); 1 ♂, N. Vietnam, Tam-Dao, 70 km SE Hanoi, 11.1991, MURZIN (MWM); 1 ♂, Vietnam, Ninh Binh Gia Vien, Cuc Fuong, 160 m, 2.05.1999, Y. KISHIDA leg. (ZMUT).

Distribution. Vietnam.

***Relluna* SCHOORL, 1990**

***Relluna nurella* (SWINHOE, 1894)**

Colour plate 6, fig. 41

*Azygophleps nurella* SWINHOE, 1894, Ann. Mag. nat. Hist. (6) **14**: 440. Type locality: Cherra Punji [India]. Holotype: male (BMNH) [examined].

Material. 1 ♂, N. Vietnam, Fan-si-pan, Cha-pa, 1700 m, Juni 1995, SINYAEV leg. (MWM).

Distribution. India, Myanmar, Vietnam (new record), Malaysia.

***Lakshmia* YAKOVLEV, 2004**

***Lakshmia sirena* YAKOVLEV, 2006**

Colour plate 6, fig. 42

*Lakshmia sirena* Yakovlev, 2006, Tinea, Tokyo, **19** (3): 208-209, figs 23, 58.

Material. Holotype, ♀, Süd Vietnam, Bao Lok, (Sek Wald), Rung Kat Tien, 1500 m, 11°32'N; 107°48'E, 10-20.12.1992, SINYAEV & SIMONOV leg., GPrMWM: 10665 (MWM)

Distribution. Known only from the type locality.

**Panau** SCHOORL, 1990

***Panau stenoptera sumatrana* (ROEPKE, 1957)**

Colour plate 6, fig. 43

*Xyleutes stenoptera sumatrana* ROEPKE, 1957, Verh. K. Akad. Wet., Amst. (Afd. Natuurkunde) (Tweede Reeks), **52** (1): 27, 8: figs. 3-3a. Type locality: Lebong Tandai [Sumatra]. Holotype: male (BMNH) [examined].

Material. 3 ♂♂, N. Vietnam, Tam Dao, 11.1991, Murzin (MWM); 1 ♂, N. Vietnam, Fan-si-pan, Cha-pa, 1700 m, Juni 1995, SINYAEV leg. (MWM); 3 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB).

Distribution. Sumatra, Andaman Isl., Malaysia, Laos, Vietnam (new record).

***Panau adusta* (Roepke, 1957)**

Plate 6, fig. 44

*Xyleutes adusta* Roepke, 1957, Verh. K. Akad. Wet., Amst. (Afd. Natuurkunde) (Tweede Reeks), **52** (1): 30, pl. 3: fig. 3, pl. 8: figs. 6-6a. Type locality: Dolok Ilir, Sumatra East Coast. Holotype: male (RMNH) [examined].

Material. 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N; 105°20'E, 1-5.05.1993, leg. SINYAEV & SIMONOV (MWM); 5 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°51'E, 24-27.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (RYB).

Distribution. Malayan peninsula, Sumatra, Java, Borneo, here recorded from Vietnam for the first time.

### Acknowledgements

The authors is grateful to all persons who offered their collections for treatment: Dr. W. MEY (Berlin), Dr. D. STÜNING (Bonn), Dr. A. HAUSMANN (Munich), Mr. S. LOEFFLER (Liechtenstein). Valuable consultations were provided by Dr. V. ZOLOTUHIN (Ulyanovsk), the text was translated into English with the help by Dr. O. KOSTERIN (Novosibirsk). Kind help of Mr. Geoff MARTIN (London), the curator of the collection of moths, made this study possible; the images are published with the permission of the BMNH Council of Trustees.

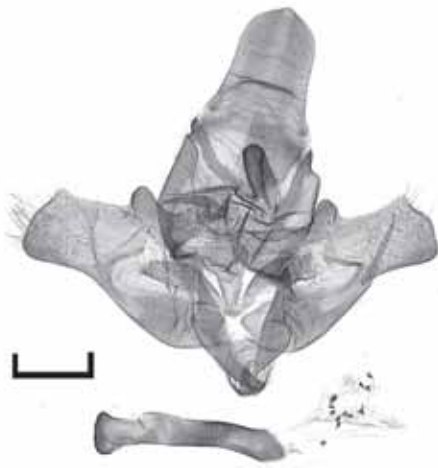
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### Genitalia plate 1

1. *Catopta tropicalis* YAKOVLEV & WITT, sp. n., paratype ♂
2. *Roepkiella siamica* YAKOVLEV & WITT, sp. n., holotype ♂
3. *Hollowiella chanwu* YAKOVLEV & WITT, sp. n., holotype ♂
4. *Hollowiella bajin* YAKOVLEV & WITT, sp. n., holotype ♂
5. *Chinocossus acronyctoides* (MOORE, 1879), comb. n. (Vietnam) ♂
6. *Aholcocerus ihleorum* YAKOVLEV & WITT, sp. n., holotype ♂



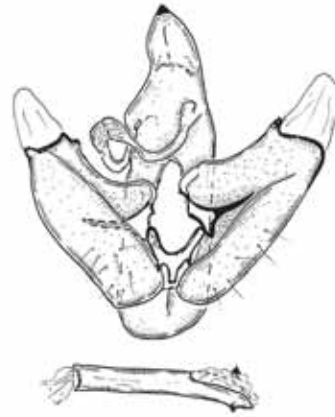
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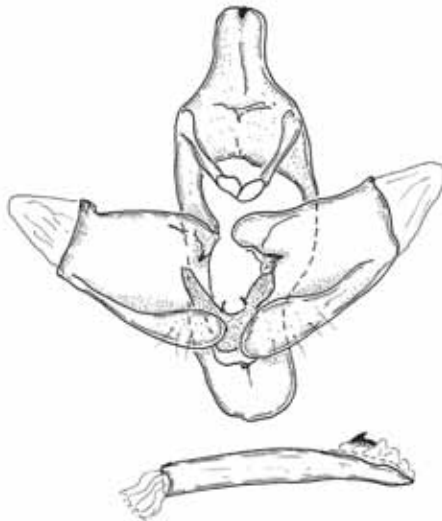
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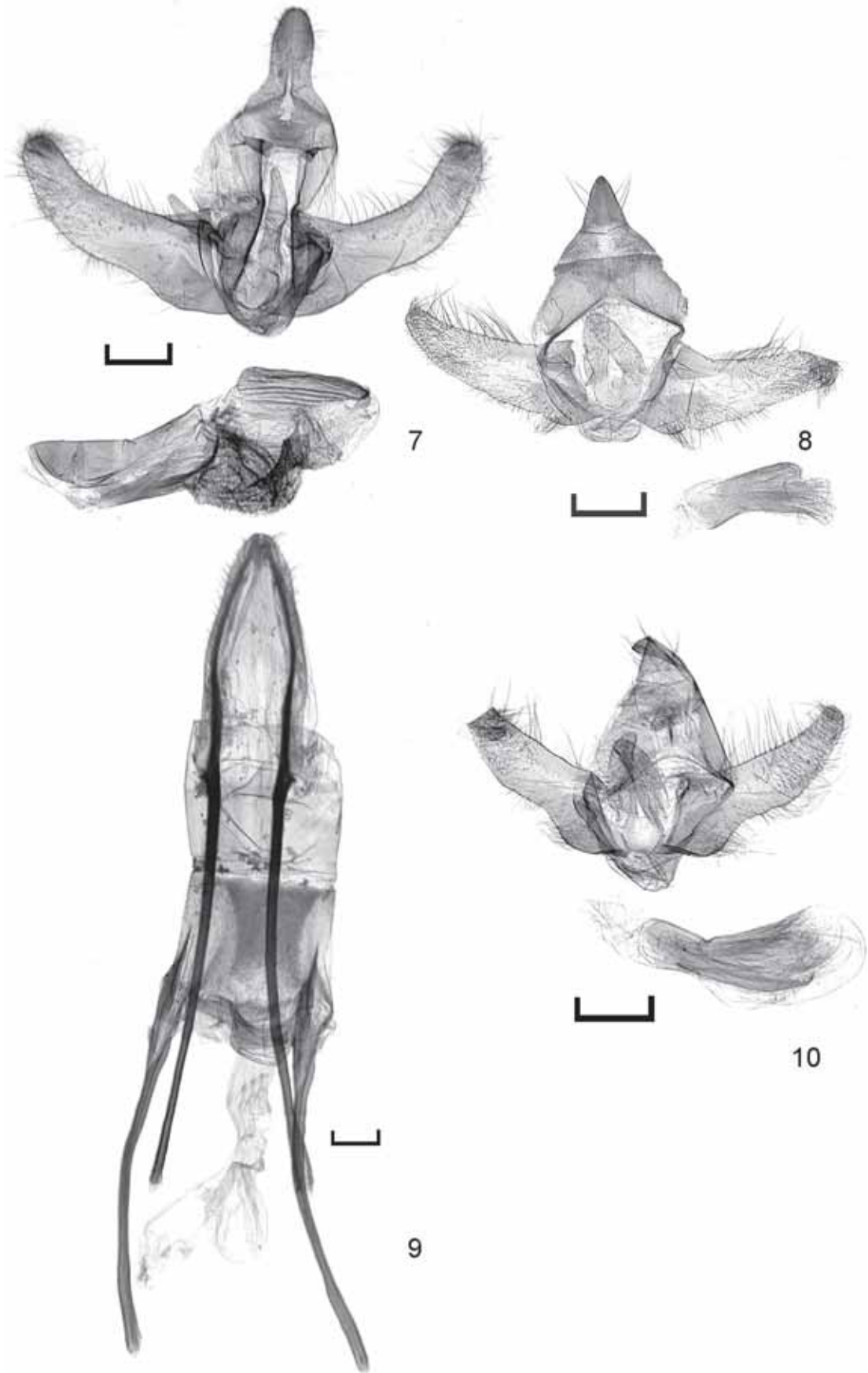
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6

Genitalia plate 2

7. *Phragmacossia fansipangi* YAKOVLEV & WITT, sp. n., paratype ♂
8. *Roerichiora stigmatica* (MOORE, 1879), comb. n., N. Vietnam ♂
9. *Roerichiora stigmatica* (MOORE, 1879), comb. n., N. Vietnam ♀
10. *Roerichiora clara* (BRYK, 1950), comb. n., S. Vietnam ♂



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# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Supplement 16

ISSN 0250-4413

Ansfelden, 16. Oktober 2009

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## **The Limacodidae of Vietnam**

**Alexey V. SOLOVYEV & Thomas J. WITT**

### **Abstract**

The Limacodidae fauna of Vietnam includes 153 species belonging to 74 genera; 110 species are reported here for the first time for the country. 57 species from Vietnam are described as new: *Cheromettia alaceria* SOLOVYEV & WITT, sp. n., *Calauta martini* SOLOVYEV & WITT, sp. n., *Belippa aeolus* SOLOVYEV & WITT, sp. n., *Altha (Belgoraea) nix* SOLOVYEV & WITT, sp. n., *Quasinarosa laesara* SOLOVYEV & WITT, sp. n., *Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n., *Flavinarosa alius* SOLOVYEV & WITT, sp. n., *F. glaesa* SOLOVYEV & WITT, sp. n., *Barabashka mirus* SOLOVYEV & WITT, sp. n., *Euphlyctinides laika* SOLOVYEV & WITT, sp. n., *Nagodopsis alethis* SOLOVYEV & WITT, sp. n., *Cania accea* SOLOVYEV & WITT, sp. n., *C. victori* SOLOVYEV & WITT, sp. n., *Caissa aurea* SOLOVYEV & WITT, sp. n., *C. bezverkhovi* Solovyev & Witt, sp. n., *Pseudocaissa apiata* SOLOVYEV & WITT, sp. n., *Hampsonella membra* SOLOVYEV & WITT, sp. n., *Arabessa plumata* SOLOVYEV & WITT, sp. n., *Chalcocelis albor* SOLOVYEV & WITT, sp. n., *Ch. dydima* SOLOVYEV & WITT, sp. n., *Sansarea zeta* SOLOVYEV & WITT, sp. n., *S. grata* SOLOVYEV & WITT, sp. n., *Miresa sagitovae* SOLOVYEV & WITT, sp. n., *M. rorida* SOLOVYEV & WITT, sp. n., *Narosoideus morion* SOLOVYEV & WITT, sp. n., *Monema meyi* SOLOVYEV & WITT, sp. n., *Prapata owadai*

SOLOVYEV & WITT, sp. n., *Parasa julikatis* SOLOVYEV & WITT, sp. n., *P. emeralda* SOLOVYEV & WITT, sp. n., *P. vadimi* SOLOVYEV & WITT, sp. n., *P. altilis* SOLOVYEV & WITT, sp. n., *P. stekolnikovi* SOLOVYEV & WITT, sp. n., *P. jade* SOLOVYEV & WITT, sp. n., *P. foliola* SOLOVYEV & WITT, sp. n., *P. umbra* SOLOVYEV & WITT, sp. n., *P. atera* SOLOVYEV & WITT, sp. n., *P. dilucida* SOLOVYEV & WITT, sp. n., *P. badia* SOLOVYEV & WITT, sp. n., *Hyphorma avanta* SOLOVYEV & WITT, sp. n., *Tanvia zolotuhini* SOLOVYEV & WITT, sp. n., *Thosea vulturaria* SOLOVYEV & WITT, sp. n., *Th. unius* SOLOVYEV & WITT, sp. n., *Griseothosea sordeo* SOLOVYEV & WITT, sp. n., *Avatara onyx* SOLOVYEV & WITT, sp. n., *A. sicilis* SOLOVYEV & WITT, sp. n., *Praesetora confusa* SOLOVYEV & WITT, sp. n., *Pseudiragoides spadix* SOLOVYEV & WITT, sp. n., *Nirmides altadim* SOLOVYEV & WITT, sp. n., *N. mimur* SOLOVYEV & WITT, sp. n., *N. trani* SOLOVYEV & WITT, sp. n., *Mummu aerata* SOLOVYEV & WITT, sp. n., *Limacolasia suffusca* SOLOVYEV & WITT, sp. n., *Squamosa svetlanae* SOLOVYEV & WITT, sp. n., *Trichogyia gemmia* SOLOVYEV & WITT, sp. n., *Devaz vetus* SOLOVYEV & WITT, sp. n., *Fignya melkaya* SOLOVYEV & WITT, sp. n., and *Caniatta levis* SOLOVYEV & WITT, sp. n.

18 genera are established here: *Calauta* SOLOVYEV & WITT, gen. n. (type species: *Calauta martini* SOLOVYEV & WITT, sp. n.), *Quasinarosa* SOLOVYEV & WITT, gen. n. (type species: *Heterogenea fulgens* LEECH, 1888), *Tennya* SOLOVYEV & WITT, gen. n. (type species: *Narosa propolia* HAMPSON, 1900), *Caelestomorpha* SOLOVYEV & WITT, gen. n. (type species: *Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n.), *Vipaka* SOLOVYEV & WITT, gen. n. (type species: *Narosa niveipennis* HERING, 1931), *Barabashka* SOLOVYEV & WITT, gen. n. (type species: *Barabashka mirus* SOLOVYEV & WITT, sp. n.), *Pseudocaiassa* SOLOVYEV & WITT, gen. n. (type species: *Pseudocaiassa apiata* SOLOVYEV & WITT, sp. n.), *Arabessa* SOLOVYEV & WITT, gen. n. (type species: *Arabessa plumata* SOLOVYEV & WITT, sp. n.), *Sansarea* SOLOVYEV & WITT, gen. n. (type species: *Trichogyia circulifera* HERING, 1933), *Tanvia* SOLOVYEV & WITT, gen. n. (type species: *Tanvia zolotuhini* SOLOVYEV & WITT, sp. n.), *Avatara* SOLOVYEV & WITT, gen. n. (type species: *Avatara onyx* SOLOVYEV & WITT, sp. n.), *Pretas* SOLOVYEV & WITT, gen. n. (type species: *Aphendala furcillata* WU & FANG, 2008), *Vanlangia* SOLOVYEV & WITT, gen. n. (type species: *Thosea castanea* WILEMAN, 1911), *Pseudiragoides* SOLOVYEV & WITT, gen. n. (type species: *Pseudiragoides spadix* SOLOVYEV & WITT, sp. n.), *Mummu* SOLOVYEV & WITT, gen. n. (type species: *Mummu aerata* SOLOVYEV & WITT, sp. n.), *Devaz* SOLOVYEV & WITT, gen. n. (type species: *Darna senescoides* HOLLOWAY, 1990), *Fignya* SOLOVYEV & WITT, gen. n. (type species: *Fignya melkaya* SOLOVYEV & WITT, sp. n.), and *Caniatta* SOLOVYEV & WITT, gen. n. (type species: *Caniatta levis* SOLOVYEV & WITT, sp. n.).

The large number of new genera shows that the limacodid fauna of South-East Asia has been poorly studied up to present and some genera previously described are polyphyletic.

The genus *Belgoraea* WALKER, 1865 is regarded here as a subgenus of *Altha* WALKER, 1862 and the genus *Caniodes* MATSUMURA, 1927 as subgenus of *Rhamnosa* FIXSEN, 1887.

The genus *Mambarona* HERING, 1931 is resynonymized with *Birthama* WALKER, 1862.

The following generic synonymies are established here: *Allothosea* HERING, 1938 is a junior synonym of *Matsumurides* HERING, 1931; *Dactylorhynchides* STRAND, 1920 is a junior synonym of *Trichogyia* HAMPSON, 1894 and *Contheyloides* MATSUMURA, 1931 is

a junior synonym of *Belippa* WALKER, 1865.

Lectotypes are here designated for 34 taxa: *Belippa horrida* WALKER, 1865, *Altha nivea* WALKER, 1862, *Narosa nigrisigna* WILEMAN, 1911, *Heterogenea formosana* MATSUMURA, 1927, *Narosa ochracea* HERING, 1931, *Heterogenea fulgens* LEECH, 1888, *Narosa Tamsi* LEMÉE, 1950, *N. propolia* HAMPSON, 1900, *N. rufotessellata* MOORE, 1879, *Cania bilinea robusta* HERING, 1931, *Spatulifimbria castaneiceps* HAMPSON, 1893, *Parasa pseudorepanda* HERING, 1933, *P. ostia* SWINHOE, 1902, *P. pastoralis tonkinensis* HERING, 1931, *Neaera bicolor* WALKER, 1855, *Hyphorma minor* DE JOANNIS, 1930, *Scopelodes vulpina* MOORE, 1879, *S. tantula* SWINHOE, 1904, *S. tantula melli* HERING, 1931, *Scopelodes ursina* BUTLER, 1886, *Scopelodes venosa kwangtungensis* HERING, 1931, *Parasa Loesa* MOORE, 1859, *Thosea obliquistriga* HERING, 1931, *Setora divergens* MOORE, 1879, *Hyblaea junctura* WALKER, 1865, *Thosea rufa* WILEMAN, 1915, *Susica congrua* WALKER, 1862, *Setora simplex* SNELLEN, 1900, *Thosea castanea* WILEMAN, 1911, *Iragoides melli* HERING, 1931, *Thosea sybilla* SWINHOE, 1903, *Natada furva* WILEMAN, 1911, *Aphendala ochracea* MOORE, 1883, and *Miresa pallivitta* MOORE, 1877.

New synonymies are established for 21 species group taxa: *Narosa (Penicillonarosa) nigrisigna* WILEMAN, 1911 = *N. ochracea* HERING, 1931, syn. n.; *Quasinarosa fulgens* (LEECH, 1888) = *Narosa pseudochracea* HERING, 1933, syn. n., = *N. tamsi* LEMÉE, 1950, syn. n.; *Demonarosa rufotessellata* (MOORE, 1879) = *Cheromettia melli* HERING, 1931, syn. n.; *Miresa pyronota* HAMPSON, 1910 = *M. aspera* HERING, 1931, syn. n., = *M. lancensis* HERING, 1931, syn. n.; *Narosoideus vulpina* (WILEMAN, 1911) = *N. apicipennis* MATSUMURA, 1931, syn. n., = *N. vulpinus* ab. *aurisoma* MATSUMURA, 1927, syn. n.; *Parasa pseudorepanda* HERING, 1933 = *P. kalawensis* ORHANT, 2000, syn. n.; *P. ostia* SWINHOE, 1902 = *Latoia pseudostia* CAI, 1983, syn. n.; *Parasa pastoralis* BUTLER, 1885 = *P. pastoralis tonkinensis* HERING, 1931, syn. n.; *Hyphorma flaviceps* (HAMPSON, 1910) = *Monema tenebricosa* HERING, 1931, syn. n.; *Scopelodes vulpina* MOORE, 1879 = *S. tantula* SWINHOE, 1904, syn. n.; *S. sericea* BUTLER, 1880 = *S. tantula melli* HERING, 1931, syn. n.; *Susica sinensis* (WALKER, 1856) = *S. formosana* WILEMAN, 1911, syn. n., = *S. fusca* MATSUMURA, 1911, syn. n.; *Thosea sinensis* (WALKER, 1855) = *Th. sinensis coreana* OKANO & PAK, 1964, syn. n.; *Birthamula rufa* (WILEMAN, 1915) = *Thosea grandis* HERING, 1931, syn. n.; *Vanlangia castanea* (WILEMAN, 1911) = *Iragoides melli* HERING, 1931, syn. n.; *Nirmides fusca* HERING, 1931 = *N. purpurea* HOLLOWAY, 1986, syn. n.; *Oxyplax ochracea* (MOORE, 1883) = *O. weixiensis* CAI, 1984, syn. n.

Furthermore, the synonymy of *Scopelodes kwangtungensis* HERING, 1931 = *S. venosa kwangtungensis* f. *brunnea* HERING, 1931, syn. n. is established here.

56 new combinations are established here: *Quasinarosa fulgens* (LEECH, 1888), comb. n., *Q. corusca* (WILEMAN, 1911), comb. n., *Q. azumai* (INOUE, 1976), comb. n., *Q. swanni* (WEST, 1937), comb. n., *Tennya propolia* (HAMPSON, 1900), comb. n., *T. propoliodes* (HOLLOWAY, 1982), comb. n., *Caelestomorpha endodonta* (HAMPSON, 1897), comb. n., *Vipaka niveipennis* (HERING, 1931), comb. n., *Barabashka bilineatum* (HERING, 1931), comb. n., and *B. obliqua* (LEECH, 1890), comb. n. (all transferred from *Narosa* WALKER, 1855); *Pseudocaisa marvelosa* (YOSHIMOTO, 1994), comb. n. (from *Hampsonella* DYAR, 1898); *Hampsonella arizana* (WILEMAN, 1916), comb. n. (from *Thosea* WALKER, 1855); *H. takemurai* (INOUE, 1986), comb. n. (from *Natada* WALKER, 1855); *Sansarea circulifera* HERING, 1933, comb. n. (from *Trichogyia* HAMPSON, 1894); *Mambarilla*

*grisea* (HERING, 1935), comb. n. (from *Spatulifimbria* HAMPSON, 1893); *Parasa shaanxiensis* (CAI, 1983), comb. n., *P. zhudiana* (CAI, 1983), comb. n., *P. hainana* (CAI, 1983), comb. n., *P. flavabdomena* (CAI, 1983), comb. n., *P. feina* (CAI, 1983), comb. n., *P. jiana* (CAI, 1983), comb. n., *P. yana* (CAI, 1983), comb. n., *P. mina* (CAI, 1983), comb. n., *P. argentifascia* (CAI, 1983), comb. n., *P. mutifascia* (CAI, 1983), comb. n., *P. liangdiana* (CAI, 1983), comb. n., *P. parapuncta* (Cai, 1983), comb. n., *P. eupuncta* (Cai, 1983), comb. n., *P. jina* (CAI, 1983), comb. n., *P. bana* (CAI, 1983), comb. n., *P. xueshana* (CAI, 1983), comb. n. (all 14 transferred from *Latoia* GUÉRIN-MÉNÉVILLE, 1844); *Hyphorma flaviceps* (HAMPSON, 1910), comb. n. (from *Thosea* WALKER, 1855); *Avatara plethoneura* (HERING, 1933), comb. n., *A. interrupta* (HERING, 1931), comb. n. (both transferred from *Thosea* WALKER, 1855), *A. lineofusca* (WU & FANG, 2008), comb. n. (from *Iragoides* HERING, 1931); *A. pseudocana* (WU & FANG, 2008), comb. n., *Pretas furcillata* (WU & FANG, 2008), comb. n. (both transferred from *Aphendala* WALKER, 1865); *Pretas separata* (HERING, 1931), comb. n., *Birthamoides fuscidorsalis* (HERING, 1931), comb. n. (from *Miresa* WALKER, 1855), *B. rufa* (WILEMAN, 1915), comb. n., *Matsumurides bisuroides* (HERING, 1931), comb. n. (all 3 transferred from *Thosea* WALKER, 1855); *M. lateritia* (HERING, 1931), comb. n., *M. lola* (SWINHOE, 1904), comb. n., *M. montana* (HOLLOWAY, 1986), comb. n. (all 3 transferred from *Allothosea* HERING, 1938), *M. thaumasta* (HERING, 1933), comb. n. (from *Iragoides* HERING, 1931), *Mambarona irrorata* (WEST, 1932), comb. n. (from *Praesetora* HERING, 1931), *Vanlangia castanea* (WILEMAN, 1911), comb. n. (from *Thosea* WALKER, 1855), *Vanlangia uniformis* (HERING, 1931), comb. n. (from *Iragoides* HERING, 1931), *Pseudonirmides cyanopasta* (HAMPSON, 1910), comb. n. (transferred from *Belippa* WALKER, 1865), *Mummu cuprea* (MOORE, 1879), comb. n. (from *Nirmides* HERING, 1931), *Trichogyia limacodiformis* (STRAND, 1920), comb. n. (from *Dactylorhynchides* STRAND, 1920), *T. rufibasale* (HAMPSON, 1896), comb. n. (from *Dactylorhynchides* STRAND, 1920), *T. castanea* (HAMPSON, 1893), comb. n. (from *Araeogyia* HAMPSON, 1893), *Devaz senescens* (WEST, 1932), comb. n., *D. senescoides* (HOLLOWAY, 1990), comb. n. (both transferred from *Orthocraspeda* HAMPSON, 1893), and *D. aspergillata* (HERING, 1931), comb. n. (from *Macrolepctrina* HERING, 1931).

The taxa *F. paucispina* HOLLOWAY, 1986, stat. n., *Monema nigrans* DE JOANNIS, 1901, stat. n., *Rhamnosa kwangtungensis* HERING, 1931, stat. n., and *Nirmides fusca* HERING, 1931, stat. n. are raised to the status of full species.

All moths and the characters, necessary for species identification, are illustrated.

### Zusammenfassung

Die Limacodiden-Fauna von Vietnam umfaßt 153 Arten, die zu 74 Gattungen gehören; 110 Arten werden hier erstmals für das Land gemeldet. 57 Arten aus Vietnam werden neu beschrieben: *Cheromettia alaceria* SOLOVYEV & WITT, sp. n., *Calauta martini* SOLOVYEV & WITT, sp. n., *Belippa aeolus* SOLOVYEV & WITT, sp. n., *Altha (Belgoraea) nix* SOLOVYEV & WITT, sp. n., *Quasinarosa laesara* SOLOVYEV & WITT, sp. n., *Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n., *Flavinarosa alius* SOLOVYEV & WITT, sp. n., *F. glaesa* SOLOVYEV & WITT, sp. n., *Barabashka mirus* SOLOVYEV & WITT, sp. n., *Euphlyctinides laika* SOLOVYEV & WITT, sp. n., *Nagodopsis alethis*

SOLOVYEV & WITT, sp. n., *Cania accea* SOLOVYEV & WITT, sp. n., *C. victori* SOLOVYEV & WITT, sp. n., *Caissa aurea* SOLOVYEV & WITT, sp. n., *C. bezverkhovi* Solovyev & Witt, sp. n., *Pseudocaissa apiata* SOLOVYEV & WITT, sp. n., *Hampsonella membra* SOLOVYEV & WITT, sp. n., *Arabessa plumata* SOLOVYEV & WITT, sp. n., *Chalcocelis albor* SOLOVYEV & WITT, sp. n., *Ch. dydima* SOLOVYEV & WITT, sp. n., *Sansarea zeta* SOLOVYEV & WITT, sp. n., *S. grata* SOLOVYEV & WITT, sp. n., *Miresa sagitovae* SOLOVYEV & WITT, sp. n., *M. rorida* SOLOVYEV & WITT, sp. n., *Narosoideus morion* SOLOVYEV & WITT, sp. n., *Monema meyi* SOLOVYEV & WITT, sp. n., *Prapata owadai* SOLOVYEV & WITT, sp. n., *Parasa julikatis* SOLOVYEV & WITT, sp. n., *P. emeralda* SOLOVYEV & WITT, sp. n., *P. vadimi* SOLOVYEV & WITT, sp. n., *P. altilis* SOLOVYEV & WITT, sp. n., *P. stekolnikovi* SOLOVYEV & WITT, sp. n., *P. jade* SOLOVYEV & WITT, sp. n., *P. foliola* SOLOVYEV & WITT, sp. n., *P. umbra* SOLOVYEV & WITT, sp. n., *P. atera* SOLOVYEV & WITT, sp. n., *P. dilucida* SOLOVYEV & WITT, sp. n., *P. badia* SOLOVYEV & WITT, sp. n., *Hyphorma avanta* SOLOVYEV & WITT, sp. n., *Tanvia zolotuhini* SOLOVYEV & WITT, sp. n., *Thosea vulturia* SOLOVYEV & WITT, sp. n., *Th. unius* SOLOVYEV & WITT, sp. n., *Griseothosea sordeo* SOLOVYEV & WITT, sp. n., *Avatara onyx* SOLOVYEV & WITT, sp. n., *A. sicilis* SOLOVYEV & WITT, sp. n., *Praesetora confusa* SOLOVYEV & WITT, sp. n., *Pseudiragoides spadix* SOLOVYEV & WITT, sp. n., *Nirmides altadim* SOLOVYEV & WITT, sp. n., *N. mimur* SOLOVYEV & WITT, sp. n., *N. trani* SOLOVYEV & WITT, sp. n., *Mummu aerata* SOLOVYEV & WITT, sp. n., *Limacolasia suffusca* SOLOVYEV & WITT, sp. n., *Squamosa svetlanae* SOLOVYEV & WITT, sp. n., *Trichogyia gemmia* SOLOVYEV & WITT, sp. n., *Devaz vetus* SOLOVYEV & WITT, sp. n., *Fignya melkaya* SOLOVYEV & WITT, sp. n. und *Caniatta levis* SOLOVYEV & WITT, sp. n.

18 Gattungen werden hier aufgestellt: *Calauta* SOLOVYEV & WITT, gen. n. (Typus-Art: *Calauta martini* SOLOVYEV & WITT., sp. n.), *Quasinarosa* SOLOVYEV & WITT, gen. n. (Typus-Art: *Heterogenea fulgens* LEECH, 1888), *Tennya* SOLOVYEV & WITT, gen. n. (Typus-Art: *Narosa propolia* HAMPSON, 1900), *Caelestomorpha* SOLOVYEV & WITT, gen. n. (Typus-Art: *Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n.), *Vipaka* SOLOVYEV & WITT, gen. n. (Typus-Art: *Narosa niveipennis* HERING, 1931), *Barabashka* SOLOVYEV & WITT, gen. n. (Typus-Art: *Barabashka mirus* SOLOVYEV & WITT, sp. n.), *Pseudocaissa* SOLOVYEV & WITT, gen. n. (Typus-Art: *Pseudocaissa apiata* SOLOVYEV & WITT, sp. n.), *Arabessa* SOLOVYEV & WITT, gen. n. (Typus-Art: *Arabessa plumata* SOLOVYEV & Witt, sp. n.), *Sansarea* SOLOVYEV & WITT, gen. n. (Typus-Art: *Trichogyia circulifera* HERING, 1933), *Tanvia* SOLOVYEV & WITT, gen. n. (Typus-Art: *Tanvia zolotuhini* SOLOVYEV & WITT, sp. n.), *Avatara* SOLOVYEV & WITT, gen. n. (Typus-Art: *Avatara onyx* SOLOVYEV & WITT, sp. n.), *Pretas* SOLOVYEV & WITT, gen. n. (Typus-Art: *Aphendala furcillata* WU & FANG, 2008), *Vanlangia* SOLOVYEV & WITT, gen. n. (Typus-Art: *Thosea castanea* WILEMAN, 1911), *Pseudiragoides* SOLOVYEV & WITT, gen. n. (Typus-Art: *Pseudiragoides spadix* SOLOVYEV & WITT, sp. n.), *Mummu* SOLOVYEV & WITT, gen. n. (Typus-Art: *Mummu aerata* SOLOVYEV & WITT, sp. n.), *Devaz* SOLOVYEV & WITT, gen. n. (Typus-Art: *Darna senescoides* HOLLOWAY, 1990), *Fignya* SOLOVYEV & WITT, gen. n. (Typus-Art: *Fignya melkaya* SOLOVYEV & WITT, sp. n.) und *Caniatta* SOLOVYEV & WITT, gen. n. (Typus-Art: *Caniatta levis* SOLOVYEV & WITT, sp. n.).

Die große Anzahl neuer Gattungen zeigt, dass die Limacodiden-Fauna Südost-Asiens bisher wenig untersucht wurde und einige zuvor beschriebene Gattungen polyphyletisch sind.

Die Gattung *Belgoraea* WALKER, 1865 wird hier als eine Untergattung von *Altha* WALKER, 1862 betrachtet und die Gattung *Caniodes* MATSUMURA, 1927 als eine Untergattung von *Rhamnosa* FIXSEN, 1887.

Die Gattung *Mambarona* HERING, 1931 wird wieder mit *Birithama* WALKER, 1862 synonymisiert.

Die folgenden generischen Synonymien werden hier festgestellt: *Allothosea* HERING, 1938 ist jüngerer Synonym von *Matsumurides* HERING, 1931; *Dactylorhynchides* STRAND, 1920 ist jüngerer Synonym von *Trichogyia* HAMPSON, 1894 und *Contheyloides* MATSUMURA, 1931 ist jüngerer Synonym von *Belippa* WALKER, 1865.

Lectotypes werden hier für 34 Taxa ausgewählt: *Belippa horrida* WALKER, 1865, *Altha nivea* WALKER, 1862, *Narosa nigrisigna* WILEMAN, 1911, *Heterogenea formosana* MATSUMURA, 1927, *Narosa ochracea* HERING, 1931, *Heterogenea fulgens* LEECH, 1888, *Narosa Tamsi* LEMÉE, 1950, *N. propolia* HAMPSON, 1900, *N. rufotessellata* MOORE, 1879, *Cania bilinea robusta* HERING, 1931, *Spatulifimbria castaneiceps* HAMPSON, 1893, *Parasa pseudorepanda* HERING, 1933, *P. ostia* SWINHOE, 1902, *P. pastoralis tonkinensis* HERING, 1931, *Neaera bicolor* WALKER, 1855, *Hyphorma minor* DE JOANNIS, 1930, *Scopelodes vulpina* MOORE, 1879, *S. tantula* SWINHOE, 1904, *S. tantula melli* HERING, 1931, *Scopelodes ursina* BUTLER, 1886, *Scopelodes venosa kwangtungensis* HERING, 1931, *Parasa Loesa* MOORE, 1859, *Thosea obliquistriga* HERING, 1931, *Setora divergens* MOORE, 1879, *Hyblaea junctura* WALKER, 1865, *Thosea rufa* WILEMAN, 1915, *Susica congrua* WALKER, 1862, *Setora simplex* SNELLEN, 1900, *Thosea castanea* WILEMAN, 1911, *Iragoides melli* HERING, 1931, *Thosea sybilla* SWINHOE, 1903, *Natada furva* WILEMAN, 1911, *Aphendala ochracea* MOORE, 1883 und *Miresa pallivitta* MOORE, 1877.

Neue Synonymien werden für 21 Taxa der Artgruppe festgestellt: *Narosa (Penicillinarosa) nigrisigna* WILEMAN, 1911 = *N. ochracea* HERING, 1931, syn. n.; *Quasinarosa fulgens* (LEECH, 1888) = *Narosa pseudochracea* HERING, 1933, syn. n., = *N. tamsi* LEMÉE, 1950, syn. n.; *Demonarosa rufotessellata* (MOORE, 1879) = *Cheromettia melli* HERING, 1931, syn. n.; *Miresa pyronota* HAMPSON, 1910 = *M. aspera* HERING, 1931, syn. n., = *M. lancensis* HERING, 1931, syn. n.; *Narosoideus vulpina* (WILEMAN, 1911) = *N. apicipennis* MATSUMURA, 1931, syn. n., = *N. vulpinus* ab. *aurisoma* MATSUMURA, 1927, syn. n.; *Parasa pseudorepanda* HERING, 1933 = *P. kalawensis* ORHANT, 2000, syn. n.; *P. ostia* SWINHOE, 1902 = *Latoia pseudostia* CAI, 1983, syn. n.; *Parasa pastoralis* BUTLER, 1885 = *P. pastoralis tonkinensis* HERING, 1931, syn. n.; *Hyphorma flaviceps* (HAMPSON, 1910) = *Monema tenebricosa* HERING, 1931, syn. n.; *Scopelodes vulpina* MOORE, 1879 = *S. tantula* SWINHOE, 1904, syn. n.; *S. sericea* BUTLER, 1880 = *S. tantula melli* HERING, 1931, syn. n.; *Susica sinensis* (WALKER, 1856) = *S. formosana* WILEMAN, 1911, syn. n., = *S. fusca* MATSUMURA, 1911, syn. n.; *Thosea sinensis* (WALKER, 1855) = *Th. sinensis coreana* OKANO & PAK, 1964, syn. n.; *Birithamula rufa* (WILEMAN, 1915) = *Thosea grandis* HERING, 1931, syn. n.; *Vanlangia castanea* (WILEMAN, 1911) = *Iragoides melli* HERING, 1931, syn. n.; *Nirmides fusca* HERING, 1931 = *N. purpurea* HOLLOWAY, 1986, syn. n.; *Oxyplax ochracea* (MOORE, 1883) = *O. weixiensis* CAI, 1984, syn. n.

Ferner wird die Synonymy von *Scopelodes kwangtungensis* HERING, 1931 = *S. venosa kwangtungensis* f. *brunnea* HERING, 1931, syn. n. hier festgestellt.

56 Neukombinationen werden vorgenommen: *Quasinarosa fulgens* (LEECH, 1888),

comb. n., *Q. corusca* (WILEMAN, 1911), comb. n., *Q. azumai* (INOUE, 1976), comb. n., *Q. swanni* (WEST, 1937), comb. n., *Tennya propolia* (HAMPSON, 1900), comb. n., *T. propoliodes* (HOLLOWAY, 1982), comb. n., *Caelestomorpha endodonta* (HAMPSON, 1897), comb. n., *Vipaka niveipennis* (HERING, 1931), comb. n., *Barabashka bilineatum* (HERING, 1931), comb. n., and *B. obliqua* (LEECH, 1890), comb. n. (all transferred von *Narosa* WALKER, 1855); *Pseudocaissa marvelosa* (YOSHIMOTO, 1994), comb. n. (von *Hampsonella* DYAR, 1898); *Hampsonella arizana* (WILEMAN, 1916), comb. n. (von *Thosea* WALKER, 1855); *H. takemurai* (INOUE, 1986), comb. n. (von *Natada* WALKER, 1855); *Sansarea circulifera* HERING, 1933, comb. n. (von *Trichogyia* HAMPSON, 1894); *Mambarilla grisea* (HERING, 1935), comb. n. (von *Spatulifimbria* HAMPSON, 1893); *Parasa shaanxiensis* (CAI, 1983), comb. n., *P. zhudiana* (CAI, 1983), comb. n., *P. hainana* (CAI, 1983), comb. n., *P. flavabdomena* (CAI, 1983), comb. n., *P. feina* (CAI, 1983), comb. n., *P. jiana* (CAI, 1983), comb. n., *P. yana* (CAI, 1983), comb. n., *P. mina* (CAI, 1983), comb. n., *P. argentifascia* (CAI, 1983), comb. n., *P. mutifascia* (CAI, 1983), comb. n., *P. liangdiana* (CAI, 1983), comb. n., *P. parapuncta* (Cai, 1983), comb. n., *P. eupuncta* (Cai, 1983), comb. n., *P. jina* (CAI, 1983), comb. n., *P. bana* (CAI, 1983), comb. n., *P. xueshana* (CAI, 1983), comb. n. (all 14 transferred von *Latoia* GUÉRIN-MÉNÉVILLE, 1844); *Hyphorma flaviceps* (HAMPSON, 1910), comb. n. (von *Thosea* WALKER, 1855); *Avatara plethoneura* (HERING, 1933), comb. n., *A. interrupta* (HERING, 1931), comb. n. (both transferred von *Thosea* WALKER, 1855), *A. lineofusca* (WU & FANG, 2008), comb. n. (von *Iragoides* HERING, 1931); *A. pseudocana* (WU & FANG, 2008), comb. n., *Pretas furcillata* (WU & FANG, 2008), comb. n. (both transferred von *Aphendala* WALKER, 1865); *Pretas separata* (HERING, 1931), comb. n., *Birthamoides fuscidorsalis* (HERING, 1931), comb. n. (von *Miresa* WALKER, 1855), *B. rufa* (WILEMAN, 1915), comb. n., *Matsumurides bisuroides* (HERING, 1931), comb. n. (all 3 transferred von *Thosea* WALKER, 1855); *M. lateritia* (HERING, 1931), comb. n., *M. lola* (SWINHOE, 1904), comb. n., *M. montana* (HOLLOWAY, 1986), comb. n. (all 3 transferred von *Allothosea* HERING, 1938), *M. thaumasta* (HERING, 1933), comb. n. (von *Iragoides* HERING, 1931), *Mambarona irrorata* (WEST, 1932), comb. n. (von *Praesetora* HERING, 1931), *Vanlangia castanea* (WILEMAN, 1911), comb. n. (von *Thosea* WALKER, 1855), *Vanlangia uniformis* (HERING, 1931), comb. n. (von *Iragoides* HERING, 1931), *Pseudonirmides cyanopasta* (HAMPSON, 1910), comb. n. (transferred von *Belippa* WALKER, 1865), *Mummu cuprea* (MOORE, 1879), comb. n. (von *Nirmides* HERING, 1931), *Trichogyia limacodiformis* (STRAND, 1920), comb. n. (von *Dactylorhynchides* STRAND, 1920), *T. rufibasale* (HAMPSON, 1896), comb. n. (von *Dactylorhynchides* STRAND, 1920), *T. castanea* (HAMPSON, 1893), comb. n. (von *Araeogyia* HAMPSON, 1893), *Devaz senescens* (WEST, 1932), comb. n., *D. senescoides* (HOLLOWAY, 1990), comb. n. (both transferred von *Orthocraspeda* HAMPSON, 1893) und *D. aspergillata* (HERING, 1931), comb. n. (von *Macroplectrina* HERING, 1931).

Die Taxa *F. paucispina* HOLLOWAY, 1986, stat. n., *Monema nigrans* DE JOANNIS, 1901, stat. n., *Rhamnosa kwangtungensis* HERING, 1931, stat. n. und *Nirmides fusca* HERING, 1931, stat. n. werden in den Artrang erhoben.

Alle Falter und die zur Bestimmung nötigen Merkmale werden abgebildet.

## Introduction

The Limacodidae are a very diverse in all continents, and constitute a mainly tropical and subtropical family. The world fauna comprises about 1,500 species. Externally, the moths are quite different in size, wing pattern and coloration, but bearing a very characteristic silky shining on the forewing (Colour plates 1–9). The male antennae range from bipectinate to filiform; the female antennae are filiform.

Diagnostic features are reduced to small proboscis consisting of slightly spiral galeae, lacking chaetosemata and ocelli, presence of vein R3+R4, presence of a dense mat of ventral sensillae trichoideae on recessed pad without interspersed scales (EPSTEIN, 1996: 81) and disc-shaped ovipositor lobes in female genitalia (Colour plates 20–21).

The moths are usually nocturnal and well attracted to light; they are often observed in a distinctive resting posture with the body held at an angle from the substrate supported by the extended legs with the wings draped laterally (GODFRAY et al., 1987) (Plates 22, 23).

The eggs are scale-shaped, flattened, and laid on the leaf of the host plant, normally aggregated in a row or a loose group. The parasitized eggs turn black (GODFRAY et al., 1987: 1).

The larvae are mostly characteristic for the family (Plates 24–25). The head is retracted. The prolegs and the crochets are absent. The crochets are present only in late instars of *Pantoctenia* FELDER, 1874 from S. Africa (EPSTEIN, 1996: 81). The thoracic legs are still visible though much reduced. The ventral surface of segments A1–A7 contains suckers that take part directly in peristaltic movement.

The dorsum of larva contains spiny scoli, hairy tubercles, or verrucae in position D and SD (nomenclature of STEHR, 1987, homology sensu EPSTEIN, 1996), or larva relatively smooth, without tubercles, or with gelatinous warts similar to those of Dalceridae. Young larvae often look very different from mature larvae of the same species. Typically, younger larvae have larger scoli and look more “spiny”.

In accord to external morphology of caterpillars, 3 groups can be recognized in S.E. Asia.

The first group has a “nettle” type larva (GODFRAY et al., 1987), with long scoli, tubercles or verrucae in D and SD – different in size but usually enlarged on T3, A1 and A7; the subdorsal scoli on A1 are vestigial (Colour plate 18, figs 2–13; Colour plate 19, figs 1–4, 8–9; Colour plate 20, figs 1–8). Most genera conform to this type, among them: *Monema* WALKER, 1855, *Parasa* MOORE, 1859, *Phocoderma* BUTLER, 1886, *Narosoideus* MATSUMURA, 1911, *Miresa* WALKER, 1855, *Thosea* WALKER, 1855, *Cania* WALKER, 1855, *Scopelodes* WESTWOOD, 1841, *Darna* WALKER, 1862, *Oxyplax* HAMPSON, 1893, etc.

The second group has “smooth” or “gelatine” larvae (GODFRAY et al., 1987), with ellipsoid shape and smooth dorsum; this type of larva is associated with *Narosa* WALKER, 1855, *Altha* WALKER, 1862, *Cheromettia* MOORE, 1883, *Chalcozelis* HAMPSON, 1893, *Chalcoscelides* HERING, 1931, etc (Colour plate 18, fig. 1). The young caterpillars have distinct verrucae D and SD on T2–A9 with small stinging spurs. The mature larva is smooth, but with well defined cuticle pores and stinging spurs.

The larva of *Phrixolepia* BUTLER, 1877 is placed in a third group – “gelatinous” with



unique external morphology (Colour plate 19, figs 5–7). The genus *Olonia* SNELLEN, 1900 is probably also associated with this type of larva. The larvae of both genera have 6 longitudinal rows of specific processes that can be detached when touched. The processes are semitransparent and bear a single long bristle that performs the tactile function. Usually D-processes are double, SD – single in this larval type.

The larvae of most species appear to be polyphagous, feeding on a wide range of plant families. The first instars eat the epidermis only. Limacodidae are economically important defoliators of palms and other agricultural plants.

The pupa has long labial palps (often 1.5 times longer than the head), parallel maxillar lobes, the spiracle of segment A2 is covered by the wings, the abdominal segments till A6–A7 are movable. Pupation occurs in a hard, oval cocoon with a circular lid cut by the larva. The cocoon itself is constructed from silk hardened by saliva (ISHII et al., 1984) (Colour plate 20, figs 9–12).

At present, the family Limacodidae is placed into Zygaenoidea (SCOBLE, 1992; EPSTEIN et al., 1999; KUZNETZOV & STEKOLNIKOV, 2001) and associated with the limacodid-group of families including also Megalopygidae, Dalceridae, and Aididae (EPSTEIN, 1996: 1).

The family is presently separated in two subfamilies – Limacodinae and Chrysopolominae (EPSTEIN et al., 1999: 166). The second one is known from tropical Africa and is often regarded as a separate family.

### Short historical review

The family Limacodidae still remains a poorly studied group in Vietnam in spite of its economical importance. It contains a large number of endemics and also many widespread species distributed from India to Sundaland. Only a few papers were specially devoted to faunistic research and 10 limacodids were originally described from the region.

The study of the Vietnamese fauna of limacodid moths was begun with the publication of the article of CANDÈZE (1927: 73–133) about Heterocera from French Indochina in which 13 species of 9 genera were recorded and one species was described from Vietnam (Laokay). The identifications of species were often erroneous because only external characters were used, not genitalic ones, and no type material was studied. Thus, only about 10% of the real fauna was listed in the paper, and one third of them was misidentified.

The paper of de JOANNIS (1929) included 31 species of 18 genera (4 species were described as new) and the work of LEMÉE (1950) included only 11 species (1 species was described as a new).

*Arctioleptis rubida* FELDER, 1862 mentioned by LEMÉE (1950) was transferred later to Pyralidae by FLETCHER & NYE, 1982: 17.

The studies of HERING (1931, 1933) and HOLLOWAY et al. (1987) were also valuable contributions to the exploration of the Vietnamese fauna.

Seven species of the Limacodidae were recorded from Vietnam by the first author (SOLOVYEV, 2005; 2008; 2009 (in print)).

Vietnamese papers on Limacodidae are extremely rare and show great problems with the identification of species (NGUYEN et al., 2008).

Totally, only 43 species, mainly from Northern Vietnam, were recorded for the Vietnamese fauna in the literature until now ( $\approx 25\%$ ), however 10 of them were misidentified. The few studies made on the Vietnamese fauna are caused by the absence of representative material in the collections. The situation changed only in the last 15 years when many specimens from Vietnam became available for study due to field work of V. SINYAEV, M. SIMONOV, E. AFONIN, Y. BEZVERKHOV (all from Moscow, Russia), V. ZOLOTUHIN (Ulyanovsk, Russia), A. SCHINTLMEISTER (Dresden, Germany), R. BRECHLIN (Pasewalk, Germany), G. CSORBA (Budapest, Hungary), G. RONKAY (Budapest, Hungary), T. IHLE (T. Maehia, Chiang Mai, Thailand), and E. PALIK (Cracov, Poland).

An interesting material was found in the Insect Collection of the Institute of Ecology and Biological Resources, Hanoi, Vietnam. Also, the first author himself took part in field work in Central and Northern Vietnam in 2008 with Vietnamese colleagues (TRAN Thieu Du).

As a result, 153 species from 74 genera of Limacodidae are now included in the Vietnamese fauna.

### **Material and Methods**

The material from MWM (see abbreviations below) is the main basis for this study; other collections are mentioned below. The identifications were corroborated by the comparison of all available type-material with examination of external and of morphological characters of male and female genitalia. The genitalia slides were prepared and stained using the standard method (CLARKE, 1941; HARDWICK, 1950), the vesica was everted if possible, and the preparations were mounted in Euparal.

The moth images were taken with a Nikon Coolpix 5400 E digital camera and the images of genital structures were taken through a MBS-10 binocular microscope and Olympus C750 UZ using the slide-adaptor. All images were later digitally improved using Corel Photo Paint 12; the plates were made using Corel Draw 12.

### **Abbreviations and Symbols**

BMNH – The Natural History Museum; London, United Kingdom

CAS – collection of Alexey V. SOLOVYEV; Ulyanovsk, Russia

CMS – collection of Manfred STRÖHLE; Weiden, Germany

CSI – collection of Siegfried IHLE; Ingolstadt, Germany

CVS – collection of Victor V. SINYAEV; Moscow, Russia

CYB – collection of Yuri A. BEZVERKHOV; Moscow Russia

DEI – Deutsches entomologisches Institut im Zalf; Müncheberg

EIHU – Hokkaido University; Sapporo, Japan

MNHN – Museum National d'Histoire Naturelle; Paris, France

MWM – entomologisches Museum Thomas J. WITT; Munich, Germany (to be transferred to ZSM)

NMW – Naturhistorisches Museum; Wien, Austria

NSMT – National Science Museum; Tokyo, Japan

IEBR – Institute of Ecology and Biological Resources; Hanoi, Vietnam

IZCAS – Chinese Academy of Sciences, Institute of Zoology; Beijing, China

RMNH – Nationaal Natuurhistorische Museum (“Naturalis”); Leiden, Netherlands (formerly Rijksmuseum van Natuurlijke Historie)

HDOU – Hope Department of Oxford University; United Kingdom

ZMHB – Zoologisches Museum der Humboldt Universität zu Berlin; Germany

ZSM – Zoologische Staatssammlung, München; Germany

The bionomic information is given in text for Vietnamese populations.

The data of labels of primary types are cited in quotes; “|” means a new line.

The depository of specimens is given in brackets.

Comments. A previous study of some traditional limacodid genera mentioned in this paper shows their polyphyly. Here we attempt to define monophyletic groups in the rank of genera and to find their proper place in the system of Limacodidae.

The genera are enumerated in connection with their probable relationships.

### Check-list of the Vietnamese Limacodidae

*Cheromettia alaceria* SOLOVYEV & WITT, sp. n.

*Calauta martini* SOLOVYEV & WITT, sp. n.

*Belippa horrida* WALKER, 1865

*Belippa aeolus* SOLOVYEV & WITT, sp. n.

*Altha (Altha) nivea* WALKER, 1862

*Altha (Belgoraea) nix* SOLOVYEV & WITT, sp. n.

*Pseudaltha sapa* SOLOVYEV, 2009

*Althonarosa horisyaensis* KAWADA, 1930

*Narosa (Penicillonarosa) nigrisigna* WILEMAN, 1911

*Quasinarosa fulgens* (LEECH, 1888), comb. n.

*Quasinarosa laesara* SOLOVYEV & WITT, sp. n.

*Tennya propolia* (HAMPSON, 1900), comb. n.

*Tennya* sp.1

*Tennya* sp.2

*Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n.

*Vipaka niveipennis* (HERING, 1931), comb. n.  
*Flavinarosa alius* SOLOVYEV & WITT, sp. n.  
*Flavinarosa glaesa* SOLOVYEV & WITT, sp. n.  
? *Flavinarosa holoxanthia* (HAMPSON, 1900)  
*Demonarosa rufotessellata* (MOORE, 1879)  
*Ceratonema* sp.  
*Barabashka bilineatum* (HERING, 1931), comb. n.  
*Barabashka* cf *obliqua* (LEECH, 1890), comb. n.  
*Barabashka mirus* SOLOVYEV & WITT, sp. n.  
*Euphlyctinides laika* SOLOVYEV & WITT, sp. n.  
*Nagodopsis alethis* SOLOVYEV & WITT, sp. n.  
*Atosia himalayana* HOLLOWAY, 1986  
*Limacocera hel* HERING, 1931  
*Cania bilinea* (WALKER, 1855)  
*Cania robusta* HERING, 1931  
*Cania siamensis* TAMS, 1924  
*Cania accea* SOLOVYEV & WITT, sp. n.  
*Cania victori* SOLOVYEV & WITT, sp. n.  
*Rhamnosa (Rhamnosa) kwangtungensis* HERING, 1931, stat. n.  
*Rhamnosa (Caniodes) takamukui* MATSUMURA, 1927  
*Caissa aurea* SOLOVYEV & WITT, sp. n.  
*Caissa bezverkhovi* SOLOVYEV & WITT, sp. n.  
*Caissa parenti* ORHANT, 2000  
*Pseudocaissa apiata* SOLOVYEV & WITT, sp. n.  
*Hampsonella membra* SOLOVYEV & WITT, sp. n.  
*Arabessa plumata* SOLOVYEV & WITT, sp. n.  
*Triplophleps* cf *inferma* (SWINHOE, 1890)  
*Chalcoscelides castaneipars* (MOORE, 1865)  
*Chalcocelis albor* SOLOVYEV & WITT, sp. n.  
*Chalcocelis dydima* SOLOVYEV & WITT, sp. n.  
*Sansarea zeta* SOLOVYEV & WITT, sp. n.  
*Sansarea grata* SOLOVYEV & WITT, sp. n.  
? *Spatulifimbria castaneiceps* HAMPSON, 1893  
*Miresa burmensis* HERING, 1931  
*Miresa fulgida* WILEMAN, 1910  
*Miresa demangei* DE JOANNIS, 1930  
*Miresa exigua* HERING, 1931

*Miresa kwangtungensis* HERING, 1931  
*Miresa urga* HERING, 1933  
*Miresa fangae* WU & SOLOVYEV (in print)  
*Miresa sagitovae* SOLOVYEV & WITT, sp. n.  
*Miresa polargenta* WU & SOLOVYEV (in print)  
*Miresa rorida* SOLOVYEV & WITT, sp. n.  
*Narosoideus vulpina* (WILEMAN, 1911)  
*Narosoideus morion* SOLOVYEV & WITT, sp. n.  
*Monema meyi* SOLOVYEV & WITT, sp. n.  
*Prapata owadai* SOLOVYEV & WITT, sp. n.  
*Parasa julikatis* SOLOVYEV & WITT, sp. n.  
*Parasa emeralda* SOLOVYEV & WITT, sp. n.  
*Parasa campagnei* DE JOANNIS, 1928  
*Parasa pseudorepanda* HERING, 1933  
*Parasa ostia* SWINHOE, 1902  
*Parasa prasina* ALPHERAKY, 1895  
*Parasa shaanxiensis* (CAI, 1983), comb. n.  
*Parasa vadimi* SOLOVYEV & WITT, sp. n.  
*Parasa attilis* SOLOVYEV & WITT, sp. n.  
*Parasa pastoralis* BUTLER, 1885  
*Parasa stekolnikovi* SOLOVYEV & WITT, sp. n.  
*Parasa darma* MOORE, 1859  
*Parasa albipuncta* HAMPSON, 1893  
*Parasa zhudiana* (CAI, 1983), comb. n.  
*Parasa bicolor* (WALKER, 1855)  
*Parasa flavabdomena* (CAI, 1983), comb. n.  
*Parasa hainana* (CAI, 1983), comb. n.  
*Parasa yana* (CAI, 1983), comb. n.  
*Parasa jade* SOLOVYEV & WITT, sp. n.  
*Parasa foliola* SOLOVYEV & WITT, sp. n.  
*Parasa umbra* SOLOVYEV & WITT, sp. n.  
*Parasa argentifascia* (CAI, 1983), comb. n.  
*Parasa atera* SOLOVYEV & WITT, sp. n.  
*Parasa argentilinea* HAMPSON, 1893  
*Parasa bana* (CAI, 1983), comb. n.  
*Parasa dilucida* SOLOVYEV & WITT, sp. n.  
*Parasa badia* SOLOVYEV & WITT, sp. n.

*Parasa albida* CANDÈZE, 1927  
*Barisania honeyi* SOLOVYEV, 2009  
*Hyphorma minax* WALKER, 1865  
*Hyphorma minor* DE JOANNIS, 1930  
*Hyphorma avanta* SOLOVYEV & WITT, sp. n.  
*Scopelodes vulpina* MOORE, 1879  
*Scopelodes testacea* BUTLER, 1886  
*Scopelodes sericea* BUTLER, 1880  
*Scopelodes venosa* WALKER, 1855  
*Scopelodes kwangtungensis* HERING, 1931, stat. n.  
*Tanvia zolotuhini* SOLOVYEV & WITT, sp. n.  
*Phocoderma velutina* (KOLLAR, 1844)  
*Phocoderma betis* DRUCE, 1896  
*Mahanta fraterna* SOLOVYEV, 2005  
*Susica sinensis* (WALKER, 1856)  
*Susica pygmaea* HERING, 1931  
*Thosea sinensis* (WALKER, 1855)  
*Thosea lutea* HEYLAERTS, 1890  
*Thosea bipartita* HERING, 1933  
*Thosea vulturia* SOLOVYEV & WITT, sp. n.  
*Thosea unius* SOLOVYEV & WITT, sp. n.  
? *Thosea unifascia* WALKER, 1855  
*Thosea* sp.  
*Quasithosea obliquistriga* (HERING, 1931)  
*Griseothosea fasciata* (MOORE, 1888)  
*Griseothosea sordeo* SOLOVYEV & WITT, sp. n.  
*Avatara onyx* SOLOVYEV & WITT, sp. n.  
*Avatara sicilis* SOLOVYEV & WITT, sp. n.  
*Pseudidonauton siamica* SOLOVYEV, 2009  
*Pseudidonauton vexa* SOLOVYEV, 2009  
*Setora postornata* (HAMPSON, 1900)  
*Setora baibarana* (MATSUMURA, 1931)  
*Setora* cf. *fletcheri* Holloway, 1987  
*Praesetora divergens* (MOORE, 1879)  
*Praesetora kwangtungensis* HERING, 1931  
*Praesetora confusa* SOLOVYEV & WITT, sp. n.  
*Pretas furcillata* (WU & FANG, 2008), comb. n.

*Birhamoides junctura* (WALKER, 1865)  
*Birhamula rufa* (WILEMAN, 1915), comb. n.  
*Matsumurides thaumasta* (HERING, 1933), comb. n.  
*Birhamia roseum* (DE JOANNIS, 1930)  
*Mambarona congrua* (WALKER, 1862)  
*Vanlangia uniformis* (HERING, 1931), comb. n.  
? *Vanlangia castanea* (WILEMAN, 1911), comb. n.  
*Phlossa conjuncta* (WALKER, 1855)  
*Iragoides crispera* (SWINHOE, 1889)  
*Iragoides elongata* HERING, 1931  
*Pseudiragoides spadix* SOLOVYEV & WITT, sp. n.  
*Nirmides altadim* SOLOVYEV & WITT, sp. n.  
*Nirmides mimur* SOLOVYEV & WITT, sp. n.  
*Nirmides trani* SOLOVYEV & WITT, sp. n.  
*Pseudonirmides* cf. *cyanopasta* (HAMPSON, 1910), comb. n.  
*Mummu aerata* SOLOVYEV & WITT, sp. n.  
*Limacolasia suffusca* SOLOVYEV & WITT, sp. n.  
*Squamosa svetlanae* SOLOVYEV & WITT, sp. n.  
*Iraga rugosa* (WILEMAN, 1911)  
*Phrixolepia sinyaei* SOLOVYEV (in print)  
*Trichogyia gemmia* SOLOVYEV & WITT, sp. n.  
*Darna sybilla* SWINHOE, 1903  
*Orthocraspeda sordida* SNELLEN, 1900  
*Orthocraspeda furva* (WILEMAN, 1911)  
*Oxyplax ochracea* (MOORE, 1883)  
*Oxyplax pallivitta* (MOORE, 1877)  
*Devaz vetus* SOLOVYEV & WITT, sp. n.  
*Fignya melkaya* SOLOVYEV & WITT, sp. n.  
*Caniatta levis* SOLOVYEV & WITT, sp. n.  
*Euphlyctina* sp.

### An annotated check-list of Vietnamese Limacodidae

#### ***Cheromettia* MOORE, 1883**

Lepid. Ceylon 2: 133. Type species: *Belippa ferruginea* MOORE, 1877, by monotypy.

The species is sexual dimorphic. The males are rufous brown or blackish with broadly

bipectinated antennae only in the basal quarter. The male forewings are narrow, elongate, with black apex; the hindwings are medially transparent in some taxa (Colour plate 7, fig. 1). The females are paler, rufous yellow; the forewings are broader than in males, also with black apex (Colour plate 7, fig. 2). The genus includes 6 species: *Ch. ferruginea* (MOORE, 1877), *Ch. apicata* (MOORE, 1879), *Ch. laleana* (MOORE, 1859), *Ch. lohor* (MOORE, 1859), *Ch. sumatrensis* (HEYLAERTS, 1884), and *Ch. alaceria* SOLOVYEV & WITT, **sp. n.** The taxa *Ch. apicata* (MOORE, 1879) and *Ch. laleana* (MOORE, 1859) are probable synonymous (HERING 1931: 673); but the type of *Ch. laleana* (MOORE, 1859) is not examined yet. The genus is known from India, southern China, Vietnam, northern Thailand, Peninsular Malaysia and Sundaland.

The larvae are of the smooth-type, green, subovate, with several longitudinal rows of small yellow spots (HOLLOWAY, 1986: 59; LEWVANICH, 2001: 93, figs 49, 50) (Colour plate 18, fig. 1).

***Cheromettia alaceria* SOLOVYEV & WITT, sp. n.**

Colour plate 7, figs 1, 2

Type material. **Holotype:** ♂, “Thailand | Changwat Chiang Mai | 6 km SE of Pang Faen | 1100 m, 21.VIII.1999 | leg. T.CSÖVÁRI & L. MIKUS | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.322 | Museum WITT München”. **Paratypes:** 1 ♂, Thailand, Changwat Nan, 8 km W of Pha Lak, 800 m, 17.VI.1998, leg. István SOÓS & Attila SZABÓ (MWM, genitalia slide 14323); 1 ♂, Thailand, Chiang Mai, Mt. Doi Inthanon, Nat Park, 2300 m, 25.IX.1999, leg. A. SZABO & ZITA (MWM, genitalia slide 14324); 1 ♂, China, S.W. Yunnan, Xisuanbanna, Guanping env., 60 km N of Jinghong, 1000 m, 28–30.IV.2003, leg. S. MURZIN (MWM, genitalia slide 14325); 1 ♂, China, S.Yunnan, N-Lanchang, Hei Mt., Lf, ca. 2500 m, IX.1999, leg. WANG & LI (MWM, genitalia slide 14326); 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Trưng Duong distr., Nghe An prov., 19°10'32.5"N, 104°37'18.5"E, 165±15 m, 5.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, BaBe, Lake N.P., Prov. Cao Bang Phuc, 300 m, XII.2007, leg. Thomas IHLE (CSI).

Additional material. 1 ♀, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM, genitalia slide 14366).

The forewing length is 12–14 mm; the wingspan is 28–30 mm in males; 15 mm (forewing length) and 32 mm (wingspan) in female. The males are blackish with broadly bipectinate antennae in their basal quarter (Colour plate 7, fig. 1). The male forewings are elongate, ochre-blackish; the apex is black, the outer margin near apex with white streaks. The hindwings are triangular, with concave outer margin and transparent medially. The abdomen is robust. The females are ochre brown; the forewings are paler distally with black apex; the hindwings are ochre, rounded (Colour plate 7, fig. 2).

The male genitalia have the single uncus with well developed, slender apical spur (Genitalia plate 1, fig. 1). The gnathos is strong. The valvae are elongate; the apex is smooth. The juxta is modified, horseshoe-shaped, flat, slender apically, with small proximal processes and large distal lateral apical processes. The aedeagus is straight, slender, slightly bifid distally.

The ovipositor lobes of female genitalia are well developed (Genitalia plate 11, fig. 2). The apophyses anteriores are short, finger-shaped; the posterior ones are long, very slender, clublike apically. The ductus bursae is long, spiral. The corpus bursae is rounded. The signum consists of a small field with sclerotized denticles.



Diagnosis. The species is similar externally to *Ch. lohor* (MOORE, 1859) and *Ch. sumatrensis* (HEYLAERTS, 1884) but it is much darker with transparent hindwings. In male genitalia the juxta is characteristic – its lateral parts are narrow distally, neck-shaped, with apical lateral processes; the distal process is single, large, with 1.5–2.0 times of the length of the proximal ones.

Distribution. Northern Thailand, southern China, northern Vietnam.

Biology. The specimens were collected in May and beginning of October from 150 to 300 m in Vietnam and in late April, mid June, mid August, September, and December in elevations of 800 to 2500 m in other localities. Its probable larvae are illustrated here (Colour plate 18, fig. 1).

Etymology. From Latin “alacer” – lively, jolly, cheerful.

### ***Calauta* SOLOVYEV & WITT, gen. n.**

Type species: *Calauta martini* SOLOVYEV & WITT., **sp. n.**, here designated.

The new genus is monotypical, includes small sized moths with obscure dark coloration and transparent wings. The male antennae are broadly bipectinate in basal third. The forewings are elongate with concave costa, transparent, with deep blackish basal and apical zones. The hindwings are transparent medially. In forewing, the veins Sc and R1–5 are close to costa; R5 branching off from R3+R4; the medial stem is well developed, not branched distally; vein CuP is concave.

In male genitalia, the uncus is slightly bifid apically with short subapical spur. The gnathos is well developed. The valvae are triangular without saccular processes. The juxta is divided in two lateral plates; each plate contains a long and curved spur. The vinculum is slender, curved caudad ventrally, without saccus. The aedeagus is slender. The vesica does not contain cornuti.

The females are unknown so far.

The genus is similar to *Cheromettia* MOORE, 1883, *Pseudonagoda* HOLLOWAY, 1990, *Nagoda* MOORE, 1887 and *Nagodopsis* MATSUMURA, 1931 by Sc and R1–5 of forewing closely approximated to costa and by transparent wings, but the following feature does not conform with any of these genera: the deep black basal zone of forewing is well separated from the rest of the wing. Probable apomorphies of the genus: juxta divided in two lateral plates bearing a long single process, slightly bifid apically uncus with medial depression containing subapical spur, slender and long vinculum curved caudad ventrally. The genus is close to *Cheromettia* MOORE, 1883 in its habitus and divided juxta on two lateral plates.

The genus is named after Latin “calautica” – veil, referring to the obscure coloration of the moths and their transparent wings.

### ***Calauta martini* SOLOVYEV & WITT., sp. n.**

Colour plate 7, fig. 10

Type material. Holotype: ♂, “Thailand: Doi | Suthep-Pui N.P. | Chiang Mai, | 1440 m, 10.V.1989 | A.M. COTTON”, “Limacodidae | Brit. Mus. slide | No. 1403” (BMNH, genitalia slide 1403). Paratype: 1 ♂, C. Vietnam, Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25.IX.2008, leg. A. SOLOVYEV & V.

ZOLOTUHIN (CAS, genitalia slide 0101, AS-LIMAC 36).

The forewing length is 9 mm and wingspan is 19–20 mm. The ground colour is black (Colour plate 7, fig. 10). The forewings are transparent with deep, black, well separated basal and apical zones. The hindwings are triangular, transparent medially, with deep black costal and dorsal zones.

In male genitalia, the uncus is slightly divided apically by an apical depression, with small, slender subapical spur (Genitalia plate 1, fig. 2). The gnathos is slender, curved. The valvae are triangular. The transtilla is well developed. The juxta is divided in two turned over L-shaped parts; each part is flattened with single long and slender anterior spur; the left one is C-shaped; the right one is S-shaped. The aedeagus is tube-shaped, slender.

Diagnosis. The species is similar to members of *Cheromettia* MOORE, 1883 as discussed above, but well defined by transparent fore- and hindwings, concave costa of forewing, well separated, and deep black basal area of forewing.

Distribution. Central Vietnam, northern Thailand.

Biology. The moths were collected in early May and late September in altitudes of 288 to 1440 m.

Etymology. The species is dedicated to Mr. Geoff MARTIN (BMNH) for his kind support during my stay in London and examination of collection of BMNH in 2005 and 2008.

### ***Belippa* WALKER, 1865**

List Specimens lepid. Insects Colln. Br. Mus. **32**: 508. Type species: *Belippa horrida* WALKER, 1865, by monotypy.

= *Contheyloides* MATSUMURA, 1931, **syn. n.**, Ins. Mats. **5**: 104, Type species: *Contheyloides boninensis* MATSUMURA, 1931, Ins. mats. **5**: 104, by original designation.

The genus includes middle-sized moths with forewing length 13–16 mm and wingspan 28–35 mm. The congeners differ from each other externally, but are associated together by the similar male genitalia in which the juxta is divided in two flattened lateral parts with dorsal row of large spurs and cranial finger-shaped process. Two lineages inside this genus can be defined.

The first lineage consists of only *Belippa horrida* WALKER, 1865. It is characterized by a darker coloration. The male antennae have short rami. The forewings are elongate with apical white spot and dentate spots near outer margin in the region of veins M1 – M3. The discal spot is streak-like. The hindwings are triangular with almost straight outer margin, blackish brown, with white and black spots near tornus. In male genitalia, the uncus has subapical spur; valvae have no saccular processes; lateral parts of juxta with largest dorsal spurs, arcuate aedeagus widened medially. In female genitalia the ovipositor lobes are well developed; the anterior apophyses are very short, finger-shaped; the posterior ones are very slender, clavate apically. The ductus bursae is long, spiral. The rounded corpus bursae bears an ovoid field of stellate signa.

The second lineage includes 3 species: *B. ochreata* YOSHIMOTO, 1994, *B. thoracica* (MOORE, 1879) and *B. aeolus* SOLOVYEV & WITT, **sp. n.** The species are well differing in appearance by the shape of the forewing and their coloration. However, the male

antennae have very short rami; the thorax is white with two black dorsal spots; the hindwings are rounded. The male genitalia are characterized by the uncus having a subapical spur, well developed gnathos, caudally rounded lateral parts of juxta, slender aedeagus with apical spur dorsally. In female genitalia, the anterior apophyses are short, finger-shaped; the posterior ones are long and very broad. The ductus bursae is long, spiral. The corpus bursae contains a drop-like field of stellate signa.

Special revision needs to determine exact systematic position of both lineages. The synonymy of *Belippa* WALKER, 1865 and *Contheyloides* MATSUMURA, 1931, syn. n. is here erected on a base of the study of the type species. *Contheyloides* MATSUMURA is associated with the first lineage and closely related to *Belippa horrida* WALKER, 1865.

The genus is known from India, Nepal, Japan, China and northern Vietnam.

***Belippa horrida* WALKER, 1865** Colour plate 7, fig. 3; Colour plate 16, figs 1, 2

*Belippa horrida* WALKER, 1865, List Specimens lepid. Insects Colln. Br. Mus. **32**: 509. Type locality: “North China”. Lectotype: ♂ (BMNH), here designated.

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM); 3 ♂♂, 1 ♀, N. Vietnam, Cha pa, 2400 m, NN, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 1600–1800 m, leg. BRECHLIN / SCHINTLMEISTER (MWM). 4 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 1 L, 1-st instar, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 20.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 88, in 96% alcohol); 2 ♂♂, the same data but 11.V.2006 (CAS, VZ-LIMAC 42, 43, in 96% alcohol).

Distribution. India, Japan, China, Taiwan, Thailand, Laos, northern Vietnam.

Biology. The specimens were collected from April to mid July from the altitudes of 1500–2400 m.

Parasites: *Apanteles belippicola* LIU & YOU, 1988 (Braconidae) (LIU, YOU, 1988), *Brachynervus confusus* GAULD (Ichneumonidae) (HE, CHEN, 1994).

Comments. The taxon *Cheromettia formosaensis* KAWADA, 1930 from Taiwan is a probable synonym of *B. horrida* WALKER, 1865. It is also mentioned in INOUE, 1982: 219 but the syntypes are still not examined.

Nomenclatorial notes. The species *Belippa horrida* WALKER, 1865 was described after two males from North China. Only one syntype was found in BMNH. A male bearing the following printed labels: 1 – rounded with green frame, “Type”; 2 – rectangle, yellowish, “N. China. | 54.8.”; 3 – rectangle, yellowish, “*Belippa horrida*.” is here designated as lectotype. This specimen is supplied with the additional lectotype-label.

***Belippa aeolus* SOLOVYEV & WITT, sp. n.** Colour plate 7, fig. 4

Type material. Holotype: ♂, “Nord-Vietnam | Mt. Fan-si-pan | Cha pa, 1700 m NN | (22.15°N 103.46°E) | VI.1994, leg. SINJAEV | & einheim. Sammler | Museum WITT”,

“Genitalpräparat | Heterocera | Nr. 14.388 | Museum Wit München” (MWM, genitalia slide 14388). **Paratype:** 1 ♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994 m, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 14389).

Obscure moths with forewing length 13 mm and wingspan 30 mm in male; 14 viz. 33 mm in female. The male antennae are bipectinate with very short rami. The thorax is white with two dorsal black spots (Colour plate 7, fig. 4). The forewings are triangular, brown with indistinct white discal and apical spots. The abdomen and hindwings are grayish brown.

The male genitalia have slender uncus with short subapical spur (Genitalia plate 1, fig. 3). The gnathos is strong; apically it is slightly flattened dorso-ventrally. The valvae are elongated, narrow. The juxta is divided in two lateral flattened parts, rounded caudally; the dorsal margin of them has large spurs and a finger-shaped process cranially. The aedeagus is regularly curved, slender, 1.8 times as long as valva, dorsally with apical acute triangular spur.

The female genitalia with well developed ovipositor lobes (Genitalia plate 11, fig. 1). The anterior apophyses are short, flattened, rounded apically. The posterior ones are large, finger-shaped and flattened. The ductus bursae is long, spiral. The antrum is slightly curved, well defined. The corpus bursae is rounded, and bears a drop-shaped field of stellate signa.

**Diagnosis.** The species is well distinguished externally from other congeners by apically elongate forewings with more rounded tornus; the ground colour is grayish brown, not yellowish brown as in *B. ochreata* YOSHIMOTO, 1994. In male genitalia, the dorsal spurs of juxta are larger; the valvae are narrower.

**Distribution.** Northern Vietnam.

**Biology.** The moths were collected in June to the beginning of July in altitudes of 1600 to 1800 m.

**Etymology.** Aeolus – the Greek God of the wind.

### ***Altha* WALKER, 1862**

J. Proc. Linn. Soc. 6: 173. Type species: *Altha nivea* WALKER, 1862, by monotypy.

The genus includes whitish moths with forewing length 10–16 mm and wingspan 20–32 mm, similar externally to *Althonarosa* KAWADA, 1930, but the antennae are strongly bipectinate in basal third in male, the coloration of forewing consists of grey or yellowish regularly-shaped large spots (rarely reduced). The female genitalia are modified, with secondary ovipositor lobes (HOLLOWAY, 1986: 63) (Genitalia plate 11, fig. 4).

The larvae are oval, convex above, without tubercules (HOLLOWAY, 1986: 63).

The genus consists of two subgenera: *Altha* WALKER, 1862 and *Belgoraea* WALKER, 1865, **stat. n.** defined externally and by the male genitalia.

### **Subgenus *Altha* WALKER, 1862**

It is separated from the genus *Belgoraea* WALKER, 1865) by more elongate forewings

with larger grey or yellowish spots. Both wings with single outer-marginal black spots. The forewing length is 12–15 mm and wingspan 23–32 mm. The male genitalia are asymmetric with long and massive left and weak right processes of juxta, larger gnathos, saccus long and narrow; valvae basally with two papula-shaped hairy processes (Genitalia plate 1, fig. 4).

The subgenus ranges from India to Sundaland and consists of 5 species: *A. nivea* WALKER, 1862, *A. pura* (SNELLEN, 1900), *A. melanopsis* STRAND, 1915, *A. kerangatis* HOLLOWAY, 1982, and *A. purina* HOLLOWAY, 1982.

***Altha (Altha) nivea* WALKER, 1862**

Colour plate 7, fig. 5

*Altha nivea* WALKER, 1862, J. Proc. Linn. Soc. 6: 173. Type locality: [Sarawak]. Lectotype: ♂ (HDOU), here designated.

Material. 10 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saamler (MWM, genitalia slides 12985, 12999, 13000, 12992 (♂)); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 12987); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, sec. forest, 1600–1800 m, IX.1995, leg. local collector (MWM, genitalia slide 12986); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Prim. NebWald, 28–30.X.1994, leg. SINJAEV & Einh. Slr. (MWM, genitalia slide 12993); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 12991); 1 ♀, N. Vietnam, Mt. Fan-si-pan (west), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM); 9 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, 1–15.XI.1992, sek. Wald, leg. SINAJEV & SIMONOV (MWM, genitalia slide 12960); 7 ♂♂, the same, but 950 m, 17.X.1994, leg. V. SINJAEV (MWM, genitalia slides 12975, 12990); 9 ♂♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 18.40° N, 105.40° E, 200 m, 22–30.XI.1994, leg. SINJAEV & SIMONOV (MWM); 8 ♂♂, N. Vietnam, Ben En National Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 12904); 8 ♂♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slides 12959, 12988); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 3 ♂♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, Vietnam mer., Bach-Ma Nat. Park, 16°10'N, 107°54'E, 1200 m, 26.VII–6.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 12989); 3 ♂♂, Vietnam, Lam Vien plato, Nui Ba nat. reserve, 12°10'N, 108°40'E, 1500 m, 9–18.XI.2008, leg. Y. BEZVERKHOV & V. SINYAEV (CYB); 3 ♀♀, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 10–20.XII.1992, leg. SINAJEV & SIMONOV (MWM).

Distribution. From India to Sundaland and Palawan, including southern China and Taiwan.

Biology. The moths were taken from May to mid December in the altitudes of 200–2400 m.

The food plants are *Camellia* sp. (Theaceae) (BROWNE, 1968), *Costus speciosus* (J. KÖNIG) SM. (SWAMY, RAJAGOPAL, 1995: 137), *Bombax ceiba* L. (BOMBACEAE),

*Camellia sinensis* (L.) KUNTZE (Theaceae), *Cinnamomum zeylanicum* J. PRESL (Lauraceae, West Malaysia), *Citrus* sp. (Rutaceae, India), *Polyalthia longifolia* SONN. (Annonaceae), *Ricinus communis* L. (Euphorbiaceae), *Shorea robusta* ROTH (Dipterocarpaceae), *Terminalia myriocarpa* van HEURCK & MÜLL. Arg., *T. tomentosa* (ROXB. ex DC.) WIGHT & ARN. (Combretaceae), and *Tinospora cordifolia* (THUNB.) MIERS (Menispermaceae, India) (ROBINSON et al., 2007).

Comments. More detailed examinations are needed to determine the status of the taxa *A. nivea* WALKER, 1862, *A. pura* (SNELLEN, 1900), *A. melanopsis* STRAND, 1915, *A. kerangatis* HOLLOWAY, 1982, and *A. purina* HOLLOWAY, 1982 because no diagnostic features were found in external characters of adults and in male and female genitalia (Genitalia plate 1, fig. 4; Genitalia plate 11, fig. 4) so far. By the way, the length of the lateral parts of juxta varies in great limits and it is impossible to define any discrete values for sole taxa even though it was done in the descriptions of *A. kerangatis* HOLLOWAY, 1982 and *A. purina* HOLLOWAY, 1982. Therefore, all species names inside this subgenus can be synonyms.

Nomenclatorial notes. The original description of *Altha nivea* WALKER, 1862 does not contain any information about the number of type specimens. The only specimen found is a male in the collection of HDOU. It is selected as lectotype of the taxon and here designated with the following labels: 1 – large, square, blue; 2 – rectangle, yellowish, black framed with printed text “TYPE | Hope Dept. Oxford” and handwritten “Lep.: No 701 | *Altha nivea* | WALKER”; 3 – round, handwritten with black ink, “SAR.”; 4 – rectangle, yellowish with printed text “Hope Ent. Coll. | Oxf. Univ. Mus. | Genitalia No.:" and handwritten with black ink “1982/1218”; 5 – small, rectangle, printed “1104”; 6 – rectangle, yellowish, handwritten by F. WALKER, “*nivea*”. The lectotype is supplied with a lectotype label with the corresponding information.

### **Subgenus *Belgoraea* WALKER, 1865, stat. n.**

List Specimens lepid. Insects Colln. Br. Mus. **32**: 496. Type species: *Belgoraea subnotata* WALKER, 1865, by monotypy.

The forewing length is 10–16 mm and wingspan 20–31 in male. In comparison to nominate subgenus, the forewings of *Belgoraea* WALKER are shorter and broader, with smaller yellowish or brown spots. Both pairs of wings have two or several black outer-marginal spots. The gnathos is short. The juxta is long, symmetric. The saccus is short. The valvae are without papula-shaped hairy processes.

The subgenus ranges from India to Sundaland and consists of 7 species: *A. (Belgoraea) subnotata* WALKER, 1865, *A. (Belgoraea) adala* (MOORE, 1859), *A. (Belgoraea) contaminata* (HAMPSON, 1893), *A. (Belgoraea) rufescens* SWINHOE, 1893, *A. (Belgoraea) lacteola* (SWINHOE, 1890), *A. (Belgoraea) nuristana* DANIEL, 1965, and *A. (Belgoraea) nix* SOLOVYEV & WITT, **sp. n.**

### ***Altha (Belgoraea) nix* SOLOVYEV & WITT, sp. n.**

Colour plate 7, fig. 6

Reference. DE JOANNIS, 1929: 578 (Cho ganh; Yen bai; as *Altha adala* MOORE, 1859); HERING, 1931: 680 (Tonkin; as *Altha adala* MOORE, 1859).

Type material. Holotype: ♂, “N. Vietnam, 900 m | Tam Dao VI. 86 | 75 km N Hanoi | lg. J. RAZOWSKI”, “Genitalpräparat | Heterocera | Nr. 13.004 | Museum WITT München”, “Museum WITT” (MWM, genitalia slide 13004). Paratypes. 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 950 m, IV.1995, leg. V. SINJAEV (MWM, genitalia slide 13002); 5 ♂♂, the same data but 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 12927); 1 ♂, “Hinterindien Tonking” [Tonkin] (MWM, genitalia slide 12997); 1 ♂, 1 ♀, Thailand, Phu Pan NP, Sakhon Nakhon, 400 m, 22.IV–27.IV.2004, leg. Thomas IHLE (CSI, genitalia slides GU-007 (♂), GU-008 (♀)(2007)); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0054); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 143); 3 ♂♂, C. Vietnam, Kon Tum, 6–7.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 7, 8, 18, in 96% alcohol).

Small moths with forewing length 10–12 mm and wingspan 21–26 mm in males, and 12 mm and 28 mm in females correspondingly. The male antennae are broadly bipectinate in basal third, filiform in female. The ground colour is yellowish white (Colour plate 7, fig. 6). Forewings with ochre spots and small black medial spot, with two black marginal spots between veins R4 and R5, and veins R5 and M1 in the forewing and between veins Rs and M1, and M1 and M2 in the hindwings. These black spots can be reduced.

In male genitalia the uncus is finger-shaped and strongly sclerotized apically (Genitalia plate 1, fig. 5). The gnathos is very small. The valvae are triangular, long, and narrow apically with concave costa. The ratio of diagonal length of valvae to its width is 2.2–2.5. The juxta is very long, with 2/3 of the length of the valvae. The aedeagus is 1.2–1.4 times as long as the valvae; apically distinctly widened; its apical part is 1.5–1.7 times as broad as its medial width, with small, apical sparse spines.

The female genitalia conform to the ground plan of *Altha* WALKER, 1862 with secondary ovipositor lobes.

Diagnosis. The species is externally similar to other species of *Belgoraea* WALKER, 1865 and distinguished by the smaller size of the adults and by the morphology of the male genitalia. The shape of aedeagus is similar to *Altha* (*Belgoraea*) *lacteola* (SWINHOE, 1809), but the valvae of the latter are shorter and broader (the ratio of diagonal length of valvae to its width is 1.95); the aedeagus is without small apical spines.

Distribution. North-eastern Thailand, northern Vietnam.

Biology. The moths were collected in April – June and October in the altitudes of 60–1200 m.

The food plants: *Coffea* sp. (Rubiaceae) (DE JOANNIS, 1929: 579, as for *Altha adala* MOORE, 1859).

Etymology. From Latin “nix” – snow, in connection with external view of adults.

### ***Pseudaltha* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 681. Type species: *Pseudaltha atramentifera* HERING, 1931, by original designation.

The genus includes whitish coloured moths, with male antenna bipectinate with short rami. The forewings have ochre zigzag basal, antemedial and postmedial fasciae, with

black apical and medial streaks. The genus consists of 3 species: *P. atramentifera* HERING, 1931, *P. eboris* SOLOVYEV, 2009, and *P. sapa* SOLOVYEV, 2009, and ranges from India to northern Thailand and northern Vietnam.

The moths are similar to *Altha* WALKER, 1862 and *Althonarosa* KAWADA, 1930 but are distinguished by the presence of a large apical dark streak in the forewing, the male antennae are evenly bipectinate almost to their tip; in male genitalia, the valvae are strongly divided; the juxta has two horn-like lateral processes.

The larvae are unknown.

### ***Pseudaltha sapa* SOLOVYEV, 2009**

Colour plate 7, fig. 7

*Pseudaltha sapa* SOLOVYEV, 2009, Tijdschr. Ent. **152**: 171. Type locality: “N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 1525 m, 22.17°N, 103.44°E”. Holotype: ♂ (MWM).

Material. 3 ♂♂, holotype and paratypes, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, 1525 m, primär. Urwald, 7.10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 12943); 2 ♂♂, paratypes, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 12952); 1 ♂, paratype, the same data but leg. SCHINTLMEISTER (MWM, genitalia slide 12953); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 12954); 1 ♂, paratype, the same, but 2400 m, 8–29.V.1993 (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol).

Distribution. Northern Thailand (Changwat Nan), northern Vietnam (Fan-si-pan).

Biology. The flight period is from May to early July. The moths were taken on the altitudes of 1500–2400 m.

### ***Althonarosa* KAWADA, 1930**

J. Imp. Agr. Exp. Stat. Nish. **1**: 233 (key), 251. Type species: *Althonarosa horisyaensis* KAWADA, 1930, by original designation.

The moths are similar externally to *Altha* WALKER, 1862, but the antennae are provided with very short rami in male; the forewing pattern is diagnostic with black discal spot and smooth dark postmedial fascia (Colour plate 7, fig. 8). The valva with single papula-shaped hairy process in male genitalia; the aedeagus with two large apical spurs (Genitalia plate 1, fig. 6). No secondary ovipositor lobes presented in female genitalia (Genitalia plate 11, fig. 3).

The genus ranges from India to Sundaland and consists of 3 species: *A. horisyaensis* KAWADA, 1930 (= *Narosa nigricristata* HERING, 1931), *A. dentijuxta* HOLLOWAY, 1986, and *A. cretacea* HOLLOWAY, 1986.

The species *Thosea peralbida* SWINHOE, 1904 (type locality: “Poona” [W. India]) is known only from a single female (holotype) and probably must be also attributed to this genus.



***Althonarosa horisyaensis* KAWADA, 1930**

Colour plate 7, fig. 8

*Althonarosa horisyaensis* KAWADA, 1930, J. Imp. Agr. Exp. Stat. Nish. **1**: 251. Type locality: “Horisya in Formosa”. Syntypes: 1 ♂, 1 ♀.

*Narosa nigricristata* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 676. Type locality: “Formosa, Tamorin”. Holotype: ♀ (ZMHB).

Material. 7 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slides 12933, 12934, 13010); 1 ♀, N. Vietnam, Yen-Bai – An-Chy, 21°42’N, 104°18’E, primary forest, V.1996 (MWM, genitalia slide 13006); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Chapa, 22°20’N, 103°40’E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM, genitalia slide 13007); 1 ♂, N. Vietnam, Fan-si-pan, 22°20’N, 103°40’E, O-ku-hay, 1600–1800 m, VII.1995, leg. local collectors (MWM, genitalia slide 13008); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, near Cha-pa, 22°20’N, 103°40’E, V.1995, 1600–1800 m, leg. local collectors (MWM, genitalia slide 13016); 4 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, N. Vietnam, Fan-si-pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 11, in 96% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 17.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 26, in 96% alcohol).

Distribution. North-western India, eastern Nepal, Myanmar, China, Taiwan, Thailand, northern Vietnam, Peninsular Malaysia, Sumatra, Java, Bali.

Biology. The moths were collected in May and July in the altitudes of 1500–2400 m.

Remark. Male and female genitalia are figured in this paper (Genitalia plate 1, fig. 6; Genitalia plate 11, fig. 3).

***Narosa* WALKER, 1855**

List Specimens lepid. Insects Colln. Br. Mus. **5**: 1103 (key), 1151. Type species: *Narosa conspersa* WALKER, 1855, by monotypy.

About 45 species names were formerly associated with this genus based on several not unique characters: the small size and yellowish coloration of imago, filiform antennae in both sexes, sinuous vein R1 in forewing, and stellate signa in corpus bursae. All these features can be found in other genera as well. Several monophyletic groups of species can be recognized though a detailed analysis of the forewing pattern and genitalia of both sexes of *Narosa* WALKER, 1855 proves the polyphyly of the genus. We propose to transfer all these groups into their own genera. This transfer could also help to easier identify the species. Four new genera are therefore established here except *Narosa* WALKER, 1855: *Quasinarosa* SOLOVYEV & WITT, **gen. n.**, *Tennya* SOLOVYEV & WITT, **gen. n.**, *Caelestomorpha* SOLOVYEV & WITT, **gen. n.**, and *Vipaka* SOLOVYEV & WITT, **gen. n.** (diagnoses are given below).

Thus, the genus *Narosa* WALKER, 1855 includes small-sized moths with forewing length 8–9 mm and wingspan 14–18 mm in male (Colour plate 8, figs 1, 2). The species are without strong sexual dimorphism; the females are just slightly larger than males (forewing length 9–10 mm and wingspan 19–20 mm). The forewings are yellowish with dark spots and fasciae. The presence of apical small streaks and narrow postmedial transverse fasciae is diagnostic. The outer margin of forewing bears dark spots ornamented by white colour between veins.

The male genitalia are characterized by single uncus and gnathos, valvae without saccular process, flattened simple juxta, tube-shaped and slender aedeagus, vesica with or without claw-shaped cornuti (Genitalia plate 1, fig. 7). The presence of claw-shaped cornuti is a unique feature which can be regarded as a possible autapomorphy for *Narosa* WALKER, 1855.

Females are known only for subgenus *Penicillonarosa* STRAND, 1916 and are characterized by well developed ovipositor lobes, long spiraled ductus bursae, sclerotized antrum, the corpus bursae is rounded, with large, ellipsoidal, stellate signum.

The genus consists of two subgenera well defined by morphology of male genitalia and forewing pattern: *Narosa* WALKER, 1855 and *Penicillonarosa* STRAND, 1916. The nominate subgenus is monotypical, known from Sri Lanka only so far. Both subgenera are similar externally and in male genitalia but the nominate one lacks cornuti on vesica.

### **Subgenus *Penicillonarosa* STRAND, 1916**

Arch. Naturgesch. 82 (A) 3: 141. Type species: *Narosa (Penicillonarosa) penicillata* STRAND, 1916, by monotypy.

The subgenus is monotypical, ranges from India, southern China, Taiwan, Thailand, Vietnam to Peninsular Malaysia and Sumatra (HOLLOWAY, 1990: 33, as *Narosa ?ochracea* HERING (1931)).

### ***Narosa (Penicillonarosa) nigrisigna* WILEMAN, 1911**

Colour Plate 8, figs 1, 2, Colour plate 16, figs 3, 4

*Narosa nigrisigna* WILEMAN, 1911, Entomologist 44: 204. Type locality: “Kanshirei (1000 ft.)” [Taiwan]. Lectotype: ♀ (BMNH), **here designated**.

*Narosa (Penicillonarosa) penicillata* STRAND, 1916, Arch. Naturg., A. 3: 141. Type locality: “Kosempo” [Taiwan]. Holotype: ♂ (DEI).

*Heterogenea formosana* MATSUMURA, 1927, J. Coll. Agric. Hokkaido imp. Univ. 19: 90. Type locality: “Baibara (Horisha)” [Taiwan]. Lectotype: ♂ (EIHU), **here designated**.

*Narosa ochracea* HERING, 1931, in SEITZ, Gross-Schmett. Erde 10: 675, Taf. 86 b, **syn. n.** Type locality: “Kwang-tung, Mahn-tsi-schan”. Lectotype: ♂ (ZMHB), **here designated**.

Reference. DE JOANNIS, 1929: 579 (Tuyen quang, Cho ganh; as *Narosa conspersa* WLK., 1855, and *N. nigrisigna* WIL., 1911).

Material. 6 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek, Wald, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 13114); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, Kult., 1600–1800 m, IV.1995, leg. SINAJEV & Einh. Slr. (MWM); 4 ♂♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 17 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7–9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slides 0038, 0071, 0073); 2 ♂♂, the same data but 7–8.X.2008 (CAS, AS-LIMAC 55, in 96% alcohol); 1 ♂, N. Vietnam, Mê Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. Zolotuhin (CAS); 2 ♂♂, N. Vietnam, Mê Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11.X.2008, leg. A.

SOLOVYEV & V. ZOLOTUHIN (CAS); 6 ♂♂, the same data but 12–13.X.2008 (CAS, genitalia slides 0041, 0070, 0071); 8 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0039); 5 ♂♂, the same data but 1.X.2008 (CAS); 1 ♂, C. Vietnam, Yên Khê, Thác Kèm waterfall, Con Cuông distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 6 ♂♂, the same data but 26–28.IX.2008 (CAS, AS-LIMAC 39, AS-LIMAC 79, AS-LIMAC 98, in 96% alcohol); 3 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 3 ♂♂, the same data (CAS, AS-LIMAC 126, in 96% alcohol); 9 ♂♂, the same data but 29–1.IX.2008 (CAS, AS-LIMAC 88, AS-LIMAC 132, in 96% alcohol); 14 ♂♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Trưng Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0040); 8 ♂♂, the same data but 4–5.X.2008 (CAS, AS-LIMAC-66, in 96% alcohol); 1 ♂, the same data but 5.X.2008 (CAS); 5 ♂♂, S. Vietnam, Bao Loc (Sek. Wald) Pung Cat Tien, 11.32° N, 107.48° E, 1500 m, 10–20.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slide 13024); 3 ♂♂, S. Vietnam, Ninh Thuận prov., Bắc Ai Distr., Phước Bình vill. & NP, secondary forest, 200 m, 11–14.XI.2008, leg. TRAN Thieu Du (MWM).

Distribution. India, southern China, Taiwan, Thailand, Vietnam, Peninsular Malaysia, Sumatra (HOLLOWAY, 1990: 33, as *Narosa ? ochracea* HERING (1931)).

Biology. The moths were taken in April, May, late September – mid October, mid November and December in the altitudes of 34–1800 m in Vietnam (in April – August, November and December in the altitudes of 1200–1700 m in other localities).

Comments. DE JOANNIS noted “*N. conspersa* WLK., 1855” from Vietnam. The species is similar externally to *Narosa (Penicillanarosa) nigrisigna* WILEMAN, 1911 and probably was confused with this species because of the colour polymorphism. The species *Narosa (Penicillanarosa) nigrisigna* WILEMAN, 1911 is known in grey and yellow forms, and both forms are found sympatrically in the area from Taiwan to Vietnam.

The new synonymy of *N. (Penicillanarosa) nigrisigna* WILEMAN, 1911 and *N. ochracea* HERING, 1931 is established here on the base of external similarity and morphology of the male genitalia (types of both taxa examined).

Nomenclatorial notes. The species *Narosa nigrisigna* WILEMAN, 1911 was described after two “males” but only one female was found in BMNH with labels conform to the syntype series; the sex of syntypes was misidentified evidently. This specimen is designated as lectotype; it bears the following labels: 1 – yellowish with red frame, round with printed text “Type”; 2 – yellowish, rectangle with printed “Kanshirei, | Formosa. | 1,000 ft. A.E. WILEMAN.”, handwritten with black ink “25.X.1908.” and symbol “♂” corrected to “♀”, both handwritten by red ink; 3 – yellowish, rectangle, handwritten by hand of A.E. WILEMAN with black ink, “*Narosa | nigrisigna* | Type ♂♂ [both symbols are crosses] sp. n.” and by red ink “♀”; 4 – yellowish, square, handwritten by red ink “608T+”, the latest number conforms to collection number mentioned in original description. The lectotype is supplied with the corresponding lectotype label.

The species *Heterogenea formosana* MATSUMURA, 1927 was described after two syntypic males. The single syntype specimen kept in EIHU is designated as lectotype which bears the labels: 1 – yellowish with black frame, rectangle, with printed text “det. MATSUMURA” and handwritten by hand of S. MATSUMURA, by grey [or faded black]

“*Heterogenea* | *formosana* MATS. | n. sp. |”; 2 – yellowish, rectangle with handwritten text by grey [or faded black] “Baibara | 21/VII’25” and otherside with printed “Formosa | T. UCHIDA”; 3 – red with black frame, rectangle with printed “type” and handwritten with black ink “*Heterogenea* | *formosana* | MATSUMURA”; 4 – red, rectangle, printed “Type | MATSUMURA”; 5 – white, rectangle with printed text “♂ Genitalia on slide” and handwritten with black ink “H. INOUE, ’75 | No. Cch-1”. This specimen is supplied with an additional red lectotype label.

The type series of *Narosa ochracea* HERING, 1931 includes male and female from Kwang-tung, Mahn-tsi-shan, collected in April – June and July – August by Dr. MELL, but only one male was found in ZMHB. It is designated as lectotype with labels: 1 – rectangle, red, with printed “Typus”; 2 – rectangle, yellow, with printed “Mahn tsi shan | Kwangtung | MELL S.” and handwritten with black ink “8.VIII.15.”; 3 – rectangle, yellowish, printed “140633”; 4 – rectangle, yellowish with printed text: “det. Mart. HERING” and handwritten by hand of M. HERING “*Narosa* | *ochracea* M. | ♂-Type”; 5 – quadrangle, yellow, by pencil, “M 1659” (hardly readable). The specimen is supplied with an additional red lectotype label.

Remark. Male and female genitalia are figured in the present paper (Genitalia plate 1, fig. 7; Genitalia plate 11, fig. 5).

### ***Quasinarosa* SOLOVYEV & WITT, gen. n.**

Type species: *Heterogenea fulgens* LEECH, 1888, here designated.

The genus includes small moths with forewing length 8–11 mm and wingspan 18–23 mm in males, 12–14 mm and 24–30 mm in females. The male antennae are filiform. The forewings have diagnostic, not well distinctive, dark, apical streak-like pattern and large, dark medial spot (Colour plate 8, figs 3–5). The outer margin of forewings has black spots ornamented by white colour between veins. The vein R1 of forewing is sinuous; the vein R5 is branched from R3+R4.

The male genitalia have curved saccular processes, juxta with apical two pincers-like, curved, strong processes (Genitalia plate 1, figs 8, 9). The uncus is single with subapical spur. The gnathos is single. The aedeagus is small, tube-shaped. The vesica does not contain cornuti.

The female genitalia have sclerotized vaginal plate, spiral ductus bursae and rounded corpus bursae with pear-like stellate signum (Genitalia plate 11, figs 7–8).

The probable autapomorphies of *Quasinarosa* SOLOVYEV & WITT, **gen. n.** are the presence of large pincer-like processes of juxta and curved, strongly sclerotized, acute saccular processes. The phylogenetic relationships with other limacodid genera is still unknown so far. The included species were transferred from *Narosa* WALKER, 1855 but no distinct synapomorphies of these two genera were found except a slight similarity in forewing pattern.

The genus ranges from India, Nepal, Myanmar to China, Taiwan, Vietnam, and Thailand and consists of 5 species so far: *Q. fulgens* (LEECH, 1888), **comb. n.** (= *Narosa kanshireana* MATSUMURA, 1927, = *Narosa pseudochracea* HERING, 1933, **syn. n.**, = *Narosa tamsi* LEMÉE, 1950, **syn. n.**), *Q. corusca* (WILEMAN, 1911), **comb. n.** (= *Narosa baibarana* MATSUMURA, 1927, = *Narosa takamukui* MATSUMURA, 1927, = *Narosa*

*ishidae* MATSUMURA, 1927, = *Narosa shinshana* MATSUMURA, 1927), *Q. azumai* (INOUE, 1976), **comb. n.**, *Q. swanni* (WEST, 1937), **comb. n.**, and *Q. laesara* SOLOVYEV & WITT, **sp. n.**

The new synonymies are established here on the base of the identity of external and male genital characters of the types.

The relationship of *Q. fulgens* (LEECH, 1888) and *Q. corusca* (WILEMAN, 1911) is not clear so far and probably they are also synonyms and distinguished only by a single character of the male genitalia – the pincer-like processes of juxta have basal curved spurs in *Q. fulgens* (LEECH), but this character is quite variable; it needs special investigation.

The genus is named after *Narosa* WALKER, 1855 with prefix “quasi” meaning “imaging, false” in Latin because of external similarity to the genus.

***Quasinarosa fulgens* (LEECH, 1888), comb. n.**

Colour plate 8, fig. 3

*Heterogenea fulgens* LEECH, 1888, Proc. zool. Soc. Lond.: 609, plate XXX, fig. 18. Type locality: “Gensan”. Lectotype: ♂ (BMNH), **here designated**.

*Narosa kanshireana* MATSUMURA, 1927, J. Coll. Agric. Hokkaido imp. Univ. **19**: 87, pl. V, fig. 24. Type locality: “Formosa, Kanshirei”. Holotype: ♂ (EIHU).

*Narosa pseudochracea* HERING, 1933, in SEITZ, Gross-Schmett.Erde, Suppl **2**: 203, **syn. n.** Type locality: “Chung-kiang, West-China”. Holotype: ♂ (BMNH).

*Narosa Tamsi* LEMÉE, 1950, Contr. Et. Lepid. Mt. Tonkin. Saigon: 43, **syn. n.** Type locality: “Backan” [N. Vietnam]. Lectotype: ♂ (MNHN), **here designated**.

Material. 1 ♂, Haut. Tonkin, Backan (MNHN, lectotype of *Narosa Tamsi* LEMÉE); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 144); 3 ♂♂, the same data, leg. V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, Cuc Phuong N.P., prov. Ninh Binh, 20°14.579'N, 105°43.071'E, 140 m (CSI); 11 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25–29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0044, 0075); 4 ♂♂, the same data (CAS, AS-LIMAC 38, AS-LIMAC 77, in 96% alcohol); 2 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1–2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0043); 1 ♂, the same data (CAS, AS-LIMAC 115, in 96% alcohol).

Distribution. Japan, Korea, China, Taiwan, northern and central Vietnam.

Biology. The specimens were collected in early May, late September – early October in altitudes of 60–352 m.

Comments. Externally, the species is similar to *Q. laesara* SOLOVYEV & WITT, **sp. n.**, but distinguished in male genitalia by the following points: the juxta has two large apical processes with triangular, not rounded flattened basal part; the gnathos is slender; the saccular processes are broader; the aedeagus is not so strongly curved (Genitalia plate 1, fig. 8). The female genitalia are also figured (Genitalia plate 11, fig. 7).

Nomenclatorial notes. *Heterogenea fulgens* LEECH, 1888 was described after “two specimens (♀)” collected in Gensan (leg. LEECH) and Ningpo (leg. native collector) in July. However, two specimens of different sexes with corresponding type labels were

found in BMNH. We suppose that the sex of one specimen was misidentified because males and females of the present species are hardly separable externally. The male type specimen is here designated as the lectotype; it bears the following labels: 1 – round with red frame and print black text “Type”; 2 – rectangle, yellowish, with handwritne text by J.H. LEECH’s hand with black ink “Narosa | Heterogenea | fulgens | Type ♂ | sp. n.”; 3 – rectangle, yellowish, printed “LEECH Coll. | 1900–64”; 4 – rectangle with black frame with print black text “Gensan, | July, 1887. | LEECH.”; 5 – rectangle, blue with printed text “Limaodidae | genitalia | slide No.” and handwritten “159”. The lectotype is supplied with a red label with corresponding text. The female type specimen should therefore be considered as paralectotype of the species.

The number of typical specimens of *Narosa tamsi* LEMÉE, 1950 and their sex are not mentioned in the original description. Lectotype: ♂ (MNHN), here designated, with followings labels: 1 – rectangle, red with black printed text “Type”; 2 – rectangle, yellowish, handwritten with black ink “*Narosa Tamsi* | Backan”; 3 – rectangle, white with black printed text “Muséum Paris” and handwritten with black ink “A. LEMÉE | 1959”; 4 – rectangle, yellowish, handwritten with black ink “Haut. Tonkin | Backan | Paul LEMÉE”; 5 – large, rectangle, yellowish with handWITTEN black inked text “*Narosa | tamsi* LEMÉE | Contr. Et. Lépid. | Ht. Tonkin. Saigon, | 1950, p. 43, fig.”. This specimen is supplied with a red lectotype label with corresponding text.

***Quasinarosa laesara* SOLOVYEV & WITT, sp. n.**

Colour plate 8, figs 4, 5

Type material. Holotype: ♂, “Nord-Vietnam | Tam Dao, (Sek. Wald) | 60 km NW Hanoi, 1200 m | (21.34’N 105.20’E) | 1-5.V.1993 leg. | SINAJEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.090 | Museum WITT München” (MWM, genitalia slide 13090). Paratypes. 1 ♂, the data as in holotype; 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, Sekund.-Wald, 22.20° N, 103.40° E, Kult., 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Slr. (MWM, genitalia slide 13091); 2 ♂♂, 1 ♀, C. Vietnam, Bao Loc (Sek. Wald), Rung Cat Tien, 11.32° N, 107.48° E, 1500 m, 10–20.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slides 13085 (♂), 13167 (♀)).

The forewing length is 9–10 mm and the wingspan is 20 mm in males, 12 and 22 mm in females (Colour plate 8, figs 4, 5). The females have more elongate forewings in comparison with *Q. fulgens* (LEECH).

In male genitalia, the uncus is single, finger-shaped apically (Genitalia plate 1, fig. 9). The gnathos broad and dorso-ventrally flattened. The saccular process coiled. The juxta has two large apical processes with rounded, flattened basis. The aedeagus is S-shaped in lateral view, slightly longer than valvae.

The female genitalia with well-developed vaginal plate (Genitalia plate 11, fig. 8). The ductus bursae is spiralled with about 10 turns, very long. The corpus bursae is rounded and small.

Diagnosis. Similar to *Q. fulgens* (LEECH), but easily distinguished in male genitalia. In the present species, the uncus is finger-shaped apically, the gnathos is much broader and flattened, saccular processes more coiled, processes of juxta with rounded basis, and aedeagus larger. In female genitalia, the ductus bursae is twice more spiralled and longer, the corpus bursae is smaller (only 2 times broader than length of ovipositor lobes).

Distribution. Vietnam.

Biology. The flight period falls in April, May and December. Probably two generations are developed per year. The moths were collected in altitudes of 1200–1800 m.

Etymology. From Latin “laesarius” – amber-coloured, in connection with coloration of adults.

### ***Tennya* SOLOVYEV & WITT, gen. n.**

Type species: *Narosa propolia* HAMPSON, 1900, here designated.

The genus includes small moths with forewing length 9–11 mm and wingspan 19–24 mm in males and 13–15 mm viz. 26–30 mm in females (Colour plate 8, fig. 6). The male antennae are filiform. The females have more elongate forewings than the males. In forewing, the vein R1 is sinusoidal, R5 arises from R3+R4; the apex and costa are whitish with basal large darken spot; the apical and medial spots are present. The outer margin of forewings has black spots, ornamented by white colour between veins.

The male genitalia are diagnostic, with hook-shaped saccular processes, well developed sacculus with two narrow and long apical processes (Genitalia plate 1, fig. 10). The uncus has an apical spur. The gnathos is narrow. The aedeagus is short and very broad.

The female genitalia with very short two pairs of apophyses (only female of *Tennya propoliodes* (HOLLOWAY) is examined). The 9th segment of abdomen is strongly sclerotized. The ductus bursae is short, slightly spiral, strongly sclerotized. The corpus bursae is ellipsoidal, large, with small, indistinctive, stellate signum in cranial part.

Externally the genus is similar to *Quasinarosa* SOLOVYEV & WITT, **gen. n.**, but easily distinguished by the white apex of forewings, whitish costa, and the thorax often with white scales.

The probable apomorphies in male genitalia are flattened juxta with two long, closely situated dorsal processes, curved and strongly sclerotized saccular process with sacculus well defined from the rest part of valva and with dorsal strongly sclerotized crest.

The genus ranges from India, Nepal, southern China, Thailand, and Vietnam to Malaysia and consists of 2 described species: *T. propolia* (HAMPSON, 1900), **comb. n.** and *T. propoliodes* (HOLLOWAY, 1982), **comb. n.**; two more species as yet undescribed are also tentatively attributed.

The genus is named after “Tennyō (Tennin)” – Buddhist angels.

### ***Tennya propolia* (HAMPSON, 1900), comb. n.**

Colour plate 8, fig. 6

*Narosa propolia* HAMPSON, 1900, J. Bombay nat. Hist. Soc. **13**: 232. Type locality: “Sikhim, 2,800”. Lectotype: ♂ (BMNH), **here designated**.

Material. 3 ♂♂, N. Vietnam, Mai-chau, Urwald, 40 km SE Moc-chau, 20.5° N, 104.5° E, 1400 m, 7–15.IV.1995, leg. SINJAEV & Eihn. Samml. (MWM, genitalia slide 13076); 2 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21° 34'N, 105° 20'E, 950 m, 17.X.1995, leg. SINJAEV (MWM, genitalia slide 13077); 1 ♂, the same, but 23–31.III.1995 (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, Kult., 1600–1800 m, IV.1995, leg. SINJAEV & Eihn. Slr. (MWM); 1 ♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N,

105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0074).

Distribution. Vietnam, India, Nepal, China: Guangxi.

Biology. The moths were taken in late March, April and beginning and mid October in the altitudes of 343 to 1800 m in Vietnam; in April, May, July, and August in other territories.

The food plants are *Citrus* spp. (NATH, 1970: 177), *Citrus sinensis* (L.) OSBECK (Rutaceae) (ROBINSON et al., 2007).

Nomenclatorial notes. The species *Narosa propolia* HAMPSON, 1900 was described after an unknown number of male specimens. The single male found in BMNH is therefore designated as lectotype here. The specimen bears the following labels: 1 – round, with red frame and black print text “Type”; 2 – rectangle, yellowish, printed “99–206.”; 3 – rectangle, yellow, with printed text “Sikkim. | July '95. | PILCHER.” and handwritten with black ink “2800”; 4 – rectangle, yellowish, handwritten by HAMPSON's hand, black inked “*Narosa | propolia | type ♂*. HMPSON”; 5 – rectangle, blue, “Limacodidae | genitalia | slide No.” and handwritten in black ink “179 ♂”. This specimen is supplied with a label with corresponding text.

Remark. The male genitalia are figured in the present paper (Genitalia plate 1, fig. 10).

### ***Tennya* sp. 1**

Material. 1 ♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 1 ♂, C. Vietnam, Kon Tum, 3.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 21, in 96% alcohol); 2 ♂♂, the same data, but 1–10.VI.2006 (CAS, VZ-LIMAC 2, 3, in 96% alcohol).

Comments. A new species. The specimens are known only from alcohol preserved material.

### ***Tennya* sp. 2**

Material. 1 ♂, Vietnam mer., Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13146).

Comments. Also a new species but we cannot describe it here because the single known male is strongly worn and its genitalia are slightly damaged.

### ***Caelestomorpha* SOLOVYEV & WITT, gen. n.**

Type species: *Caelestomorpha albiceris* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus is characterized by the small size of the moths with forewing length 9–12 mm and wingspan 19–25 mm (Colour plate 8, fig. 7). The male antennae are almost filiform, with very short rami. The forewings are whitish apically with basal dark spot; similar to *Tennya* SOLOVYEV & WITT, **gen. n.**, but the external fascia is distinctly narrow. The vein R1 of forewings is sinuous, vein R5 is branched from R3+R4.

The male genitalia are diagnostic (Genitalia plate 2, fig. 1). The uncus broad and very narrow and flattened distally, without any spur. The gnathos is flattened, fish-tale-shaped



divided apically. The valvae are rounded with costal appendage and with short saccular processes. The juxta is flattened, without any process. The aedeagus is very long, acute apically. The vesica with two large rows of bristle-shaped cornuti. The females are unknown.

The genus is easily defined by its forewing pattern and features of male genitalia.

The probable autapomorphies are: elongate and flattened uncus apically, fish-tale-shaped gnathos apically, rounded valvae with costal appendage and vesica with two rows of bristle-shaped cornuti.

The genus consists of 2 species: *C. albiceris* SOLOVYEV & WITT, **sp. n.** and *C. endodonta* (HAMPSON, 1897), **comb. n.**

The genus name originates from Latin “Caelestis” – celestial, heavenly, rainbow.

### *Caelestomorpha albiceris* SOLOVYEV & WITT, **sp. n.**

Colour plate 8, fig. 7

Type material. Holotype: ♂, “Nord-Vietnam | Cuc Phuong Nat. Park | 60 km SW Hanoi, 400 m | (20.15°N 105.20°E) | 21.11.1994 leg. | SINJAEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.032 | Museum WITT München” (MWM, genitalia slide 13032). Paratypes. 1 ♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13159); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13160); 2 ♂♂, the data as in holotype; 1 ♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0034); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0042); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 97, in 96% alcohol); 1 ♂, S. Vietnam, Ninh Thuan prov., Bac Ai Distr., Phuoc Binh vill. & NP, secondary forest, 200 m, 11–14.XI.2008, leg. TRAN Thieu Du (MWM).

Additional material. 1 ♂, Thailand, Changwat Nan, 25 km N of Bo Luang, 1150 m, 11.XI.1999, leg. Márton HREBLAY (MWM, genitalia slide 13069); 1 ♂, Thailand, Changwat Nan, 6 km N of Bo Luang, 1050 m, 19.VIII.1999, leg. T. CSÖVÁRI & L. MIKUS (MWM, genitalia slide 13097); 1 ♂, S. Cambodia, Sre Klong env., Kirirom, 720 m, 4–12.I.2001, leg. L. CHERNYSHEV & V. KOSOV (MWM, genitalia slide 13827).

The forewing length is 9–12 mm and wingspan 19–25 mm. The forewings are whitish apically, with basal dark spot near dorsum, with series of dentate almost paralleled oblique fasciae; the external fascia is distinctly narrow (Colour plate 8, fig. 7).

In male genitalia, the uncus is broad, slender and flattened distally, without any spur (Genitalia plate 2, fig. 1). The gnathos is flattened, fish-tale-shaped apically. The valvae are rounded with costal appendage and short saccular processes. The juxta is flattened without any processes. The aedeagus is long, acute apically, with dorsal margin longer than ventral one. The vesica with two rows of bristle-shaped cornuti.

Diagnosis. The species is similar to *Tennya* SOLOVYEV & WITT, **gen. n.**, but the external fascia is distinctly narrower. The male genitalia are diagnostic, with absence of any spur

in uncus, fish-tale-shaped gnathos, rounded valvae, not modified juxta, long aedeagus, and two rows of bristle-shaped cornuti in vesica.

Distribution. Northern Thailand (Changwat Nan), southern Cambodia and Vietnam.

Biology. The flight period falls in the beginning of May, late September to beginning of October, mid November to beginning of December. The moths were collected in altitudes of 200 to 1200 m.

Etymology. Albiceris (from Latin) – yellow-white.

### ***Vipaka* SOLOVYEV & WITT, gen. n.**

Type species: *Narosa niveipennis* HERING, 1931, here designated.

The genus is monotypical so far, includes *Vipaka niveipennis* (HERING, 1931), **comb. n.** (Colour plate 8, fig. 8). The unique forewing pattern, coloration, features of male and female genitalia do not allow to place the species in *Narosa* WALKER, 1855. The moths are small sized with forewing length 9 mm and wingspan 17–18 mm in males, 9–11 and 18–23 mm in females. The ground colour is white. The male antennae are filiform. The head, thorax and abdomen are yellowish. The forewings are white with brown medial spot and S-shaped postmedial fascia in upper third of forewing. The outer margin between veins has series of black dots. The vein R5 of the forewing arises from the stem R3+R4, and R1 is sinusoidal.

The male genitalia with single uncus and gnathos (Genitalia plate 2, fig. 2). The valvae are elongate, without saccular processes. The juxta is flattened. The aedeagus is tubular, broad, tapered apically, with two strong sharp apical processes. The dorsal process is slightly S-shaped, curved, 2.5 times shorter than ventral one.

Female genitalia with narrow ovipositor lobes (Genitalia plate 11, fig. 6). The apophyses are well developed, finger-shaped. The ductus bursae is short with band of distinctive strong sclerotization. The corpus bursae is pear-shaped with rhomboidal single signum of crescent-type.

Diagnosis. The moths of *Vipaka* SOLOVYEV & WITT, **gen. n.** are similar externally to *Narosa albidens* HOLLOWAY, 1990, for which its own genus is also needed, but easily discriminable by the forewing pattern and male genitalia. The brown postmedial fascia of forewing and the aedeagus have two diagnostic apical processes. The signum of corpus bursae is crescent-shaped (in *Narosa* WALKER, 1855 – stellate signum, which characterizes another monophyletic generic lineage after HOLLOWAY, 1986 and HOLLOWAY et al., 1987).

The probable apomorphy of the genus is tubular aedeagus with two sharp, apical, arisen from one point processes.

Etymology. *Vipaka* – in Buddhism, results or consequence.

### ***Vipaka niveipennis* (HERING, 1931), comb. n.**

Colour plate 8, fig. 8

*Narosa niveipennis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 676. Type locality: “Shillong” [India]. Holotype: ♂ (BMNH).

Material. 2 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22.17°, 103.44° E,

1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler, MWM (genitalia slide 13019 MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X.1995, leg. SINJAEV, MWM (genitalia slide 13083 MWM); 1 ♀, N. Vietnam, Hoa Bihn, 70 km NW Hanoi, 400 m, 28.V–6.VI.1990, leg. E. PALIK, MWM (genitalia slide 13084 MWM); 1 ♀, N. Vietnam, Mai-chau, 25 km S Moc-chau, Sekundärwald, 20.50° N, 104.40° E, 1400 m, 14–18.XI.1994, leg. V. SINJAEV (MWM).

Distribution. India, northern Thailand (Chiang Mai) and northern Vietnam.

Biology. The moths were taken in April, late May, early June, October, and November in the altitudes of 400–1400 m.

Remark. Male and female genitalia are figured (Genitalia plate 2, fig. 2, Genitalia plate 11, fig. 6).

### ***Flavinarosa* HOLLOWAY, 1986**

Moths of Borneo 1: 72. Type species: *Narosa holoxanthia* HAMPSON, 1900, by original designation.

The genus comprises small sized-moths, externally similar to *Narosa* WALKER, 1855, *Quasinarosa* SOLOVYEV & WITT, **gen. n.**, *Tennya* SOLOVYEV & WITT, **gen. n.** and *Caelestomorpha* SOLOVYEV & WITT, **gen. n.**, but can easily be distinguished by unicolorous rufous forewings and yellow hindwings (Colour plate 8, figs 10, 11). In male genitalia, the uncus is slightly bifid apically; the vesica of aedeagus contains a series of bristle-shaped cornuti (Genitalia plate 2, figs 3, 4). The corpus bursae in female genitalia with double triangular, slightly scobinate signum (Genitalia plate 11, fig. 9). The genus consists of 5 species: *F. holoxanthia* (HAMPSON, 1900), *F. obscura* (WILEMAN, 1915), *F. paucispina* HOLLOWAY, 1986, **stat. n.**, *F. alius* SOLOVYEV & WITT, **sp. n.**, and *F. glaesa* SOLOVYEV & WITT, **sp. n.**, and ranges from India to Sundaland. *F. paucispina* is raised to the status of a full species based on clear differences in the male genitalia.

### ***Flavinarosa alius* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 10

Type material. Holotype: ♂, “Vietnam, Prov. Nghe An, | Distr. Que Phong, Ban Khom | 280 m, 19°40.5'N, 104°54.1'E | 21–23.I.1999, leg. G. RONKAY | coll. Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.836 | Museum WITT München” (MWM, genitalia slide 13836). Paratypes: 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald / cult., 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. Sinjaev & Einheim. Sammler (MWM, genitalia slide 13808); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22.17° N, 103.44° E, 1600 m, 20–30.IV.1995, leg. V. Sinjaev & Einheim. Sammler (MWM, genitalia slide 13811); 1 ♀, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. Sinjaev & loc. coll. (MWM, genitalia slide 13833).

Additional material. 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.VI.2006, leg. V. Zolotuhin (CAS, VZ-LIMAC 33, in 96% alcohol).

The forewing length is 9–10 mm and wingspan 18–21 mm in males, 12 and 26 mm in female (Colour plate 8, fig. 10). The male antennae are filiform. The ground colour is brownish yellow.

In male genitalia, the uncus is slightly bifid apically, with well developed, long subapical spur (Genitalia plate 2, fig. 3). The gnathos is slender, single. The valvae are elongate,

without saccular processes. The juxta is flattened with two narrow dorsal processes and mediodorsal cut. The dorsolateral corners of the juxta are distinctive. The aedeagus is S-shaped, slender and long. The vesica with 4 rows of cornuti. The apical pair of rows is larger than the medial pair. The cornuti of each row are arranged by their increasing size in the retracted vesica.

The female genitalia with well developed ovipositor lobes and slender apophyses (Genitalia plate 11, fig. 9). The antrum is wide. The ductus bursae is short, spiral, with 2.5 turns, strongly sclerotized medially. The corpus bursae is large, ball-shaped, with two large and slightly sclerotized signa.

Diagnosis. The moths are similar to other congeners externally but the characters of male genitalia are diagnostic. The juxta of *F. alius* SOLOVYEV & WITT, **sp. n.** has two narrow dorsal processes and a medial cut, with distinct corners.

Distribution. Northern Vietnam.

Biology. The moths were collected in late January, April, mid May and late November in altitudes of 280–1800 m.

Etymology. *Alius* (from Latin) – distinct from others, in connection with large number of yellowish limacodids.

***Flavinarosa glaesa* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 11

Type material. Holotype: ♂, “Sued-Vietnam | Bao Loc (Sek. Wald) | Rung Cat Tien, 1500 m | (11.32°N 107.48°E) | 10.–20.12.1992 leg. | SINAJEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.801 | Museum WITT München” (MWM, genitalia slide 13801); Paratypes: 1 ♂, the data as in holotype; 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slides 13068, 13812); 2 ♂♂, C. Vietnam, Plato Tay Nguyen, Mt, Ngoc Linh, 15°02’N, 107°59’E, 900–1400 m, 10–25.VIII.1996, leg. SINAJEV and AFONIN (MWM, genitalia slide 13728); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04’N, 107°29’E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 173).

The forewing length is 8–9 mm and the wingspan is 17–20 mm in males (Colour plate 8, fig. 11). The antennae are filiform in males. The ground colour is brownish yellow.

The male genitalia have a single uncus, slightly bifid apically, with well developed subapical spur (Genitalia plate 2, fig. 4). The gnathos is single, slender. The valvae are elongate without saccular processes. The juxta is flattened, with large dorsal cut; the lateral parts divided by this incision have internal spurs. The aedeagus is S-shaped. The vesica with 2 apical rows of very large cornuti and two medial rows of small cornuti.

Diagnosis. Externally the species is similar to other *Flavinarosa* HOLLOWAY, 1986, and distinguished genitally. The juxta with very deep dorsal cut and its lateral parts with internal small spurs.

Biology. The flight period falls in late April, early May, mid and late August, and mid December. The species is known from 900–1500 m.

Distribution. Vietnam.

Etymology. *Glaesum* (from Latin) – amber, in connection with coloration of adults.

### ? *Flavinarosa holoxanthia* (HAMPSON, 1900)

*Narosa holoxanthia* HAMPSON, 1900, J. Bombay nat. Hist. Soc. **13**: 232. Type locality: “Khásis”. Holotype: ♂ (BMNH).

Reference. LEMÉE, 1950: 43 (Backan) (as *Narosa holoxanthia* HAMPS.).

Comments. The species was supposedly confused with *F. alius* SOLOVYEV & WITT, **sp. n.** or *F. glaesa* SOLOVYEV & WITT, **sp. n.** because *F. holoxanthia* (HAMPSON, 1900) is distributed in India and is not known eastwards so far.

### *Demonarosa* MATSUMURA, 1931

Ins. Matsum. **5**: 105. Type species: *Demonarosa rosea* MATSUMURA, 1931, by original designation.

= *Natarosa* HERING, 1931

in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 715. Type species: *Altha subrosea* WILEMAN, 1915, by original designation.

= *Arbelarosa* HERING, 1931

in SEITZ, Gross-Schmett. Erde **10**: 677. Type species: *Narosa rufotessellata* MOORE, 1879, by original designation.

The genus can be easily defined by deep orange, very attractive coloration of adults and spotted red pattern (Colour plate 7, fig. 22; Colour plate 16, figs 5, 6).

The genus ranges from India to Sundaland, including India, Nepal, Myanmar, China, Thailand, Vietnam, Taiwan, Japan and consists of 5 species: *D. rufotessellata* (MOORE, 1879) (= *Cheromettia melli* HERING, 1931, **syn. n.**) with subspecies *D. r. rufotessellata* (MOORE), 1879, *D. r. subrosea* (WILEMAN, 1915) (= *rosea* MATSUMURA, 1931), and *D. r. issikii* (KAWAZOE & OGATA, 1962); *D. mediodorsata* (HERING, 1931), *D. ochrirubra* (HOLLOWAY, 1976), *D. diagonalis* (HOLLOWAY, 1982), and *D. nocturnignis* HOLLOWAY, 1990.

### *Demonarosa rufotessellata* (MOORE, 1879)

Colour plate 7, fig. 22; Colour plate 16, figs 5, 6

*Narosa rufotessellata* MOORE, 1879, New Ind. Lep. **1**: 73, pl. III, fig. 24. Type locality: “Darjiling”. Lectotype: ♀ (ZMHB), **here designated**.

*Cheromettia melli* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 673, Taf. 85f, **syn. n.** Type locality: “Kwangtung, Sahmgong”. Holotype: ♀ (ZMHB).

Material. 1 ♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 18.40° N, 105.40° E, 200 m, 22–30.XI.1994, leg. SINJAEV & SIMONOV (MWM, genitalia slide 9979); 1 ♀, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 7–8.X.2008 (CAS, AS-LIMAC 46, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum, 4.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 5, in 96% alcohol); 2 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 24–27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 93, 114, in 96% alcohol).

Distribution. India, Nepal, Myanmar, southern China, Thailand, northern and central Vietnam, Borneo (ssp. *rufotessellata* MOORE, 1879); Taiwan (ssp. *subrosea* WILEMAN, 1915) and Japan (ssp. *issikii* KAWAZOE & OGATA, 1962).

Biology. The species was collected in early June, late September – early October and late November in the altitudes of 200–380 m in Vietnam (in February, mid March–August, and November in elevations of 200–2700 m in other localities).

Nomenclatorial notes. *Narosa rufotessellata* MOORE, 1879 was described without the indication of the number of studied specimens and their sex, but the female was illustrated in the original description. The single typical female found in ZMHB is designated as lectotype; it bears the following labels: 1 – rectangle, yellowish, black inked by MOORE's hand “*Narosa | rufotessellata | (type) MOORE*”; 2 – rectangle, yellowish, printed, “Coll. | STAUDINGER”; 3 – square, pinkish with printed text “Origin.”; 4 – rectangle, yellowish, printed: “coll ATKINSON” with handwritten with black ink “MOORE Darj.”; 5 – rectangle, yellowish, with two lateral black lines, black inked, “*Rufotessel- | lata | MOORE*”. This female is supplied with a red lectotype label.

### ***Ceratonema* HAMPSON, 1893**

Fauna Br. India (Moths) 1: 373 (key), 393.

Type species: *Limacodes retractata* WALKER, 1865, by original designation.

The genus includes middle-sized yellow moths. The forewings have 3 characteristic dark fasciae: 1 – from 1/3 dorsum to 1/2 costa, the second from tornus to 3/4 costa, and the third short, from 3/4 dorsum to centre of wing, parallel to outer margin (Colour plate 16, fig. 7).

The male genitalia are slightly modified, with well developed uncus and gnathos, valvae without saccular processes, but the aedeagus is tube-shaped, curved with characteristic apical zone of small denticles.

The genus needs revision.

### ***Ceratonema* sp.**

**Colour plate 16, fig. 7**

Reference. CANDÈZE, 1927: 125 (Vietnam: Indochina; as *Ceratonema retractatum* WALK.)

Material. 1 ♀, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 13.X.2008, leg. V. ZOLOTUHN (CAS, genitalia slide 0002).

Comments. We suppose the species noted for Vietnam as *Limacodes retractata* WALKER, 1865 (*in*: CANDÈZE, 1927: 125) is wrongly identified. The identification of the single female collected is impossible so far. In any case, *C. retractata* (WALKER, 1865) is only known from India and Nepal with certainty so far.

### ***Barabashka* SOLOVYEV & WITT, gen. n.**

Type species: *Barabashka mirus* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus includes small moths with forewing length 9–11 mm and wingspan 19–21 mm (Colour plate 8, figs 13–16; Colour plate 16, fig. 8). The male antennae are as long as 4/5 of forewing costa, almost filiform with very short rami. The ground colour is yellow. The forewings are triangular with dark, entire, transverse, medial fascia running from 1/3

dorsum to near apex where it meets the dark external fascia, which is parallel to outer margin. The forewing venation is characterized by the vein R5 which is stalked with the stem of R2+R3+R4; the vein R1 is not sinuous.

The male genitalia conform to the limacodid ground plan (Genitalia plate 2, figs 5, 6). The uncus is long with slender subapical spur. The gnathos is well developed. The valvae are long, elongate, without saccular process. The juxta is divided in two defined lateral processes. The aedeagus is tubular, slender.

In female genitalia, the ovipositor lobes are ovoid; apophyses are well developed, slender (Genitalia plate 11, fig. 10). The ductus bursae is long, spiral; the antrum is not well defined, slightly broader than ductus bursae. The corpus bursae is pyriform with double signum of which the lateral parts are connected medially.

External characters are quite diagnostic and define the genus easily among related or similar groups. The moths are similar to *Euphlyctinides* HERING, 1931 but are distinguished externally: the dark forewing fasciae are crossed distally, uninterrupted, without visible broadenings. In male genitalia, the aedeagus is without apical hook-shaped process.

The probable autapomorphies of the genus are uninterrupted medial forewing fasciae running from 1/3 dorsum to near apex, the juxta is slightly divided dorsally in two lateral parts.

The genus includes 3 species: *B. bilineatum* (HERING, 1931), **comb. n.**, *B. obliqua* (LEECH, 1890), **comb. n.** and *B. mirus* SOLOVYEV & WITT, **sp. n.** The species *B. bilineatum* (HERING, 1931) is transferred from *Ceratonema* HAMPSON, 1893 and *B. obliqua* (LEECH, 1890) from *Heterogenea* KNOCH, 1783 because of external features and male genitalia.

Etymology. Barabashka is a hooligan home ghost in folklore of different cultures, especially in Slavic mythology.

***Barabashka bilineatum* (HERING, 1931), comb. n.**

Colour plate 8, fig. 13

*Ceratonema bilineatum* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 698. Type locality: "Sahm-gong, Wan-shan" [China, Kwang-tung]. Holotype: ♂ (ZMHB).

Material. 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0018); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS).

Distribution. Southern China, northern and central Vietnam.

Biology. The moths were collected in late September to the beginning of October in altitudes of 288 to 380 m.

Comments. The species is recognized from other congeners by its smaller size; in male genitalia the slender aedeagus with small finger-shaped apical process is diagnostic (Genitalia plate 2, fig. 5).

***Barabashka cf. obliqua* (LEECH, 1890), comb. n.**

Colour plate 8, figs 15, 16; Colour plate 16, fig. 8

*Heterogenea obliqua* LEECH, 1890, Entomologist **23**: 83. Type locality: “Chang Yang”. Holotype: ♀ (BMNH).

Material. 1 ♂, 1 ♀, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Trung Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0019 (♂), 0020 (♀)); 1 ♂, the same data (CAS, AS-LIMAC 65, in 96% alcohol); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 119, in 96% alcohol); 1 ♂, the same data but 2.X.2008 (CAS, AS-LIMAC 123, in 96% alcohol).

Distribution. Eastern China, central Vietnam.

Biology. The moths were collected in early October in altitudes of 119 to 180 m.

Comments. A single male type was mentioned in the original description, but the sex of the specimen was misidentified and only one typical female was found in BMNH.

The species is well discriminated from other congeners by larger size and dark coloration, the forewings are yellowish brown; the hindwings are grayish brown.

Males from eastern China are needed for the safe identification of the specimens from Vietnam.

The female genitalia are figured (Genitalia plate 11, fig. 10).

***Barabashka mirus* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 14

Type material. Holotype: ♂, “S. Vietnam | Plato TayNguyen, Mt. NgocLinh | 15°02'N 107°59'E, H=900–1400 m | 10–25.8.1996 leg. SINIAEV & AFONIN”, “Genitalpräparat | Heterocera | Nr. 13.250 | Museum WITT München” (MWM, genitalia slide 13250).

The forewing length is 10 mm, wingspan – 20 mm. The ground colour is yellow (Colour plate 8, fig. 14). The male antennae are long, 4/5 of the length of costa, almost filiform. The forewings have dark brown, entire medial fascia running from 1/3 of dorsum to apex and crossed with external fascia. The hindwings are paler.

In male genitalia the uncus is long, as long as 2 widths in basal part, with well developed subapical spur (Genitalia plate 2, fig. 6). The gnathos is slender. The valvae are elongated, as long as 3 widths in medial part. The juxta is flattened, narrow dorsally, slightly bifid apically. The aedeagus is tube-shaped, short, 3/5 times as long as the valvae, dorsal part much longer than ventral one.

Diagnosis. The species is similar to *B. bilineatum* HERING, 1931 but well distinguished externally by paler coloration, shorter rami of the male antennae and the more distal position of external fascia. In male genitalia, the juxta is only slightly bifid dorsally; the aedeagus is shorter, broader and acute apically with longer dorsal part than ventral one.

Distribution. Central Vietnam (NgocLinh plateau).

Biology. The single specimen was collected at 10–25 August in altitudes of 900–1400 m.

Etymology. *Mirus* (Latin) – unusual, delightful, starsting.



### ***Euphlyctinides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 704. Type species: *Euphlyctinides rava* HERING, 1931, by original designation.

The male antenna is filiform. The ground colour is yellowish-brown. The forewings are elongate, covered with sparse dark scales, with 2 dark smooth fasciae.

The genus consists of 4 species: *Euphlyctinides albifusum* (HAMPSON, 1893) (= *E. rava* HERING, 1931), *E. indi* SOLOVYEV, 2009, *E. aeneola* SOLOVYEV, 2009, and *E. laika* SOLOVYEV & WITT, **sp. n.**, and is known from India, northern and western Thailand and northern Vietnam so far.

Externally the genus is similar to *Barabashka* SOLOVYEV & WITT, **gen. n.** but forewing fasciae are very smooth and never joined.

### ***Euphlyctinides laika* SOLOVYEV & WITT, sp. n.**

Colour plate 8, figs 17, 18; Colour plate 16, fig. 9

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N.P. | Tam Dinh v., Tuong Duong distr. | Nghe An prov. | 19°10'32.5''N, 104°37'18.5''E | 165±15 m 4.X.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (MWM); Paratypes: 26 ♂♂, 1 ♀, the same data (CAS, genitalia slides 0021 (♂), 0103 (♀)); 2 ♂♂, the same data but 5.X.2008 (CAS, genitalia slide 0061); 5 ♂♂, 1 ♀, the same data but 4–5.X.2008 (CAS, AS-LIMAC 63, in 96% alcohol).

The forewing length is 9–10 mm in males, 13 mm in female. The forewings with 2 dark smooth fasciae: the external one is parallel to outer margin and the medial one from 2/3 costa to 1/3 dorsum (Colour plate 8, figs 17, 18; Colour plate 16, fig. 9). The hindwings are grayish brown.

The male genitalia with single, elongate uncus with slender and acute subapical spur (Genitalia plate 2, fig. 7). The gnathos is slender. The valva is elongate, without saccular process, with elongate flap from medial part of valva to its basal. The juxta is long, narrowed ventrally, divided apically in two slender finger-shaped processes. The aedeagus is straight, 0.8 times as long as the valva, with apical spur spiralled in a half turn.

The female genitalia with well developed, ovoid ovipositor lobes (Genitalia plate 11, fig. 11). Both pairs of apophyses are well developed, slender. The antrum is short, strongly sclerotized. The ductus bursae is long, spiral. The corpus bursae is ball-shaped, with a double signum.

Diagnosis. Externally similar to *E. albifusum* (HAMPSON, 1893), but the male genitalia are diagnostic by the single juxta, which is only apically divided in two slender finger-shaped processes. The valvae with medial flaps. The apical spur of aedeagus is much shorter and broader, vesica without cornuti.

Distribution. Central Vietnam.

Biology. The specimens were collected in early October in altitudes of 150–180 m.

Etymology. The species is named in memory of the dog Laika, the first living creature in space.

### ***Nagodopsis* MATSUMURA, 1931**

Ins. Mats. 5: 103. Type species: *Nagodopsis shirakiana* MATSUMURA, 1931, by original designation.

Externally, the members of the genus are characterized by their small size, almost filiform male antennae and obscure coloration. The wings show the tendency to become transparent centrally, with a white spot near the proximal third of the forewing, just posterior of discal cell.

The genus includes 3 species: *N. shirakiana* MATSUMURA, 1931, *N. albipuncta* HOLLOWAY, 1986, *N. parvimargo* (HOLLOWAY, 1976), and *N. alethis* SOLOVYEV & WITT, **sp. n.**, and ranges from Taiwan and Vietnam to Borneo. Females are unknown.

### ***Nagodopsis alethis* SOLOVYEV & WITT, sp. n.**

Colour plate 7, fig. 11

Type material. Holotype: ♂, “Vietnam, Prov. Tuyen Quang | Na Hang Nature Reserve, 300 m | 105°5'E, 22°3'N, 22.II–5.III.1997 | leg. G. CSORBA” (MWM, genitalia slide 14191).

The forewing length is 8.5 mm, wingspan – 19 mm (Colour plate 7, fig. 11). The male antennae are almost filiform. The ground colour is dark brown. The wings are hemi-transparent with dark discal vein. The forewing has a white spot near the proximal third, just posterior of discal cell.

The uncus is single with strongly sclerotized apex in male genitalia (Genitalia plate 2, fig. 8). The gnathos is well developed with rounded, scobinate apex. The valvae without saccular process, triangular-shaped, elongate. The juxta is flattened, large, and ellipsoidal. The aedeagus is slender, tube-shaped, slightly curved, with small and short, caudad, apical spur which is 1/2 – 2/3 times as long as width of aedeagus.

Diagnosis. The species is similar externally to Taiwanese *N. shirakiana* MATSUMURA and Bornean *N. albipuncta* HOLLOWAY, but male genitalia are diagnostic. The valvae are slender in comparison with both mentioned species; the saccular area of lower margin is not distinctly present, without saccular papula (as in *N. shirakiana* MATSUMURA); the valvae with regularly curved lower margin.

Distribution. Northern Vietnam.

Biology. The single male was collected between 22 February and 5 March in the altitude of 300 m.

Etymology. From Greek “Alethia” – the Greek name of Wisdom.

### ***Atosia* SNELLEN, 1900**

Tijdschr. Ent. 43: 50 (key), 92. Type species: *Parasa doenia* MOORE, 1860, by monotypy.

The genus is well distinguished externally by the hook-like pattern in forewing; its curvation contains a white mark (Colour plate 8, fig. 9). The apex of forewing is dark brown. The male genitalia are simple; the aedeagus with a terminal spine or a scobinate lobe.

The larvae are of the smooth-type. The cocoon is spherical, dark brown (HOLLOWAY, 1986: 76).

The genus is well recognized externally and includes the following 5 species: *A. doenia*

(MOORE, 1859), *A. himalayana* HOLLOWAY, 1986, *A. spicata* HOLLOWAY, 1986, *A. trusmadia* HOLLOWAY, 1986, and *A. sumatrae* HOLLOWAY, 1990. It ranges from India to Sundaland.

### *Atosia himalayana* HOLLOWAY, 1986

Colour plate 8, fig. 9; Colour plate 16, fig. 10

*Atosia himalayana* HOLLOWAY, 1986, Moths of Borneo 1: 76. Type locality: "Khasis". Holotype: ♂ (BMNH).

Material. 3 ♂♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15°N, 105.20°E, 400 m, 18.XI–3.XII.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11357); 4 ♂♂, the same data but 21.XI.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11358); 4 ♂♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 7.IX.2008, leg. TRAN Thieu Du (IEBR); 8 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7–9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0084); 1 ♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 20.50°N, 104.40°E, 1400 m, Sekundärwald, 14–18.XI.1994, leg. V. SINJAEV (MWM); 1 ♂, N. Vietnam, Mai-chau, 40 km SE Moc-chau, 20.50°N, 104.50°E, Sekundärwald, 1400 m, 7–15.IV.1995, leg. SINJAEV & einh. Samml. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22.17°N, 103.44°E, 25–30.III.195, leg. V. SINJAEV & A. SCHINTLMEISTER (MWM, genitalia slide 11359); 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 12.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0085); 4 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0083); 5 ♂♂, the same data but 26–28.IX.2008 (CAS, AS-LIMAC 73, AS-LIMAC 96, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX–4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 110, in 96% alcohol); 3 ♂♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Trưng Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 169, genitalia slide 137).

Distribution. India, Nepal, northern Myanmar, southern China (Yunnan, Chekiang), northern Thailand (Chiang Mai), northern and central Vietnam.

Biology. The moths were collected in late March, April, beginning and late September to mid October, mid November to early December in altitudes of 34 to 1400 m.

The larva is ovoid, convex, green, with yellow subdorsal line curved outwardly. The cocoon is almost spherical, dark brown. The food plant: *Ricinus communis* L. (Euphorbiaceae) (SEVASTOPULO, 1947; HOLLOWAY, 1986: 76).

### *Limacocera* HERING, 1931

in SEITZ, Gross-Schmett. Erde 10: 668 (key): 674. Type species: *Narosa pachycera* HAMPSON,

1897, by original designation.

The genus includes small, brownish grey moths. The male antennae are very long. The forewings are grey, crossed by a characteristic broad, brown medial fascia. The genus is close to *Compsopsectra* WEST, 1932, but relationships between both genera are unclear so far and, in spite of external similarity, the male genitalia are extremely different. The genus includes 2 species, *L. pachycera* (HAMPSON, 1897) and *L. hel* HERING, 1931, known from India, southern China and central Vietnam.

### ***Limacocera hel* HERING, 1931**

Colour plate 8, fig. 19

*Limacocera hel* Hering, 1931, in SEITZ, *Gross-Schmett. Erde* **10**: 675. Type locality: "Liu-ping" [China, Guangdong]. Holotype: ♂ (ZMHB).

Material. 1 ♂, C. Vietnam, Kon Tum, 7.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 14, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 23, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N. P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (genitalia slide 0027); 1 ♀, the same data but 25.IX.2008 (CAS, genitalia slide 0028).

Distribution. Central Vietnam.

Biology. The specimens were taken in early June and late September in altitudes of 288 to 352 m.

Comments. The holotype and the specimens from central Vietnam have some differences in male genitalia; Vietnamese specimens are attributed to *L. hel* Hering, 1931 so far, but additional material from China is needed.

### ***Cania* WALKER, 1855**

List Specimens lepid. Insects Colln. Br. Mus. **5**: 1159 (key), 1177. Type species: *Cania sericea* WALKER, 1855, by monotypy.

The genus includes middle-sized moths with yellowish ground colour. Usually, the species of the genus are characterized by slightly curved, shaded darkish postmedial and medial fasciae of the forewings. The antennae are bipectinate in males. The larvae are of the nettle-type, semiovoid with long lateral and short subdorsal scoli. The genus is similar to *Rhamnosa* FIXSEN, 1887 but differs by the absence of the tornal incision of the forewings. The genus is known from India to Philippines and is already revised by HOLLOWAY (1986: 78–83).

Four lineages can be recognised in the genus. The first lineage includes 7 species: *C. bilinea* (Walker, 1855) (= *Aspidiotus bicarinatus* WALKER, 1858), *C. robusta* HERING, 1931 (= *C. pallida* HEING, 1931), *C. heppneri* INOUE, 1970, *C. javana* HOLLOWAY, 1987, *C. striola* HERING, 1931, *C. himalayana* HOLLOWAY, 1987, and *C. cocki* HOLLOWAY, 1987. The species are without strong sexual dimorphism, with well developed shaded postmedial and medial fasciae on the forewings in both sexes (Colour plate 7, figs 14, 15).

The second lineage includes the single species *C. minuta* HOLLOWAY, 1986, similar to the first lineage, without sexual dimorphism, but male genitalia are extremely different (HOLLOWAY, 1986: 81).

The third and fourth lineages are sexually dimorph. The females conform to external ground plan of *Cania* WALKER.

The third lineage includes 4 species: *C. sericea* WALKER, 1855 (= *C. pulligonis* SWINHOE, 1889; = *Miresa mollis* WALKER, 1865), *C. obliquifascia* (HAMPSON, 1900), *C. siamensis* TAMS, 1924, and *C. accea* SOLOVYEV & WITT, **sp. n.** (Colour plate 7, figs 16–18). The males of this lineage are brownish yellow and have the large brown area in forewings with dark brown distal border parallel to outer margin of forewing and a dark brown zig-zag oblique medial fascia.

Only 5 species are known in the fourth lineage: *C. bandura* (MOORE, 1859) (= *Nyssia malaccana* WALKER, 1865), *C. acutivalva* HOLLOWAY, 1986, *C. guichardi* HOLLOWAY, 1986, *C. styx* HOLLOWAY, 1986, and *C. victori* SOLOVYEV & WITT, **sp. n.** (Colour plate 7, fig. 19). The males have the large dark brown area in forewings with border parallel to wing margins; the proximal border of this area has a semicircular concavity.

### ***Cania bilinea* (WALKER, 1855)**

Colour plate 7, fig. 14; Colour plate 16, fig. 11

*Neaera bilinea* WALKER, 1855, List Specimens lepid. Insects Colln. Br. Mus. **5**: 1142. Type locality: “China”. Syntypes: 1 ♂, 1 ♀ (BMNH).

*Aspidiotus bicarinatus* WALKER, 1858, List Homopt. Ins. Suppl.: 306. Type: larva (-e) (BMNH).

Reference. DE JOANNIS, 1929: 578 (Hanoi; An chau; Hoang su phi).

Material. 11 ♂♂, N. Vietnam, Cuc. Phuong Nat. Park, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 21.XI.1994, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13860); 10 ♂♂, N. Vietnam, Cuc. Phuong Nat. Park, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINJAEV & SIMONOV; 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 8.X.2008 (CAS, AS-LIMAC 41, in 96% alcohol); 3 ♂♂, N. Vietnam, Ben En N.P., 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMMEISTER (MWM, genitalia slide 9626); 4 ♂♂, N. Vietnam, Ben N.P., 40 km SW Than Hoa, 18°40'N, 105°40'E, 200 m, 22–30.XI.1994, leg. SINJAEV & SIMONOV; 1 ♂, Vietnam: mer., Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13858); 2 ♂♂, N. Vietnam, Hoa Binh, 70 km NW Hanoi, 400 m, 28.V–6.VI.1990, leg. E. PALIK (MWM, genitalia slide 13857); 1 ♂, Hinterindien, Tonking, F. DANIEL, München (MWM, genitalia slide 13896); 1 ♂, N. Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 22°3'N, 105°5'E, 300 m, 22.II–5.III.1997, leg. G. CSORBA (MWM, genitalia slide 13904); 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. BRECHLIN (MWM); 1 ♂, N. Vietnam, Ruan-giao, street, Sekund. veg., Lai-chau to Hanoi, 21.35° N, 103.25° E, 1200 m, 5–10.XI.1994, leg. SCHINTLMMEISTER (MWM); 4 ♂♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 12.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 13.X.2008 (CAS); 1 ♂, the same data but 11–13.X.2008 (CAS, AS-LIMAC 133, in 96% alcohol); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V 2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 145); 4 ♂♂, Vietnam, Quang Tri prov., Da Krong Nature Reserve, near HQ, 16°36'N, 106°52'E, 170 m, 13.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14588); 1 ♂, C. Vietnam, Tam Dinh vill., Trưng Dươg distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A.

SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 4–5.X.2008 (CAS, AS-LIMAC 62, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 25.IX.2008 (CAS, AS-LIMAC 30, in 96% alcohol); 1 ♂, 1 ♀, the same data but 28.IX.2008 (CAS); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC 81, in 96% alcohol); 1 ♂, the same data but 30.IX.2008 (CAS); 2 ♂♂, the same data but 2.X.2008 (CAS, AS-LIMAC 121, in 96% alcohol); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N. P. office, 30 m, 16°15'N, 107°53'E, 19.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 185).

Distribution. Southern China (Yunnan, Zhejiang, Hainan), northern and central Vietnam.

Biology. The moths were collected in late February, early March, mid April, early and late May to early June, August to early December in altitudes of 30 to 2240 m.

Food plants are *Careya* sp. (Lecythidaceae, Oriental), *Cocos nucifera* L., *Elaeis guineensis* JACQ. (Arecaceae, West Malaysia), *Musa acuminata* Colla (Musaceae, S.E. Asia), *Terminalia* sp. (Combretaceae), *Ziziphus* sp. (Rhamnaceae, Oriental), and *Camellia sinensis* (L.) KUNTZE (Theaceae, S.E. Asia) (ROBINSON et al., 2007).

Comments. The type series of *Neaera bilinea* WALKER, 1855 should consist of a couple from China but only the syntypical female is present now in BMNH (Genitalia plate 12, fig. 1). The identification of the systematic position of this species was therefore established based on features of female genitalia and the distribution of all similar taxa.

The taxon *Aspidiotus bicarinatus* WALKER, 1858 was described as a hemipteran after a dried limacodid larva and regarded as a junior synonym of *Cania bilinea* (WALKER, 1855) (HOLLOWAY, 1986: 79).

The species *Cania bilinea* (WALKER, 1855) is undistinguishable externally from *C. robusta* HERING, 1931 and only male and female genitalia are diagnostic (Genitalia plate 2, fig. 9; Genitalia plate 12, fig. 1). *C. bilinea* (WALKER) (the forewing length is 11–13 mm and wingspan is 22–27 mm in males) is only usually smaller than *C. robusta* HERING (12–16 mm and 22–31 mm respectively) (Colour plate 7, fig. 14). The male genitalia differ from *C. robusta* HERING by shorter lateral processes of uncus, Y-shaped gnathos; Y-shaped saccular processes, distally narrow aedeagus with longer ventral part (Genitalia plate 2, fig. 9). The female genitalia differ from *C. robusta* HERING by a longer process of the postvaginal plate. It was shown that the number of helicoid convolutions of the ductus bursae is not constant (Genitalia plate 12, fig. 1).

### ***Cania robusta* HERING, 1931**

Colour plate 7, fig. 15

*Cania bilinea robusta* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 679. Type locality: [China] “Siao-Lou”. Lectotype: ♂ (ZMHB), **here designated**.

*Cania bilinea pallida* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 679. Type locality: “Tsekou”. Holotype: ♂ (ZMHB).

Material. 6 ♂♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM); 8 ♂♂, 4 ♀♀, the same data, but 950 m, 17.X.1994, leg. SINJAEV (MWM); 2 ♂♂, 3 ♀♀, the same data, but 1200 m, 1–15.XI.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slides 13897 and 13852); 1 ♀, N.

Vietnam, Tam Dao, 900 m, 18–21.V.1990, leg. H. J. KOPEC, E. PALIK (MWM); 1 ♀, N. Vietnam, Tam Dao, 950 m, 15.X.1984, leg. K. SPITZER (MWM); 1 ♂, N. Vietnam, Tam Dao, 75 km N Hanoi, 900 m, VI.1986, leg. J. RAZOWSKI (MWM); 5 ♂♂, 1 ♀, N. Vietnam, Mai-chau, Urwald, 40 km SE Moc-chau, 7–15.IV.1995, 1400 m, leg. SINJAEV & Ein.Samml. (MWM, genitalia slides 13894 and 13895); 6 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, 1600–1800 m, Sekwald / Kulturland, XI.1994, SINJAEV & Einh. Slr. (MWM, genitalia slides 13853 and 13899); 2 ♂♂, the same data, but IX.1994, leg. MONG (MWM); 8 ♂♂, 4 ♀♀, the same data, but IV. 1995, SINJAEV & Einh. Slr. (MWM); 1 ♂, the same data, but IX.1994, leg. SINJAEV & loc. coll. (MWM); 4 ♂♂, 5 ♀♀, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, Primärurwald, 22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll. (MWM, genitalia slide 13891, 13892); 1 ♀, the same data, but 1525 m, 28.X–3.XI.1994, leg. SINJAEV & einh. Samml. (MWM); 1 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. SINJAEV & Sammler (MWM); 1 ♂, the same data, but primary forest, 20–30.X.1995, leg. V. SINJAEV & E. AFONIN (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, 1525 m, primär. Urwald, 7,10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 11 ♂♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 34, in 96% alcohol); 9 ♂♂, 5 ♀♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22°15'N, 103°46'E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slides 9625 and 13898); 1 ♀, N. Vietnam, Tam Dao, 90 km N Hanoi, 12–25.V.1990, 1000 m, leg. E. PALIK (MWM, genitalia slide 13856); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 2 ♀♀, Vietnam, Prov. Lao Cai, Sa Pa, 1300 m, 15–20.XI.1993, leg. BANKOVICS & CSORBA (MWM); 1 ♀, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, IX.1994, leg. SINJAEV & loc. coll. (MWM); 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22.20° N, 103.40° E, 1600–1800 m, IX.1994, leg. local collectors (MWM); 1 ♂, C. Vietnam, Plato Tay Nguyen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINJAEV & AFONIN (MWM, genitalia slide 13893); 8 ♂♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 78, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum, Dac Gle, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. SINJAEV & AFONIN (MWM).

Distribution. Myanmar, China (Sichuan, Yunnan), northern and southern Thailand, south-western Laos, northern and central Vietnam, western Malaysia (HOLLOWAY et al., 1987: 23).

Biology. The moths were collected in April to November in altitudes of 700–1800 m. The larva of *C. robusta* HERING is similar to *C. striola* HERING, 1931 (HOLLOWAY et al., 1987: 23, plate 23). The foodplants are *Cocos* sp. (Arecaceae) (HOLLOWAY, 1986: 79); *Cocos nucifera* L., *Elaeis guineensis* JACQ. (Arecaceae), *Musa* sp. (Musaceae, banana), *Eugenia* sp. (Myrtaceae), and *Camellia* sp. (Theaceae, tea) (DAMMERMAN, 1929; HOLLOWAY et al., 1987: 23).

Comments. The species *C. robusta* HERING is undistinguishable from *C. bilinea* (WALKER, 1855) externally, but usually larger (see comments on previous species) (Colour plate 7, fig. 15). The male genitalia are diagnostic and differ from *C. bilinea* (WALKER) by longer lateral processes of uncus, somewhat T-shaped gnathos apically; saccular processes are not Y-shaped, single apically; aedeagus narrow distally with longer dorsal part (Genitalia plate 2, fig. 10). The female genitalia are also diagnostic:

the process of postvaginal plate is much shorter. The number of helicoid convolutions of ductus bursae is not constant and so the female genitalia are not separable from *C. bilinea* (WALKER) (Genitalia plate 12, fig. 2).

Nomenclatorial notes. The taxon *Cania bilinea robusta* HERING, 1931 was described on the base of two syntypes (male and female). The only found male type-specimen kept in ZMHB is designated as lectotype. It bears the following labels: 1 – rectangle, with black frame, with black printed text “Siao-Loû | Chasseurs Indigènes | du P. DÉJEAN | 1903”; 2 – rectangle, printed “ex coll. | OBERTHÜR”; 3 – rectangle, yellow with black printed text “Zool. Mus. Berlin”; 4 – rectangle, handwritten with black ink “robusta | HER.”. The specimen is supplied with a red lectotype label with corresponding text.

### ***Cania siamensis* TAMS, 1924**

Colour plate 7, fig. 16

*Cania siamensis* TAMS, 1924, J. nat. Hist. Soc. Siam **6**: 280, pl. 17, fig. 14. Type locality: “Chumporn” [Thailand]. Holotype: ♀ (BMNH).

Material. 1 ♂, Vietnam, Quang Tri prov., Da Krong Nature Reserve, near HQ, 16°36'N, 106°52'E, 170 m, 13.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14586).

Distribution. Thailand, Laos, central Vietnam.

Biology. The larva is illustrated in HOLLOWAY et al., 1987: pl. 24, belongs to the nettle-type, is flattened with dorsal scoli on segment T2 and the other dorsal scoli reduced to small tubercles, but with all subdorsal scoli moderately developed, green with green spines. It has a narrow greenish yellow dorsal line emphasized between segments T2–T3 and A1–A2 and expanded to white spot near A4–A5, with longitudinal rows of yellow dots. Over the subdorsal scoli of segment T3 is a blue-green spot; over each of the subdorsal scoli of segment A4 and A8 a yellow spot. The larvae have 12 larval instars. The food plant is *Cocos* sp. (Arecaceae).

The cocoon is smooth, white and ovoid. The egg of the species develops in 6 to 7 days, larva in 59 to 81 days, pupa in 19 to 24 days, female lives 5 to 6 days, male 4 to 5 days, total life cycle lasts from 92 to 117 days (HOLLOWAY et al., 1987: 27).

Parasites: Chrysididae, *Platyplectrus* (?) sp. (Eulophidae), *Buysmania oxymora* Tosquinet, 1903 (Ichneumonidae), Tachinidae (HOLLOWAY et al., 1987: 28).

Comments. The species is similar externally to *C. accea* SOLOVYEV & WITT, **sp. n.** but larger, with forewing length about 16 mm (Colour plate 7, fig. 16). The male genitalia are more than 1.5 times larger than those of *C. accea* SOLOVYEV & WITT, **sp. n.**; the cornuti are also larger (Genitalia plate 3, fig. 1). The female genitalia are figured as well (Genitalia plate 12, fig. 3).

### ***Cania accea* SOLOVYEV & WITT, **sp. n.****

Colour plate 7, figs 17, 18

Type material. Holotype: ♂, “N. Vietnam | Mt. Fan-si-pan, Cha-pa | 22.15'N 103.46'E | 8.–29.V.1993 1700 m NN | leg. SINJAEV & SIMONOV”, “Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.847 | Museum WITT München” (MWM, genitalia slide 13847). Paratypes: 1 ♂, the data as in holotype; 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 13867); 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW



Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 13868); 1 ♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 20–27.IV.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 13869); 9 ♂♂, 1 ♀, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 10–20.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slides 9594, 13846, 13848).

Additional material. 1 ♂, Vietnam, Quang Tri Prov., Da Krong Nature Reserve, near HQ, 16°36'N, 106°52'E, 170 m, 13.XI.2007, leg. G. CSORBA (MWM); 1 ♂, Cambodia, Mondolkiri Prov., Seima Biodiversity Conservation Area, between Seima and O'Rang, 12°12'12''N, 107°01'09''E, 300 m, 30.I.2006, leg. G. Csorba & G. Ronkay (MWM, genitalia slide 13871); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 25.IV.2009, leg. V. Zolotuhin (CAS, in 96% alcohol, VZ-LIMAC 187, genitalia slide 144).

The middle sized moths with forewing length 12–14 mm and wingspan 25–30 mm in males; 14 and 32 mm in female (Colour plate 7, figs 17, 18). The antennae are strongly bipectinate in basal 2/3 in males and filiform in females. The ground colour is brownish yellow. The moths are sexually dimorphic. In males, the head and thorax are brown; the hindwings and abdomen are yellow. The forewings are brownish, distally yellowish with large brown area bordered by a dark brown fascia which is parallel to outer margin and with dark brown zig-zag oblique medial fascia. The zone between distal border and medial fascia is grayish, shaded. The males are variable in external view which is connected with colour saturation.

The ground colour of females is yellow; the forewings are golden yellow with two concave fasciae.

The male genitalia with slightly bifid apically broad and short uncus (Genitalia plate 3, fig. 2). The gnathos is well developed, flattened. The valvae are without saccular processes, rounded. The saccus is broad and long. The juxta is strongly modified, very broad, plate-shaped with finger-shaped apical process; the juxta is attached to basal parts of valvae. The homology of this plate and juxta is not evident. The aedeagus is tube-shaped, long. The vesica bears a compact field of large cornuti.

The female genitalia with well developed ovipositor lobes and short spiral ductus bursae (Genitalia plate 12, fig. 4). The antrum is sclerotized. The ductus bursae is short, broad. The corpus bursae is rounded, without signum.

Diagnosis. The species is similar externally to *C. siamensis* TAMS, 1924 and *C. sericea* WALKER, 1855, but larger than *C. sericea* WALKER and smaller than *C. siamensis* TAMS. The male genitalia are 1.5 times smaller than in *C. siamensis* TAMS; the valvae are more rounded. The species differs from *C. sericea* WALKER also by broader aedeagus and longer gnathos. Both species are well recognizable in female genitalia. Females of *C. accea* SOLOVYEV & WITT, **sp. n.** with broader and much shorter antrum, larger ovipositor lobes and much shorter ductus bursae.

Distribution. Vietnam, Cambodia.

Biology. The flight period falls in late April to early July, mid November and mid December. The specimens were collected in the altitudes of 170 to 1800 m.

Etymology. Accedo (Latin) – similar, after the external similarity with *C. siamensis* TAMS.

***Cania victori* SOLOVYEV & WITT, sp. n.**

Colour plate 7, fig. 19

Material. Holotype: ♂, “S. Vietnam | Ma Don | 9.I.1990”, ‘Museum WITT’, ‘Genitalpräparat | Heterocera | Nr. 13.873 | Museum WITT München’ (MWM, genitalia slide 13873). Paratypes: 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald. / Kul, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 13861); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Viñh Cuù, 11°16’20.6’’N, 106°16’20.6’’E; 60±20 m, 3.VIII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0047).

The forewing length is 13–15 mm; the wingspan is 26–31 mm in males. The male antennae are broadly bipectinate. The ground colour is brownish yellow (Colour plate 7, fig. 19). The forewings have a large dark brown area with a border which is parallel to the margin of the forewings. The proximal border of this area has a semicircular concavity. The hindwings have a grayish central zone.

The female is unknown, but, judging from the morphology of the related species, the presence of sexual dimorphism can be expected.

The male genitalia with strongly bifid uncus with curved and horn-shaped lateral parts (Genitalia plate 3, fig. 3). The gnathos is single, flattened proximally and very narrow, finger-shaped apically. The valvae are short, without saccular processes. The saccus is long and broad. The juxta is tube-shaped, elongate, narrowed apically, with distal field of small denticles and is attached to the basal parts of valvae. The homology of the juxta is not evident, though its function and position is similar to the juxta. HOLLOWAY (1986: 80) supposes that this “juxta” is possibly the furca. The aedeagus is narrow, acute apically, S-shaped.

Diagnosis. The species is similar externally to *C. bandura* (MOORE, 1859), *C. acutivalva* HOLLOWAY, 1986, and *C. guichardi* HOLLOWAY, 1986 but easily distinguished by male genitalia: broad valvae, very narrow gnathos with finger-shaped apical part not arised the apex of uncus, conus-shaped juxta with distal field of small denticles, and S-shaped, slender aedeagus.

Distribution. Vietnam.

Biology. The moths were collected in the beginning of January, mid June to beginning of July and beginning of August in altitudes of 40 to 1800 m.

Etymology. The species is dedicated to Mr. Victor V. SINYAEV (Moscow, Russia) who collected this pretty species.

***Rhamnosa* FIXSEN, 1887**

Mém. Lépid. 3: 339. Type species: *Rhamnosa angulata* FIXSEN, 1887, by monotypy.

The genus includes medium-sized moths with cream ground colour. The forewings with dark antemedial and postmedial fasciae and incision in lower margin near tornus (Colour plate 7, figs 20, 21). The male antennae are bipectinate almost till apex.

The male genitalia are characterized by slender aedeagus; the vesica contains a long row of hair-like cornuti with large apical area of cornuti (Genitalia plate 3, figs 4, 5).

The genus is similar externally to *Cania* WALKER, 1855 by the presence of ante- and postmedial fasciae in forewings, but well distinguished by the presence of the incision

near tornus of forewing similar to the situation in some Notodontidae.

The genus consists of 2 subgenera: the nominate one and *Caniodes* MATSUMURA, 1927). We consider it *Caniodes* MATSUMURA, 1927 as a subgenus *Rhamnosa* FIXSEN, 1887, even though it has been regarded as a synonym of it (HERING, 1931: 679; OKANO, PAK, 1964: 5). Both taxa are well defined externally and in male genitalia.

The genus *Rhamnopsis* MATSUMURA, 1931 with type species *Rhamnopsis arizanella* MATSUMURA, 1931 is associated with *Rhamnosa* FIXSEN, 1887 based on external features. However, the male genitalia of the type species are not yet examined and so the exact taxonomic position of *Rhamnopsis* remains unclear so far.

### Subgenus *Rhamnosa* FIXSEN, 1887

The subgenus is characterized by entire, almost parallel, only slightly curved, darkish antemedial and postmedial fasciae in the forewing (Colour plate 7, fig. 20). The hindwings are usually paler. The species are not sexually dimorphic; the females are usually slightly larger, with filiform antennae. The male genitalia are diagnostic with long and strong, up-curved, not apically hairy basal processes of valvae (Genitalia plate 3, fig. 4). The saccus is long. The juxta is modified, with long medial and shorter, horn-shaped, lateral processes.

The subgenus includes 5 species *Rh. angulata* FIXSEN, 1887, *Rh. dentifera* HERING & HOPP, 1927, *Rh. hatita* (DRUCE, 1896), *Rh. kwangtungensis* HERING, 1931, **stat. n.** and *Rh. convergens* HERING, 1931, and is known from Korea, China and Vietnam. *Rh. hatita* (DRUCE, 1896) and *Rh. dentifera* HERING & HOPP, 1927 are probable synonyms. *Rh. kwangtungensis* HERING, 1931, **stat. n.** (DRUCE, 1896) has slightly different male genitalia with flattened juxta and lacks hairy basal processes of valvae but forewing pattern and morphology of male aedeagus conform to this subgenus. *Rh. convergens* HERING, 1931 has strongly modified genitalia in comparison to other congeners; the species is included into the subgenus *Rhamnosa* FIXSEN, 1887 on the base of external features.

The subgenus is distinguished from the subgenus *Caniodes* MATSUMURA, 1927 by the presence of entire fasciae of forewing.

### *Rhamnosa (Rhamnosa) kwangtungensis* HERING, 1931, **stat. n.**

Colour plate 7, fig. 20

*Rhamnosa angulata kwangtungensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 679, Taf. 86 f, **syn. n.** Type locality: "Kwang-tung, Lung-tao-shan". Holotype: ♂ (ZMHB).

Material. 12 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14392); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 76, in 96% alcohol).

Distribution. China (Hunan, Guangdong), northern and central Vietnam.

Biology. The specimens were collected in early May and late September in altitudes of 288 to 1200 m.

Remark. The male genitalia are figured here (Genitalia plate 3, fig. 4).

**Subgenus *Caniodes* MATSUMURA, 1927, stat. n.**

J. Coll. Agric. Hokkaido imp. Univ. **19**: 91. Type species: *Caniodes takamukui* MATSUMURA, 1927, by original designation.

The taxon is considered as subgenus within *Rhamnosa* FIXSEN, 1887 and characterized by not entire, dotted, almost paralleled, darkened antemedial and postmedial fasciae in forewing (Colour plate 7, fig. 21). The females differ from males by rufous forewings, short antemedial fascia, larger size and filiform antennae. In male genitalia the valvae have short and massive, hairy apically, basal processes; the juxta has small single basal part and long lateral parts bearing a long, slender, curved processes (Genitalia plate 3, fig. 5).

The subgenus includes 3 species: *Rh. (Caniodes) takamukui* MATSUMURA, 1927, *Rh. (Caniodes) uniformis* (Swinhoe, 1895) (= *Cania notodonta* HAMPSON, 1897) and *Rh. (Caniodes) uniformis rufina* (HERING, 1931), known from India, China, Taiwan and Vietnam.

***Rhamnosa (Caniodes) takamukui* MATSUMURA, 1927**

Colour plate 7, fig. 21

*Caniodes takamukui* MATSUMURA, 1927, J. Coll. Agric. Hokkaido imp. Univ. **19**: 91, pl. 5, fig. 29. Type locality: "Formosa, Horisha". Holotype: ♂ (EIHU).

Material. 1 ♂, N. Vietnam, Ben En National Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 14391); 2 ♂♂, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll. (MWM, genitalia slide 14390); 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 12.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0045); 1 ♂, the same data but 11–12.X.2008 (CAS, AS-LIMAC 128, in 96% alcohol); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 142); 1 ♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0046); 1 ♂, the same data (CAS, AS-LIMAC 54, in 96% alcohol); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 8.X.2008 (CAS); 1 ♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 10, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum, 7.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 15, in 96% alcohol); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 172).

Distribution. Taiwan, northern and central Vietnam.

Biology. The specimens were taken in late April, early May, beginning of June, beginning and mid October, late November in altitudes of 34 to 1600 m.

Remark. The male genitalia are figured here (Genitalia plate 3, fig. 5).

### ***Caissa* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 670 (key), 700. Type species: *Caissa caissa* HERING, 1931, by original designation.

The species of the genus are very variable externally, in venation and in male genitalia. Among the features common to all species are filiform male antennae, dark discal spot in forewing, dark tornal spot in hindwing (Colour plate 9, figs 1–3). Three groups of species can be distinguished within the genus by external characters. The first group includes only the type species; it is similar to *Pseudocaissa* SOLOVYEV & WITT, **gen. n.** and characterized by the presence of a dark, oblique, medial fascia from 1/3 dorsum to 1/2 costa in forewing, arcuate postmedial fascia from 2/3 costa to tornus containing 4 large whitish spots.

The second group includes *C. fasciatum* (HAMPSON, 1893), *C. gambita* HERING, 1931, *C. longisaccula* WU & FANG, 2008, *C. aurea* SOLOVYEV & WITT, **sp. n.** and *C. bezverkhovi* SOLOVYEV & WITT, **sp. n.** and is characterized by well defined oblique fascia in forewing and very indistinct or almost reduced arcuate postmedial fascia; a dark spot is present near the basis of vein CuP (Colour plate 9, figs 1, 2).

The third group with species *C. medialis* YOSHIMOTO, 1994, *C. parenti* ORHANT, 2000, and *C. caii* WU & FANG, 2008 is defined externally by brown medial area with a proximal dark brown border which is running from 2/5 dorsum to 1/3 costa and a distal dark brown border from 3/5 dorsum to 2/3 costa and with dark arcuate fascia which run from 2/3 costa to tornus (Colour plate 9, fig. 3).

The genus ranges from India, Nepal, Myanmar to Vietnam.

### ***Caissa aurea* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 1

Type material. **Holotype**: ♂, “Vietnam (N) | Mts Fan-si-pan, N-side | Chapa, 22°17’N, 103°44’E | 1600 m, 20–30.XI.1995 | leg. SINJAEV & loc. coll. | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.398 | Museum WITT München” (MWM, genitalia slide 14398). **Paratypes**: 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14395); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 40, in 96% alcohol); 1 ♂, the same data but 16.V.2006 (CAS, VZ-LIMAC 75, in 96% alcohol).

The forewing length is 14 mm and wingspan 28–30 in males. The male antennae are filiform. The head, thorax and abdomen are brownish. The thorax with broad, brown, dorsal fascia. The forewings are yellow with distinct brown medial fascia bordered proximally and distally by black fasciae, with small black spots near apex and a black spot near CuP slightly distally from medial fascia. The hindwings are yellow with black tornal spot.

The male genitalia with slender uncus with well developed subapical spur (Genitalia plate 3, fig. 6). The gnathos is slender, well developed, slightly curved. The valvae are elongate, with triangular and strongly sclerotized saccular processes. The juxta is narrow, flattened. The anellus is spiny with single, almost straight and only slightly curved distally, spiny apical process which has 1/3 of the length of the aedeagus. The aedeagus

is tube-shaped, curved, slightly widened apically.

Female is unknown.

Diagnosis. The species is similar to *C. bezverkhovi* SOLOVYEV & WITT, **sp. n.** but well discriminable externally by the presence of a dorsal brown band on thorax. The male genitalia are also diagnostic: the single process of anellus is short, straight and just apically slightly curved, with uniform width, 3 times shorter than aedeagus; the aedeagus is widened apically.

Distribution. Northern Vietnam (Mt. Fan-si-pan).

Biology. The specimens were collected in mid May and late November in altitudes of 1600 to 2400 m.

Etymology. From “aureus” (in Latin) – golden-haired, charming.

### ***Caissa bezverkhovi* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 2; Colour plate 16, figs 13, 14

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N.P. | Yên Khê, Thác Kèm waterfall | Con Công distr., Nghe An prov. | 18°57'54.4''N, 104°48'09.6''E | 320±32 m 28.IX.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN (MWM, genitalia slide 0069). Paratypes: 2 ♂♂, the same data as in holotype but 27.IX.2008 (CAS, AS-LIMAC 92, in 96% alcohol); 4 ♂♂, C. Vietnam, office Cuc Phuong N.P., Bông Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0058); 2 ♂♂, the same data (CAS, AS-LIMAC 48, in 96% alcohol).

The forewing length is 12–13 mm in male. The male antennae are filiform. The ground colour is yellow, thorax as well. The forewings with distinct brown medial fascia bordered proximally and distally by black fasciae, with 2 small black spots near apex and black spot near basis of CuP (Colour plate 9, fig. 2; Colour plate 16, figs 13, 14). The hindwings are yellow with small black tornal spot.

In male genitalia, the uncus is slender with well developed, acute subapical spur (Genitalia plate 3, fig. 7). The gnathos is slender, well developed, slightly curved distally. The valvae are elongate with triangular and strongly sclerotized saccular processes; the sacculus has distinct small medial upper spurs. The juxta is narrow, flattened. The anellus is spiny, with single C-shaped, process which is slender distally, spined apically and has  $\frac{1}{4}$  of the length of the aedeagus. The aedeagus is tube-shaped, curved, slightly slenderer apically.

Female is unknown.

Diagnosis. The species differs from similar *C. aurea* SOLOVYEV & WITT, **sp. n.** by yellowish thorax without brown dorsal band. In male genitalia, C-shaped, slender, distal process of anellus of  $\frac{1}{4}$  of the length of the aedeagus, distally slender aedeagus, and sacculus with medial upper spines are diagnostic.

Distribution. Central Vietnam.

Biology. The moths were collected in elevations of 288 to 380 m in late September to beginning of October.

Etymology. The species is dedicated to Mr. Yuri A. BEZVERKHOV (Moscow Russia) for

the possibility of examination of his wonderful collection of Limacodidae.

***Caissa parenti* ORHANT, 2000**

Colour plate 9, fig. 3; Colour plate 16, fig. 15

*Caissa parenti* ORHANT, 2000, Lambillionea, C, 3: 472, figs 4–5. Type locality: “Myanmar, Maymyo, 1200 m”. Holotype: ♂ (coll. ORHANT).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N 103.46° E, 2400 m, NN, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11482); 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15°, 103.46° E, 2400 m, NN, V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, Nord-Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINJAEV & Simonov (MWM); 1 ♀, Vietnam, Prov. Nghe An, Diatr. Que Ban Khom, 19°40'N, 104°54'E, 280 m, 21–23.I.1999, leg. G. RONKAY (MWM); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 4.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 4, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tuong Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0057); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 23, in 96% alcohol).

Distribution. Myanmar, southern China (Yunnan) (WU & FANG, 2008a: 64), northern and central Vietnam.

Biology. The moths were taken in late January, May, late September to early October and mid November to early December in the altitudes of 119 to 2400 m.

Comments. Externally, the species is distinguished easily from sympatric congeners by the presence of a wide brown medial trapezoid fascia in forewing (Colour plate 9, fig. 3; Colour plate 16, fig. 15).

***Pseudocaissa* SOLOVYEV & WITT, gen. n.**

Type species: *Pseudocaissa apiata* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus includes middle-sized moths with forewing length 15–17 mm and wingspan 30–34 mm in males and greyish brown ground colour. The male antennae are filiform. The forewings are triangular, dark with series of white spots. The most typical spots are: the apical one; the large semicircular spot under the apical one; the series of 4 spots forming a concave line near tornus; the large 4 spots in the region of postmedial fascia; the spot near medial stem of discal cell in proximal third of forewing; the large subbasal white spot near dorsum, often divided in two, and the small basal spot (Colour plate 9, fig. 4). The hindwings are unicolorous, yellowish brown with a small dark spot near tornus. The females are unknown.

In male genitalia, the uncus is elongate (Genitalia plate 3, fig. 8). The gnathos is reduced. The valvae are elongate, with slender, strongly sclerotized saccular processes. The juxta is flattened. The aedeagus is tube-shaped, short, curved. The vesica bears a single massive cornutus.

The genus is hardly separable from *Caissa* HERING, 1931 externally and only the spotted white pattern is diagnostic. However, a reduced gnathos and a single large cornutus in the aedeagus are characteristic in the male genitalia and may be considered as autapomorphies of the genus.

The genus includes 2 species *P. marvelosa* (YOSHIMOTO, 1994), **comb. n.** and *P. apiata* SOLOVYEV & WITT, **sp. n.**, known from Nepal and northern Vietnam. The first species was transferred here from genus *Hampsoniella* [sic!, misprint of *Hampsonella* DYAR, 1898 whereas *Hampsoniella* VIETTE, 1949 is in Hepialidae].

The genus is named after the external similarity with *Caissa* HERING, 1931.

***Pseudocaissa apiata* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 4

Type material. Holotype: ♂, “N-Vietnam 16–1800 m | Mt. Fan-si-pan (West) | Cha-pa, Nov. 1994 | 22.20’N 103.40’E | SekWald / Kulturland | SINJAEV & Einh. Slr. | Museum WITT”, ‘Genitalpräparat | Heterocera | Nr. 11.487 | Museum WITT München’ (MWM, genitalia slide 11487).

The forewing length is 15 mm; the wingspan is 33 mm in male. The male antennae are filiform. The forewings are dark brown with series of white spots; the subbasal spot near dorsum is divided in two (Colour plate 9, fig. 4). The hindwings are darkish with pale cilia.

In male genitalia, the uncus is elongate, without any spur; the gnathos is reduced (Genitalia plate 3, fig. 8). The valvae are elongate, rounded and widened distally. The saccular processes are short, acute, 4/5 – 3/4 as long as the valvae. The anellus is sclerotized. The juxta is flattened, apically with two lateral, short, drop-shaped, acute processes with small spines. The aedeagus is short, tube-shaped, arcuate. The vesica contains a single massive slender and long, curved cornutus.

Diagnosis. The species is distinguished from *P. marvelosa* (YOSHIMOTO, 1994) externally by the location of a spot of the postmedial fascia near costa; it is more distant from apical spot. In male genitalia, the rounded and distally widened valvae with small saccular processes, and juxta with two apical spiny processes are diagnostic.

Distribution. Northern Vietnam.

Biology. The single male was collected in November in altitudes of 1600 to 1800 m.

Etymology. From Latin “apiatus” – spotty, speckled.

***Hampsonella* DYAR, 1898**

Psyche, Camb. 8: 274. Type species: *Parasa dentata* HAMPSON, 1893, by original designation.

The genus is well recognizable externally by filiform male antennae, brown ground colour and forewing pattern (Colour plate 9, fig. 5). The forewings have a dark medial zone which is bordered by concave dentate dark fasciae, a pale dentate area near M3 and CuA1, and an arcuate dentate dark fascia running from 2/3 costa to tornus. The male genitalia are simple, with well developed gnathos and uncus; the valvae without saccular processes; the juxta is flattened.

The genus consists of 4 species: *H. dentata* (HAMPSON, 1893), *H. arizana* (WILEMAN, 1916), **comb. n.** (transferred from *Thosea* WALKER, 1855), *H. takemurai* (INOUE, 1986), **comb. n.** (transferred from *Natada* WALKER, 1855) and *H. membra* SOLOVYEV & WITT, **sp. n.** and ranged to India, Japan, Taiwan, southern China and northern Vietnam.



***Hampsonella membra* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 5

Type material. Holotype: ♂, “N-Vietnam 1400 m | Mai-chau, Urwald | 40 km SE Moc-chau | 20.50’N 104.50’E | 07.–15.IV.1995 leg. | SINJAEV & EinhSamml | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.397 | Museum WITT München” (MWM, genitalia slide 14397). Paratypes: 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slide 14396).

Additional material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-side, Mt. Fan-si-pan, 22°17’N, 103°44’E, primary forest, 1600 m, 20–30.X.1995, leg. SINJAEV & AFONIN (MWM); 1 ♂, China, Hunan, Nanling Mts, Shikengkong Mt., 24°54’N, 112°57’E, 1500 m, leg. SINJAEV & Team (MWM, genitalia slide 10048).

The forewing length is 12 mm and wingspan 27–28 mm. The male antennae are filiform. The ground colour is brown. The forewings are obscure, with dark medial area bordered by dark brown proximal and distal fasciae, with dark arcuate dentate fascia from 2/3 costa to tornus; the forewings have pale zones near apex, in the region of arcuate fascia and in the proximal part (Colour plate 9, fig. 5). The hindwings are dark, grayish brown.

In male genitalia, the uncus is simple, strongly sclerotized apically, with slender and massive apical spur (Genitalia plate 3, fig. 9). The gnathos is flattened, spatulate, widened apically. The valvae are elongated, without saccular processes, widened distally (distal width is 1.5–1.9 times of basal width) with S-shaped costa. The juxta is flattened. The aedeagus is S-shaped, short.

Female is unknown.

Diagnosis. The species is similar externally to other congeners, and male genitalia are diagnostic: the uncus is slender, apically strongly sclerotized, with massive apical spur, spatulate gnathos, widened valvae distally, and S-shaped short aedeagus.

Distribution. Northern Vietnam, China (Hunan).

Biology. The specimens were collected in April and late October in altitudes of 1400 to 1600 m.

Etymology. *Membra* (from Latin) – curved, irregular, in connection with external view.

***Arabessa* SOLOVYEV & WITT, gen. n.**

Type species: *Arabessa plumata* SOLOVYEV & WITT, sp. n., here designated.

The genus includes obscure, brownish moths with forewing length about 12 mm. The male antennae are filiform. The forewings are brownish with dark arcuate fascia and dark shades similar to those of *Atosia* SNELLEN, 1900; the black streak is located between veins R4–R5 in outer marginal area (Colour plate 9, fig. 6). In forewing vein R1 is slightly sinuous; R5 is branched from R3+R4.

In male genitalia the uncus is simple with acute subapical spur (Genitalia plate 3, fig. 10). The gnathos is well developed. The valvae are elongate, with strong saccular processes. The juxta is asymmetric with small base and large, curved, left, apically slightly bifid, dorsal process. The aedeagus is slender, tube-shaped.

The female and preimaginal stages are unknown.

The genus is monotypical so far, but some undescribed congeners are known from India

and Cambodia. The genus is similar to *Atosia* SNELLEN, 1900 externally but the arcuate forewing fascia without silver spot; all fasciae and shades are more zigzag-like. The apomorphy is assymmetric juxta with long, bifid and curved left process.

Etymology. From French “arabesque” in connection with elegant forewing pattern.

***Arabessa plumata* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 6

Material. Holotype: ♂, “Vietnam | Quang Tri Prov., Huong Hoa | Nat. Res., near Cup vill. | 16°56'15 N 106°34'52 E, | 400 m 7–10 November 2007 | leg. G. CSORBA | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.590 | Museum WITT München” (MWM, genitalia slide 14590). Paratype: 1 ♂, Vietnam, Quang ri Prov., Huong Hoa Distr., A Xoc village, 16°53'11''N, 106°34'15''E, 310 m, 6.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14589).

The forewing length is 12 mm, wingspan – 27–29 mm. The ground colour is brownish yellow. The male antennae are filiform. The forewings are obscure with dark zigzag arcuate fascia and black spot near apex in outer margin (Colour plate 9, fig. 6). The hindwings are greyish-brown.

The male genitalia have flattened spatulate uncus with well developed acute subapical spur (Genitalia plate 3, fig. 10). The gnathos is slender, hook-shaped apically. The valvae are elongate, narrow, with strong, broad, flattened, concave, apically acute saccular processes. The juxta has a small base and a large dorsal process. The dorsal process is curved, slightly shorter than valva, apically acute, with a small process near 3/4 of it. The aedeagus is slender, tube-shaped, slightly spiral, of the length of the valvae.

Diagnosis. See generic account.

Distribution. Central Vietnam.

Biology. The specimens were collected in the beginning of November in altitudes of 310 to 400 m.

Etymology. From Latin “plumatus” – embroidered by plumose patterns in connection with external view of moths.

***Triplophleps* HAMPSON, 1893**

Fauna Br. India (Moths) 1: 372 (key), 392. Type species: *Limacodes inferna* SWINHOE, 1890, by original designation.

The genus is monotypical so far, externally well distinguished from other limacodids by the blackish brown coloration; the forewings have rhombus-shaped black pattern in medial part and black external fascia. The male genitalia are simple, but aedeagus is long and slender, divided distally in two equal lateral parts; each bears a large spur.

***Triplophleps cf. inferna* (SWINHOE, 1890)**

Colour plate 8, fig. 12

*Limacodes inferna* SWINHOE, 1890, Trans. ent. Soc. Lond.: 194. Type locality: “Rangoon, Bhamo” [Myanmar]. Holotype: ♂ (BMNH).

Material. 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Trong Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHN

(CAS, genitalia slide 0011).

Distribution. Myanmar, central Vietnam.

Biology. The single male specimen was collected in early October in altitudes of 150 to 180 m.

Comments. Additional material from Myanmar and Vietnam is needed for the exact identification of this Vietnamese specimen.

### ***Chalcoscelides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 686. Type species: *Miresa castaneipars* MOORE, 1865, by original designation.

The genus is monotypical, known from India to Sundaland.

### ***Chalcoscelides castaneipars* (MOORE, 1865)**

Colour plate 7, fig. 9; Colour plate 17, figs 1, 2

*Miresa castaneipars* MOORE, 1865, Proc. zool. Soc. Lond.: 819. Type locality: "Darjeeling". Type (-s): unknown.

Material. 1 ♂, Vietnam, Prov. Vinh Phu, Tam Dao, 60 km NW Hanoi, 23°34'N, 105°20'E, 950–1200 m, VI.1994, leg. V. SINJAEV & SIMONOV (MWM, genitalia slide 14038); 9 ♂♂, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM); 23 ♂♂, the same data, but leg. BRECHLIN / SCHINTLMEISTER (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 1700 m, 5–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, the same data, but 2400 m, 8–29.V.1993, lg. SINJAEV & SIMONOV (MWM); 2 ♂♂, the same data, but 2000 m, 5.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, the same data, but VI.1994, leg. SINJAEV (MWM); 10 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler(MWM); 3 ♂♂, N. Vietnam, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 17 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa (= Sapa), Sek. Wald / Kulturland, 22.20° N, 103.40° E, 1600–1800 m, 10.VI–6.VII.1994, SINJAEV & einh. Saml. (MWM); 4 ♂♂, the same data, but leg. SCHINTLMEISTER (MWM); 11 ♂♂, the same data, but VI.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, 10–30.X.1994, leg. SINJAEV & Sammler (MWM); 15 ♂♂, the same data, but 10.VI–6.VII.1994 (MWM); 2 ♂♂, the same data, but 1995, leg. local collectors (MWM); 8 ♂♂, the same data, but V.1995 (MWM); 6 ♂♂, the same data, but 1600 m, 20–30.X.1994, leg. V. SINJAEV & Einheim. Sammler (MWM); 15 ♂♂, the same data, but 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, primär. Nebelwald, 1525 m, 7, 10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, the same data, but 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 10 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 52, in 96% alcohol); 1 ♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, N.P., 20.15° N, 105.20° E, 400 m, 21.XI.1994, leg. SINJAEV & SIMONOV (MWM); 82 ♂♂, the same data, but 18.XI–3.XII.1992, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Cuc Phuong Nat Park, 60 km SW Hanoi, 20.15° N,

105.20° E, 400 m, 21.XI.1994, leg. SINJAEV & SIMONOV (MWM); 2 ♂♂, C. Vietnam, Plato TayNguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, lg. SINJAEV & AFONIN (MWM); 2 ♂♂, C. Vietnam, Quang Tri Prov., Huong Hoa Nat. Res., near Cup vill., 16°56'15''N, 106°34'52''E, 400 m, 7–10.XI.2007, leg. G. CSORBA (MWM); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 86, in 96% alcohol).

Distribution. India, Nepal, Myanmar, Taiwan, Vietnam, and Sundaland.

Biology. The moths were collected in late April to July, mid and late August, late September to early December in altitudes of 119 to 2400 m.

The larva is whitish, smooth, ovate, with a brown band; early instars have a transverse dark band (PIEPERS, SNELLEN, 1900; KALSHOVEN, 1981). Host-plants: *Citrus* sp. (Rutaceae), *Cinnamomum* sp. (Lauraceae), *Cassia* sp. (Fabaceae), *Spondias* sp. (Anacardiaceae), *Theobroma* sp. (Sterculiaceae), *Trevesia* sp. (Araliaceae) (HOLLOWAY, 1986: 84); *Camellia sinensis* (L.) KUNTZE (Theaceae, Oriental), *Cocos* sp., *Cocos nucifera* L. (Arecaceae, Indonesia), *Eugenia malaccensis* L. (Myrtaceae, W. Malaysia), *Mangifera indica* L. (Anacardiaceae, Indonesia), *Spondias pinnata* (J. G. KONIG ex L. f.) KURZ. (Anacardiaceae, S.E. Asia), *Senna obtusifolia* (L.) H.S. IRWIN & BARNEBY (Fabaceae, S.E. Asia), *Theobroma cacao* L. (Sterculiaceae, Indonesia) (ROBINSON et al., 2007).

The cocoon is brown, enveloped in white silk (HOLLOWAY, 1986: 84).

Comments. The females can be confused with females of the genus *Chalcozelis* HAMPSON, 1893 but the basal brown spot of the forewing is larger in *Chalcoscelides* HERING, 1931, reaching the radial stem, with tornal incision; the apex of abdomen with tufts of dark scales, without distinct discal spot.

Nomenclatorial notes. In the original description, the number and sex of specimens of the type-series was not mentioned. Type (-s) is not found, but it is known that it is from collection of W.S. ATKINSON and deposited in BMNH according to the original description. Two males were found in BMNH which can be probable syntypes, but their label data are not exhaustive enough for considering them as safe syntypes.

The specimens were identified as this species by comparison with the original description.

### ***Chalcozelis* HAMPSON, 1893**

Fauna Br. India (Moths) 1: 372 (key), 392. Type species: *Miresa fumifera* SWINHOE, 1890, by original designation.

The genus includes medium-sized moths with brownish coloration of different tints. The male antennae are broadly bipectinate over only the basal third in males. The moths are sexually dimorphic. The male forewings with characteristic black, small, medial patch and silky brown central spot which has proximally small white patch (Colour plate 7, figs 12, 13). The females are similar to *Chalcoscelides* HERING, 1931 externally, but well defined by presence of black, small, medial patch in forewings (Colour plate 17, fig. 3).

The following names were associated with *Chalcozelis* HAMPSON, 1893: *Miresa fumifera* SWINHOE, 1890 (Myanmar), *Altha pulchrimacula* HULSTAERT, 1924 (New Guinea),

*Miresa nigriplaga* HEYLAERTS, 1890 (Sumatra), *Miresa sanguineomaculata* HEYLAERTS, 1890 (Sumatra), *Limacodes albiguttatus* SNELLEN, 1879 (Sulawesi), *Doratifora* [sic!] *hemistaura* LOWER, 1902 (Queensland), *Doratifora* [sic!] *nephrochrysa* LOWER, 1902 (Queensland), which were regarded as *Chalcocelis albiguttatus* (SNELLEN, 1879) before present time (HOLLOWAY, 1986: 85; 1990: 39; HOLLOWAY et al., 1987: 20; EDWARDS, 1996: 145), *Chalcocelis wilemani* WEST, 1937 (Luzon), and *Chalcocelis castanica* TURNER, 1927. The species which were synonymized with *Chalcocelis albiguttatus* (SNELLEN, 1879) (*Miresa fumifera* SWINHOE, 1890, *Altha pulchrimacula* HULSTAERT, 1924, *Miresa nigriplaga* HEYLAERTS, 1890, *Miresa sanguineomaculata* HEYLAERTS, 1890, *Doratifora hemistaura* LOWER, 1902, and *Doratifora nephrochrysa* LOWER, 1902 are among them) is distributed from India to Australia. The reason of the long synonymy of *Chalcocelis albiguttatus* is quite unclear, because the taxa from different regions are only externally similar, but have strong and discrete differences in male genitalia.

So, the specimens from Australia and Queensland have valvae undivided apically with vestigial subcostal lobe bearing hair-like setae; the uncus is very broad apically. The specimens from the Phillipines lost the valval lobes covered with setae. The specimens from Sundaland have the lobe covered with hair-like setae in valvae, uncus apically divided, slightly bifid valvae apically with the shape of fish-tail. The specimens from India, Myanmar, China, Thailand and Vietnam have slender, acute uncus, divided valvae apically with the shape of fish-tail and well developed lobe with setae (Genitalia plate 4, figs 1, 2).

This genus needs a total revision.

DE JOANNIS (1929: 579) recorded *Chalcocelis albiguttatus* (SNELLEN, 1879) from Vietnam (Cho ganh; Yen bai) and gave *Coffea* sp. (Rubiaceae) as a food plant. *Ch. albiguttatus* (SNELLEN, 1879) was recorded also from southern Vietnam (HOLLOWAY et al., 1987: 20), but the species *Ch. albiguttatus* SNELLEN in Vietnam can be confused with two other sympatric species, *Ch. albor* SOLOVYEV & WITT, **sp. n.** and *Ch. dydima* SOLOVYEV & WITT, **sp. n.** which can be distinguished only by the morphology of the male genitalia; real *Ch. albiguttatus* SNELLEN is known from Sulawesi and not expected to occur in Vietnam.

### ***Chalcocelis albor* SOLOVYEV & WITT, sp. n.**

Colour plate 7, fig. 12

Type material. Holotype: ♂, “N-Vietnam 1400 m | Mai-Chau, Urwald | 40 km SE Moc-chau | 20.50’N 104.50’E | 07.–15.IV.1995 leg. | SINJAEV & EinhSamml | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.213 | Museum WITT München” (MWM, genitalia slide 14213).

The forewing length is 12 mm and the wingspan is 24 mm. The male antennae are broadly bipectinate basally. The ground colour is greyish brown. The forewings with rounded central silky brown spot in the region of the veins CuA2 and CuP, with proximal white patch on vein CuA2 and black small medial patch (Colour plate 7, fig. 12).

The male genitalia have narrow valvae, which are triangular apically, 1.3–1.7 times higher than wide, with lobe covered with hair-like setae (Genitalia plate 4, fig. 1). The uncus is triangular in back view, finger-shaped apically. The gnathos is modified into a pair of membraneous, setose, globular lobes. The juxta is flattened. The aedeagus is very

short, tube-shaped, widened apically.

Female unknown.

Diagnosis. The species is externally similar to its congeners except *Ch. wilemani* WEST, 1937, but well discriminated by male genitalia, resembling *Ch. fumifera* (SWINHOE, 1890) and *Ch. dydima* SOLOVYEV & WITT, **sp. n.**, but differing by narrower valvae with straighter lower margin and more massiv apical parts.

Distribution. Northern Vietnam.

Biology. The single male was collected in 7–15 April in the elevation of 1400 m.

Etmology. Albor (from Latin) – white spot, in connection with forewing pattern.

### ***Chalcoecelis dydima* SOLOVYEV & WITT, sp. n.**

Colour plate 7, fig. 13; Colour plate 17, fig. 3

Type material. **Holotype:** ♂, “China | Hainan Dao | He Ling Mts. und | Wuzhu Shan | 1000–1800 m | E.II.–E.V.2000 Lf. | lg. J.L. LI, Slg. MAIER | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.306 | Museum WITT München” (MWM, genitalia slide 14306). **Paratypes:** 10 ♂♂, the data as in holotype; 13 ♂♂, China, Hainan Isl., Wuzhi-Shan Mts., 18°53’N, 109°43’E, 1500 m, 18–28.II.2003, leg. SINIAEV & his team (MWM, genitalia slide 14305); 34 ♂♂, China, Hainan Isl., Wuzhi-Shan Mts., 18°53’N, 109°43’E, 1500 m, 20.II–10.IV.2001, leg. local collector (MWM, genitalia slide 14291); 6 ♂♂, China, Hainan Isl., Wuzhi-Shan Mts., 18°53’N, 109°43’E, 1500 m, 17.VII–7.VIII.2003, leg. SINIAEV & his team (MWM, genitalia slide 14293); 2 ♂♂, 1 ♀, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23’03.3’’N, 105°42’43.7’’E, 56±22 m, 11.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 3 ♂♂, the same data but 12.X.2008 (CAS); 2 ♂♂, the same data but 11–12.X.2008 (CAS, AS-LIMAC 127, in 96% alcohol).

Additional material. 1 ♂, Hinterindien, Tonking (MWM, genitalia slide 14289); 1 ♂, Vietnam, Quang Tri prov., Huong Hoa Distr., A Xoc Village, 16°53’11’’N, 106°34’15’’E, 310 m, 6.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14591); 1 ♂, Vietnam, Quang Tri prov., Da Krong Nature Reserve, near HQ, 16°36’N, 106°52’E, 170 m, 13.XI.2007, leg. G. CSORBA (MWM); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16’20.6’’N, 106°16’20.6’’E; 60±20 m, 27.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

The forewing length is 10–12 mm; the wingspan 20–25 mm in males. The ground colour is greyish brown. The male forewings have small black medial patch and large, rounded, silky brown central spot in CuA2–CuP region with proximal white patch in CuA2 (Colour plate 7, fig. 13). The female forewings are whitish with black, small, medial patch in forewings and large, rounded, brown spot near lower margin (Colour plate 17, fig. 3).

In male genitalia, the uncus is simple and slender apically (Genitalia plate 4, fig. 2). The gnathos is modified into a pair of membraneous, setose, globular lobes. The valvae are irregularly sinuous with central subcostal lobe with hair-like setae; distally in lower part the valvae are narrowed and widened apically. The apical part of valvae is S-shaped, rounded dorsally with acute tornal corner. The juxta is wide, flattened. The aedeagus is very short, tube-shaped, widened apically.

Diagnosis. The species is not distinguished externally from congeners except *Ch. wilemani* WEST, but the male genitalia are diagnostic; they are similar to those of *Ch. fumifera* (SWINHOE, 1890) but well defined by almost straight, only slightly irregular-sinuuous lower margin of valvae and dorsally rounded, S-shaped apical part of it.

Distribution. Southern China (Hainan), northern Thailand (Changwat Payao), Vietnam.

Biology. The moths were collected in mid February to late May, mid June to beginning of August in elevations of 1000 to 1800 m in Hainan; in Vietnam in late July, mid October, the beginning and mid November in altitudes of 34 to 310 m.

Etymology. Didymae (Greek) – twins.

### ***Sansarea* SOLOVYEV & WITT, gen. n.**

Type species: *Trichogyia circulifera* HERING, 1933, here designated.

The genus includes middle-sized moths with forewing length 10–14 mm and wingspan 22–28 mm in males, 14 mm and 30 mm in females. The ground colour is brownish-ochre. The male antenna is filiform. The forewing with large postmedial dark brown rounded spot with postmedial, antemedial and not-well defined external zigzag fasciae (Colour plate 9, figs 7, 8). The outer marginal area of forewing bears small dark spots on the veins. The hindwing is dark with bright fringe and dorsal margin.

The male genitalia with single, apically finger-shaped uncus with small lateral processes (Genitalia plate 4, figs 3, 4). The gnathos is strongly modified: distally very broad with two pairs of lateral and distal processes. The valvae without saccular processes. The juxta is flattened. The aedeagus is tube-shaped, slightly spiral with apical strong acute spur. The 8-th sternite is modified, with two basad processes. The shape of gnathos and of processes of the eighth sternite are diagnostic.

In female genitalia, the ovipositor lobes are well-developed. The anterior apophyses are reduced. The posterior apophyses are very broad proximally, as wide as the length of the ovipositor lobes, apically narrow. The postvaginal plate is strongly sclerotized. The ductus bursae is long, spiral. The corpus bursae is ball-shaped with surface covered with bristles and small field of stellate signa.

The type species of this genus was associated with *Trichogyia* HAMPSON, 1894 (Type species: *semifascia* HAMPSON, 1984) (HERING, 1933: 207; YOSHIMOTO, 1993: 34).

The strong modified wing pattern, male and female genitalia show great differences between both genera (a detailed diagnosis of *Trichogyia* is given by HOLLOWAY, 1986: 134–135). By the way, the type of signum proves the misplacement of *Sansarea circulifera* (HERING) in *Trichogyia* HAMPSON, 1894: in the latter, the signum is a single, circular scobinate patch of sclerotization, but in *Sansarea* SOLOVYEV & WITT, **gen. n.** it is stellate-spined. Thus, the new genus presents another lineage of the family Limacodidae and must be associated with the genera *Narosa* WALKER, 1855, *Belippa* WALKER, 1865, *Austrapoda* INOUE, 1982, *Apoda* HAWORTH, 1809, *Demonarosa* MATSUMURA, 1931, *Nagoda* MOORE, 1887, *Cheromettia* MOORE, 1883, *Chalcocelis* HAMPSON, 1893 etc.

The genus consists of 3 species: *S. circulifera* (HERING, 1933), **comb. n.** (transferred from *Trichogyia* HAMPSON, 1894), *S. zeta* SOLOVYEV & WITT, **sp. n.** and *S. grata*

SOLOVYEV & WITT, **sp. n.**, and ranges from Nepal to Japan (YOSHIMOTO, 1993: 34), southern China, Taiwan, northern Thailand and northern Vietnam.

Etymology. Sansara (or Samsara) – the cycle from birth to rebirth in Buddhism.

***Sansarea zeta* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 7

Type material. Holotype: ♂, “N-Vietnam 1600 m | Mt. Fan-si-pan (Nord) | Cha-pa, Primärurwald | 22.17’N 103.44’E | 20.-30.IV.1995 | leg. V. SINJAEV & | Einheim. Sammler | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 12.733 | Museum WITT München” (MWM, genitalia slide 12733).

The forewing length is 14 mm, wingspan 30 mm in male. The ground colour is brownish-ochre. The male antenna is filiform. The forewing with postmedial large brown spot and brown zigzag antemedial, postmedial and weakly defined external fasciae (Colour plate 9, fig. 7). The hindwing is dark with light cilia and dorsal margin.

The male genitalia with simple uncus, slightly trident distally, finger-shaped apically (Genitalia plate 4, fig. 3). The gnathos is very broad distally with long lateral processes slightly interrupted medially, curved distally and containing proximal small processes. The valvae conform to the ground plan of *Sansarea* SOLOVYEV & WITT, **gen. n.** The aedeagus is tube-shaped, slightly spiralled, very narrow and acute apically.

The 8 sternite with two processes expanded laterally.

Diagnosis. The species is similar externally to other congeners, and male genitalia are diagnostic. The lateral processes of gnathos as in description above. The apical finger-shaped process of uncus is wider than in other congeners. The 8th sternite with two narrower finger-shaped processes laterally and broader medial incision than in *S. circulifera* (HERING), with not semicircular central papula as in *S. grata* SOLOVYEV & WITT, **sp. n.**

Distribution. Northern Vietnam (Mt. Fan-si-pan).

Biology. The single male was collected in late April in the altitude of 1600 m.

Etymology. From Greek “zetes” – the winged son of Boreas and Oreithyia, mentioned among the Argonauts.

***Sansarea grata* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 8

Type material. Holotype: ♂, “N-Vietnam, 16–1800 m | Mt. Fan-si-pan (West) | Cha-pa, Sekund.-Wald | 22.20’N 103.40’E | (Kult.) XI.1994 leg | SINJAEV & Einh. Slr. | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 13.241 | Museum WITT München” (MWM, genitalia slide 13241). Paratype: 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHN (CAS, VZ-LIMAC 48, in 96% alcohol).

The forewing length is 14 mm and the wingspan is 28 mm in male. The forewing with rounded postmedial dark spot and zigzag antemedial, postmedial and not-well defined external fasciae (Colour plate 9, fig. 8). The male antenna is filiform. The hindwing is dark with light cilia on lower margin.

The male genitalia with trident uncus (Genitalia plate 4, fig. 4). The gnathos with two narrow and long lateral processes and long, narrow, slightly curved medial processes.



The valvae without saccular processes. The juxta is flattened. The aedeagus is slightly spiralled, acute and narrow apically. The 8th sternite with semicircular, medial incision.

Diagnosis. The species is similar externally to other congeners and well defined by male genitalia. The gnathos without medial incision, with pair of long and slender medial and lateral processes; the lateral process is slightly concave. The 8th sternite is distinguished from congeners by processes with lateral slender parts; the medial incision is broad, semicircular.

Distribution. Northern Vietnam (Fan-si-pan).

Biology. The moths were collected in mid May and November in altitudes of 1600 to 1800 m.

Etymology. From Latin “grates” – gratitude, in connection with history of description of this species.

### ***Spatulifimbria* HAMPSON, 1893**

Fauna Br. India (Moths) **1**: 372 (key), 391. Type species: *Spatulifimbria castaneiceps* HAMPSON, 1893, by original designation.

= *Spatulicraspeda* HAMPSON, 1893

Fauna Br. India (Moths) **1**: 391. Type species: *Spatulifimbria castaneiceps* HAMPSON, 1893, by original designation.

The genus includes small moths with brown ground colour. The male antennae are broadly bipectinate almost to tip. The forewings are bronzy brown, unicolorous, with discal and postmedial fasciae, which are parallel to outer margin and dark shaded (Colour plate 8, fig. 20). The larva is peculiar shaped, centrally swollen (Colour plate 18, fig. 3). Cocoon is whitish with brown dispersal fasciae (Colour plate 20, fig. 9).

The genus is monotypical and includes only species with 3 distinct subspecies: *S. c.s castaneiceps* HAMPSON, 1893, *S. c.s opprimata* HERING, 1931, *S. c. insolita* HERING, 1931. The taxon *Spatulifimbria grisea* HERING, 1935 is transferred here to *Mambarilla* HERING, 1931 and the new combination *Mambarilla grisea* (HERING, 1935), **comb. n.** is established based on forewing venation and male genitalia.

The genus is similar to *Mambarilla* HERING, 1931 externally but in forewing R1 is almost straight (sinuous in *Mambarilla*); both genera need revision.

### **? *Spatulifimbria castaneiceps* HAMPSON, 1893** (Colour plate 8, fig. 20)

*Spatulifimbria castaneiceps* HAMPSON, 1893, Fauna Br. India (Moths) **1**: 391, pl. 161, figs 16, 17.

Type locality: “Ceylon”. Lectotype: ♂ (BMNH), **here designated**.

Reference. DE JOANNIS, 1929: 577 (Cho ganh).

Distribution. Sri Lanka, Northern Vietnam (?).

Comments. No material available; the species is recorded from Vietnam only by a note of DE JOANNIS (1929: 577), but misidentification is highly probable.

Nomenclatorial notes. The type series of *Spatulifimbria castaneiceps* HAMPSON, 1893 includes male and female from Sri Lanka but only one syntypical male was found in BMNH which is designated as lectotype here. The specimen with following labels: 1 –

round, with red frame with black printed text “Type”; 2 – square, yellowish with printed black text “Coll GREEN. | 91.–26.”; 3 – rectangle, yellowish, with black inked by HAMPSON text “Spatulicraspeda | castaneiceps. HMPSN. | type ♂” and backside “Pundaloya | Ceylon. | nov.”. This specimen is supplied with a lectotype label with corresponding text.

### ***Miresa* WALKER, 1855**

List Specimens lepid. Insects Colln. Br. Mus. **5**: 1103 (key), 1123. Type species: *Nyssia albipuncta* HERRICH-SCHÄFFER, 1854, by subsequent designation by MOORE, 1883: 128.

= *Nyssia* HERRICH-SCHÄFFER, 1854

Samml. aussereurop. Schmett. **1** (1): wrapper, pl. 37, figs 178, 179. Type species: *Nyssia albipuncta* HERRICH-SCHÄFFER, 1854, by subsequent designation of FLETCHER & NYE, 1982: 104. A junior homonym of *Nyssia* DUPONCHEL, 1829. The objective replacement name is *Miresa* WALKER, 1855.

= *Neomiresa* BUTLER, 1878

Trans. ent. Soc. Lond. **1878**: 74. Type-species: *Nyssia argentata* WALKER, 1855, by original designation.

= *Miresopsis* MATSUMURA, 1927

J. Coll. Agric. Hokkaido imp. Univ. **19**: 87. Type species: *Miresa bracteata* BUTLER, 1880, by original designation.

Typically the members of the genus are yellowish brown, pale; the forewings with S-shaped postmedial fascia, the medial spot, postmedial and external fasciae are silver colored, but any of these features is reduced sometimes (Colour plate 9, figs 10–19). The species is similar to *Narosoideus* MATSUMURA, 1911 but distinguished by the presence of any silver spot and fascia.

The larvae are of the nettle-type.

The genus includes the following taxa: *M. albipuncta* (HERRICH-SCHÄFFER, 1853) (= *M. guttifera* WALKER, 1855), *M. argentifera* WALKER, 1855, *M. decedens* WALKER, 1855, *M. nivaha* MOORE, 1859, *M. bracteata* BUTLER, 1880, *M. fulgida* WILEMAN, 1910 (= *M. bracteata* var. *orientis* STRAND, 1915, = *M. bracteata* ab. *kagoshimensis* STRAND, 1915), *M. methathermistis* HAMPSON, 1910, *M. pyronota* HAMPSON, 1910, (= *M. aspera* HERING, 1931, **syn. n.**, = *M. lancensis* HERING, 1931, **syn. n.**), *M. demangei* DE JOANNIS, 1930, *M. kwangtungensis* HERING, 1931, *M. burmensis* HERING, 1931, *M. exigua* HERING, 1931, *M. sibirinoides* HERING, 1931, *M. urga* HERING, 1933, *M. fangae* WU & SOLOVYEV (in print), *M. polargenta* WU & SOLOVYEV (in print), *M. sagitovae* SOLOVYEV & WITT, **sp. n.**, and *M. rorida* SOLOVYEV & WITT, **sp. n.** known from India to Sundaland. The genus is in need of revision. The new synonymies are established here on the base of external characters and morphology of male genitalia of typical specimens.

Remark: *Miresa albivitta* MOORE, recorded by LEMÉE, 1950: 43 from Backan is an error.

The species name does not exist, and is a misidentification of TAMS or an error that occurred during compilation.

***Miresa burmensis* HERING, 1931**

(Colour plate 9, fig. 10)

*Miresa burmensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 682. Type locality: “Nieder-Burma”. Holotype: ♂ (BMNH).

Material. 3 ♂♂, 1 ♀, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 26–29.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0082 (♂), 0099 (♂)); 4 ♂♂, the same data (IEBR); 1 ♂, S. Vietnam, Dong Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0100); 2 ♂♂, the same data (IEBR); 7 ♂♂, 1 ♀, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25–27.VII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. Southern Myanmar, southern China (WU & SOLOVYEV, 2009), southern Vietnam.

Biology. The specimens were collected in late July in altitudes of 40 to 153 m.

Comments. The species is close to *M. albipuncta* (HERRICH-SCHÄFFER, 1853), *M. pyronota* HAMPSON, 1910 and *M. sibinoides* HERING, 1931 known from India and Sri Lanka, but differs by the male genitalia: in *M. burmensis* HERING, 1931 the angle of aedeagus curvation is more than 45°. By the way, this group is in need of a special revision with the examination of large samples to show individual variation.

***Miresa fulgida* WILEMAN, 1910**

Colour plate 9, fig. 11; Colour plate 17, fig. 4

*Miresa fulgida* WILEMAN, 1910, Entomologist **43**: 192. Type locality: “Kanshirei (1000 ft.)”. Lectotype: ♂ (BMNH), designated by WU & SOLOVYEV (in print).

*Miresa bracteata* var. *orientis* STRAND, 1915, Suppl. Ent. **4**: 6. Type locality: “Karapin (Japan)” [Taiwan]. Lectotype: ♂ (RMNH), designated by WU & SOLOVYEV (in print).

*Miresa bracteata* ab. *kagoshimensis* STRAND, 1915, Suppl. Ent. **4**: 7. Type locality: “Kagoshima (Japan)”. Holotype: ♂ (RMNH).

Reference. HERING, 1931: 682 (Tonkin).

Material. 2 ♂♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 45, in 96% alcohol); 1 ♂, S. Vietnam, Dong Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N, 106°16'20.6''E; 60±20 m, 27.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 1 ♂, the same data (IEBR); 1 ♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 6.IX.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 3 ♂♂, S. Vietnam, Dong Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N, 106°16'20.6''E; 60±20 m, 31.VII–2.VIII.2008, leg. TRAN Thieu Du (IEBR); 3 ♂♂, N. Vietnam, Ben En Nat. Par, 40 km SW Than Hoa, 18.40° N, 105.40° E, 200 m, 22–30.XI.1994, leg. SINJAEV & SIMONOV (MWM, genital slide 14345); 1 ♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 136, genitalia slide 127); 5 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96%

alcohol, VZ-LIMAC 148, 158, 163, 165); 3 ♂♂, the same data but 24–25.IV 2009, leg. V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 26–27.IV (CAS); 15 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09,6''E, 320±32 m, 25–28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 13 ♂♂, the same data but 25–26.IX.2008 (CAS, AS-LIMAC 27, AS-LIMAC 72, 105, in 96% alcohol); 2 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18,6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC, in 96% alcohol).

Distribution. Southern China, Taiwan, southern Japan, Vietnam.

Biology. The specimens were collected in late April, early May, late July, early August, early and late September, early October, and late November in altitudes of 34 to 380 m.

The larva belongs to the nettle-type. The mature larva has long dorsal scoli on segments T3, A1 and A7 only; subdorsal scoli are short. The larva is green with a pair of dorsal, wavy, white lines, edged with dark green, running from segment A1 to A7 where they are joined together; with a pair of white, dorsal, ovoid rings, edged by dark green, between segments T2 and T3, T3 and A1. Food plants: *Camellia* spp., *Canarium album* (Lour.) Rausch. (Burseraceae) (HERING, 1931: 682; ROBINSON et al. 2001, 2007).

Comments. The species can be confused with *Miresa demangei* DE JOANNIS, 1930, but can be discriminated externally by smaller medial silver spot divided proximally and more rounded forewings without concave costa. The relationships between both taxa is still unclear so far.

***Miresa demangei* DE JOANNIS, 1930**      Colour plate 9, fig. 12; Colour plate 17, fig. 5

*Miresa demangei* DE JOANNIS, 1930, Anns Soc. ent. Fr. **91**: 574, pl. III, fig. 3. Type locality: “Chapa” [Vietnam]. Holotype: ♂ (MNHN).

Material. 1 ♂, holotype, Chapa, Tonkin (MNHN); 34 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, NN, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14344); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, VI.1995, leg. local collectors (MWM, genitalia slides 14347, 14348); 1 ♂, Vietnam (N), Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, 15–25.IV.1995, leg. SINJAEV & loc. coll. (MWM); 7 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (=Sapa), Sek. Wald / Kulturland, 1600–1800 m, 22.20° N, 103.40° E, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 13 ♂♂, N. Vietnam Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN / SCHINTLMEISTER (MWM); 18 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 10 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, NN, VI.1994, leg. SINJAEV & einheim. Sammler (MWM); 52 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22°20'N, 103°40'E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM); 7 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Chapa (= Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7, 10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, West, Cha-pa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SCHINTLMEISTER (MWM); 3 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 8 ♂♂, 1 ♀, the same data, but VI.1994, leg. SINJAEV &

einheim. Sammler (MWM); 2 ♂♂, the same data, but 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, West, Cha-pa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22.17° N, 103.44° E, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 1 ♂, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, 5–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam / Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Nebelwald, 240 m, 2–4.III.1995, leg. Dr. BRECHLIN (MWM); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 5 ♂♂, the same data, but 20–30.X.1994, leg. SINJAEV & einh. Saml. (MWM); 2 ♂♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER. (MWM); 2 ♂♂, N. Vietnam, Yen-Bai, Anchy, 21°42'N, 104°18' E, primary forest, V.1996 (MWM); 2 ♀♀, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, C. Vietnam, Kon Tum, 12.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 35, in 96% alcohol); 5 ♂♂, 1 ♀, C. Vietnam, Plato TayNgyuen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINIAEV & AFONIN (MWM, genitalia slide 14380); 2 ♂♂, C. Vietnam, Kon Tum province, DacGlei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. SINIAEV & AFONIN (MWM).

Distribution. South-western China (Yunnan), Vietnam.

Biology. The moths were taken in early March, mid April to August, early and late October, and late November in altitudes of 200 to 2400 m.

Comments. Externally, the species is well discriminated from other congeners by the yellowish orange colour, with large triangular medial spot and narrow fasciae from the spot to base of forewing; the postmedial fascia is S-shaped, silver and narrow. The species can be confused with *Miresa fulgida* WILEMAN, 1910, but concave costa in forewing, with large, equilateral triangle, and silver medial spot distinguish it immediately. The relationship of both taxa (*Miresa demangei* DE JOANNIS, 1930 and *Miresa fulgida* WILEMAN, 1910) needs in further investigation.

### ***Miresa exigua* HERING, 1931**

Colour plate 9, fig. 13

*Miresa exigua* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 683. Type locality: “Naga-Hills, in 5000–8000 Fuß”. Holotype: ♂ (BMNH).

Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler (MWM, genitalia slide 14346); 2 ♂♂, the same data, but VI.1995, leg. local collectors (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 3 ♂♂, the same data, but 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM).

Distribution. India, northern Vietnam.

Biology. The specimens were collected in June to mid July in altitudes of 1600 to 1800 m.

Comments. The species is similar to *M. demangei* DE JOANNIS, 1930 externally but the medial silver spot of forewing is smaller; the forewing is more elongate, with straight costa.

***Miresa kwangtungensis* HERING, 1931** Colour plate 9, fig. 16; Colour plate 17, fig. 6

*Miresa argentifera kwangtungensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 683. Type locality: "Kwang-tung, Tsha-yün-schan". Lectotype: ♂ (ZMHB), designated by WU & SOLOVYEV (in print).

Material. 1 ♂, N. Vietnam, Ben En National Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 14383); 2 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7–8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, the same data (CAS, AS-LIMAC 51, in 96% alcohol); 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0049); 1 ♂, N. Vietnam, Cuc Phuong N.P., prov. Ninh Binh, 20°14.579'N, 105°43.071'E, 140 m (CSD); 1 ♂, C. Vietnam, Dồi sần bay, La bố B; ký hiệu, Chà Val, huyện Nam Giang, Quảng Nam, 15°35'N, 107°28'E, 546–549 m, 28.VI.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. Zolotuhin (CAS); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 95, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 22, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Chi Khê, Con Công distr., Nghe An prov., 18°57'N, 104°48'E, 24.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 113, in 96% alcohol); 4 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX–2.X.2008.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 30.IX.2008 (CAS, AS-LIMAC 107, in 96% alcohol).

Distribution. Southern China, northern and central Vietnam

Biology. The specimens were collected in late April, June, late September, beginning and mid October, late November in altitudes of 34 to 549 m.

Comments. The species is well defined from congeners by bright yellow head and thorax; the abdomen and wings are brown. The forewings are almost unicolored, with smoothed, dark, S-shaped, weakly defined medial and postmedial fasciae; the silver external fascia is narrow, not well expressed.

***Miresa urga* HERING, 1933**

Colour plate 9, fig. 15

*Miresa urga* HERING, 1933, in SEITZ, Gross-Schmett. Erde, Suppl. **2**: 206, Taf. 15 d. Type locality: "Siao-Lou". Lectotype: ♂ (ZMHB), designated by WU & SOLOVYEV (in print).

Material. 3 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 14355 (♂)); 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40°, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM).

Distribution. Central and southern China, northern Thailand (Changwat Nan, Changwat Chiang Mai), northern Vietnam.

Biology. The moths were collected in mid June to mid July in altitudes of 1600 to 1800 m.

Comments. The species is similar to *M. sagitovae* SOLOVYEV & WITT, **sp. n.** but usually

darker and smaller (Colour plate 9, fig. 15). The male genitalia are diagnostic: the gnathos is narrow, not rounded apically; the valvae are broader; the aedeagus with crest-shaped dorsal process (Genitalia plate 4, fig. 5).

***Miresa fangae* WU & SOLOVYEV (in print)** (Colour plate 9, fig. 17)

*Miresa fangae* WU & SOLOVYEV, Zootaxa. Type locality: “China, Hainan: Tongshi”. Holotype: ♂ (IZCAS).

Material. 1 ♂, C. Vietnam, Sơn Thọ, Vũ Quang; Hà Tĩnh, 18°25'N, 105°24'E, 50–100 m, 24.V.2008, leg. TRAN Thieu Du (CAS, ex. coll. IEBR, genitalia slide 0050)

Ditribution. China (Jiangxi, Hunan, Guangxi, Hainan, Guizhou), Central Vietnam.

Biology. The single specimen was collected at 24 May in the altitudes of 50 to 100 m.

Comments. The specimen can be confused with *Miresa polargenta* WU & SOLOVYEV, but the coloration is more uniform; forewings are more rounded with entire post-median silver fascia without silver fasciae on veins M2 and CuA2.

***Miresa sagitovae* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 18; Colour plate 17, fig. 7

Type material. Holotype: ♂, “Nord-Vietnam | Mt. Fan-si-pan | Cha pa, 2400 m NN | (22.15°N 103.46°E) | 8.–29.V.1993 leg. SINJAEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.351 | Museum WITT München” (MWM, genitalia slide 14351). Paratypes: 1 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM, genitalia slide 13256 (♂)); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN / SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (=Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14384); 7 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Samml. (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 4 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1996, leg. local collectors (MWM, genitalia slides 14382 (♂), 14385 (♀)); 15 ♂♂, the data as in holotype (MWM); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 65, in 96% alcohol).

Additional material. 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, (Kult.), 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Slr. (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, NN, 22.15° N, 103.46° E, VI.1994, leg. SINJAEV & einheim. Sammler (MWM); 9 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha pa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Saml. (MWM);

1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, Prim. Urwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Prim. Neb. Wald, 2350 m, 28–30.X.1994, leg. SINJAEV & Einh. Slr. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (=Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7, 10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 4 ♂♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, 15–25.IV.1995, leg. SINJAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. SINJAEV & Sammler (MWM); 3 ♂♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, IV.1995, leg. SINJAEV & loc. coll. (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, VI.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°17'N, 103°44'E, 1600 m, XI.1995, leg. SINJAEV & loc. coll. (MWM); 5 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol).

The forewing length is 15–16 mm; the wingspan is 31–34 mm in males; 21 and 38 in female (Colour plate 9, fig. 18). The male antennae are broadly bipectinate in basal half. The forewings are elongate, acute. The ground colour is yellowish brown. The head and thorax are yellow with narrow brown dorsal band. The forewings are orange-brown; with characteristic longitudinal Y-shaped dark fascia in the region of the medial stem; the proximal dorsal zone of forewing bordered by this fascia is pale, orange; the postmedial and external fasciae are silver; the postmedial fascia is concave, running from 2/3 of dorsum to apex. The hindwings are brown with yellow fringes. The abdomen is brown with yellowish apex.

The male genitalia have simple, apically broad uncus with massive and short apical spur (Genitalia plate 4, fig. 6). The gnathos is flattened, broad, rounded apically. The valvae are triangular with almost straight costa. The juxta is flattened. The aedeagus is tube-shaped, curved basally, apically flattened with triangular-shaped, ventral and dorsal crests.

The female genitalia with well developed ovipositor lobes (Genitalia plate 12, fig. 5). The ductus bursae is long, spiral. The corpus bursae is rounded; the signum is double, T-shaped.

Diagnosis. Externally the species is similar to *M. urga* HERING, 1933, but usually larger and paler. The male genitalia are diagnostic: broad and apically rounded gnathos, narrower valvae with almost straight costa, aedeagus apically with triangular ventral and dorsal crest-shaped processes.

Distribution. Northern Vietnam (Fan-si-pan).

Biology. The specimens were collected in April, May, June to mid July, late October, and November in altitudes of 1500 to 2350 m.

Etymology. The species is named after Lyudmila V. SAGITOVA (St. Petersburg; Russia), secretary of Entomology Department of St. Petersburg State University for her support during my study in this University.

***Miresa polargenta* WU & SOLOVYEV (in print)**

Colour plate 9, fig. 14

*Miresa polargenta* WU & SOLOVYEV, Zootaxa (in press). Type locality: “China, Guangxi: Jinxiu



(1100 m). Holotype: ♂ (IZCAS).

Material. 2 ♂♂, paratypes, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, 1600–1800 m, secondary forest, V.1995, leg. local collectors (MWM, genitalia slide 14353); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17°N, 103.44°E, primär. Urwald, 1525 m, 7.10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 14359); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20°N, 103.40°E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, paratypes, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 44, 45, in 96% alcohol); 2 ♂♂, paratypes, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol).

Distribution. Southern China (Guangxi, Yunnan), northern Vietnam (Mt. Fan-si-pan), northern Thailand (Chiang Mai).

Biology. The moths were taken in May, late June to mid July in altitudes of 1525 to 1800 m.

Comments. Externally, the species is similar to *M. fangae* WU & SOLOVYEV (in print) but differs by obscurer coloration and larger size (Colour plate 9, fig. 14). In male genitalia (Genitalia plate 4, fig. 7), the uncus is much broader apically, the gnathos is narrow, S-shaped distally in lateral view, the aedeagus is shorter, straight, apically with triangular dorsal, lateral and ventral crest-shaped processes; the dorsal process is larger, curved basad, and the lateral process is situated more proximal.

### ***Miresa rorida* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 19

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N. P. | Tam Dinh v., Tuong Duong distr. | Nghe An prov. | 19°10'32.5''N, 104°37'18.5''E | 165±15 m 4.X.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (MWM, genitalia slide 0048). Paratypes: 1 ♂, the data as in holotype (CAS, genitalia slide 0068); 1 ♂, the same data (CAS, AS-LIMAC 58, in 96% alcohol).

The forewing length is 13–14 mm, the wingspan is 29–30 mm (Colour plate 9, fig. 19). The male antennae are slightly bipectinate. The ground colour is brownish yellow. The head, abdomen and thorax are yellow. The forewings are rounded, grayish brown with yellowish dorsal proximal area and not well defined external fasciae. The hindwings are obscure, yellowish brown.

The male genitalia with slender uncus with acute and strongly sclerotized apex (Genitalia plate 4, fig. 8). The gnathos is well developed, slightly flattened. The valvae are narrow, elongate, without saccular processes. The juxta is flattened. The aedeagus is S-shaped, long and slender, with two apical spurs – the first spur is small, curved caudad, the opposite one is large, strongly curved craniad, acute.

Female unknown.

Diagnosis. Externally, the species is similar to *M. kwangtungensis* HERING, 1931, but well distinguished by more obscure coloration and more rounded forewings, the male antennae with shorter rami. In male genitalia, strong and acute apex of uncus, slightly flattened gnathos, and S-shaped aedeagus with two apical spurs are diagnostic.

Distribution. Central Vietnam.

Biology. The moths were collected in early October in altitudes of 150 to 180 m.

Etymology. From Latin “roridus” – covered by dew, wet by dew in connection with slightly silver forewing pattern.

### ***Narosoideus* MATSUMURA, 1911**

Thousand Insects Japan (Suppl.) 3: 75. Type species: *Narosoideus formosanus* MATSUMURA, 1911, by monotypy.

The genus includes middle-sized, yellowish brown moths. The forewings with dark S-shaped postmedial fascia. The species are similar externally to members of *Miresa* WALKER, 1855 but distinguished by the absence of silver pattern (Colour plate 9, figs 20, 21). The larvae belong to the nettle-type (Colour plate 18, fig. 2).

The following taxa are associated with this genus: *N. vulpina* (WILEMAN, 1911) (= *N. formosanus* MATSUMURA, 1911, = *N. apicipennis* MATSUMURA, 1931, **syn. n.**, = *N. vulpinus* ab. *aurisoma* MATSUMURA, 1927, **syn. n.**, = *N. formosicola* MATSUMURA, 1925), *N. flavidorsalis* (STAUDINGER, 1887) (= *Narosoideus flavidorsalis micans* BRYK, 1948, = *Miresa inornata* WALKER, 1855), *N. ochridorsalis* INOUE, 1982, *N. fuscicostalis* (FIXSEN, 1887) with unclear form *flavissima* Hering, 1933, and *N. morion* SOLOVYEV & WITT, **sp. n.** The genus is therefore ranged from Japan to Vietnam. The taxon *N. formosicola* MATSUMURA, 1925 is probable synonym of *N. vulpina* (WILEMAN, 1911). The genus needs revision.

### ***Narosoideus vulpina* (WILEMAN, 1911)**

Colour plate 9, fig. 20; Colour plate 18, fig. 2; Colour plate 20, fig. 10

*Miresa vulpina* WILEMAN, 1911, Entomologist: 206. Type locality: "Kanshirei (1000 ft.)" [Taiwan]. Holotype: ♂ (BMNH).

*Narosoideus formosanus* MATSUMURA, 1911, Thous. Ins. Japan (Suppl.) 3: 75, pl. XXXVI, f. 1. Type locality: "Formosa". Holotype: ♀ (EIHU).

*Narosoideus apicipennis* MATSUMURA, 1931, Ins. mats. 5: 101, pl. II, fig. 16, **syn. n.** Type locality: "Formosa, at Horisha". Holotype: ♀ (EIHU).

*Narosoideus vulpinus* ab. *aurisoma* MATSUMURA, 1927, J. Coll. Agric. Hokkaido imp. Univ. 19: 86, pl. V, fig. 28, **syn. n.** Type locality: "Formosa (Horisha), at Baibara". Syntypes: ♂ (EIHU).

References. CANDÈZE, 1927: 124 (Vietnam: Laokay; as *Miresa inornata* WALK.); LEMÉE, 1950: 43 (Backan; as *Narosoideus vulpinus*); DE JOANNIS, 1929 : 573 (Hoang su phi; Lao kay; as *Miresa inornata* WALK., 1855).

Material. 23 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993 (MWM, genitalia slide 14361 MWM); 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 950 m, IV.1995, leg. V. SINJAEV (MWM, genitalia slide 14387); 1 ♂, Hinterindien, Tonking, Tam Dao (MWM); 1 ♂, N. Vietnam, Tam Dao, 90 km N Hanoi, 1000 m, 12–25.V.1990, leg. E. PALIK (MWM); 1 ♂, N. Vietnam, Sa Pa, Prov. Lienbon, 12.V–17.V.1990, leg. O. ČERNÝ (MWM); 3 ♂♂, N. Vietnam, Cuc Phuong Nat. Park, 120 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 1–2.IV.1995, leg. SINJAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 400 m, 2.IV.1994, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mai-chau, 40 km SE Moc-chau, 20.50° N, 104.50° E, Urwald, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Samml. (MWM); 4 ♂♂, C. Vietnam, Pu Mat N. P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m,

29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 83, in 96% alcohol); 5 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 147, 150, 156); 3 ♂♂, the same data but 24–25.IV 2009, leg. V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 26–27.IV 2009 (CAS); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV 2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 174, 182); 4 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 30–1250 m, 16°12'N, 107°51'E–16°15'N, 107°53'E, 19–22.IV 2009, leg. V. ZOLOTUHIN (CAS).

Distribution. Southern China (Hainan, Zhejiang, Simao), Taiwan, Thailand (Changwat Nan), northern and central Vietnam.

Biology. The moths were collected in April, May and late September in altitudes of 30 to 1400 m. The cocoon is brown (Colour plate 20, fig. 10).

Comments. The species is similar to *N. morion* SOLOVYEV & WITT, **sp. n.** externally, but easily distinguished by larger size and paler coloration.

DE JOANNIS (1929: 573) recorded *Miresa inornata* WALKER, 1855 from Vietnam (now it is a junior synonym of *N. flavidorsalis* (STAUDINGER, 1887) ranging from the Far East of Russia, Korea, northern China to Japan) but this record is probably based on a misidentification of the present, related species *Narosoideus vulpina* (WILEMAN, 1911).

The synonymy of taxa *N. vulpina* (WILEMAN), *N. apicipennis* MATSUMURA, 1931 and *N. vulpina* ab. *aurisoma* MATSUMURA, 1927 is established here by their sympatry and external features and male genitalia.

### ***Narosoideus morion* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 21

Type material. Holotype: ♂, “N. Vietnam | Mt. Fan-si-pan, W-side | Chapa, 22°20'N, 103°40'E | 1600–1800 m, Apr. 1995 | leg. SINJAEV & Sammler | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.358 | Museum WITT München” (MWM, genitalia slide 14358). Paratypes: 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 NN, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14360); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM).

The forewing length is 13 mm and wingspan 28 mm in males; 17 and 35 in female. The male antennae are broadly bipectinate almost till apex. The head and thorax are yellow. The forewings are obscure, dark brown with an orange longitudinal spot near 1/3 of dorsum, with distal, large, black, ellipsoid patch ranging almost from tornus to apex (Colour plate 9, fig. 21). The hindwings and abdomen are dark brown.

In male genitalia, the uncus is elongate, single, with small apical spur (Genitalia plate 4, fig. 9). The broad gnathos is slightly flattened distally. The valvae are strongly arched, triangular. The juxta is flattened. The aedeagus is tube-shaped, 1.4 times as long as valva, curved basally, with right apical crest bearing a small spur.

The female genitalia (Genitalia plate 12, fig. 6) with well developed ovipositor lobes and slender apophyses. The ductus bursae is spiral. The corpus bursae is rounded. The signum is double, T-shaped.

Diagnosis. Externally, the species is well discriminated from other congeners by darker

coloration and large black distal spot in forewing. In male genitalia, the arched valvae and curved aedeagus with lateral crest bearing an apical spur are diagnostic.

Distribution. Northern Vietnam.

Biology. The specimens were taken from April, May to early July in altitudes of 1600 to 2400 m.

Etymology. Morion – a very dark brown to black opaque, the German, Danish, Spanish and Polish synonym for smoky quartz.

### ***Monema* WALKER, 1855**

List Specimens lepid. Insects Colln. Br. Mus. **5**: 1102 (key), 1112. Type species: *Monema flavescens* WALKER, 1855, by monotypy.

= *Cnidocampa* DYAR, 1905

Proc. U.S. natn Mus. **28**: 952. Type species: *Monema flavescens* WALKER, 1855, by monotypy.

The genus includes middle-sized yellowish moths. The male antennae are filiform. The forewings have narrow brown concave fasciae running from apex to 3/4 and 1/3 of dorsum; the proximal fascia ends in medial part of wing; the basal part of forewing bordered by this fascia is yellow, the rest is rufous brown. The discal cell is large, rufous brown.

The larva belongs to the nettle-type, known only for *M. flavescens* WALKER, 1855.

The cocoon is elipsoidal, white, with longitudinal brown stripes.

The genus can be confused with *Narosoideus* MATSUMURA, 1911, but the male antennae are filiform, the base of forewing and thorax are pale yellow.

The genus contains 6 species: *M. flavescens* WALKER, 1855 (= *Cnidocampa johani-bergmani* BRYK, 1948), *M. coralina* DUDGEON, 1895, *M. nigrans* DE JOANNIS, 1901, **stat. n.**, *M. rubriceps* (MATSUMURA, 1931), *M. melli* HERING, 1931, and *M. meyi* SOLOVYEV & WITT, **sp. n.**, and is distributed in Nepal, Bhutan, China, Far East of Russia, Korea, Japan, China, Taiwan, and northern Vietnam.

### ***Monema meyi* SOLOVYEV & WITT, sp. n.**

Colour plate 9, fig. 9

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N.P. | Tam Dinh vill., Tuong Duong distr. | Nghe An prov. | 19°10'32.5''N, 104°37'18.5''E | 165±15 m 04.X.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (ZMHB, genitalia slide 0102). Paratype: 1 ♂, the data as in holotype (CAS, genitalia slide 0003).

Reference. DE JOANNIS, 1929: 571 (An Chau; as *Monema flavescens* Wlk.).

The forewing length is 14–15 mm; the wingspan is 31 mm (Colour plate 9, fig. 9). The male antennae are filiform. The ground colour is yellow. The forewing pattern consists of two dark concave fasciae from apex to 1/3 and 2/3 of dorsum, the distal part of forewing bordered by proximal fascia is rufous brown.

The male genitalia with triangular uncus in back view with slender apex; the gnathos is tape-shaped (Genitalia plate 4, fig. 10). The valvae are elongate, with strong short apically divided saccular processes. The juxta consists of two lateral parts; each one is S-shaped, slender with lateral distal row of elongate spines. The saccus is long and very

broad. The aedeagus is S-shaped, strongly curved with a long, strong, curved apical spur.

Diagnosis. The species is similar externally to *M. flavescens* WALKER, 1855, but well discriminated by male genitalia: saccular process divided apically, juxta with lateral row of elongate spines, very broad saccus, S-shaped aedeagus with long and strong apical spur.

Distribution. Northern and central Vietnam.

Biology. The specimens were collected in early October in altitudes of 150 to 180 m.

Etymology. The species is dedicated to Dr. Wolfram MEY (ZMHB; Berlin, Germany) for his kind support and hospitality during the examination of the collection of ZMHB by the first author.

### ***Prapata* HOLLOWAY, 1990**

Heterocera Sumatrana 6: 40. Type species: *Prapata bisinuosa* HOLLOWAY, 1990, by original designation.

The genus is well defined externally by obscure blackish brown coloration; the hindwings are pale, grayish brown (Colour plate 11, fig. 17). The forewings with characteristic black discal streak. The male antennae are broadly bipectinate over the basal third. All species extremely similar to each other in appearance, therefore the morphology of male genitalia are diagnostic.

The genus includes 3 species and is divided into two groups of species strongly differing in male genitalia, and is known from India to Sumatra.

The first group consists of the type species *P. bisinuosa* HOLLOWAY, 1990 only. It has very slender uncus, gnathos and valvae. The juxta bears sinusoidal, conspicuously setose, slender, long lateral parts.

The second group includes *P. scotopepla* (HAMPSON, 1900) and *P. owadai* SOLOVYEV & WITT, **sp. n.** (Genitalia plate 5, fig. 1). The male genitalia with uncus slightly bifid apically, reduced and tape-like gnathos, trapezium-shaped valvae with acute apex, the juxta flattened with two curved, slender, pointed, lateral processes.

### ***Prapata owadai* SOLOVYEV & WITT, sp. n.**

Colour plate 11, fig. 17

Type material. **Holotype**: ♂, “Vietnam, Prov. Lao Cai, 1900–2000 m | Fan-si-pan Mts, 14 km NW Sa Pa | 103°46.06'E, 22°20.9'N, 26–29.I.1999 | leg. I. PEREGOVITS, G. & L. RONKAY | coll. Museum WITT”, “Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.157 | Museum WITT München” (MWM, genitalia slide 14157). **Paratypes**: 1 ♂, the data as in holotype (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slide 14156); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.15° N, 103.45° E, prim. Nebelwald, 2250 m, 28–29.III.1995, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14199); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7, 10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 14200).

The forewing length is 12 mm, wingspan – 26–27 mm in males. The male antennae are bipectinated in the basal third. The head, thorax, forewings and abdomen are obscure blackish brown (Colour plate 11, fig. 17). The forewings have well defined black discal streak. The hindwings are pale, grayish brown.

The male genitalia are characterized by short, slightly apically bifid uncus with long and massive subapical spur (Genitalia plate 5, fig. 1). The gnathos is tape-shaped with medial wart. The valvae are trapezium-shaped with acute apex; the costa is slightly concave. The juxta is flattened, broad, with two curved, slender, pointed lateral processes. The saccus is slender, long. The aedeagus is slender, straight, as long as valva.

Female is unknown.

Diagnosis. The species is similar to other congeners, but related to *P. scotopepla* (HAMPSON) by the structure of the male genitalia. It differs from the latter species by shorter bifurcation of uncus, stronger and acute subapical spur, presence of medial wart on gnathos, slender and long saccus.

Distribution. Northern Vietnam.

Biology. The specimens were collected in late January, late March, late April, late June to mid July in altitudes of 1525 to 2250 m.

Etymology. The species is dedicated to Dr. Mamoru OWADA (NSMT; Tokyo, Japan) for his kind support in the examination of material from the collection of NSMT and rare literature sources.

### ***Parasa* MOORE, 1859 sensu lato**

Cat. lep. Ins. Mus. East India Coy 2: 413. Type species: *Neaera chloris* HERRICH-SCHÄFFER, 1854, by subsequent designation by FLETCHER & NYE, 1982: 120.

= *Neaera* Herrich-Schäffer, 1854

Samml. aussereurop. Schmett. 1 (1): wrapper, pl. 37, figs 176, 177. Type species: *Neaera chloris* Herrich-Schäffer, 1854 by subsequent designation by FLETCHER & NYE, 1982: 120. A junior homonym of *Neaera* ROBINEAU-DESVOIDY, 1830 (Insecta, Diptera).

= *Callochlora* PACKARD, 1864

Proc. ent. Soc. Philad. 3: 339. Type species: *Callochlora vernata* PACKARD, 1864, by monotypy.

= *Neaerasa* STAUDINGER, 1892

Mém. Lépid. 6: 298. Type species: *Neaera chloris* HERRICH-SCHÄFFER, 1854, by subsequent designation by FLETCHER & NYE, 1982: 120.

The genus sensu lato includes small to large sized moths, joined together under the single character – presence of green colour on the wings or body (Colour plates 10; 11: figs 1–16). The larvae of known species belong to the nettle-type (Colour plate 18, figs 4–7).

Thirteen monophyletic lineages can be considered within the South-East Asian complex of *Parasa*-species. The groups are established here in connection with external characters of included species and the features of their genitalia. The strong differences in external view and genitalia of both sexes indicate the probable polyphyly of the genus *Parasa* MOORE, 1859. Here only preliminary notes are given for the grouping of species and a detailed revision of the complex is under preparation now.

The *lepida* group (HOLLOWAY, 1986: 90) includes 9 species: *P. lepida* (CRAMER, 1779), *P. media* (WALKER, 1855), *P. shirakii* KAWADA, 1930, *P. sundalepida* HOLLOWAY,

1986, *P. philepida* Holloway, 1987, *P. himalepida* HOLLOWAY, 1987, *P. corbeti* HOLLOWAY, 1987, *P. julikatis* SOLOVYEV & WITT, **sp. n.**, and *P. emeralda* SOLOVYEV & WITT, **sp. n.**, and is known from India to the Philippines. The group joins middle-sized moths with green forewings and brown distal and basal areas; the basal area is trapezoid, located near costa, never joined to lower margin; the distal area is large, near outer margin, separated from green part of forewing by an oblique, dark brown, medial fascia (Colour plate 10, figs 1–3). The thorax and head are green. The male genitalia are unmodified; the group is recognizable only externally (Genitalia plate 5, figs 2, 3).

The *bimaculata* group (HOLLOWAY et al., 1987: 35) is close to the *lepida* group and includes 5 species: *P. bimaculata* (SNELLEN, 1897), *P. chlorostigma* (SNELLEN, 1879), *P. brillians* HOLLOWAY, 1987, *P. semperi* HOLLOWAY, 1987, and *P. balitkae* HOLLOWAY, 1987. The group ranges from China to Sulawesi. The *bimaculata* group is characterized by small green forewing area, and strong sexual dimorphism in forewing pattern; the head and thorax are green. The male genitalia are unmodified.

The *repanda* group includes 3 large species: *P. repanda* (WALKER, 1855), *P. campagnei* DE JOANNIS, 1928, and *P. pseudorepanda* HERING, 1933, and ranges from India to Thailand. This group is clearly discriminated both externally and by male and female genitalia. The forewings are green with brown basal and distal areas; the distal one is separated from the proximal green area by a silver fascia, running from costa near apex to 1/4 lower margin, parallel to outer and lower margins; the brown area is of different shape (Colour plate 10, figs 4–6). The thorax is green with dorsal brown band. The probable apomorphies of this group are the medially widened gnathos, which is S-shaped in lateral view, valvae without saccular processes but with large medial flap containing a bunch of hairs, aedeagus with large and very broad single apical process (Genitalia plate 5, fig. 4).

The *ostia* group includes 5 species: *P. ostia* SWINHOE, 1885, *P. shaanxiensis* (CAI, 1983), **comb. n.** (transferred from *Latoia* GUÉRIN-MÉNÉVILLE, 1844), *P. prasina* ALPHERAKY, 1895, *P. altilis* SOLOVYEV & WITT, **sp. n.**, and *P. vadimi* SOLOVYEV & WITT, **sp. n.** and ranges from India to Thailand and Vietnam. *P. grandis* Hering, 1931 is also associated with this group probably. Externally, the moths are of medium to large size with almost entirely apple green forewings with brown cilia, distal area, costa and basal spot (Colour plate 10, figs 7–12). The male antennae are broadly bipectinate almost till their apex which is untypical for other *Parasa* MOORE, 1859. The male genitalia are slightly modified. Probable apomorphies are S-shaped, acute and apically narrow aedeagus, and broad lateral parts of juxta (Genitalia plate 5, figs 5–7).

The *consocia* group includes 7 species: *P. consocia* WALKER, 1865, *P. humeralis* WALKER, 1862, *P. lorquini* (REAKIRT, 1864), *P. zulona* REAKIRT, 1864, *P. pastoralis* BUTLER, 1885, *P. neopastoralis* ROSE, 2004 and *P. stekolnikovi* SOLOVYEV & WITT, **sp. n.** and ranges from India to the Philippines. The group is established on the base of modified forewing pattern. The forewings are green with ochre distal and brown basal areas; the distal area with brown veins and separated from proximal greenish zone by brown postmedial fascia (Colour plate 10, figs 13–15). The male genitalia are simple, with distally straight aedeagus containing a pair of small spurs (Genitalia plate 5, fig. 8).

The *darma* group includes only 2 species so far: *P. darma* MOORE, 1859 and *P. darmoides* HOLLOWAY, 1982, ranging from Myanmar to the Philippines. The forewing

pattern is modified with central medial area separated from the remaining brown zone by a silver fascia which is parallel to all margins of forewing (Colour plate 11, fig. 1). The male genitalia are simple; the aedeagus with apical spurs.

The *albipuncta* group includes 3 species: *P. albipuncta* HAMPSON, 1893, *P. hampsoni* DYAR, 1894, and *P. zhudiana* (CAI, 1983), **comb. n.**, and ranges from India to Sundaland. The moths are characterized by green forewing with brown cilia and costa with brown incisions near 2/3 lower margin and 1/2 outer margin containing silver spots (in outer marginal incision the silver spot can be reduced) (Colour plate 11, figs 2–3). The probable apomorphy is the presence of spur-like dorsal processes of juxta (Genitalia plate 6, figs 1–2). The group is similar to *bicolor* group, but the basal hairy processes of valvae are absent here.

The *bicolor* group (HOLLOWAY et al., 1987: 28; HOLLOWAY, 1990: 44) includes 14 species: *P. bicolor* (WALKER, 1855), *P. albida* CANDÈZE, 1927, *P. argyroneura* HERING, 1931, *P. pseudobicolor* HOLLOWAY, 1990, *P. virescens* (MATSUMURA, 1911), *P. hainana* (CAI, 1983), **comb. n.**, *P. flavabdomena* (CAI, 1983), **comb. n.**, *P. feina* (CAI, 1983), **comb. n.**, *P. jiana* (CAI, 1983), **comb. n.**, *P. yana* (CAI, 1983), **comb. n.**, *P. mina* (CAI, 1983), **comb. n.** (all transferred from *Latoia* GUÉRIN-MÉNÉVILLE, 1844), *P. jade* SOLOVYEV & WITT, **sp. n.**, *P. foliola* SOLOVYEV & WITT, **sp. n.**, and *P. umbra* SOLOVYEV & WITT, **sp. n.** The moths are middle-sized with green forewings with brown cilia and costa and a series of brown spots on veins near external fascia, large between CuP – A1+A2 and medial spots (Colour plate 11, figs 4–11). The probable apomorphies are presence of basal hairy valval processes in male genitalia, and Y-shaped juxta (Genitalia plate 6, figs 3–9); the group seems to be associated with the larval host Poaceae in contrary to the other groups.

The *argentifascia* group includes 5 species: *P. argentifascia* (CAI, 1983), **comb. n.**, *P. mutifascia* (CAI, 1983), **comb. n.**, *P. liangdiana* (Cai, 1983), **comb. n.**, *P. parapuncta* (Cai, 1983), **comb. n.**, and *P. eupuncta* (Cai, 1983), **comb. n.**, and is known from China, Thailand and Vietnam. The forewing pattern is strongly modified, green with diagonal and external silver fasciae. The male genitalia are simple but the juxta is large, with two dorsal processes and a large medial plate (Genitalia plate 5, fig. 9). The forewing pattern and juxta characters are probable apomorphies of this group.

The *jina* group includes 2 species: *P. jina* (CAI, 1983), **comb. n.** and *P. atera* SOLOVYEV & WITT, **sp. n.** The moths are small; the forewings are brown with smooth, green basal spot (Colour plate 11, fig. 12). The probable apomorphies are presence of setose, basal lobes in valva situated near costa; strongly sclerotized margin of sacculus with small distal notch (Genitalia plate 5, fig. 10).

The characters juxta supplied with a pair of dorsal processes and the presence of rows of spur-shaped cornuti in the vesica join *jina*, *albipuncta* and *bicolor* groups.

The *argentina* group includes *P. argentina* HAMPSON, 1893 and another yet undescribed species. The moths are small, with green forewings having brown costa, distal and lower marginal areas separated by a silver band running from costa near apex to 2/3 lower margin (Colour plate 11, fig. 13). The probable apomorphies are asymmetric juxta with long flattened left process, and the finger-shaped apical process of aedeagus which is caudad directed (Genitalia plate 6, fig. 10).

The *herbifera* group includes 7 species: *P. herbifera* (WALKER, 1855), *P. canangae*



HERING, 1931, *P. melli* Hering, 1931, *P. bana* (CAI, 1983), **comb. n.**, *P. canangoides* HOLLOWAY, 1986, *P. mustacha* HOLLOWAY, 1990, and *P. barbatanellus* HOLLOWAY, 1990. The species of this group are similar externally to the *bimaculata* group being sexually dimorphic in forewing pattern, but distinguished in male genitalia (Colour plate 11, fig. 16). The probable apomorphies are strongly hairy lateral parts of anellus or presence of long lateral spurs and crescent-shaped, apical process of aedeagus directed caudad (Genitalia plate 7, fig. 1). The taxon *Nyssia latifascia* Walker, 1855 is placed into this group here as a probable synonym of *P. herbifera* (WALKER, 1855). The taxon is known only from a single typical female and was regarded as a synonym of *P. lepida* (CRAMER, 1779) before, but the female genitalia have a well developed antrum, small signum, dark brown hindwings (the hindwings of *P. lepida* CRAMER are yellowish brown) which does not confirm this synonymy.

The *xueshana* group includes 3 species: *P. xueshana* (CAI, 1983), **comb. n.**, *P. dilucida* SOLOVYEV & WITT, **sp. n.**, and *P. badia* SOLOVYEV & WITT, **sp. n.**, ranging from southern China to northern Vietnam. The moths are middle-sized with modified pattern. The forewings are green with large brown basal spot joined with costa and lower margin and brown distal area separated from proximal green one by black brown fascia and silver spots between veins (Colour plate 11, figs 14, 15). The probable apomorphies are presence of crescent-shaped, acute, dorsal processes of juxta and long, acute apical spur of aedeagus directed cranial.

### *lepida* group

#### *Parasa julikatis* SOLOVYEV & WITT, **sp. n.**

Colour plate 10, figs 1, 2; Colour plate 18, figs 5–7; Colour plate 20, fig. 11

Type material. **Holotype:** ♂, “Vietnam (N) | Mts Fan-si-pan, N-side | Chapa, 22°17’N, 103°44’E | 1600 m, 20–30.XI.1995 | leg. SINJAEV & loc. coll. | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.394 | Museum WITT München” (MWM, genitalia slide 14394). **Paratypes:** 6 ♂♂, the data as in holotype (MWM); 1 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, (kult.), 1600–1800 m, XI.1994, leg. SINJAEV & Einh. Slr. (MWM); 2 ♂♂, Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10’N, 108°40’E, 9–18.XI.2008, 1500 m, leg. Y. BEZVERKHOV & V. SINYAEV (CYB); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20’N, 103°40’E, sec. forest, 1600–1800 m, IX.1995, leg. local collectors (MWM, genitalia slide 9710).

Additional material. 5 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slide 9709); 1 ♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 15°02’N, 107°59’E, 900–1400 m, 10–25.VIII.1996, leg. V. SINJAEV & E. Afonin (MWM); 1 ♂, N. Vietnam, Mt. Fam-si-pan (West), Cha-pa, 22.20° N, 103.40° E, SekWald / cult, 1600–1800 m, IV.1995, leg. SINJAEV & Einheim. Sammler (MWM, genitalia slide 14393); 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (=Sapa), 22.17° N, 103.44° E, prim. Urwald, 1600 m, 20–30.IV.1995, leg. SINJAEV & einh. Samler (MWM); 1 ♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, C. Vietnam, Kon Tum, 1.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 20, in 96% alcohol); 1 L, N. Vietnam, Lao Cai, Sa Pa, 1300 m, city park, on *Rosa*

sp., V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 87, in 96% alcohol); 2 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 90, in 96% alcohol); 1 ♂, the same data but 26.IX.2008 (CAS, AS-LIMAC 104, in 96% alcohol); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 161).

Middle-sized moths with forewing length 14–16 mm and wingspan 29–33 mm in males; 18–20, and 35–39 mm in females correspondingly. The male antennae are broadly bipectinate in basal third. The head and thorax are green with dorsal brown band (Colour plate 10, figs 1–2). The forewings are green with dark brown basal spot and distal area; the basal spot is trapezium-shaped, not reaching the dorsum; the brown distal area is separated by sinuous dark brown border running from 2/3 dorsum to 5/6 costa with deep evagination near vein CuA2. The hindwings are yellow with brownish submarginal area, often slightly greenish centrally. The abdomen is yellowish brown.

The male genitalia with simple uncus, which is curved, beak-shaped and apically acute (Genitalia plate 5, fig. 2). The gnathos is broad, flattened distally and rounded apically. The valvae are triangular with rounded outer margin, without saccular processes. The juxta is flattened. The aedeagus is tube-shaped with dorsal apical spur and with curved basal part which is 1/3 – 1/2 times as long as the remaining part of the aedeagus.

In female genitalia, the ovipositor lobes are well developed with slender, long apophyses. The ductus bursae is long, spiral. The corpus bursae is large. The signum is double, elongate, T-shaped.

Diagnosis. The species is similar externally to *P. shirakii* KAWADA, 1930 but well distinguished externally by wider distal brown area of forewing; in male genitalia, the basal curved part of aedeagus is longer.

Distribution. Vietnam.

Biology. The specimens were collected in April to early June and mid August to November in altitudes of 288 to 1800 m. The species is close to *P. lepida* (CRAMER, 1779) which is characterized by the nettle-type of caterpillar.

The young larva belongs to the nettle-type, yellow with two longitudinal blue dorsal bands (Colour plate 18, figs 5, 6, 7). The mature larva is green with two blue dorsal bands bordered laterally by yellow bands. Food plant: *Rosa* sp. (Rosaceae).

The cocoon is brown (Colour plate 20, fig. 11).

Etymology. The species name is given by Yuri A. BEZVERKHOV, a famous collector of Lepidoptera (Moscow, Russia) and dedicated to his loved granddaughters.

### ***Parasa emeralda* SOLOVYEV & WITT, sp. n.**

Colour plate 10, fig. 3

Type material. **Holotype:** ♂, “Vietnam, Prov. Nghe An, | Distr. Que Phong, Ban Khom | 280 m, 19°40.5'N. 104°54.1' E | 21–23.I.1999, leg. G. RONKAY | coll. Museum WITT”, “Genitalpräparat | Heterocera | Nr. 12.677 | Museum WITT München” (MWM, genitalia slide 12677). **Paratypes:** 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM, genitalia slide 12675); 2 ♂♂, N. Vietnam, BaBe, Lake N.P., Prov. Cao Bang Phuc, 300 m, IV.2008,

leg. Thomas IHLE (CSI); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC-19, in 96% alcohol); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 151, genitalia slide 132).

Additional material. 1 ♂, N. Vietnam, Moo Ba, 30 km oestlich von Thainguynen, Prov. Thai Nguyen, 200 m, VIII.2008, elg. Thomas IHLE (CSI); 1 ♂, China, W. Yunnan, Mou Ding county, 25°19'N, 101°32'E, 1300 m, 16.III–10.IV.2000, leg. local collectors (MWM, genitalia slide 11404); 1 ♂, China, Guangxi Dayao Shan, Jiangxi, 100 km SE Liuzhou, 23°45'N, 109°45'E, 1200 m, VIII.2005, leg. V. SINIAEV & team (MWM, genitalia slide 12667); 1 ♂, China, Jiangxi, Wuyi Shan, Xipaihe village, 27°54'N, 117°20'E, 1500 m, VIII.2004, leg. SINIAEV & his team (MWM, genitalia slide 12678); 2 ♂♂, China, Hainan Isl., Wuzhi-Shan Mts, 18°53'N, 109°43'E, 1500 m, 20.II–10.IV.2001, leg. local collector (MWM, genitalia slides 12681, 12695); 1 ♂, the same data but IV.2003, leg. SINIAEV & his team (MWM, genitalia slide 9713); 1 ♂, China, Hainan Dao, He Ling Mts und Wuzhi Shan, 1000–1800 m, E.II. – E.V.2000 Lf., leg. J.L. LI & Slg. MAIER (MWM, genitalia slide 12682); 1 ♂, Thailand, Changwat Nan, 5 km N of Bo Luang, 1000 m, 18.VIII.1999, leg. T. CSÖVÁRI & L. MIKUS (MWM, genitalia slide 12671).

References. CANDÈZE, 1927: 124 (Vietnam: Pnom-Penh; Annam; Laokay; as *Parasa lepida* CR.); DE JOANNIS, 1929 : 586 (Hanoï; Cho ganh; Lao kay; as *Parasa lepida* CR., 1777); LEMÉE, 1950: 43 (Vietnam: Backan; as *Parasa lepida* CR.).

The forewing length is 14–15 mm and wingspan 27–30 mm in males. The male antennae are broadly bipectinate in basal third. The head and thorax are green with brown dorsal band. The forewings are green with dark brown basal spot and distal brown area; the brown spot is trapezium shaped, and does not reach the dorsum; the distal area is bordered by a curved dark margin which running from 1/2 dorsum to 4/5 costa and with slight invagination near vein CuA2 (Colour plate 10, fig. 3). The hindwings are yellow with brownish submarginal area. The abdomen is yellowish brown.

In male genitalia, the uncus is well developed, broad and finger-shaped apically (Genitalia plate 5, fig. 3). The gnathos is broad and flattened distally, rounded apically. The valvae are elongate, without saccular processes. The juxta is flattened. The aedeagus is tube-shaped, curved basally with dorsal apical spur and ventral disc-shaped strongly sclerotized process; the basal curved part is equally long as 1/2 of the remaining part of the aedeagus.

Diagnosis. The species is similar externally to *P. lepida* (CRAMER, 1779) but well distinguished by broader brown distal area of forewing. In male genitalia, the ventral, disc-shaped, strongly sclerotized apical process of aedeagus is diagnostic.

Distribution. China (Hainan, Jiangxi, Yunnan), northern Thailand (Changwat Nan), northern and central Vietnam.

Biology. The food plants are *Camellia* sp. (Theaceae), *Musa* sp. (Musaceae), and *Triadica sebifera* (L.) SMAL (as *Stillingia sebifera* (L.) MICHX) (Euphorbiaceae) (DE JOANNIS, 1929: 576, for “*Parasa lepida* (CRAMER, 1777)”).

The specimens were collected in late January, early March, April, August, early October in altitudes of 119 to 2240 m.

Etymology. From English “emerald” in connection with coloration of species.

*repanda* group

***Parasa campagnei* DE JOANNIS, 1928**

Colour plate 10, figs 4, 5

*Parasa campagnei* DE JOANNIS, 1928, Anns Soc. ent. Fr. **98**: 576 [338], pl. 3, fig. 2. Type locality: “An chau” [Vietnam, Tonkin]. Holotype: ♀ (MNHN).

Material. 1 ♀, An Chau, Tonkin (MNHN, holotype); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, N. Vietnam, Nhu Xuân, Thanh Hóa, 19°32'31.7''N; 105°22'38.3''E, 140–160 m, 29.V.2008, leg. TRAN Thieu Du (IEBR); 3 ♂♂, N. Vietnam, Tan Long, ca. 20 km südöstl. von Thai Nguyen, Prov. Thai Nguyen, 150 m, VIII.2008, leg. HOA Binh Nguyen (CSI); 2 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 25.IX.2008 (CAS, AS-LIMAC 31, in 96% alcohol); 6 ♂♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX–2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0079); 1 ♂, the same data but 1.X.2008 (CAS, AS-LIMAC 16, in 96% alcohol); 1 ♂, C. Vietnam, Nghệ An province, Thanh Mỹ, Thanh Chương, 18°48'07.8''N, 105°13'42.5''E, 80–120 m, 26.V.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, C. Vietnam, Sơn Thọ, Vũ Quang; Hà Tĩnh, 18°25'N, 105°24'E, 50–100 m, 24.V.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

Distribution. Southern China (Jiangxi), northern Vietnam.

Biology. The moths were collected in late May, August, late September, beginning of October in altitudes of 50 to 380 m.

Comments. The species is similar to *P. pseudorepanda* HERING, 1933 externally, but distinguished by trapezoid, not triangular basal brown patch (Colour plate 10, figs 4, 5). The male genitalia are figured (Genitalia plate 5, fig. 4).

***Parasa pseudorepanda* HERING, 1933**

Colour plate 10, fig. 6

*Parasa pseudorepanda* HERING, 1933, in SEITZ, Gross-Schmett. Erde, Suppl. **2**: 207, Taf. 15 k. Type locality: “Siao-lu”. Lectotype: ♂ (ZMHB), **here designated**.

*Parasa kalawensis* ORHANT, 2000, Lambillionea, C, **3**: 472, figs1–3, **syn. n.** Type locality: “Myanmar, Kalaw, 1304 m”. Holotype: ♂ (coll. ORHANT).

References. CANDÈZE, 1927: 124 (Vietnam: Laokay; as *Parasa repanda* WALK.); DE JOANNIS, 1929: 577 (Vietnam: Lao kay; as *Parasa repanda* WLK.).

Material. 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINLMMEISTER (MWM, genitalia slide 9700); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 11301); 3 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slides 11271, 11291); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, IV.1995, leg. SINJAEV & Sammler (MWM, genitalia slide 11285); 1 ♂, N. Vietnam, Tam Dao, 90 km N Hanoi, 12–25.V.1990, leg. E. PALIK (MWM, genitalia slide 11290); 1 ♂, N. Vietnam, Tam Dao, 75 km N Hanoi, 900 m, VI.1986, leg. J. RAZOWSKI (MWM, genitalia slide 11294); 1 ♂, N. Vietnam, Cuc Phuong, 120 km SW Hanoi, 20.17° N, 105.20° E, 1400 m, 1–2.IV,1995, Nat. P., leg. SINJAEV & SCHINTLMMEISTER (MWM); 2 ♂♂, N.

Vietnam, Mai-chau, 40 km SE Moc-chau, 20.50° N, 104.50° E, Urwald, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Saml. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7,10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha pa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. Sinjaev & Einh.Saml. (MWM); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. SINAJEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, IV.1994, leg. SINAJEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, IX.1994, leg. SINAJEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, V.1996, Prim. Urwald, 1600 m, leg. SINJAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 2 ♂♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 41, 55, in 96% alcohol); 1 ♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 3 ♂♂, the same data (CAS, AS-LIMAC 18, 40, in 96% alcohol); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 176); 1 ♂, C. Vietnam, Kon Tum, 6.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 19, in 96% alcohol); 1 ♂, C. Vietnam, Plato Tay Nguyen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINIAEV & AFONIN (MWM, genitalia slide 9693).

Distribution. Myanmar, China, Thailand, Vietnam.

Biology. The flight period falls in April to early October. The specimens were collected in altitudes of 320 to 2400 m.

Comments. The species is similar externally to *Parasa campagnei* DE JOANNIS, 1928, but easily distinguished by the shape of the almost triangular basal brown spot (Colour plate 10, fig. 6).

The synonymy is established on the base of external and male genital identity of the primary types.

Nomenclatorial notes. The species *Parasa pseudorepanda* HERING, 1933 was described from a male and a female from Siao-lu. The lectotype is the only found male in ZMHB, here designated, with following labels: 1 – rectangle, red, printed with black text “Type”; 2 – rectangle, yellowish with black printed text “det. Mart. HERING” and black inked by M. HERING “*Parasa | Pseudorepan | da m. |*”; 3 – rectangle, yellowish with black frame and black printed text “Siao-Lou | 1900 | Chasseurs indigènes”. The lectotype is supplied with the additional red lectotype label with corresponding text.

## *ostia* group

### *Parasa ostia* SWINHOE, 1902

Colour plate 10, fig. 7

*Parasa ostia* SWINHOE, 1902, Ann. Mag. nat. Hist. (7) **10**: 48. Type locality: “Khasia Hills”.  
Lectotype: ♂ (BMNH), **here designated**.

*Latoia pseudostia* CAI, 1983, Acta ent. sinica **26** (4): 450, fig.13, **syn. n.** Type locality: “Menghai, Yunnan, 1200 m”. Holotype: ♂ (IZCAS).

Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11321); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SCHINTLMEISTER (MWM); 3 ♂♂, N. Vietnam, Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 7 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.30° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, 1600–1800 m, V.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol).

Distribution. India, Myanmar, China (Yunnan, Sichuan), Thailand, northern Vietnam.

Biology. The moths were collected in late April, May, mid June to early July in altitudes of 1200 to 2400 m in Vietnam (in May and June from 950 to 2460 m in other localities).

The egg stage in the Sichuan population lasts 10 to 16 days, the larval stage 40 to 65 days. The food plants are *Populus* sp., *Salix* sp. (Salicaceae), *Robinia pseudoacacia* L. (Fabaceae) and fruit trees. Pupation begins from the late April. The pupal development period lasts 25 to 53 days; develops a single generation per yer (LIU, 1984).

Comments. The species is similar to *P. prasina* ALPHERAKY, 1895 and *P. shaanxiensis* (CAI, 1983) externally, but the basal brown patch is diagnostic, larger with dentate distal edge (Colour plate 10, fig. 7). The male genitalia are figured (Genitalia plate 5, fig. 5).

Nomenclatorial notes. The syntype series of *Parasa ostia* SWINHOE, 1902 includes 3 males from “Khasia Hills” but only one male was found in BMNH which is here designated as lectotype; it bears the following labels: 1 – round, with red frame, with black printed text “Type”; 2 – rectangle, yellowish, with black printed text “Khasia | Hill.”; 3 – rectangle, yellowish, with black printed “1903–29.”; 4 – rectangle, yellowish, handwritten with black ink by SWINHOE “*Parasa* | *ostia* ♂ | SWINHOE Type”. The specimen is supplied with an additional lectotype label with corresponding text.

### *Parasa prasina* ALPHERAKY, 1895

Colour plate 10, fig. 8

*Parasa prasina* ALPHERAKY, 1895, D. ent. Zts. Iris **8**: 186. Type locality: “Ta-t sien-lou”.  
Holotype: ♂ (ZISP).

Material. 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. SINJAEV & Sammler (MWM, genitalia slide 11309); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 25–30.III.1995, leg. V. SINJAEV & A. SCHINTLMEISTER (MWM, genitalia slide 11318); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, IV.1994, leg. SINJAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Fan Si Pan, SaPa, Prov. Lao Cai, 2300 m, IV.2008, leg. Thomad IHLE (CSI).

Distribution. Myanmar, China (Shaanxi, Sichuan, Yunnan), northern Vietnam.

Biology. The specimens were collected in late March and April in altitudes of 1600 to 2300 m in Vietnam (in April–June from 950 to 2460 m in other localities).

Comments. The species is similar externally to *P. ostia* SWINHOE, 1902 and *P. shaanxiensis* (CAI, 1983) but the basal brown patch of forewing is very small, close to dorsum, not extending to the costa (Colour plate 10, fig. 8).

***Parasa shaanxiensis* (CAI, 1983), comb. n.** (Colour plate 10, fig. 10)

*Latoia shaanxiensis* CAI, 1983, Acta ent. sinica **26** (4): 450, fig. 15. Type locality: “Feng Xian, Shaanxi”. Holotype: ♂ (IZCAS).

Material. 140 ♂♂, 17 ♀♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slides 9682, 11275, 11317); 20 ♂♂, 5 ♀♀, N. Vietnam, Mt. Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Sammler (MWM, genitalia slide 11315); 16 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 11320 (♀)); 103 ♂♂, 4 ♀♀, N. Vietnam, Mt. Fan-si-pan (West), Cha pa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Saml. (MWM); 1 ♂, the same data, but I.1994, leg. SINJAEV & Einh. Slr. (MWM); 13 ♂♂, 1 ♀, the same data, but XI.1994 (MWM); 4 ♂♂, the same data, but VIII.1995, leg. local collectors (MWM); 4 ♂♂, 2 ♀♀, the same data, but V.1995, leg. local collectors (MWM); 15 ♂♂, 1 ♀, the same data, but IX.1994, leg. SINAJEV & loc. coll. (MWM); 17 ♂♂, the same data, but 15–25.IV.1995. (MWM); 1 ♂, 2 ♀♀, the same data, but IV.1994 (MWM); 2 ♂♂, Hinterindien, Tonking, leg. F. DANIEL München (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM); 2 ♂♂, the same data, but 950 m, IV.1995, leg. V. SINJAEV (MWM); 1 ♀, N. Vietnam, Mai-chau, 40 km SE Mocchau, 20.50° N, 104.50° E, Urwald, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Samml. (MWM); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 31, in 96% alcohol).

Distribution. China (Shaanxi, Sichuan, Yunnan), Thailand (Chiang Mai), northern Vietnam.

Biology. The moths were collected in January, April, May, August to November in altitudes of 950 to 2400 m in Vietnam (in February, and April to June from 900 to 3500 m in other localities).

Comments. The species is similar to *P. ostia* SWINHOE, 1902 and *P. prasina* ALPHERAKY, 1895, but distinguished by the smaller basal brown patch reaching the costa (Colour plate 10, fig. 10).

***Parasa vadimi* SOLOVYEV & WITT, sp. n.** Colour plate 10, figs 11, 12

Type material. Holotype: ♂, “Vietnam, Prov. Lao Cai, | Fan-si-pan Mts, primary forest | 2100 m. 31.I.1999 | leg. L. PEREGOVITS et G. RONKAY | coll. Museum WITT”, “Genitalpräparat | Heterocera | Nr. 12.285 | Museum WITT München”, ‘Genitalpräparat | Heterocera | Nr. 12.295 | Museum WITT München’ (MWM, slides 12285 (genitalia), 12295 (legs)). Paratypes: 1 ♂, 1 ♀, the data as in holotype (MWM, slides 11302 (genitalia), 12296 (legs))

(♀); 9699 (genitalia), 12290 (legs) (♂)).

The forewing length is 20–22 mm, wingspan 43–45 mm in males, 31 and 60 mm in female. The thorax is green with dorsal brown band (Colour plate 10, figs 11, 12). The forewings are green with brown basal and distal areas. The distal margin of brown basal area is dentate with two large teeth. The distal area is bordered by an ill-defined, strongly sinusoidal, concave fascia which is parallel to the outer margin of the forewing. The hindwings are yellow, medially greenish with brown cilia and terminal area. The abdomen is greenish yellow, brownish apically and dorsally.

The male genitalia with well developed, apically distinctly slender simple uncus (Genitalia plate 5, fig. 6). The gnathos is broad, flattened, rounded apically. The valvae are narrow with width in medial part corresponding 0.3 times the length of valvae. The juxta is broad, flattened. The aedeagus is only slightly S-shaped with two small apical spurs.

In female genitalia, the ovipositor lobes are large; the apophyses are well developed (Genitalia plate 12, fig. 7). The ductus bursae is short, slightly spiral. The corpus bursae is rounded.

Diagnosis. Externally similar to *P. attilis* SOLOVYEV & WITT, **sp. n.** but easily distinguished by larger size, the distal margin of brown basal spot with two teeth, the border of distal brown area is strongly sinusoidal. In male genitalia the aedeagus is almost straight, only slightly curved; the valvae are narrower distally; the gnathos is rounded apically; the uncus is distinctly slender distally.

Distribution. Northern Vietnam.

Biology. The moths were collected at 31 January in the altitude of 2100 m.

Etymology. The species is named after my supervisor Dr. Vadim V. ZOLOTUHIN (State Pedagogical University of Ulyanovsk; Russia) for his kind support of all my investigations.

### ***Parasa attilis* SOLOVYEV & WITT, sp. n.**

Colour plate 10, fig. 9

Type material. Holotype: ♂, “N-Vietnam / Tonkin | Mt. Fan-si-pan (Nord) | Cha-pa, Nebelwald | (22.15°N, 103.45°E) | 2–4.3.1995 2240 m | leg. Dr. R. BRECHLIN | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 12.335 | Museum WITT München”, “Genitalpräparat | Heterocera | Nr. 12.299 | Museum WITT München” (MWM, slides 12299 (legs), 12335 (genitalia)); Paratypes: 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 25–30.III.1995, leg. V. SINJAEV & A. SCHINLMEISTER (MWM, slides 12289 (legs), 9698 (genitalia)); 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45°E, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. BRECHLIN (MWM, genitalia slide 12284).

The moths are large with forewing length 18–19 mm and wingspan 35–40 mm in males. The male antennae are broadly bipectinate till apex, brown. The head is green. The thorax is green with dorsal brown band. The forewings are green with large brown basal part and brown distal area (Colour plate 10, fig. 9). The brown basal part has almost straight border with small band near dorsum. The distal area is bordered proximally by a narrow, slightly sinusoidal brown fascia which is almost parallel to outer margin of forewing. The hindwings are yellow with brownish fringes. The abdomen is yellow.



The male genitalia with apically strongly sclerotized simple uncus (Genitalia plate 5, fig. 7). The gnathos is strong, acute apically. The valvae are elongate, broad, in medial part 0.4 times as wide as length of valvae, without saccular processes. The juxta is broad, flattened. The aedeagus is S-shaped in lateral view with strongly curved distal part, with two small apical spurs; the dorsal spur is more distal.

Diagnosis. The species is similar externally to *P. grandis* HERING, 1931 from northern Thailand and southern China, but well discriminated by the absence of the basal green spot and the silver postmedial fascia in forewing. From other species of *ostia* group, the species is discriminated by broader distal brown area, but similar to *P. vadimi* SOLOVYEV & WITT, **sp. n.** The new species is distinguished externally from the latter by straighter distal borders of basal and distal basal areas of forewings. In the male genitalia, the strongly S-shaped aedeagus with two apical spurs, of which the dorsal spur is more distal, the apically acute gnathos, and wider valvae are diagnostic.

Distribution. Northern Vietnam (Fan-si-pan).

Biology. The moths were collected in early and late March in altitudes of 1600 to 2240 m.

Etymology. *Altis* (from Latin) – large, fattened, well-fed, in connection with size of moths.

### ***consocia* group**

#### ***Parasa pastoralis* BUTLER, 1885**

Colour plate 10, fig. 13

*Parasa pastoralis* BUTLER, 1885, Ann. Mag. nat. Hist. (5) 6: 63. Type locality: [Bhutan]. Type: ♀ (BMNH).

*Parasa pastoralis tonkinensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde 10: 696, **syn. n.** Type locality: “Tonkin”. Lectotype: ♂ (ZMHB), **here designated.**

References. DE JOANNIS, 1929: 577 (Hanoi; Cho ganh); LEMÉE, 1950: 43 (Hagiang; as *Parasa consocia* WALKER, 1865).

Material. 1 ♂, lectotype of *Parasa pastoralis tonkinensis* HERING, 1931, Tonkin, Phuly, 1908 (ZMHB); 1 ♂, 1 ♀, N. Vietnam, Tam Dao, 90 km N Hanoi, 1000 m, 12–25.V.1990, leg. E. PALIK (MWM, genitalia slide 12385 (♀)); 1 ♂, Vietnam, Hanoi, IV.1979, leg. M. HLAVA (MWM, genitalia slide 11455); 4 ♂♂, S. Vietnam, Bach-Ma Nat. Park, 16°10'N, 107°54'E, 1200 m, 26.VII–6.VIII.1996, leg. SINJAEV & AFONIN (MWM); 1 ♂, N. Vietnam, Hoa Bohn, 70 km NW Hanoi, 400 m, 28.V–6.VI.1990, leg. E. PALIK (MWM); 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), 22.15° N, 103.45° E, Cha-pa, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6–8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 17, 42, in 96% alcohol); 15 ♂♂, 1 ♀, C. Vietnam, Plato Tay Nguyen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINJAEV & AFONIN (MWM, genitalia slide 12391).

Distribution. Widespread in South-East Asia, in India, Pakistan, Bhutan, Nepal,

Myanmar, southern China, Taiwan, Thailand, Vietnam, Borneo, Sumatra, Java, and Bali.

Biology. The specimens were collected in early March, April, mid and late May, late July, August and early October in altitudes of 320 to 1400 m in Vietnam (in April, May to August, and November from 33 to 2100 m in South-East Asia).

Food plants: *Musa* sp. (Musaceae), *Aleurites cordata* (THUNB.) STEUD. (Euphorbiaceae), *Tectona grandis* L. (Verbenaceae), *Triadica sebifera* (L.) SMAL (as *Stillingia sebifera* (L.) MICHX) (Euphorbiaceae) (DE JOANNIS, 1929: 577); *Camellia sinensis* (L.) KUNTZE (Theaceae, India) (ROBINSON et al., 2007). Predator: *Cantheconidea furcellata* WOLFF, 1801 (Pentatomidae) (KAKOTY, 1976).

Comments. The synonymy is established according to the unique external features and male genitalia.

The species is similar to *P. stekolnikovi* SOLOVYEV & WITT, **sp. nov.** but distinguished by the smallest brown spot in forewing with distal brown sputtering (Colour plate 10, fig. 13).

Nomenclatorial notes. The type-series of *Parasa pastoralis tonkinensis* HERING, 1931 includes 2 males from Tonkin; only one of them was found in ZMHB. The lectotype: male, here designated, with following labels: 1 – rectangle, red, with black printed text “Typus”; 2 – rectangle, yellowish, with black inked by M. HERING text “Parasa | tonkinensis | m. Type” and black printed text “det. Mart. HERING”; 3 – square, yellowish, black printed “Tonkin | Phuly | 1908.”; 4 – rectangle, yellowish with with printed black text “ex coll. | OBERTHÜR”. This specimen is supplied with an additional red lectotype label with corresponding text.

### ***Parasa stekolnikovi* SOLOVYEV & WITT, sp. n.**

Colour plate 10, figs 14, 15

Type material. **Holotype:** ♂, “N. Vietnam, 1600 m | Mt. Fan-si-pan (Nord) | Cha-pa, Primärurwald | 22.17°N, 103.40°E | 20.–30.IV.1995 | leg. V. SINJAEV & | Einheim. Sammler” (MWM). **Paratypes:** 13 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha pa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Saml. (MWM, genitalia slide 9729); 1 ♂, 3 ♀♀, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 950 m, IV.1995, leg. V. SINJAEV (genitalia slide 11462 (♀)); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-seite, Cha-pa (=Sapa), 22.17° N 103.44° E, prim. Urwald, 1600 m, 20–30.IV.1995, leg. SINJAEV & einh. Sammler (MWM); 3 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan, N-side, Chapa, 22°17’N, 103°44’E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll. (MWM); 12 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.40° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slide 9728 (♂)); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa (=Sapa), 22.20° N, 103.40° E, Sek.Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N 103.40° E, SekWald / Kulturland, 1600–1800 m, XI.1994, leg. SINJAEV & Einh. Slr. (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, Sekund.-Wald, 22.20° N 103.40° E, (Kult.), 1600–1800 m, XI.1994, leg. SINJAEV & Einh. Slr. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, IV.1995, leg. SINJAEV & Sammler (MWM); 3 ♂♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22.20° N, 103.40° E, 1600–1800 m, 15–25.IV.1995, leg. SINJAEV & loc. coll. (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Chapa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Chapa, 22.15° N, 103.46° E, 1700 m, VI.1994, leg. SINJAEV &

einheim. Sammler (MWM); 1 ♂, N. Vietnam, Mai-chau, Urwald, 40 km SE Moc-chau, 20.50° N, 104.50° E, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Samml. (MWM); 10 ♂♂, 2 ♀♀, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll. (MWM); 10 ♂♂, 1 ♀, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.IV.1995, leg. SINJAEV & loc. coll. (MWM); 1 ♂, Cochin China, Tuyen Quang, IX.1936, S. MASEYEFF, B.M. 1937–658 (BMNH); 1 ♂, Vietnam, Lang moy / Tan long, Dong hy, Bezirk: Thai nguyen, 7.X.1999, leg. LÖFFLER (CMS, genitalia slide GU-06-005).

Additional material. 5 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 32, in 96% alcohol); 1 ♂, China, Prov. W-Yünnan, Xishuangbanna Dai auton. pref., Puwen, 30 km SSW Simao, 22°30'N, 100°02'E, 900 m, 16.III–10.IV.2000, leg. BRECHLIN's loc. coll. (MWM, genitalia slide 12394).

Middle sized moths with forewing length 17–19 mm and wingspan 36–38 mm in males, and 19–21 mm, and 42–44 mm in females correspondingly. The male antennae are bipectinate with long rami in basal third. The head and thorax are green (Colour plate 10, figs 14, 15). The forewing is dark-yellow with large medial green field, bordered externally by thick curved brown fascia which is parallel to outer margin; the distal yellow field has brown veins; basally the wing has a large brown spot ranging from 1/3 of costa to 1/3 of dorsal margin. The hindwings and abdomen are yellow. The forewing venation shows distally branched medial stem, vein R5 arising from R3+R4. Tibial spurs 0-2-2.

In male genitalia, the uncus is simple with apical spur (Genitalia plate 5, fig. 8). The valvae have no saccular processes, elongate. The juxta is flattened. The aedeagus is curved basally, with two small apical processes.

The female genitalia with spiraled ductus bursae, rounded corpus bursae and double heart-shaped signum (Genitalia plate 12, fig. 8).

Diagnoses. The species is similar externally to *P. pastoralis* BUTLER, 1885, but easily distinguished by the largest brown basal spot in forewing and deep yellow coloration.

Distribution. South-western China (Yunnan), northern and southern Vietnam.

Biology. The moths were collected in April to early July, September to November in altitudes of 950 to 2400 m.

Etymology. The species is dedicated to Prof. Dr. Anatoliy A. STEKOLNIKOV (St. Petersburg State University; St. Petersburg, Russia).

## ***darma* group**

### ***Parasa darma* MOORE, 1859**

Colour plate 11, fig. 1

*Parasa darma* MOORE, 1859, Cat. Lep. Mus. East-India Company. 2: 414, t. XI a, f. 7. Type locality: "Java". Holotype: ♀ (BMNH).

Material. 5 ♂♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25–29.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slides 0007, 0096); 1 ♂, S. Vietnam, Dong Nai

province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N, 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0037); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 30.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0036); 1 ♂, the same data but 29.IX.2008 (CAS, AS-LIMAC 15, in 96% alcohol).

Distribution. Myanmar, central and southern Vietnam, Peninsular Malaysia, Sundaland; Palawan (HOLLOWAY, 1986: 94).

Biology. The moths were collected in late July and late September in altitudes of 40 to 153 m.

The larvae are of the “nettle”-type, green, typical for *Parasa* MOORE, 1859, described in HOLLOWAY, 1986: 94.

The food plants are *Cocos* sp. (Thailand) (HOLLOWAY, 1986: 94), *Cocos nucifera* L. (Arecaceae, Oriental), *Coffea* sp., *Coffea liberica* W. BULL ex HIERN (Rubiaceae, S.E. Asia), *Elaeis guineensis* JACQ. (Arecaceae, S.E. Asia), *Piper* sp. (Piperaceae, Oriental), and *Theobroma cacao* L. (Sterculiaceae, S.E. Asia, W. Malaysia) (ROBINSON et al., 2007).

Comments. The species is clearly discriminated from other congeners by larger green medial spot with margins parallel to forewing margin and bordered by silver fascia (Colour plate 11, fig. 1).

### ***albipuncta* group**

#### ***Parasa albipuncta* HAMPSON, 1893**

Colour plate 11, fig. 2

*Parasa albipuncta* HAMPSON, 1893, Fauna Br. India Moths 1: 390. Type locality: “Mao, Manipur”. Holotype: ♂ (BMNH).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, Kult., 1600–1800 m, IV.1995, leg. SINJAEV & Einh. Slr. (MWM, genitalia slide 11181); 3 ♂♂, S. Vietnam, Bao Loc (Sek. Wald), Rung Cat Tien, 11.32° N, 107.48° E, 1500 m, 10–20.XII.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slide 9717).

Distribution. India, Myanmar, Thailand, Laos, Vietnam, Malaysia, and Sumatra.

Biology. The moths were collected in April and mid December in altitudes of 1500 to 1800 m (in February, April to June, August, September, November, December in altitudes of 100 to 2300 in other localities).

Comment. The species is externally similar to *P. zhudiana* (CAI, 1983), but distinguished by the absence of a defined silver band and weaker incision in the green spot of the forewing (can be only slightly indicated) (Colour plate 11, fig. 2). In male genitalia, the length of processes of juxta (1/4 – 1/3 of valvae width) is diagnostic (Genitalia plate 6, fig. 1).

#### ***Parasa zhudiana* (CAI, 1983), comb. n.**

Colour plate 11, fig. 3

*Latoia zhudiana* CAI, 1983, Acta ent. sinica 26 (4): 448, fig. 3. Type locality: “Jinping, Yunnan, 1700 m”. Holotype: ♂ (IZCAS).

Material. 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, VI.1995, leg. local collectors (MWM, genitalia slide 9723); 2 ♂♂, 1 ♀, as previous but V.1995 (MWM, genitalia slide 11189 (♀)); 14 ♂♂, N. Vietnam, Cha-pa, Mt. Fan-si-pan, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11178); 21 ♂♂, 1 ♀, N. Vietnam, Cha-pa (=Sapa), Mt. Fan-si-pan (West), Sek. Wald / Kulturland, 22.20° N, 103.40° E, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml (MWM, genitalia slide 11188 (♀)); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN / SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, 5–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.15° N, 103.45° E, primär. Nebelwald, 2000 m, 5.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 3 ♂♂, the same data, but VI.1995, leg. SINJAEV & einheim. Sammler (MWM); 1 ♂, N. Vietnam, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, VIII.1995, leg. local collectors (MWM); 6 ♂♂, the same data, but 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7,10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM).

Distribution. Southern China (Yunnan), northern Vietnam.

Biology. The flight period falls in May to early July and August. The moths were collected in altitudes of 1525 to 2400 m.

Comment. The species is externally similar to *P. albipuncta* HAMPSON, 1893, but distinguished by the presence of a well-defined silver band in the outer-marginal depression of the green spot in the forewing (Colour plate 11, fig. 3) and by male genitalia: the apical processes of juxta is much longer with length of 2/3 times of the width of the valvae (Genitalia plate 6, fig. 2).

### ***bicolor* group**

#### ***Parasa bicolor* (WALKER, 1855)**

Colour plate 11, fig. 4

*Neaera bicolor* WALKER, 1855, List Specimens lepid. Insects Colln. Br. Mus. **5**: 1142. Type locality: “North India”. Lectotype: ♂ (BMNH), **here designated**.

*Latoia oryzae* CAI, 1983, Acta ent. sinica **26** (4): 451, fig. 19. Type locality: “Rong Xian, Guangxi”. Holotype: ♂ (IZCAS).

References. CANDÈZE, 1927: 124 (Laokay); DE JOANNIS, 1929: 577 (Hanoi; Cao bang; Lao kay).

Material. 1 ♂, N. Vietnam., Tam Dao, 90 km N Hanoi, 1000 m, 14.V.1990, leg. E. PALIK (MWM, genitalia slide 11201 MWM); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Viñh Cù, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 27.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0090).

Distribution. India, Nepal, Pakistan, Myanmar, southern China, Thailand, northern and southern Vietnam.

Biology. The specimens were collected in mid May and late July in altitudes of 40 to 1000 m (in other localities of South-East Asia in April to July and September in altitudes of 120 to 1800 m). The probable larva (5<sup>th</sup> instar; southern Thailand) is illustrated in KÜPPERS & JANIKORN, 2009: colour plate 16, fig. 1. It is of the nettle-type, with short

scoli, yellow, with single dorsal and lateral, blue, longitudinal bands, with posterior, black, large dots on the abdomen. Food plants: *Oryza sativa* L. (Poaceae) (India, Manipur; AMU SINGH, 1981: 15); bamboo (CHEN et al., 1984), *Saccharum* sp. (Poaceae) (KHANNA et al., 1966: 122), *Saccharum officinarum* L. (Poaceae, India), *Dendrocalamus asper* (SCHULT. & SCHULT. f.) BACKER ex K. HEYNE (Poaceae, Thailand) (ROBINSON et al., 2007).

Parasites: *Brachymeria euplocae* (WESTWOOD, 1837) (Chalcididae), *Goryphus basilaris* (HOLMGREN, 1868) (Ichneumonidae) (West Bengal; CHATTERJEE, 1982: 15), *Eupteromalus parnaruae* GAHAN, 1919 (Hymenoptera: Pteromalidae) (PAWAR et al., 1981: 65), *Aroplectrus dimerus* L. and *Platyplectrus* sp. (Eulophidae) (India; SINGH et al., 1988).

Comments. The species is discriminated from *P. flavabdomena* (CAI, 1983), *P. yana* (CAI, 1983) and *P. jade* SOLOVYEV & WITT, **sp. n.** by brown hindwings, extremely similar externally to *P. hainana* (CAI, 1983) and *P. foliola* SOLOVYEV & WITT, **sp. n.** (Colour plate 11, fig. 4), but the male genitalia are diagnostic. The valva has two basal processes of the same size approximately; the juxta has very long processes, as long as the length of the valva, in contrary to similar species (Genitalia plate 6, fig. 3).

Nomenclatorial notes. The species *Neaera bicolor* WALKER, 1855 was described from two males from “North India” and “East Indies”, but only one specimen from northern India was found in BMNH and is designated as the lectotype here. The specimen bears the following labels: 1 – round, with green margin, and black printed text “Type”, 2 – rectangle, yellowish, with black printed text “*Neaera bicolor.*”, 3 – rectangle, blue, black inked “Limacodidae | slide No: | 1086 ♂”, 4 – round, yellowish, black inked “N. | India”. This specimen is supplied with an additional lectotype label with corresponding text.

***Parasa flavabdomena* (CAI, 1983), comb. n.**

Colour plate 11, fig. 10

*Latoia flavabdomena* CAI, 1983, Acta ent. sinica **26** (4): 450, fig. 18. Type locality: “Jinping, Yunnan, 370 m”. Holotype: ♂ (IZCAS).

Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11140); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 9689, 11165).

Distribution. Southern China, northern Vietnam.

Biology. In Vietnam, the specimens were collected in May, mid June to beginning of July in the altitudes of 1600 to 1800 m (in mid April to beginning of June in elevations of 370 to 1000 m in southern China).

Comments. The species is distinguished from *P. bicolor* (WALKER, 1855), *P. hainana* (CAI, 1983), *P. foliola* SOLOVYEV & WITT, **sp. n.** and *P. umbra* SOLOVYEV & WITT, **sp. n.** by yellow hindwings; and from *P. jade* SOLOVYEV & WITT, **sp. n.** by medial spot of the forewings nearer to outer margin, all brown spots without yellowish proximal streak (Colour plate 11, fig. 10). The male genitalia are figured (Genitalia plate 6, fig. 4).

***Parasa hainana* (CAI, 1983), comb. n.**

Colour plate 11, fig. 5

*Latoia hainana* CAI, 1983, Acta ent. sinica **26** (4): 451, fig. 23. Type locality: “Hainan Dao

(Baoting), Guangdong". Holotype: ♂ (IZCAS).

Material. 1 ♂, N. Vietnam, Son La Prov., SE of Doe Pha Din, 950 m, 4–6.V.1995, leg. Mamoru OWADA (NSMT, genitalia slide 2007-03 Limacodidae); 1 ♂, N. Vietnam, Mai-chau, Urwald, 40 km SE Moc-chau, 20.50° N, 104.50° E, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Samml. (MWM, genitalia slide 9686); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (=Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7,10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slides 11160, 11199); 1 ♂, N. Vietnam, Tam Dao, 90 km N Hanoi, 12–25.V.1990, leg. E. PALIK (MWM, genitalia slide 11161); 1 ♂, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 11208); 4 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 2 ♂♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 12, 56, in 96% alcohol).

Distribution. Southern China, northern Vietnam.

Biology. The moths were collected in altitudes of 950 to 1525 m in beginning and mid April, May and beginning of July in Vietnam (in March to May in the altitudes of 600 to 1500 m in southern China).

Comments. The species is well discriminated from the similar *P. flavabdomena* (CAI, 1983), *P. yana* (CAI, 1983) and *P. jade* SOLOVYEV & WITT, **sp. n.** by brown hindwings (Colour plate 11, fig. 5), and differs from *P. bicolor* (WALKER, 1855), *P. foliola* SOLOVYEV & WITT, **sp. n.** and *P. umbra* SOLOVYEV & WITT, **sp. n.** only by characters of the male genitalia. The valva is triangular with two basal hairy processes, the upper one is rounded; the saccular process has a strong basal spur (Genitalia plate 6, fig. 5).

***Parasa yana* (CAI, 1983), comb. n.**

Colour plate 11, fig. 6

*Latoia yana* CAI, 1983, Acta ent. sinica **26** (4): 451, fig. 21. Type locality: "Jingdong, Yunnan, 1170 m". Holotype: ♂ (IZCAS).

Material. 1 ♂, N. Vietnam, Farin-Pass, 20 km NW Son-La, 21°22'N, 103°52'E, 1600 m, 11–13.XI.1994, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13826).

Distribution. China (Shaanxi, Yunnan, Jiangxi), central Thailand, Laos, northern Vietnam, Malaysia (Perak).

Biology. The single male was collected at 11–13 November on the altitude of 1600 m.

Comments. Externally the species is similar to *P. flavabdomena* (CAI, 1983) (Colour plate 11, fig. 6) but well distinguished by distinct and well developed hairy basal processes of valvae; the saccular processes have basal small spur; the juxta is Y-shaped (Genitalia plate 6, fig. 6).

***Parasa jade* SOLOVYEV & WITT, sp. n.**

Colour plate 11, fig. 11

Type material. Holotype: ♂, "S. Thailand | Surutkhani Prov. | Christ village | 27.–30.IV.1995", "Museum WITT", "Genitalpräparat | Heterocera | Nr. 11.194 | Museum WITT München" (MWM, genitalia slide 11194). Paratypes: 1 ♂, Thailand, Umg. Pak Chong, Khao Yai National Park, 4-22.IX.1998, leg. S. LÖFFLER (MWM, genitalia slide 12372); 1 ♂, S. Thailand, Ranong, Kapur, Khlong Nakha, 50 m, 12–13.VIII.1987, leg. M. OWADA (NSMT, genitalia slide 2007-04 Limacodidae, A. Solovjev prep.).

Additional material. 1 ♂, S. Vietnam, Kon Tum province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. SINIAEV & AFONIN (MWM, genitalia slide 9719); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09,6''E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 20, in 96% alcohol); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18,6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0078); 1 ♂, S. Vietnam, Đông Nai province, Cúc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 3.VIII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0089).

The species is middle-sized with forewing length 12–13 mm and wingspan 25–27 mm in males. The male antennae are bipectinate in basal half, brown. The head and the thorax are green. The forewings are green with brown costa, medial large spot and two indistinct external spots on veins (if present), the semiovoid brown spot near the dorsal margin; the spots bear proximally inner yellowish white dots. The cilia are yellowish-ochre. The hindwings and abdomen are ochre.

The male genitalia are characterized by simple uncus with apical spur. The gnathos is single, odd. The valvae are triangular with distinctly concave costa and claw-shaped saccular process. The aedeagus is short, broad basally. The vesica contains a row of small cornuti.

Diagnosis. The species is easily separable from *P. bicolor* (WALKER, 1855), *P. hainana* (CAI, 1983), *P. foliola* SOLOVYEV & WITT, **sp. n.** and *P. umbra* SOLOVYEV & WITT, **sp. n.** by yellowish hindwings, and well discriminated from *P. flavabdomena* (CAI, 1983) by the proximal position of medial brown spot of the forewings, all spots of forewings with yellowish white, inner, proximal dots (Colour plate 11, fig. 11). The male genitalia are diagnostic. The valvae are concave, basally without hairy basal processes; the saccular process is down-curved (Genitalia plate 6, fig. 7).

Distribution. Southern Thailand, central and southern Vietnam.

Biology. The specimens were collected in April, August and September in altitudes of 40 to 700 m.

Etymology. Jade (English) – nephrite.

### ***Parasa foliola* SOLOVYEV & WITT, sp. n.**

Colour plate 11, fig. 7

Type material. Holotype: ♂, “Vietnam mer. | Kon Tum Province | Dac Glei, 700 m | 8.8.1996 leg. | V. SINIAEV & E. AFONIN | 15°07'N 107°42'E | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 11.207 | Museum WITT München” (MWM, genitalia slide 11207). Paratypes: 11 ♂♂, Vietnam mer., Plato Tay Nguyen. Mt., Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN, (MWM, genitalia slide 11168); 1 ♂, S. Vietnam, Bach-Ma Nat. Park, 16°10'N, 107°54'E, 1200 m, 26.VII–6.VIII.1996, leg. SINIAEV & AFONIN (MWM, genitalia slide 11169).

The forewing length is 13–16 mm and wingspan 29–32 mm in males. The male antennae are bipectinate basally. The head and thorax are green. The forewings are green with brown costa and ochre fringes, with brown large medial spot, with series of small brown distal spots on the veins, and with the brown spot in the central region of vein CuP. The hindwings and abdomen are brownish.

The male genitalia with simple uncus with an attached apical spur. The gnathos is



slender. The valvae are rhombus-shaped with straight costa, with small curved saccular process and distinctive tornal corner. The saccular process basally has small spur. The valvae basally with two hairy processes; the upper process is longer than the medial one, up-curved. The juxta is Y-shaped, its basis is shorter than lateral processes. The aedeagus is short. The vesica contains a row of large cornuti, with apically decreasing size.

Diagnosis. The species is well discriminated from the similar *P. flavabdomena* (CAI, 1983), *P. yana* (CAI, 1983) and *P. jade* SOLOVYEV & WITT, **sp. n.** by brown hindwings (Colour plate 11, fig. 7). It resembles *P. umbra* SOLOVYEV & WITT, **sp. n.** but the basal processes of valvae are shorter, the upper one is up-curved; the basal part of saccular process has a distinct small spur (Genitalia plate 6, fig. 8).

Distribution. Central and southern Vietnam.

Biology. The moths were collected in late July and August on the altitudes of 700–1400 m.

Etymology. Foliolum (Latin) – leaf.

### ***Parasa umbra* SOLOVYEV & WITT, sp. n.**

Colour plate 11, fig. 8; Colour plate 16, fig. 12

Type material. Holotype: ♂, “N-Vietnam 200 m | Ben En Nationalpark | 40km SW Than Hoa | Sek. Wald / Vegetation | 19.40°N 105.15°E | 22.–30.XI.1994, leg. | SINJAEV & SCHINTLMEI | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 11.206 | Museum WITT München” (MWM, genitalia slide 11206). Paratypes: 2 ♂♂ with the same data (MWM, genitalia slides 13726, 13727); 4 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57′54.4″N, 104°48′09.6″E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0097); 1 ♂, the same data (CAS, AS-LIMAC 80, in 96% alcohol); 4 ♂♂, the same data but 28.IX.2008 (CAS, genitalia slide 0035); 2 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49′12.3″N, 104°58′18.6″E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 14, in 96% alcohol); 1 ♂, the same data but 29.IX.2008 (CAS, AS-LIMAC 87, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tương Dương distr., Nghe An prov., 19°10′32.5″N, 104°37′18.5″E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 22, in 96% alcohol).

The forewing length is 14 mm; wingspan 27–29 mm. The male antennae are bipectinate in basal part, brown. The head and the thorax are green. The forewings are green with brown large medial spot and series of small brown distal spots on the veins, with brown spot in the region of medial CuP; the costa and fringes are brown (Colour plate 11, fig. 8; Colour plate 16, fig. 12). The hindwings and abdomen are brownish.

In male genitalia the uncus is single with apical spur (Genitalia plate 6, fig. 9). The gnathos is single. The valvae are rhombus-shaped with distinctive tornal edge. The saccular process is small, basally has small bristles. The valva basally has two haired processes; the upper process is longer of medial, curved caudad. The juxta is Y-shaped; its basis is shorter of dorsal processes. The aedeagus is small, the vesica contains a row of large cornuti; their sizes fade out apically.

Diagnosis. The species is similar externally to *Parasa foliola* SOLOVYEV & WITT, **sp. n.**, *P. bicolor* (WALKER, 1855) and *P. hainana* (CAI, 1983) but easily distinguished by male

genitalia. From extremely similar *P. foliola* SOLOVYEV & WITT, **sp. n.** it is distinguished by longer basal processes of valvae, the upper is curved caudad, not to up; the basis of saccular process with a distinct field of small bristles. From *P. bicolor* (WALKER) and *P. hainana* (CAI) it is distinguished by rhomboid valvae with distinct tornus.

Distribution. Northern and central Vietnam.

Biology. All specimens were collected in late September, beginning October and late November in altitudes of 119 to 352 m.

Etymology. Umbra (from Latin) – shady greenery.

### ***argentifascia* group**

#### ***Parasa argentifascia* (CAI, 1983), comb. n.**

Colour plate 11, fig. 9

*Latoia argentifascia* CAI, 1983, Acta ent. sinica **26** (4): 448, fig. 3. Type locality: “Longling, Yunnan, 1600 m”. Holotype: ♂ (IZCAS).

Material. 3 ♂♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slide 9716); 13 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, prim. Urwald, 1600 m, 20–30.IV.1995, leg. SINAJEV & einh. Sammler (MWM, genitalia slides 9715 (♂), 11190 (♀)); 1 ♂, N. Vietnam, Vinh Phu Prov., Tam Dao, 930 m, 12,16,17.I.1996, leg. Mamoru OWADA (NSMT, genitalia slide 2007-06); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, Kult., 1600–1800 m, IV.1995, leg. SINAJEV & Einh. Slr. (MWM).

Distribution. Southern China, northern Vietnam.

Biology. The moths were collected in mid January, April, and mid November to the beginning of December in altitudes of 400 to 1800 m.

Remark. The male genitalia are figured (Genitalia plate 5, fig. 9).

### ***jina* group**

#### ***Parasa atera* SOLOVYEV & WITT, sp. n.**

Colour plate 11, fig. 12

Type material. Holotype: ♂, “Nord-Vietnam | Tam Dao, (Sek. Wald) | 60 km NW Hanoi, 1200 m | (21.34°N 105.20°E) | 1.–5.V.1993 leg. | SINAJEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 11.212 | Museum WITT München” (MWM, genitalia slide 11212).

The forewing length is 12 mm; the wingspan is 24 mm. The male antennae are bipectinate with long rami in basal 2/3. The head and thorax are green (Colour plate 11, fig. 12); the forewings are reddish-brown with fuzzy green spot in basal part near dorsal margin; the hindwings and abdomen are black-brown.

The uncus and gnathos are simple (Genitalia plate 5, fig. 10). The valvae are triangular, without saccular process; in the basal upper corner, the two rounded processes are present; the outer margin is strongly sclerotized, with distinct incision. The juxta has two

apical processes with 2/3 of the length of the valvae. The aedeagus is short and slender. The vesica with a row of spur-shaped cornuti.

Diagnosis. The species is similar to *P. jina* (CAI, 1983) (known from southern China) externally and in male genitalia, but differs by the hindwings which are darker than forewings (in *jina* CAI both are almost same-colour) the valvae with distinct incision in outer margin, the processes of juxta are longer.

Distribution. Northern Vietnam.

Biology. The single male was taken in early May in the altitude of 1200 m.

Etymology. From Latin “ater” – dark, obscure.

### ***argentilinea* group**

#### ***Parasa argentilinea* HAMPSON, 1893**

Colour plate 11, fig. 13

*Parasa argentilinea* HAMPSON, 1893, Fauna Br. India Moths 1: 389. Type locality: “Sikhim; Margharita, Assam”. Holotype: ♂ (BMNH).

Material. 2 ♂♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 18.40° N, 105.40° E, 200 m, 22–30.XI.1994, leg. SINJAEV & SIMONOV (MWM, genitalia slides 11215, 11227); 1 ♀, N. Vietnam, Ben En National Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 11217); 1 ♂, C. Vietnam, Pu Mat N. P., Tam Dinh vill., Tuong Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 5.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC 21, in 96% alcohol).

Distribution. India, Nepal, Myanmar, northern and central Vietnam.

Biology. The moths were collected in the beginning of October and late November in altitudes of 150 to 200 m (in May, late July to early August, September and late November in elevations of 200 to 1800 m in other localities).

Remark: The male genitalia are figured (Genitalia plate 6, fig. 10).

### ***herbifera* group**

#### ***Parasa bana* (CAI, 1983), comb. n.**

Colour plate 11, fig. 16

*Latoia bana* CAI, 1983, Acta ent.sinica 26 (4): 449, fig. 8. Type locality: “Chongan (Sangang), Fujian, 740 m”. Holotype: ♂ (IZCAS).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 11424); 1 ♂, Vietnam, Prov. Vinh Phu, Tam Dao, 60 km NW Hanoi, 950–1200 m, 23°34'N, 105°20'E, VI.1995, leg. SINAJEV V. & SIMONOV (MWM, genitalia slide 12722).

Distribution. Southern China, northern Vietnam.

Biology. The specimens were collected in June to mid July in altitudes of 950 to 1800 m.

Remark: The male genitalia are figured (Genitalia plate 7, fig. 1).

## *xueshana* group

### *Parasa dilucida* SOLOVYEV & WITT, sp. n.

Colour plate 11, fig. 15

Type material. Holotype: ♂, “N. Vietnam | Cuc Phuong 60 km SW | Hanoi, 20.15’N 105.20’E | 18.XI.–3.XII.1992 400 m | leg. SINAJEV & SIMONOV | ex coll. SCHINTLMEISTER”, “Genitalpräparat | Heterocera | Nr. 11.446 | Museum WITT München”, “Museum WITT” (MWM, genitalia slide 11446). Paratype: 1 ♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slide 12398).

The moths are middle-sized with a forewing length of 13 mm and wingspan of 26–27 mm in males. The head and thorax are green with brown dorsal band. The male antennae are bipectinate with very long rami in basal half. The forewings have a large green field, its outer margin convex, apex rounded, bordered distally by silver spots between the veins; the large brown basal spot of the forewing with dentate external margin (Colour plate 11, fig. 15). The medial stem of forewing is divided distally; the vein R5 is branched from R3+R4. The hindwings and abdomen are yellow. Tibial spurs: 0-2-2.

In male genitalia, the uncus is simple, strongly sclerotized apically (Genitalia plate 7, fig. 2). The gnathos is robust. The valvae have no saccular process. The juxta has two curved, flattened, crescent-shaped dorsal processes. The aedeagus is long, slender, straight, with large, basad directed, apical spur.

Diagnosis. The species is similar externally and in male genitalia to *P. xueshana* (CAI, 1983) and *P. badia* SOLOVYEV & WITT, sp. n. but differs by the green field of forewing with distinctly rounded outer margin and broadly rounded apical edge, as well as by stronger tornal pattern incision. The forewing with more convex costa than in *P. xueshana* (CAI, 1983). The hindwings are almost yellow with brownish outer margin expanding in tornal Cu-field in contrary to other similar species where the hindwings are completely or almost completely uniformly coloured from dark brown to ochre-brown. The dorsal processes of juxta are longer. The aedeagus is straight with apical spur.

Distribution. Northern Vietnam (Cuc Phuong).

Biology. The specimens were collected in the period from mid November to beginning of December in the altitude of 400 m.

Etymology. From Latin “dilucidus” – bright, light in connection with coloration.

### *Parasa badia* SOLOVYEV & WITT, sp. n.

Colour plate 11, fig. 14

Type material. Holotype: ♂, “N. Vietnam | Mt. Fan-si-pan W-Seite | Cha-pa (= Sapa) 1600-1800 m | 22.20’N 103.40’E Sek. Wald/ | Kulturland 30.vi.-12.vii.1994 | leg. BRECHLIN & SCHINTLMEISTER”, “Genitalpräparat | Heterocera | Nr. 11.162 | Museum WITT München”, “Museum WITT” (MWM, genitalia slide 11162). Paratypes: 6 ♂♂, N.Vietnam, Mt. Fan-si-pan (West), Cha-pa (=Sapa), Sek. Wald / Kulturland, 22.20° N, 103.40° E, 1600–1800 m, 10.VI–6.VII.1994, SINJAEV & einh. Saml. (MWM, genitalia slides 12397, 12706).

The forewing length is 16–18 mm; the wingspan is 32–34 mm in males. The head and thorax are green with brown dorsal band. The male antennae are bipectinate in basal half. The forewings have a large green field, which is convex and bordered distally by silver

spots between the veins; the basal brown spot is dentate distally (Colour plate 11, fig. 14). The medial stem of forewing is divided distally; the vein R5 branches from R3+R4. The hindwings are ochre-brown with yellow basal area extending in Cu-vein area. The abdomen is dark-yellow.

The male genitalia with simple uncus with strongly sclerotized apex and odd gnathos (Genitalia plate 7, fig. 3). The valvae without saccular processes. The juxta with two short, flattened dorsal processes. The aedeagus is curved in basal third, armed with a ventral apical spur directed basally.

Diagnosis. The species is similar externally and in male genitalia to *P. xueshana* (CAI, 1983) and *P. dilucida* SOLOVYEV & WITT, **sp. n.**, but much larger and differs by more concave costa of the forewing than in *P. xueshana* (CAI, 1983); the apical edge of green field is almost straight and adjacent to apex (rounded in *P. dilucida* SOLOVYEV & WITT, **sp. n.**); the tornal incision is smaller and of another shape. The hindwings are almost ochre-brown with yellow medial area near Cu-veins. The male genitalia differ from *P. dilucida* SOLOVYEV & WITT, **sp. n.** by shorter processes of juxta, curved aedeagus in basal third with ventral apical basad spur.

Distribution. Northern Vietnam (Fan-si-pan Mts).

Biology. The specimens were collected in June to the beginning of July in altitudes of 1600 to 1800 m.

Etymology. From Latin “badius” – maroon, bay in connection with coloration of adults.

### ***Parasa albida* CANDÈZE, 1927**

*Parasa albida* CANDÈZE, 1927, Enc. Ent. Lep. **2**: 124. Type locality: “Pnom-Penh; Laokay”. Syntypes: 2 ♂♂ (the depository of the type-series is unknown).

Reference. DE JOANNIS, 1929: 577 (Lao kay).

Distribution. Northern Vietnam, Cambodia.

Biology. Unknown.

Comments. The types were not found in spite of special search; therefore, the species is known to us only by the original description. The labial palps and antennae are ochre, the thorax is green with dorsal brown band almost as in *P. bicolor* (WALKER, 1855). The forewings are green except single brown spot between M3 and CuA1 (“4 and 5 veins”). The costa, apical corner and the edge of cilia is ochre in forewing. The hindwings are silky yellowish-white, monotonous. The abdomen is yellow. The species is similar to *P. flavabdomena* (CAI, 1983), *P. hainana* (CAI, 1983) and *P. yana* (CAI, 1983) and *P. jade* SOLOVYEV & WITT, **sp. n.**, or may just be one of these, but exact taxonomic position is unclear so far. The collection of CANDÈZE was sold in an auction after his death and the deposition of only a very few types described by him is known now.

### ***Barisania* HOLLOWAY, 1990**

Heterocera Sumatrana **6**: 45. Type species: *Parasa lampra* WEST, 1937, by original designation.

The genus includes middle-sized limacodids with forewing length 13–16 mm and unique brown-yellow coloration and strongly modified wing pattern (Colour plate 11, fig. 18).

Females and preimaginal stages are still unknown.

The genus is ranged to Myanmar, Thailand, Vietnam, Sumatra and Borneo.

Two species are included.

***Barisania honeyi* SOLOVYEV, 2009**

Colour plate 11, fig. 18

*Barisania honeyi* SOLOVYEV, Tijdschr. Ent. **152**: 170. Type locality: “Thailand, Changwat Chiang Mai, 1 km E of Kop Dong, 1650 m”. Holotype: ♂ (MWM).

Reference. SOLOVYEV, 2009 (in print) (Kon Tum).

Material. 1 ♂, Vietnam mer., Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13254).

Distribution. Central Myanmar (Sagaing) northern and central Thailand (Nan, Pha Yao, Chiang Mai and Nakhorn Nayok), Central Vietnam (Kon Tum).

Biology. The only specimen from Vietnam was collected in early August in the altitude of 700 m; flight period falls in June, August, September, November and December in other regions; and the species was collected there in altitudes up to 1650 m.

***Hyphorma* WALKER, 1865**

List Specimens lepid. Insects Colln. Br. Mus. **32**: 493. Type species: *Hyphorma minax* WALKER, 1865, by monotypy.

Includes species with reddish brown coloration; the forewings with a dark, concave, external fascia and a slightly curved, oblique, dark fascia running from 1/3 dorsum to forewing apex (Colour plate 13, figs 1–5).

The genus includes 7 species: *H. minax* WALKER, 1865, *H. capucina* (SNELLEN, 1900), *H. sericea* LEECH, 1899, *H. minor* DE JOANNIS, 1930, *H. margaritacea* HERING, 1931 (= *Hyphormides barisana* WEST, 1937), *H. flaviceps* (HAMPSON, 1910), **comb. n.** (= *Monema tenebricosa* HERING, 1931, **syn. n.**), and *H. avanta* SOLOVYEV & WITT, **sp. n.** and is known from India to Sundaland.

The species *H. flaviceps* HAMPSON, 1910 is placed in *Hyphorma* WALKER, 1865 on the base of external features, transferred from *Thosea* WALKER, 1855. The synonymy of *H. flaviceps* (HAMPSON, 1910) (“Assam, Khàsis”) and *M. tenebricosa* HERING, 1931 (“Khasis”) is given in connection with external characters of adults and the same type localities; types of both taxa examined.

The genus is somewhat similar to *Susica* WALKER, 1855 but well discriminated externally by more elongate forewings and obscure coloration; the male antennae are not so strongly bipectinate.

***Hyphorma minax* WALKER, 1865**

Colour plate 13, figs 1–2

*Hyphorma minax* WALKER, 1865, List Specimens lepid. Insects Colln. Br. Mus. **32**: 493. Type locality: “North China”. Holotype: ♂ (BMNH).

References. HERING, 1931: 691 (Tonkin).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest,

1600–1800 m, V.1995, leg. local collectors (MWM, genitalia slide 14275); 1 ♂, the same data, but VI.1995 (MWM, genitalia slide 14278); 1 ♀, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. Zolotuhin (CAS); 4 ♂♂, C. Vietnam, Kon Tum Povince, Dac Glei, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM); 12 ♂♂, 1 ♀, C. Vietnam, Plato TayNguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slides 14273, 14274 (♂)); 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 25, in 96% alcohol); 1 ♂, Vietnam, Lam Vien plato, Nui Ba nat. reserve, 12°10'N, 108°40'E, 1500 m, 9–18.XI.2008, leg. Y. BEZVERKHOV & V. SINYAEV (CYB); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 120, in 96% alcohol).

Distribution. China, Cambodia, Vietnam.

Biology. The food plant: *Aleurites moluccana* (L.) WILLD. (Euphorbiaceae, Hong Kong) (ROBINSON et al., 2007).

The specimens were collected in May, June, August, early October and early and mid November in altitudes of 119 to 1800 m.

### ***Hyphorma minor* DE JOANNIS, 1930**

Colour plate 13, fig. 3

*Hyphorma minor* DE JOANNIS, 1930, Anns Soc. ent. Fr. **98**: 569. Type locality: “par la Station expérimentale de Phu tho” [Vietnam]. Lectotype: ♂ (MNHN), **here designated**.

Material. 1 ♂, lectotype, Station de Phu Tho, Tonkin [Vietnam] (MNHN); 3 ♂♂, N. Vietnam, BaBe, Lake N.P., prov. Cao Bang Phuc, 300 m, X.2006, leg. Thomas IHLE (CSI); 1 ♂, 1 ♀, N. Vietnam, Cuc Phuong N.P., prov. Ninh Binh, 20°14.579'N, 105°43.071'E, 140 m (CSI).

Distribution. Northern Vietnam.

Biology. The specimens were collected in October in altitudes of 140 to 300 m.

Comments. The species differs from *Hyphorma minax* WALKER, 1865 externally by dark, unicolourous fore- and hindwings.

Nomenclatorial notes. The type series of *Hyphorma minor* DE JOANNIS, 1930 includes 2 males from “la Station expérimentale de Phu tho”, but only one male was found in MNHM. The lectotype male is here designated, with following labels: 1 – square, yellowish, black inked “*Hyphorma* | *minor* JOAN. | Ann. Soc. ent. Fr., | 1929, 98, Suppl., p. 331 | (L.T.♂ - P. VIETTE. II-1953)”; 2 – rectangle, red, black printed “TYPE”; 3 – rectangle, yellowish, black inked “Station de Phu tho | TonKin”; 4 – rectangle, yellowish with narrow black frame and black printed text “1920 1932 | coll. L. & J. de JOANNIS | Muséum Paris”; 5 – trapezoid, yellowish, black inked “*Hyphorma* | *minor* n. sp. | ♂ cotype. de JOANNIS”. The specimen is supplied with a lectotype label with corresponding text.

### ***Hyphorma avanta* SOLOVYEV & WITT, sp. n.**

Colour plate 13, fig. 5

Type material. Holotype: ♂, “C. Vietnam | Kon Tum – Thuộc dãy Sác Li | Sa Nhon, Huyện Sa Thày | 14°27'N, 107°48'E | 637–691 m 22.VI.2008 | leg. TRAN Thieu Du, ex IEBR” (ex coll. IEBR, MWM, genitalia slide 0104).

The forewing length is 12 mm; the wingspan is 27 mm. The male antennae are filiform.

The ground colour is brown. The head and thorax are yellow (Colour plate 13, fig. 5). The forewings are brownish with typical fasciae for *Hyphorma* WALKER, 1865: the concave external fascia and an oblique, dark fascia running from 1/3 dorsum to apex. The hindwings and abdomen are dark brown.

In the male genitalia, the uncus is simple with strongly sclerotized and curved apex (Genitalia plate 7, fig. 4). The gnathos is slightly flattened, rounded apically. The valvae are triangular, concave. The juxta is flattened. The aedeagus is slender, 1.2 times as long as the valva, gradually curved proximally with modified apex bearing a large, flattened, triangular-shaped dorsal process and very large, ovoid ventral process.

Diagnosis. The species is distinguished from most *Hyphorma* WALKER, 1865 externally and by presence of filiform male antennae, but is similar to *H. flaviceps* (HAMPSON, 1910) (Colour plate 13, fig. 4). There is no doubt that these two species are closely related. They are well distinguished in the male genitalia, though they are allopatric: the uncus of *H. avanta* SOLOVYEV & WITT, **sp. n.** is apically undivided, triangular, the valvae are concave, and the aedeagus is strongly curved, with long apical process.

Distribution. Central Vietnam.

Biology. The single male was collected in late June on the altitudes of 637–691 m.

Etymology. The species name is derived from “avanturine”, mineral of brown or golden yellow colour in connection with the coloration of the moths.

### ***Scopelodes* WESTWOOD, 1841**

in JARDINE, Naturalist's Libr. (Ed. 1) **33**: 222. Type species: *Scopelodes unicolor* WESTWOOD, 1841, by monotypy.

= *Bethura* WALKER, 1862

J. Proc. Linn. Soc. (Zool.) **6**: 173. Type species: *Bethura minax* WALKER, 1862, by monotypy.

The genus includes from medium- to large-sized moths. Externally they are distinguished from others by long third segment of labial palps with tufts of scales; the forewing is unicoloured with longitudinal or transverse shadows; the abdomen usually is yellow with transverse brown or black stripes (Colour plate 12). Strong sexual dimorphism in size, pattern and coloration is typical for most species.

The caterpillar is of nettle type with well developed scoli (Colour plate 19, figs 1–2).

The generic name is associated with the following species: *S. unicolor* WESTWOOD, 1841 (= *S. palpalis* WALKER, 1855, = *Dalcera palpigera* HERRICH-SCHÄFFER, 1856, = *Nyssia micacea* WALKER, 1865, = *S. lutea* HERING, 1931), *S. albipalpalis* HERING, 1931, *S. anthela* SWINHOE, 1909, *S. contracta* WALKER, 1855, *S. dinawa* BETHUNE-BAKER, *S. exigua* SWINHOE, 1916, *S. niassica* HERING, 1931, *S. griseoscura* HOLLOWAY, 1990, *S. magnifica* HERING, 1931, *S. nigrescens* HERING, 1931, *S. nitens* BETHUNE-BAKER, 1904, *S. pallivittata* SNELLEN, 1886, = *S. anthela malaccana* HERING, 1933, *S. sericea* BUTLER, 1880 (= *S. tantula melli* HERING, 1931, **syn. n.**), *S. vulpina* MOORE, 1879 (= *S. tantula* SWINHOE, 1904, **syn. n.**), *S. testacea* BUTLER, 1886 with subspecies *S. testacea malayana* HERING, 1931, *S. nigricans* HERING, 1931, *S. minax* (WALKER, 1862), *S. venosa* WALKER, 1855 (= *S. ursina* BUTLER, 1886, **syn. n.**), *S. aurogrisea* MOORE, 1883, and *S. kwangtungensis* HERING, 1931 (= *S. venosa kwangtungensis f. brunnea* HERING, 1931, **syn. n.**); the genus is known from India to New Guinea and needs revision.



***Scopelodes vulpina* MOORE, 1879**

Colour plate 12, figs 1–2

*Scopelodes vulpina* MOORE, 1879, Descr. New Ind. Lep. Colln late Atkinson 1: 73, plate III, fig. 22. Type locality: “Darjiling”. Lectotype: ♀ (ZMHB), **here designated**.

*Scopelodes tantula* SWINHOE, 1904, Ann. Mag. nat. Hist. (7) 14: 132, **syn. n.** Type locality: “Khasia Hills”. Lectotype: ♂ (BMNH), **here designated**.

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 13928).

Distribution. India, Nepal, northern Thailand, and northern Vietnam.

Biology. The single male was collected in June to early July in the altitude of 1600 to 1800 m.

Comments. The species is sexual dimorphic (Colour plate 12, figs 1–2), similar to *S. kwangtungensis* HERING, 1931 and *S. venosa* WALKER, 1855, but differs by smaller size; the tuft of the third segment of labial palps is yellowish with black apex.

The synonymy of *S. vulpina* MOORE, 1879 and *S. tantula* SWINHOE, 1904 is established here. Both taxa *tantula* and *vulpina* are described after a male and a female correspondingly. The species is well expressed sexual dimorphic in wing pattern which complicates indication of synonymy of both taxa but morphs identical to the types of the synonymized names were found within several single populations in the MWM that confirm the synonymy.

Nomenclatorial notes. The species *Scopelodes vulpina* MOORE, 1879 was described after an unknown number of syntypes and unknown sex. In the collection of the ZMHB, a single female labeled as type of this species was found. It is here designated as lectotype of the taxon. It bears the following labels: 1 – square, red, with black printed text “Origin.”; 2 – rectangle, yellowish with black printed text “coll. Atkinson” and black inked “MOORE”; 3 – rectangle, yellowish, black inked by MOORE “*Scopelodes | vulpina |* (type) MOORE”; 4 – rectangle, black printed “Coll. | STAUDINGER”; 5 – rectangle, yellow, black inked “Darjiling | 1866”. The specimen is supplied with an additional red lectotype label with corresponding text.

The species *Scopelodes tantula* SWINHOE, 1904 was described also after an unknown number of males. The lectotype is the only found male in BMNH, here designated, with following labels: 1 – round, white with red frame, black printed “Type”; 2 – rectangle, yellowish with black printed text “Khasia Hills. | Assam.”; 3 – rectangle, handwritten, with black ink text by SWINHOE “*Scopelodes | tantula* ♂ | SWINHOE type”; 4 – rectangle, black printed “1905–65.”. The specimen is supplied with the additional red lectotype label with corresponding text.

***Scopelodes testacea* BUTLER, 1886**

Colour plate 12, figs 3–5; Colour plate 17, fig. 8; Colour plate 19, figs 1, 2

*Scopelodes testacea* BUTLER, 1886, Ill. Typ. Brit. Mus. Specimens Colln Brit. Mus. 6: 3. Type locality: “Silhet”. Holotype: ♀ (BMNH).

References. CANDÈZE, 1927: 124 (Vietnam: Annam); DE JOANNIS, 1929: 569 (Hanoi; Cho ganh).

Material. 10 LL, N. Vietnam, Hanoi, Botanic Garden, 6.V.2009, leg. V. Zolotuhin (CAS); 1 L pupated at 10.V.2009; adult was appeared at 15 June 2009; 3 ♂♂, C. Vietnam, Plato

Tay Nguyen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINJAEV & AFONIN (MWM, genitalia slide 13935); 2 ♂♂, C. Vietnam, Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. V. SINJAEV & E. AFONIN (MWM); 1 ♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, 950 m, 23–31.III.1995, leg. SINJAEV (MWM, genitalia slide 13924); 3 ♂♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 3 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 27–28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 4 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX–2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tương Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0062); 1 ♂, S. Vietnam, Dong Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N, 106°16'20.6''E; 60±20 m, 4.VIII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 2 ♂♂, the same data (IEBR); 10 ♂♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25–29.VII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. India, Nepal, northern Thailand, Cambodia, central and southern Vietnam.

Biology. The specimens were collected in late March, early June, late July, August, late September, early October in altitudes of 40 to 1400 m.

The larvae are of the nettle-type (Colour plate 19, figs 1, 2). Food plants: *Diospyros rhodocalyx* KURZ. (Ebenaceae, Thailand), *Lagerstroemia loudonii* TEIJSM. & BINN. (Lythraceae, Thailand), *Mangifera indica* L. (Anacardiaceae, Thailand), *Musa* sp. (India), *Musa malaccensis* RIDLEY (Musaceae, W. Malaysia), *Nephelium lappaceum* L., *Schleichera oleosa* (LOUR.) OKEN (Sapindaceae, Thailand) (ROBINSON et al., 2007), *Canna* sp. (Cannaceae).

Comments. The species is distinguished externally from other *Scopelodes* WESTWOOD, 1841 by the white tuft of labial palps with black apex; the hindwings are greyish yellow with weakly defined yellow veins as in *S. venosa* WALKER, 1855; the forewings are dark (as illustrated) or light grayish brown with transverse postmedial light field (Colour plate 12, figs 3–5; Colour plate 17, fig. 8).

*Scopelodes testacea* BUTLER, 1886, *S. testacea malayana* HERING, 1931, *S. griseoscura* HOLLOWAY, 1990 and *S. anthela* SWINHOE, 1909 are probably synonyms; the taxa are distinguished by the features of intensity of forewing coloration and valval shape first of all, but both these features can be found in specimens from Borneo, Vietnam, Thailand and Nepal in all expressions. Additional material is needed for the determination of the exact systematic position of these mentioned taxa.

***Scopelodes sericea* BUTLER, 1880**

Colour plate 12, fig. 6

*Scopelodes sericea* BUTLER, 1880, Ann. Mag. nat. Hist. (5) 6: 63. Type locality: [China]. Type: ♀ (BMNH).

*Scopelodes tantula melli* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 689, **syn. n.** Type locality: 'Lung-tao-shan'. Lectotype: ♂ (ZMHB), **here designated**.

Reference. LEMÉE, 1950: 43 (Vietnam: Backan; as *Scopelodes Melli* HERING, 1931).

Material. 1 ♂, N. Vietnam, Tan Long, ca. 20 km südöstl. von Thai Nguyen, prov., Thai Nguyen, 150 m, leg. HOA Binh Nguyen, VIII.2008 (CSI); 2 ♂♂, N. Vietnam, BaBe, Lake N.P., Prov., Cao Bang Phuc, 300 m, X.2006, leg. Thomas IHLE (CSI); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 135); 4 ♂♂, the same data, leg. V. ZOLOTUHIN (CAS); 2 ♂♂, S. Vietnam, Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, SINIAEV & AFONIN (MWM); 1 ♂, C. Vietnam, Pu Mat N. P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 30.IX.2008 (CAS); 1 ♂, the same data (CAS, AS-LIMAC 106, in 96% alcohol); 5 ♂♂, Vietnam mer., Plato Tay Nguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13923); 1 ♂, N. Vietnam, Tam Dao, (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, IV.1995, leg. V. SINAJEV (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM); 1 ♂, C. Vietnam, Kon Tum province, Chư Mom Ray, Rờ Koi, huyện Sa Thầy, 14°31'N, 107°38'E, 331–381 m, 25.VI.2008, leg. TRAN Thieu Du (IEBR); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 175, 179); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 30–1250 m, 16°12'N, 107°51'E–16°15'N, 107°53'E, 19–22.IV.2009, leg. V. ZOLOTUHIN (CAS); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 146, 153); 1 ♂, the same data but 24–25.IV.2009, leg. V. ZOLOTUHIN (CAS); 3 ♂♂, the same data but 26–27.IV.2009 (CAS); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 29.VII.2008, leg. TRAN Thieu Du (IEBR); 3 ♂♂, the same data but 26.VII.2008 (IEBR); 5 ♂♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. India, southern China (Guangxi, Hainan), Vietnam.

Biology. The flight period falls in April, early May, late June, late July to early September, October. The habitat altitudes are in 30 to 1400 m elevation.

Comments. The species is separated from other congeners by bronzy yellow ground colour, dark yellow tufts of third segment of labial palps, the forewings with longitudinal black-shaded field, transverse light-shaded field and yellow fascia near Cu-stem; apex of abdomen is grayish, not deep black (Colour plate 12, fig. 6).

The conspecificity of *S. sericea* BUTLER, 1880 and *S. tantula melli* HERING, 1931 is based on external features and male and female genitalia; types of both taxa were examined.

Nomenclatorial notes. The type-series of *Scopelodes tantula melli* HERING, 1931 includes two syntypes of different sex kept in ZMHB. The lectotype ♂ (ZMHB) is here designated with the following labels: 1 – rectangle, red with black frame, black printed "Typus"; 2 – rectangle, yellowish with black printed text "det. Mart. HERING" and black

inked by M. HERING “Scop. tantula | melli m. ♂-Type“; 3 – large, yellow, rectangle, unreadable handwritten label by pencil; 4 – rectangle, with black printed text “140052”. The lectotype is supplied with a red lectotype label with corresponding text; the syntypical female deposited also in ZMHB is designated as paralectotype.

***Scopelodes venosa* WALKER, 1855**      Colour plate 12, fig. 7; Colour plate 17, fig. 9

*Scopelodes venosa* WALKER, 1855, List Specimens lepid. Insects Colln. Br. Mus. **5**: 1105. Type locality: “Silhet”. Holotype: ♂ (BMNH).

*Scopelodes ursina* BUTLER, 1886, Illust. Lepid. Heterocera Br. Mus. **6**: 3, pl. CI, figs 7, 8. Type locality: “Silhet”. Lectotype: ♀ (BMNH), **here designated**.

Reference. LEMÉE, 1950: 43 (Vietnam: Langson; as *Scopelodes ursina* BUTLER, 1886).

Material. 12 ♂♂, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM); 1 ♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, VI.1994, leg. SINJAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Chapa, 22°20'N, 103°40'N, 1600–1800 m, V.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Yen Bai, Dorf An-Fu, 22°12'N, 104°40'E, 800 m, V.1996, leg. BURAKOV, SAVKIN & MISHUK (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m, VI.1994, leg. SINJAEV (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 33 ♂♂, C. Vietnam, Plato Tay Nguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13916); 2 ♂♂, C. Vietnam, Pu Mat N P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09,6''E, 320±32 m, 26–27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 25.IX.2008 (CAS, AS-LIMAC 35, in 96% alcohol); 3 ♂♂, the same data but 26.IX.2008 (CAS, AS-LIMAC 71, 102, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18,6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 2.X.2008 (CAS); 1 ♂, C. Vietnam, Tam Dinh vill., Trưng Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18,5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 59, in 96% alcohol); 2 ♂♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cù, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 27–31.VII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. India including Sri Lanka, northern Myanmar, northern Thailand, Vietnam.

Biology. The moths were collected in May, June, late July, August, late September and early October in altitudes of 40 to 1800 m.

The food plants: *Terminalia brassii* EXELL. (Combretaceae) (SHNEIDER, 1990), *Camellia sinensis* (L.) KUNTZE (Theaceae, Oriental), *Coffea* sp. (Rubiaceae, Sri Lanka), *Rosa* sp. (Rosaceae, Sri Lanka) (ROBINSON et al., 2007).

Comments. The species is distinguished from other species of *Scopelodes* WESTWOOD, 1841 by the greyish brown coloration; the tufts of labial palps are yellow with black apex; the abdomen is yellow with black transverse bands and black apex; the hindwings are greyish brown with yellow fascia near veins and lower area is yellowish; the forewings are dark with longitudinal dark and light shadows (Colour plate 12, fig. 7; Colour plate 17, fig. 9). Externally, the species is similar to *S. kwangtungensis* HERING,

1931, but differs by black apex of labial tufts. It also differs in male genitalia, in *S. venosa* WALKER, the uncus is more elongate apically.

Nomenclatorial notes. *Scopelodes ursina* BUTLER, 1886 was described after male (-s) from Darjiling and female (-s) from Silhet in the type series, but only one female type was found in BMNH. This syntype is designated as lectotype here. The lectotype labels: 1 – round, white with red frame, black printed “Type”; 2 – rectangle, yellowish, black inked “*ursina* | BUTLER”; 3 – rectangle, yellowish, handwritten by brown [discolour black] ink “Silhet | 43·58”. The lectotype is supplied with an additional label with corresponding text.

***Scopelodes kwangtungensis* HERING, 1931, stat. n.**

Colour plate 12, figs 8–9

*Scopelodes venosa kwangtungensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 689. Type locality: China: “Kwang-tung, Liu-ping”. Lectotype: ♂ (ZMHB), **here designated**.

*Scopelodes venosa kwangtungensis* f. *brunnea* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 689, **syn. n.** Type locality: [Guangdong]. Type: ♀ (ZMHB).

Material. 1 ♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slides 13921 (♂), 13922 (♀)); 1 ♂, N. Vietnam, Tam Dao, 900 m, 22–24.V.1990, leg. E. PALIK, M.J. KOPEC (MWM); 1 ♂, N. Vietnam, Tam Dao, 90 km N Hanoi, 1000 m, 12–25.V.1990, leg. E. PALIK (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.199, leg. SINJAEV & SIMONOV (MWM); 3 ♂♂, the same data, but 1700 m, VI.1995, leg. SINJAEV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, VI.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, VIII.1995, leg. local collectors (MWM); 7 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 16.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 77, in 96% alcohol); 1 ♂, N. Vietnam, Hoa Binh, 400 m, 70km NW Hanoi, 28.V–6.VI.1990, leg. E. PALIK (MWM); 2 ♂♂, C. Vietnam, Plato Tay Nguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 13966); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 116, in 96% alcohol); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 154, 157); 1 ♂, the same data but 26–27.IV 2009, leg. V. Zolotuhin (CAS); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV 2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 178); 5 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N. P., 30–1250 m, 16°12'N, 107°51'E–16°15'N, 107°53'E, 19–22.IV 2009, leg. V. ZOLOTUHIN (CAS).

Distribution. India, southern Myanmar, northern Thailand, northern and central Vietnam.

Biology. The moths were collected in late April, May, June, August and beginning October in altitudes of 30 to 2400 m.

Comments. The species is similar to *S. venosa* WALKER, 1855, but easily distinguished by clear white tufts of third segment of labial palps (Colour plate 12, figs 8–9). Also a difference in the male genitalia was found: the uncus is not so elongate apically.

The synonymy of *S. kwangtungensis* HERING, 1931 and *Scopelodes venosa kwangtungensis f. brunnea* HERING, 1931 is established here based on external similarity and features of male and female genitalia; types of both taxa were examined.

Nomenclatorial notes. *Scopelodes venosa kwangtungensis* HERING, 1931 was described after two syntypes – male and female kept in ZMHB. So, the lectotype is here designated as the male (ZMHB) with the following labels: 1 – rectangle, red, black printed “Typus”; 2 – rectangle, yellowish with black printed text “det. Mart. HERING” and black inked by M. HERING “*Scopelodes | kwangtungensis | m. ♂*-Type; 3 – rectangle, yellowish with black printed “140041”; 4 – large, rectangle, handwritten by pencil in both sides, unreadable “... 20.V...”. The lectotype is supplied with a lectotype label with corresponding text; the syntypical female kept in ZMHB is designated as paralectotype.

### ***Tanvia* SOLOVYEV & WITT, gen. n.**

Type species: *Tanvia zolotuhini* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus includes middle-sized yellowish moths with unicolorous darker forewings and external, concave, darkish, indistinct fascia (Colour plate 13, figs 9, 10). The male antennae are bipectinate almost till apex. The labial palps with very long third segment with apical tufts. In the forewing, vein R5 arises from the stem R3+R4.

In male genitalia, the uncus is short and broad, apically very narrow and strongly sclerotized with massive lateral parts (Genitalia plate 7, fig. 5). The gnathos is small, W-shaped, slightly bifid distally. The valvae are triangular without saccular processes. The juxta has large lateral parts, distally horn-shaped. The aedeagus is small, tube-shaped, unmodified.

The female genitalia with well-developed ovipositor lobes (Genitalia plate 12, fig. 11). The 9th segment is modified, with strongly sclerotized and spicular dorsal part. Antevaginal plate is also spicular with medial process. The ductus bursae is short, not spiral. The corpus bursae is pear-shaped. The singum is double, tear-shaped.

The genus is monotypical so far but several other undescribed species from Thailand and southern China will have to be also included in this genus.

The genus is similar to *Scopelodes* WESTWOOD, 1841 (Colour plate 12) with long third segment of labial palps and apical tufts, but easily discriminated externally by unicolorous abdomen without transverse dark bands. The probable apomorphies of *Tanvia* SOLOVYEV & WITT, **gen. n.** are uncus of male genitalia with medial incision bearing an apical spur, horseshoe-shaped juxta with two long finger-shaped lateral processes, M-shaped gnathos medially, strongly modified 9th sclerite in female genitalia as described above.

Etymology. *Tanvia* – (from Vietnamese Tan Vien) one of the mountains in Vietnam that protects the Viets country.

### ***Tanvia zolotuhini* SOLOVYEV & WITT, sp. n.**

Colour plate 13, figs 9, 10

Type material. Holotype: ♂, “Nord-Vietnam | Mt. Fan-si-pan | Cha pa, 1700 m NN | (22.15’N 103.46’E) | Juni 1995 | leg. SINJAEV | Museum WITT”, “Fangjahr 1994 | (nec 1995)”, “Genitalpräparat | Heterocera | Nr. 13.949 | Museum WITT München” (MWM, genitalia

slide 13949). Paratypes: 1 ♂, the data as in holotype (MWM); 18 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13926 MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund. Wald, 1600–1800 m, IX.1994, leg. MONG (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wlad / Kulturland, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SCHINTLMEISTER (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Samml. (MWM); 11 ♂♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600 m, III.1995, leg. V. SINJAEV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20°N, 103.40°E, Sek. Wald, 1600–1800 m, 10–30.X.1994, leg. SINJAEV & einh. Saml. (MWM); 2 ♂♂, N. Vietnam, Fan-si-pan, O-ku-hay, 22°20'N, 103°40'E, Secondary Forest, 1600–1800 m, VII.1995, leg. local collectors (MWM); 2 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, 1600–1800 m, secondary forest, VI.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994. SINJAEV & einh. Saml. (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler (MWM); 2 ♂♂, N. Vietnam, W-Seite, Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. BRECHLIN / SCHINTLMEISTER (MWM); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, 1600–1800 m, Sek. Wald / Kulturland, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, 1600–1800 m, Sek. Wald / Kul., 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22.20° N, 103.40° E, 1600–1800 m, 20–30.X.1994, leg. SINJAEV & einh. Saml. (MWM); 1 ♂, N-Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, 1600–1800 m, Sek. Wald / Kulturland, XI.1994, SINJAEV & Einh. Slr. (MWM); 4 ♂♂, 2 ♀♀, Nord-Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, VI.1996, leg. SINJAEV & einheim. Sammler (MWM, genitalia slide 13925 (♀)); 1 ♂, N-Vietnam, Mt. Fan-si-pan, Cha-pa, Primärurwald, NN, 22.17° N, 103.44° E, 1600 m, 20–30.IV.1996, leg. SINJAEV & Einheim. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.15° N, 103.45° E, primär. Nebelwald, 2000 m, 5.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM).

Additional material. 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 19.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 72, in 96% alcohol).

The forewing length is 19–21 mm and wingspan 40–42 mm in males, 26–27, and 48–54 in females. The ground colour is brownish yellow. The forewings are silk-ochre (Colour plate 13, figs 9, 10). The tufts of lapial palps are ochre. The hindwings and abdomen are yellow.

The uncus is claw-shaped apically, narrow (Genitalia plate 7, fig. 5). The gnathos is small, W-shaped, slightly bifid distally. The valvae are triangular, very narrow distally with distinct tornus. The lateral processes of juxta are long, 1/2.5 times as long as the valvae, rounded apically. The aedeagus is tube-shaped, short, 3/4 as long as the valvae.

Female genitalia: see generic description (Genitalia plate 12, fig. 11).

Diagnosis. The species is similar to members of *Scopelodes* WESTWOOD, 1841, but easily distinguished externally and by male and female genitalia as stated above.

Distribution. Northern Vietnam.

Biology. The moths were collected in March, late April to July, September to November in altitudes of 1500 to 2400 m.

Etymology. The species is named after Dr. Vadim V. ZOLOTUHIN (State Pedagogical University of Ulyanovsk; Russia) for his support of all stages of my study on Limacodidae and correction of this paper.

### ***Phocoderma* BUTLER, 1886**

Illust. Lepid. Heterocera Br. Mus. 6: 4. Type species: *Gastropacha velutina* KOLLAR, 1844, by monotypy.

The genus includes large moths with forewing length 20–30 mm and wingspan 42–60 mm and silky-brown ground colour. The forewing pattern is diagnostic (Colour plate 13, figs 11–12).

The larva is of the nettle-type, known only for *Ph. velutina* (KOLLAR) (LEWVANICH, 2001: 95, fig. 63, 64).

Distribution of the genus is from India to Sundaland, including Nepal, Myanmar, China, Thailand, Vietnam, Peninsular Malaysia, Sumatra, and Borneo. The genus consists of 3 species: *Ph. velutina* (KOLLAR, 1844), *Ph. betis* DRUCE, 1896 and *Ph. witti* SOLOVYEV, 2008.

### ***Phocoderma velutina* (KOLLAR, 1844)**

Colour plate 13, fig. 11

*Gastropacha velutina* KOLLAR, 1844, in HÜGEL, Kaschmir und das Reich der Siek, 4 (part 2), Aufzählung und Beschreibung der von Freiherrn Carl v. HÜGEL auf seiner Reise durch Kaschmir und das Himaleeyagebirge gesammelten Insecten: 473. Type locality: “Himal., Massuri” [northern India]. Holotype: ♀ (NMW).

*Natada rugosa* WALKER, 1855, List Spec. lepid. Insects Colln Br. Mus. 5: 1109. Type locality: “Scinde?”. Holotype: ♂ (BMNH).

Material. 1 ♂, C. Vietnam, Kon Tum – Thuộc VQG Chư Mom Ray, Rò Koi, Huyện Sa Thầy, 14°31'N, 107°38'E, 331–381 m, 24.VI.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0001); 2 ♂♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 3–4.VIII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

Distribution. India, Nepal, Myanmar, Thailand, central and southern Vietnam Malaysia (Taman Negara), Borneo, Sumatra.

Biology. The flight period is late June, late July and early August in Vietnam and from March to December in other localities. The species was found in habitats with altitudes of 40 to 1900 m.

The larvae have long scoli, and are of the nettle-type. The ground colour of the body is different tints of green: from yellowish green to pale grayish green, including scoli;



lateral and dorsolateral scoli of segment A8 with black tips; horizontal dorsal and oblique lateral blue ellipses are enclosed in cells of the ground colored network with intersections presented by scoli (LEWVANICH, 2001: 95, fig. 64).

The larvae are gregarious when young, living on the underside of leaves, eating the epidermis. They spread on the host-plant when larger and often defoliate whole trees. Pupation occurs on the soil surface in a solid, grey, rough ovoid cocoon (Holloway 1986: 100).

The host-plants are *Lannea* sp., *Mangifera* sp. (Anacardiaceae), *Sapium* sp. (Euphorbiaceae), *Terminalia* sp. (Combretaceae), *Bombax* sp. (Bombacaceae) (HOLLOWAY 1986: 100); *Aleurites* sp. (Euphorbiaceae), *Butea monosperma* (LAM.) TAUB. (Fabaceae), *Nephelium lappaceum* L. (Sapindaceae), and *Camellia sinensis* (L.) KUNTZE (Theaceae) (ROBINSON et al. 2001: 323).

Comments. Externally, this species is very similar to *Ph. betis* DRUCE, but is darker with very short 3-rd segment of labial palp (Colour plate 13, fig. 11); in male genitalia, the long apical spur of the aedeagus is diagnostic (Genitalia plate 7, fig. 6) (SOLOVYEV, 2008: 57, figs 7, 8).

### ***Phocoderma betis* DRUCE, 1896**

Colour plate 13, fig. 12

*Phocoderma betis* DRUCE, 1896, Ann. Mag. nat. Hist. **18** (6): 236. Type locality: “China, Hunan”. Holotype: ♀ (BMNH).

Reference. SOLOVYEV, 2008: 59 (northern Vietnam: Lai Chau).

Material. 2 ♂♂, N. Vietnam, Lai Chau Prov., Muong Lay, Ban A Chia, 890 m, 8.V.1995, leg. Mamoru OWADA (NSMT); 1 ♂, N. Vietnam, Yen Bai Prov., Yen Bai, 200 m, 18.V.1995, leg. Mamoru OWADA (NSMT); 1 ♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 6.IX.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 2 ♂♂, N. Vietnam, BaBe, Lake N.P., Prov., Cao Bang Phuc, 300 m, X.2006, leg. Thomas IHLE (CSI); 1 ♂, C. Vietnam, Pu Mat N. P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 25–28.IX.2008 (CAS, AS-LIMAC 34, AS-LIMAC 74, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 30.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC 108, in 96% alcohol); 1 ♂, C. Vietnam, Kon Tum – thuộc VQG Chư Mom Ray, Rò Koi, huyện Sa Thầy, 14°31'N, 107°38'E, 331–381 m, 24.VI.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0029); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 155); 2 ♂♂, the same data but 24–25.IV 2009 (CAS); 5 ♂♂, the same data but 26–27.IV 2009 (CAS).

Distribution. China (Shaanxi, Hubei, Zhejiang, Sichuan, Hunan, Guanxi, Simao and Yunnan), northern Thailand (Nan), northern and central Vietnam.

Biology. Flight period falls in late April, early and mid May, late June, early and late September, October (in May to September in southern China); the species was collected in altitudes of 34 to 890 m (34 to 3500 m in China).

Comments. The species is similar to *Ph. velutina* (KOLLAR, 1844), but lighter (Colour

plate 13, fig. 12), with longer 3-rd segment of labial palp; in male genitalia, two apical crests on aedeagus are diagnostic (Genitalia plate 7, fig. 7) (SOLOVYEV, 2008: 59, figs 9, 10).

### ***Mahanta* MOORE, 1879**

in HEWITSON & MOORE, Descr. new Indian lepid. Ins. Coll. Atkinson (1): 78. Type species: *Mahanta quadrilinea* MOORE, 1879, by monotypy.

The genus includes large adults with forewing length 18–25 mm and wingspan 40–50 mm and silky-orange ground colour (Colour plate 13, fig. 8). Forewings shape and pattern are diagnostic, with two parallel, dark brown, oblique fasciae and light triangular shadows attached at their outer edge; the apex is more or less falcate.

The range of this genus is limited to the southern part of the eastern Palaearctic and to the Oriental Region (China including Taiwan, India, Nepal, Myanmar, Vietnam, Thailand, Peninsular Malaysia, Borneo, and Sumatra).

The genus consists of 8 species: *M. quadrilinea* MOORE, 1879; *M. kawadai* YOSHIMOTO, 1995; *M. leworthyi* HOLLOWAY, 1986; *M. yoshimotoi* WANG & HUANG, 2003; *M. zolotuhini* SOLOVYEV, 2005; *M. svetlanae* SOLOVYEV, 2005; *M. fraterna* SOLOVYEV, 2005; *M. tanyae* SOLOVYEV, 2005.

### ***Mahanta fraterna* SOLOVYEV, 2005**

Colour plate 13, fig. 8

*Mahanta fraterna* SOLOVYEV, 2005, Tinea, Tokyo **18** (4): 267, figs 3, 7, 13. Type locality: “Thailand, Chiangwat Chiang Mai, Mt. Doi Phahompok, 16 km NW of Fang, 2000 m”. Holotype: ♂ (MWM).

Material. 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15°N, 103.46°E, 1700 m, VI.1994, leg. SINIAEV (MWM, genitalia slide 4332); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan (Nord) Cha-pa, 22°15'N, 103°46'E, Primärurwald, 1600 m, 08–29.V.1993, leg. V. SINIAEV & M. SIMONOV (MWM); 1 ♂, paratype, N. Vietnam, Tarn Dao, 60 km NW Hanoi, 21°34'N 105°20'E, Sek. Wald., 1200 m, 1–5.V.1997, leg. SINIAEV & SIMONOV (MWM); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22°17'N, 103°44'E, Primärurwald, 1600 m, 20–30.IV 1995, leg. V. SINIAEV (MWM); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan (West) Cha-pa (= Sapa), 22.20°N 103.40°E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI 1994, leg. SINIAEV (MWM); 1 ♂, paratype, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, VIII.1995, leg. local collectors (MWM); 1 ♂, paratype, N. Vietnam, Yen Bai, An-chy, 21°42'N, 104°18'E, Primärurwald, V.1996; 1 ♂, paratype, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 20.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 80, in 96% alcohol).

Distribution. Southern China (Yunnan), northern Thailand, northern Vietnam.

Biology. Flight period falls in late April to June and August in Vietnam. The moths were collected in altitudes of 1200 to 1800 m.

### ***Susica* WALKER, 1855**

List Specimens lepid. Insects Colln Br. Mus. **5**: 1103 (key), 1113. Type species: *Susica pallida* WALKER, 1855, by monotypy.

= *Tadema* WALKER, 1856

List Specimens lepid. Insects Colln Br. Mus. 7: 1758. Type species: *Tadema sinensis* WALKER, 1856, by monotypy.

The genus includes medium-sized moths with unique external characters (Colour plate 13, figs 6, 7; Colour plate 17, fig. 10). The ground colour is greyish-brown. The male antennae are broadly bipectinate with very long rami till 2/3 of antenna. The forewings are usually broad and rounded, with dark curved transverse medial fascia and sinusoidal external fascia near apex, usually with sparse dark scales and with distinct medial dark spot.

The genus is known from India to Sundaland and includes 12 species: *S. pallida* WALKER, 1855 (= *Hydrocladia* [sic!] *stolognoma* WEST, 1937), *S. sinensis* (WALKER, 1856) (= *S. sinensis formosana* WILEMAN, 1911, **syn. n.**, = *S. fusca* MATSUMURA, 1911, **syn. n.**), *S. pannosa* (SNELLEN, 1900), *S. pygmaea* HERING, 1931, *S. hyphorma* HERING, 1931, *S. malayana* HERING, 1931 (= *S. nigrifascia* HERING, 1931), *S. everetti* HOLLOWAY, 1982, *S. heringi* HOLLOWAY, 1982, *S. himalayana* HOLLOWAY, 1982, *S. obscura* HOLLOWAY, 1982, *S. brooksi* HOLLOWAY, 1982, and *S. nasuta* INOUE, 1986.

***Susica sinensis* (WALKER, 1856)** Colour plate 13, fig. 7; Colour plate 17, fig. 10

*Tadema sinensis* WALKER, 1856, List Specimens lepid. Insects Colln. Br. Mus. 7: 1759. Holotype: ♂ (BMNH). Type locality: “Shanghai, North China”.

*Susica formosana* WILEMAN, 1911, Entomologist 44: 151, **syn. n.** Holotype: ♂ (BMNH). Type locality: “Kanshirei (1000 ft.)” [Taiwan].

*Susica fusca* MATSUMURA, 1911, Thous. Ins. Japan Suppl. 3: 80, **syn. n.** Holotype: ♂ (EIHU). Type locality: “Formosa”.

References. CANDÈZE, 1927: 124 (Vietnam: Laokay; as *Susica pallida* WALK. – *Tadema sinensis* WALK.); LEMÉE, 1950: 43 (Backan; as *Susica sinensis* SWINH. [sic!]); DE JOANNIS, 1929: 571 (Lao kay; as *Susica pallida* Wlk.).

Material. 1 ♂, Hinterindien, Tonking, “Hoabinh”, Tonkin, de Cooman (MWM, genitalia slide 14034); 1 ♂, Vietnam mer, Kon Tum Province, Dac Glei, 15°07'N, 107° 42'E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 14019); 1 ♂, N. Vietnam, Cuc Phuong N.P, 120 km SW Hanoi, 20.15° N, 105.20° E, 1–2.IV.1995, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 14020); 6 ♂♂, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM. genitalia slide 14018); 5 ♂♂, N. Vietnam / Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22.15° N, 103.45° E, 2240 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM); 1 ♂, N. Vietnam, Cuc Phuong N.P, 120 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 1–2.IV.1995, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 14021); 1 ♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 6.IX.2008, leg. TRAN Thieu Du (IEBR); 3 ♂♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11–23.V.2006, leg. V. ZOLOTUHIN (ZSMCAS VZ-LIMAC 27, VZ-LIMAC 30, VZ-LIMAC 50, in 96% alcohol); 9 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26–28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 6 ♂♂, the same data but 25–26.IX.2008 (CAS, AS-LIMAC 29, AS-LIMAC 70, AS-LIMAC 10, in 96% alcohol); 5 ♂♂, C. Vietnam, Pu Mat N. P., Phuc Son vill., Anh Son distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX–1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, the same data but 29.IX–2.X.2008 (CAS, AS-LIMAC 82, AS-LIMAC 122, in 96% alcohol); 1 ♂, C. Vietnam, Dồi sần bay, La bơ B; ký hiệu, Chà Val, huyện Nam Giang,

Quảng Nam, 15°35'N, 107°28'E, 546–549 m, 28.VI.2008, leg. TRAN Thieu Du (coll. IEBR); 1 ♂, C. Vietnam, Nghệ An province, Thanh Mỹ, Thanh Chương, 18°48'07.8''N; 105°13'42.5''E, 80–120 m, 26.V.2008, leg. TRAN Thieu Du (IEBR); 3 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 152, 162, 167); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 1.VIII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. Southern China (Yunnan, Hainan), Taiwan, northern Thailand, Cambodia, Vietnam.

Biology. The moths were caught in early March, early and late April, May, early and late June, early August, early and late September, early October in altitudes of 34 to 2240 m.

Comments. The species is similar to *S. pygmaea* HERING, 1931, but easily distinguished externally, the medial and external fasciae are sinusoidal, not prominent (Colour plate 13, fig. 7; Colour plate 17, fig. 10).

The synonymy of *S. sinensis* (WALKER, 1856), *S. formosana* WILEMAN, 1911 and *S. fusca* MATSUMURA, 1911 is established here because of their external characters and features of male genitalia; the intensity of melanisation of the forewing is variable. The holotypes (males) of all synonymized taxa were examined.

### ***Susica pygmaea* HERING, 1931**

Colour plate 13, fig. 6

*Susica pygmaea* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 707. Type locality: “Nieder-Burma”. Holotype: ♂ (BMNH).

Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14044); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINAJEV & einh. Sammler (MWM, genitalia slides 14032, 14043); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22° 20'N, 103°40'E, secondary forest, 1600–1800 m, VI.1995, leg. local collectors (MWM); 1 ♂, the same data, but V.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Fan-si-pan, O-ku-hay, 22°20'N, 103°40'E, Secondary Forest, 1600–1800 m, VIII.1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 21.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 76, in 96% alcohol); 4 ♂♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 14016); 1 ♂, S. Vietnam, Ninh Thuan prov., Bac Ai Distr., Phuoc Binh vill. & NP, secondary forest, 200 m, 11–14.XI.2008, leg. TRAN Thieu Du (MWM).

Distribution. Myanmar, northern and central Vietnam.

Biology. The moths were collected in May, mid June to early July, August and mid November in altitudes of 200 to 2400 m.

Comments. The species differs from *Susica sinensis* (WALKER, 1856) by straight, well defined medial and external fascia in forewing (Colour plate 13, fig. 6).

The taxa *S. pygmaea* HERING, 1931 and *S. hyphorma* HERING, 1931 are probably synonymous. More material of this group is necessary to solve this question.

### ***Thosea* WALKER, 1855**

List Specimens lepid. Insects Colln Br. Mus. **5**: 979 (key), 1068. Type species: *Thosea unifascia* WALKER, 1855, by monotypy.

= *Anzabe* WALKER, 1855

List Specimens lepid. Insects Colln Br. Mus. **5**: 982 (key), 1093. Type species: *Anzabe sinensis* WALKER, 1855, by monotypy.

= *Autocopa* MEYRICK, 1889

Trans. ent. Soc. Lond. **1889**: 457. Type species: *Autocopa monoloncha* MEYRICK, 1889, by monotypy.

= *Dasycomota* LOWER, 1902

Trans. R. Soc. S. Austr. **26**: 220. Type species: *Dasycomota pyrrhoea* LOWER, 1902, by monotypy.

Externally, the genus is characterized by middle sized moths with grey or brownish ground colour, with dark brown discal spot and oblique, dark, straight postmedial fascia (Colour plate 14, figs 1–6). The male genitalia are characterized by the presence of a long process from sacculus of valva (Genitalia plate 7, figs 8–10). The larvae are of nettle-type; the subdorsal scoli are longer than the dorsal ones (Colour plate 20, figs 1–3).

The genus includes a large number of species (about 45) known from India to New Guinea and Australia.

The genus is revised by HOLLOWAY, 1986, and by HOLLOWAY et al., 1987, but the exact taxonomic position of several included species is still unclear.

### ***Thosea sinensis* (WALKER, 1855)**

Colour plate 14, fig. 1; Colour plate 17, fig. 11; Colour plate 20, fig. 1

*Anzabe sinensis* WALKER, 1855, List Specimens lepid. Insects Colln. Br. Mus. **5**: 1093. Type locality: [China: Hong Kong]. Holotype: ♂ (BMNH).

*Susica taiwania* SHIRAKI, 1913, Spec. Rep. Formosa Agric. Expt. Sta. **8**: 401. Type locality: “Formosa (Taihoku)” Types: originally not specified.

*Thosea sinensis coreana* OKANO & PAK, 1964, Ann. Rep. Coll. Lib. Arts Iwate: 6, pl. 1, fig. 11. **syn. n.** Type locality: “Chongryangri, Seoul”. Holotype: ♂ (the depository is unknown).

References. CANDÈZE, 1927: 124 (Vietnam: Annam; Haut-Tonkin); DE JOANNIS, 1929: 572 (Choa ganh; Cho cay; Phu tho; Yen bai; Lao kay); HOLLOWAY et al., 1987: 49 (northern Vietnam).

Material. 5 ♂♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14056); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 950 m, IV.1995, leg. V. SINJAEV (MWM, genitalia slide 14073); 1 ♂, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM, genitalia slide 14081); 3 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7–8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 6.IX.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 138); 11 ♂♂, 4 ♀♀, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m,

25–28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 18 ♂♂, the same data (CAS, AS-LIMAC 28, AS-LIMAC 100, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, C. Vietnam, Tam Dinh vill., Trưng Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 61, in 96% alcohol); 1 ♂, C. Vietnam, Nghệ An province, Thanh Mỹ, Thanh Chương, 18°48'07.8''N; 105°13'42.5''E, 80–120 m, 26.V.2008, leg. TRAN Thieu Du (IEBR).

Distribution. Korea, China, Taiwan, northern Thailand, Cambodia, northern and central Vietnam.

Biology. The moths were taken in April, May, early and late September, early October in altitudes of 34 to 1200 m.

A colour picture of the caterpillar is provided by SOHN, 2006: 212–213.

The larvae are ovoid with very long subdorsal hairy scoli and a short dorsal scoli. The larvae are green with white dorsal band with blue border, with two small red patches between third and fourth abdominal segments near dorsal scoli. Food plants: *Cocos nucifera* L. (Arecaceae, Thailand), *Coffea* sp. (Rubiaceae, Vietnam), *Erythrina variegata* L. (Fabaceae, Thailand), *Gerbera jamesonii* Bolus ex Hooker f. (Asteraceae, Thailand), *Musa* sp. (Musaceae, Thailand), *Nicotiana tabacum* L. (Solanaceae, Thailand), *Oryza sativa* L. (Poaceae, Thailand), *Ricinus communis* L. (Euphorbiaceae, Thailand), *Rosa* sp. (Rosaceae, Thailand), *Ziziphus mauritiana* LAM. (Rhamnaceae, Thailand) (ROBINSON et al. 2007); *Melia azedarach* L. (Meliceae) (DE JOANNIS, 1929: 572); *Camellia sinensis* (L.) KUNTZE (Theaceae) (HU & WANG, 1969).

Comments. Externally, the species is similar to *Th. bipartita* HERING, 1933 and *Th. unius* SOLOVYEV & WITT, **sp. n.** (Colour plate 14, fig. 1; Colour plate 17, fig. 11), but the male genitalia with rhomboid valvae with curved, and long, tape-like saccular process (Genitalia plate 7, fig. 8).

### ***Thosea lutea* HEYLAERTS, 1890**

Colour plate 14, fig. 2

*Thosea lutea* HEYLAERTS, 1890, Comp. Rend. Soc. ent. Belg.: 28. Type localities: “à Padang”, “à Fort-de-Kock” [Sumatra]. Syntypes: ♂ (RMNH).

*Limacodes nubeculosa* SNELLEN, 1892, Veth. Midden Sumatra, Lepidoptera 4 (8): 30. Type locality: [Sumatra]. Type: ♂ (RMNH).

Material. 1 ♂, S. Vietnam, Saigon env., V.1982, leg. K. SPITZER (MWM, genitalia slide 14048 MWM); 2 ♂♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 29.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

Distribution. Central and southern Vietnam, Sumatra; western Malaysia, Java, Borneo, Bangkwa, Siberut (HOLLOWAY et al., 1987: 57).

Biology. The flight period falls in May and beginning July. The habitat altitudes are 113 to 153 m.

The larva is illustrated in HOLLOWAY et al., 1987: pl. 25. It is light green, the lateral scoli are orange, the dorsal band is blue, and the subdorsal scoli are very short. The development on gambir (*Uncaria gambir* ROXB.) takes 85 days, on palms over two months (HOLLOWAY et al., 1987: 58). Other food plants are *Coffea* sp. (Rubiaceae),

*Piper* sp. (Piperaceae) (HOLLOWAY, 1986: 108); *Uncaria gambir* Roxb. (Rubiaceae), *Cocos nucifera* L., (HOLLOWAY et al., 1987: 57); *Camellia* sp., *Camellia sinensis* (L.) KUNTZE (Theaceae, W. Malaysia), *Coffea arabica* L. (Rubiaceae, Indonesia), *Elaeis* sp., and *Elaeis guineensis* JACQ. (Arecaceae, S.E. Asia) (ROBINSON et al., 2007).

The cocoon is dark brown, ovoid.

The following information about natural enemies of this species is given in HOLLOWAY et al., 1987: pl. 31. Pathogens: *Cordyceps* sp. (Fungi). The parasitoids: *Apanteles* sp. (Braconidae), *Brachymeria* sp. (Chalcididae), *Chrysis shanghaiensis* SMITH (Chrysididae); *Eurytoma* sp. (Eurytomidae), *Chlorocryptus purpuratus* (SMITH), *Stictopisthus* sp. (both Ichneumonidae). Predators: *Cantheconidea gaugleri* SCHNEIDER (Pentatomidae), *Sycanus* sp. (Reduviidae).

Comments. The species differs externally from other *Thosea* WALKER, 1855 by absence of the postmedial fascia in the forewings and is therefore similar to *Griseothosea* HOLLOWAY, 1986, but distinguished by more elongate forewings, larger discal spot, and the presence of an indistinct curved medial fascia (Colour plate 14, fig. 2). The male genitalia are also characteristic, with large gnathos, narrower valvae and S-shaped, broad saccular processes.

### ***Thosea bipartita* HERING, 1933**

Colour plate 14, figs 3, 4

*Thosea bipartita* HERING, 1933, *Stylops* 2 (9): 214. Type locality: "Siam". Holotype: ♂ (BMNH).

Reference. HOLLOWAY et al., 1987: 51 (southern Vietnam).

Material. 1 ♂, N. Vietnam, Cuc Phuong N.P., An Nghia commune, Lac Son district, Hoa Binh province: 20°22'11.1''N, 105°31'16.6''E, 34 m, 7.IX.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0081); 1 ♂, the same data but 6.IX.2008 (CAS, ex coll. IEBR, genitalia slide 0098); 1 ♂, C. Vietnam, Provinz Quang Tri, Kreis / Gemeinde Dackrong, Dorf Patung, 16°38.307'N, 106°50.865'E, Primärwald, 67 m, 11.VIII.2004, leg. S. LÖFFLER, P. SPONA & T. FREDERKING (MWM, genitalia slide 14049); 1 ♂, C. Vietnam, Quang Tri prov., Krong Klang City, 16°40'56''N, 106°53'50''E, 380 m, 12.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14587); 1 ♂, C. Vietnam, Kon Tum – thuộc dãy Sác Li, Sa Nhơn, huyện Sa Thầy, 14°27'N, 107°48'E, 637–691 m, 22.VI.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 25.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 37, in 96% alcohol); 4 ♂♂, C. Vietnam, Kon Tum – thuộc VQG Chư Mom Ray, Rò Koi, huyện Sa Thầy, 14°31'N, 107°38'E, 331–381 m, 24–25.VI.2008, leg. Tran Thieu Du (CAS, ex coll. IEBR, genitalia slide 0031); 2 ♂♂, the same data (EIBR); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 27.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0032); 1 ♂, the same data but 26.VII.2008 (CAS, ex coll. IEBR); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 26.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

Distribution. Thailand, central and southern Vietnam; north-eastern India, Bangladesh, Myanmar (HOLLOWAY et al., 1987: 51).

Biology. The specimens were collected in late June, late July, mid August, early and late September, mid November in altitudes of 34 to 691 m.

Food plants: *Cocos nucifera* L. (Arecaceae), *Coffea* sp. (Rubiaceae), *Erythrina* sp. (Fabaceae), *Gerbera* sp. (Asteraceae), *Ricinus communis* L. (Euphorbiaceae) (PHOLBOON, 1965; HOLLOWAY et al., 1987: 51); *Acacia auriculiformis* A. CUNN ex BENTH., *Acacia mangium* WILLD. (Fabaceae, Thailand), *Azadirachta indica* A. JUSS (Meliaceae, Thailand) (ROBINSON et al., 2007).

Comments. The species is similar to *Th. sinensis* (WALKER, 1855), *Th. unius* SOLOVYEV & WITT, **sp. n.**, but distinguished externally by weak discal spot, broad postmedial fascia, proximally marked by paler area (Colour plate 14, figs 3, 4). The specimens of *Th. bipartita* HERING, 1933 slightly differ externally. Two forms, a light and a dark one, can be found in Vietnam as illustrated.

In male genitalia, the triangular valvae and the absence of gnathos are diagnostic.

### ***Thosea vulturaria* SOLOVYEV & WITT, sp. n.**

Colour plate 14, fig. 5

Type material. Holotype: ♂, “N. Vietnam | Mt. Fan-si-pan W-Seite | Cha-pa (= Sapa) 1600–1800 m | 22.20°N 103.40°E Sek. Wald / | Kulturland 30.VI.–12.VII.1994 | leg. BRECHLIN & SCHINTLMEISTER”, “Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.063 | Museum WITT München” (MWM, genitalia slide 14063). Paratype: 1 ♀, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund. Wald, 1600–1800 m, IX.1994, leg. MONG (MWM, genitalia slide 14078).

Additional material. 1 ♂, N. Vietnam, Fan Si Pan, SaPa, Prov. Lao Cai, 2300 m, VIII.2006, leg. Thomas IHLE (CSI).

The forewing length is 16 mm and wingspan 34 mm in male, 20 and 41 mm in female. The male antennae are bipectinate. The ground colour is dark brown with well defined black discal spot and pale postmedial fascia in forewing (Colour plate 14, fig. 5). The hindwings are greyish brown.

The uncus of male genitalia with hook-shaped, large apical spur which has an apical position (Genitalia plate 7, fig. 9). The gnathos is well developed, long, strong, and almost straight distally. The valvae are elongate, strongly bifid distally, with parallel costa and dorsum. The costa of valva shows distally a well defined curvation. The lower distal part of valvae is slender, slightly curved and triangular. The processes of sacculus are very long, much longer than valva, slightly sinusoidal. The aedeagus is slender, tube-shaped, strongly curved proximally, slightly widened apically.

In female genitalia, the ovipositor lobes and boths pairs of apophyses are well developed (Genitalia plate 12, fig. 9). The ductus bursae is very long, strongly spiral. The corpus bursae is rounded. The signum is crescent, very large and narrow, strongly curved.

Diagnosis. The species is characterized by very obscure coloration which distinguishes it from other congeners; similar is just one species, *Th. styx* HOLLOWAY, 1987, known from India and Thailand, but in *Th. vulturaria* SOLOVYEV & WITT, **sp. n.**, the postmedial fascia in forewing is much paler, in male genitalia the costa of valva is distinctly curved distally at an angle of 60 degrees, the valvae are more elongate and narrow, the upper distal part of valvae is not triangular.

Distribution. Northern Vietnam.

Biology. The moths were caught in late June to mid July, August and in September in altitudes of 1600 to 2300 m.



Etymology. From Latin “vultur” – kite.

***Thosea unius* SOLOVYEV & WITT, sp. n.**

Colour plate 14, fig. 6

Type material. Holotype: ♂, “N. Vietnam | Mt. Fan-si-pan 16-1800 m near | Chapa 22°20'N 103°40'E | secondary forest August 1995 | leg. local collectors”, “Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.058 | Museum WITT München” (MWM, genitalia slide 14058).

The forewing length is 15 mm, wingspan is 33 mm. The females are unknown. The ground colour is greyish brown. The postmedial fascia of forewing is dark, slightly concave, broad; the discal spot is indistinct (Colour plate 14, fig. 6). The male antennae are bipectinate.

In the male genitalia, the uncus is long; finger-shaped, strongly curved, very slender distally (Genitalia plate 7, fig. 10). The gnathos is well developed, concave in lateral view. The valvae are broad, triangular. The processes of sacculus are short, as long as valva, crescent-shaped. The aedeagus is tube-shaped, curved proximally, slightly widened apically.

Diagnosis. Externally, the species is similar to many others congeners, but the absence of a discal spot, the ground colour with more reddish tints and features of male genitalia are diagnostic. The male genitalia is similar to *Th. austrocaerulea* HOLLOWAY, 1987 and *Th. boreocaerulea* HOLLOWAY, 1987, but distinguished by curved gnathos, triangular valvae, and crescent-shaped processes of sacculus.

Distribution. Northern Vietnam.

Biology. The single male was collected in August in altitudes of 1600 to 1800 m.

Etymology. Unius (from Latin) – the single, in connection with single specimen in type series.

**? *Thosea unifascia* WALKER, 1855**

*Thosea unifascia* WALKER, 1855, List Specimens lepid. Insects Colln. Br. Mus. **5**: 1068. Type locality: “East Indies”. Holotype: ♀ (BMNH).

*Parasa Loesa* MOORE, 1859, Cat. Lep. Mus. Eaet-India Company **1**: 417. Type locality: “Java”. Lectotype: ♂ (BMNH), **here designated**.

Reference. DE JOANNIS, 1929: 572 (Vietnam: Cho ganh).

Distribution. Northern Vietnam (?), Java, Bali (HOLLOWAY et al., 1987: 44).

Biology. The larvae are light greyish green, the dorsal band is yellowish or white, sometimes containing two small yellow spots encircled with reddish brown. Food plants: *Musa* sp. (Musaceae), *Phaseolus lunatus* L., *Cinchona* sp. (Rubiaceae), *Erythrina lithosperma* MIQ. (Fabaceae), *Mangifera foetida* LOUR. (Anacardiaceae), *Psidium guajava* L. (Myrtaceae), *Camellia* sp. (Theaceae) (PIEPERS, SNELLEN 1900); *Citrus* sp. (Rutaceae), *Cordia* sp. (Boraginaceae), *Phoenix* sp. (Arecaceae), *Punica granatum* L. (Lythraceae), *Shorea robusta* ROTH. (Dipterocarpaceae) (HORSFIELD, MOORE, 1859: 417).

Comments. The presence of the species in Vietnam cannot be confirmed by us; no

material is at our disposal. The record from Vietnam is probably erroneous.

Nomenclatorial notes. The species *Thosea unifascia* WALKER was described after a single male type mentioned in the original description, but the only type specimen is a female which was found in BMNH with the type labels of WALKER. The sex of the typical specimen seems to have been misidentified by WALKER.

The type series of *Parasa loesa* MOORE, 1859 includes a male, a female and a pupa from Java (from Dr. HORSFIELD's Collection). The lectotype: ♂ (BMNH), here designated, with following labels: 1 – round, with red frame, with black printed text “Type | H.T.”; 2 – rectangle, yellowish, handwritten by MOORE with black ink “*Parasa | Loesa*. ♀. MOORE”; 3 – rectangle, blue, with black printed text “~~Netodontidae~~ | genitalia slide | No.” and handwritten with black ink “Limaç | No. 200 ♂”; 4 – rectangle, yellowish with printed text “60:15 | E.I.C.”; 5 – rectangle, yellowish, black inked “5.”. The lectotype is supplied with a lectotype label. The syntypical female in ZMHB is designated as paralectotype.

### ***Thosea* sp.**

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), 22.20°N 103.40°E Cha-pa, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 14060).

Distribution. Northern Vietnam.

Biology. The single male was collected in 10 June – 6 July in the altitude of 1600–1800 m.

Comments. The species is unidentified so far, but it is similar to *Th. borneensis* HERING, 1931. Additional material is needed for exact species identification.

### ***Quasithosea* HOLLOWAY, 1987**

Slug and nettle caterpillars: 66. Type species: *Thosea sythoffi* SNELLEN, 1900, by original designation.

Externally, the moths of *Quasithosea* HOLLOWAY, 1987 can be confused with *Thosea* WALKER, 1855. They have a distinct postmedial fascia which is usually more medially positioned and bordered proximally by a pale zone; a small discal spot is present in males (Colour plate 14, fig. 7). The morphology of the caterpillar is more suitable for genus identification. The larva is of *Thosea*-type, but scoli of segments A2–A4, A6 and A7 are very small; the sides have triangular depressions between the scoli foundations (Colour plate 20, figs 4–5).

The genus is known from India to Java and consists of 2 species: *Q. sythoffi* (SNELLEN, 1900) (= *Iragoides pseudocurvistriga* HERING, 1933) and *Q. obliquistriga* (HERING, 1931) (= *Thosea obliquistriga* HERING, 1931).

### ***Quasithosea obliquistriga* (HERING, 1931)**

Colour plate 14, Fig. 7; Colour plate 20, figs 4–5

*Thosea obliquistriga* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 713, Taf. 89 b. Type

locality: “Cochinchina” [S. Vietnam]. Lectotype: ♂ (ZMHB), **here designated**.

*Thosea curvistriga* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 713, Taf. 89 b. Type locality: “Mahn-tsi-shan” [southern China]. Holotype: ♂ (ZMHB).

Reference. HOLLOWAY et al., 1987: 68 (northern Vietnam).

Material. 1 ♂, lectotype, S. Vietnam, Conchinchina (ZMHB); 1 ♂, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM, genitalia slide 14072); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 134); 1L, N. Vietnam, Hanoi, Botanical Garden, 6.V.2009, on banana, leg. V. ZOLOTUHIN (pupation at 7–9.V.2009, ex cocoon 6.VI.2009, ♀) (CAS, in 96% alcohol, VZ-LIMAC 188); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0025); 1 ♂, the same data (CAS, AS-LIMAC 94, in 96% alcohol); 1 ♂, C. Vietnam, Son Thọ, Vũ Quang; Hà Tĩnh, 18°25'N, 105°24'E, 50–100 m, 24.V.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0004); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 117, in 96% alcohol).

Distribution. Southern China, Vietnam.

Biology. The specimens were collected in May, early June, late September, early October in altitudes of 50 to 352 m.

The dorsal stripe is entire, narrow, pale blue, bordered by a darker green area (Colour plate 20, figs 4–5). Segment T2 with lateral dark blue spot.

Food plants: *Rhapis* sp., *Chrysalidocarpus* sp. (Arecaceae), *Gardenia* sp. (Rubiaceae) (HOLLOWAY et al., 1987: 68); *Citrus maxima* (BURM.) MERR. (Rutaceae, Hong Kong) (ROBINSON et al., 2007), *Musa* sp. (Musaceae) (Vietnam).

Nomenclatorial notes. The type-series of *Thosea obliquistriga* HERING, 1931 consists of a couple kept in ZMHB. The lectotype: male with following labels: 1 – rectangle, yellow with upper and lower dotted lines and black printed text “Zool. Mus. | Berlin”; 2 – rectangle, red with black printed text “Typus”; 3 – rectangled, yellowish, with black printed text “det. Mart. HERING” and black inked by M. HERING “*Thosea* ♂-Type | *obliquistriga* m.”. The lectotype is supplied with an additional red lectotype label with corresponding text. The single syntypical female is designated as paralectotype.

Remark. The male genitalia are figured (Genitalia plate 8, fig. 1).

### ***Griseothosea* HOLLOWAY, 1986**

Moths of Borneo **1**: 123. Type species: *Nyssia cruda* WALKER, 1862, by original designation.

Medium sized moths with greyish brown ground colour. The forewing patterns are characteristic, with a black discal spot and three darker diffuse fasciae at right angle to dorsum of forewing; the external fascia is entire, zig-zag; usually forewing is darker basally (Colour plate 14, figs 8–9; Colour plate 17, fig. 12).

The genus includes 5 species: *G. cruda* (WALKER, 1862), *G. filamentata* HOLLOWAY, 1986, *G. mixta* (SNELLEN, 1900), *G. fasciata* (MOORE, 1888), and *G. kinabaluensis* HOLLOWAY, 1986 and is known from India to Sundaland.

Externally, the genus is similar to members of *Aphendala* WALKER, 1865 and *Thosea lutea* HEYLAERTS, 1890, but *Griseothosea* HOLLOWAY, 1986 is easily distinguished externally by the presence of a discal spot and three smooth fasciae at right angle to dorsum of forewing.

***Griseothosea fasciata* (MOORE, 1888)** Colour plate 14, fig. 8; Colour plate 17, fig. 12  
*Aphendala fasciata* MOORE, 1888, Proc. zool. Soc. Lond. **1888**: 403. Type locality: “Dharmasala”.  
Holotype: ♂ (BMNH).

Reference. DE JOANNIS, 1929: 572 (Phu tho; as *Thosea fasciata* Moore).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46°E, 2400 m, 8–29.V.1993, NN, leg. SINJAEV & SIMONOV (MWM, genitalia slide 9886); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 23.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 37, in 96% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 54, in 96% alcohol); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0080); 1 ♂, the same data (CAS, AS-LIMAC 129, in 96% alcohol); 1 ♂, N. Vietnam, BaBe, Lake N.P., Prov., Bac Kan, 300 m, VIII.2008, leg. HOA Binh Nguyen (CSI).

Distribution. East India, Nepal, southern and western China (Sichuan, Tien-mu-shan, Yunnan), Taiwan, Thailand, and northern Vietnam.

Biology. The specimens were collected in May, August, early and mid October in altitudes of 34 to 2400 m.

***Griseothosea sordeo* SOLOVYEV & WITT, sp. n.** Colour plate 14, fig. 9

Type material. Holotype: ♂, “N-Vietnam, 16–1800 m | Mt. Fan-si-pan (West) | Cha-pa, Sek Wald / cult | (22.20'N 103.40'E) | IV.1995 leg. SINJAEV | & Einheim. Sammler | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.097 | Museum WITT München” (MWM, genitalia slide 14097).

Additional material. 1 ♂, Thailand, Changwat Chiang Mai, 16 km NW of Mae Ai, 1550 m, 15.VI.1998, leg. István Soós & Attila Szabó (MWM, genitalia slide 14100).

The forewing length is 10 mm and wingspan is 23 mm. The male antennae are bipectinate almost till the apex with medium sized rami. The foretibia has a white patch. The ground colour is greyish brown. The forewings have a black discal spot and three well defined fasciae: antemedial, short postmedial and external (Colour plate 14, fig. 9). The antemedial fascia is slightly concave; the basal zone of forewing which it borders is very obscure. The postmedial fascia is short, transversal, in a central position of the forewing. The external fascia is concave, beginning from tornus to apex of forewing. The hindwings are slightly darker than the ground colour.

Female unknown.

The uncus of male genitalia is equilateral triangular in back view with apical narrow parallel-sided part which bears the apical spur (Genitalia plate 8, fig. 2). The gnathos is

well-developed, slender. The valvae are elongate, triangular. The juxta is flattened, large, with two long horn-shaped flattened lateral processes and a tooth-shaped medial one. The aedeagus is weak, C-shaped, as long as valvae, with apical long and slender S-shaped spur of 1/3.5 times the length of of the aedeagus.

Diagnosis. Externally, the species is similar to *G. mixta* (SNELLEN, 1900) but differs in the position of fasciae of the forewings. The antemedial fascia is entire (in *G. mixta* only from dorsum to central zone); the postmedial fascia is located slightly distal of discal spot and very smooth (in *G. mixta* under the discal spot, not so smooth); the external fascia is running from tornus to apex (in *G. mixta* from tornus to 4/5 of costa). The male genitalia are more diagnostic and characterized by the absence of the subcostal flaps and are similar to those of *G. fasciata* (MOORE, 1888). The male genitalia of *G. sordeo* SOLOVYEV & WITT, **sp. n.** differ from those of *G. fasciata* (MOORE) by the juxta with three apical processes (the lateral is very long, horn-shaped, flattened), uncus of equilateral triangle shape in back view with apical narrow parallel-sided part which bears an apical spur; weak aedeagus of the length of the valva, C-shaped.

Biology. The single Vietnamese male was caught in April in the altitude of 1600–1800 m.

Distribution. Northern Thailand, northern Vietnam.

Etymology. Sordeo (in Latin) – dirty, dingy, in connection with external view.

### ***Avatara* SOLOVYEV & WITT, gen. n.**

Type species: *Avatara onyx* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus includes medium sized moths with forewing length 11–14 mm and wingspan 23–29 mm in males. The females are unknown. The male antennae are bipectinate with various long rami. The ground color is brown. The forewings with streak-like discal spot, medial and external fasciae (Colour plate 14, figs 10–11). The external fascia is slightly concave at right angle to dorsum. The medial fascia is concave, running from 1/3 of forewing's dorsum to costa near external fascia. The basal zone of forewings bordered by the medial fascia is very obscure. The hindwings are usually paler than the forewings. The forewings with R5 branched from the basis of R3+R4 near discal vein.

In male genitalia, the uncus is single with well developed apical spur (Genitalia plate 8, figs 3–6). The gnathos is strong, slightly flattened distally. The valva is elongate without saccular processes. The juxta is flattened. The aedeagus is tube-shaped, slender, with characteristic apical spur of various shape.

Externally, the genus is similar to *Aphendala* WALKER, 1865, but the medial fascia is gradually curved and arises from external fascia. In the male genitalia, the valvae and uncus are undivided.

The genus consists of 4 species so far: *A. plethoneura* (HERING, 1933), **comb. n.**, *A. interrupta* (HERING, 1931), **comb. n.** (both transferred from *Thosea* WALKER, 1855), *A. lineofusca* (WU & FANG, 2008), **comb. n.** (transferred from *Iragoides* HERING, 1931), *A. pseudocana* (WU & FANG, 2008), **comb. n.** (transferred from *Aphendala* WALKER, 1865), *A. onyx* SOLOVYEV & WITT, **sp. n.** and *A. sicilis* SOLOVYEV & WITT, **sp. n.**

Etymology. Avatara – in Hindu philosophy is the “descent” or incarnation of a divine

being or the supreme being (God) onto planet Earth.

***Avatara onyx* SOLOVYEV & WITT, sp. n.**

Colour plate 14, fig. 10

Type material. Holotype: ♂, “Nord-Vietnam | Mt. Fan-si-pan, Cha-pa | 1600–1800 m | 10.Juni–6.Juli 1994 | leg. SINAJEV”, “Genitalpräparat | Heterocera | Nr. 14.066 | Museum WITT München” (MWM, genitalia slide 14066). Paratypes: 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINAJEV & einh. Samml. (MWM, genitalia slide 14098); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994, leg. SINAJEV & einh. Sammler (MWM, genitalia slide 14103); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20°, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINAJEV & einh. Sammler (MWM, genitalia slide 14101); 1 ♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald, 1600–1800 m, 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM, genitalia slide 14121).

Additional material. 1 ♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 20–27.IV.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14102).

The forewing length is 12–14 mm, the wingspan is 25–29 mm in males. The male antennae are bipectinate with long rami. The ratio of the width of the flagellar segment and the length of the rami in medial part of antenna is 1 : 2.0–2.5. The forewings and thorax are dark brown with distinct medial and external fasciae (Colour plate 14, fig. 10). The abdomen and hindwings are grayish brown.

The male genitalia have a simple, in back view triangular uncus with well developed apical spur (Genitalia plate 8, fig. 3). The gnathos is single, slightly flattened, and spatulate distally. The valvae are elongate, narrow. The aedeagus is tube-shaped, slightly curved, 1.5–1.8 times as long as valva, dorsally with small apical spur (Genitalia plate 8, fig. 5).

Diagnosis. Externally, the species is distinguished from *A. sicilis* SOLOVYEV & WITT, **sp. n.** by more obscure coloration and longer rami in male antennae. In male genitalia, *A. onyx* SOLOVYEV & WITT, **sp. n.** has a longer aedeagus, with simple and small apical spur dorsally.

Distribution. Northern and southern Vietnam.

Biology. The specimens were collected in late April, mid June to mid July in altitudes of 1500 to 1800 m.

Etymology. The species is named after the onyx stone in connection with similarity in coloration.

***Avatara sicilis* SOLOVYEV & WITT, sp. n.**

Colour plate 14, fig. 11

Type material. Holotype: ♂, “N. Vietnam, 16–1800 m | Mt. Fan-si-pan (West) | Cha-pa, Sek. Wald | (22.20°N 103.40°E) | 10.–30.X.1994 leg. | SINAJEV & einh. Saml | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.104 | Museum WITT München” (MWM, genitalia slide 14104). Paratypes: 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slides 9856, 14105, 14124); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINAJEV & Einheim Sammler (MWM,

genitalia slide 14123); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, primär. Urwald, 1525 m, 7.10.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 14106).

The forewing length is 11–12 mm, wingspan is 23–26 mm in males. The male antennae are bipectate with very short rami: the ratio of the width of the flagellar segment and the length of the rami in medial part of antenna is 1 : 1. The ground colour is brown. The medial fascia of forewing is much darker, the basal part of the wing bordered by this fascia is darker (Colour plate 14, fig. 11). The discal spot is streak-like. The hindwings are greyish brown.

In male genitalia, the uncus is simple, with short apical spur (Genitalia plate 8, fig. 4). The gnathos is well developed, flattened distally. The valvae are elongate, narrow. The juxta is flattened. The aedeagus is tube-shaped, slender, half as long as valvae, laterally with apical, strongly sclerotized, rounded plate, bearing a small, slightly curved spur (Genitalia plate 8, fig. 6).

Diagnosis. The species differs from *A. onyx* SOLOVYEV & WITT, **sp. n.** externally by paler ground coloration and shorter rami in male antennae. The species is similar to *A. plethoneura* (HERING, 1933), **comb. n.**, known from north-western China, but the aedeagus of the new species is slender, longer, with apical rounded plate bearing the smallest and slightly curved spur.

Distribution. Northern Vietnam (Mt. Fan-si-pan).

Biology. The moths were collected in late April, May, early July and October in altitudes of 1525 to 2400 m.

Etymology. Sicilis (from Latin) – crescent, in connection with forewing pattern.

### ***Pseudidonauton* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 705. Type species: *Pseudidonauton admirabile* HERING, 1931, by original designation.

The genus includes small-sized moths with forewing length 6–9 mm, without strong sexual dimorphism. The male antennae are filiform. The ground colour is pale brown. The forewing is almost uniform with clearly defined basal brown area; the apical brown area can be recognizable in some species (Colour plate 8, figs 21–22; Colour plate 17, fig. 13).

The uncus is broad, flattened, with lateral long processes (Genitalia plate 8, figs 8–9). The juxta is flattened. The transtilla medially with large, strongly sclerotized plate which is apically bifid. The gnathos is reduced to a small tape and probably functionally replaced by this plate of transtilla. The valvae are specifically divided in two parts, the lower has a long spine.

The larvae are semiovoid, almost without processes (HOLLOWAY, 1986: 127).

*Pseudidonauton* consists now of 6 species: *P. admirabile* HERING, 1931, *P. bhaga* SWINHOE, 1901, *P. nigribasis* HAMPSON, 1905, *P. siamica* SOLOVYEV, 2009, *P. chihpyh* SOLOVYEV, 2009, and *P. vexa* SOLOVYEV, 2009. The genus ranges from India to Sudaland.

***Pseudidonauton siamica* SOLOVYEV, 2009**

Colour plate 8, fig. 21; Colour plate 17, fig. 13

*Pseudidonauton siamica* SOLOVYEV, 2009, Tijdschr. Ent. **152**: 180. Type locality: “Thailand, Changwat Chiang Mai, Mt. Doi Inthanon, NP, 2300 m”. Holotype: ♂ (MWM).

Material. 1 ♂, paratype, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tuong Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (paratype, CAS, genitalia slide 0009); 1 ♂, paratype, the same data (CAS, AS-LIMAC 69, in 96% alcohol); 1 ♂, paratype, C. Vietnam, Pu Mat N.P., Phuc Son vill., Anh Son distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (paratype, CAS, genitalia slide 0056).

Distribution. Northern Thailand and central Vietnam.

Diagnosis. Similar to *P. vexa* SOLOVYEV, 2009, but distinguished by a more prominent dark medial fascia in the forewing (Colour plate 8, fig. 21).

Biology. The specimens were collected in early October in the altitude of 119–180 m.

Remark. The male genitalia are figured (Genitalia plate 8, fig. 8).

***Pseudidonauton vexa* SOLOVYEV, 2009**

Colour plate 8, fig. 22

*Pseudidonauton vexa* SOLOVYEV, 2009, Tijdschr. Ent. **152**: 182(in print). Type locality: “C. Vietnam, Cuc Phuong N.P., Bông Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°17'35.9''N, 105°40'03.4''E, 300±20 m”. Holotype: ♂ (MWM).

Material. 2 ♂♂, holotype & paratype, N. Vietnam, Cuc Phuong N.P., Bông Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°17'35.9''N, 105°40'03.4''E, 300±20 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (MWM, genitalia slide 0066); 1 ♂, paratype, the same data but 7–8.X.2008 (CAS, AS-LIMAC 56, in 96% alcohol); 1 ♂, paratype, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0067); 3 ♂♂, 1 ♀, paratypes, C. Vietnam, Pu Mat N.P., Yen Khe, Thac Kem waterfall, Con Cuong distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26–28.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slides 0055, 0063, 0064 (♂), 0010 (♀)); 1 ♂, paratype, the same data but 27–28.IX.2008 (CAS, AS-LIMAC 99, in 96% alcohol); 1 ♂, paratype, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0065).

Distribution. Northern and central Vietnam, south-eastern Thailand.

Biology. The moths were collected in late September to early October in altitudes of 280 to 380 m.

Comments. The species is similar to other congeners externally but well recognizable in the male genitalia. It is distinguished externally from Vietnamese *P. siamica* SOLOVYEV by smoother, less prominent, shaded medial forewing fascia (Colour plate 8, fig. 22), in male genitalia by double, very broad uncus, double, not fish-tailed transtilla, longer valvae without basal costal large pad, shorter saccular spine, and by the presence of large cornuti in the vesica (Genitalia plate 8, fig. 9).



## ***Setora* WALKER, 1855**

List Specimens lepid. Insects Colln Br. Mus. **5**: 978 (key), 1069. Type species: *Setora nitens* WALKER, 1855, by monotypy.

The moths are medium-sized with bronzy brownish coloration. The forewings have concave dark medial fascia and slightly curved postmedial fascia with large external silky-brown spot of variable shape (Colour plate 14, figs 13–15).

The genus includes 10 species *S. nitens* WALKER, 1855 (= *Nyssia rudis* WALKER, 1862), *S. postornata* (HAMPSON, 1900) (= *Setora sinensis* MOORE, 1877, = *Thosea postornata* ab. *Hampsoni* STRAND, 1916), *S. baibarana* (MATSUMURA, 1931) (= *S. mongolica* HERING, 1933, = *S. suberecta kwangtungensis* HERING, 1931, = *S. suberecta* HERING, 1931), *S. cupreiplaga* (WALKER, 1862), *S. cupreistriga* (WALKER, 1862), *S. fletcheri* HOLLOWAY, 1987, *S. kelapae* HOLLOWAY, 1987, *S. longifurca* HOLLOWAY, 1987, *S. tagalog* HOLLOWAY, 1987, and *S. tamsi* HERING, 1931, and is known from India to Sulawesi and the Philippines.

### ***Setora postornata* (HAMPSON, 1900)**

(Colour plate 14, fig. 13)

*Setora sinensis* MOORE, 1877, Ann. Mag. nat. Hist. (4) **20**: 93. Type locality: “Shanghai”. Holotype: ♂ (BMNH).

*Thosea postornata* HAMPSON, 1900, J. Bombay nat. Hist. Soc. **13**: 231 (replacement name for *Setora sinensis* MOORE, a junior homonym within *Thosea* WALKER, 1855)

*Thosea postornata* ab. *Hampsoni* STRAND, 1916, Arch. Naturg. 82 A, **2**: 89. Type locality: “Sikkim”. Holotype: ♂ (BMNH).

Reference. DE JOANNIS, 1929: 572 (Hanoi; La pho; Cho ganh; as *Thosea postornata* HMPSON.).

Material. 1 ♂, N. Vietnam, Tam Dao, 75 km N Hanoi, 900 m, VI.1986, leg. J. RAZOWSKI (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 60 NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINAJEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 950 m, IV.1995, leg. V. SINAJEV (MWM, genitalia slides 13972, 13996); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 139); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7–8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 44, in 96% alcohol); 1 ♂, the same data (CAS); 3 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 2 ♂♂, C. Vietnam, Sơn Thọ, Vũ Quang; Hà Tĩnh, 18°25'N, 105°24'E, 50–100 m, 24.V.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR); 2 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Cuông distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 26.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 75, 103, in 96% alcohol); 1 ♂, C. Vietnam, Nghệ An province, Thanh Mỹ, Thanh Chương, 18°48'07.8''N; 105°13'42.5''E, 80–120 m, 26.V.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, C. Vietnam, Thừa Thiên Huế Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 26–27.IV.2009, leg. V. ZOLOTUHIN (CAS); 3 ♂♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 25–27.VII.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 1.VIII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. India, Nepal, southern China, Taiwan, Vietnam.

Biology. The specimens were collected in April to June, late July to early August, late September to early October in altitudes of 40 to 1200 m.

Two generations per year in Zhejiang (FANG et al., 2001).

Food plants: *Platanus acerifolia* (AIT.) WILLD., *P. orientalis* L. and *P. occidentalis* L. (Zhejiang, Platanaceae) (FANG et al., 2001); *Castanea sativa* MILLER (Fagaceae) (ROBINSON et al., 2007).

Comments. The species is similar to *S. baibarana* (MATSUMURA, 1931), but distinguished by isoscales-triangular silky brown spot in tornal area of forewings.

Nomenclatorial note. The name *Setora sinensis* MOORE is not valid under the article 59.3 (“Secondary homonyms replaced before 1961 but no longer considered congeneric”) of the International Code of Zoological Nomenclature (fourth edition, 1999), because of homonymy with *Thosea sinensis* (WALKER, 1855). Both taxa were placed into the genus *Thosea* WALKER, 1855 by HAMPSON and by several other scientists (VAN EECKE, 1925: 11; KAWADA, 1930: 240; MATSUMURA, 1931: 110) and the name *sinensis* MOORE, as a secondary homonym, was replaced by *postornata* HAMPSON. At present, the species *Thosea sinensis* (WALKER) and *Setora postornata* (HAMPSON) are placed in different genera, but the substitute name *postornata* HAMPSON is still in use (VAN EECKE, 1925: 11; DE JOANNIS, 1929: 572, KAWADA, 1930: 240; MATSUMURA, 1931: 110; HERING, 1931: 710; 1933: 205; SUN, 1985: 147; FANG et al., 2001: 173; JIU et al., 2007: 396) and consequently still valid.

### ***Setora baibarana* (MATSUMURA, 1931)**

Colour plate 14, fig. 14

*Thosea baibarana* MATSUMURA, 1931, Ins. Mats.: 107, pl. II, fig. 18. Type locality: “Formosa, Baibara (Horisha)”. Holotype: ♀ (EIHU).

*Setora mongolica* HERING, 1933, in SEITZ, Gross-Schmett. Erde., Suppl. 2: 205, Taf. 15 h. Type locality: “Ta-t sien-lu”. Holotype: ♀ (ZMHB).

*Setora suberecta* HERING, 1931, in SEITZ, Gross-Schmett. Erde 10: 710, Taf. 90 f, g. Type locality: “Ht. Birmanie”. Holotype: ♂ (ZMHB).

*Setora suberecta kwangtungensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde 10: 710. Type locality: “Liu-ping (Kwang-tung)”. Holotype: ♀ (ZMHB).

Reference. DE JOANNIS, 1929: 573 (An chau; Hoang su phi; as *Setora nitens* WLK., 1855).

Material. 4 ♂♂, 2 ♀♀, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 21.34° N, 105.20° E, 950 m, IV.1995, leg. V. SINJAEV (MWM); 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, 950 m, 23–31.III.1995 (MWM, genitalia slide 14028); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, SINJAEV & einh. Saml. (MWM); 5 ♂♂, 3 ♀♀, the same data, but IV.1995 (MWM, genitalia slide 14022); 1 ♂, the same data, but IX.1994 (Sekundärwald), leg. MONG (MWM); 1 ♂, the same data, but 30.VI–12.VII.1994, leg. BRECHLIN / SCHINTLMEISTER (MWM, genitalia slide 14024); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 49, in 96% alcohol); 12 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM, genitalia slides 13981, 14000); 11 ♂♂, N. Vietnam, Mts Fan-si-pan, N-side, Chapa,

22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll. (MWM, genitalia slide 13971); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 13977); 1 ♂, N. Vietnam / Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22.15° N, 103.45° E, 2400 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM, genitalia slide 14023); 2 ♂♂, N. Vietnam, Mai-chau, Urwald, 40 km SE Moc-chau, 20.50° N, 104.50° E, 1400 m, 7–15.IV.1995, leg. SINJAEV & Einh. Samml. (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 7–8.X.2008 (CAS, AS-LIMAC 50, in 96% alcohol); 4 ♂♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, C. Vietnam, Kon Tum, 6.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 9, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 118, in 96% alcohol); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (IEBR).

Distribution. China (Shaanxi, Sichuan, Jiangxi, Hainan, Wuysan), Taiwan, Vietnam; north-eastern India, northern Myanmar (HOLLOWAY et al., 1987: 83).

Biology. The moths were collected in March, April, May, mid June to early July, September to early October and late November in altitudes of 40 to 2400 m.

Comments. The species differs from *S. postornata* (HAMPSON, 1900) by large, oblongate, dentate, silky-brown, tornal spot of forewing, not isoscaly triangular (Colour plate 14, fig. 14). The male genitalia are figured (Genitalia plate 8, fig. 10).

DE JOANNIS (1929: 573) noted *S. nitens* WALKER, 1855 from Vietnam but presence of this species here is not proved by us, and it is ranged to western Malaysia, Singapore, Java and Sumatra (HOLLOWAY et al., 1987: 77). We suppose that *S. nitens* WALKER was confused with *S. baibarana* (MATSUMURA, 1931).

### ***Setora* cf. *fletcheri* HOLLOWAY, 1987**

Colour plate 14, fig. 15

*Setora fletcheri* HOLLOWAY, 1987, Slug and Nettle Caterpillars: 82, pl. 21, 13. Type locality: “[Burma] Rangoon”. Holotype: ♂ (BMNH).

Material. 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0053); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 159, 160, genitalia slides 133, 134); 1 ♂, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0030); 1 ♂, S. Vietnam, Ninh Thuan prov., Bac Ai Distr., Phuoc Binh vill. & NP, secondary forest, 200 m, 11–14.XI.2008, leg. TRAN Thieu Du (MWM).

Distribution. Myanmar, Bangladesh, India (Assam) (HOLLOWAY et al., 1987: 82), western and southern China, Thailand, central and southern Vietnam.

Biology. The specimens were collected in late April, late June, late September and mid November on the altitudes of 40–663 m.

Parasites: *Spinaria spinator* (GUÉRIN-MÉNEVILLE) (Braconidae, Thailand) (HOLLOWAY et al., 1987: 82).

Comments. The more additional material from India, Myanmar and Vietnam is needed for exact species identification. The male genitalia of a southern Vietnamese specimen are figured (Genitalia plate 8, fig. 11).

### ***Praesetora* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 672 (key), 711. Type species: *Setora divergens* MOORE, 1879, by original designation.

A genus with medium sized moths with reddish brown coloration. The forewings with dark straight medial diagonal fascia and black postmedial fascia running from the tornus to 4/5 of the costa; these fasciae are almost crossed near costa (Colour plate 14, figs 16–18). The medial fascia is sometimes indistinct.

The genus includes 5 species: *P. divergens* (MOORE, 1879) (= *Aphendala divaricata* MOORE, 1884), *P. albitermina* HERING, 1931, *P. kwangtungensis* HERING, 1931, *P. monogramma* HERING, 1933, *P. kinabalua* (HOLLOWAY, 1976), and ranged from India to Philippines and Sulawesi. The synonymy of *Praesetora divergens* (MOORE, 1879) and *Aphendala divaricata* MOORE, 1884 is already mentioned in STRAND, 1925: 11 and HERING, 1931: 711. The type of latest taxon is not examined (in coll. India Museum, Calcutta); but the synonymy is evident in connection with features of adults given in original description (“upper side pae purplish brownish-ochreous”).

The species *Thosea erectistriga* HERING, 1931 from Sri Lanka is also related to this genus probably.

The male genitalia of *Praesetora monogramma* HERING, 1933 are not examined yet; the exact systematic position of this species is not clear so far.

### ***Praesetora divergens* (MOORE, 1879)**

Colour plate 14, fig. 16

*Setora divergens* MOORE, 1879, Lep. Atkins.: 75, t. 3, f. 23. Type-locality: “Darjiling”. Lectotype: ♂ (ZMHB), **here designated**.

*Aphendala divaricata* MOORE, 1884, Trans. Ent. Soc. Lond.: 376. Type-locality: “Silcuri, Cachar”. Type (-s): ♀ (collection of India Museum, Calcutta).

Reference. DE JOANNIS, 1929: 572 (An chau; as *Thosea divergens* MOORE, 1879); ROBINSON et al., 2007 (Vietnam).

Material. 1 ♂, C. Vietnam, Plato TayNguyen, Mt. NgocLinh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINIAEV & AFONIN (MWM, genitalia slide 14271); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 171, genitalia slide 139); 1 ♂, C. Vietnam, the same data but, 26–27.IV.2009, leg. V. ZOLOTUHIN (CAS, genitalia slide 0145).

Distribution. India, Central Vietnam.

Biology. The moths were collected in late April and mid to late August in altitudes of 663 to 1400 m.

The larvae are of the nettle-type, similar to *Cania* WALKER, 1855 and *Thosea* WALKER,

1855.

The food plants are *Camellia sinensis* (L.) Kuntze (Theaceae, India), and *Coffea* (Rubiaceae, Vietnam) (ROBINSON et al., 2007).

Nomenclatorial notes. The species *Setora divergens* MOORE, 1879 was described after a syntypical male and female, kept in coll. STAUDINGER (ZMHB). Both specimens were examined. The lectotype: ♂, here designated, with the following labels: 1 – rectangle, yellowish, with black inked, handwritten by MOORE text “*Setora* || *divergens*. ♂. || (type) MOORE”; 2 – rectangle, with black printed text “Coll. || STAUDINGER”; 3 – square, red, with black printed text “Origin.”; 4 – rectangle, yellowish, with black printed text “coll. ATKINSON” and handwritten with black ink “MOORE”; 5 – rectangle, yellow, with handwritten with black ink text “Darjiling || N69”. The other syntypical specimen, a female, kept in ZMHB, is designated as a paralectotype. The designated lectotype and paralectotype are supplied with additional labels with corresponding text.

***Praesetora kwangtungensis* HERING, 1931**

Colour plate 14, fig. 17

*Praesetora divergens kwangtungensis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 711, Taf. 88 i. Type locality: “Lung-tao-shan”. Holotype: ♂ (ZMHB).

Material. 6 ♂♂, 1 ♀, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, BaBe, Lake N.P., Prov. Cao Bang Phuc, 300 m, V.2008, leg. Thomas IHLE (CSI); 1 ♂, Vietnam, Quang Tri Prov., Huong Hoa Nat. Res., near Cup vill., 16°56'15''N, 106°34'52''E, 400 m, 7–10.XI.2007, leg. G. CSORBA (MWM, genitalia slide 14585); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 166, 170, genital slides 135, 138); 2 ♂♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 26.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slides 0051, 0087).

Distribution. Southern China, Vietnam.

Biology. The specimens were collected in late April, May, late July and early November in altitudes of 60 to 663 m.

Remark. The male genitalia are figured (Genitalia plate 9, fig. 1).

***Praesetora confusa* SOLOVYEV & WITT, sp. n.**

Colour plate 14, fig. 18

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N.P. | Yên Khê, Thác Kèm waterfall | Con Công distr., Nghe An prov. | 18°57'54.4''N, 104°48'09.6''E | 320±32 m 28.IX.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (MWM, genitalia slide 0052). Paratypes: 2 ♂♂, the same data but 25–27.IX.2008 (CAS, AS-LIMAC 24, AS-LIMAC 32, in 96% alcohol).

Additional material. 1 ♂, N.W. India, Sukna, 300 m, 2.VIII.1990, leg. W. THOMAS (MWM, genitalia slide 12752).

The species is brown with forewing length 16 mm and wingspan 37 mm. The male antennae are broadly bipectinate in basal third. The forewings with shaded and concave transverse medial and distal fasciae (Colour plate 14, fig. 18). The hindwings are grayish brown.

In male genitalia, the uncus is simple, with strong, acute apical spur (Genitalia plate 9, fig. 2). The gnathos is strong, curved proximally. The valvae are elongate, rounded distally, with parallel costa and lower margin. The juxta is fattened, with two lateral tufts of hair dorsally. The aedeagus is large, curved proximally, 1.3–1.4 times as long as the valvae, with apical flattened widened process.

Female is unknown.

Diagnosis. The species differs from other congeners by large size, broader and darker forewing fascia, and brown coloration without pinkish tints. In male genitalia, the anellus does not contain long lateral spurs; massive gnathos, elongate valvae with parallel margins, and aedeagus with apically widened plate are diagnostic.

Distribution. Central Vietnam, north-western India.

Biology. The moths were collected in late September in altitudes of 288 to 352 m.

Etymology. From Latin “confusus” – not clear, confuse; in connection with external similarity with other congeners.

### ***Pretas* SOLOVYEV & WITT, gen. n.**

Type species: *Aphendala furcillata* WU & FANG, 2008, **here designated**.

The genus includes middle-sized moths. The ground colour is brown. The forewings with black small discal spot and dark, smooth, slightly concave, transverse, postmedial fascia running from approximately 2/3 of costal margin to tornus (Colour plate 14, fig. 12). The male antennae have short rami.

In male genitalia, the uncus is simple, with well developed subapical spur (Genitalia plate 9, fig. 3). The gnathos is strong, single, slightly flattened. The valvae are elongate, without saccular processes. The juxta is flattened. The aedeagus is slender, C-shaped, with large apical ventral and dorsal spurs.

The female genitalia with well developed ovipositor lobes and slender apophyses. The ductus bursae is long and spiral. The corpus bursae is rounded with crescent signum.

The moths are similar to members of *Praesetora* HERING, 1931, but distinguished externally by the presence of a discal spot and concave, smooth postmedial fascia in forewing, the rami of male antennae are almost uniform. In male genitalia the juxta is flattened, without distinct lateral processes. The male genitalia are distinguished from *Praesetora* HERING by presence of two apical spurs.

The genus includes 2 species: *Pretas furcillata* (WU & FANG, 2008), **comb. n.** (transferred from *Aphendala* WALKER, 1865) and *Pretas separata* (HERING, 1931), **comb. n.** (transferred from *Thosea* WALKER, 1855) so far, but two more new species from Cambodia and Thailand will be described soon. Dr. Shun-Sheng WU and Dr. Cheng-Lai FANG (2008b: 694) suppose that the species *P. furcillata* (WU & FANG, 2008) is closely related with *Praesetora monogramma* HERING, 1933 and placed both to *Aphendala* WALKER, 1865. We do not confirm this close relationship and place the latter species back to *Praesetora* HERING, 1931 until the males will be found.

Etymology. “Pretas” – in Hindu mythology, the spirit of dead people that inhabit Preta-Loka, the realm of tortured spirits.

***Pretas furcillata* (WU & FANG, 2008), comb. n.**

Colour plate 14, fig. 12

*Aphendala furcillata* WU & FANG, 2008, Acta zootax. sinica **33** (4): 693, figs 8, 16.

Material. 7 ♂♂, N. Vietnam, Mts Fan-si-pan, N-side, Chapa, 22°17'N, 103°44'E, 1600 m, 20–30.XI.1995, leg. SINJAEV & loc. coll., Museum WITT (MWM, genitalia slide 14036); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sekund.-Wald (Kult.), 1600–1800 m, XI.1994, leg. SINJAEV & Einh. Slr. (MWM, genitalia slide 14006); 1 ♂, the same data, but IV.1995, leg. SINJAEV & Einh. Slr. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Cha-pa), 22.15° N, 103.46° E, 2400 m, NN, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14037); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol).

Distribution. Southern China (Sichuan, Yunnan), northern Thailand, northern Vietnam.

Biology. The specimens were collected in April, May and November in altitudes of 1500 to 2400 m.

Comments. The species is similar to *P. separata* (HERING, 1931) known from India, but distinguished externally by the presence of well expressed discal spot and by the location of the postmedial fascia: in *P. furcillata* (WU & FANG, 2008) it arises from 2/3 of costa, in *P. separata* (HERING, 1931) approximately from 3/4 of costa in males (Colour plate 14, fig. 12); in male genitalia apically broad valvae, not apically acute (but apically widened) uncus with two apical processes of equal size are diagnostic (Genitalia plate 9, fig. 3).

***Birhamoides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 703. Type species: *Hyblaea junctura* WALKER, 1865, by original designation.

The genus is externally characterized by medium sized, reddish-brown moths. The forewing pattern is characteristic, includes transverse antemedial fascia from 1/2 costa to 1/3 dorsum; the basal area bordered by this fascia is darker than the rest of the forewing; the external fascia is shaded, and borders the lighter apical part of the forewing; the medial fascia is shaded, perpendicular to dorsum (Colour plate 14, fig. 19). The genus includes 9 species: *B. junctura* (WALKER, 1865), *B. circumatus* (SNELLEN, 1879) (= *Birthama divergens* WEST, 1932), *B. bilineata* (SWINHOE, 1892), *B. plagioscia* (TURNER, 1902) (= *B. aspidophora* (LOWER, 1902)), *B. angustipennis* HERING, 1931, *B. extincta* HERING, 1931, *B. ramosa* HERING, 1931, *B. buruana* WEST, 1937; *Miresa fuscidorsalis* HERING, 1931 is transferred to *Birhamoides fuscidorsalis* (HERING, 1931), **comb. n.** The genus ranges from India and Myanmar to the Philippines and Australia and needs revision.

***Birhamoides junctura* (WALKER, 1865)**

Colour plate 14, fig. 19

*Hyblaea junctura* WALKER, 1865, List Specimens lepid. Insects Colln. Br. Mus. **33**: 857. Type locality: “Cambodia”. Lectotype: ♂ (HDOU), **here designated**.

Material. 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 26–27.IV.2009, leg. V. ZOLOTUHIN (CAS); 1 ♂, S. Vietnam, Dong Nai province, Vinh An afforestation yard, Phu Ly commune, Vinh Cuu district: 11°24'42.4''N, 107°06'19.5''E, 133±20 m, 27.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR, genitalia slide 0005); 1 ♂, the same data but 29.VII.2008 (CAS, genitalia slide 0006); 1 ♂, S. Vietnam, Dong Nai

province, Cuc Miên Nam, Phú Lý, Viñh Cù, 11°16'20.6''N; 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (CAS, ex coll. IEBR).

Distribution. India, Andaman Islands, Myanmar, Cambodia, Thailand, central and southern Vietnam, Bali, Borneo (HOLLOWAY, 1986: 113), Sumatra, Java (HOLLOWAY et al., 1987: 88).

Biology. The specimens were collected in late April, late July in altitudes of 40 to 663 m. The larva is semiovoid, parallel-sided, without processes and spines, covered with a series of longitudinal white lines, and intermingled with numerous small blue spots. Pupation takes place between leaves in a grey-white cocoon. Host-plant: *Mangifera* sp. (HOLLOWAY, 1986: 113), *Mangifera indica* L. (Anacardiaceae, Indonesia) (ROBINSON & al., 2007).

Nomenclatorial notes. The number of male type-specimens was not mentioned in the original description, but only one male was found in HDOU. The lectotype: male with following labels: 1 – white with black frame, rectangle, with printed black text “TYPE | HOPE DEPT. OXFORD” and handwritten with black ink “LEP: No 715 | *Hyblaea junctura* WALKER”; 2 – yellowish, rectangle, with black printed text “1125”; 3 – yellowish, rectangle, with black printed text “*Hyblaea junctura*”; 4 – yellowish, rectangle, with black printed text “Mouhot” and handwritten by brown (faded black) “Pack”; 5 – blue square without any text. This specimen is supplied with an additional lectotype label with corresponding text.

### ***Birathamula* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 704. Type species: *Contheyla chara* SWINHOE, 1901, by original designation.

The genus includes middle-sized moths. The male antennae are bipectinate. The forewings with characteristic distal, ovoid, dark or pale area; medially with white oblique fasciae or without them, but with broad dark fasciae or without both (Colour plate 14, fig. 20–21). The discal spot in forewings usually is well defined. The species show a great variability in appearance but undoubtedly they form a monophyletic group. The male genitalia with sinuous uncus in lateral view with well developed subapical or apical spur, juxta divided in two lateral parts; usually these lateral parts have apical spines.

The larva belongs to the nettle-type with the same configuration of dorsolateral scoli as in *Setothosea* HOLLOWAY, 1986.

The genus consists of 5 species: *B. chara* (SWINHOE, 1901), *B. diffusa* (HAMPSON, 1898), *B. rufa* (WILEMAN, 1915), **comb. n.** (= *Thosea grandis* HERING, 1931, **syn. n.**) (transferred from *Thosea* WALKER, 1855), *B. nigroapicalis* HERING, 1931, and *B. altichara* HOLLOWAY, 1986.

### ***Birathamula rufa* (WILEMAN, 1915), comb. n.**

Colour plate 14, figs 20–21

*Thosea rufa* WILEMAN, 1915, Entomologist **48**: 19. Type locality: “Kanshirei” [Taiwan]. Lectotype: ♂ (BMNH), **here designated**.

*Thosea grandis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 714, **syn. n.** Type locality: “Khasis”. Holotype: ♂ (BMNH).



Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM); 7 ♂♂, the same data, but 2400 m (MWM, genitalia slides 14115, 14129); 1 ♂, the same data, but 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler (MWM, genitalia slide 14130); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.15° N, 103.45° E, primär. Nebelwald, 2000 m, 5.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slides 12748, 14113); 1 ♂, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 22°3'N, 105°5'E, 300 m, 22.II–5.III.1997, leg. G. CSORBA (MWM, genitalia slide 14110); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 2 ♂♂, the same data, but 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slides 14114, 14126); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Chapa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1995, leg. local collectors (MWM, genitalia slide 14127); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, Sek. Wald, 1600–1800 m, 10.VI–6.VII.1994 (MWM, genitalia slide 14131); 1 ♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 2 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 46, in 96% alcohol); 1 ♂, the same data but 12.V.2006 (CAS, VZ-LIMAC 68, in 96% alcohol); 3 ♂♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kèm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 91, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 30.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 112, in 96% alcohol).

Distribution. India, southern China (Yunnan, Hainan), Taiwan, northern Thailand, northern and central Vietnam.

Biology. The specimens were collected in late February, early March, late April to early July and late September in altitudes of 119 to 2400 m.

Food plant: *Rhodomyrtus tomentosa* (AITON) HASSK. (Myrtaceae, Hong Kong, as for *Thosea rufa* WILEMAN, 1915) (ROBINSON et al., 2007).

Comments. Externally, the species is variable in tints of coloration (Colour plate 14, fig. 20–21). So, the Vietnamese specimens have obscurer coloration and large dark areas near the white medial fascia and discal spot. However, the variation in this features is not discrete and probably depends on ecological factors.

The species *Thosea rufa* WILEMAN, 1915 is transferred to *Birthamula* HERING, 1931 here because of the similarity in external appearance and male and female genitalia with the type species. In *Th. rufa* WILEMAN, the distal ovoid spot and the discal dark spot in forewing are diagnostic; in male genitalia, the uncus is sinuous in lateral view; the juxta is divided in two lateral parts which have apical spines. Also the shape of gnathos, aedeagus and valvae, and female genitalia conform to the ground plan of the genus, but the corpus bursae of female genitalia lacks the signum. A strong difference is the presence of medial fascia in forewings which is white and bordered by dark areas.

The synonymy of *Birthamula rufa* (WILEMAN, 1915) and *Thosea grandis* HERING, 1931 is established here based on the unique external view, and characters of male genitalia.

Nomenclatorial notes. The species *Thosea rufa* WILEMAN, 1915 was described after two males. The lectotype: ♂ (BMNH) here designated, with labels: 1 – rounded with red

frame and black printed text “Type”; 2 – rectangle, yellowish, with black printed text “Kanshirei, | ♂ Formosa. | 1,000 ft. | A.E. WILEMAN.” and black inked “10.IV.1908”; 3 – square, yellowish with red inked “1260 Ft”; 4 – rectangle, yellowish with black printed text “WILEMAN Coll. | B.M. 1929–261.”; 5 – large, rectangle, white with bluish band near lower margin and handwritten by A.E. WILEMAN, by black, ink text “*Thosea rufa*, sp. n. | Type ♂”.

### ***Matsumurides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 723. Type species: *Hyphormoides okinawanus* MATSUMURA, 1931, by monotypy.

= *Hyphormoides* MATSUMURA, 1931

Insecta matsum. **5**: 104. Type species: *Hyphormoides okinawanus* MATSUMURA, 1931, by monotypy.

= *Allothosea* HERING, 1938, **syn. n.**

Mitt. dt. ent. Ges. **8**: 63. Type species: *Thosea bisuroides* HERING, 1931, by original designation.

The genus includes small, reddish brown moths. The forewings with dark discal spot, and curved, smoothed external and medial fascia. The latest is very concave, running from 1/3 of dorsum to 2/3 of forewing costa (Colour plate 15, fig. 1). The basal zone of forewing bordered by this fascia is usually dark than distal zone. The external fascia is almost paralleled to outer margin of forewings. The male antennae are broadly bipectinate in basal half. The females are slightly larger than males, with more rounded forewings. The male genitalia are not modified but the vesica has a group of hair-like cornuti of equal size. The Bornean species *M. lola* (SWINHOE) and *M. montana* (HOLLOWAY) with very large apical cornutus in aedeagus.

In female genitalia the ductus bursae is long and spiral, rounded corpus bursae and crescent-shaped signum.

The genus *Matsumurides* HERING, 1931 was established as replacement name for *Hyphormoides* MATSUMURA, 1931 (homonym of *Hyphormoides* STRAND, 1914 in Limacodidae). The synonymy of *Matsumurides* HERING, 1931 and *Allothosea* HERING, 1938 is established here on a base of their external similarity, and the similarity of male and female genitalia of both generotypes. They have unique forewing pattern as described above. The male genitalia conform to the limacodid ground plan with slender, apically widened aedeagus; the vesica bears a group of hair-like cornuti.

The genus *Neiraga* MATSUMURA, 1931 is close to *Matsumurides* HERING, 1931, but differs in male genitalia: the vesica is without cornuti, the juxta is hairy. However, only the type specimen could be examined, and additional material is needed for the identification of the exact systematic position of *Neiraga* MATSUMURA, 1931.

The genus includes 6 species: *M. okinawanus* (MATSUMURA, 1931) (= *Praesetora japonica* KAWAZOE & OGATA, 1963), *M. bisuroides* (HERING, 1931), **comb. n.** (transferred from *Thosea* WALKER, 1855), *M. lateritia* (HERING, 1931), **comb. n.** (= *Allothosea basistriga* HERING, 1937), *M. lola* (SWINHOE, 1904), **comb. n.** (= *Thosea plumbea* HERING, 1931, = *Miresa orgyioides* VAN EECKE, 1929), *M. montana* (HOLLOWAY, 1986), **comb. n.** (all transferred from *Allothosea* HERING, 1938), *M. thaumasta* (HERING, 1933), **comb. n.** (transferred from *Iragoides* HERING, 1931), and is known from Japan, China, Taiwan, Vietnam, Thailand, Peninsular Malaysia, and

Sundaland.

***Matsumurides thaumasta* (HERING, 1933), comb. n.**

Colour plate 15, fig. 1

*Iragoides thaumasta* HERING, 1933, in SEITZ, Gross-Schmett. Erde, Suppl. 2: 204, 15 i. Type locality: “Nanking, Prov. Kiang-su”. Holotype: ♂ (ZMHB).

Material. 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 53, in 96% alcohol); 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14316 MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17° N, 103.44° E, prim. Urwald, 1600 m, 20–30.IV.1995, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14318).

Distribution. Southern China, northern Vietnam.

Biology. The specimens were collected in late April, mid May, mid June to early July in altitudes of 1600 to 1800 m.

***Birthama* WALKER, 1862**

J. Proc. Linn. Soc. (Zool.) 6: 175. Type species: *Birthama obliqua* WALKER, 1862, by monotypy. = *Nirma* VAN EECKE, 1929

Zool. Meded. 12: 385. Type species: *Nirma psychidalis* VAN EECKE, 1929, by original designation. The genus is characterized by sexual dimorphism; the females are much larger with more distinct fasciation consisting of an oblique, straight band and a stepped or zig-zag submarginal band (Colour plate 15, figs 2–3). The ground colour is reddish. In male genitalia, the two movable ventral and dorsal apical spurs in the aedeagus are diagnostic. The larvae are of the smooth-type.

The genus consists of 2 species *Birthama rubicunda* (WALKER, 1862) (= *Birthama obliqua* WALKER, 1862, = *Miresa acallis* SWINHOE, 1906, = *Nirma psychidalis* VAN EECKE, 1929) and *Birthama roseum* (DE JOANNIS, 1930), and ranges from Vietnam to Borneo and Sumatra.

***Birthama roseum* (DE JOANNIS, 1930)**

Colour plate 15, figs 2–3

*Ceratonema roseum* DE JOANNIS, 1930, Annl. Soc. ent. Fr. 99: 578. Type locality: “An chau” [Vietnam]. Holotype: ♀ (MNHN).

Material. 1 ♀, holotype, An Chau, Tonkin (MNHN); 1 ♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14229); 1 ♂, C. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 9.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS).

Distribution. Northern and central Vietnam.

Biology. The specimens were taken in the beginning of October, mid November to the beginning of December in altitudes of 320 to 400 m.

Comment. The species *B. roseum* (de JOANNIS, 1930) is similar to *B. rubicunda* (WALKER, 1862) externally and in male genitalia and is a probable synonym, but

additional material is necessary to solve this problem.

### ***Mambarona* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 685. Type species: *Susica congrua* WALKER, 1862, by original designation.

The genus is characterized by sexual dimorphism; the females are larger, with more distinct forewing pattern (Colour plate 15, figs 4–5). The ground colour is yellowish brown with an oblique, straight band and zig-zag submarginal fascia. The male genitalia with bifid gnathos and sickle-shaped, apically acute aedeagus.

HOLLOWAY (1986: 121) established the synonymy of the genera *Birthama* WALKER, 1862 and *Mambarona* HERING, 1931 based on external features and the presence of sexual dimorphism. We do not accept this decision. The males of *Mambarona* HERING, 1931 have more yellowish coloration with not so elongate forewings without concave costa, and without reddish tints in coloration. The male genitalia of *Mambarona* HERING, 1931 have bifid gnathos and sickle-shaped, apically acute aedeagus; in *Birthama* WALKER, 1862 the aedeagus is single, not bifid; the aedeagus is almost straight, curved basally, with two (ventral and dorsal) movable apical spurs.

The genus includes 6 species: *M. congrua* (WALKER, 1862) (= *Setora simplex* SNELLEN, 1900), *M. obliquifascia* (HAMPSON, 1893) (= *Miresa canescens* HAMPSON, 1896), *M. timorensis* HERING, 1931, *M. florensis* HERING, 1931, *M. irrorata* (WEST, 1932), **comb. n.**, and *Mambarona pelochroa* (WEST, 1932). The species *Birthama dyscrita* WEST, 1932 could not be examined, but is probably associated with this genus. The genus is known from India to the Philippines.

The genus needs revision. The species *M. irrorata* (WEST, 1932) is transferred to the present genus from *Thosea* WALKER, 1855, but HOLLOWAY (1986: 111) includes it in *Praesetora* HERING, 1931.

### ***Mambarona congrua* (WALKER, 1862)**

Colour plate 15, figs 4–5

*Susica congrua* WALKER, 1862, J. Linn. Soc. Lond. Zool. **6**: 172. Type locality: [Sarawak]. Lectotype: ♂ (HDOU), **here designated**.

*Setora simplex* SNELLEN, 1900, Tijdschr. Ent. **43**: 64. Type locality: “les montagnes du Preanger ou Prajangan (ouest de l’île, à environ 1300 mètres”. Lectotype: ♂ (RMNH), **here designated**.

Material. 1 ♂, Vietnam mer., Kon Tum Province, Dac Glei, 15°07’N, 107°42’E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 14228); 1 ♂, C. Vietnam, Dồi sân bay, La bơ B; Ký hiệu, Chà Val, Huyện Nam Giang, Quảng Nam, 15°35’N, 107°28’E, 546–549 m, 28.VI.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04’N, 107°29’E, 24–25.IV 2009, leg. V. ZOLOTUHIN (CAS).

Distribution. Thailand, Cambodia, central Vietnam, Malaysia, Sundaland; Sulawesi, Lombok (?), Flores (?), Timor (?) (HOLLOWAY, 1986: 123).

Biology. The moths were collected in late April, late June and beginning of August in altitudes of 546 to 700 m.

Food plants: *Coffea liberica* W. BULL ex HIERN (Rubiaceae, western Malaysia; as for

*Birthama congrua* (WALKER, 1862)), *Erythrina* sp. (Fabaceae, western Malaysia; as for *Birthama congrua* (WALKER, 1862)) (ROBINSON et al. 2007).

Comments. *M. obliquifascia* (HAMPSON, 1893) (= *Miresa canescens* HAMPSON, 1896) is a probable synonym of *Mambarona congrua* (WALKER, 1862).

Nomenclatorial notes. *Susica congrua* WALKER, 1862 was described with an unknown number of males in the type-series. Only one male was found in HDOU; it is designated as lectotype and bears the following labels: 1 – rectangle, white with black frame, with black printed text “TYPE | HOPE DEPT. OXFORD” and handwritten with black ink “Lep.” No 697 | *Susica congrua* | WALKER”; 2 – rectangle, yellowish, with handwritten by brown (faded black) ink “congrua”; 3 – rectangle, yellow, with handwritten text with black ink “Natada | congrua – WLK.”; 4 – rounded, yellow, with black inked “SAR.”; 5 – rectangle, yellow with black printed “1097”; 6 – trapezoid, blue, without text. The lectotype is supplied with an additional lectotype label with corresponding text.

The species *Setora simplex* SNELLEN, 1900 was described after 3 males from “les montagnes du Preanger ou Prajangan (ouest de l’île), à environ 1300 mètres” and only one male was found in RMNH which is designated as lectotype here. The specimen bears the following labels: 1 – rectangle, blue, handwritten with black ink “TYPE SNELLEN”; 2 – rectangle, yellowish, brown (faded black) inked “orig. der. afb.” [hardly readable]; 3 – rectangle, yellowish, with black printed text “Java occ | Preanger | 1886 ♂”; 4 – rectangle, yellowish, with black frame, with printed black text “Museum Leiden. | Det. :” and handwritten by SNELLEN with black ink “*Setora* | *simplex* | SNELL. | SNL. ♂”. The lectotype is supplied with additional lectotype label with corresponding text.

### ***Vanlangia* SOLOVYEV & WITT, gen. n.**

Type species: *Thosea castanea* WILEMAN, 1911, here designated.

The genus includes only 2 species so far: *Vanlangia castanea* (WILEMAN, 1911), **comb. n.** (= *Thosea taiwana* WILEMAN, 1916, = *Iragoides melli* HERING, 1931, **syn. n.**) and *Vanlangia uniformis* (HERING, 1931), **comb. n.**; it is known from China, Taiwan, and northern Vietnam. These species were associated with *Thosea* WALKER, 1855, *Iragoides* HERING, 1931 and *Phlossa* WALKER, 1858 until now, but they are well distinguished externally and in male and female genitalia.

The moths are small-sized with forewing length 10–14 mm and wingspan 21–29 mm (Colour plate 15, fig. 6; Colour plate 17, figs 14–15). The ground colour is bronzy-brown. The male antennae are bipectinate with short rami. The forewings with pale medial fascia with darker border and greyish distal semicircular field near apex. The forewing with vein R5 stalked with R3+R4; the medial stem is well developed, not branched distally.

In male genitalia, the uncus is single, with subapical spur (Genitalia plate 8, fig. 7). The gnathos is well developed. The valvae are elongate without saccular processes. The juxta is flattened. The aedeagus is tube-shaped without any apical processes, in *V. uniformis* (HERING) it is widened apically.

In female genitalia, the ovipositor lobes are well developed; the apophyses are slender (Genitalia plate 12, fig. 10). The ductus bursae is slightly spiralled. The ductus bursae is rounded. The singum is wide with well defined medial interruption.

Generally the included species differ from each other in the apical widening of the aedeagus and in the position of the singum in the corpus bursae.

The new genus differs from *Thosea* WALKER, 1855 externally and by the absence of tape-like processes of the sacculus. It is well discriminated from *Phlossa* WALKER, 1858 externally, the aedeagus is slender, without apical finger-shaped process. The new genus is distinguished from *Iragoides* HERING, 1931 by the presence of a silky bronze pattern and in the male genitalia by the weak, not distally pointed aedeagus. In female genitalia, the signum of corpus bursae has a medial depression.

The synonymy of *Vanlangia castanea* (WILEMAN, 1911) and *Iragoides melli* HERING, 1931 is established because of the similarity of their external view, male genitalia and type localities. Both types are examined.

Etymology. *Vanlangia* – the ancient name of Vietnam, the country of “tattoo people”.

### ***Vanlangia uniformis* (HERING, 1931), comb. n.**

Colour plate 15, fig. 6; Colour plate 17, figs 14–15

*Iragoides uniformis* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 710. Type locality: “Lung-tao-shan”. Holotype: ♂ (ZMHB).

Material. 1 ♂, Tonkin (BMNH, genitalia slide 1372); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek.Wald / cult, 1600–1800 m, IV.1995, leg. SINJAEV & Einheim. Sammler (MWM, genitalia slides 14154, 14160, 14190, 14188); 1 ♂, the same data, but XI.1994 (MWM, genitalia slide 14153); 1 ♂, the same data, but 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14212); 1 ♂, the same data, but 30.VI–12.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 14209); 10 ♂♂, 2 ♀♀, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim Sammler (MWM, genitalia slides 14161 (♀), 14211 (♂)); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 22.17°, 103.44° E, prim. Urwald, 1600 m, 20–30.IV.1995, leg. SINJAEV & einh. Sammler (MWM, genitalia slide 14143); 1 ♂, Vietnam, Quang Tri prov., Krong Klang City, 16°40'56''N, 106°53'50''E, 380 m, 12.XI.2007, leg. G. CSORBA (MWM); 5 ♂♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 7.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 3 ♂♂, the same data but 8.X.2008 (CAS); 2 ♂♂, the same data but 7–8.X.2008 (CAS, AS-LIMAC 52, in 96% alcohol); 4 ♂♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 12.X.2008 (CAS); 1 ♂, N. Vietnam, Cuc Phuong N.P., prov. Ninh Binh, 20°14.579'N, 105°43.071'E, 140 m (CSI).

Distribution. China (Zhejiang, Hainan, Guangxi, Jiangxi, Guangdong), northern Vietnam.

Biology. The specimens were collected in April, mid June to mid July, early and mid October and November in altitudes of 34 to 1800 m.

Remark. Male and female genitalia are figured (Genitalia plate 8, fig. 7; Genitalia plate 12, fig. 10).

? *Vanlangia castanea* (WILEMAN, 1911), comb. n.

*Thosea castanea* WILEMAN, 1911, Entomologist **44**: 204. Type locality: “Kanshirei (1000 ft.)”. Lectotype: ♂ (BMNH), here designated.

*Thosea taiwana* WILEMAN, 1916, Entomologist **49**: 98. Type locality: “Kanshirei (1000 feet)”. Holotype: ♂ (BMNH).

*Iragoides melli* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 710, syn. n. Type locality: “Kwang-tung, Mahn-tsi-shan”. Lectotype: ♂ (ZMHB), here designated.

Reference. LEMÉE, 1950: 43 (Backan; as *Thosea melli*).

Distribution. China (Jiangxi, Guangdong), Taiwan.

Comments. Not found in Vietnam, the record of LEMÉE, 1950 cannot be confirmed so far.

Nomenclatorial notes. The type series of *Thosea castanea* WILEMAN, 1911 includes 2 males from Kanshirei (1000 ft.), taken in 24.VII.1906 but only one male was found in BMNH. The lectotype male (BMNH), here designated, with following labels: 1 – round, with red frame and black printed “Type”; 2 – rectangle, yellowish, with black printed text “Kanshirei, | Formosa. | 1,000 ft. | A.E. WILEMAN.”, handwritten with black ink “24.VII.1906.” and red inked “♂”; 3 – rectangle, yellowish with handwritten red text “738 F”; 4 – rectangle, yellowish, with black printed text “WILEMAN Coll. | B.M. 1929-261.”; 5 – rectangle, yellowish, with handwritten by A.E. WILEMAN text with black ink “*Thosea* | *castanea* | Type ♂ sp. n.”; 6 – rectangle, blue, with black printed text “genitalia slide | No.” and handwritten with black ink “Limac. | 348 ♂”. The specimen is supplied with additional lectotype label with corresponding text.

*Iragoides melli* HERING, 1931 was described after a couple collected by Dr. MELL from Mahn-tsi-shan that were collected by Dr. MELL. The lectotype: ♂ (ZMHB), here designated, with following labels: 1 – rectangle, red, with black printed text “Typus”; 2 – rectangle, yellow, with black printed text “Mahn tsi shan | Kwang tung | MELL S.”; 3 – rectangle, yellowish, with black printed text “140142”; 4 – rectangle, yellowish with black printed text “det. Mart. HERING” and handwritten by M. HERING with black ink “*Iragoides* | *melli* m. ♂-Type”; 5 – rectangle tracing-paper with black inked “M. 1424”; 6 – large, rectangle, yellow, with handwritten text by pencil “7.VIII.15”. The lectotype is supplied with additional red lectotype label with corresponding text.

***Phlossa* WALKER, 1858**

List Specimens lepid. Insects Colln Br. Mus. **15**: 1673. Type species: *Phlossa fimbriares* WALKER, 1858, by monotypy. *Phlossa fimbriares* WALKER, 1858 is a junior subjective synonym of *Phlossa conjuncta* (WALKER, 1855).

Externally, the genus is defined by unique forewing pattern (Colour plate 15, fig. 7). The forewings have antemedial fascia, blackish discal spot and sinusoidal, broad, bronzy brown external fascia with one proximal and 2 distal teeth. The basal area of forewings bordered by the antemedial fascia is obscure, bronzy brown. The male genitalia are simple with undivided uncus and gnathos, elongate valvae without saccular processes, the aedeagus with apical finger-shaped caudad directed process. The larvae are of the nettle-type (Colour plate 18, fig. 11).

The genus is monotypical so far, known from India, Myanmar, China, Korea, Japan,

Taiwan, northern Thailand, Laos, and northern Vietnam. The species *Phlossa jianningana* YANG & JIANG, 1992 is also attributed to *Phlossa* WALKER, 1858, but the holotype is not examined and the exact systematic position is not clear so far.

***Phlossa conjuncta* (WALKER, 1855)** Colour plate 15, fig. 7; Colour plate 18, fig. 11

*Limacodes* ? *conjuncta* WALKER, 1855, List Specimens lepid. Insects Colln Br. Mus. **5**: 1150. Type locality: "North China". Holotype: ♂ (BMNH).

*Phlossa fimbriares* WALKER, 1858, List Specimens lepid. Insects Colln Br. Mus. **15**: 1673. Type locality: [China]. Type: ♀ (HDOU).

References. CANDÈZE, 1927: 124 (Vietnam: Haut-Tonkin; Laokay; as *Natada conjuncta* WALK.); DE JOANNIS, 1929: 573 (Hanoi; Ganh; Phu tho; An chau, été; Lao kay; as *Natada conjuncta* WALK., 1855).

Material. 7 ♂♂, 1 ♀, N. Vietnam, Yen-Bai, An-chy, 21°42'N, 104°18'E, primary forest, V.1996 (MWM, genitalia slides 14139, 14162 (♂), 14253 (♀)); 1 ♂, N.Vietnam, Mt. Fan-si-pan (West), Cha-pa, 22.20° N, 103.40° E, Sek. Wald / Kul., 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Saml. (MWM, genitalia slide 14147); 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14201); 8 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, in 70% alcohol; VZ-LIMAC 60, 61, 64, 66, 70, 79 in 96% alcohol); 1 ♂, N. Vietnam, Nhur Xuân, Thanh Hóa, 19°32'31.7''N, 105°22'38.3''E, 140–160 m, 29.V.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, N. Vietnam, Tan Long, ca. 20 km südöstl. von Thai Nguyen, prov., Thai Nguyen, 150 m, leg. HOA Binh Nguyen, VIII.2008 (CSI); 1 ♂, N. Vietnam, BaBe, Lake N.P., Prov. Cao Bang Phuc, 300 m, VIII.2008, leg. Thomas IHLE (CSI); 2 ♂♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 140); 2 ♂♂, the same data (CAS); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 1.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57'54.4''N, 104°48'09.6''E, 320±32 m, 27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data but 25.IX.2008 (CAS, AS-LIMAC 33, in 96% alcohol); 3 ♂♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 29–30.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 85, 111 in 96% alcohol); 1 ♂, C. Vietnam, Cuc Phuong N.P., Bong – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC 49, in 96% alcohol); 1 ♂, C. Vietnam, Nghệ An province, Thanh Mỹ, Thanh Chương, 18°48'07.8''N, 105°13'42.5''E, 80–120 m, 26.V.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 164); 1 ♂, C. Vietnam, Plato Tay Nguyen, Mt. Ngoc Linh, 15°02'N, 107°59'E, 900–1400 m, 10–25.VIII.1996, leg. SINJAEV & AFONIN (CVS); 1 ♂, 1 ♀, S. Vietnam, Đông Nai province, Cuc Miên Nam, Phú Lý, Vĩnh Cửu, 11°16'20.6''N, 106°16'20.6''E; 60±20 m, 31.VII.2008, leg. TRAN Thieu Du (IEBR); 1 ♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 20–27.IV.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14142).

Distribution. India, Myanmar, Korea, Japan, China, Taiwan, northern Thailand, Vietnam, Laos.



Biology. The specimens were taken in late April, May, mid June to early July, late July, August, late September, and early October in altitudes of 40 to 1800 m.

The larva is of the nettle-type, yellowish green with orange scoli and dorsal blue band (Colour plate 18, fig. 11) (LEWVANICH, 2001: 95, fig. 61, 62). Food plant: *Triadica sebifera* (L.) SMAL (as *Stillingia sebifera* (L.) MICHX) (Euphorbiaceae) (DE JOANNIS, 1929: 573).

Comments. The specimens from Japan, Korea, China, Taiwan, and China (Shaanxi, Guangdong, Sichuan, Jiangxi) usually have a longer apical spur in comparison to specimens from southern China (Yunnan), northern Thailand, Laos, Vietnam, but the character is not discrete and a distinct breakline is not found.

### ***Iragoides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 709. Type species: *Miresa crispa* SWINHOE, 1890, by original designation.

The genus includes 2 species: *I. crispa* (SWINHOE, 1889) and *I. elongata* HERING, 1931, and is known from India, Nepal, Myanmar, China, northern Thailand and northern Vietnam. The moths are medium-sized with reddish-brown coloration. The forewings are elongate, with acute apex (Colour plate 15, figs 8, 9). The male genitalia are simple, with well developed uncus and gnathos, elongate valvae without saccular processes, large flattened juxta and aedeagus apically acute.

#### ***Iragoides crispa* (SWINHOE, 1889)**

Colour plate 15, fig. 8

*Miresa crispa* SWINHOE, 1889, Proc. zool. Soc. Lond.: 409, pl. XLIII, fig. 4. Type locality: "Darjeeling". Holotype: ♂ (BMNH).

Material. 12 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14194 (♀)); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.17° N, 103.44° E, Primärurwald, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 9 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, SINJAEV & einh. Sammler (MWM); 1 ♂, the same data, but IV.1995 (MWM); 1 ♂, the same data, but IV.1994, leg. SINJAEV & loc. coll. (MWM); 1 ♂, the same data, but 10.VI–6.VII.1994, leg. SCHINTLMEISTER & einh. Sammler (MWM); 1 ♂, the same data, but 30.VI–12.VII.1994, leg. SCHINTLMEISTER (MWM); 2 ♂♂, the same data, but leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slides 14180, 14181); 1 ♂, the same data, but 1700 m, VI.1994, leg. SINJAEV & einheim. Sammler (MWM).

Distribution. India, Nepal, China (Shaanxi), northern Vietnam.

Biology. The specimens were collected in April, May, June to mid July in altitudes of 1600 to 2400 m.

#### ***Iragoides elongata* HERING, 1931**

Colour plate 15, fig. 9

*Iragoides elongata* HERING, 1931, in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 709. Type locality: "Hkamkawn, 400 Fuß (Ober-Burma)". Holotype: ♂ (BMNH).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan near Chapa, 22°20'N, 103°40'E, secondary forest,

1600–1800 m, V.1995, leg. local collectors (MWM, genitalia slide 14193); 7 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 2 ♂♂, C. Vietnam, Kon Tum, 11.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 58, 59, in 96% alcohol); 1 ♂, C. Vietnam, Thua Thien Hue Prov., A Ruang, 663 m, 16°04'N, 107°29'E, 23.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 149, genitalia slide 131); 2 ♂♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 177, 180, genitalia slide 140).

Distribution. Myanmar, northern and central Vietnam.

Biology. The specimens were taken in late April, May and mid June in altitudes of 663 to 1800 m.

### ***Pseudiragoides* SOLOVYEV & WITT, gen. n.**

Type species: *Pseudiragoides spadix* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus is erected for the type species only so far. The moths are medium-sized, unicolourous, with brownish ground colour (Colour plate 15, fig. 10). The male antennae are bipectinate with short rami, 2/3 as long as the costa of the forewings. The forewings are elongate, with a slightly concave costa, with ill-defined, very smooth dark discal spot. In forewing, the vein R5 stalked with the stem of R3+R4; the medial stem is developed, not branched distally.

In male genitalia, the uncus is simple, small with large apical spur (Genitalia plate 9, fig. 4). The gnathos is well developed, becoming apically gradually slender. The valvae are elongate with small saccular processes with strong apical spurs. The transtillae are massive. The juxta is flattened. The aedeagus is slender, with two caudad directed tape-shaped apical processes.

Female is unknown.

The genus is similar externally to *Iragoides* HERING, 1931, but the apex of the forewings is not acute, the male antennae are longer, the coloration is unicolourous. In male genitalia, valvae with saccular processes, which have apical spurs; aedeagus with two apical processes.

The probable apomorphies of the genus are well defined sacculus of male valvae with short saccular process bearing apical large spurs, aedeagus apically with two caudad directed tape-shaped processes.

The genus is named in connection with its external similarity to *Iragoides* HERING, 1931.

### ***Pseudiragoides spadix* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 10

Type material. Holotype: ♂, “N-Vietnam 1600 m, Mt. Fan-si-pan (Nord) | Cha-pa, Primärwald | 22.17°N 103.44°E | 25.–30.III.1995 | leg. V. SINJAEV & | A. SCHINTLMEISTER | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.177 | Museum WITT München” (MWM, genitalia slide 14177). Paratypes: 3 ♂♂, the data as holotype (MWM, genitalia slide 14176); 8 ♂♂, N. Vietnam / Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.45° E, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 21.34° N, 105.20° E, Sek. Wald, IV.1995, leg. V. SINJAEV (MWM, genitalia slide

4424); 3 ♂♂, N. Vietnam, Mts Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600–1800 m, IX.1994, leg. local collector (MWM).

The forewing length is 15–16 mm and wingspan is 32–34 mm in males. The ground colour is brown with different tints (Colour plate 15, fig. 10). The male antennae are long bipectinate, 2/3 as long as the costa of the forewings. The forewings are elongate, with slightly concave costa, with ill-defined smooth discal spot. The moths are totally unicolourous.

In male genitalia, the uncus is small with massive apical spur (Genitalia plate 9, fig. 4). The gnathos is well developed, becoming distally gradually slender. The valvae are elongate, concave, rounded apically, with saccular processes. The saccular processes have approximately six broad apical spurs. The transtillae are massive. The juxta is small, flattened. The aedeagus is slender, 1.3 times as long as the valva, slightly sinuous in lateral view, apically with short dorsal and long tape-like, acute, ventral processes.

The species is similar to species of *Iragoides* HERING, 1931, see generic account.

Distribution. Northern Vietnam (Fan-si-pan).

Biology. The specimens were taken in March, April and September in altitudes of 1600 to 2240 m. Probably with two generations per year.

Etymology. Spadix (from Latin) – grayish brown, brown, reddish brown.

### ***Nirmides* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 670 (key), 702. Type species: *Susica basalis* WALKER, by original designation.

The genus includes small moths. The male antennae are broadly bipectinate over the basal third. The forewings are triangular with acute apex (Colour plate 15, figs 13–15). The forewing pattern consists of a basal zone, bordered distally by a straight line running from 1/3 of the costa to tornus. The distal zone is pale, bordered by a curved line running from 4/5 of the costa to 1/2 of the outer margin. The forewings with well developed dark, large, ovoid discal spot.

The male genitalia are strongly modified with well developed saccus, divided uncus, horizontally flattened gnathos, and valvae reduced to small lobes (Genitalia plate 9, figs 5–7). The socii are well developed but the homology is not clear. The 8th sternite of abdomen is bifid distally.

The genus includes the following species: *N. basalis* (WALKER, 1862) (= *Nirma micron* VAN EECKE, 1929), *Nirmides fusca* HERING, 1931, **stat. n.** (= *N. purpurea* HOLLOWAY, 1986, **syn. n.**), *N. pura* (WEST, 1932), *N. flavissima* HOLLOWAY, 1986, *N. montana* HOLLOWAY, 1986, *N. manwahi* HOLLOWAY, 1990, *N. altadim* SOLOVYEV & WITT, **sp. n.**, *N. mimur* SOLOVYEV & WITT, **sp. n.**, *N. trani* SOLOVYEV & WITT, **sp. n.** ranged from Thailand and Vietnam to Sundaland and the Philippines.

HERING (1931: 702) described the taxon *fusca* as a form of *Nirmides basalis* (WALKER, 1862). This form is regarded by us as a full species. The synonymy of *N. fusca* HERING, 1931 and *N. purpurea* HOLLOWAY, 1986, **syn. n.** is based on the extremely similar external features and male genitalic characters. All types were examined.

***Nirmides altadim* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 13

Type material. Holotype: ♂, “Thailand | Changwat Phayao | 15 km SE Chiang Muan | 640 m, 26.XI.1998 | leg. Tibot CSÓVÁRI | & László MIKUS | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.307 | Museum WITT München” (MWM, genitalia slide 14307). Paratypes: 1 ♂, Laos, Saysomboune Prov., Phou Khao Khouay nat. park, 18°54'N, 103°08'E, 750 m, 25–29.X.2008, leg. Y. BEZVERKHOV & V. SINYAEV (CYB, genitalia slide SAV-08); 1 ♂, Vietnam mer., Kon Tum Province, Dac Glei, 15°07'N, 107°42'E, 700 m, 8.VIII.1996, leg. V. SINIAEV & E. AFONIN (MWM, genitalia slide 14257).

The forewing length is 9–10 mm; the wingspan is 20–22 mm. The ground colour is yellowish brown. The male antennae are broadly bipectinate in basal third. The basal zone of forewings is pale, yellowish; the distal zone is greyish brown; the medial is silky, bronzy brown with well developed ovoid discal spot (Colour plate 15, fig. 13). The hindwings are pale, greyish yellow.

The male genitalia have flattened, broad, very short uncus (Genitalia plate 9, fig. 5). The gnathos is horizontally flattened with unpaired medial plate. The socii are very long, horn-shaped. The valvae are reduced to small lobes which are half as long as the gnathos. The saccus is slender. The aedeagus is slender, long, slightly sinusoidal with single apical caudad directed spur. The 8th abdominal sternite is bifid apically; the lateral processes are short, broad basally, horn-shaped, with acute, strongly curved apex; the medial zone of the sternite is straight; the ratio of the height and width of the lateral process is 1.5. The tergite is bifid with two lateral semiovoid caudal parts.

Female unknown.

Diagnosis. The species is similar to *N. manwahi* HOLLOWAY, 1990 and *N. trani* SOLOVYEV & WITT, sp. n. externally and in male genitalia, but in male genitalia the valvae are longer, the aedeagus apically with only a single caudad directed spur; the lateral processes of eighth sternite is two times shorter, more curved apically and wider.

Distribution. Northern Thailand, central Laos, central Vietnam.

Biology. The specimens were collected in early August, late October and late November in altitudes of 640 to 750 m.

Etymology. The species was presented by Yuri A. BEZVERKHOV and dedicated to his close friends.

***Nirmides mimur* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 14

Type material. Holotype: ♂, ‘Vietnam | Lam Vien Plato | Nui Bai Reserv | 12°10'N · 108°40'E | 9–18.11.2008, 1500 m | Y. BEZVERKHOV & | V. SINYAEV Leg/Coll”, “Gen. Slide SAV-01” (CYB, genitalia slide SAV-01). Paratypes: 1 ♂, 1 ♀, Laos, Saysomboune prov., Nam Pha Noi, 19°00'N, 102°58'E, 1100 m, 30.X.2008, leg. Y. BEZVERKHOV & V. SINYAEV (CYB, genitalia slides SAV-11 (♀), SAV-13 (♂)).

The forewing length is 9 mm in males, 10 mm in female. The ground colour is grayish black. The male antennae are bipectinate in basal third. The male forewings are greyish black with deep black veins and pale distal zone, with concave costa (Colour plate 15, fig. 14). The female forewing is more rounded with more distinct pattern; it has a deep dark distal streak, the distal pale area bordered by a zigzag-like narrow fascia.

The uncus is flattened, small, with tooth-shaped lateral parts (Genitalia plate 9, fig. 6).

The gnathos is large, paired. Each part is slender, curved, with long finger-shaped apical processes bearing the smallest spurs, with long and slender ventrad directed processes reaching the vinculum. The valvae are slender and small. The socii are elongate, conus-shaped. The saccus is long and narrow. The aedeagus is slender, slightly curved and apically acute. The 8th sternite is bilobed; each lobe is triangular-shaped.

The female genitalia with well developed ovoid ovipositor lobes (Genitalia plate 11, fig. 12). The apophyses are well developed, slender. The ductus bursae is weak and short. The corpus bursae is pear-shaped without signum.

Diagnosis. The species is well distinguished externally from other congeners by its blackish coloration. In male genitalia, the presence of a large strongly sclerotized gnathos is diagnostic.

Distribution. Central Vietnam, central Laos.

Biology. The moths were collected in late October to mid November in altitudes of 1100 to 1500 m.

Etymology. The species name was given by Yuri A. BEZVERKHOV, an organizer and participant of the expedition in which the species was collected, and dedicated to his close friends.

***Nirmides trani* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 15

Type material. Holotype: ♂, S. Vietnam | Đông Nai province | Cuc Miên Nam, Phú Lý | Vĩnh Cù | 11°16'20.6''N; 106°16'20.6''E | 60±20 m 2.VIII.2008 | leg. TRAN Thieu Du, ex IEBR (MWM, ex coll. IEBR, genitalia slide 0095). Paratypes: 1 ♂, the data as in holotype but 27.VII.2008 (CAS, ex coll IEBR, genitalia slide 0094); 1 ♂, the same data but 31.VII.2008 (CAS, ex coll IEBR, genitalia slide 0077).

The forewing length is 8–9; the wingspan is 18–19 mm. The ground colour is yellowish brown. The basal zone of forewings is yellowish; the distal zone is greyish brown; the medial zone is silky, bronzy brown with well developed streak-like discal spot (Colour plate 15, fig. 15). The hindwings are greyish yellow with grey distal area.

The male genitalia with flattened, broad, very short uncus with triangular lateral lobes (Genitalia plate 9, fig. 7). The socii are flattened, long, horn-shaped, S-shaped, slightly bifid apically. The valvae are finger-shaped, very small. The gnathos is arcuate, slender, with entire medial plate bearing a pair of finger-shaped dorsal processes and long slender ventral processes. The saccus is slender, long. The aedeagus is slender, long, slightly sinuous, acute apically. The vesica contains a large triangular area of hair-like cornuti. The 8th abdominal sternite is apically bifid; the lateral processes are short, horn-shaped, apically acute; the medial zone of sternite is rounded. The tergite is bifid with two lateral semiovoid caudal parts.

Female unknown.

Diagnosis. The species is similar to *N. manwahi* HOLLOWAY, 1990 and *altadim* SOLOVYEV & WITT, **sp. n.** externally but the grey area of hindwings is more distally situated, narrower; the discal spot is usually narrower, streak-like. In male genitalia, the S-shaped socii, shorter valvae, and the presence of cornuti in the vesica are diagnostic.

Distribution. Southern Vietnam.

Biology. The specimens were collected in late July – early August on the altitudes of 40–80 m.

Etymology. The species is dedicated to TRAN Thieu Du (IEBR), a collector of this precious species.

### ***Pseudonirmides* HOLLOWAY, 1986**

Moths of Borneo 1: 131. Type species: *Miresa sola* SWINHOE, 1901, by original designation.

The genus is similar to *Nirmides* HERING, 1931, but differs externally by obscure coloration, the absence of a pale basal area in the forewings; the distal pale area is narrow, running from costa to tornus (Colour plate 15, figs 17–18). In male genitalia, the simple uncus, M-shaped gnathos, valvae with crescent-shaped saccular processes, and an asymmetric juxta with long unpaired process are diagnostic (Genitalia plate 9, fig. 8).

The larvae are of the nettle-type.

The genus consists of 3 species: *P. sola* (SWINHOE, 1901) (= *Nirmides luzonensis* HERING, 1931), *P. cyanopasta* (HAMPSON, 1910), **comb. n.** and *P. paloe* HOLLOWAY, 1987 and ranged from India to Philippines.

### ***Pseudonirmides* cf. *cyanopasta* (HAMPSON, 1910), **comb. n.****

Colour plate 15, figs 17–18

*Belippa cyanopasta* HAMPSON, 1910, J. Bombay nat. Hist. Soc. 20: 110. Type locality: “Burma, Bhámo (Fea)”. Holotype: ♀ (BMNH).

Material. 1 ♂, N. Vietnam, Ben En National Park, 40 km SW Than Hoa, 19.40° N, 105.15° E, Sek. Wald / Vegetation, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM, genitalia slide 12759); 1 ♂, N. Vietnam, Ben Nat. Park, 40 km SW Than Hoa, 19°40'N, 105°15'E, 200 m, 22–30.XI.1994, leg. Sinjaev & Simonov (MWM); 1 ♀, N. Vietnam, Tam Dao, 200 m, 1–15.XI.1992, Siniaev V. & S. (MWM, genitalia slide 14219); 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Viñh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, N. Vietnam, BaBe, Lake N.P., Prov., Cao Bang Phuc, 300 m, X.2006, leg. Thomas IHLE (CSI).

Distribution. Eastern Myanmar, northern Vietnam; Thailand (ROBINSON et al., 2007).

Biology. The moths were taken in mid October to November in altitudes of 34 to 300 m.

Food plants: *Dimocarpus longan* LOUR., *Litchi chinensis* SONN., *Nephelium lappaceum* L. (Sapindaceae, Thailand, as for *Belippa cyanopasta* HAMPSON, 1910) (ROBINSON et al., 2007).

Comment. Additional material from Myanmar is necessary to define the exact taxonomic position of the specimens from Vietnam.

Remark. The male genitalia of a Vietnamese specimen are figured (Genitalia plate 9, fig. 8).

### ***Mummu* SOLOVYEV & WITT, **gen. n.****

Type species: *Mummu aerata* SOLOVYEV & WITT, **sp. n., here designated.**

The moths are small-sized with triangular forewings and slightly sinuous costa (Colour plate 15, figs 19–20). The male antennae are broadly bipectinate proximally. The ground colour is brown. The forewings are obscure with black discal streak, with pale distal region bordered by an external fascia running from tornus to almost apex. The vein R5 of the forewing is branched from the stem of R3+R4; the medial stem is developed, not branched distally. The hindwings are greyish brown.

In male genitalia, the uncus is single, short with well developed subapical spur (Genitalia plate 9, fig. 9). The gnathos is flattened distally, finger-shaped in back view. The valvae are elongate, without saccular processes. The juxta is strongly modified, wide and short with weak lateral parts, medially with left small triangle-shaped process and the large, finger-shaped, hairy right process. The aedeagus is short, broad, tube-shaped, and acute apically.

The female genitalia with well developed ovipositor lobes; the apophyses are slender (Genitalia plate 12, fig. 12). The ductus bursae is long, not spiral. The corpus bursae is rounded. The singum is crescent-shaped.

The genus is similar to *Pseudonirmides* HOLLOWAY, 1986 externally but the pale distal zone of forewings is bordered proximally by an almost straight border which has a proximal, internal, obscure, tooth-shaped expansion in the region of the veins R4, R5 and M1 in *Mummu* SOLOVYEV & WITT, **gen. n.** In *Pseudonirmides* HOLLOWAY, the expansion is in the region of the veins M2 and M3 and the border is irregular sinuous. The juxta is asymmetrical with long right finger-shaped process.

The probable apomorphies of *Mummu* SOLOVYEV & WITT, **gen. n.** are the presence of a strongly modified asymmetric juxta with long, hairy, right process, rhombus shaped (in lateral view) aedeagus. From *Pseudonirmides* HOLLOWAY, the new genus is also distinguished by the absence of saccular processes of valvae.

The genus includes *M. aerata* SOLOVYEV & WITT, **sp. n.** and *M. cuprea* (MOORE, 1879), **comb. n.** The latter species is transferred into this genus from *Pseudonirmides* HOLLOWAY, 1986 on the base of external features and the morphology of the male genitalia.

Etymology. *Mummu* (Mommu) – from the Babylonian creation stories, the one of the original beings, also God of mist.

***Mummu aerata* SOLOVYEV & WITT, sp. n.**

Colour plate 15, figs 19–20

Type material. **Holotype:** ♂, “N. Vietnam | Mt. Fan-si-pan W-Seite | Cha-pa (= Sapa) 1600–1800 m | 22.20°N 103.40°E Sek. Wald / | Kulturland 10.VI.–6.VII.1994 | leg. SINJAEV & einh. Sammler”, “Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.216 | Museum WITT München” (MWM, genitalia slide 14216). **Paratypes:** 1 ♂, the data as in holotype; 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, NN, 22.15° N, 103.46° E, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slide 14218); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22.17° N, 103.44° E, 1600 m, 20–30.IV.1995, leg. V. SINJAEV & Einheim. Sammler (MWM); 1 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, N. Side, 22°17’N, 103°44’E, primary forest, 1600 m, 20–30.X.1995, leg. V. SINJAEV & E. AFONIN (MWM, genitalia slide 14217 (♀)).

The forewing length is 10–12 mm and the wingspan is 22–25 mm in males; 12 and 25

mm in females. The male antennae are strongly bipectinate basally. The ground colour is brown. The forewings are obscure with well developed black discal streak and distal pale zone which is bordered proximally by an almost straight border with internal tooth-shaped expansions in the region of veins R5 and M1 (Colour plate 15, figs 19–20). The hindwings are pale, greyish.

In male genitalia, the uncus is equilateral triangular in back view, rounded apically with well developed subapical spur (Genitalia plate 9, fig. 9). The gnathos is slightly flattened distally, finger-shaped in back view. The valvae are elongate, widened distally. The transtillae are well developed. The juxta is modified into a short and broad central part with two weak lateral parts, medially with two processes – the left one is small, triangular-shaped, flattened; the right one is long, as long as the valvae, finger-shaped, very hairy distally. The aedeagus is broad, slightly curved basally, acute apically; dorsally it is much longer than ventrally.

The female genitalia with well developed ovipositor lobes (Genitalia plate 12, fig. 12). The apophyses are long and very slender. The ductus bursae is long, not spiral, and broad. The corpus bursae is rounded with crescent-shaped signum.

Diagnosis. The species is externally similar to *M. cuprea* (MOORE, 1879), but differs by better defined border of the distal pale zone in the forewings (smooth in *M. cuprea* (MOORE, 1879)).

Distribution. Northern Thailand, northern Vietnam.

Biology. The specimens were taken in late April, late May, mid June to early July and in October. Probably two generations per year.

Etymology. From Latin “aeratus” – covered by bronze, in bronze armour, in connection with coloration of adults.

### ***Limacolasia* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 670 (key), 698. Type species: *Limacolasia dubiosa* HERING, 1931, by original designation.

The genus includes rufous brown small moths (Colour plate 15, fig. 16). The male antennae are broadly bipectinate in basal half. The forewings are triangular with concave costa.

In male genitalia, the bilobed gnathos with two lateral parts bearing the acute apical process and medial massive part, divided juxta (in two strong lateral parts bearing large spurs) are diagnostic (Genitalia plate 9, fig. 10).

The genus includes 4 species: *L. dubiosa* HERING, 1931, *L. ruficollaris* HERING, 1931, *L. thermistis* (Hampson, 1910), and *L. suffusca* SOLOVYEV & WITT, **sp. n.**, and is known from India, Myanmar, southern China and northern Vietnam.

### ***Limacolasia suffusca* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 16

Type material. Holotype: ♂, “N. Vietnam | Fan-si-pan Mts. | W-Seite, near Cha-pa | 1600–1800 m, | 22°20’N 103°40’E | Mai 1995 | leg. local collectors | Museum WITT Munchen”, “Genitalpräparat | Heterocera | Nr. 13.292 | Museum WITT München” (MWM, genitalia slide 13292). Paratype: 1 ♂, the data as in holotype (MWM).



Additional material. 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 36, in 96% alcohol); 1 ♂, the same data but 11.VI.2006 (CAS, VZ-LIMAC 51, in 96% alcohol); 1 ♂, the same data but 19.VI.2006 (CAS, VZ-LIMAC 71, in 96% alcohol).

The forewing length is 8 mm, wingspan is 17 mm. The male antennae are broadly bipectinate in basal half (Colour plate 15, fig. 16). The species is unicolourous, rufous brown, the head and the antennae are orange. The forewings are elongate, triangular with concave costa.

The male genitalia with single uncus, curved ventrad, strongly sclerotized apically (Genitalia plate 9, fig. 10). The gnathos is two-branched. Every branch consists of two rounded lobes; the upper lobe has a long, acute spur and the rest part is small; the lower lobe is large. The valvae are triangular with rounded lower margin, not strongly sclerotized centrally and basally; basally, near costa it has a short papula-shaped process with spurs. The juxta is flattened medially and bifid dorsally in two large, flattened, acute, lateral parts; these parts bear several apical and lateral spurs. The aedeagus is short, tube-shaped, with apical, spiral, broad and short process.

Female unknown.

Diagnosis. The species is externally similar to other congeners; the male genitalia are diagnostic. The upper lobe of the gnathos is distinctly smaller than the lower one. The lateral parts of juxta are acute, and bear a series of large lateral and apical processes. The aedeagus is short, bearing an apical spiralled process.

Distribution. Northern Vietnam (Fan-si-pan).

Biology. The moths were taken in May to June in altitudes of 1600 to 1800 m.

Etymology. From Latin “suffuscus” – swarthy, darkish, with brown tint, in connection with external view.

### ***Squamosa* BETHUNE-BAKER, 1908**

Novit. zool. **15**: 183. Type species: *Squamosa ferruginea* BETHUNE-BAKER, 1908, by original designation.

The genus includes 4 species: *S. ferruginea* BETHUNE-BAKER, 1908, *S. chalcites* ORHANT, 2000, *S. ocellata* (MOORE, 1879) and *S. svetlanae* SOLOVYEV & WITT, **sp. n.** The type species is known from New Guinea (Kebea) and differs in appearance from the Asian species included in this genus, but the male genitalia of *S. ferruginea* BETHUNE-BAKER, the type-species, are not examined to determine the limits of the genus. The species *S. svetlanae* SOLOVYEV & WITT, **sp. n.** is placed tentatively in *Squamosa* BETHUNE-BAKER, 1908.

The Asian species is well defined externally by medium to large size of adults with yellow ground colour; the forewings have a characteristic large, rounded, silky brown, medial spot and very narrow, dark, curved external fascia (Colour plate 15, fig. 11).

In male genitalia, the uncus is bifid apically; the gnathos is small (Genitalia plate 10, fig. 1). The valvae are longate, without saccular processes. The juxta is horseshoe-shaped with lateral asymmetric processes. The aedeagus is slender.

Female is unknown.

***Squamosa svetlanae* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 11

Type material. Holotype: ♂, “Nord-Vietnam | Mt. Fan-si-pan | Cha pa, 2400 m NN | (22.15°N 103.46°E) | 8.–29.V.1993 leg. | SINJAEV & SIMONOV | Museum WITT”, “Genitalpräparat | Heterocera | Nr. 14.231 | Museum WITT München” (MWM, genitalia slide 14231). Paratypes: 13 ♂♂, the data as in holotype (MWM, genitalia slide 14235); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, NN, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (MWM, genitalia slides 14233, 14262); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa, 22.15° N, 103.46° E, Primärurwald, 1600 m, 8–29.V.1993, leg. V. SINJAEV & M. SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 22.15° N, 103.46° E, NN, 2400 m, 8–29.V.1993, leg. SINJAEV & SIMONOV (CVS); 1 ♂, C. Vietnam, Thua Thien Hue Prov., Bach Ma N.P., 1250 m, 16°12'N, 107°51'E, 20–22.IV.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 181).

Additional material. 2 ♂♂, N. Vietnam, Tonkin, Mt. Fan-si-pan, (Nord), Cha-pa, 22.15° N, 103.45° E, Nebelwald, 2240 m, 2–4.III.1995, leg. Dr. R. BRECHLIN (MWM, genitalia slide 14236); 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 950 m, IV.1995, leg. V. SINJAEV (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, Sek. Wald, 1200 m, 1–5.V.1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 22°3'N, 105°5'E, 300 m, 22.II–5.III.1997, leg. G. CSORBA (MWM, genitalia slide 14232); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.20° N, 103.40° E, Sek. Wald / Kulturland, 1600–1800 m, 10.VI–6.VII.1994, leg. SINJAEV & einh. Sammler (MWM); 6 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-si-pan Mts, Sa Pa, 1500 m, 10–20.V.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol); 2 ♂♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 47, 57, in 96% alcohol).

The forewing length is 15–22 mm and wingspan 31–38 mm in males. The male antennae are long, 2/3 times as long as forewing costa, broadly bipectinate in basal half. The ground colour is brownish yellow (Colour plate 15, fig. 11). The forewings have a large, rounded, silky brown, medial area and the external fascia is almost parallel to the outer margin, with two defined depressions in the region of veins R4 and CuA2. The hindwings are dark or unicolourous with the forewings. The apex of abdomen bears black scales.

The male genitalia with apically slender, slightly bifid uncus (Genitalia plate 10, fig. 1). The gnathos is slender, finger-shaped apically. The valvae are trapezium-shaped with rounded outer corners; the costa is slightly concave. The juxta is horseshoe-shaped, flattened and broad with two lateral processes; the left process is sickle-shaped, long and slender; the right process is small, finger-shaped, 1/5 times as long as the left one. The aedeagus is short and slender and 1.5 times as long as the valvae.

Diagnosis. The species is similar externally to other Asian members of *Squamosa* BETHUNE-BAKER, 1908, but the forewings are not so elongate as in *S. chalcites* ORHANT, 2000. The male genitalia are diagnostic, with apically slightly bifurcated uncus, juxta with long sickle-shaped left process and short and slender right one, the valvae are trapezium-shaped with rounded outer corners and almost straight lower margin.

Distribution. Northern Vietnam.

Biology. The moths were taken in late February to early March, April, May, mid June to early July in altitudes of 300 to 2400 m.

Comments. The specimens associated with this species are variable in forewing length,

but identical in forewing pattern and male genitalia. So, the specimens included in the type-series have the smallest sizes with forewing length of 15–17 mm and wingspan 21–38 mm; probably the size depends on ecological factors or generation.

Etymology. The species is named after Mrs. Svetlana L. SINYAEVA (Moscow, Russia), the wife of the collector of this nice species, Mr. Viktor V. SINYAEV.

### ***Iraga* MATSUMURA, 1927**

J. Coll. Agric. Hokkaido imp. Univ. **19**: 89. Type species: *Tetraphleps* (?) *rugosa* WILEMAN, 1911, by original designation.

The genus includes only one species, well defined externally (Colour plate 15, fig. 12). The male antennae are filiform. The ground colour is brown. The head, thorax and base of abdomen have broad, smooth, yellowish dorsal band. The forewings have sparse yellowish spots. The male genitalia are simple, with slender uncus and large gnathos. The valvae are elongate without saccular processes. The juxta is flattened. The aedeagus is large, curved, with small apical spur.

### ***Iraga rugosa* (WILEMAN, 1911)**

Colour plate 15, fig. 12

*Tetraphleps* (?) *rugosa* WILEMAN, 1911, Entomologist **44**: 205. Type locality: “Kanshirei (1000 ft.)” [Taiwan]. Holotype: ♂ (BMNH).

Reference. LEMÉE, 1950: 43 (Backan).

Material. 1 ♂, N. Vietnam, Hoa Binh, 70 km NW Hanoi, 400 m, 28.V–6.VI.1990, leg. E. PALIK (MWM, genitalia slide 14268); 3 ♂♂, N. Vietnam, Cuc Phuong N.P., Bông – Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°20'55.2''N, 105°35'52.9''E, 358±15 m, 6.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS); 1 ♂, the same data (CAS, AS-LIMAC 47, in 96% alcohol); 1 ♂, N. Vietnam, Moo Ba, 30 km oestlich von Thainuygen, Prov. Thai Nguyen, 200 m, VIII.2008, leg. Thomad IHLE (CSI); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V.2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 133); 7 ♂♂, the same data, leg. V. ZOLOTUHIN (CAS).

Distribution. Southern China, Taiwan, Cambodia, northern Vietnam.

Biology. The moths taken in May to early June, August and early October in altitudes of 60 to 400 m.

### ***Phrixolepia* BUTLER, 1877**

Ann. Mag. nat. Hist. (4) **20**: 476. Type species: *Phrixolepia sericea* BUTLER, 1877, by original designation.

The genus includes small sized brown moths (Colour plate 15, fig. 21). The forewings are elongate with indistinct basal dark zone bordered by a pale V-shaped concave antemedial fascia. The larvae are of a peculiar shape, known for *Ph. sericea* BUTLER, 1877 (Colour plate 19, figs 5–7).

The genus contains 10 species: *Ph. sericea* BUTLER, 1877, *Ph. tenebrosa* KAWAZOE & OGATA, 1962, *Ph. luoi* CAI, 1986, *Ph. zhejiangensis* CAI, 1986, *Ph. majuscula* CAI, 1986, *Ph. inouei* YOSHIMOTO, 1993, *Ph. similis* YOSHIMOTO, 1993, *Ph. pudovkini* SOLOVYEV

(in print), *Ph. sinyaevi* SOLOVYEV (in print), and *Ph. nigra* SOLOVYEV (in print). It is known from Far East of Russia, Korea, China, Taiwan, Japan, Nepal, Thailand and northern Vietnam.

***Phrixolepia sinyaevi* SOLOVYEV (in print)**

Colour plate 15, fig. 21

*Phrixolepia sinyaevi* SOLOVYEV, Zool. Zh. (in print). Type locality: "N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15°N, 105.20°E, 400 m". Holotype: ♂ (MWM).

Material. 1 ♂, holotype, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20.15° N, 105.20° E, 400 m, 18.XI–3.XII.1992, leg. Sinajev & Simonov (MWM, genitalia slide 11386).

Distribution. Northern Vietnam.

Biology. The male was taken in mid November to the beginning of December in an elevation of 400 m.

***Trichogyia* HAMPSON, 1894**

Fauna Br. India (Moths) 2: 103. Type species: *Trichogyia semifascia* HAMPSON, 1894, by original designation.

= *Dactylorhynchides* STRAND, 1920, **syn. n.**

Arch. Naturgesch. 84 (A) 12: 185. Type species: *Dactylorhynchides limacodiformis* STRAND, 1920, by monotypy.

The genus includes small limacodids with unique forewing pattern: the forewing is divided by a medial white line in a basal ochreous zone and a distal darker brown one (Colour plate 8, fig. 23). The male antennae are filiform. The genus consists of 5 species: *T. semifascia* HAMPSON, 1894 (= *Ceratonema albidivisum* HAMPSON, 1900), *T. limacodiformis* (STRAND, 1920), **comb. n.**, *T. rufibasale* (HAMPSON, 1896), **comb. n.** (from *Dactylorhynchides* STRAND, 1920), *T. castanea* (HAMPSON, 1893), **comb. n.** (from *Araeogyia* HAMPSON, 1893) and *T. gemmia* SOLOVYEV & WITT, **sp. n.** and is known from India to Sundaland.

The synonymy of *Trichogyia* HAMPSON, 1894 and *Dactylorhynchides* STRAND, 1920 is based on external characters of adults and on the morphology of the male genitalia. The type species of both genera have the following unique characters: presence of a medial white line in forewing, the gnathos W-shaped with medial row of comb-like black bristles (Genitalia plate 10, fig. 2), the strongly divided valvae (in two parts with triangular saccular processes), and the asymmetric juxta with spur-like right process.

Several other species were included tentatively in *Trichogyia* HAMPSON, 1894: *T. brunnescens* HERING, 1933, *T. metamelaena* HAMPSON, 1897, *T. microleon* HERING, 1931, and *T. minuta* ROTHSCHILD, 1917. The exact taxonomic position of these taxa is not clear so far.

The allotype male of *Ceratonema wilemani* WEST, 1932 is in poor condition, but its genitalia conform to *Trichogyia* HAMPSON, 1894, however, the genitalia of the female holotype do not conform to the ground plan of this genus. Probably the type-series of this taxon is not homogenous.

The biology of the genus is little known, the description of the larva of *T. semifascia* HAMPSON, 1894 is given in HOLLOWAY, 1986: 135–136.

***Trichogyia gemmia* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 23

Type material. Holotype: ♂, “C. Vietnam | Pu Mat N.P. | Yên Khê, Thác Kèm waterfall | Con Công distr., Nghe An prov. | 18°57'54.4''N, 104°48'09.6''E | 320±32 m 26.IX.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (CAS, to be transferred to MWM, genitalia slide 0015). Paratype: 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tương Dương distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 4.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC-25, in 96% alcohol).

The forewing length is 6 mm. The male antenna is filiform. The ground colour is yellowish brown (Colour plate 8, fig. 23). The forewings have white medial fascia which is parallel to outer margin and divides the forewing in a basal ochreous zone and a distal brown one.

In male genitalia, the uncus is simple, triangular in back view, without any spur (Genitalia plate 10, fig. 2). The gnathos is W-shaped with medial row of comb-like black bristles. The valva is strongly divided in two parts: the dorsal one is long, curved, parallel-sided; the saccular part is short, triangular with short, curved, slender and acute saccular process with broad basis and outer dentate crest. The juxta is asymmetrical with long and narrow, strongly curved proximally right process. The aedeagus is S-shaped, slender.

Diagnosis. The species is similar externally to *T. limacodiformis* (STRAND, 1920), *T. rufibasale* (HAMPSON, 1896), and *T. castanea* (HAMPSON, 1893), but well defined in male genitalia. The saccular process of the valvae is much more slender, stronger curved with outer dentate crest. The juxta with slender, acute and proximally strongly curved right process.

Distribution. Central Vietnam.

Biology. The specimens were collected in late September to early October in altitudes of 150 to 352 m.

Etymology. From Latin “gemmeus” – similar to jewel, precious stone.

***Darna* WALKER, 1862**

J. Proc. Linn. Soc. (Zool.) 6: 174. Type species: *Darna plana* WALKER, 1862, by monotypy.

The genus includes small-sized moths with yellowish brown coloration (Colour plate 15, fig. 22). The forewings are triangular with black discal spot and dark, not well defined, external fascia. The hindwings are pale. The male genitalia are diagnostic (Genitalia plate 10, fig. 3). The larvae are of the nettle-type, green, with long subdorsal and short dorsal scoli (HOLLOWAY, 1986: 139). The genus is revised by J. D. HOLLOWAY (1986: 138–139) (as subgenus *Darna* WALKER, 1862).

Three separate genera *Ploneta* SNELLEN, 1900, *Oxyplax* HAMPSON, 1893 and *Orthocraspeda* HAMPSON, 1893 were considered as subgenera of *Darna* WALKER, 1862 by HOLLOWAY (1986: 137) based on the presence of “a process from the base of the valval costa and/or rows of non-deciduous scales on a bifid uncus; larva with blades on laterals of A2 and A7” (loc. cit.: 141). Hence, the homology of these processes arising from the base of the valval costa is not evident in all these taxa. They can arise from the base of valvae and be movable (in *Darna* and *Orthocraspeda*), from the base of valvae and weakly movable (in *Ploneta*) or they arise from the subcostal region and are weakly

movable, if present (in *Oxyplax*). Similar processes can be found also in other genera (e.g., in *Chibaraga* MATSUMURA, 1931 and *Idonauton* SWINHOE, 1892). An uniqueness of the presence of the blades in larval subdorsal scoli is arguable until the same processes are not studied in other Limacodidae. Similar processes but of another shape (not taken into account by HOLLOWAY, 1986) were found on subdorsal scoli A2 and A7 in *Parasa hilarula* (STAUDINGER, 1887) (orig. obs.). We do not disprove the close relationships of the mentioned genera but consider this hypothesis is weakly substantiated and we beware of using HOLLOWAY's classification. In the present work we are regarding all four taxa again as separate genera until decent analyses of the features are available. All genera are well recognized externally (by the shape of forewings and forewing pattern) and by male genitalia. It should be noted that the close relationships of *Darna* WALKER, 1862 and *Orthocraspeda* HAMPSON, 1893 are evident.

*Darna* WALKER, 1862 consists of the following species: *D. metaleuca* (WALKER, 1862) (= *D. plana* WALKER, 1862), *D. sybilla* (SWINHOE, 1903), *D. nararia* (MOORE, 1859) (= *Susica signata* (MOORE, 1883), = *Susica fraterna* (MOORE, 1883), = *Susica sericea* (HAMPSON, 1893), = *Miresa suffusa* (MOORE, 1888), = *Susica cosmiana* (SWINHOE, 1886)), and ranges from India to Sundaland.

### ***Darna sybilla* SWINHOE, 1903**

Colour plate 15, fig. 22

*Thosea sybilla* SWINHOE, 1903, Ann. Mag. nat. Hist. (7): 502. Type locality: "Siam, Muok-Lek, 1000 feet". Lectotype: ♂ (BMNH), **here designated**.

References. DE JOANNIS, 1929: 572 (Cho gahn; as *Darna metaleuca* Wlk., 1862), 573 (Hanoi, Cho ganh; as *Thosea sybilla* SWINH., 1903).

Material. 1 ♂, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa, 18.40° N, 105.40°, 200 m, 22–30.XI.1994, leg. SINJAEV & SCHINTLMEISTER (MWM); 1 ♂, C. Vietnam, Pu Mat N. P., Tam Dinh vill., Trung Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 5.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0023); 1 ♂, the same data but 4.X.2008 (CAS, AS-LIMAC 67, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 2.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 124, in 96% alcohol); 4 ♂♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11.32° N, 107.48° E, Sek. Wald, 1500 m, 10–20.XII.1992, leg. SINJAEV & SIMONOV (MWM, genitalia slides 14264, 14311); 1 ♂, S. Vietnam, Phước Bình, Ninh Thuận, 14.XI.2008, leg. TRAN Thieu Du (IEBR).

Distribution. Thailand, Vietnam.

Biology. The moths were taken in early October, mid and late November, and December in altitudes of 119 to 1500 m.

Comments. The species is similar to *Orthocraspeda sordida* SNELLEN, 1900 externally, but usually with more unicolorous forewing pattern (Colour plate 15, fig. 22); the male genitalia are characteristic with balloon-shaped lobes of uncus, longer gnathos, and finger-shaped costal processes of valvae (Genitalia plate 10, fig. 3).

Nomenclatorial notes. The species was described after seven specimens from Siam, Muok-Lek, 1000 feet; only one syntypical male was found in BMNH. The lectotype: male, here designated, with following labels: 1 – round, with red frame and black printed text "Type"; 2 – rectangle, yellowish, with black printed text "Siam | Muok-Lek 1000' |

Januar | H. Fruhstorfer”; 3 – rectangle, blue, with black printed text “genitalia slide | No.” and handwritten with black ink “Lima | 320 ♂”; 4 – rectangle, yellowish, black inked “1903–177.”; 5 – rectangle, yellowish, with handwritten by SWINHOE with black ink text “*Thosea* | *sybilla* | SWINHOE | ♂ type”. The lectotype is supplied with an additional lectotype label with corresponding text.

### ***Orthocraspeda* HAMPSON, 1893**

Fauna Br. India (Moths) 1: 373 (key), 393. Type species: *Parasa trima* MOORE, 1860, by original designation.

= *Thoseoides* SHIRAKI, 1913

Spec. Rep. Form. Agr. Sta. 8: 388, 391. Type species: *Thoseoides fasciata* SHIRAKI, 1913, by original designation.

The genus includes small moths with forewing pattern similar to *Darna* WALKER, 1862 but usually with 3 black fasciae (Colour plate 15, figs 23–24). In male genitalia, the uncus is not balloon-shaped, and has lost the rows of ventral scales (Genitalia plate 10, figs 4–5). The larvae are of the nettle type (Colour plate 18, figs 9–10).

The genus includes 8 species: *O. trima* (MOORE, 1859), *O. trima ajavana* HOLLOWAY, 1986, *O. furva* (WILEMAN, 1911) (= *Thoseoides fasciata* SHIRAKI, 1913), *O. catenatus* (SNELLEN, 1879), *O. sordida* SNELLEN, 1900 (= *Orthocraspeda luticrista* TAMS, 1924)), *O. bornesordida* HOLLOWAY, 1986, *O. luzonica* HOLLOWAY, 1987, *O. mindanensis* HOLLOWAY, 1987, and *O. tuaranensis* (HOLLOWAY, 1976). The taxon *Darna* (*Orthocraspeda*) *trima ajavana* HOLLOWAY, 1986 is probably a synonym of *Orthocraspeda trima* (MOORE, 1859). The taxonomic position of *O. nemacera* HAMPSON, 1900 is unclear so far. The genus is known from India to Sundaland.

### ***Orthocraspeda sordida* SNELLEN, 1900**

Colour plate 15, fig. 23

*Orthocraspeda sordida* SNELLEN, 1900, Tijdschr. Ent. 43: 99. Type locality: “Batavia (14 mètres)” [Java]. Lectotype: ♂ (RMNH), designated by J. D. HOLLOWAY, 1986 (MS?).

*Orthocraspeda luticrista* TAMS, 1924, J. nat. Hist. Soc. Siam 6: 280, pl. 17, fig. 7. Type locality: “Bangkok” [Thailand]. Holotype: ♂ (BMNH).

Material. 1 ♂, N. Vietnam, office of Cuc Phuong N.P., Cuc Phuong vill., Nho Quan distr., Ninh Binh prov., 20°15'N, 105°40'E, 350±30 m, 8.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0024); 2 ♂♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 11–12.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slides 0059, 0060); 1 ♂, the same data (CAS, AS-LIMAC 130, in 96% alcohol); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 1–4.V 2009, leg. V. ZOLOTUHIN & A. GURKOVICH (CAS, in 96% alcohol, VZ-LIMAC 141, genitalia slide 130).

Distribution. Thailand, northern Vietnam, western Malaysia, Sumatra, Java.

Biology. The specimens were collected in early May, early and mid October in altitudes of 34 to 380 m.

The larva is of the nettle-type, typical for the genus. It is illustrated by HOLLOWAY et al., 1987: pl. 29.

Food plants: *Erythrina variegata* L. (= *Erythrina spathacea* DC.; Java), *Erythrina* sp., *Pterocarpus* JACQ. (as *Pterocarpus* L. (Fabaceae; Java); *Rosa* sp. (Rosaceae; Java), *Coffea arabica* L. (Rubiaceae; Java), *Eriodendron anfractuosum* DC., *Hibiscus rosa-sinensis* L., (Malvaceae; Java), *Spondias acida* BL. (Anacardiaceae; Java), *Nephelium lappaceum* L. (Sapindaceae; Java) (PIEPERS, SNELLEN, 1900: 99); *Cocos nucifera* L., *Elaeis* sp. (Arecaceae), *Ceiba pentandra* (L.) GAERTN. (Malvaceae) (HOLLOWAY et al., 1987: 100).

Parasites: “*Rogas*” sp. (Braconidae, Sumatra), *Buysmania oxymora* (TOSQUINET) (Ichneumonidae, Sumatra) (HOLLOWAY et al., 1987: 101).

Comments. The species is distinguished from *O. furva* (WILEMAN, 1911) by more unicolourous forewings without the 3 distinct fasciae (Colour plate 15, fig. 23). It is hardly distinguished from *Darna sybilla* SWINHOE, 1903, but the external forewing fascia is usually darker; the male genitalia are diagnostic, generally distinguished by the smallest lobes of the uncus, and stronger and acute costal processes of the valvae (Genitalia plate 10, fig. 4).

### ***Orthocraspeda furva* (WILEMAN, 1911)**

Colour plate 15, fig. 24

*Natada furva* WILEMAN, 1911, Entomologist **44**: 205. Type locality: “Kanshirei (1000 ft.)” [Taiwan]. Lectotype: ♂ (BMNH), **here designated**.

*Thoseoides fasciata* SHIRAKI, 1913, Spec. Rep. Formosa Agric. Expt. Sta. **8**: 391. Type locality: “Formosa (Taihoku)”. Syntypes: ♂, ♀.

Reference. DE JOANNIS, 1929: 577 (Vietnam: Cho ganh; as *Orthocraspeda trima* (MOORE, 1859)).

Material. 1 ♂, N. Vietnam, Me Linh biodiversity station, Ngoc Thanh vill., Phúc Yên distr., Vĩnh Phúc prov., 21°23'03.3''N, 105°42'43.7''E, 56±22 m, 12.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0012); 1 ♂, the same data but 11–12.X.2008 (CAS, AS-LIMAC 131, in 96% alcohol); 1 ♀, C. Vietnam, Pu Mat N. P., Tam Dinh vill., Trung Duong distr., Nghe An prov., 19°10'32.5''N, 104°37'18.5''E, 165±15 m, 21.X.2008, from larva, leg. V. ZOLOTUHIN (CAS, genitalia slide 0013); 1 ♂, C. Vietnam, Phúc Sơn vill., Anh Sơn distr., Nghe An prov., 18°49'12.3''N, 104°58'18.6''E, 130±11 m, 5.XI–30.XI.2008, from larvae 3.X.2008, leg. V. ZOLOTUHIN (CAS, genitalia slide 0086).

Distribution. China, Taiwan, northern and central Vietnam; north-eastern Himalaya, Thailand (HOLLOWAY, 1986: 142; 1987: 104).

Biology. The larvae were collected in early October, adults in mid October and November in altitudes of 34 to 180 m.

The larva belongs to the nettle-type; it is typical for the genus (Colour plate 18, figs 9–10).

Food plants: *Antidesma* sp. (Phyllanthaceae; Hong-Kong), *Cocos nucifera* L., *Elaeis* sp., *Salacca* sp. (Arecaceae; Thailand) (HOLLOWAY et al., 1987: 105), *Musa* sp. (Musaceae; central Vietnam), *Melastoma* sp. (Melastomataceae; central Vietnam).

Parasites: *Apanteles* sp., *Fornicia ceylonica* WILKINSON (Braconidae; Thailand), *Euplectromorpha* sp., *Platyplectrus* sp. (Eulophidae; Thailand), *Melalophacharops papilionis* (ASHMEAD) (Taiwan), *Paraphylax varius* BROUN (Ichneumonidae; Thailand) (HOLLOWAY et al., 1987: 105).



The cocoon is brown (Colour plate 20, fig. 12).

Nomenclatorial notes. The type series of *Natada furva* WILEMAN, 1911 includes 2 males from “Kanshirei (1000 ft.)” collected in 20.VIII.1905 with collection number 676; one male was only found. The lectotype: male (BMNH), here designated, with following labels: 1 – rectangle, yellowish, with black printed text “Kanshirei, | Formosa. | 1,000 ft. | A.E. WILEMAN.”, handwritten by red ink “♂” and with black ink “20.VIII.1905.”; 2 – rounded with red frame and black printed text “Type”; 3 – rectangle, yellowish, with black printed text “WILEMAN Coll. | B.M. 1929-261.”; 4 – rectangle, white with black printed “LEVICK | Bequest | 1941-83”; 5 – rectangle with red inked text “676 F”; 6 – rectangle, yellowish, with handwritten by A.E. WILEMAN with black ink text “*Natada | furva* | sp. n. | type ♂”; 7 – rectangle, blue, with black printed “genitalia slide | No.” and black inked “Limaç | 338 ♂”. The specimen is supplied with an additional lectotype label with corresponding text.

Remark. The male genitalia are figured (Genitalia plate 10, fig. 5).

### ***Oxyplax* HAMPSON, 1893**

Fauna Br. India (Moths) 1: 372 (key), 376. Type species: *Aphendala ochracea* MOORE, 1883, by original designation.

The genus consists of small moths with brown ground colour (Colour plate 15, figs 25–26). The forewings are variable in coloration from yellow or golden to dark brown, but with characteristic pale or dark oblique postmedial fascia running from 1/2 dorsum to apex. The genus includes 7 species: *O. ochracea* (MOORE, 1883) (= *O. weixiensis* CAI, 1984), *O. fulvidorsia* (HAMPSON, 1910), *O. fulvimixta* (HAMPSON, 1910), *O. caii* HOLLOWAY, 1986, *O. pallivitta* (MOORE, 1877), *O. tenebrosa* HERING, 1931, and *O. yunnanensis* CAI, 1984, known from India to Sundaland.

The genus *Paroxyplax* CAI, 1984 includes only *P. lineata* CAI, 1984 and *P. menghaiensis* CAI, 1984. The genus is close to *Oxyplax* HAMPSON, 1893 and extremely similar externally, but “distinguished by the shaft of male antennae and tegulae without erect tufts of scales, and genitalia of both sex differ evidently from the latter” (CAI, 1984: 213). Without any doubt, judging from the original description, the male genitalia have several features which prove the monophyly of this taxon, but the exact taxonomic position of the genus is unclear.

### ***Oxyplax ochracea* (MOORE, 1883)**

Colour plate 15, fig. 25

*Aphendala ochracea* MOORE, 1883, Lep. Ceyl. 2: 129, pl. 129, fig. 3, 3a. Type locality: [Sri Lanka]. Lectotype: ♀ (BMNH), **here designated**.

*Oxyplax weixiensis* CAI, 1984, Entomotaxonomia 6 (2-3): 172, **syn. n.** Type locality: “Weixi (Baijixun), Yunnan, 1900 m”. Holotype: ♂ (IZCAS).

References. CANDÈZE, 1927: 124 (Vietnam: Pnom-Penh); DE JOANNIS, 1929: 571 (Cho cay; An chau, été; Tam Dao; Hoang su phi; Cha pa).

Material. 1 ♂, Hinterindien, Tonking [sic!], leg. F. DANIEL (MWM, genitalia slide 14319); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21.34° N, 105.20° E, sek. Wald, 1200 m, 1–15.XI.1992, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14320); 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 11.V.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 63, in

96% alcohol); 1 ♂, the same data but 12.V.2006 (CAS, VZ-LIMAC 67, in 96% alcohol).

Distribution. India, southern China, northern Thailand, northern Vietnam Laos.

Biology. The flight period falls in mid May and early November. The habitat altitude is 1200 m.

The egg stage lasts 9 days (73° F) (KING, 1938). The larvae are onisciform, nettle-type. The last instar larvae are green, whitish above, with two dorsal rows of black spots, a black dorsal patch on second segment, and a single spot on anal segment. The subdorsal scoli are longer than the dorsal ones. The food plants are various (MOORE, 1882–3: 129), among them: *Camellia* sp. (Theaceae, Sri Lanka), *Erythrina* sp. (Fabaceae, Sri Lanka) (KING, 1938); *Camellia sinensis* (L.) Kuntze (Theaceae, Sri Lanka), *Malus pumila* MILL. (Rosaceae, India) (ROBINSON et al., 2007). The duration of larval stage is 80–97 days (76° F, on *Camellia* sp.) and 72–72 (76° F, on *Erythrina* sp.) (KING, 1938).

The cocoon is round, pale brown (MOORE, 1882–3: 129). The pupal stage lasts 26–27 days (78° F).

Comment. The species is not separable from *O. pallivitta* (MOORE, 1877) (Colour plate 15, fig. 25), but in male genitalia the valvae provided with costal processes and the gnathos is slender (Genitalia plate 10, fig. 6).

The synonymy of *O. ochracea* (MOORE, 1883) and *O. weixiensis* CAI, 1984 is established here.

Nomenclatorial notes. The species *Aphendala ochracea* MOORE, 1883 was described after an unknown number of specimens, but the female, larva and cocoon are mentioned in the original description; only a single syntypical female was found in BMNH. The lectotype: female (BMNH), here designated, with following labels: 1 – round with red frame and black printed text, “Type”; 2 – rectangle, yellowish, with black printed text “MOORE Coll. | 94–106.”; 3 – rectangle, yellowish, with handwritten by MOORE with black ink text “*Aphendala | ochracea* ♀ | Type MOORE”, backside – “Ceylon | ♀”. The specimen is supplied with an additional lectotype label with corresponding text.

### ***Oxyplax pallivitta* (MOORE, 1877)**

Colour plate 15, fig. 26

*Miresa pallivitta* MOORE, 1877, Ann. Mag. nat. Hist. (4) 20: 93. Type locality: “Shanghai”. Lectotype: ♂ (BMNH), here designated.

References. CANDÈZE, 1927: 124 (Haut-Tonkin; as *Miresa pallivitta* MOORE); DE JOANNIS, 1929: 573 (Phu tho; Haut Tonkin; as *Miresa pallivitta* MOORE, 1877).

Material. 1 ♂, S. Vietnam, Ninh Thuan prov., Bac Ai Distr., Phuoc Binh vill. & NP, secondary forest, 200 m, 11–14.XI 2008, leg. TRAN Thieu Du (MWM).

Distribution. China, Taiwan, Thailand, northern and southern Vietnam (CANDÈZE, 1927: 124, DE JOANNIS, 1929: 573); Peninsular Malaysia, Java, Borneo (?) (HOLLOWAY, 1986: 145); Japan: Okinawa Island (YOSHIMOTO, 1997); Hawaii (CHUN et al., 2005; CONANT et al., 2001; NAGAMINE, EPSTEIN, 2007).

Biology. The single male was collected at 11–14 November in the altitude of 200 m.

The food plants are: *Zea mays* L. (Gramineae); *Ficus* sp. (Moraceae); *Adenostemma* sp. (ROBINSON et al., 2007), *Wedelia* sp. (Asteraceae) (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006); *Areca* sp., *Cocos nucifera* L., *Elaeis guineensis* JACQ.

(ROBINSON et al., 2007), *Caryota* sp., *Phoenix* sp., *Veitchia merrillii* (BECC.) BECC. (CHUN et al., 2005), *Neodypsis decaryi* (JUM.) BEENTJE & J.DRANSF. (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006), *Rhapis* sp., *Chrysalodocarpus lutescens* WENDL. (Arecaceae) (NAGAMINE, EPSTEIN, 2007: 120); *Pipturus albidus* (HOOK. & ARN.) A.GRAY ex H.MANN (Urticaceae); *Vigna marina* (BURM.f.) MERR. (CHUN et al., 2005), *Desmodium uncinatum* (JACQ.) DC., *Erythrina sandwicensis* O.DEG. (Fabaceae) (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006); *Commelina diffusa* BURMAN (Commelinaceae); *Breynia* sp. (Euphorbiaceae); *Cordyline terminalis* (L.) KUNTH (CHUN et al., 2005), *Cordyline marginata* (LAM.) ENDL. (Laxmanniaceae) (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006); *Dracaena* sp. (CHUN et al., 2005), *Iris* sp. (CHUN et al., 2005), *Beaucarnea recurvata* LEM., *Ophiopogon* sp. (Liliaceae) (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006); *Averrhoa carambola* L. (Oxalidaceae); *Coffea arabica* L. (CHUN et al., 2005), *Gardenia* sp. (Rubiaceae); *Alyxia oliviformis* GAUDICH. (Apocynaceae); *Tillandsia cyanea* LINDEN ex K.KOCH (Bromeliaceae); *Cuphea* sp. (Lythraceae); *Monstera* sp. (Araceae); *Clidemia hirta* (L.) D. DON, *Tibouchina* sp. (Melastomataceae); *Musa* sp. (Musaceae); *Psidium* sp. (Myrtaceae); *Jasminum multiflorum* (BURM.f.) ANDREWS (Oleaceae); *Arundina graminifolia* (D.DON) HOCHR. (Orchidaceae); *Panicum repens* L., *Paspalum conjugatum* P.J.BERGIUS, *Pennisetum purpureum* SCHUMACH. (Poaceae); *Macadamia* sp. (Proteaceae) (CHUN et al., 2005; WRIGHT, 2006, according to KOOP, 2006); Agavaceae; Caryophyllaceae; Commelinaceae; Costaceae; Hypoxidaceae; Iridaceae; Polypodiaceae; Zingiberaceae (CONANT et al., 2001).

Comments. The species is hardly distinguished externally from *O. ochracea* (MOORE, 1883) (Colour plate 15, fig. 26) but the valvae are without costal processes in male genitalia, the gnathos is much broader (Genitalia plate 10, fig. 7).

Additional material is needed for the determination of the exact taxonomic position of the single specimen from Vietnam.

Nomenclatorial notes. The type series of *Miresa pallivitta* MOORE, 1877 includes male and female from Shanghai in the collection PRYER and MOORE; only a single male was found in BMNH. The lectotype: male (BMNH), here designated, with labels: 1 – round, with red frame and black printed text “Type”; 2 – rectangle, yellowish, handwritten by MOORE with black ink text “*Miresa | pallivitta* MOORE | Shangai (type)”; 3 – rectangle, yellowish with black printed text “MOORE Coll. | 94–106.”; 4 – rectangle, blue, with black printed “Noctuidae | Brit. Mus. slide | No.” and black inked “901 ♂”. The lectotype is supplied with an additional lectotype label with corresponding text.

### ***Devaz* SOLOVYEV & WITT, gen. n.**

Type species: *Darna senescoides* HOLLOWAY, 1990, **here designated**.

The genus includes silky brownish grey moths with forewing length 9–13 mm and wingspan 22–27 mm in males, 11 mm and 25 in females and is erected here on the base of external features, venation and morphology of the male genitalia.

The male antennae are broadly bipectinate almost to the tip, brown. The head, thorax and abdomen are grey (Colour plate 15, figs 27–28). The forewings are elongate, with concave costa, almost unicolourous greyish brown with smooth dark spot on 2/3 of

medial stem and smooth external fascia. The hindwings are dark brownish grey. The cilia of wings are grayish.

The forewing venation is characterized by R5 stalked from the basis of R2+R3+R4; the medial stem is developed, not branched distally; the veins A1+A2 and CuP are not distinctly sinuous.

In male genitalia, the uncus is long, broad, bifid apically (Genitalia plate 10, fig. 8). The gnathos is simple, slender. The valvae are short, narrow distally and very broad basally with distinct haired saccular lobes, with serrate processes from the base of costa or with setose flaps that may be homologous with them (HOLLOWAY, 1990: 58). The juxta is small, flattened. The aedeagus is tube-shaped.

In female genitalia, the ovipositor lobes are ovoid. The anterior apophyses are slender; the posterior ones are long, finger-shaped. The ductus bursae is not spiral, short; the corpus bursae is ovoid, without signum.

The genus is erected on the base of adult external features first of all. The coloration and forewing pattern is unique and do not occur in the genus *Darna* WALKER, 1862 sensu HOLLOWAY (1986, 1990). The venation does not conform to the *Darna* ground plan where the vein R5 is stalked with the base of R2+R3+R4, not from discal cell as in *Darna* WALKER, 1862, *Orthocraspeda* HAMPSON, 1893, *Oxyplax* HAMPSON, 1893 and *Ploneta* SNELLEN, 1900. The shape of the valvae is diagnostic. The probable apomorphies of the genus are the presence of haired saccular lobe in valva and the bilobed uncus without distinct haired areas in addition to slender and curved gnathos.

The genus includes 4 species: *D. senescens* (WEST, 1932), **comb. n.**, *D. senescoides* (HOLLOWAY, 1990), **comb. n.**, *D. aspergillata* (HERING, 1931), **comb. n.**, and *D. vetus* SOLOVYEV & WITT, **sp. n.** The two three of them were placed in subgenus of *Darna* (*Orthocraspeda* HAMPSON, 1893) before; the third – from *Macroplectrina* HERING, 1931.

The biology is unknown but the tentatively attributed larva is illustrated in HOLLOWAY et al., 1987: pl. 29.

Etymology. From Devas – gods, deities, spirits, angels (from Six Realms – types of life in Buddhism).

### ***Devaz vetus* SOLOVYEV & WITT, sp. n.**

Colour plate 15, fig. 28

Type material. Holotype: ♂, “C. Vietnam | Prov. Kon Tum | 1.VI.2006 | leg. V. ZOLOTUHIN”, “Coll. ZSM | Munich, Germany”, “VZ-LIMAC 29 | (96% alcohol prep.)”, “Genitalia slide | SAV-08-02 | A. SOLOVYEV pr. | ZSM Munich” (ZSM, genitalia slide SAV-08-02, VZ-LIMAC 29 – alcohol prep.). Paratype: 1 ♂, C. Vietnam, Kon Tum, 1.VI.2006, leg. V. ZOLOTUHIN (CAS, VZ-LIMAC 28 in 96% alcohol).

Additional material. 1 ♂, C. Vietnam, Prov. Kon Tum, distr. Kom Plong, Mang Canh, 1250 m, 1–10.VI.2006, leg. V. ZOLOTUHIN (CAS, 70% alcohol).

The forewing length is 13 mm, wingspan is 28 mm. The ground colour is greyish brown (Colour plate 15, fig. 28). The male antennae are broadly bipectinate almost to the tip. The thorax is greyish. The forewings are brownish with dark, smooth spot near 2/3 of medial stem and smooth dark external fasciae. The fringes of wings are greyish. The hindwings are greyish brown.

The male genitalia with strong, apically bifid uncus with two curved dorsal processes (Genitalia plate 10, fig. 8); the processes as long as 2/3 of the rest part of uncus. The gnathos is very slender, strongly sclerotized and flattened distally, acute apically. The valvae are triangular in general view, with finger-shaped, thickly haired, saccular process and hook-shaped broad costal process near its base. The juxta is flattened. The aedeagus is tube-shaped, straight.

Diagnosis. The species is not distinguished from its congeners externally but the morphology of male genitalia is diagnostic. The dorsal processes of uncus are very slender; the costal processes of valvae are present, short, gradually narrowed distally; the saccular processes of valvae are present, finger-shaped.

Distribution. Central Vietnam (Kon Tum).

Biology. The specimens were collected in early June in the altitude of 1250 m.

Etymology. *Vetus* (from Latin) – old, threadbare, worn-out, in connection with external view of the type.

### ***Fignya* SOLOVYEV & WITT, gen. n.**

Type species: *Fignya melkaya* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus is described for a single species, the male genitalia of which do not allow to place the species in any known limacodid genus.

The forewing length is 8–9 mm, the wingspan 18–19 mm in males. The male antennae are filiform. The ground colour is greyish yellow (Colour plate 8, fig. 25). The forewing has series of zig-zag dark fasciae and large white spot in Cu-area with brown border. The forewing with sinusoidal vein R1, the vein R5 is branched from R3+R4.

In male genitalia, the uncus is single, without any spur, pointed apically (Genitalia plate 10, fig. 9). The gnathos is very broad, flattened, with the shape of fish-tail, comb-shaped apically. The valvae is elongate with basal large, hairy papula. The juxta with two slender lateral processes. The saccus is long. The aedeagus is short, tube-shaped. The vesica bears large hook-shaped cornuti.

Female unknown.

Diagnosis. The genus is similar to *Atosia* SNELLEN, 1900, but the forewings with zig-zag fasciae and large cubital white spot.

The probable apomorphies of the genus are the presence of a fish-tail, apically comb-shaped gnathos in male genitalia, valvae with large hairy basal papula, vesica with large hook-shaped cornuti.

The genus is tentatively associated with *Narosa* WALKER, 1855, *Atosia* SNELLEN, 1900, *Flavinarosa* HOLLOWAY, 1986, and *Saccurosa* HOLLOWAY, 1986 on the base of their similarity in habitus, filiform male antennae and sinusoidal vein R1.

Etymology. In Russian “fignya” means trifling.

### ***Fignya melkaya* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 25

Type material. Holotype: ♂, “N-Vietnam 16–1800 m | Mt. Fan-si-pan (West) | Cha-pa (=Sapa) |

Sek.Wald / Kulturland | 22.20'N 103.40'E | 10.VI.–6.VII.1994 | SINJAEV & einh. Saml. | Museum WITT", "Genitalpräparat | Heterocera | Nr. 14.047 | Museum WITT München" (MWM, genitalia slide 14047). Paratypes: 1 ♂, the data as in holotype; 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 22.15° N, 103.45° E, primär. Nebelwald, 2000 m, 5.VII.1994, leg. BRECHLIN & SCHINTLMEISTER (MWM, genitalia slide 14039); 1 ♂, N. Vietnam, Mt. Fan-si-pan, near Cha-pa, 22°20'N, 103°40'E, secondary forest, 1600–1800 m, V.1996, leg. local collectors (MWM, genitalia slide 10046); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, NN, 22.15° N, 103.46° E, 1700 m, 8–29.V.1993, leg. SINAJEV & SIMONOV (MWM, genitalia slide 14046).

The forewing length is 8–9 mm, the wingspan 18–19 mm in males. The male antennae are filiform. The ground colour is pale greyish yellow (Colour plate 8: 25). In forewing, the zig-zag smooth brown fascia, the broad arcuate medial fascia and large rounded white patch with brown border are well defined. The hindwings are greyish yellow.

The male genitalia are characterized by a simple, apically pointed uncus without any spur (Genitalia plate 10, fig. 9). The gnathos has the shape of a fish-tail and is apically comb-like. The valvae are elongate with basal papula which bears laterally large bristles. The juxta has slender lateral processes, which are curved apically. The length of these processes is equal to valva width. The saccus is long. The aedeagus is tube-shaped, slightly curved proximally, short. The vesica has 3 large hook-shaped cornuti.

Diagnosis. The species is similar to members of *Atosia* SNELLEN, 1900, but easily distinguished externally and by male genitalia (see generic description).

Distribution. Northern Vietnam.

Biology. The moths were collected in May, mid June to early July in altitudes of 1600 to 2000 m.

Etymology. From Russian "melkiy" – small.

### ***Caniatta* SOLOVYEV & WITT, gen. n.**

Type species: *Caniatta levis* SOLOVYEV & WITT, **sp. n.**, here designated.

The genus is monotypical so far. The moths are small, yellowish grey (Colour plate 8, fig. 24). The male antennae are broadly bipectinate almost to the apex. The forewings are triangular with two dark, parallel to the outer margin fasciae. The forewing venation with R5 branched from R3+R4; the vein R1 is slightly curved, the medial stem is well developed, not branched distally.

The male genitalia with elongate uncus, slightly apically bilobed with two, sagittally flattened lobes (Genitalia plate 10, fig. 10). The gnathos is well developed. The juxta is small, flattened. The aedeagus is slender. The vesica contains two rows of thickly hair-like cornuti.

The females and biology are unknown.

The forewing pattern is similar to *Cania* WALKER, 1855, but *Caniatta* is smaller in size with male antennae broadly bipectinated almost to the apex. In comparison to *Cania*, the male genitalia of *Caniatta* SOLOVYEV & WITT, **gen. n.** have no divided valvae, the uncus is only slightly bifid apically, the vesica of the aedeagus contains hair-like cornuti. The possible apomorphies of the genus are the uncus with two sagittally flattened apical lobes and the presence of two rows of sickle-shaped hair-like cornuti. The phylogenetic

relationships of the genus are unknown until its female and larva are detected.

The genus is named in connection with external similarity with genus *Cania* WALKER, 1855.

***Caniatta levis* SOLOVYEV & WITT, sp. n.**

Colour plate 8, fig. 24

Type material. Holotype: ♂, “N. Vietnam | Cúc Phuong N.P. | Bông Cuc Phuong vill. | Nho Quan distr., Ninh Binh prov. | 20°15’N, 105°40’E | 350±30 m 8.X.2008 | leg. A. SOLOVYEV & V. ZOLOTUHIN” (CAS, genitalia slide 0014). Paratypes: 2 ♂♂, the same data (CAS); 1 ♂, the same data (CAS, AS-LIMAC 57, in 96% alcohol); 1 ♂, C. Vietnam, Pu Mat N.P., Yên Khê, Thác Kềm waterfall, Con Công distr., Nghe An prov., 18°57’54.4’’N, 104°48’09.6’’E, 320±32 m, 27.IX.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, genitalia slide 0088); 1 ♂, C. Vietnam, Pu Mat N.P., Tam Dinh vill., Tương Dương distr., Nghe An prov., 19°10’32.5’’N, 104°37’18.5’’E, 165±15 m, 4–5.X.2008, leg. A. SOLOVYEV & V. ZOLOTUHIN (CAS, AS-LIMAC 68, in 96% alcohol).

The forewing length is 6 mm in males, the wingspan is 12–13 mm. The ground colour is greyish yellow. The male antennae are shortly bipectinate. The forewings have 2 shaded dark fasciae which are parallel to outer margin (Colour plate 8, fig. 24).

The male genitalia with slender, slightly apically bifid uncus with two sagittally flattened finger-shaped lobes (Genitalia plate 10, fig. 10). The gnathos is slender, apically acute. The valvae are narrow, elongate with acute apex. The saccus is elongate. The aedeagus is S-shaped, 1.5 times as long as the valva. The vesica contains two rows of hair-like cornuti.

The species is similar to *Cania* WALKER, 1855. See diagnosis in generic description.

Distribution. Northern and central Vietnam.

Biology. The flight period falls in late September to early October. The species is found in habitats situated between 150 to 380 m elevation.

Etymology. From Latin “levis” – small, light.

***Euphlyctina* HERING, 1931**

in SEITZ, Gross-Schmett. Erde **10**: 671 (key), 704. Type species: *Araeogyia phaeopasta* HAMPSON, 1906, by original designation.

The genus includes small-sized moths of brownish-grey coloration (Colour plate 8, fig. 26). The male antennae are filiform. The forewings are elongate, grey with characteristic obscure orange apical, tornal and basal spots with sparse dark scales. The hindwings are grey.

In the male genitalia, the uncus is simple. The gnathos is clavate. The valvae with two distal saccular processes. The juxta is asymmetric with two lateral crescent-shaped processes. The aedeagus is very slender.

The genus is similar to *Microleon* BUTLER, 1885, but with distinct differences in morphology of the male genitalia. Probably, *Microleon* BUTLER, 1885 and *Euphlyctina* HERING, 1931 are sister-groups.

The genus includes *E. phaeopasta* (HAMPSON, 1906) and *E. sp.*, and is known from India

and central Vietnam.

***Euphlyctina* sp.**

Colour plate 8, fig. 26

Material. 1 ♂, N. Vietnam, Fan Si Pan Mts., Sa Pa Nat. Park, 12.VI.2006, leg. V. ZOLOTUHIN (ZSM, genitalia slide 0106, VZ-LIMAC 38, in 96% alcohol).

Distribution. Northern Vietnam.

Biology. The single male was collected in June, 12th.

Comments. Externally similar to *E. phaeopasta* HAMPSON (from Indian subregion), but differs in male genitalia. More comparative material is necessary to define its status precisely.

## Results

153 species of Limacodidae belonging to 74 genera are presently known from Vietnam of which 110 species are reported for the first time. This number of species is not exhaustive and 5% of Vietnamese species are considered as unknown. The fauna is characterized by a large amount of endemic species (~35%) and 5% of the genera are endemic in the region. 29% of the species are known also from the Indian region and 11% from Sundaland. The closest relationships can be found with fauna of northern Thailand (~36%) and southern China (~40 %).

## Acknowledgements

We are very grateful to Dr. Vadim V. ZOLOTUHIN (State Pedagogical University of Ulyanovsk; Russia) for his scientific support, reading of this paper and corrections, for help in obtaining of digital images of adults and larvae, support in examination of type material from different museums and collecting of moths mentioned in the paper.

We would like to express our sincere gratitudes to Dr. Wolfram MEY (ZMHB; Berlin, Germany), Mr. Martin HONEY and Mr. Geoff MARTIN (both from BMNH; London, United Kingdom) for his support and hospitality during examination of his collections in 2005 and 2008 by the first author; to Prof. Joël MINET (MNHN; Paris, France) for support in study of type material from their collection; to Mr. Jérôme BARBUT (MNHN; Paris, France) – participant of project "colhelper" for the Lepidoptera of MNHN, for kind making of genitalia slide and digital images of type material; to Dr. Mamoru OWADA (NSMT; Tokyo, Japan) and Dr. Chunsheng WU (IZCAS; Beijing, China) for afford an opportunity of examinations of the type material from their collections and sending of rare and important literature; to Dr. Kazunori YOSHIKAWA (EIHU; Sapporo, Japan), Dr. Erik J. NIEUKERKEN (RMNH; Leiden, Netherlands), Dr. Wolfgang SPEIDEL (MWM; Munich, Germany), Dr. Darren MANN (HDOU; Oxford, United Kingdom), Dr. Axel HAUSMANN (ZSM; Munich, Germany), Dr. Martin LÖDL and Dr. Sabine GAAL-HASZLER (both from NHW; Wien, Austria) for kind support in examination of material from their collections; to Mr. Siegfried IHLE (Ingolstadt, Germany) for access in study of his private collection on Lepidoptera; to Mr. Alexander V. GURKOVICH (State Pedagogical University of Ulyanovsk; Russia) for making of genitalia slides of



several types and digital images of them and his kind support in obtaining of some material; to Dr. Igor Yu. KOSTYUK (Zoological Museum of Kiev State University) for technical support. We deeply appreciate Mr. Victor V. SINYAEV and Mr. Yuri A. BEZVERKHOV (both from Moscow, Russia), outstanding collectors, for their kind permission to examine their private collections of amazing specimens.

The first author wishes to thank to Dr. Marc EPSTEIN (California Dept. of Food & Agriculture University) for advises and possibility of examination of rare literature.

For support in expedition to Vietnam (2008) and hospitality the first author express his sincere thanks to Mr. TRAN Thieu Du (IEBR; Hanoi, Vietnam).

Financially the investigation was supported by Thomas-WITT-Stiftung in 2005–2008 and field expedition by a special RFBI-grant № 08-04-90300-Viet a.

The images of the typical specimens from the collection of BMNH were figured here under courtesy of The Trustees of the Museum.

The work is a part of a program of the Department of Zoology (State Pedagogical University of Ulyanovsk) on investigation of biodiversity of moths.

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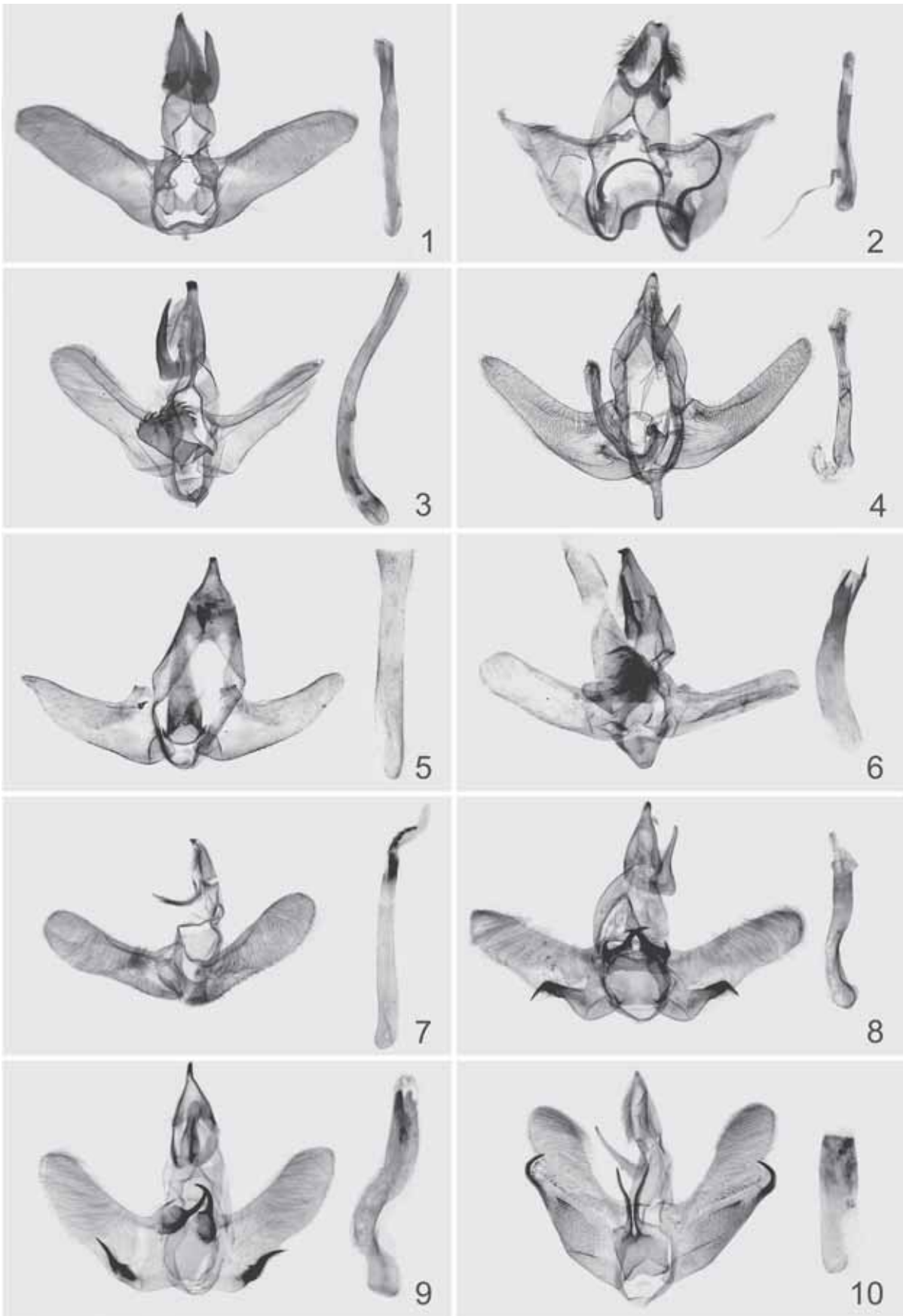
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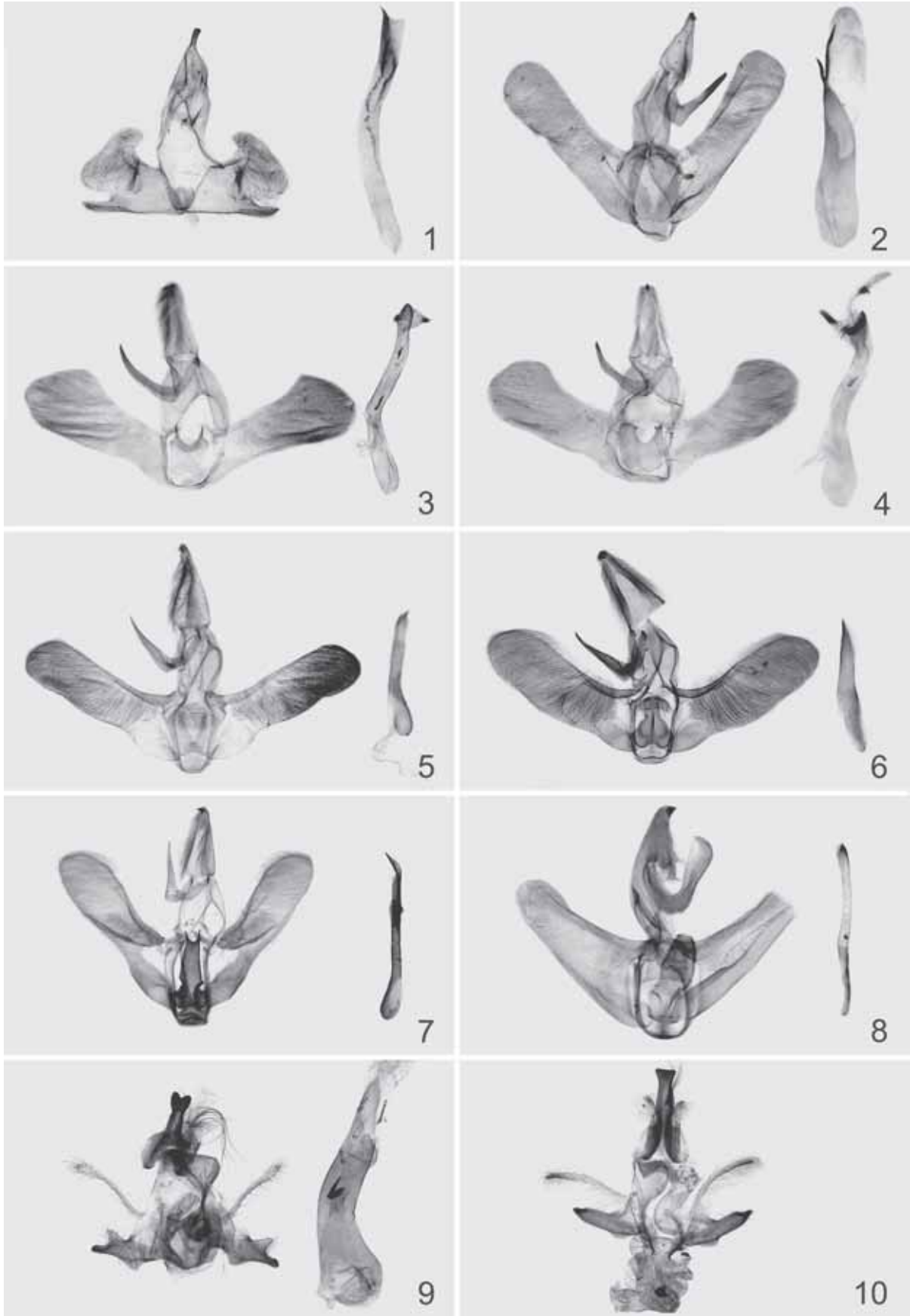
### Genitalia plate 1 (Male genitalia)

1. *Cheromettia alaceria*, sp. n. (MWM, holotype, genitalia slide 14322; Thailand, Chiang Mai);
2. *Calauta martini*, sp. n. (BMNH, holotype, genitalia slide LIMAC 1403; Thailand, Chiang Mai);
3. *Belippa aeolus*, sp. n. (MWM, holotype, genitalia slide 14388; northern Vietnam);
4. *Altha* (*Altha*) *nivea* WALKER, 1862 (HDOU, lectotype, type 701; Borneo);
5. *A.* (*Belgoraea*) *nix*, sp. n. (MWM, holotype, genitalia slide 13004; northern Vietnam);
6. *Althonarosa horisyaensis* KAWADA, 1930 (MWM, genitalia slide 12933);
7. *Narosa* (*Penicillonarosa*) *nigrisigna* WILEMAN, 1911 (MWM, genitalia slide 13114; northern Vietnam);
8. *Quasinarosa fulgens* (LEECH, 1888) (MNHN, lectotype of *Narosa Tamsi* LEMÉE; northern Vietnam);
9. *Q. laesara*, sp. n. (MWM, holotype, genitalia slide 13090; northern Vietnam);
10. *Tennya propolia* (HAMPSON, 1900) (MWM, genitalia slide 13077; northern Vietnam).



Genitalia plate 2 (Male genitalia)

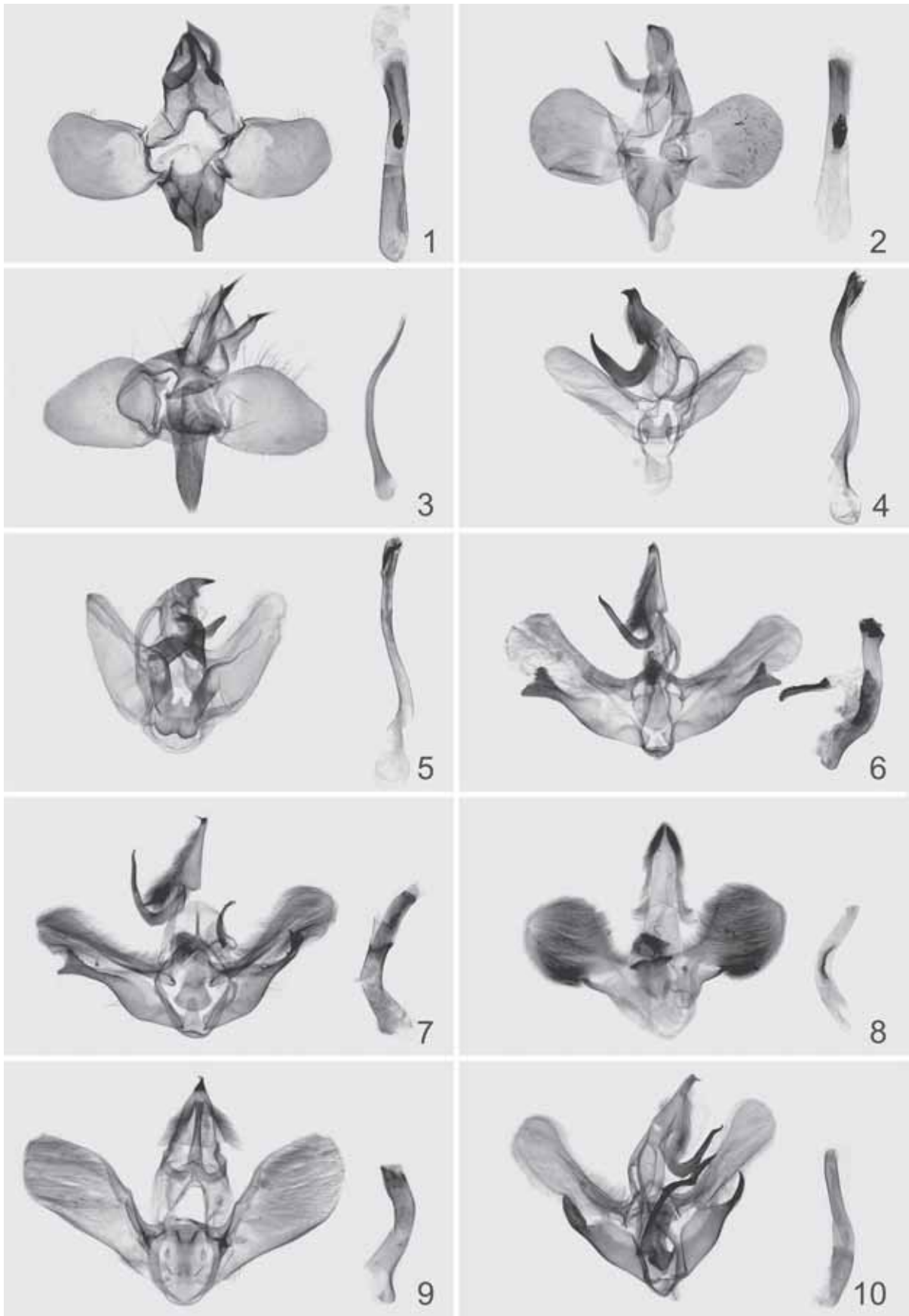
1. *Caelestomorpha albiceris*, sp. n. (MWM, genitalia slide 13032; northern Vietnam);
2. *Vipaka niveipennis* (HERING, 1931) (MWM, genitalia slide 13019; northern Vietnam);
3. *Flavinarosa alius*, sp. n. (MWM, holotype, genitalia slide 13836; northern Vietnam);
4. *F. glaesa*, sp. n. (MWM, holotype, genitalia slide 13801; southern Vietnam);
5. *Barabashka bilineatum* (HERING, 1931) (CAS, genitalia slide 0018; northern Vietnam);
6. *B. mirus*, sp. n. (MWM, holotype, genitalia slide 13250; central Vietnam);
7. *Euphlyctinides laika*, sp. n. (CAS, paratype, genitalia slide 0021; central Vietnam);
8. *Nagodopsis alethis*, sp. n. (MWM, genitalia slide 14191; northern Vietnam);
9. *Cania bilinea* (WALKER, 1855) (CAS, genitalia slide 0108; central Vietnam);
10. *C. robusta* HERING, 1931 (CAS, genitalia slide 0107; central Vietnam).





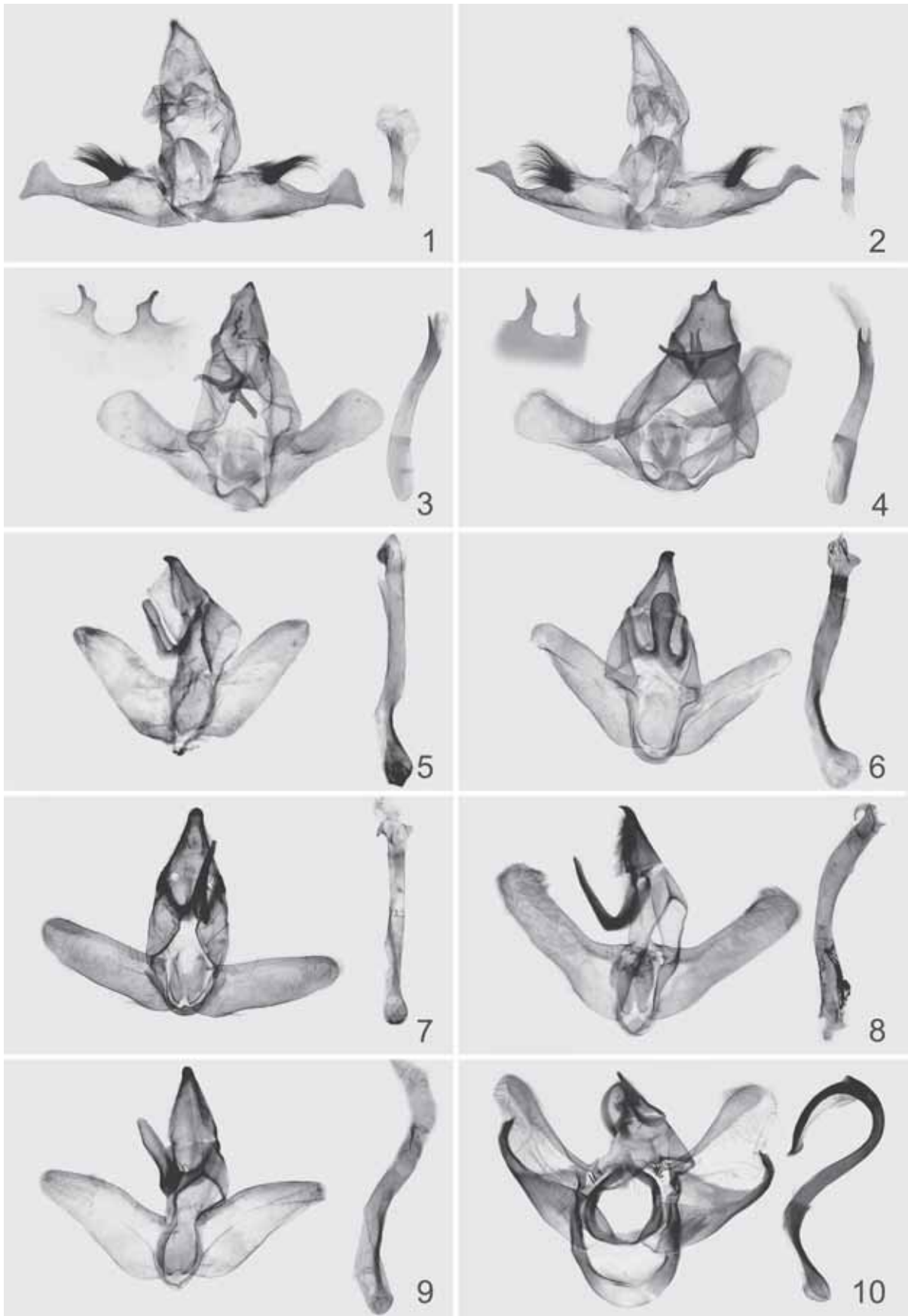
Genitalia plate 3 (Male genitalia)

1. *Cania siamensis* TAMS, 1924 (MWM, genitalia slide 14586; central Vietnam);
2. *C. accea*, sp. n. (MWM, holotype, genitalia slide 13847; northern Vietnam);
3. *C. victori*, sp. n. (MWM, holotype, genitalia slide 13873; southern Vietnam);
4. *Rhamnosa (Rhamnosa) kwangtungensis* HERING, 1931, stat. n., ♂ (MWM, genitalia slide 14392; northern Vietnam);
5. *Rh. (Caniodes) takamukui* MATSUMURA, 1927 (MWM, genitalia slide 14391; northern Vietnam);
6. *Caissa aurea*, sp. n. (MWM, holotype, genitalia slide 14398; northern Vietnam);
7. *C. bezverkhovi*, sp. n. (MWM, holotype, genitalia slide 0069; central Vietnam);
8. *Pseudocaissa apiata*, sp. n. (MWM, holotype, genitalia slide 11487; northern Vietnam);
9. *Hampsonella membra*, sp. n. (MWM, holotype, genitalia slide 14397; northern Vietnam);
10. *Arabessa plumata*, sp. n. (MWM, holotype, genitalia slide 14590; central Vietnam).



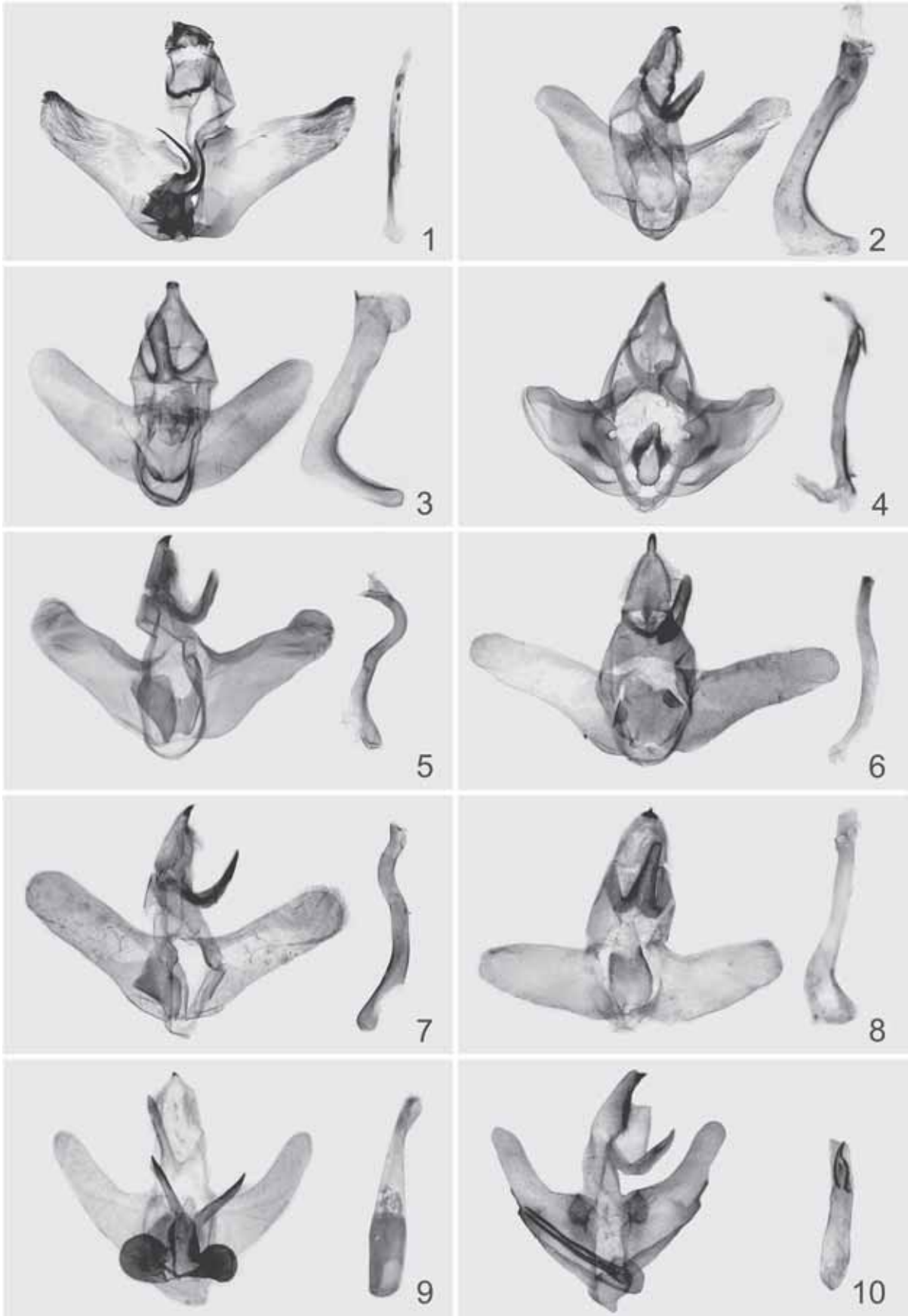
#### **Genitalia plate 4 (Male genitalia)**

1. *Chalcocelis albor*, sp. n. (MWM, holotype, genitalia slide 14213; northern Vietnam);
2. *Ch. dydima*, sp. n. (MWM, holotype, genitalia slide 14306; China, Hainan);
3. *Sansarea zeta*, sp. n. (MWM, holotype, genitalia slide 12733; northern Vietnam);
4. *S. grata*, sp. n. (MWM, holotype, genitalia slide 13241; northern Vietnam), sternite of paratype (CAS, VZ-LIMAC 48; northern Vietnam);
5. *Miresa urga* HERING, 1933 (ZMHB, lectotype; northern Vietnam);
6. *M. sagitovae*, sp. n. (MWM, holotype; genitalia slide 14351; northern Vietnam);
7. *M. polargenta* WU et SOLOVYEV (in print) (MWM, holotype, genitalia slide 14353; northern Vietnam);
8. *M. rorida*, sp. n. (MWM, holotype, genitalia slide 0048; central Vietnam);
9. *Narosoideus morion*, sp. n. (MWM, holotype, genitalia slide 14358; northern Vietnam);
10. *Monema meyi*, sp. n. (MWM, holotype, genitalia slide 0102; central Vietnam).



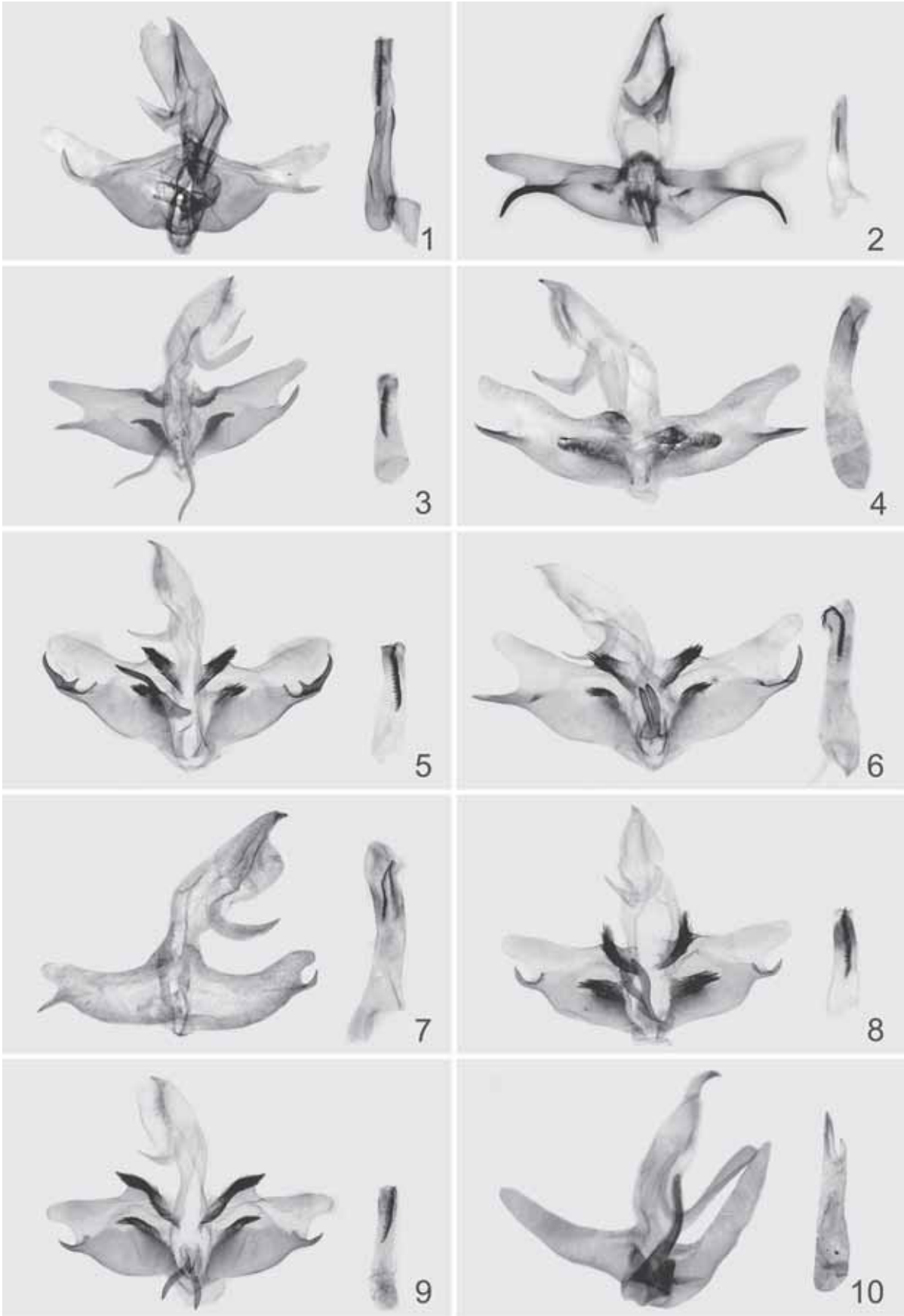
### Genitalia plate 5 (Male genitalia)

1. *Prapata owadai*, sp. n. (MWM, holotype, genitalia slide 14157; northern Vietnam);
2. *P. julikatis*, sp. n. (MWM, holotype, genitalia slide 14394; northern Vietnam);
3. *P. emeralda*, sp. n. (MWM, holotype, genitalia slide 12677; central Vietnam);
4. *P. campagnei* DE JOANNIS, 1928 (CAS, genitalia slide 0079; central Vietnam);
5. *P. ostia* SWINHOE, 1902 (BMNH, lectotype; Khasia Hills);
6. *P. vadimi*, sp. n. (MWM, holotype, genitalia slide 12285; northern Vietnam);
7. *P. altilis*, sp. n. (MWM, holotype, genitalia slide 12335; northern Vietnam);
8. *P. stekolnikovi*, sp. n. (MWM, paratype, genitalia slide 9728; northern Vietnam);
9. *P. argentifascia* (CAI, 1983) (NSMT, genital slide GU 2007-06; northern Vietnam);
10. *P. atera*, sp. n. (MWM, holotype, genitalia slide 11212; northern Vietnam).



### Genitalia plate 6 (Male genitalia)

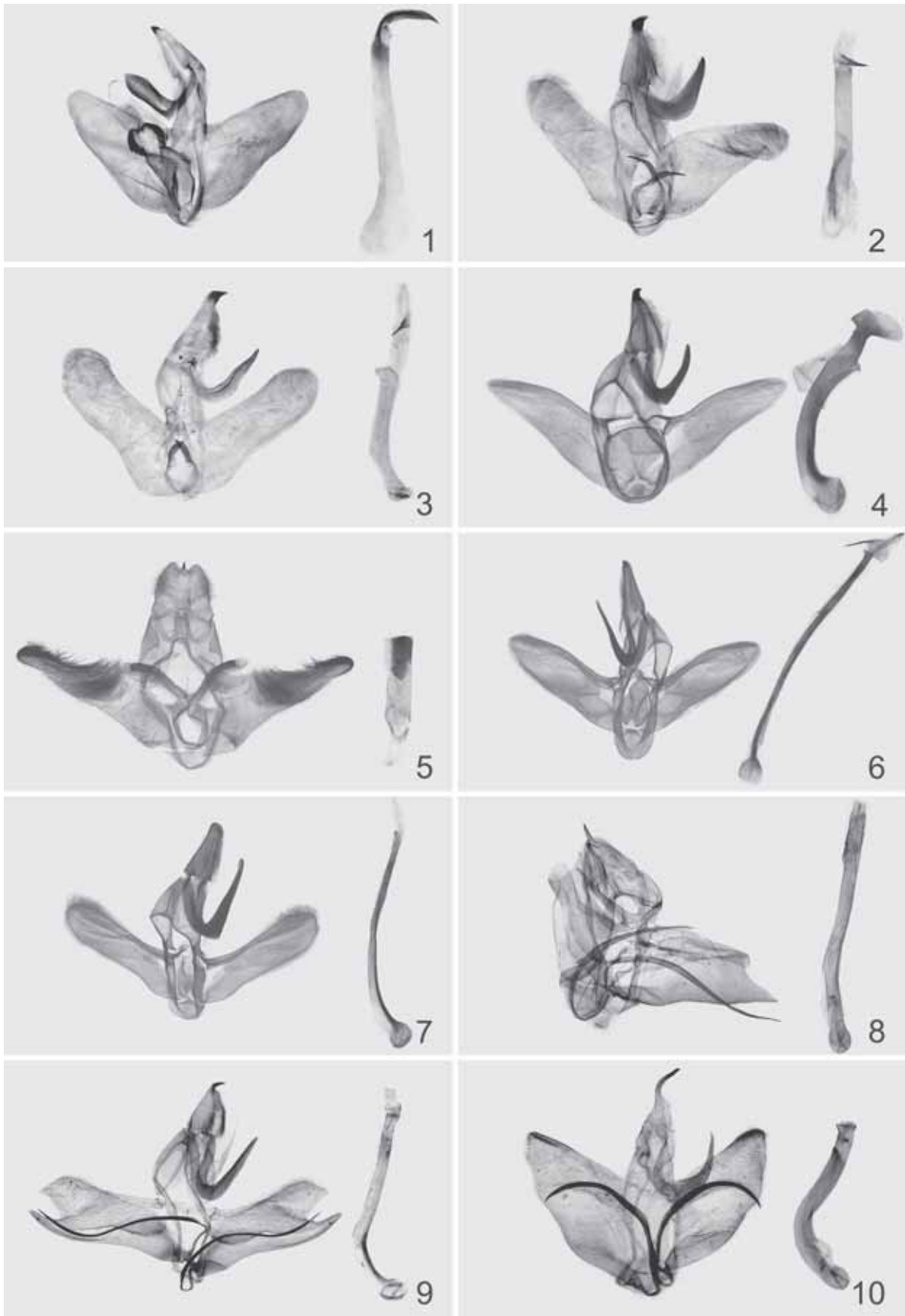
1. *Parasa albipuncta* HAMPSON, 1893 (BMNH, holotype; India);
2. *P. zhudiana* (CAI, 1983) (MWM, genitalia slide 9723; northern Vietnam);
3. *P. bicolor* (WALKER, 1855) (MWM, genitalia slide 11201; northern Vietnam);
4. *P. flavabdomena* (CAI, 1983) (MWM, genitalia slide 11140; northern Vietnam);
5. *P. hainana* (CAI, 1983) (NSMT, genitalia slide 2007-03; northern Vietnam);
6. *P. yana* (CAI, 1983) (coll. HAUENSTEIN, genitalia slide GU-06-003; north-eastern Laos);
7. *P. jade*, sp. n. (MWM, holotype, genitalia slide 11194; southern Thailand);
8. *P. foliola*, sp. n. (MWM, holotype, genitalia slide 11207; central Vietnam);
9. *P. umbra*, sp. n. (MWM, holotype, genitalia slide 11206; northern Vietnam);
10. *P. argentilinea* HAMPSON, 1893 (MWM, genitalia slide 11215; northern Vietnam).





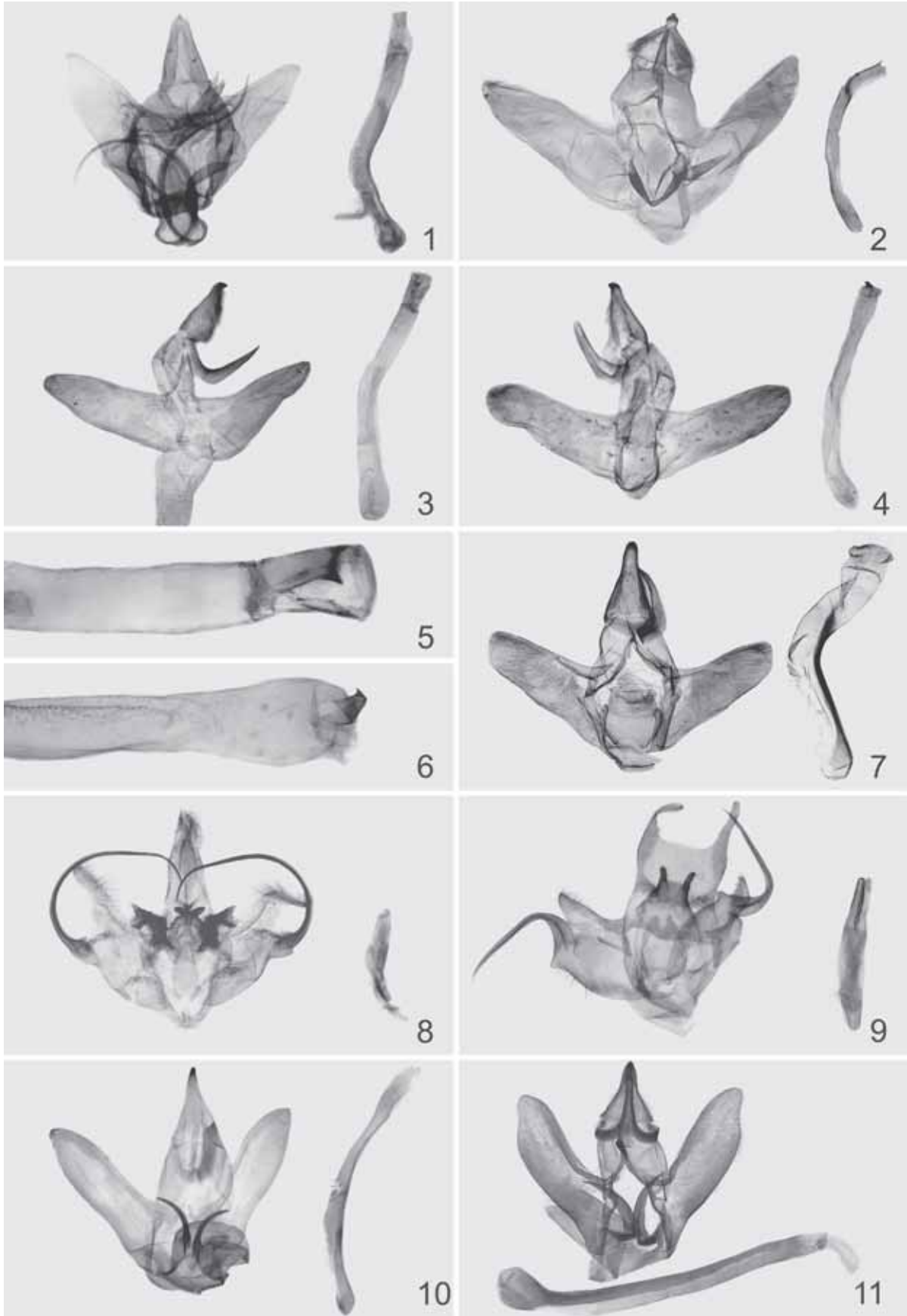
### **Genitalia plate 7 (Male genitalia)**

1. *Parasa bana* (CAI, 1983) (MWM, genitalia slide 12722; northern Vietnam);
2. *P. dilucida*, sp. n. (MWM, holotype, genitalia slide 11446; northern Vietnam);
3. *P. badia*, sp. n. (MWM, holotype, genitalia slide 11162; northern Vietnam);
4. *Hyphorma avanta*, sp. n. (MWM, holotype, genitalia slide 0104; central Vietnam);
5. *Tanvia zolotuhini*, sp. n. (MWM, holotype, genitalia slide 13949; northern Vietnam);
6. *Phocoderma velutina* (KOLLAR, 1844) (CAS, genitalia slide 0001; central Vietnam);
7. *Ph. betis* DRUCE, 1896 (CAS, genitalia slide 0029; central Vietnam);
8. *Thosea sinensis* (WALKER, 1855) (BMNH, holotype; southern China);
9. *Th. vulturaria*, sp. n. (MWM, holotype, genitalia slide 14063; northern Vietnam);
10. *Th. unius*, sp. n. (MWM, holotype, genitalia slide 14058; northern Vietnam).



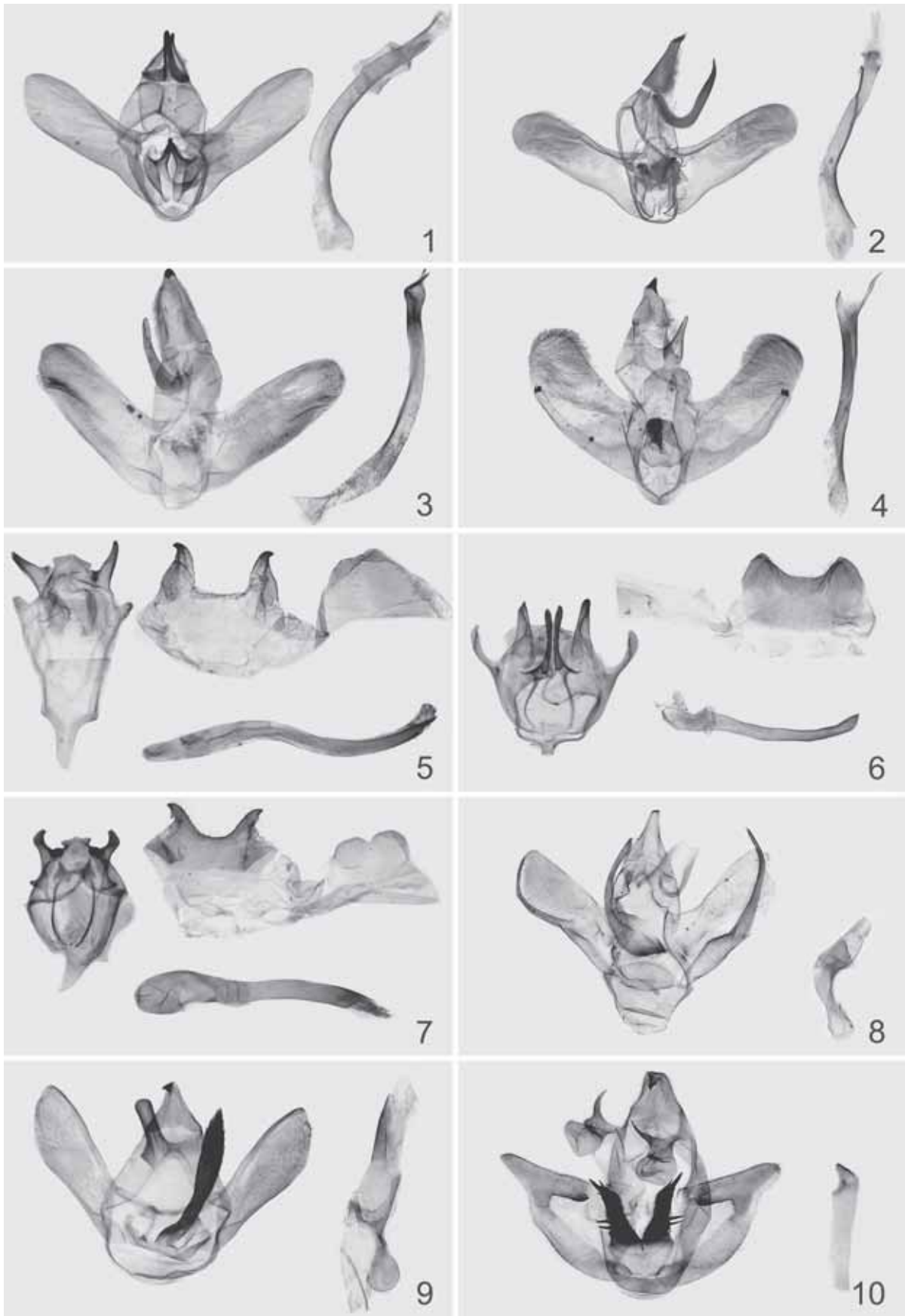
### Genitalia plate 8 (Male genitalia)

1. *Quasithosea obliquistriga* (HERING, 1931) (ZMHB, holotype of *Thosea curvistriga* HERING, 1931; southern China);
2. *Griseothosea sordeo*, sp. n. (MWM, holotype, genitalia slide 14097; northern Vietnam);
3. *Avatara onyx*, sp. n. (MWM, holotype, genitalia slide 14066; northern Vietnam);
4. *A. sicilis*, sp. n. (MWM, holotype, genitalia slide 14104; northern Vietnam);
5. *A. onyx*, sp. n., the apex of aedeagus (MWM, holotype, genitalia slide 14066; northern Vietnam)
6. *A. sicilis*, sp. n., the apex of aedeagus (MWM, holotype, genitalia slide 14104; northern Vietnam);
7. *Vanlangia uniformis* (HERING, 1931) (BMNH, genitalia slide Limac-1372; northern Vietnam);
8. *Pseudidonauton siamica* SOLOVYEV, 2009 (in print) (MWM, genitalia slide 13831; northern Thailand);
9. *P. vexa* SOLOVYEV, 2009 (in print) (MWM, genitalia slide 0066; central Vietnam);
10. *Setora baibarana* (MATSUMURA, 1931) (MWM, genitalia slide 13983; Taiwan);
11. *S. cf fletcheri* Holloway, 1987 (CAS, genitalia slide 0030; southern Vietnam).



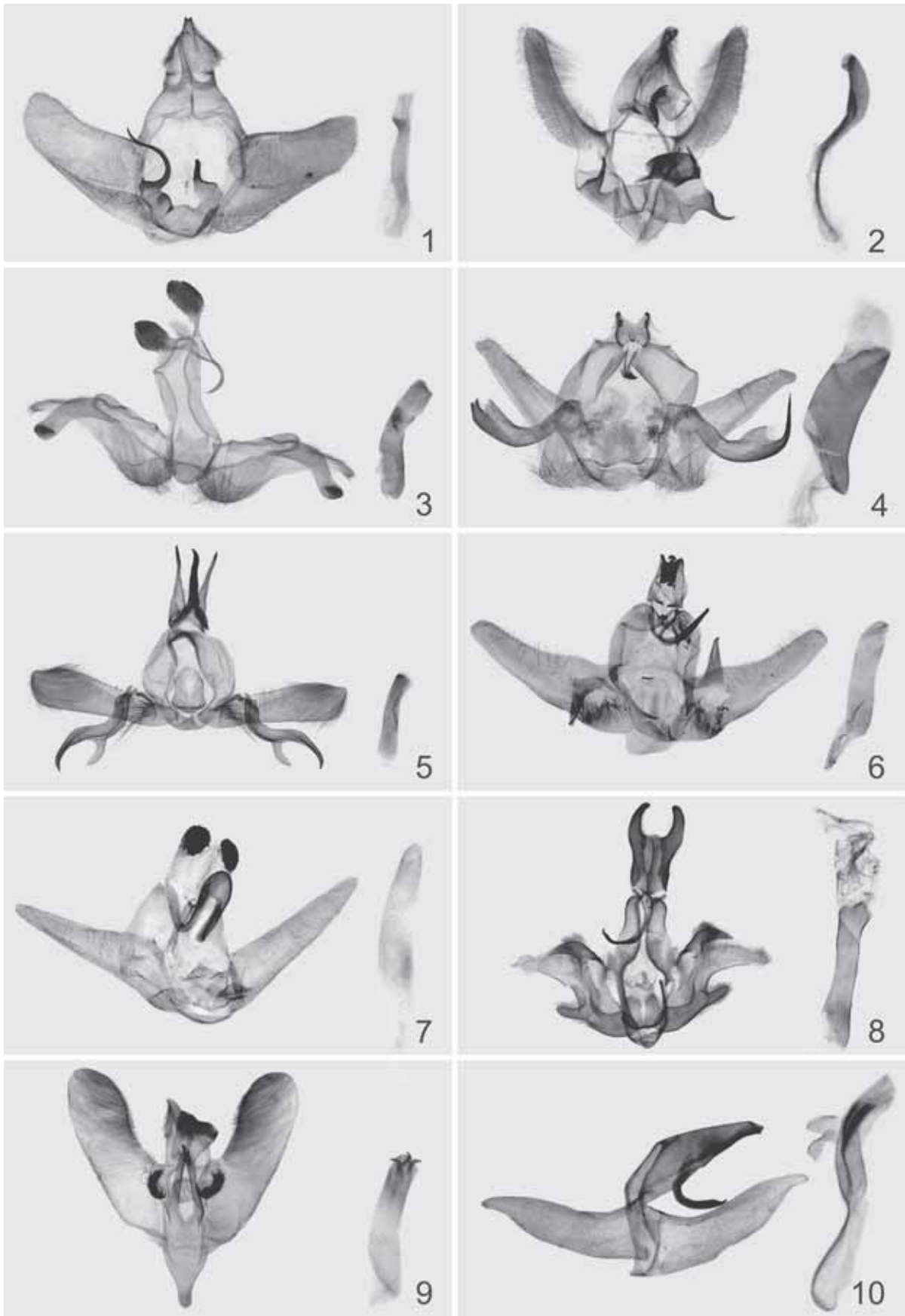
### Genitalia plate 9 (Male genitalia)

1. *Praesetora kwangtungensis* HERING, 1931 (MWM, genitalia slide 14585; central Vietnam);
2. *P. confusa*, sp. n. (MWM, genitalia slide 0052; central Vietnam);
3. *Pretas furcillata* (WU et FANG, 2008) (MWM, genitalia slide 1036; northern Vietnam);
4. *Pseudiragoides spadix*, sp. n. (MWM, holotype, genitalia slide 14177; northern Vietnam);
5. *Nirmides altadim*, sp. n. (MWM, holotype, genitalia slide 14307; northern Thailand);
6. *N. mimur*, sp. n. (CYB, holotype, genitalia slide SAV-01; central Vietnam);
7. *N. trani*, sp. n. (MWM, holotype, genitalia slide 0095; southern Vietnam);
8. *Pseudonirmides* cf. *cyanopasta* (HAMPSON, 1910) (MWM, genitalia slide 12759; northern Vietnam);
9. *Mummu aerata*, sp. n. (MWM, holotype, genitalia slide 14216; northern Vietnam);
10. *Limacolasia suffusca*, sp. n. (MWM, holotype, genitalia slide 13292; northern Vietnam).



### Genitalia plate 10 (Male genitalia)

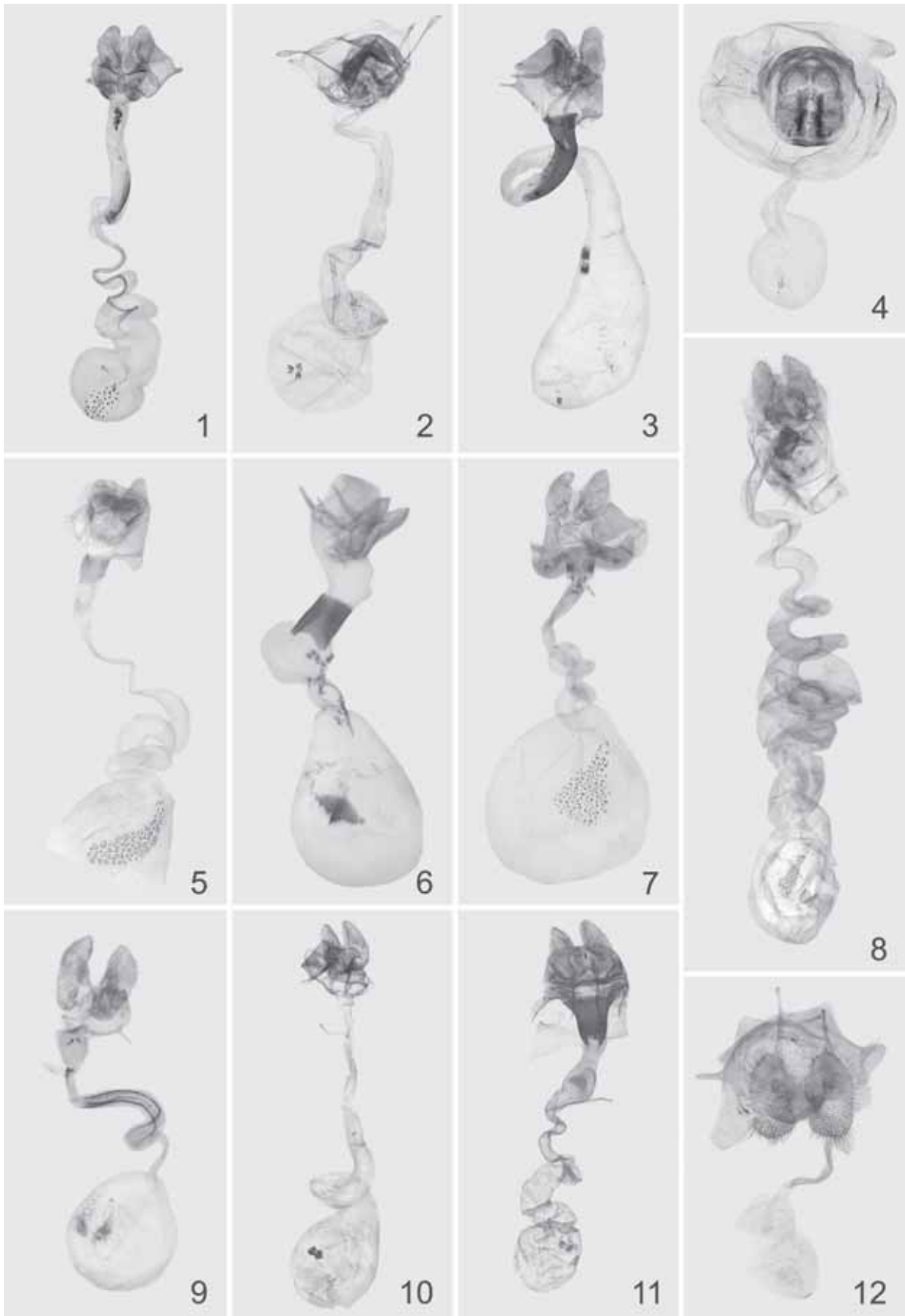
1. *Squamosa svetlanae*, sp. n. (MWM, holotype, genitalia slide 14231; northern Vietnam);
2. *Trichogyia gemmia*, sp. n. (MWM, holotype, genitalia slide 0015; central Vietnam);
3. *Darna sybilla* SWINHOE, 1903 (CAS, genitalia slide 0023; central Vietnam);
4. *Orthocraspeda sordida* SNELLEN, 1900 (CAS, genitalia slide 0059; central Vietnam);
5. *O. furva* (WILEMAN, 1911) (CAS, genitalia slide 0086; central Vietnam);
6. *Oxyplax ochracea* (MOORE, 1883) (MWM, genitalia slide 14320; northern Vietnam) (photo: V. ZOLOTUHIN);
7. *O. pallivitta* (MOORE, 1877) (MWM, genitalia slide 14397; southern Vietnam) (photo: V. ZOLOTUHIN);
8. *Devaz vetus*, sp. n. (MWM, holotype, genitalia slide 0002; central Vietnam);
9. *Fignya melkaya*, sp. n. (MWM, holotype, genitalia slide 14047; northern Vietnam);
10. *Caniatta levis*, sp. n. (MWM, holotype; genitalia slide 0014; central Vietnam).





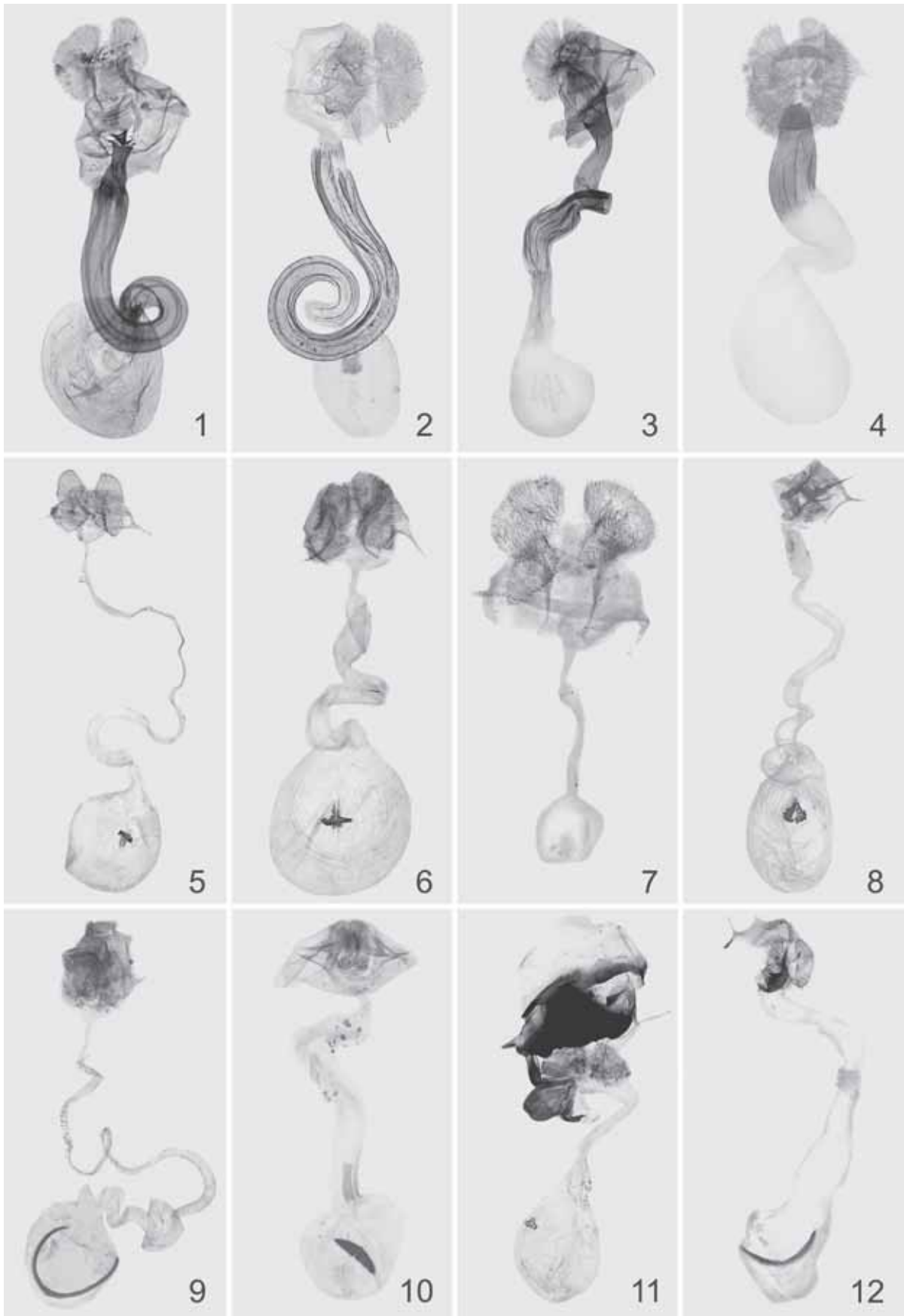
### Genitalia plate 11 (Female genitalia)

1. *Belippa aeolus*, sp. n. (MWM, paratype, genitalia slide 14389; northern Vietnam);
2. *Cheromettia alaceria*, sp. n. (MWM, genitalia slide 14366; northern Vietnam);
3. *Althonarosa horisyaensis* KAWADA, 1930 (MWM, genitalia slide 13006; northern Vietnam);
4. *Altha* (*Altha*) *nivea* WALKER, 1862 (MWM, genitalia slide 12976; China, Yunnan);
5. *Narosa* (*Penicillonarosa*) *nigrisigna* WILEMAN, 1911 (MWM, genitalia slide 13018; Taiwan);
6. *Vipaka niveipennis* (HERING, 1931) (MWM, genitalia slide 13084; northern Vietnam);
7. *Quasinarosa fulgens* (LEECH, 1888) (MWM, genitalia slide 13022; Taiwan);
8. *Q. laesara*, sp. n. (MWM, paratype, genitalia slide 13167; central Vietnam).
9. *Flavinarosa alius*, sp. n. (MWM, paratype, genitalia slide 13833; northern Vietnam);
10. *Barabashka* cf. *obliqua* (LEECH, 1890) (CAS, genitalia slide 0020; central Vietnam);
11. *Euphlyctinides laika*, sp. n. (CAS, paratype, genitalia slide 0103; central Vietnam);
12. *Nirmides mimur*, sp. n. (CYB, paratype, genitalia slide 011; central Laos).



### Genitalia plate 12 (Female genitalia)

1. *Cania bilinea* (WALKER, 1855) (BMNH, syntype; China);
2. *C. robusta* HERING, 1931 (MWM, genitalia slide 13852; northern Vietnam; photo: V. ZOLOTUHIN);
3. *C. siamensis* TAMS, 1924 (BMNH, holotype, limac slide 807; Thailand);
4. *C. accea*, sp. n. (MWM, paratype, genitalia slide 13846; southern Vietnam);
5. *Miresa sagitovae*, sp. n. (MWM, paratype, genitalia slide 14385; northern Vietnam);
6. *Narosoideus morion*, sp. n. (MWM, paratype, genitalia slide 14360; northern Vietnam);
7. *Parasa vadimi*, sp. n. (MWM, paratype, genitalia slide 11302; northern Vietnam);
8. *P. stekolnikovi*, sp. n. (MWM, paratype, genitalia slide 11462; northern Vietnam; photo: V. ZOLOTUHIN);
9. *Thosea vulturaria*, sp. n. (MWM, paratype, genitalia slide 14078; northern Vietnam);
10. *Vanlangia uniformis* (HERING, 1931) (MWM, genitalia slide 14161; northern Vietnam) (photo: A. GURKOVICH);
11. *Tanvia zolotuhini*, sp. n. (MWM, paratype, genitalia slide 13925; northern Vietnam);
12. *Mummu aerata*, sp. n. (MWM, paratype; genitalia slide 14217; northern Vietnam).



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# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Supplement 16

ISSN 0250-4413

Ansfelden, 16. Oktober 2009

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## The Bombycidae of Vietnam

Vadim V. ZOLOTUHIN & Thomas J. WITT

### Abstract

37 species of Bombycidae are reported from Vietnam, among them are 6 species described as new ones: *Prismosticta microprisma* ZOLOTUHIN & WITT, **sp. n.**, *Prismosticta regalis* ZOLOTUHIN & WITT, **sp. n.**, *Andraca stueningi* ZOLOTUHIN & WITT, **sp. n.**, *Andraca melli* ZOLOTUHIN & WITT, **sp. n.**, *Sesquiluna forbesi* ZOLOTUHIN & WITT, **sp. n.**, and *Sesquiluna theophoboides* ZOLOTUHIN & WITT, **sp. n.**

The following new combinations are established: *Triuncina diaphragma* (MELL, 1958), **comb. n.**, *Penicillifera tamsi* (LEMÉE, 1950), **comb. n.**, *Pseudandraca flavamaculata* (YANG, 1995), **comb. n.**, *Theophoba affinis* (KISHIDA, 1993), **comb. n.**, and *Theophoba mirifica* (KISHIDA, 1993), **comb. n.**

Lectotypes of *Ocinara diaphragma* MELL, 1958, *Andraca röpkei* BRYK, 1944, *Andraca apodecta* SWINHOE, 1907, *Andraca olivacens* MELL, 1958, as well as a neotype of *Ocinara tamsi* LEMÉE, 1950, are designated in the present paper.

The following new synonymies are here established: *Bombyx lemeepauli* LEMÉE, 1950 (= *Theophila albicurva* CHU & WANG, 1993, **syn. n.**); *Gunda proxima* ROEPKE, 1924 (= *Clenora epigrypa* WEST, 1932, **syn. n.**; = *Theophoba ostruma* CHU & WANG, 1993, **syn.**

**n.**); *Triuncina diaphragma* (MELL, 1958) (= *Ocinara nitidoidea* CHU & WANG, 1993, **syn. n.**); *Ernolatia moorei* (HUTTON, 1865) (= *Ocinara bipuncta* CHU & WANG, 1993, **syn. n.**); *Penicillifera tamsi* (LEMÉE, 1950) (= *Ocinara tetrapuncta* CHU & WANG, 1993, **syn. n.**); *Pseudandracca flavamaculata* (YANG, 1995) (= *Andracca nabesan* KISHIDA & OWADA, 2002, **syn. n.**).

The genus *Theophoba* MELL, 1958 is raised from the synonymy with *Sesquiluna* FORBES, 1955 to a separate genus.

The species *Andracca albilunata* HAMPSON, 1910 is deleted from the list of the Vietnamese Lepidoptera as it was erroneously recorded before.

### Zusammenfassung

37 Bombycidae-Arten werden aus Vietnam gemeldet, von denen 6 Arten neu beschrieben werden: *Prismosticta microprisma* ZOLOTUHIN & WITT, **sp. n.**, *Prismosticta regalis* ZOLOTUHIN & WITT, **sp. n.**, *Andracca stuenengi* ZOLOTUHIN & WITT, **sp. n.**, *Andracca melli* ZOLOTUHIN & WITT, **sp. n.**, *Sesquiluna forbesi* ZOLOTUHIN & WITT, **sp. n.** und *Sesquiluna theophoboides* ZOLOTUHIN & WITT, **sp. n.**

Die folgenden Gattungsneukombinationen werden vorgenommen: *Triuncina diaphragma* (MELL, 1958), **comb. n.**, *Penicillifera tamsi* (Lemée, 1950), **comb. n.**, *Pseudandracca flavamaculata* (Yang, 1995), **comb. n.**, *Theophoba affinis* (Kishida, 1993), **comb. n.** und *Theophoba mirifica* (Kishida, 1993), **comb. n.**

Lectotypen von *Ocinara diaphragma* MELL, 1958, *Andracca röpkei* BRYK, 1944, *Andracca apodecta* SWINHOE, 1907, *Andracca olivacens* MELL, 1958, und auch ein Neotypus von *Ocinara tamsi* LEMÉE, 1950, werden in diesem Artikel designiert.

Die folgenden neuen Synonyme werden hier festgestellt: *Bombyx lemeepauli* LEMÉE, 1950 (= *Theophila albicurva* CHU & WANG, 1993, **syn. n.**); *Gunda proxima* ROEPKE, 1924 (= *Clenora epigrypa* WEST, 1932, **syn. n.**; = *Theophoba ostruma* CHU & WANG, 1993, **syn. n.**); *Triuncina diaphragma* (MELL, 1958) (= *Ocinara nitidoidea* CHU & WANG, 1993, **syn. n.**); *Ernolatia moorei* (HUTTON, 1865) (= *Ocinara bipuncta* CHU & WANG, 1993, **syn. n.**); *Penicillifera tamsi* (LEMÉE, 1950) (= *Ocinara tetrapuncta* CHU & WANG, 1993, **syn. n.**); *Pseudandracca flavamaculata* (YANG, 1995) (= *Andracca nabesan* KISHIDA & OWADA, 2002, **syn. n.**).

Die Gattung *Theophoba* MELL, 1958 wird aus der Synonymy mit *Sesquiluna* FORBES, 1955 entfernt und als eigenständige Gattung geführt.

Die Art *Andracca albilunata* HAMPSON, 1910 wird aus der Liste der Vietnamesischen Lepidoptera gestrichen, da ihre Meldung auf einem Irrtum beruht.

### Introduction

The first three species of the Bombycidae that were described from Vietnam, were those by LEMÉE (1950) (*Gunda tonkinensis* LEMÉE, *Ocinara tamsi* LEMÉE, *Bombyx lemee-*



*pauli* LEMÉE; the typical specimens of two of them are now kept in the collection of MNHN).

To date, only three works were devoted specially to Vietnamese Heterocera, namely the papers of CANDÈZE (1927), de JOANNIS (1929) and LEMÉE (1950). Four species of Bombycidae were mentioned from different localities by CANDÈZE (*Andraca albilunata* HAMPS., *Prismosticta tiretta* SWINH., *Ocinara signifera* WALK., *O. varians* WALK.). Eight species were listed by de JOANNIS (*Bombyx mori* L., *Ocinara signifera* WALK., *O. lida* MOORE, *O. varians* WALK., *Gunda javanica* MOORE, *G. lugubris* DRURY, *Prismosticta tiretta* SWINH. and *Andraca bipunctata* WALK.). LEMÉE recorded four species from Vietnam (*Gunda tonkinensis* LEMÉE, *G. lugubris*, *Ocinara Tamsi* LEMÉE, *Bombyx Lemee-Pauli* LEMÉE). After that, only a few papers added some species of Bombycidae that are found in the country (DIERL, 1978; ZOLOTUHIN, 2007).

Most of the material for this article was obtained by V. SINJAEV and V. SIMONOV as well as by R. BRECHLIN and A. SCHINTLMEISTER and is now deposited in the Museum WITT, München (MWM – later to be included in Zoologische Staatssammlung, München). Also, a field trip was made by the senior author in May-June 2006 and in September-October 2008 and this material is now kept in the collection of V. ZOLOTUHIN, mostly preserved in 96-100% alcohol for further molecular analysis, and partly in MWM. Other museums are stipulated and the following abbreviations are used for them in the text:

BMNH – The Natural History Museum, London

CVZU – collection V. ZOLOTUHIN (Uljanovsk, Russia)

HDOU – Hope Department of Oxford University, United Kingdom

IEBR – Institute of Ecology and Biological Resources, Hanoi, Vietnam

IZAS – Institute of Zoology, Academia Sinica, Beijing, China

MHUB – Zoologisches Museum der Humboldt Universität zu Berlin

MNHG – Museum d'histoire naturelle, Geneve, Switzerland

MNHN – Museum National d'Histoire Naturelle, Paris

NHMK – Naturhistorisches Museum Karlsruhe

NHML – Natural History Museum, Leiden, the Netherlands

NSMT – National Science Museum, Tokyo, Japan

ZFMK – Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn

ZSSM – Zoologische Staatssammlung, München

In the article, the original spelling is retained in the listing of the data of the labels. The species that were formerly erroneously recorded from Vietnam are underlined in the text.

At present, 37 species of Bombycidae are known from Vietnam. Six species are described here as new.

The system of the family was recently reviewed by LEMAIRE & MINET (1998). Four subfamilies are recognized: Apatelodinae – mainly neotropical to North America with more than ten genera and about 150 species described; Phitidinae (Neotropic) with about 25 species of four genera; African and Indo-Australian Prismostictinae (= Oberthuerinae); and Bombycinae. The Prismostictinae, according to LEMAIRE & MINET

(*loc. cit.*: 334), contain five genera and about 15 species and can be divided into two tribes with lineages *Prismosticta* and *Oberthueria* (having very peculiar caterpillars – see MYATA, 1970); also *Andraca* and *Mustilia* (with *Mustilizans*) were included. Bombycinae sensu MINET 1994 contains two tribes, Bombycini (about 15 genera) and Epiini (about five genera), and the genus *Sesquiluma* FORBES may deserve a separate tribe (we consider it to be related with *Prismosticta*). The genus *Dalailama* STGR., which is closely related to *Mustilia* s. str. in our opinion was doubtfully placed in Endromidae (*loc. cit.*, p. 336, as “Endromidae”) with a reference to I. KITCHING.

Recently, the system was modified by NAKAMURA (2007) based on the study of pupal characters. He proposed the same two Oriental subfamilies, the Bombycinae and Prismostictinae, but placed the genera *Pseudandraca* and *Oberthueria* under the name “Tribe II” into Bombycinae and considered them to be a sister clade to “Tribe II” prope *Bombyx*.

Recent investigation (REGIER & al., 2008) questions the monophyly of the family based on protein-coding nuclear genes and different tribes and subfamilies are arranged in quite different clades; the question needs special research.

We agree with the classification proposed by LEMAIRE & MINET (1998) on the whole, but are noting here that the content of Asian subfamilies as well as most genera should be corrected. Some genera are yet undescribed and some are under revision now. A few preliminary changes and additions are made in the text of this work below.

## **Bombycidae**

### **Bombycinae LATREILLE, [1802]**

Two lineages can be recognized – prope *Bombyx*-branch and *Ocinara*-branch. Both genitalic characters and larval peculiarities distinguish these two complexes of related genera. Short valvae, bilobed and often massive uncus and long slender saccus are typical in male genitalia, reduction of hairness and swollen thorax are typical for larvae.

### **Prismostictinae FORBES, 1955 (= Oberthuerinae KUZNETZOV & STEKOLNIKOV, 1985)**

Two lineages can be recognized, prope *Prismosticta*-branch and *Mustilia*-branch. Both genitalic characters and larval peculiarities distinguish these two complexes of related genera. In male genitalia, flattened valvae, bilobed, often modified uncus and reduced saccus are typical for Prismostictinae. For larvae, long secondary hairs and slender thorax are typical; in some genera a horn is developed on segment XI and resting position with cocked anal segments is characteristic.

## **Check-list of the Vietnamese Bombycidae**

### **Bombycinae**

#### ***Bombyx* LINNAEUS, 1758**

*Bombyx mori* LINNAEUS, 1758

*Bombyx huttoni* WESTWOOD, 1847

*Bombyx lemeepauli* LEMÉE, 1950

***Gunda* WALKER, 1862**

*Gunda ochracea* WALKER, 1862

*Gunda javanica* (MOORE, 1872)

*Gunda proxima* ROEPKE, 1924

***Ocinara* WALKER, 1856**

*Ocinara albicollis* (WALKER, 1862)

*Ocinara bifurcula* DIERL, 1978

***Trilocha* MOORE, [1860] 1858-59**

*Trilocha varians* (MOORE, 1855)

*Trilocha friedeli* DIERL, 1978

***Triuncina* DIERL, 1978**

*Triuncina diaphragma* (MELL, 1958), comb. n., stat. rev.

***Penicillifera* DIERL, 1978**

*Penicillifera apicalis* (WALKER, 1862)

*Penicillifera lactea* (HUTTON, 1865)

*Penicillifera tamsi* (LEMÉE, 1950), comb. n.

***Bivincula* DIERL, 1978**

*Bivincula diaphana* (MOORE, 1879)

***Ernolatia* WALKER, 1862**

*Ernolatia moorei* (HUTTON, 1865)

***Gnathocinara* DIERL, 1978**

*Gnathocinara situla* (van EECKE, 1929)

***Rondotia* MOORE, 1885**

*Rondotia diaphana* HAMPSON, [1893]

**Prismostictinae**

***Prismosticta* BUTLER, 1880**

*Prismosticta micropisma* ZOLOTUHIN & WITT, sp. n.

*Prismosticta regalis* ZOLOTUHIN & WITT, sp. n.

***Mustilia* WALKER, 1865**

*Mustilia (Mustilia) lobata* ZOLOTUHIN, 2007

*Mustilia (Mustilia) sphingiformis* MOORE, 1879

*Mustilia (Smerkata) phaeopera* HAMPSON, 1910

*Mustilia (Smerkata) craptalis* ZOLOTUHIN, 2007

***Mustilizans* YANG, 1995**

*Mustilizans hepatica* (MOORE, 1879)  
*Mustilizans hepatica aeola* ZOLOTUHIN, 2007  
*Mustilizans dierli* (HOLLOWAY, 1987)  
*Mustilizans dierli refugialis* ZOLOTUHIN, 2007  
*Mustilizans lepusa* ZOLOTUHIN, 2007  
*Mustilizans sinjaevi* ZOLOTUHIN, 2007

***Falcogona* ZOLOTUHIN, 2007**

*Falcogona gryphea* ZOLOTUHIN, 2007

***Andraca* WALKER, 1865**

*Andraca trilochoides* MOORE, 1865  
*Andraca trilochoides roepkei* BRYK, 1944, stat. n.  
*Andraca stueningi* ZOLOTUHIN & WITT, sp. n.  
*Andraca apodecta* SWINHOE, 1907  
*Andraca melli* ZOLOTUHIN & WITT, sp. n.  
*Andraca olivacea* MATSUMURA, 1927  
*Andraca olivacea olivacens* MELL, 1958

***Pseudandraca* MIYATA, 1970**

*Pseudandraca flavamaculata* (YANG, 1995), comb. n.

***Sesquiluna* Forbes, 1955**

*Sesquiluna forbesi* ZOLOTUHIN & WITT, sp. n.  
*Sesquiluna theophoboides* ZOLOTUHIN & WITT, sp. n.

## **Bombycinae**

### ***Bombyx* Linnaeus, 1758**

Systema Naturae (Ed. 10) 1: 495. Type species: *Phalaena Bombyx mori* LINNAEUS, 1758, Syst. Nat. (Ed. 10) 1: 499, by subsequent designation by the International Commission on Zoological Nomenclature, 1957, Opin. Declar. Int. Commn zool. Nom. 15 (Opinion 450): 254.  
= *Theophila* MOORE, 1862, Trans. ent. Soc. Lond. (3) 1: 315. Type species: *Bombyx bengalensis* MOORE, 1862, Trans. ent. Soc. Lond. (3) 1: 315, by subsequent designation by KIRBY, 1892, Synonymic Catal. Lepid. Heterocera 1: 719. *Bombyx bengalensis* MOORE, 1862, is a junior subjective synonym of *Bombyx huttoni* WESTWOOD, 1847, Cabinet orient. Ent.: 26, pl. 12, fig. 4.  
The genus consists of five species and ranges from Northern China, Far East of Russia and Korea to Taiwan and Sundaland. Three species are known from Vietnam.

### ***Bombyx mori* LINNAEUS, 1758**

*Phalaena Bombyx mori* LINNAEUS, 1758, Syst. Nat. (Ed. 10) 1: 499. Locus typicus: China. Type (?holotype by monotypy): male (LSL) [examined].

References. de JOANNIS 1929: 526.

Strongly agricultural [semi]domestic species used to obtain silk (known as silkworm). Widely distributed throughout tropical and subtropical regions of the world, reared also in Vietnam, mostly on domestic manufacturing plants in villages. Was listed by de JOANNIS (1929) from La pho. No fresh material at our disposal.

***Bombyx huttoni* WESTWOOD, 1847**

Colour plate 21, figs 1, 2

*Bombyx huttoni* WESTWOOD, 1847, Cabinet orient. Ent.: 26, pl. 12, fig. 4. Locus typicus: [India] „hills of Mussooree“. Holotype (by monotypy: “a specimen provided...”): male (HDOU) [examined].

=*Bombyx bengalensis* MOORE, 1862, Trans. ent. Soc. Lond. (3) 1: 315. Locus typicus: [India] „hills of Mussooree“. Holotype (by monotypy: “a specimen provided...”): [female] (?lost) [not found].

=*Bombyx sherwilli* HUTTON 1865, Trans. ent. Soc. Lond. (3) 2: 324. Locus typicus: [India, S. E. Himalayas] „Morre“. Holotype (by monotypy): female (?lost) [not found, colour drawing from the type kept in BMNH].

=*Theophila religiosa* HELFER sensu CHU & WANG, 1993: fig. 3, pl. 1, fig. 3; and sensu ZHU & WANG 1996: 31, pl. 1, fig. 3.

Material. 5 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 1 ♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI-3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m NN, 22°15'N, 103°46'E, VI 1994, leg. SINIAEV & einh. Sammler (MWM); 6 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (west), Cha-pa (= Sapa), Sek. Wald/Kulturland, 22°20'N, 103°40'E, 10.VI-6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W. Seite, Cha-pa (= Sapa), 2000 m, 22°15'N, 103°45'E, primär. Nebelwald, 5.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N. Seite, Cha-pa (= Sapa), 1525 m, 22°17'N, 103°44'E, primär. Urwald 7, 10.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), 22°20'N, 103°40'E, 30.VI -12.VII 1994, leg. SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Nov. 1994, 22°20'N, 103°40'E, Sek. Wald/Kulturland, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600-1800m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 3 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, 16-1800 m, near Chapa, 22°20'N, 103°40'E, secondary forest, May-Juni 1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 1600 m, 22°17'N, 103°44'E, V 1995, primär Urwald, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X 1995, leg. SINIAEV (MWM); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Phúc Sơn vill., 130 m, 18°49'N, 104°58'E, 29.IX – 3.X 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. Pakistan, India, Nepal, Bhutan, Thailand, Vietnam, southern China (Yunnan), northern Myanmar.

Comments. The species was reported to be reared from larvae found in India on wild mulberry [*Morus alba* L., Moraceae] (Capt. HUTTON in litt.). The Latin name associated with the local one for a plant and given by WESTWOOD as *Eranthemum montanum* (Acanthaceae) seems to be erroneous. ZHU & WANG 1996: 17, also noted the species

from *Morus alba* L.

***Bombyx lemeepauli* LEMÉE, 1950**

Colour plate 21, figs 3-5

*Bombyx Lemée-Pauli* LEMÉE, 1950, Contrib. l'étude Lépid. Haut-Tonkin et Saigon: 37, fig'd. Locus typicus: Backan. Holotype (by monotypy): male (MNHN) [examined].

=*Theophila albicurva* CHU & WANG, 1993, **syn. n.**, Sinozoologia 10: 224, fig. 4, pl. 1, fig. 4. Locus typicus: China, Hubei, Xingshan. Holotype (by original designation): male (IZAS) [not examined].

References. HOLLOWAY 1987: 77.

Material. 1 ♂, holotype of *Bombyx Lemée-Pauli* LEMÉE, Backan (MNHN); 5 ♂♂, N. Vietnam, Cuc. Phuong, 60km SW Hanoi, 20°15'N, 105°20'E, 18.XI-3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 4 ♂♂, N. Vietnam, Mai-chau, 1400 m, 25 km SE Moc-chau, Sekundärwald, 20°50'N, 104°40'E, 14.-18.XI 1994, leg. SINIAEV & SIMONOV (MWM); 3 ♂♂, N. Vietnam, Ben En Nat. Park, 200 m, 40 km SW Than Hoa, 18°40'N, 105°40'E, 22.-30.XI 1994, leg. SINIAEV & SIMONOV (MWM); 1 ♀, N. Vietnam, 200 m, Ben En Nat. Park, 40 km SW Than Hoa, Sek. Wald/Vegetation, 19°40'N, 105°15'E, 22.-30.XI 1994, leg. SINIAEV & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 1 ♂, Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N 104°54,1'E, 21.-23.I 1999, leg. G. RONKAY (MWM); 1 ♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Tam Dinh vill., 170 m, 19°10'N, 104°37'E, 4-5.X 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. Vietnam, Thailand, China (Yunnan, Hubei, Shaanxi, Sichuan, Zhejiang, Guangxi).

Comments. This peculiar species differs well from other congeners by its atypical pattern with the semilunar fasciae on grey groundcolour. HOLLOWAY (1987) supposed that it is not a *Bombyx*, but male genitalic characters prove it doubtlessly (Genitalia plate 1, fig. 1). The species can't be confused with any other but surprisingly it was described as a new one, *Theophila albicurva*, by CHU & WANG again in 1993. We examined a long series of the species from different localities of the whole range and found no differences neither in the genitalia nor in external characters between both taxa, and therefore the new synonymy, as stated above, is established here.

*Morus alba* L. is the host plant for *Theophila albicurva* CHU & WANG, 1993 in China.

***Gunda* WALKER, 1862**

J. Proc. Linn. Soc. (Zool.) 6: 176. Type species: *Gunda ochracea* WALKER, 1862, by monotypy.

= *Aristhala* MOORE, 1878, Proc. zool. Soc. Lond. 1878: 704. Type species: *Aristhala hainana* MOORE, 1878.

= *Hanisa* MOORE, 1879, Proc. zool. Soc. Lond. 1879: 406. Type species: *Bombyx subnotata* WALKER, 1859.

= *Clenora* SWINHOE, 1899, Ann. Mag. nat. Hist. (7) 3: 109. Type species: *Clenora engonata* SWINHOE, 1899.

= *Norasuma* MOORE, 1872, Proc. zool. Soc. Lond. 1872: 575. Type species: *Norasuma javanica* MOORE, 1872.

***Gunda ochracea* WALKER, 1862**

Colour plate 21, figs 9, 10

*Gunda ochracea* WALKER, 1862, J. Proc. Linn. Soc. (Zool.) 6: 177. Locus typicus: Borneo: Sarawak. Holotype (by monotypy): female (HDOU) [examined].

References. It was listed by de JOANNIS 1929: 527 and by LEMÉE 1950: 37 as *Gunda lugubris*.

Material. 1 ♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI-3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekundärwald, 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SINIAEV (MWM); 1 ♂, Vietnam, Prov. Tyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. G. CSORBA (MWM).

The species was also listed by de JOANNIS 1929: 527 from Pho Moi and by LEMÉE 1950: 37 from Haut Tonkin.

Distribution. HOLLOWAY (1987: 81) reported the species from the Indian Subregion, S. E. Asia to Sumatra, Borneo and Philippines. However, *G. ochracea* in his concept seems to be a polytypic complex especially concerning the populations of the Philippines. This complex needs to be revised. However, the specimens from Vietnam are closely related with the nominate race from Borneo and can be considered to be conspecific. NE India (Assam), Vietnam, Thailand, southern China (Yunnan, Hainan, Guangxi), peninsular Malaysia, Sumatra, Borneo is the range of *G. ochracea* s. str.

Comments. See also HOLLOWAY (1987: 80) for a list of related taxa now regarded as synonyms of the present species. *Ficus retusa* L. is a host plant in China (CHU & WANG, 1993: 18, as for *Gunda sikma* [sic!] MOORE).

***Gunda javanica* (MOORE, 1872)**

*Norasuma javanica* MOORE, 1872, Proc. zool. Soc. Lond. 1872: 576, pl. 33, fig. 6. Locus typicus: Java. Holotypes (by monotypy): female (HDOU) [examined].

***Gunda javanica tonkinensis* LEMÉE, 1950, stat. n.**

Colour plate 21, figs 6-8

*Gunda tonkinensis* LEMÉE, 1950, Contrib. l'étude Lépid. Haut-Tonkin et Saigon: 36, fig'd. Locus typicus: Backan. Holotype (by monotypy): male (MNHN) [examined].

References. de JOANNIS 1929: 527; LEMÉE 1950: 36 (as *Gunda tonkinensis*).

Material. 1 ♂, holotype of *tonkinensis* LEMÉE, Backan (MNHN); 5 ♂♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'W, 105°20'E, 18.XI-3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 3 ♂♂, N. Vietnam, 200 m, Ben En Nat. Park, 40km SW Than Hoa, Sek. Wald/Vegetation, 19°40'N, 105°15'E, 22.-30.XI 1994, leg. SINIAEV & SCHINTLMMEISTER (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sekundärwald, 22°20'N, 103°40'E, Sept. 1994, leg. MONG (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X 1995, leg. SINIAEV (MWM).

The species was also listed by de JOANNIS 1929: 527 from Hanoi; Tonkin nord, entre Cao bang and Lao kay, and by LEMÉE 1950: 36 from Haut Tonkin: Backan.

Distribution. HOLLOWAY (1987: 81) recorded the species from the Indian Subregion, China, S. E. Asia and Sundaland. In this concept, *G. javanica* seems to be a polytypic

complex as in the case of the preceding species. The population of Sulawesi should be separated as an allopatric species, *G. richteri* WEYMER, 1890, and Borneo is inhabited by two sympatric, closely related species. However, *G. tonkinensis* LEMÉE (Genitalia plate 1, fig. 2) seems to be a valid name to designate the continental population of the species. This specific complex should be revised. Java, Sumatra, Borneo, Myanmar, southern China (Hainan, Yunnan), Vietnam, Thailand, NE India and Palawan is the range of *G. javanica* s. str.

Comments. For the list of related taxa synonymized within the species see also HOLLOWAY (1987: 80); but this list must be changed. *Ficus retusa* L. is the host plant in China (CHU & WANG, 1993: 247).

### ***Gunda proxima* ROEPKE, 1924**

*Gunda proxima* ROEPKE, 1924, Tijdschr. Ent. 67: 162, figs 1, 2; pl. 1, figs 1-3; pl. 2, fig. 1. Locus typicus: Java. Syntypes: males and females (NHML) [examined].

=*Clenora epigrypa* WEST, 1932, **syn. n.**, Novit Zool. 37: 215. Locus typicus: Philippines, Palawan. Type: male (BMNH) [examined].

=*Theophoba ostruma* CHU & WANG, 1993, **syn. n.**, Sinozoologia 10: 225, fig. 5, pl. 1, fig. 5. Locus typicus: [China] Yunnan, Jinghong. Holotype (by original designation): male (IZAS) [after photo examined].

Material. 3 ♂♂, S. Vietnam, Dong Nai Prov., Vinh Cuu, Phu Ly, TW Cuc Mnam, 31.XII 2007, leg. TRAN THIEU Du (IEBR); 1 ♂, Vietnam, Quang Nam Prov., Nam Giang, Cha Vai, 28.VI 2008, leg. TRAN THIEU Du (IEBR).

Distribution. Java, Sumatra, Borneo, Palawan, Myanmar, southern China (Yunnan), southern Vietnam, Thailand, NE India (Assam).

Comments. In spite of falcate forewings and general appearance, the species is not a real member of the genus and must be considered to belong in a separate phylogenetic branch. We leave it within *Gunda* until the revision of the genus will be accomplished.

*Ficus elastica* is the host plant in Java (ROEPKE 1924); *Morus alba* and *Ficus carica* are reported for *Theophoba ostruma* CHU & WANG, 1993.

We discovered this species just shortly before the article was sent to print, and therefore images of the moths are unfortunately not available here.

### ***Ocinara* WALKER, 1856**

List Specimens lepid. Insects Colln Br. Mus. 7: 1768. Type species: *Ocinara dilectula* WALKER, 1865 by monotypy.

Six species are included; two of them are native to Vietnam.

### ***Ocinara albicollis* (WALKER, 1862)**

Colour plate 21, figs 19, 20

*Naprepa albicollis* WALKER, 1862, J. Linn. Soc. London. (Zool.) 6: 171. Locus typicus: Borneo: Sarawak. Types (holotype by monotypy?): male (BMNH) [examined].

Material. 1 ♂, N. Vietnam, Hoa Binh, 400 m, 70 km NW Hanoi, 28.V -6.VI 1990, leg. PALIK (MWM); 69 ♂♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 18.XI - 3.XII 1992, leg. SINIAEV & SIMONOV (MWM); 7 ♂♂, S. Vietnam, Bao Loc (Sek.



Wald), Rung Cat Tien, 1500 m, 11°32'N, 107°48'E, 10.-20.XII 1992, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Cuc Phuong, Nat. Park, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 21.XI 1994, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Ben Nat. Park, 40 km SW Than Hoa, 18°40'N, 105°40'E, 200 m, 22.-30.XI 1994, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan, Nord-Seite, Cha-pa, 22°17'N, 103°44'E, 25.-30.III 1995, Primärurwald, leg. SINIAEV & SCHINTLMEISTER (MWM); 4 ♂♂, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. CSORBA (MWM); 4 ♂♂, Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N, 104°54,1'E, 21.-23.I 1999, leg. RONKAY (MWM); 1 ♂, N. Vietnam, Ninh Binh Prov., Nho Quan Distr., Bông – Cúc Phúông vill., 360 m, 20°21'N, 105°36'E, 6-9.X 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. India including Sri Lanka, China (Yunnan, Hainan), Thailand, Vietnam, Myanmar, Malaya, Borneo, Sumatra, Java.

### ***Ocinara bifurcula* DIERL, 1978**

Colour plate 21, figs 21, 22

*Ocinara bifurcula* DIERL, 1978, Spixiana 1: 238, fig. 9, pl. 2, figs 8, 9. Locus typicus: Sumatra, Fort de Kock, 920 m. Holotype (by original designation): male (RNH) [examined].

Material. 2 ♂♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 18.XI - 3.XII 1992, leg. SINIAEV & SIMONOV (MWM).

Distribution. Sumatra, Borneo, peninsular Malaysia, northern Vietnam.

### ***Trilocha* MOORE, [1860] 1858-59**

in HORSFIELD & MOORE, Cat. Lepid. Insects Mus. Nat. Hist. East-India House 2: 382. Type species: *Naprepa varians* MOORE, 1855, by monotypy. Was proposed as the objective replacement name for *Naprepa* WALKER, 1855: 1152 nec WALKER, 1855: 1046.

= *Chazena* WALKER, 1869, Characters undescr. Lepid. Heterocera: 21. Type species: *Chazena velata* WALKER, 1869, Characters undescr. Lepid. Heterocera: 21, by monotypy. *C. velata* is a junior subjective synonym of *Naprepa varians* WALKER, 1855, List Specimens lepid. Insects Colln Br. Mus. 5: 1153.

= *Naprepa* WALKER, 1855, List Specimens lepid. Insects Colln Br. Mus. 5: 1103 (key), 1152. Type species: *Naprepa varians* MOORE, 1855, List Specimens lepid. Insects Colln Br. Mus. 5: 1153, by monotypy. A junior homonym of *Naprepa* WALKER, 1855, List Specimens lepid. Insects Colln Br. Mus. 5: 1046 (Lepid., Notodontidae).

Six to seven species, two of them are known from Vietnam.

### ***Trilocha varians* (MOORE, 1855)**

Colour plate 21, figs 15, 16

*Naprepa varians* MOORE, 1855, List specim. Lepid. Insects Colln Brit. Mus. 5: 1153. Locus typicus: [Sri Lanka] Ceylon. Type (holotype by monotypy?): male (BMNH) [examined].

References. The species was listed as *Ocinara varians* by CANDÈZE 1927: 121 and by de JOANNIS 1929: 527.

Material. 3 ♂♂, Central Vietnam, prov. Kon Tum, Distr. Kom Plong, vill. Mang Cahn, 1250 m, 1-10.VI 2006, V. ZOLOTUHIN (CVZU); 1 ♂, Vietnam, Tam Dao, 900 m, 25.VII 1986, leg.

RAZOWSKI (MWM); 1 ♂, N. Vietnam, Tam Dao, 1000 m, 90 km N Hanoi, 12.-25.V 1990, leg. PALIK (MWM); 16 ♂♂, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 18.XI – 3.Xii 1992, leg. SINIAEV & SIMONOV (MWM); 1 ♂, S. Vietnam, Bao Loc (Sek. Wald), Rung Cat Tien, 1500 m, 11°32'N, 107°48'E, 10.-20.XII 1992, leg. SINIAEV & SIMONOV (MWM); 1 ♂, Vietnam, Prov. Lao Cai, Sa Pa, 1300 m, 15.-20.XI 1993, leg. BANKOVICS & CSORBA (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sekund-Wald, 22°20'N, 103°40'E, September 1994, leg. MONG (MWM); 4 ♂♂, N. Vietnam, Cuc Phuong Nat. Park, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 21.XI 1994, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, Ben Nat. Park, 40 km SW Than Hoa, 18°40'N, 105°40'E, 200 m, 22.-30.XI 1994, leg. SINIAEV & SIMONOV (MWM); 1 ♂, Vietnam mer., 1200 m, Bach-ma Nat. Park, 16°10'N, 107°54'E, 26.VII - 6.VIII 1996, leg. SINIAEV & AFONIN (MWM); 1 ♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 10.-25.VIII 1996, 15°02'N, 107°59'E, leg. SINIAEV & AFONIN (MWM); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Thác Kèm, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (CVZU); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Phúc Sơn vill., 130 m, 18°49'N, 104°58'E, 29.IX – 3.X 2008, V. ZOLOTUHIN leg. (CVZU); 1 ♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Tam Dinh vill., 170 m, 19°10'N, 104°37'E, 4-5.X 2008, V. ZOLOTUHIN leg. (CVZU).

The species was also listed by CANDÈZE 1927: 121 from Annam, Haut Tonkin and Laokay and by de JOANNIS 1929: 527 from Hanoi, Cho cay, Cho ganh and Lao kay.

Distribution. From India and Nepal through Vietnam, Thailand, Myanmar and southern China (including Taiwan) to Sumatra and Java. Replaced by related species in the Philippines and Sulawesi. *Ficus carica* L. and *Ficus retusa* L. are host plants in China (CHU & WANG, 1993: 246; ZHU & WANG 1996: 17); cocoons with pupae were found by ZOLOTUHIN on a small-leaved *Ficus* sp. in northern Vietnam (fig. 17); the caterpillars can easily be reared on *Ficus elastica*.

### ***Trilocha friedeli* DIERL, 1978**

Colour plate 21, figs 17, 18

*Trilocha friedeli* DIERL, 1978, Spixiana 1: 243, fig. 13, pl. 3, figs 19, 21. Locus typicus: S. Thailand, 20 km O. von Krabi. Holotype (by original designation): male (ZSSM) [examined].

References. DIERL 1978: 244; HOLLOWAY 1987: 85.

Material. 1 ♂, Vietnam, Tam Dao, 900 m, 18.-21.V 1990, leg. PALIK & KOPEC (MWM); 1 ♂, S. Vietnam, Bao Loc (Sek. Wald), Rung Cat Tien, 1500 m, 11°32'N, 107°48'E, 10.-20.XII 1992, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Hoa Bihn, 400 m, 70 km NW Hanoi, 28.V - 6.VI 1990, leg. PALIK (MWM); 3 ♂♂, N. Vietnam, Ben Nat. Park, 40 km SW Than Hoa, 18°40'N, 105°40'E, 200 m, 22.-30.XI 1994, leg. SINIAEV & SIMONOV (MWM).

The species was also listed by DIERL (1978: 244) from Tonkin occ., Reg. de Hoa Binh and Tonkin, Thai-Nieu Basin.

Distribution. NE India (Assam), Thailand, Vietnam, Malaysia, Borneo.

### ***Triuncina* DIERL, 1978**

Spixiana 1(3): 246. Type species: *Trilocha brunnea* WILEMAN, 1911, by original designation.

Six species, one of them is yet undescribed; only one species is known so far from Vietnam.

***Triuncina diaphragma* (MELL, 1958), comb. n., stat. rev.** Colour plate 21, figs 11, 12

*Ocinara diaphragma* MELL, 1958, Dt. ent. Z. (N.F.) 5: 210. Locus typicus: [China] Mahntsishan, N-Kuangtung, 25°N. Lectotype (here designated): male (MHUB) [examined].

= *Ocinara nitidoidea* CHU & WANG, 1993, syn. n., Sinozoologia 10: 232, figs 14, pl. 1, fig. 14. Locus typicus: [China] Fujian, Wuyi. Holotype (by original designation): male (IZAS) [not examined].

Material. 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Sa Pa, 1300 m, 15.-20.XI 1993, leg. BANKOVICS & CSORBA (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 10.VI - 6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 16-1800 m, 22°20'N, 103°40'E, Sek. Wald/Kulturland, 30.VI - 12.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 6 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 1525 m, 22°17'N, 103°44'E, prim. Urwald 7, 10.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 20.-30.X 1994, leg. SINIAEV & einh. Sammler (MWM); 3 ♂♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 16-1800 m, 22°20'N, 103°40'E, Sek-Wald, Kulturland, November 1994, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.-4.III 1995, 2240 m, leg. BRECHLIN (MWM); 3 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 25.-30.III 1995, leg. SINIAEV & SCHINTLMEISTER (MWM); 9 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 16-1800 m, 22°20'N, 103°40'E, April 1995, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 7.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, 16-1800 m, near Cha-pa, 22°20'N, 103°40'E, secondary forest, May 1995, leg. loc. coll. (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X 1995, leg. SINIAEV (MWM); 20 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 30.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 2250 m, 22°17'N, 103°44'E, primary forest, 1.-6.XI 1995, leg. SINIAEV & AFONIN (MWM).

Distribution. Southern China (Guangdong, Fujian), northern Vietnam.

Comments. The species was incorrectly synonymized with *T. cervina* (WALKER, 1865) by W. DIERL (1978: 248) and therefore it was overlooked by the following scientists and re-described in 1993 by CHU & WANG as *Ocinara nitidoidea*. However, it represents a good species distinctly differing in the structure of the genitalia. From two males kept in the collection of MHUB, one is designated here to be the lectotype of the species. It is a male specimen with the original geographic label in Chinese, with typed labels “*Ocinara diaphragma* MELL / Typus (Ectrocta ?)” and framed “*Triuncina / diaphragma /* (MELL, 1958) / V. ZOLOTUHIN det.” and provided with a special red label with inscription “Lectotype ♂ / *Ocinara / diaphragma /* MELL, 1958 / *D. ent. Z. 5: 210 /* V. ZOLOTUHIN des. 002”. The other male is designated as paralectotype.

At present, we haven't seen any specimens of the species from China: Fujian, the male genitalia figured in the original description of *Ocinara nitidoidea* prove the synonymy established here.

*Morus alba* L. is the host plant of *Ocinara nitidoidea* CHU & WANG, 1993 in China.

### ***Penicillifera* DIERL, 1978**

*Spixiana* 1 (3): 249. Type species: *Dasychira apicalis* WALKER, 1862, by original designation. Seven species are known, three of them are native to Vietnam.

#### ***Penicillifera apicalis* (WALKER, 1862)**

Colour plate 22, figs 3-5

*Dasychira apicalis* WALKER, 1862, J. Linn. Soc. London. (Zool.) 6: 171. Locus typicus: Borneo: Sarawak. Holotype (by monotypy): female (HDOU) [examined].

References. CANDÈZE 1927: 121; de JOANNIS 1929: 527 (both as *Ocinara signifera* with *lactea* as a synonym).

Material. 4 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 1 ♀, N. Vietnam, Tam Dao, 1000m, 90 km N Hanoi, 12.-25.V 1990, leg. PALIK (MWM); 1 ♂, N. Vietnam, Tam Dao, 70 km SE Hanoi, X 1991, leg. MURZIN (MWM); 1 ♂, N. Vietnam, Tam Dao, h=1200m, 1.-15.XI 1992, leg. SINIAEV & SCHINTLMEISTER (MWM); 70 ♂♂, 1 ♀, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI - 3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11°32'N, 107°48'E, 1500 m, 10.-20.XII 1992, Sek. Wald, leg. SINIAEV & SIMONOV (MWM); 3 ♂♂, 1 ♀, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22°20'N, 103°40'E, IX 1994, Sekundärwald, leg. MONG (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 17.X 1994, leg. V. SINIAEV (MWM); 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kulturland, 22°20'N, 103°40'E, XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekund.-Umg., 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SCHINTLMEISTER (MWM); 7 ♂♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, Sekundärwald, 14.-18.XI 1994, leg. SINIAEV (MWM); 6 ♂♂, N. Vietnam, Cuc Phuong Nat. Park, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 21.XI 1994, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 1 ♂, 1 ♀, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 25.-30.III 1995, leg. SINIAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, IV 1995, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, Sekund.-Wald, 22°20'N, 103°40'E, 1600-1800 m, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 8 ♂♂, 1 ♀, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.IV 1995, leg. SINIAEV & Sammler (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X 1995, leg. SINIAEV (MWM); 1 ♀, N. Vietnam, Yen-Bai - An-chy, 21°42'N, 104°18'E, primary forest, V 1996 (MWM); 19 ♂♂, 1 ♀, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. CSORBA (MWM); 1 ♂, Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N 104°54,1'E, 21.-23.I 1999, leg. RONKAY (MWM).

Distribution. N.E. India (Assam), Nepal, southern China, Vietnam, Thailand, Myanmar,

peninsular Malaysia, Borneo, Sumatra, Java.

Comments. It is highly probable that two different species (*P. apicalis* and *P. lactea*) were mixed in the series of specimens by CANDÈZE and de JOANNIS; in most cases both species cannot be discriminated externally. However, *P. lactea* HUTTON is mostly of dusty ground colour, whereas *P. apicalis* is often of a pure white ("lacteal") coloration, when the two similar species are compared.

*Ficus elastica* is reported as hostplant (DIERL 1978: 254).

***Penicillifera lactea* (HUTTON, 1865)**

Colour plate 22, figs 1, 2

*Ocinara lactea* HUTTON, 1865, Trans. ent. Soc. Lond. (3) 2: 328. Locus typicus: Mussuree. Typus: male (BMNH) [examined].

References. CANDÈZE 1927: 121; de JOANNIS 1929: 527 (both as *Ocinara signifera* with *lactea* as a synonym).

Material. 1 ♂, N. Vietnam, Tam Dao, 1000 m, 90 km N Hanoi, 12.-25.V 1990, leg. PALIK (MWM); 1 ♂, N. Vietnam, Tam Dao, XI 1991 (MWM); 3 ♂♂, N. Vietnam, Tam Dao, 50 NW Hanoi, 21°34'N, 105°20'E, 1200 m, 1.-15.XI 1992, Sek. Wald, leg. SINIAEV & SIMONOV (MWM); 16 ♂♂, 1 ♀, N. Vietnam, Cuc Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI - 3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 14 ♂♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11°32'N, 107°48'E, 1500 m, 10.-20.XII 1992, Sek. Wald, leg. SINIAEV & SIMONOV (MWM); 5 ♂♂, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W.Seite, Cha-pa (= Sapa), 16-1800 m, 22°20'N, 103°40'E, Sek. Wald/Kulturwald, 30.VI -12.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22°20'N, 103°40'E, IX 1994, Sekundärwald, leg. MONG (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 17. Oktober 1994, leg. SINIAEV (MWM); 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 20.-30.X 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 1525m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E (Kult.), XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekundärwald, 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SCHINTLMEISTER (MWM); 23 ♂♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, Sekundärwald, 14.-18.XI 1994, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Cuc Phuong Nat. Park, 60 km SW Hanoi, 400 m, 20°15'N, 105°20'E, 21.XI 1994, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, 200 m, Ben En Nationalpark, 40 km SW Than Hoa, Sek. Wald/Vegetation, 19°40'N, 105°15'E, 22.-30.XI 1994, leg. SINIAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.-4.III 1995, 2240 m, leg. BRECHLIN (MWM); 1 ♂, 1 ♀, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 25.-30.III 1995, leg. SINIAEV & SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, IV 1995, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler

(MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.IV 1995, leg. SINIAEV & SAMMLER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, VIII 1995, leg. loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, Nov. 1995, leg. SINIAEV & loc. coll. (MWM); 12 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 7.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♀, N. Vietnam, Yen-Bai - An-chy, 21°42'N, 104°18'E, primary forest, V 1996 (MWM); 1 ♂, Vietnam mer., Bach-ma Nat. Park, 1200 m, 16°10'N, 107°54'E, 26.VII - 6.VIII 1996, leg. SINIAEV & AFONIN (MWM); 2 ♂♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 10.-25.VIII 1996, 15°02'N, 107°59'E, leg. SINIAEV & AFONIN (MWM); 7 ♂♂, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. CSORBA (MWM); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Thác Kèm, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. From Afghanistan, Pakistan, northern India and Nepal to southern China (Yunnan, Hainan), Vietnam, Thailand, Myanmar and Malaysia (Pahang state).

Comments. See under previous species.

*Morus* and *Ficus* are reported to be hostplants (DIERL 1978: 254).

***Penicillifera tamsi* (LEMÉE, 1950), comb. n.**

Colour plate 22, figs 6, 7

*Ocinara Tamsi* LEMÉE, 1950, Contrib. l'étude Lépid. Haut-Tonkin et Saigon: 37. Locus typicus: Backan. Holotype (by monotypy): male (MNHN) [lost]. Neotype (hier designated): male (MWM) [from Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m].

= *Ocinara tetrapuncta* CHU & WANG, 1993, **syn. n.**, *Sinozoologia* **10**: 230, fig. 12, pl. 1, fig. 12. Locus typicus: China, Yunnan, Jinghong. Holotype (by original designation): male (IZAS) [not examined].

Material. ♂, neotype (here designated): Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N, 104°54,1'E, 21.-23.I 1999, leg. RONKAY (MWM); 5 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 4 ♂♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 1200 m, 1.-15.XI 1992, Sek. Wald, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI -3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, 1 ♀, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 1200 m, 21°34'N 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Prov. Lao Cai, Sa Pa, 1300 m, 15.-20.XI 1993, leg. BANKOVICS & CSORBA (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N 103°40'E, 16-1800 m, Sept. 1994, leg. SINIAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 20.-30.X 1994, leg. SINIAEV & einh. Sammler (MWM); 3 ♂♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 3 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kulturland, 22°20'N, 103°40'E, Nov. 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Tuan-giao, 5.-10.XI 1994, 21°35'N, 103°25'E, 1200 m, leg. SINIAEV & SIMONOV (MWM); 4 ♂♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, 14.-18.XI 1994, Sekundärwald, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, IV 1995, leg.

SINIAEV (MWM); 4 ♂♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 13 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 7.XI 1995, leg. SINIAEV & Afonin (MWM); 1 ♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 10.-25.VIII 1996, 15°02'N, 107°59'E, leg. SINIAEV & AFONIN (MWM); 12 ♂♂, 1 ♀, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. CSORBA (MWM); 2 ♂♂, Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N, 104°54,1'E, 21.-23.I 1999, leg. RONKAY (MWM); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Thác Kèm, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (CVZU); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Phúc Sơn vill., 130 m, 18°49'N, 104°58'E, 29.IX - 3.X 2008, V. ZOLOTUHIN leg. (CVZU); 1 ♂, N. Vietnam, Vinh Phuc Prov., Ngoc Thanh vill., Mê Linh biological station, 60 m, 21°23'N, 105°43'E, 11-13.X 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. NE India (Assam), Southern China (Yunnan), Vietnam, Thailand and Myanmar (Putao).

Taxonomic remark. This peculiar species is one of three bombycids described by LEMÉE (1950). Two of them were figured in the original description; moreover, the types of both are present in the collection of the MNHN. The typical specimen of the species under consideration, *Ocinara tamsi* LEMÉE, 1950, was not figured, is now lost and was not found in MNHN in spite of special search. A second specimen from the Chan states in the collection of BMNH was mentioned in the original description; it was also not found there in 2005 and 2006. The original description is not enough to determine what genus and species is implied under the name given, however the only species of small bombycids with a lilac to violet pattern of the wings referred to in the original description is the species recently described under the name *Ocinara tetrapuncta* CHU & WANG, 1993. To clear this situation, a neotype for the taxon is designated here from the collection of MWM (Plate 22, fig. 6). It is a male with the printed white rectangular label: "Vietnam, Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40,5'N, 104°54,1'E, 21.-23.I 1999, leg. RONKAY" and rectangular red label with corresponding text: "NEOTYPE. *Ocinara tamsi* LEMÉE, 1950, design. ZOLOTUHIN & WITT, 2008".

By this selection, the species *O. tetrapuncta* CHU & WANG, 1993, becomes a junior subjective synonym of *P. tamsi* LEMÉE, 1950, **syn. n.**

Comments. *Morus alba* L. is the host plant for *Ocinara tetrapuncta* CHU & WANG, 1993, in China.

### ***Bivincula* DIERL, 1978**

Spixiana 1(3): 258. Type species: *Ocinara diaphana* MOORE, 1879, in HEWITSON & MOORE, Descr. New Indian lepid. Insects Colln late Mr ATKINSON (1): 83, by original designation.

### ***Bivincula diaphana* (MOORE, 1879)**

Colour plate 22, figs 10, 11

*Ocinara diaphana* Moore, 1879, in HEWITSON & MOORE, Descr. new Indian lepid. Insects Colln late Mr ATKINSON (1): 83. Locus typicus: Khasia Hills. Holotype (by monotypy): male (MHUB) [examined].

Material. 1 ♂, N. Vietnam, Farin-Pass, 1600 m, 20 km NW Son-la, 21°22'N, 103°52'E, 11.-13.XI 1994, leg. SINIAEV & SIMONOV (MWM); 11 ♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, 14.-18.XI 1994, Sekundärwald, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Kim Boi, 19.XI 1994, 200 m, 30 km W Hoa binh, 20°50'N, 105°15'E, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 10.-25.VIII 1996, 15°02'N, 107°59'E, leg. SINIAEV & AFONIN (MWM).

Distribution. N and NE India, Vietnam, Thailand and Myanmar.

Comments. DIERL (1978) reported the species as only inhabiting the East Himalayas, but despite this record, it is distributed eastwards to the Pacific Ocean with minor differences in characters from the nominate race.

### ***Ernolatia* WALKER, 1862**

J. Proc. Linn. Soc. (Zool.) 6: 131. Type species: *Ernolatia signata* WALKER, 1862, J. Proc. Linn. Soc. (Zool.) 6: 131, by monotypy. *E. signata* is a junior subjective synonym of *Ocinara lida* MOORE, [1860] 1858, Cat. Lep. Insects Mus. Nat. Hist. East-India House 2: 381. Was established in the Liparidae; was placed in the Bombycidae by KIRBY, 1892, Synonymic Cat. Lepid. Heterocera 1: 716.

### ***Ernolatia moorei* (HUTTON, 1865)**

Colour plate 22, figs 12, 13

*Ocinara moorei* HUTTON, 1865, Trans. ent. Soc. Lond. (3)2: 326. Locus typicus: Mussuree.  
= *Ocinara bipuncta* CHU & WANG, 1993, **syn. n.**, Sinozoologia 10: 228, fig. 8, pl. 1, fig. 8. Locus typicus: China, Fujian, Putina. Holotype (by original designation): male (IZAS) [not examined].  
References. de JOANNIS 1929: 527.

Material. 2 ♂♂, Central Vietnam, prov. Kon Tum, Distr. Kom Plong, vill. Mang Cahn, 1250 m, 1-10.VI 2006, leg. V. ZOLOTUHN (CVZU); 1 ♂, N. Vietnam, 17.-21.V 1990, Tam Dao, Vinh Phu Distr., 900 m, leg. HORAK (MWM); 1 ♂, Vietnam, Tam Dao, 900 m, 18.-21.V 1990, leg. PALIK & KOPEC (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 1200 m, 21°34'N, 105°20'E, Sek. Wald, 1.-15.XI 1992, leg. SINIAEV & SIMONOV (MWM); 7 ♂♂, N. Vietnam, Cuc. Phuong, 60 km SW Hanoi, 20°15'N, 105°20'E, 18.XI - 3.XII 1992, 400 m, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, S. Vietnam, Bao Loc, Rung Cat Tien, 11°32'N, 107°48'E, 1500 m, 10.-20.XII 1992, Sek. Wald, leg. SINIAEV & SIMONOV (MWM); 7 ♂♂, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♀, N. Vietnam, Mt. Fa-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, VI 1994, leg. SINIAEV & einh. Sammler (MWM); 3 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 30.VI - 12.VII 1994, leg. BRECHLIN/SCHINTLMEISTER (MWM); 1 ♂, 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22°20'N, 103°40'E, Sept. 1994, Sekundärwald, leg. MONG (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, 10.-30.X 1994, leg. SINIAEV & SAMMLER (MWM); 2 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kulturland, 22°20'N, 103°40'E, Nov. 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekund.-Umg., 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SINIAEV (MWM); 6 ♂♂, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, 14.-18.XI 1994,



Sekundärwald, leg. SINIAEV & SIMONOV (MWM); 3 ♂♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.-4.III 1995, 2240 m, leg. BRECHLIN (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, IV 1995, leg. SINIAEV (MWM); 10 ♂♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.IV 1995, leg. SINIAEV & Sammler (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 21°34'N, 105°20'E, 950 m, 17.X 1995, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, Nov. 1995, leg. SINIAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 1.-7.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, 20.-30.XI 1995, leg. SINIAEV & loc. coll. (MWM); 3 ♂♂, S. Vietnam, Kon Tum Province, Dac Glei, 700 m, 8.VIII 1996, 15°17'N, 107°42'E, leg. SINIAEV & AFONIN (MWM); 1 ♂, S. Vietnam, Bach-ma Nat. Park, 1200 m, 16°10'N, 107°54'E, 26.VII -06.VIII 1996, leg. SINIAEV & AFONIN (MWM); 1 ♂, Vietnam, Prov. Tuyen Quang, Na Hang Nature Reserve, 300 m, 105°5'E, 22°3'N, 22.II - 5.III 1997, leg. CSORBA (MWM).

The species was listed by de JOANNIS 1929: 527 from Hanoi as *Ocinara lida* (= *apicalis*).

Distribution. The range of both species previously known within the genus (*E. lida* (MOORE, [1860] 1858) and *E. moorei* (HUTTON, 1865) needs special verification especially in the southern parts of SE Asia because of the extreme similiarity in appearance. *E. moorei* (HUTTON, 1865) is known reliably from northern and north-eastern India, Nepal, southern and eastern China including Taiwan, Vietnam, Thailand and Myanmar. Possible occurrence of *E. lida* (MOORE, 1858) inhabiting Java, Sumatra, Borneo, Palawan and Malaysia in southern Vietnam was not yet confirmed by dissection (Genitalia plate 1, fig. 3); further taxa are known from the Philippines, Sulawesi and Flores.

Comments. *Morus alba* L. is the host plant for the genus (CHU & WANG, 1993: 245) in China.

### ***Gnathocinara* DIERL, 1978**

Spixiana 1(3): 266. Type species: *Ocinara situla* van EECKE, 1929, Zool. Meded. Leiden 12: 62, pl. 11, fig. 1, 1a, by original designation.

The genus consists of two species, one of them is yet undescribed.

### ***Gnathocinara situla* (VAN EECKE, 1929)**

Colour plate 22, figs 8, 9

*Ocinara situla* VAN EECKE, 1929, Zool. Meded. Leiden 12: 62, pl. 11, figs 1, 1a. Locus typicus: Sumatra, Padang. Syntypes: male, female (MNHL) [examined].

Material. 1 ♂, N. Vietnam, 11.-16.V 1990, Sa Pa Hoang Lien, Son Distr., 1600 m, leg. HORAK (MWM); 1 ♂, Vietnam, Tam Dao, 900 m, 15.-17.V 1990, leg. KOPEC & PALIK (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fa-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, VI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 30.VI - 12.VII 1994, leg. BRECHLIN/SCHINTLMEISTER (MWM); 5 ♂♂, 1 ♀, N. Vietnam, 16-1800 m, Mt.

Fan-si-pan (West), Cha-pa (= Sapa), 22°20'N, 103°40'E, IX 1994, Sekundärwald, leg. MONG (MWM); 3 ♂♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kulturland, 22°20'N, 103°40'E, XI. 1994, leg. SINIAEV & einh. Sammler (MWM); 39 ♂♂, 5 ♀♀, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekund.-Umg., 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Farin-Pass, 1600 m, 20 km NW Son-la, 21°22'N, 103°52'E, 11.-13.XI 1994, leg. SINIAEV & SIMONOV (MWM); 43 ♂♂, 4 ♀♀, N. Vietnam, Mai-chau, 25 km S Moc-chau, 1400 m, 20°50'N, 104°40'E, 14.-18.XI 1994, Sekundärwald, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.-4.III 1995, 2240 m, leg. BRECHLIN (MWM); 63 ♂♂, N. Vietnam, 1400 m, Mai-chau, Urwald, 40 km SE Moc-chau, 20°50'N, 104°50'E, 07.-15.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, Primärurwald, 22°17'N, 103°44'E, 1600 m, 20.-30.IV 1995, leg. SINIAEV & Sammler (MWM); 23 ♂♂, 4 ♀♀, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 7.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, Nov.1995, leg. SINIAEV & loc. coll. (MWM); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 1.-7.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♂, Vietnam mer., Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 10.-25.VIII 1996, 15°02'N, 107°59'E, leg. SINIAEV & AFONIN (MWM).

Distribution. Sumatra; Vietnam, Thailand, southern China (Yunnan) and Myanmar.

Comments. DIERL (1978) reported the species only from Sumatra, but it is distributed northwards to Yunnan with differences in characters from the nominate race.

### ***Rondotia* MOORE, 1885**

Ann. Mag. nat. Hist. (5) **15**: 491. Type species: *Rondotia menciana* MOORE, 1885, Ann. Mag. Nat. Hist. **15**: 492, by monotypy.

= *Ectrocta* HAMPSON, [1893] 1892, Fauna Br. India (Moths) **1**: 32 (key), 33. Type species: *Ectrocta diaphana* HAMPSON, [1893].

The synonymy is established already in LEECH, 1898.

### ***Rondotia diaphana* (HAMPSON, [1893])**

Colour plate 21, figs 13, 14

*Ectrocta diaphana* HAMPSON, [1893], Fauna Br. India (Moths) **1**: 33. Type locality: [Myanmar] Burma: Momeit. Holotype: ♀ (BMNH).

Material. 2 ♂♂, N. Vietnam, Bac Can Prov., Ba Be, 300 m, 16-18.X 1997, M. OWADA leg. (NSMT); 1 ♂, sur Ban-Nam-Kay, 2.XI 1949, J. ROMIEUX (MNHG).

Distribution. Northern India (Manipur); Myanmar (Momeit); northern Thailand (Fang); northern Vietnam (Bac Can Prov.).

## Prismostictinae

### *Prismosticta* BUTLER, 1880

Ann. Mag. nat. Hist. (5) 6: 67. Type species: *Prismosticta fenestrata* BUTLER, 1880, Ann. Mag. Nat. Hist. 6: 68, by original designation. Was established in the Notodontidae; was placed in the Bombycidae by BUTLER, 1885, Cistula ent. 3: 125.

Seven species, most of them are yet undescribed. The male genitalia of the type species are figured (Genitalia plate 1, fig. 4).

### *Prismosticta micropisma* sp. n.

Colour plate 23, figs 1, 2

References. ? CANDÈZE 1927: 121 (*Prismosticta tiretta*); ? DE JOANNIS 1929: 527 (*Prismosticta tiretta*).

Material. Holotype (Plate 23, fig. 2): 1 ♂, N. Vietnam, 200 m, Ben En Nat. Park, 40 km SW Than Hoa, Sek. Wald/Vegetation, 19°40'N 105°15'E, 22.-30.XI 1994, leg. SINIAEV & SCHINTLMIESTER (GU 5020 in MWM); Paratypes. 3 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Thác Kèm, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (MWM, CVZU); 2 ♂♂, S. Vietnam, Dong Nai Prov., Vinh Cuu, Phu Ly, TW Cuc M Nam, 31.XII 2007, leg. TRAN THIEU Du (IEBR); 1 ♂, Thailand, Ban Huai Gung ca 30 km östl. v. Mae Sariang, Pro. Mae Hong Song, 1060 m, 03.V 2006, leg. Thomas IHLE (coll. S. IHLE); 1 ♂, [Thailand] Khao Yai, Nakhon Nayok, 20.VI 1998 (coll. A. PINRATANA); 1 ♂, [Thailand] Khao Yai, 6.VIII 1986 (coll. A. PINRATANA); 1 ♂, China, Guangdong, Canton, leg. R. MELL (ZMHU); 1 ♀, China, Guangdong, Canton, leg. R. MELL (ZMHU); 1 ♂, Thailand, Nakhon Nayok, Khao Yai, ca 800 m, 16.VI 1983, KUROKO, MORIUTI, ARITA & YOSHIYASU (ZSM); 1 ♂, SW Kampuchia, Kurirom Nat. Park, 11°21'E, 104°04'N, 650 m, 2-17.I 2000, leg. M. & S. MURZIN (MWM); 2 ♂♂, Cambodia, Mondolkiri Prov., Seima Biodiversity Conservation Area, between Seima and O'Rang, 12°15'44N, 107°03'49E, 360 m, 27-29.I 2006, leg. G. CSORBA & G. RONKAY (GU 13507 in MWM).

Male. Wingspan 31-34 mm, forewing length 16-18 mm. Externally very similar to *Prismosticta tiretta* SWINHOE, 1903, with the same kind of pattern and coloration. Differs easily in the shape of the hindwings where the outer margin is rounded not toothed or serrate as in *P. tiretta*; the transparent spot on the forewing is diagnostically smaller and of different shape.

Male genitalia are diagnostic in doubtful cases. In male genitalia (Genitalia plate 1, figs 7, 8), uncus has slender apex consisting of close short triangular lobes; gnathos very slender, lacking scobination and protruded spines; valvae elongate with rounded ventral margin; medial part of each valve with robust bilobed appendix; valval foundation with narrow and long toothed process directed to the bilobed appendix. Aedeagus short, strongly C-shaped, with short vesica bearing weak basal scobination and single flattend cornutus with widened base.

Diagnosis. In external characters, the large size and rounded, not serrate, hindwings are diagnostic as well as in male genitalia not spinulated gnathos and equipment of valva.

Distribution. Vietnam, Thailand, Cambodia, southern China (Guangdong).

***Prismosticta tirecta* SWINHOE, 1903**

Colour plate 23, fig. 4

*Prismosticta tirecta* SWINHOE, 1903, Fascic. Malay. Zool. 1: 52

The species was listed from Vietnam twice: by CANDÈZE 1927: 121 from Haut Tonkin and Cho ganh as well as by de JOANNIS 1929: 527. We haven't seen any specimens of the species from Vietnam but it is reliably known from Sumatra, Borneo, Peninsular Malaysia (Fraser's Hills), southern Thailand (Yala Distr. and Krabi), southern Myanmar (Tenasserim), surely is native to [southern] Vietnam also but was not collected there so far.

Hindwings are toothed in the species, coloration lighter than in *P. fenestrata* BUTLER, 1880, and male genitalia without spined processes and with harpa looking like flattened bone's head (Genitalia plate 1, fig. 6).

***Prismosticta regalis* sp. n.**

Colour plate 23, fig. 3

Material. Holotype: ♂, [China] Kuatun, Prov. Fukien, 18.IX 1938, H. HÖNE (ZFMK); Paratypes: 1 ♂, [China] Kuatun, Prov. Fukien, 28.VIII 1938, H. HÖNE (GU BO 9805 in ZFMK); 1 ♂, Central Vietnam, prov. Kon Tum, Distr. Kom Plong, vill. Mang Cahn, 1250 m, 1-10.VI 2006, leg. V. ZOLOTUHIN (in 96% Alcohol in CVZU, GU 13633 in MWM, is figured here on pl. 2, fig. 16);

Male. Wingspan 39 mm, forewing length 19 mm. Externally it is very similar to *Prismosticta tirecta* Swinhoe, 1903, with the same kind of pattern and coloration and serrate external margin of hindwings. Male genitalia are diagnostic here.

In male genitalia (Genitalia plate 1, fig. 5), uncus short and robust, with two short triangular lobes; gnathos wide, heavy spinulate and therefore of a very characteristic appearance; valvae elongate with straight ventral margin; medial part of each valve with robust pyramide-like appendix; valval foundation with very distinct, flattened and long toothed process directed ventrally. Aedeagus very short, stout, strongly C-shaped, with short vesica bearing weak single needle-shaped, slightly S-shaped cornutus.

Diagnosis. Only male genitalia characters are diagnostic, the spinulated gnathos and equipment of valve are very characteristic, transparent spots on the forewing mostly larger than in other congeners.

Distribution. Central Vietnam, eastern China (Fujian).

***Mustilia* WALKER, 1865**

List Lep. Heter. Brit. Mus. 32: 580. Type species: *Mustilia falcipennis* WALKER, 1865, List Lep. Heter. Brit. Mus. 32: 580, by monotypy.

Genus consists of 15 species distributed from the Himalayas over China (incl. Taiwan), Thailand, Vietnam, Myanmar and Peninsular Malaysia to Sumatra.

The genus is naturally divided into smaller sections. This separation is based on both external characters as well as peculiarities of the male genitalia which are of a constant ground plan within the species groups considered.

The following species groups are considered in the text according the newly published work of ZOLOTUHIN (2007).

### 1. *Mustilia falcipennis* WALKER, 1865 – species group

The range of the *falcipennis*-group is limited by the Himalayas (India, Pakistan, Nepal), southern and central China, Vietnam, Thailand and Myanmar.

All members of this group seem to be polyvoltine.

This group includes six species, only one of them is native of Vietnam.

#### *Mustilia lobata* ZOLOTUHIN, 2007

Colour plate 23, figs 7, 8

*Mustilia lobata* ZOLOTUHIN, 2007, Neue ent. Nachr. 60: 189, fig. 2, colour pl. 27, figs 3, 4. Locus typicus: Thailand, Changwat Chiang Mai, Doi Phahompok, 16 km NW of Fang, 2050 m. Holotype (by original designation): male (MWM) [examined].

References. ZOLOTUHIN 2007: 189.

Material. 3 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 1200 m, 21°34'N 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 10 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 700 m NN, 22°15'N, 103°46'E, VI 1994, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kult, 22°20'N, 103°40'E, 10.VI -6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 1600-1800 m, 22°20'N, 103°40'E, Sek. Wald/Kulturland, 30.VI - 12.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♀, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 7.-10.VII 1994, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 26 ♂♂, 2 ♀♀, N. Vietnam, Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.-4.III 1995, 2240 m, leg. Dr. R. BRECHLIN (MWM); 1 ♂, N. Vietnam, 2250 m, Mt. Fan-si-pan, Nord-Seite, Cha-pa, 22°15'N, 103°45'E, 28.-29.III 1995, prim. Nebelwald, leg. SINIAEV (MWM); 29 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 25.-30.III 1995, leg. SINIAEV & A. SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. Sammler (MWM); 10 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/cult, 22°20'N, 103°40'E, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 7 ♂♂, N. Vietnam, Tam Dao, Sek. Wald, 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, April 1995, leg. SINIAEV (MWM); 20 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, 16-1800 m near Chapa, 22°20'N, 103°40'E, secondary forest, May-Juni 1995, leg. local collectors (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, Juni 1995, leg. SINIAEV (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, VIII 1995, leg. local collectors (MWM); 2 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, N. Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 7.XI 1995, leg. SINIAEV & E. AFONIN (MWM); 4 ♂♂, Vietnam, Prov. Lao Cai, 1900-2000 m, Fan-si-pan Mts., 14 km NW Sa Pa, 103°46.06'E, 22°20.9'N, 26.-29.I 1999, leg. PEREGOVITS, G. & L. RONKAY (MWM).

Distribution. Southern China, northern Myanmar, northern Thailand and northern Vietnam, it is a vicariant of *falcipennis* Wlk., 1865.

Comments. The species is very similar in appearance to *falcipennis* but somewhat larger,

with brighter and more contrast coloration; is on average more robust, with stronger thorax; forewings more falcate. Dark coloured specimens are extremely rare. For most specimens, the prominent apical streak is very typical. In doubtful cases, preparation of the genitalia is useful to identify the species; shape of the uncus is clearly diagnostic for the species.

Biology. All specimens were collected at light on the altitudes from 950 to 2240 m and is on the wings from March to July, females – to August, and after that in October and November. Preimaginal stages and host plants are unknown.

Caterpillars of the closely related *M. falcipennis* were observed to feed on *Symplocos lucida* (Symplocaceae – ROBINSON et al., 2001).

## 2. *Mustilia sphingiformis* MOORE, 1879 – species group.

The range of the *M. sphingiformis*-group is limited to the Himalayas (India, Pakistan, Nepal), southern China, Vietnam, Thailand, Myanmar and Taiwan, a very peculiar species is known from the mountains of Sumatra.

All members of this group seem to be polyvoltine.

This group consists of three species (only one in Vietnam).

### *Mustilia sphingiformis* MOORE, 1879

Colour plate 23, figs 13, 14

*Mustilia sphingiformis* MOORE, 1879, Proc. zool. Soc. Lond. **1879**: 407, pl. 33, fig. 4. Locus typicus: Masuri, N.W. Himalaya. Syntypes: ♂, ♀ (BMNH) [examined].

References. ZOLOTUHIN 2007: 191.

Material. 42 ♂♂, 3 ♀♀, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 11 ♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 36 ♂♂, 1 ♀, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, Juni 1994, leg. SINIAEV (MWM); 1 ♀, Vietnam, Prov. Vinh Phu, Tam Dao, 60 km NW Hanoi, 950-1200 m, 23°34'N, 105°20'O, Juni 1994, leg. SINIAEV & SIMONOV (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 1525 m, 22°17'N, 103°44'E, prim. Urwald 7, 10.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 1600-1800 m, 22°20'N, 103°40'E, Sek. Wald/Kulturland, 10.VI - 12.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 5 ♂♂, N. Vietnam, Tam Dao, 60 NW Hanoi, 21°34'N, 105°20'E, 950 m, 14.-15.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 9 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek-Wald, 22°20'N, 103°40'E, September 1994 Lf., leg. MONG (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, Sept. 1994, leg. SINIAEV & loc. coll. (MWM); 10 ♂♂, 1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kult, 22°20'N, 103°40'E, 20.-30.X - Nov. 1994, leg. SINIAEV & einh. Sammler (MWM); 8 ♂♂, 1 ♀, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, 1 ♀, N. Vietnam/Tonkin, Mt. Fan-si-pan (Nord), Cha-pa, Nebelwald, 22°15'N, 103°45'E, 2.- 4.III 1995, 2240 m, leg. Dr. BRECHLIN (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 1600-1800 m, 22°20'N, 103°40'E, Sek. Wald, Kulturland, 15.-25.III 1995, leg. SINIAEV & einh. Sammler (MWM); 7 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 25.-30.III 1995,

leg. SINIAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 1400 m, Mai Chau, 40 km SE Moc-chau, Urwald, 7.-15.IV 1995, 20°50'N, 104°50'E, leg. SINIAEV & einh. Sammler (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 74 ♂♂, 3 ♀♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kult., 22°20'N, 103°40'E, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 32 ♂♂, 1 ♀, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 28 ♂♂, N. Vietnam, Fan-si-pan Mts, W-Seite, near Cha-pa, sec. Forest, 1600-1800 m, 22°20'N, 103°40'E, May-September 1995, leg. loc. coll. (MWM); 7 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Side, 1600 m, 22°17'N, 103°44'E, primary forest, 20.X - 07.XI 1995, leg. SINIAEV & AFONIN (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.XI 1995, leg. SINIAEV & loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-Seite, Cha-pa (= Sapa), 1600 m, 22°17'N, 103°44'E, V 1996, prim. Urwald, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Yen Bai – Anchy, 21°42'N, 104°18'E, Primärwald, V 1996 (MWM); 4 ♂♂, S. Vietnam, sept. Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 15°02'N, 107°59'E, 10.-25.VIII 1996, leg. SINIAEV & AFONIN (MWM).

Distribution. From the Himalayas (northern and north-eastern India and Nepal) to southern and south-eastern China (prov. Yunnan, Fujian), Myanmar, northern Thailand, northern Vietnam and Malaysia; the subspecies *gerontica* WEST, 1932, is known from Taiwan.

Comments. The larvae were recorded to feed on *Hibiscus rosa-sinensis* (Malvaceae), *Ficus retusa* and *Morus* sp. (Moraceae), *Fraxinus pensylvanica* (Oleaceae – ROBINSON et al., 2001; CHU & WANG, 1996). Hence, in Lao Cay newly hatched caterpillars rejected *Ficus* pr. *benjamina* and related species (V. ZOLOTUHIN, pers. obs.).

### **Subgenus *Smerkata* ZOLOTUHIN, 2007 (of *Mustilia* WALKER, 1865)**

Neue ent. Nachr. 60: 193. Type species: *Mustilia phaeopera* HAMPSON, 1910, by original designation.

Range of *M. phaeopera*-group is limited to the Himalayas (Assam, Nepal), northern Vietnam, northern Thailand, Taiwan and mountains of southern and eastern China.

All members of this group seem to be winter fliers and often are known from higher altitudes of mountain ranges.

This group consists of six species, two of them are known from Vietnam.

### ***Mustilia (Smerkata) phaeopera* HAMPSON, 1910**

Colour plate 23, fig. 9

*Mustilia phaeopera* HAMPSON, 1910, J. Bomb. Nat. Hist. Soc. 20: 83, pl. F, fig. 1. Locus typicus: Assam, Khasis. Lectotype: male (BMNH) [examined]. The lectotype was designated by ZOLOTUHIN (2007: 193).

References. ZOLOTUHIN 2007: 193.

Material. 3 ♂♂, N-Vietnam, 16-1800m, Mt. Fan-si-pan (West), Cha-pa, Sek-Wald, 22°20'N, 103°40'E, 10.X - Nov. 1994, leg. SINIAEV & einh. Sammler (MWM).

Distribution. Being described from Assam, this species is known also from Nepal where it is relatively common. Three specimens are known from Northern Vietnam; the same

species probably is native to China (Hunan).

Biology. Autumnal flier, is on the wing in October-November. In Nepal, it inhabits higher elevations of about 2000 to 3200 m, but is more common in about 2300 to 2560 m. Develops one generation per year.

Caterpillars were reported from *Camellia caudata* (Theaceae – ROBINSON et al., 2001).

***Mustilia (Smerkata) craptalis* ZOLOTUHIN, 2007** Colour plate 23, figs 11, 12

*Mustilia (Smerkata) craptalis* ZOLOTUHIN, 2007, Neue ent. Nachr. **60**: 193, fig. 12, colour plate 28, figs 29-31. Locus typicus: China, Prov. Nord-Yunnan, Li-kiang, ca 4000 m. Holotype (by original designation): male (ZFMK) [examined].

References. ZOLOTUHIN 2007: 193.

Material. 1 ♂, paratype, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Nov. 1994, 22°20'N, 103°40'E, Sek. Wald, Kulturland, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Nov. 1994, 22°20'N, 103°40'E, Sek. Wald, Kulturland, leg. SINIAEV & einh. Sammler (MWM); 6 ♂♂, 1 ♀, N-Vietnam, 2350 m, Mt. Fan-si-pan (Nord), Cha-pa, Prim. Nebelwald, 22°15'N, 103°45'E, 28.-30.X 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.IV 1995, leg. SINIAEV & Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sekund-Wald, 22°20'N, 103°40'E, (Kult), IV 1995, leg. SINIAEV & einh. Sammler (MWM).

Distribution. Southern China (Yunnan), northern Vietnam (Mt. Fan-si-pan).

Biology. Autumnal flier, is on the wing in September-November; one specimen is known from April. Inhabits altitudes from 1600 to 4000 m. Preimaginal instars and host plants are still unknown.

***Mustilizans* YANG, 1995**

Insects Baishanzu Mountain: 355. Type species: *Mustilizans drepaniformis* YANG, 1995, Insects Baishanzu Mountain: 356, by original designation.

Range of the genus is limited by the Himalayas (India, Pakistan, Nepal), southern China, Vietnam, Thailand, Myanmar, Laos and Sundaland (Sumatra, Borneo, Java).

All members of this group seem to be polyvoltine.

Taxonomic comments. As a matter of fact, the genus doesn't belong in a close relationship with *Mustilia* s. str. and probably forms a separate group which possibly merits the rank of a separate tribe within the Bombycidae.

This group consists of nine species, four of them are known from Vietnam.

***Mustilizans hepatica* (MOORE, 1879)** Colour plate 24, figs 1, 2

*Mustilia hepatica* MOORE, 1879, Lep. coll. late Mr Atkinson: 82, pl. 3: fig. 18. Locus typicus: [Darjeeling] Darjiling. Holotype (by monotypy): male (MHUB) [examined].



***Mustilizans hepatica aeola* ZOLOTUHIN, 2007**

*Mustilizans hepatica aeola* ZOLOTUHIN, 2007, Neue ent. Nachr. 60: 196, fig. 19, colour plate 28, fig. 35. Locus typicus: Thailand, Changwat Nan, 30 km E of Pua, 1700 m. Holotype (by original designation): male (MWM) [examined].

References. ZOLOTUHIN 2007: 196.

Material. 15 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 2006, leg. V. ZOLOTUHIN (CVZU); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, Juni 1994, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (= Sapa), 1600-1800 m, 22°20'N, 103°40'E, Sek. Wald/Kulturland, 30.VI - 12.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, Kult., XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.III 1995, leg. SINIAEV & loc. coll. (MWM); 10 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/cult, 22°20'N 103°40'E, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 8 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W. Seite, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, VIII 1995, leg. loc. coll. (MWM); 3 ♂♂, N. Vietnam, Fan-si-pan Mts. W-Seite, Cha-pa, 1600-1800 m, 22°20'N, 103°40'E, secondary forest, May-August 1995, leg. loc. coll. (MWM); 9 ♂♂, S. Vietnam, Plato TayNguyen, Mt. NgocLinh, 900-1400 m, 15°02'N, 107°59'E, 10.-25.VIII 1996, leg. SINIAEV & AFONIN (MWM).

Distribution (for the species). From the Himalayas (Pakistan, northern India, Nepal) eastwards to southern and eastern China, northern Vietnam, Thailand, Laos and northern Malaysia.

Larvae were recorded to feed on *Quercus incana* (Fagaceae – ROBINSON et al., 2001) and *Broussonetia papyrifera* (L.) Vent. (Leguminosae – CHU & WANG, 1996).

***Mustilizans dierli* (HOLLOWAY, 1987)**

*Mustilia dierli* HOLLOWAY, 1987, Moths Borneo 3: 88, pl. 9, fig. 120. Locus typicus: [Borneo] E[astern] Saba: Brumas. Holotype (by original designation): male (BMNH) [examined].

***Mustilizans dierli refugialis* ZOLOTUHIN 2007**

Colour plate 24, fig. 5

*Mustilizans dierli refugialis* ZOLOTUHIN 2007, Neue ent. Nachr. 60: 196, fig. 20, colour plate 28, fig. 36. Locus typicus: China, Yunnan, Simao-district, Mangxi Ba Mts, 18 km S of Simao, 1280 m. Holotype (by original designation): male (MWM) [examined].

References. ZOLOTUHIN 2007: 196.

Material. 5 ♂♂, N. Vietnam, Prov. Lao Cai, Fan-Si-Pan Mts., Sa Pa, 1500 m, 10-20.V 200, leg. V. ZOLOTUHIN (CVZU); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West) Cha-pa, Sek. Wald/Kult., 22°20'N, 103°40'E, 10.VI - 6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, April 1995, leg. SINIAEV (MWM); 1 ♂, Vietnam, Quang Nam Prov., Nam

Giang, Cha Vai, 28.VI 2008, leg. TRAN THIEU Du (IEBR); 5 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Thác Kè, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (CVZU); 2 ♂♂, C. Vietnam, Nghe An Prov., Pu Mat NP, Phúc Sơn vill., 130 m, 18°49'N, 104°58'E, 29.IX – 3.X 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution (for the species). Sundaland (Sumatra, Borneo, Peninsular Malaysia) up to central Thailand, Vietnam and southern Myanmar.

***Mustilizans lepusa* ZOLOTUHIN, 2007**

Colour plate 24, fig. 3

*Mustilizans lepusa* ZOLOTUHIN, 2007, Neue ent. Nachr. 60: 198, fig. 26, colour plate 29, fig. 41. Locus typicus: northern Vietnam, Cuc Phuong Nat. Park, 120 km SW Hanoi, 20°15'N, 105°20'E, 400 m. Holotype (by original designation): male (MWM) [examined].

References. ZOLOTUHIN 2007: 198.

Material. 1 ♂, holotype, N. Vietnam, 400 m, Cuc Phuong, Nat. Park, 120 km SW Hanoi, 20°15'N, 105°20'E, 1.-2.IV 1995, leg. SINIAEV & SCHINTLMEISTER (MWM).

Distribution. Seems to be rare. The only male known to date, the holotype, is from Northern Vietnam, prov. Cuc Phuong.

***Mustilizans sinjaevi* ZOLOTUHIN, 2007**

Colour plate 24, fig. 4

*Mustilizans sinjaevi* ZOLOTUHIN, 2007, Neue ent. Nachr. 60: 198, fig. 27, colour plate 29, fig. 42. Locus typicus: North Vietnam, Mt. Fan-si-pan, Cha-pa, 2400 m, 22°15'N; 103°46'E. Holotype (by original designation): male (MWM) [examined].

Material. ♂, holotype, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1700 m NN, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald/Kult., 22°20'N, 103°40'E, 20.-30.X 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 28.X - 3.XI 1994, leg. SINIAEV & einh. Sammler (MWM); 6 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek-Wald/Kult., 22°20'N, 103°40'E, 15.-25.III 1995, leg. SINIAEV & einh. Sammler (MWM); 7 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan, Nord-Seite, Cha-pa, 22°17'N, 103°44'E, 25.-30.III 1995, prim. Nebelwald, leg. SINIAEV & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 2250 m, Mt. Fan-si-pan (Nord), Cha-pa, prim. Nebelwald, 22°15'N, 103°45'E, 28.-29.III 1995, leg. SINIAEV (MWM); 13 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West) Cha-pa, Sek. Wald/cult., 22°20'N, 103°40'E, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Fan-si-pan Mts, W-Seite, near Cha-pa, 1600-1800 m, 22°20'N, 103°40'E, secondary forest, May 1995, leg. loc. coll. (MWM); 1 ♂, N. Vietnam, Fan-si-pan, 16-1800 m, sec. forest, 22°20'N, 103°40'E, July 1995, O-ku-hay, leg. loc. coll. (MWM).

Distribution. The species is known from northern Vietnam (Mt. Fan-si-pan) and Southern China (Sichuan, Yunnan and Tibet).

***Falcogona* ZOLOTUHIN, 2007**

Neue ent. Nachr. 60: 199. Type species: *Falcogona gryphea* ZOLOTUHIN, 2007, by original designation.

The genus is monotypical.

***Falcogona gryphea* ZOLOTUHIN, 2007**

Colour plate 23, fig. 10

*Falcogona gryphea* ZOLOTUHIN, 2007, Neue ent. Nachr. 60: 199, fig. 16, colour plate 27, fig. 20. Locus typicus: Northern Vietnam, Mt. Fan-si-pan, Cha-pa, 22°17'N, 103°44'E, 1600 m. Holotype (by original designation): male (MWM) [examined].

References. ZOLOTUHIN 2007: 199.

Material. ♂, holotype, Northern Vietnam, Mt. Fan-si-pan, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20-30.III 1995, leg. SINJAEV & SAMMLER (MWM). 1 ♂, paratype, Northern Vietnam, Mt. Fan-si-pan, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20-30.IV 1995, leg. SINJAEV & Sammler (GU 7972 in MWM).

Distribution. So far is known only from the type locality.

Biology. Spring flier; slightly worn moths were collected on middle altitudes (of about 1600 m) in late March-April. Probably develops one generation per year.

***Andraca* WALKER, 1865**

List Spec. Lepid. Insects Colln Br. Mus. 32: 581. Type species: *Andraca bipunctata* WALKER, 1865, List Spec. Lepid. Insects Colln Br. Mus. 32: 582, by monotypy. Was established in the Bombycidae, later was transferred to the Notodontidae by VAN EECKE (1921, Tijdschr. Ent. 64: xii), again to Bombycidae by himself (1929, Zoolog. Mededeel. 12: 57), later to the Eupterotidae by KIRIAKOFF, 1968, in WYTSMAN, Genera Insect. 217(C): 2.

***Andraca trilochoides* MOORE, 1865**

*Andraca trilochoides* WALKER, 1865, List Spec. Lepid. Insects Colln Br. Mus. 32: 582. Locus typicus: India, Darjiling. Holotype: male (BMNH) [examined].

***Andraca trilochoides roepkei* BRYK, 1944, stat. n.**

Colour plate 24, figs 7, 9

*Andraca roepkei* Bryk, 1944, Ark. Zool. 35A 8: 17, pl. 3, fig. 22 (sic! not 21 as pointed out in the text!). Locus typicus: N. E. Burma, Kambaiti, 2000 m. Lectotype: male N 241 79, 11.VI 1934, leg. MALAISE, here designated (RMS) [examined].

= *Andraca henosa* CHU & WANG, 1993, syn. n., Sinozoologia 10: 242, fig. 26, pl. 2, fig. 26. Locus typicus: China, Yunnan, Yongshan. Holotype (by original designation): male (IZAS) [not examined].

*Andraca bipunctata* sensu OWADA et al., 2002: 463, figs 1, 2, nec Moore, 1865.

References. de Joannis 1929: 528; OWADA & al. 2002: 463 (*Andraca bipunctata*).

Material. 1 ♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1600 m, 22°15'N, 103°46'E, 5.-29.V 1993, leg. SINJAEV & SIMONOV (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1600 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINJAEV & SIMONOV (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, IV 1995, leg. SINJAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Tam Dao, 60 km NW Hanoi, 950 m,

21°34'N, 105°20'E, 23.-31.III 1995, leg. SINIAEV (MWM); 1 ♂, N. Vietnam, Fan-si-pan Mts, W-Seite, near Cha-pa, 1600-1800 m, 22°20'N, 103°40'E, secondary forest, May 1995, leg. loc. coll. (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 8 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha pa, 1700 m NN, 22°15'N, 103°46'E, VI 1994, leg. SINIAEV & einh. Sammler (MWM); 9 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (west), Cha-pa (= Sapa), Sek. Wald/Kulturland, 22°20'N, 103°40'E, 10.VI - 6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 5 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 16-1800 m, VIII 1995, leg. loc. coll. (MWM); 7 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 16-1800 m, 22°20'N, 103°40'E, April 1995, leg. SINIAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1600 m, 22°15'N, 103°46'E, 5.-29.V 1993, leg. SINIAEV & SIMONOV (MWM); 4 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Mt. Fan-si-pan, W. Seite, Cha-pa (= Sapa), 2000 m, 22°15'N, 103°45'E, primär. Nebelwald, 5.VII 1994, leg. BRECHLIN & SCHINTLMEISTER (MWM); 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Nov. 1994, 22°20'N, 103°40'E, Sek. Wald/Kulturland, leg. SINIAEV & einh. Sammler (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Chapa, 22°20'N, 103°40'E, 1600-1800 m, 15.-25.IV 1995, leg. SINIAEV & loc. coll. (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.XI 1995, leg. SINIAEV & loc. coll. (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1600 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV (MWM).

The species was listed by de JOANNIS 1929: 528 from Phu tho as *Andraca bipunctata*

Comments. This taxon was described by F. Bryk as a separate species but was overlooked for a long period and only shortly before, OWADA et al. (2002) synonymized it with *Andraca bipunctata* WLK. However, both taxa are not conspecific; constant differences in male genitalia allow to consider the taxon *roepkei* as a separate subspecies of *A. trilochooides* MR. The Chinese *A. henosa* CHU & WANG, 1993 should be removed from the synonymy with *Andraca bipunctata*, but should be considered correctly to be a synonym of *A. trilochooides roepkei* BRYK, 1944, **syn. n.** The situation will be considered in details in a revision of *Andraca* (ZOLOTUHIN, in prep.).

Biology. Flight period in Vietnam falls in April to July and again in November, but in China, from where many more specimens are known, the species flies from late April to August and probably develops few generations. Inhabits altitudes from 900 to 3500 m, most typical in altitudes of 1600 to 2400 m. CHU & WANG (1996: 18) recorded *Camellia japonica* (Theaceae) as a larval host plant for *A. henosa*. BRYK (1944) noted also that "befand sich kein Theefeld in der ganzen Umgebung der Fangstelle. Daraus möchte ich schliessen, dass die Larve dieser Art dort eine andere Futterpflanze hat, es ist denn dass der Falter weit von der nördlich gelegenen Theeplantagen Südchinas ans Licht herangeflogen gekommen wäre, was ich nicht gerne annehmen möchte".

Distribution. Northern Vietnam (Lao Cai: Mt. Fan-si-pan; Tam Dao; Son La), northern Thailand (Chiang Mai, Chiang Nan, Chiang Rai), southern China (Yunnan, Sichuan), Myanmar (North-eastern: Kambaiti). The nominate subspecies is known from Northern India (Sikkim, Darjeeling) and Nepal.

***Andraca stueningi* ZOLOTUHIN & WITT, sp. n.**

Colour plate 24, figs 6, 8

**Material.** Holotype (Plate 24, fig. 8): ♂, Nord Vietnam, Yen Bai – An-chy, 21°42'N, 104°18'E, Primärurwald, V 1996 (GU 9001 in coll. MWM). Paratypes: 5 ♂♂, the same data; 4 ♂♂, Vietnam sept., Plato TayNguen, Mt. NgocLinh, 900-1400 m, 15°02'N, 107°59'E, 10-25.VIII 1996, leg. SINJAEV & AFONIN (MWM); 2 ♀♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan, Cha-pa, Sekund. Wald, 22°20'N, 103°43'E, XI 1994, leg. SINJAEV & einh. Smmlr (MWM).

Wingspan of males 39-43 mm, of females 49-54 mm, forewing length is 21-23 mm in males and 28-29 mm in females. Forewings in males with sharpened apex, festooned outer edge and shortly acute in medial zone; hindwings distinctly angled with dentated outer margin. Ground color corresponds well with that of *A. bipunctata* or *A. trilochoides*, of dark red-castanea, with olive-greenish external spots in medial area, darker transversal lines, blackish discal dot and vague bluish suffusion on costal edge. Females with sickle-shaped apex of the forewing and acutely angled in medial zone; the rest of the wing edge is smooth. The hindwing is very similar to that of the male, which is untypical for the females of other *Andraca*. Ground color yellowish-brown, dark pattern reduced to only an oblique fascia coming from apex to the rest of postmedia and vanished in dorsal fourth; the apex is suffused with bluish scales; greenish spots in external field are also typical.

Male genitalia (Genitalia plate 2, fig. 13). Tegumen broad, with long, strongly flattened and W-shaped [bifurcate] uncus, gnathos consists of two very slender, curved arms; valvae flattened, almost parallel-sided, sclerotized, with costal flattened declinated tooth, and small rounded inner projection. Aedeagus long, thin, strongly curved, with dorsal row of smaller cornuti and caudal tuft of longer ones.

**Diagnosis.** Toothed costal margin of valva is typical. The shape of the wings of the females is very characteristic; as a matter of fact it is the only species of the genus with the females having so strongly acute forewings.

**Biology.** Unknown. Flight period falling in May, August and November, develops probably two or more generations per year. Inhabits altitudes from 900 to 1800 m. Preimaginal stages and food plants unknown.

**Distribution.** Is known only from Vietnam so far; here is a vicariant of *Andraca bipunctata* WLK.

***Andraca apodecta* SWINHOE, 1907**

Colour plate 24, fig. 10

*Andraca apodecta* SWINHOE, 1907, *Ann. Mag. nat. Hist.* (7)19: 49. Locus typicus: Padang, W. Sumatra. Lectotype: male (BMNH), here designated [examined].

**Material.** 1 ♂, N. Vietnam, Mt. Fan-si-pan, 16-1800 m, near Cha-pa, 22°20'N, 103°40'E, sec. forest, September 1995, leg. loc. coll. (MWM).

**Distribution.** Sumatra, Borneo, Sulawesi; northern Vietnam (Mt. Fan-si-pan), northern Thailand (Chiang Mai; Nan), China (Yunnan; border Jiangxi/Fujian; Shaanxi).

**Diagnosis.** The species is easily recognized due to large size, reddish-brown ground colour with darker pattern, smooth wing margin and especially by the absence of cornuti. Geographic range is also very characteristic.

**Biology.** The species is on the wing throughout the year on the islands (Sumatra, Borneo,

Sulawesi); from the continent is known from July – mid-September, develops probably one generation per year. Inhabits altitudes of 900-1300 m on Sulawesi, of 500-1350 m on Sumatra, about 1450 m on Borneo; on the continent seems to be a mountain species, with altitude preference of about 1600-1800 m in Vietnam, 1480-2200 m in China and 1550-2000 m in Thailand. The caterpillars are reported from tea (*Camellia*, Theaceae) (ROEPKE, 1924) and *Thea sinensis* (OWADA et al., 2002).

Taxonomical notes. At least three syntypical specimens are kept in BMNH. From them, one male bearing the following labels: white circle with red frame and typed “Type”; white rectangle with printed text “1907-128.”; yellowish rectangle with printed “Padang / W. Sumatra”, white rectangle with hand written text [by Swinhoe’s hand, by ink] “*Andraca* / apodecta ♂ / SWINHOE type” and blueish rectangle with typed “genitalia slide No.” and hand’s inscription with ink “Eupter.” and ‘17”, is designated here to be the lectotype of the taxon; it is supplied with a red label with corresponding text. Two other specimens, both females, should therefore be considered as paralectotypes of the species.

***Andraca melli* sp. n.**

Colour plate 24, figs 11, 12

*Andraca bipunctata* sensu CHU & WANG, 1993: 241, fig. 25, pl. 2, fig. 25, and Zhu & Wang, 1996: 55, fig. 39, pl. 3, fig. 7, nec WALKER, 1865.

Material. Holotype: ♂, China, Prov. Guangdong, Mahn-tsi-shan, 4.X 1915, leg. R. MELL (MHUB).  
Paratypes: 4 ♂♂, 2 ♀♀, the same data but 1.VII, 2.VII, 6.VIII, 12.VIII 1915, 20.IV [19]12 (MHUB); 3 ♂♂, China, Prov. Guangdong, Lo-fa-shan, 11.X 1912, 2.VII, leg. R. Mell (MHUB); 1 ♀, China, Prov. Guangdong, Lo-fau-shan, 3.VII, leg. R. MELL (MHUB); 2 ♂♂, 2 ♀♀, China, Prov. Guangdong, Tscha-yun-shan, 20.V, 26.VII, 20.VII-3.VIII, 26.VIII, leg. R. MELL (MHUB); 2 ♀♀, China, Prov. Guangdong, Drachenkopf, 1.VIII, 19-29.VII, leg. R. MELL (MHUB); 3 ♂♂, ♀, China [?Prov. Guangdong] T. Y. S., V [19]11, leg. R. MELL (MHUB); 1 ♀, [China, Prov. Guangdong] V [19]11, leg. R. MELL (MHUB); 2 ♀♀ without labels [China, Prov. Guangdong, leg. R. MELL] (MHUB); 7 ♂♂, 7 ♀♀, [China] Nanning (ZFMK); 1 ♂, 1 ♀, China (ZFMK); 1 ♂, 2 ♀♀, [China] Kuling, VII 1921 (ZFMK); 1 ♂, [China, Guangdong] Prow. Kwangtung, Linping, 20.VII 1923, leg. H. HÖNE (ZFMK); 1 ♂, China (ZFMK); 1 ♂, ♀, [China] Prov. Chekiang, West Tien-mu-shan, 2.V. 1932 & 23.IV 1931, leg. H.HÖNE (ZFMK); 1 ♀, the same data, 13.VII 1932 (MHUB); 1 ♂, Thailand, Changwat Nan, 5 km N of Bo Luang, 1000 m, 18.VIII 1999, leg. T.CSOVÁRI & L.MIKUS (MWM); 1 ♂, China, Prov. Guang Dong, 40 km W Guang Zhou (= Canton), 80 m, 23-24.III 1999, leg. G.MÜLLER (GU 11033 in MWM); 1 ♀, China, Hainan Dao, He Ling Mts. und Wuzhi Shan, 1000-1800 m, eII-eV 2000, leg. J. L. LI (MWM); 1 ♀, China, WuyShan, Jiangxi-Fujian border, 50 km SE of Yungtan, 27°55’N, 117°25’E, 1600 m, V 2002, leg. SINIAEV & loc. coll. (MWM).

Small species, wingspan of males is 32-37 mm, of females 42-47 mm, forewing length is 17-20 mm in males and 24-26 mm in females. Forewings in males with sharpened apex, smooth and straight outer edge and almost rectangular tornus. Hindwings distinctly angled at about 95°; both sides of outer margin (above and under the angle) are straight. In some specimens, this angle is slightly rounded. Ground colour corresponds well with that of *A. bipunctata* or *A. trilochoides*, of dark red-castanea, with olive-greenish external spots in medial area, darker transversal lines, blackish discal dot and vague bluish suffusion. This suffusion is especially prominent on costal edge of the wing nearby external fascia. Females with sickle-shaped apex of the forewing and broadly rounded external margin of both wings. Ground colour brownish-yellow, with darker transversal

lines and oblique apical streak outlined with bluish suffusion.

Male genitalia (Genitalia plate 2, fig. 14). Tegumen broad, with short, triangular to pyramidal strong uncus, gnathos consists of two short, medially broadened, curved arms; valvae short, flattened, strongly sclerotized, with caudal protruded acute tips but without inner projection. Aedeagus short but strong, strongly curved, with compact group of long and strong needle-shaped cornuti on dorsal surface.

Diagnosis. The smallest species of the genus. Shape of the hindwings of the males is diagnostic. Female can easily be identified by small size and rounded external margin of the hindwings.

Biology. Flight period in Thailand falls in May, July, August and October, therefore develops probably two or few generations. CHU & WANG (1996: 18) recorded *Thea sinensis*, *Camellia oleifera* (Theaceae), *Fraxinus pennsylvanica* (Oleaceae), and *Ternstroemia japonica* (Ternstroemiaceae) as larval host plants for *A. bipunctata* [misidentification].

Distribution. China (Guangdong; Zhejiang; Hainan, Jiangxi-Fujian border), northern Thailand (Nan). Only two females are known from Vietnam which are not included in type series, because they specific belonging should be confirmed by males:

1 ♀, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West) Cha-pa, Sek. Wald, 22°20'N, 103°40'E (Kult.), XI 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♀, N. Vietnam, Mt. Fan-si-pan, N-side, Cha-pa, 22°17'N, 103°44'E, 1600 m, 20.-30.XI 1995, leg. SINIAEV & loc. coll. (MWM).

### ***Andraca olivacea* MATSUMURA, 1927**

*Andraca olivacea* MATSUMURA, 1927, J. Coll. Agric. Hokkaido Univ. **19**: 50, pl. 3, fig. 7. Locus typicus: Formosa, Horisha, Baibara. Holotype (by monotypy): male (coll. Sapporo Uni) [examined].

### ***Andraca olivacea olivacens* MELL, 1958, comb. n., stat. n.**      Colour plate 24, fig. 13

*Andraca olivacens* MELL, 1958, D. ent. Z. (N.F.) 5: 211. Locus typicus: [China, Fujian] Kuantun, NW-Fukien. Lectotype: male (ZFMK), here designated. Was described in the Notodontidae.

= *Andraca hedra* CHU & WANG, 1993, Sinozoologia 10: 243, fig. 28, pl. 2, fig. 28. Locus typicus: Cina, Hainan, Jiannfeng. Holotype (by original designation): male (IZAS) [not examined].

References. Owada & al., 2002: 464 (syn. to *olivacea* MATS.).

Material. 3 ♂♂, Central Vietnam, prov. Kon Tum, Distr. Kom Plong, vill. Mang Cahn, 1250 m, 1-10.VI 2006, leg. V. ZOLOTUHIN (CVZU); 1 ♂, S. Vietnam, Bao Loc (Sek. Wald), Rung Cat Tien, 1500 m, 11°32'N, 107°48'E, 10.-20.XII 1992, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1.-5.V 1993, leg. SINIAEV & SIMONOV (MWM); 2 ♂♂, N. Vietnam, 1525 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 7.-10.VII 1994, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Tam Dao, 60 km Hanoi, 950 m, 21°34'N, 105°20'E, 17.X 1994, leg. SINIAEV (MWM); 9 ♂♂, N. Vietnam, Mt. Fan-si-pan (West), Cha-pa, 16-1800 m, 22°20'N, 103°40'E, IV 1995, leg. SINIAEV & einh. Sammler (MWM); 4 ♂♂, N. Vietnam, Tam Dao (Sek. Wald); 60 km NW Hanoi, 950 m, 21°34'N, 105°20'E, IV 1995, leg. SINIAEV (MWM); 1 ♂, Vietnam mer., 1200 m, Bach-ma Nat. Park, 16°10'N, 107°54'E, 26.VII -6.VIII 1996, leg. SINIAEV & AFONIN (MWM); 7 ♂♂, C. Vietnam, Nghe

An Prov., Pu Mat NP, Thác Kèm, 330 m, 18°58'N, 104°48'E, 24.-28.IX 2008, V. ZOLOTUHIN leg. (CVZU).

Distribution. Southern China (Jiangxi-Fujian border; Fujian; Hainan); Myanmar (50 km E Putao); Vietnam. Surprisingly not known so far from Thailand. The nominate subspecies is endemic to Taiwan.

Diagnosis. Similar to the nominate subspecies, but more uniform olive-greyish with considerable reduction of the yellow pattern; southern populations have distinct reddish tint.

Biology. Unknown. Flight period falling in February-May, July-August, October and December, develops probably few generations per year. Inhabits altitudes from 950 to 1600 m. CHU & WANG (1996: 18) recorded *Ficus benjamina* (Moraceae) as larval host plant for *A. hedra*. In the nominate subspecies, the flight period falls in February – mid July and from August – early September; probably develops few overlapping generations per year; inhabits altitudes from 400 to 1160 m, mainly of 470-650 m.

Comments. The male from the type series with the labels: reddish with printed text “Type”, violet with printed text “Kuatun (2300m) 27,40 n. Br. / 117,40 ö. L., J. KLAPPERICH / 3. 4. 1938 (Fukien)”, whitish with handwritten with tint by R. Mell text “*Andraca olivacens* MELI / Typus” where “Typus” is underlined with a red pencil, and white square with black frame and a printed text “ZFMKBonn / ZOLOTUHIN pr. / 2008-02”, is designated here as lectotype (coll. ZFMK); accordingly, the female from the same collection should therefore be considered to be a paralectotype. Both specimens are supplied with red labels with the corresponding printed text.

### ***Pseudandraca* MIYATA, 1970**

Tinea, Tokyo **8**: 190. Type species: *Andraca gracilis* BUTLER, 1885, by original designation. Two species are included, only one of them is known from Vietnam.

### ***Pseudandraca flavamaculata* (YANG, 1995), comb. n. Colour plate 24, fig. 14**

*Andraca flavamaculata* YANG, 1995, Insects Baishanzu Mountain: 354, figs 3, 8. Locus typicus: [Mt. Baishanzu, 1100 m, Zhejiang Prov., China]. Holotype: male (pointed out to be in coll. Beijing Agricultural University) [not found].

*Andraca nabesan* KISHIDA & OWADA, 2002, Spec. Bull. Jap. Soc. Coleopt. **5**: 467, figs. 4, 7, **syn. n.** Locus typicus: Vietnam, Cao Bang, Cao Lang. Holotype: male (NSMT).

References. Owada et al., 2002: 467.

Material. 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, Cha-pa, 1600 m, 22°15'N, 103°46'E, 8.-29.V 1993, leg. SINIAEV & SIMONOV, ex. coll. SCHINTLMEISTER (MWM); 2 ♂♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa, Sek. Wald, 22°20'N, 103°40'E, 10.VI - 6.VII 1994, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, 2250 m, Mt. Fan-si-pan (Nord), Cha-pa, prim. Nebelwald, 22°15'N, 103°45'E, 28.-29.III 1995, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Tam Dao (Sek. Wald), 60km NW Hanoi, 950 m, 21°34'N, 105°20'E, April 1995, leg. SINIAEV (MWM); 2 ♂♂, N. Vietnam, Mt. Fan-si-pan, W-side, Cha-pa, 22°20'N, 103°40'E, 1600-1800 m, April 1995, leg. SINIAEV & loc. coll. (MWM); 3 ♂♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärurwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (MWM); 1 ♂, N. Vietnam, Fan-si-pan Mts, W-Seite,



near Cha-pa, 1600-1800 m, 22°20'N, 103°40'E, secondary forest, May 1995, leg. loc. coll. (MWM); 3 ♂♂, N. Vietnam, Mt. Fan-si-pan, N-Side, Cha-pa, 1600 m, 22°17'N, 103°44'E, primary forest, 20.-30.XI 1995, leg. SINIAEV & loc. coll. (MWM); 1 ♂, Vietnam, Prov. Lao Cai, 1900-2000 m, Fan-si-pan Mts, 14 km NW Sa Pa, 103°46.06'E, 22°20.9'N, 26.-29.I 1999, leg. PEREGOVITS, G. & L. RONKAY (MWM).

The species is characterised in external characters by distinct contrasting citrus-yellow spots of the greyish ground colour of the wings. Male genitalia are also very characteristic, especially in the shape of the valva and in the presence of a strong sharpened basal inner process. The genus *Pseudandracca* MIYATA is based on these characters and therefore the species under consideration is placed here in the latter genus with the establishment of a new combination as stated above.

Biology. Flight period from March to beginning of September. Inhabits altitudes from 1100 to 3200 m. Preimaginal stages, females and food plants unknown. For the subspecies *nabesan*, flight period was given by OWADA & al. (2000) to be only in February; in MWM, the moths were collected from April to July and again in November and January, probably develops two generations. Inhabits altitudes from 1600 to 2250 m, but mainly 1600-1800 m. Preimaginal stages, females and food plants unknown.

Comments. This peculiar moth was described as a separate species by OWADA & KISHIDA (2002) without reference to the work of YANG (1995). Both taxa under consideration, *P. flavamaculata* and *P. nabesan*, are conspecific without doubts and therefore the new combination described above for *P. nabesan* is established. At the same time, the peculiarities of the male genitalia as well as brighter and more contrasting coloration of the wings allow consideration of the Vietnamese population in the rank of a separate subspecies.

Distribution. Known only from the southern China (Zhejiang; border Jiangxi/Fujian; Fujian; Yunnan; Sichuan) and Vietnam (Tam Dao; Lao Cao; Cao Bang; Mt. Fan-si-pan).

### ***Sesquiluna* FORBES, 1955**

Tijdschr. Ent. **98**: 121. Type species: *Andraca albilunata* HAMPSON, 1910, J. Bombay nat. Hist. Soc. **20**: 84, pl. F, fig. 2, by original designation.

KISHIDA (1993: 143) erroneously synonymized the genus with *Theophoba* MELL, 1958, based on the wrong postulate that *albilunata* was placed already in *Theophoba* by MELL himself "being unaware that this latter species had been designated as type species of its own genus *Sesquiluna* FORBES, 1955". Really, these two genera are not closely related. *Sesquiluna* is quite different in male genitalia from all hitherto known genera of the Bombycidae as illustrated (Genitalia plate 2, figs 9, 10).

Three species of *Sesquiluna* are known; two of them are described here as new ones.

The placement and relationship of *Sesquiluna* was shortly discussed by NÄSSIG & OBERPRIELER (2008) but without distinct conclusion. We have no doubts that it is a member of the Bombycidae; at the same time its subfamilial placement needs further investigation. In any case *Sesquiluna* is quite different from *Theophoba* representing independent lineages.

*Andraca albilunata* HAMPSON, 1910, J. Bombay nat. Hist. Soc. **20**: 84, was incorrectly recorded from Annam by CANDEZE 1927: 121 (male genitalia see Genitalia plate 2, fig.

9), but it is not known from where and it is replaced in Vietnam by the related species described below.

***Sesquiluna forbesi* sp. n.**

Colour plate 23, fig. 6

*Andraca albilunata* sensu CANDÈZE 1927: 121.

Material. Holotype: ♂, N. Vietnam, 1600 m, Mt. Fan-si-pan (Nord), Cha-pa, Primärwald, 22°17'N, 103°44'E, 20.-30.IV 1995, leg. SINIAEV & einh. Sammler (GU 5026 in MWM). Paratypes: 1 ♂, N. Vietnam, 16-1800 m, Mt. Fan-si-pan (West), Cha-pa (= Sapa), 22°20'N, 103°40'E, IX 1994 (Sekundärwald), leg. MONG (MWM); 1 ♂, Thailand, Changwat Nan, 7 km W of Ban Bo Yuak, 1000 m, 25.XI 1998, leg. Tobor CSOVARI & Laszlo MIKUS (GU 5525 in MWM).

Male. Wingspan 29-30 mm, forewing length 16 mm. Externally is very similar to the type species of the genus *S. albilunata* HAMPSON, 1910, but with shorter wings. Wings dark chocolate brown with abundant covering of greenish or grey cover scales. Forewing with distinct round incision in the radial field; wing pattern consists of two wavy to lunate medial fasciae outlined with narrow dark yellow bands (the latter often hardly visible); discal spot bracket-shaped, darker than ground colour. Hindwings uniform dark brown with typical spotted pattern on anal margin. The presence of two transparent windows on the apical corner of the forewing between R4-R5 (narrow ellipsoid) and R5-M1 (semilunar) is very characteristic.

In male genitalia (Genitalia plate 2, fig. 11), uncus distinctly bilobed with sickle-shaped lobes, valvae distinctly divided into two zones. The lower one is flattened, strongly sclerotized, with irregular teeth on outer edge; the upper one is membranous and very fine, ellipsoid, covered outside with dense very smooth hair-like scales, probably of androconial significance; aedeagus screw-curved, with slender rounded apex. Opening of vesica small, compact, no cornuti present. Sternum 8 slightly modified as figured.

Diagnosis. Externally is very similar to the type species of the genus, but the latter has its saccular lobes of valvae smooth, not serrate. Differs from *S. theophoboides* sp. n. in having broader wings and two instead of one transparent windows in the forewing.

Distribution. Vietnam, Thailand.

***Sesquiluna theophoboides* sp. n.**

Colour plate 23, fig. 5

Material. Holotype: ♂, N. Vietnam, 1200 m, Tuan-giao, street Lai-chau to Hanoi, Sekundärwald, 21°35'N, 103°25'E, 5.-10.XI 1994, leg. SCHINTLMEISTER (GU 5528 in MWM).

Male. Wingspan 29 mm, forewing length 16 mm. Externally is very similar to *Theophoba pendulans* MELL, 1958 (male genitalia see Genitalia plate 2, fig. 10), from China, Kwangtung, rather than to other congeners. Wings narrow, dark greenish brown with abundant covering of yellowish-green scales. Forewing with distinct round incision in the radial field; wing pattern consists of two wavy to lunate medial fasciae outlined with narrow dark yellow bands; discal spot staple-shaped, darker than ground colour. Hindwings uniform dark brown with typical spotted pattern on anal margin. The presence of a single heart-shaped window on the apical corner of the forewing between R5-M1 is diagnostic.

In male genitalia (Genitalia plate 2, fig. 12), uncus distinctly bilobed with sickle-shaped lobes, valvae distinctly divided into two zones. The lower one is flattened, strongly sclerotized, longer and slender than in previous species, with irregular teeth on outer edge; the upper one is membranous, very fine, bag-shaped, with numerous folds, covered outside with dense and long, very smooth hair-like scales, probably, of androconial significance; aedeagus screw-curved, with slender, protruded and pointed apex. Opening of vesica small but larger than in *S. forbesi* sp. n., no cornuti present. Sternum 8 slightly modified as figured.

Diagnosis. As was already pointed out, externally the type species of the genus is very similar to the members of *Theophoba* MELL, 1958, but has transparent windows that are absent from the latter genus; male genitalia are also very characteristic. This species differs easily from other congeners in having slender wings, the only transparent window in forewing and characteristic shape of aedeagus in male genitalia; lower valval lobe slenderer, aedeagus with pointed apex.

Distribution. So far known only from the type locality.

## Results

Thus, only 37 species of Bombycidae belonging to 17 genera are known from Vietnam so far. Most of them are widespread in the Oriental tropics. Surely, the number is not definitive, and some more species, first of all native to insular Sundaland fauna, will be found here in the future by careful investigation of the southern provinces. This interesting part of the country is still weakly known.

## Acknowledgements

We are grateful to Dr. Dieter STÜNING (ZFMK), Dr. Ulf EITSCHBERGER, Mr Mamoru OWADA (NSMT), Mr Martin HONEY & Geoff MARTIN (BMNH), Dr Joel MINET (MNHN), Bro Amnuay PINRATANA (Bangkok), Dr Wolfgang SPEIDEL for support and help in different ways during the preparation of the manuscript, to Dr Sergej RJABOV (Tula, Russia) and Vietnamese colleagues for the help in field researches, especially to TRAN THIEU Du (Hanoi). Furthermore, we thank Frau Heike REICHERT, Olching for technical assistance.

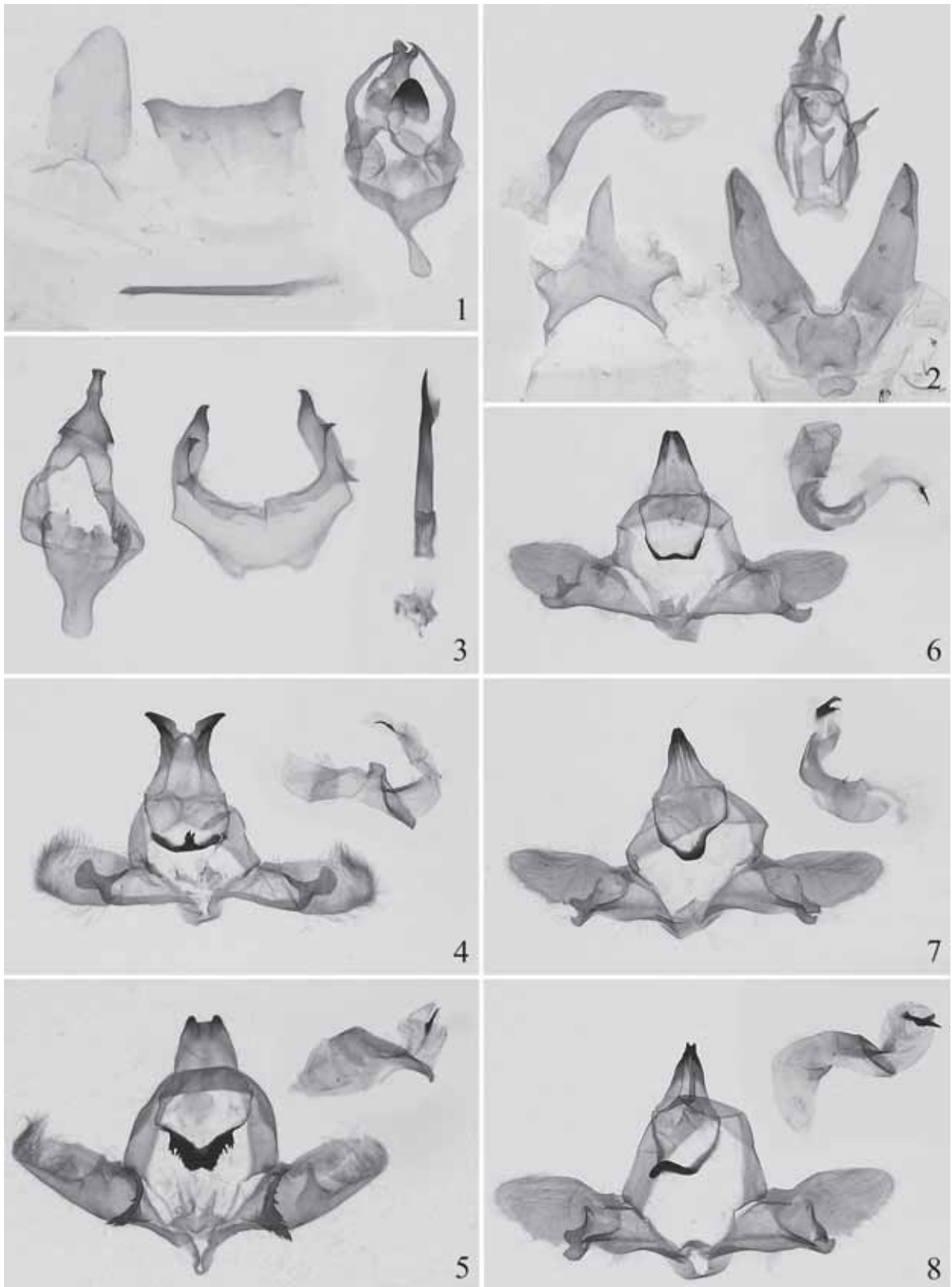
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### Genitalia plate 1

1. *Bombyx lemeepauli* LEMÉE, 1950 (MNHN, male holotype, Backan);
2. *Gunda javanica* (MOORE, 1872) (MNHN, male holotype of *Gunda tonkinensis* LEMÉE, Backan);
3. *Ernolatia moorei* (HUTTON, 1865) (MWM, male, N Vietnam, Fan-si-Pan (GU 13179 in));
4. *Prismosticta fenestrata* BUTLER, 1880 (MWM, male, East Nepal (GU 13509));
5. *Prismosticta regalis* sp. n. (MWM, male paratype, Central Vietnam, prov. Kon Tum, Distr. Kom Plong, vill. Mang Cahn (GU 13633));
6. *Prismosticta tiretta* SWINHOE, 1903 (MWM, male, South Thailand (GU 5023));
7. *Prismosticta microprisma* sp. n. (MWM, male holotype, N. Vietnam, Ben En Nat. Park, 40 km SW Than Hoa (GU 5020));
8. *Prismosticta microprisma* sp. n. (MWM, male paratype, Cambodia, Mondolkiri Prov., Seima Biodiversity Conservation Area, between Seima and O'Rang (GU 13507)).



## Genitalia plate 2

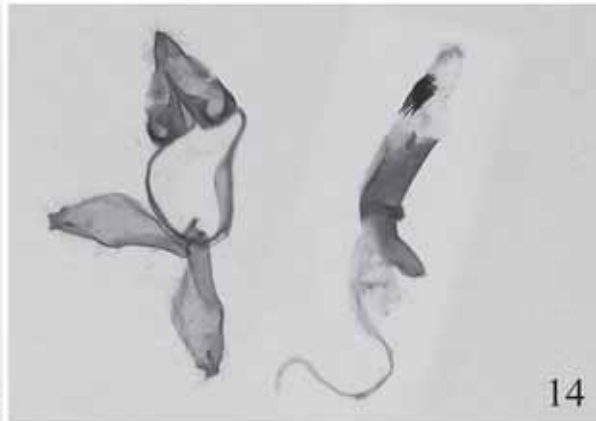
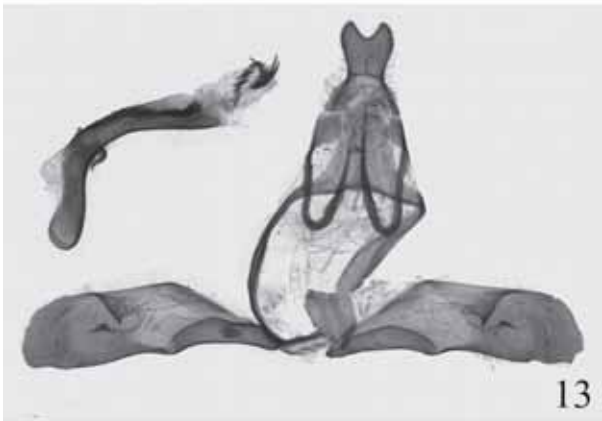
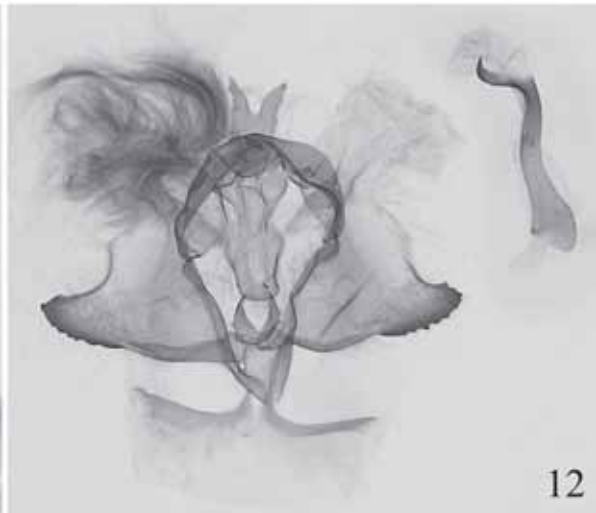
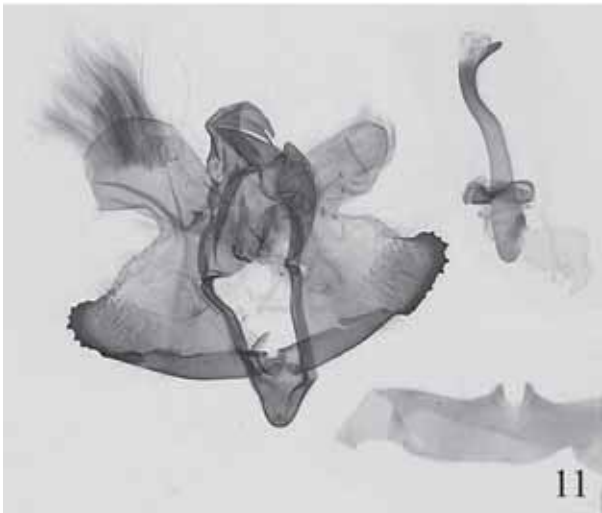
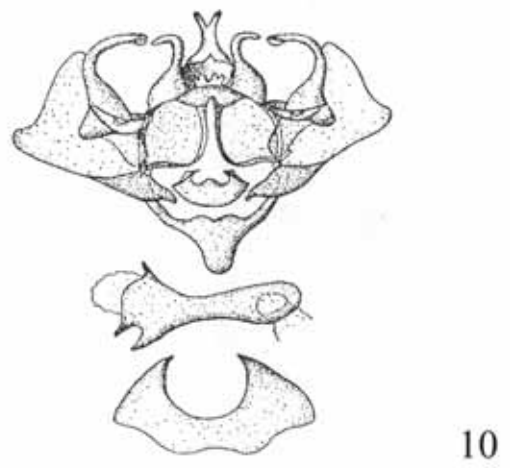
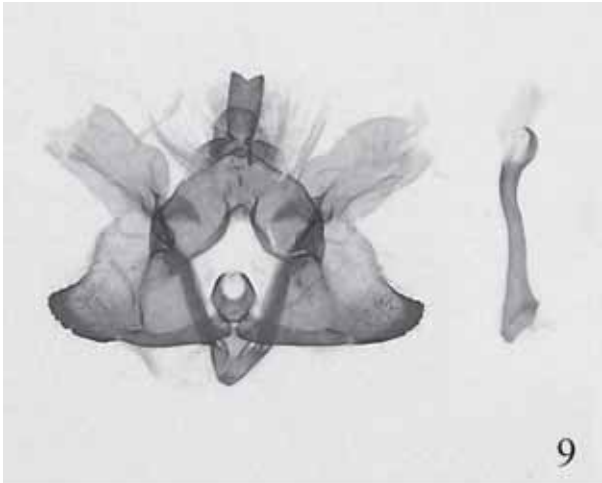
9. *Sesquiluna albilunata* Hampson, 1910 (BMNH, male [holo]type, Assam);
10. *Theophoba pendulans* Mell, 1958 (MHUB, male holotype, China) - from Mell, 1958;
11. *Sesquiluna forbesi* sp. n. (MWM, male holotype, N. Vietnam, Mt. Fan-si-pan (Nord), Cha-pa (GU 5026));
12. *Sesquiluna theophoboides* sp. n. (MWM, male holotype, N. Vietnam, Tuan-giao, street Lai-chau to Hanoi (GU 5528));
13. *Andraca stueningi* sp. n. (MWM, male holotype, Nord Vietnam, Yen Bai – An-chy (GU 9001));
14. *Andraca melli* sp. n. (MHUB, male paratype, China, Yunnan).

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# *Entomofauna*

ZEITSCHRIFT FÜR ENTOMOLOGIE

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Supplement 16

ISSN 0250-4413

Ansfelden, 16. Oktober 2009

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## **A new genus and 2 new species of Lasiocampidae from Vietnam (Lepidoptera)**

**Vadim V. ZOLOTUHIN & Viktor V. SINYAEV**

### **Abstract**

Two new species are described and one new genus is erected in the article as a result of an expedition undertaken in 2008 by Y. BEZVERKHOV & V. SINYAEV to Southern Vietnam.

The new genus *Bezverkhovia* **gen. n.** with type species *Bezverkhovia lydia* **sp. n.** (type locality: S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 1300-1500 m) is related to the *Dendrolimus* GERMAR – *Pachypasoides* MATSUMURA – branch, but considered to be much more primitive, and probably with an ancestral set of features.

The new species *Radhica vasilissae* **sp. n.** (type locality: S. Vietnam, Lam Vien Plateau, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 1300-1500 m) belongs to the *R. himerta* (SWINHOE, 1893) group; the smallest size and dark coloration are diagnostic for the new species.

The genus *Radhica* MOORE, 1879, is transferred here from the complex with *Arguda* MOORE, 1879, to the Selenepherini TUTT. Its phylogenetic relationship will be defined

more precisely later when more comprehensive DNA investigation of the family will be undertaken.

Thus, 109 species of the family Lasiocampidae are known now from Vietnam.

### Zusammenfassung

Zwei neue Arten und eine neue Gattung werden im vorliegenden Artikel beschrieben, deren Entdeckung ein Ergebnis einer von Y. BEZVERKHOV & V. SINYAEV im Jahr 2008 unternommenen Expedition nach Süd-Vietnam ist.

Die neue Gattung *Bezverkhovia* **gen. n.** mit der Typus-Art *Bezverkhovia lydia* **sp. n.** (Typenlokalität: S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 1300-1500 m) ist verwandt mit dem *Dendrolimus* GERMAR – *Pachypasoides* MATSUMURA – Zweig, aber wird als viel primitiver eingeschätzt, vermutlich mit einem Satz ancestraler Merkmale.

Die neue Art *Radhica vasilissae* **sp. n.** (Typenlokalität: S. Vietnam, Lam Vien Plateau, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 1300-1500 m) gehört in die *R. himerta* (SWINHOE, 1893)-Gruppe; die kleinste Größe und dunkle Färbung sind diagnostisch für die neue Art.

Die Gattung *Radhica* MOORE, 1879, wird von einem Komplex mit *Arguda* MOORE, 1879 zu den Selenepherini TUTT verwiesen. Ihre phylogenetischen Beziehungen werden erst später genauer bestimmt werden können, wenn eine umfassendere DNA-Untersuchung der Familie unternommen wird.

Es sind also gegenwärtig 109 Arten der Familie Lasiocampidae von Vietnam bekannt.

### Introduction

All known sources dealing with Lasiocampidae of Vietnam were initially summarized by ZOLOTUHIN & WITT (2000). In that article, 98 species were listed, 16 of them (and 8 subspecies) were described as new for science. The article initiated an interest in the Lasiocampidae of Vietnam and materials coming later allowed the correction of some inaccurate former determinations. New findings could be added to the list, especially from the southern territories which are very poorly investigated until now.

9 years later ZOLOTUHIN (2009) published a revised list of the Lasiocampidae of the country where 105 species were given, 4 of them were cited as faunistically new and for 7 species the former determinations were corrected.

One more species of *Dendrolimus* GERMAR, 1812 was listed in 2009 by ZOLOTUHIN, THINH & TRAN, and one more new species was described in the same year by ZOLOTUHIN & TRAN. Thus, 107 species of the family are recorded from Vietnam until now.

An expedition undertaken by Y. BEZVERKHOV & V. SINYAEV (both from Moscow, Russia) in 2008 to Southern Vietnam resulted in the discovery of a new genus and 2 new species of Lasiocampidae which are described in this article. The typical specimens

described here are kept in the entomological Museum of Thomas J. WITT, Munich, Germany (MWM) and in the collection of Yu. A. BEZVERKHOV, Moscow, Russia (CYBM).

### Description of new taxa

#### ***Bezverkhovia* gen. n.**

Type species: *Bezverkhovia lydia* sp. n., **here designated**.

The genus contains middle-sized narrow winged Lasiocampidae with bright spotted pattern (colour plate 25, figs 1-3).

Vestiture dark reddish-brown. Ground colour of forewings dark reddish-brown with black shadows and bright yellow fields. Sexual dimorphism limited to the females being larger and more robust, with wings more elongate and their wing pattern more poorly defined and pattern generally with less contrast. Wing pattern simple, not modified, without zig-zag medial fasciae, but with transversal smooth or slightly dentate medial fasciae.

Male genitalia (Genitalia plate, fig. 1). Uncus and gnathos reduced completely. Socii short, indistinct. Valvae strongly sclerotized, stiletto-shaped, with small, angled and sclerotized lower lobe. Vinculum band-shaped, with paired distal processes. The latter narrow, widened distal, with serrate outer margin. Juxta weak, plate-like. Aedeagus tubular, strongly bent at basis, with long, pointed and undulate apical spur. Opening of vesica has dorsal position; vesica with two apical sacks, each with innumerate short needle-shaped cornuti. Sternum VIII unmodified.

Female genitalia (Genitalia plate, fig. 4). Papilla analis short and low, densely covered with short setae; both pairs of apophyses slender and long, apophysis posterioris a quarter longer. Both vaginal plates present, but antevaginal plate only weakly sclerotized, low, diffuse; postvaginal plate distinct, completely bent, with deep ostium. No additional sclerites attached to postvaginal plate present. Atrium deep; ostium lying in a small sinus; anthrum as well as ductus bursae short, membranous; corpus bursae pear-shaped, without any scobination and without signum.

Diagnosis. The genus combines characters of two related genera – *Dendrolimus* GERMAR, 1812 and *Pachypasoides* MATSUMURA, 1927 –, but differs from both in having the following diagnostic features:

wing pattern simple, without zig-zag medial fasciae;

in male genitalia, lower lobes of valvae sclerotized, short, indistinct, fused with the upper lobe;

distal processes of vinculum of specific shape, irregularly dentate on outer margin and curved upwards;

aedeagus with long S-shaped apical spur and sole group of cornuti on vesica:

vesica pyramidal, not divided onto 2 lobes;

in female genitalia, no additional sclerites attached to postvaginal plate present.

After these characters, the new genus can be considered as surely related to both mentioned genera, but is much more primitive, and probably with an ancestral set of features, especially in the weakly modified wing pattern and the absence of additional sclerites attached to the vaginal plates in females. It should be placed to the base of a common *Dendrolimus* – *Pachypasoides*-clade.

Distribution. The genus is known so far only from Southern Vietnam.

Etymology. The genus is named after its collector, Yuri M. BEZVERKHOV (Moscow, Russia).

***Bezverkhovia lydia* sp. n.**

Colour plate 25, figs 1-3

Material. Holotype: ♂, S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 9-18.XI 2008, 1300-1500 m, leg. Y. BEZVERKHOV & V. SINYAEV (MWM); Paratypes: 2 ♂♂, 1 ♀, S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 9-18.XI 2008, 1300-1500 m, leg. Y. BEZVERKHOV & V. SINYAEV (CYBM, MWM).

Wingspan 43-45 mm in males and 60 mm in females; forewing length 23-25 mm in males and 30 mm in females. Ground colour of the forewing dark reddish-brown with vague dark grey to blackish serrate transversal medial fasciae. External fasciae present as a row of black arrows outlined with bright yellow spots. The same yellow fields are also situated on basal area of the wing and along the anal margin. Discal spot small, but distinct, round, white, in basal third of the wing. Cilia uniformly brownish-grey in both wings. Hind wings rounded, of the same ground colour, with darker broad transversal band and 2 vague yellowish transversal bands: a narrower medial one and broader spotted submarginal one. Females generally darker, with less contrast, and with hindwings plain reddish-brown.

Male genitalia (Genitalia plate, fig. 1). See above in generic account.

Female genitalia (Genitalia plate, fig. 4). See above in generic account.

Diagnosis. See generic account. Besides that, the species resembles externally *Dendrolimus kikuchii* MATSUMURA, 1927 (colour plate 25, fig. 4), but wing pattern of the latter with distinct transversal fasciae and the yellowish spots are smaller and more clearly bordered. The new species can be hardly confused with any other lasiocampid. In doubtful cases (in worn specimens) dissection of the genitalia will help to identify the species correctly.

Biology. Almost unknown. The species was collected in the second decade of November in altitudes between 1300 and 1500 m. Nothing is known about its preimaginal stages, but presumably conifers should be hostplants.

Distribution. The species is known so far only from its type locality but is probably distributed at least on the whole Lam Vien Plateau.

Etymology. The species is named after Lydia E. BEZVERKHOVA (Moscow, Russia), the wife of its collector.

***Radhica vasilissae* sp. n.**

Colour plate 25, figs 5, 6

Material. Holotype: ♂, S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 9-18.XI 2008, 1300-1500 m, leg. Y. BEZVERKHOV & V. SINYAEV (MWM); Paratype: 1♀, S. Vietnam, Lam Vien Plato, Nui Ba Nat. Reserve, 12°10'N, 108°40'E, 9-18.XI 2008, 1300-1500 m, leg. Y. BEZVERKHOV & V. SINYAEV (CYBM, MWM).

Small species (wingspan 35 mm in males and 40 mm in females; forewing length 18 mm in males and 21 mm in females) with weak sexual dimorphism. The males are smaller and slender, of dull reddish yellow ground colour, with brownish transversal fasciae, spotted grey external line and small black discal dot. Hindwings brighter coloured, with reddish brown anal hairs and the same coloured antemedial band. Abdomen with broad, elongate, dark grey dorsal band. Female similarly patterned, but more reddish in colouration, with hindwings darker in costal field, but without darker anal hairs. Generally, moths are very similar in pattern and colouration to moths of the *R. himerta* (SWINHOE, 1893)-group.

Male genitalia (Genitalia plate, fig. 2). Toothed lateral processes of vinculum and bifurcate distal process are characteristic. Aedeagus tubular, with very short apical spur and single cup of very small cornuti on the top of vesica.

Female genitalia (Genitalia plate, fig. 3). Papilla analis elongate, with ventral additional lobes lacking setae. Both pairs of apophyses slender and long, apophysis posterioris a third longer. Antevaginal plate high, with smooth surface, slightly wrinkled cranial; postvaginal plate weakly developed. Atrium indistinct; ostium membranous; ductus bursae short, with zone of sclerotization; corpus bursae ovoid, without scobination and distinct signum.

Diagnosis. The smallest species of the genus. Externally, the species is similar to *R. himerta* (SWINHOE, 1893), but is almost 2 times smaller. In male genitalia, it has similarity to *R. elisabethae* LAJONQUIÈRE, 1977, but has the distal process of the vinculum stronger, with teeth situated closer. Generally, the smallest size and dark coloration are diagnostic for the new species.

Biology. Seems to be a rare and local species. The species was collected in the second decade of November in altitudes between 1300 and 1500 m. Nothing is known on its preimaginal stages. For a long time, the caterpillars and hostplants were completely unknown for the genus and just recently, a related species was occasionally reared from *Shorea obtusa* (Dipt.) (PELLINEN, 2009).

Distribution. The species is known only from the type locality.

Etymology. The species is dedicated to Vasilissa BEREZOVSKAYA, the mother of the collector Yuri M. BEZVERKHOV (Moscow).

Nomenclatorial remarks. The placement of the genus *Radhica* MOORE, 1879 has never been in doubt and in a well known word-combination “*Arguda* and *Radhica* group” both genera have been placed close together and with other genera of similar appearance: *Odonestis* GERMAR, 1812, *Syrastrena* MOORE, 1884, *Takanea* NAGANO, 1917, etc. However, sequencing of DNA undertaken in the last year based on our material, has shown, that most of these genera are not closely related, and that the complex is divided into 3 independent clades. From these, *Radhica* was surprisingly close to the *Euthrix*-lineage (= *Selenepherini* TUTT, 1902). PELLINEN (2009) recorded the presence of small setal tufts on the dorsal surface of the caterpillar in the description of the preimaginal

instars of a *Radhica* species (probably *himerta*). These tufts are typical mostly for the *Euthrix*-lineage; moreover, visible scobination on the corpus bursae also are in favour for such a placement. Generally, the male genitalic complex of *Radhica* has an affinity to *Somadasys* GAEDE, 1932, a genus also belonging to Selenepherini TUTT, 1902. Thus, we transfer here the genus *Radhica* from the complex with *Arguda* MOORE, 1879, and place it in the Selenepherini TUTT. Its phylogenetic relationship will be defined more precisely later, when more comprehensive DNA investigation of the family will be undertaken.

### Acknowledgements

It is a pleasure to express our sincere thanks for colleagues who helped us in different ways during the preparation of the revision: Yuri M. BEZVERKHOV (Moscow, Russia), Svetlana SINJAEVA (Moscow, Russia), and Marku PELLINEN (Finland).

The work is a part of the program of the Department of Zoology (State Pedagogical University of Uljanovsk) and Eco-Design Studio (Moscow) on the investigation of the biodiversity of moths.

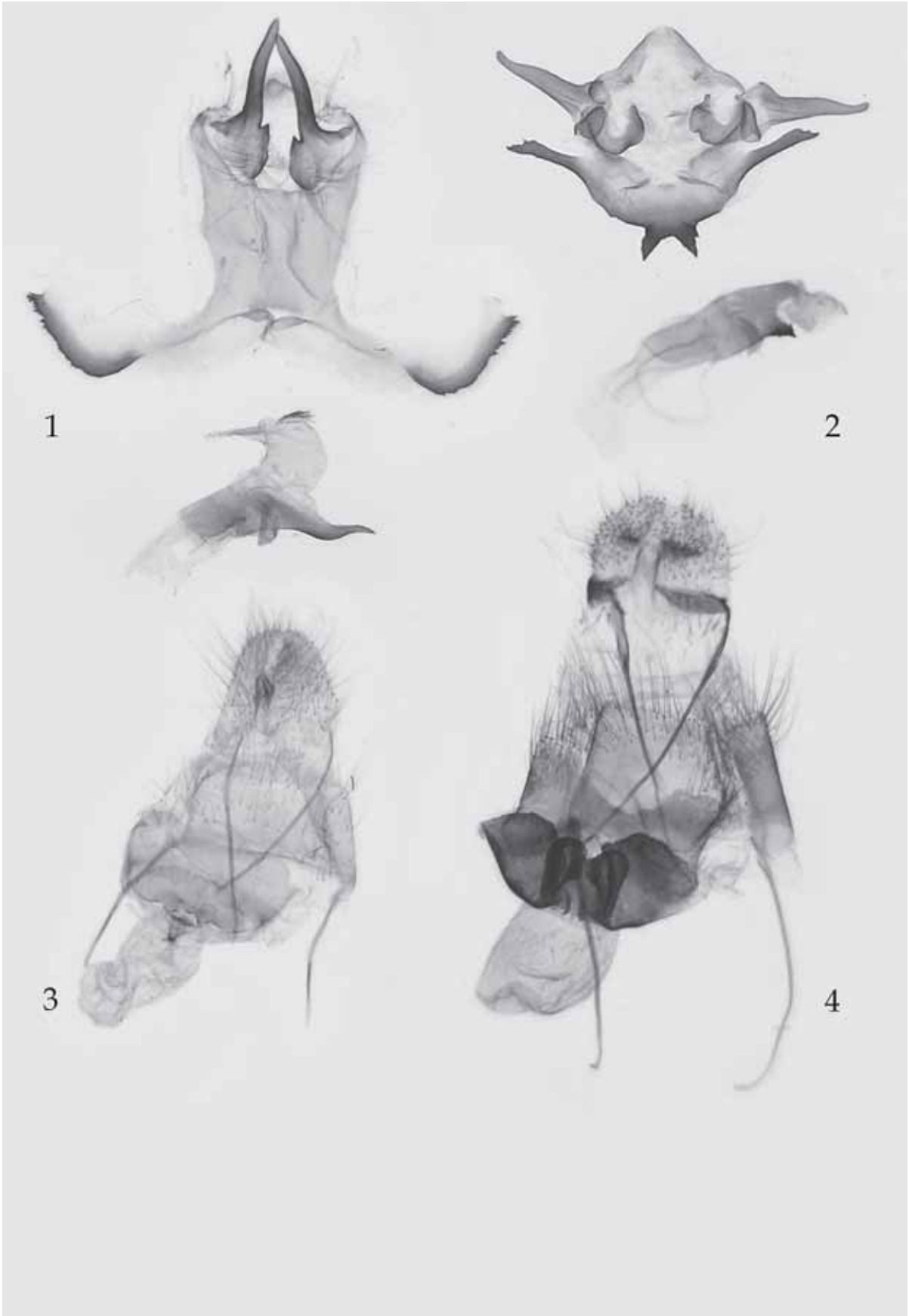
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## Genitalia plate

(Male and female genitalia)

1. *Bezverkhovia lydia* sp. n. (CYBM male paratype, aedeagus extracted);
2. *Radhica vasilissae* sp. n. (MWM, male holotype, aedeagus extracted);
3. *R. vasilissae* sp. n. (CYBM, female paratype);
4. *B. lydia* sp. n. (MWM, female paratype).





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Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:  
Maximilian SCHWARZ, Konsulent f. Wissenschaft der Oberösterreichischen Landesregierung, Eibenweg 6,  
A-4052 Ansfelden, E-Mail: [maximilian.schwarz@liwest.at](mailto:maximilian.schwarz@liwest.at).

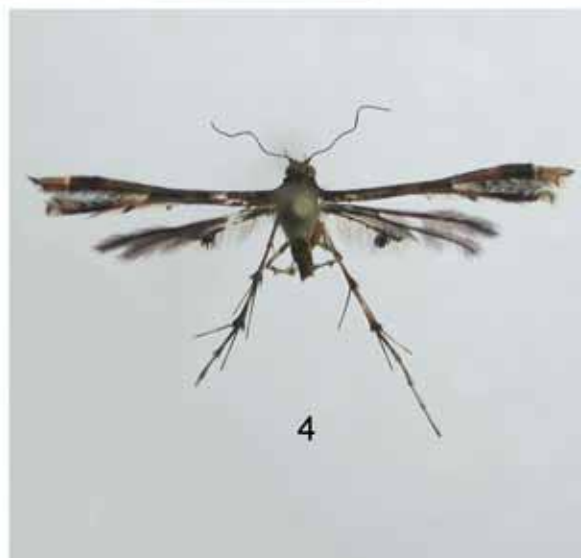
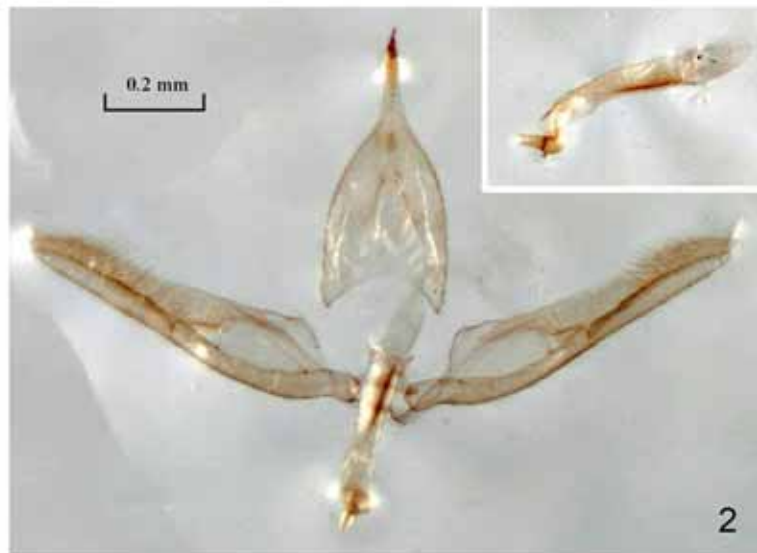
Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München;  
Fritz GUSENLEITNER, Lungitzerstr. 51, A-4222 St. Georgen/Gusen;  
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### Legend for the colour plates

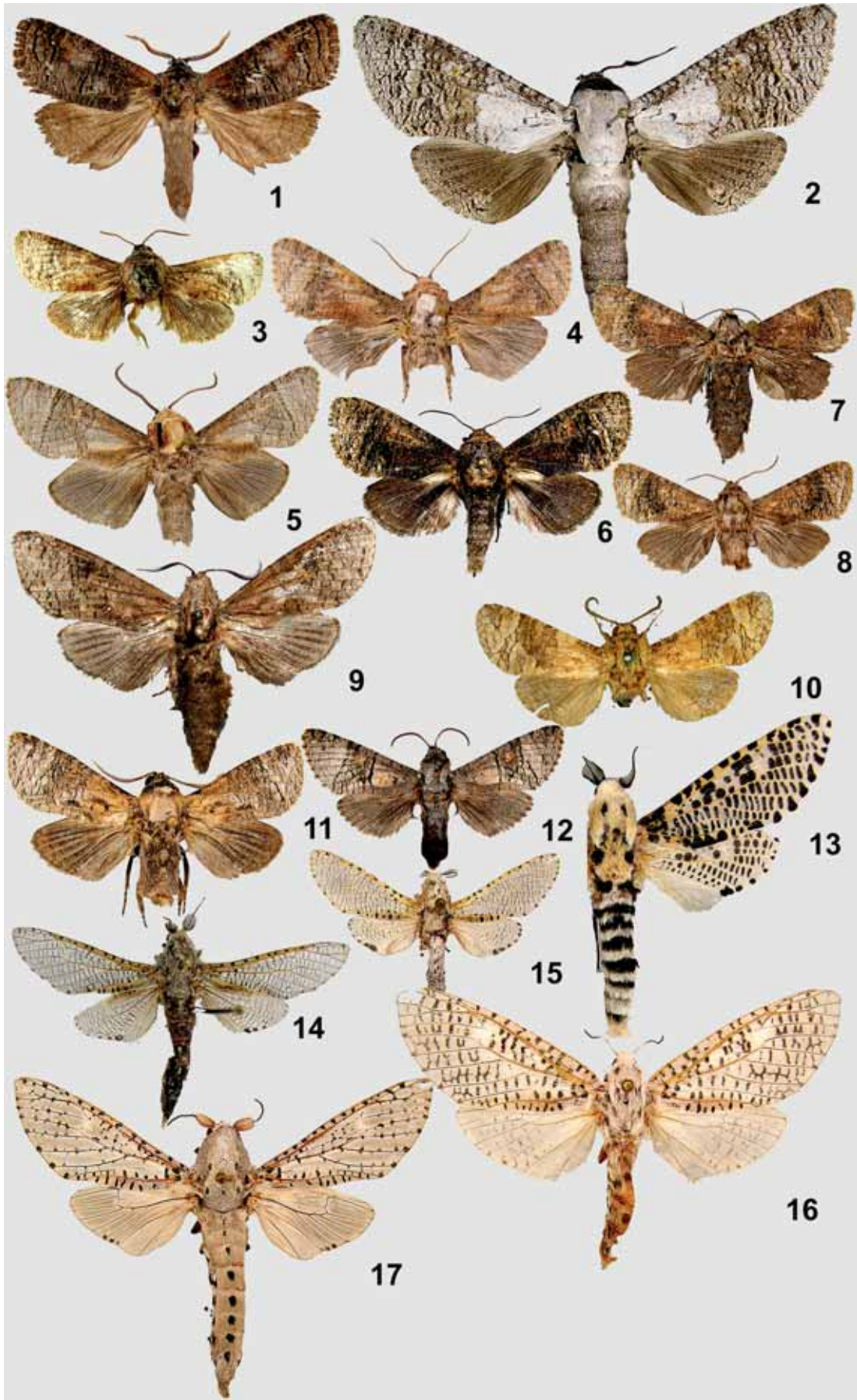
#### Plate 1 (Pterophoridae)

1. *Xyroptila kuznetzovi* USTJUZHANIN & KOVTUNOVICH, sp. n., ♂ (ZISP, holotype) p. 6
2. *X. kuznetzovi* USTJUZHANIN & KOVTUNOVICH, sp. n. (genitalia of holotype) p. 6
3. *Diacrotricha fasciola* ZELLER, 1852, ♂ (CVKPU, N. Vietnam) p. 8
4. *Nippoptilia vitis* (SASAKI, 1913), ♂ (CVKPU, N. Vietnam) p. 5



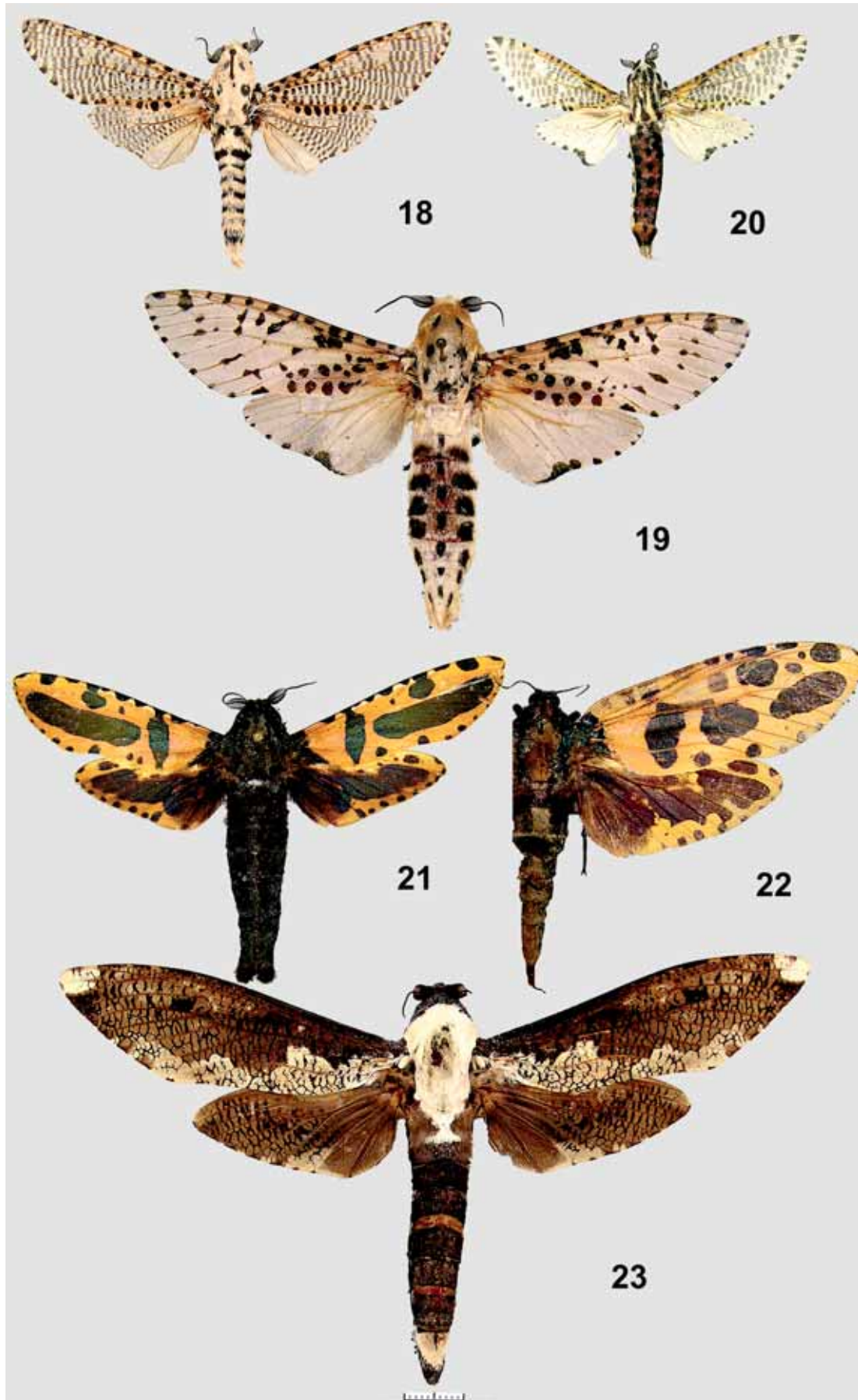
**Plate 2 (Cossidae)**

1. *Catopta tropicalis* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype) p. 14
2. *Wittocossus mokanshanensis* (DANIEL, 1945), ♂ (MWM, Thailand) p. 14
3. *Roepkiella rufidorsia* (HAMPSON, 1905), comb. n., ♂ (BMNH, holotype) p. 15
4. *R. rufidorsia* (HAMPSON, 1905), comb. n., ♂ (MWM, Vietnam) p. 15
5. *R. siamica* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype, Thailand) p. 16
6. *R. loeffleri* (YAKOVLEV, 2006), comb. n., ♀ (MSW, holotype, C. Vietnam) p. 16
7. *Hollowiella chanwu* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype, N. Vietnam) p. 17
8. *H. bajin* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype, Myanmar) p. 17
9. *Chinocossus vjet* YAKOVLEV, 2006, ♂ (ZFMK, holotype, N. Vietnam) p. 18
10. *C. acronyctoides* (MOORE, 1879), comb. n., ♂ (BMNH, holotype, India) p. 18
11. *C. acronyctoides* (MOORE, 1879), comb. n., ♂ (MWM, Vietnam) p. 18
12. *Aholcocerus ihleorum* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype, Thailand) p. 18
13. *Zeuzera multistrigata* MOORE, 1881, ♂ (MWM, Vietnam) p. 19
14. *Z. yuennani* DANIEL, 1940, ♂ (RMNH, Vietnam) p. 20
15. *Z. coffeae* NIETNER, 1861, ♂ (MWM, Vietnam) p. 20
16. *Z. coffeae* NIETNER, 1861, ♀ (MWM, S. India, Andaman Isl.) p. 20
17. *Z. conferta* WALKER, 1885, ♂ (MWM, Thailand) p. 20



**Plate 3 (Cossidae)**

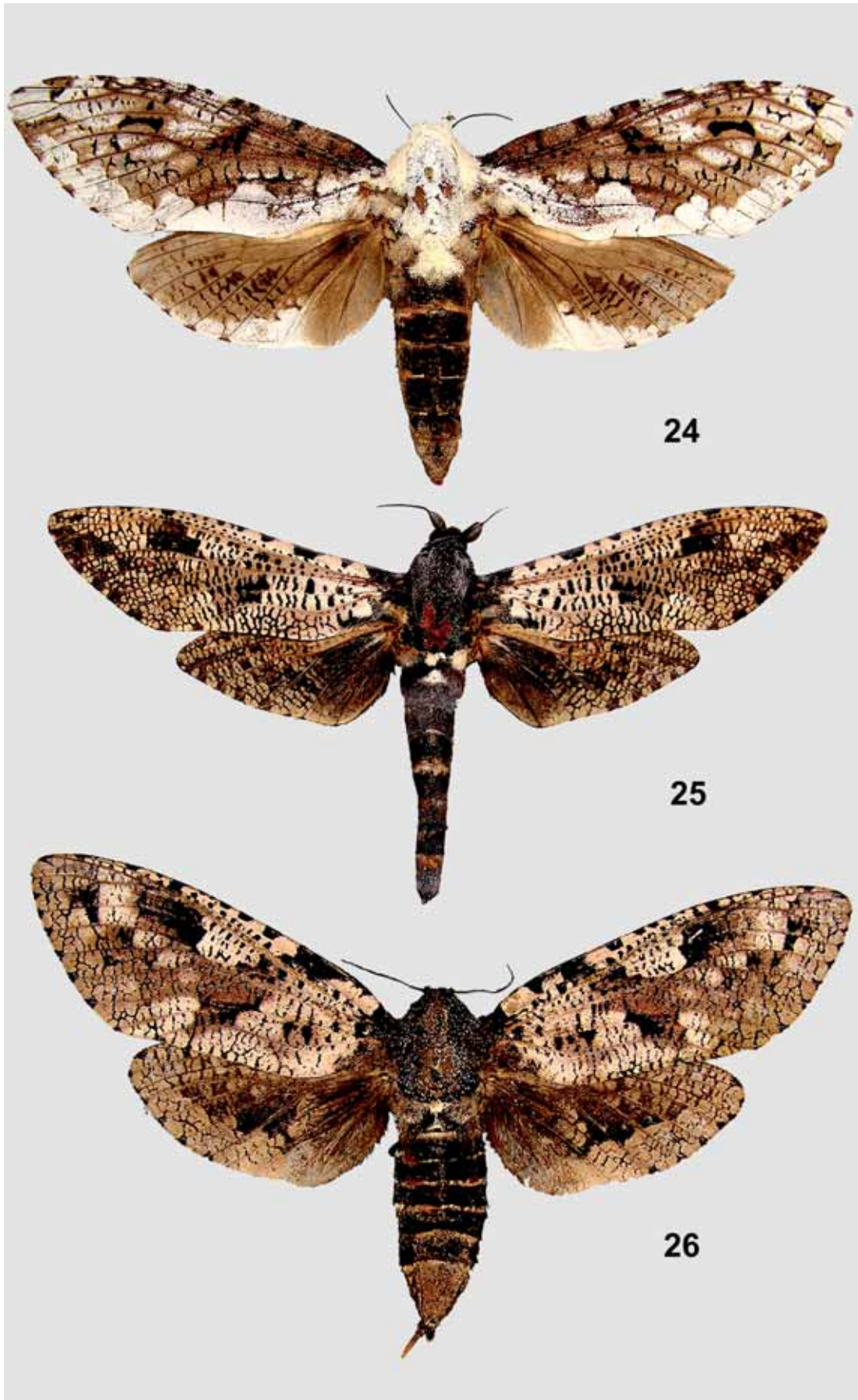
- |  |       |
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| 18. <i>Zeuzera lineata</i> GAEDE, 1933, ♂, Vietnam (MWM)       | p. 20 |
| 19. <i>Z. indica</i> HERRICH-SCHÄFFER, 1854, ♂, Vietnam (MWM)  | p. 21 |
| 20. <i>Z. rhabdota</i> JORDAN, 1932, ♂, Thailand (MWM)         | p. 21 |
| 21. <i>Chalcidica minea</i> (CRAMER, 1779), ♂, Thailand, (MWM) | p. 21 |
| 22. <i>C. minea</i> (CRAMER, 1779), ♀, Nepal, (MWM)            | p. 21 |
| 23. <i>Xyleutes persona</i> LE GUILLOU, 1841, ♂, Vietnam (MWM) | p. 22 |



**Plate 4 (Cossidae)**

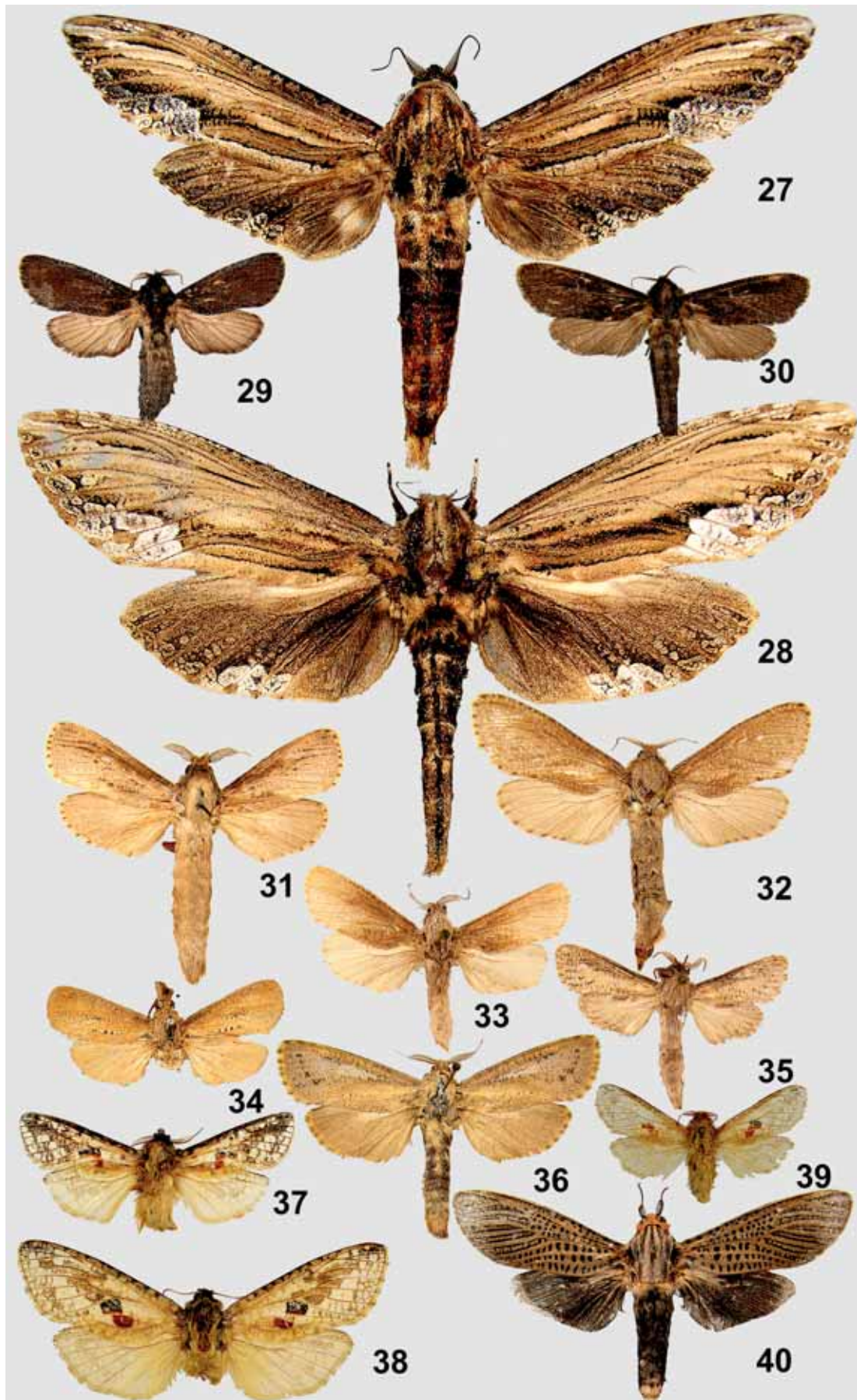
24. *Xyleutes persona* LE GUILLOU, 1841, ♀ (MWM, New Guinea) p. 22  
25. *X. strix* (LINNAEUS, 1758), ♂ (MWM, Vietnam) p. 22  
26. *X. strix* (LINNAEUS, 1758), ♀ (MWM, Taiwan) p. 22





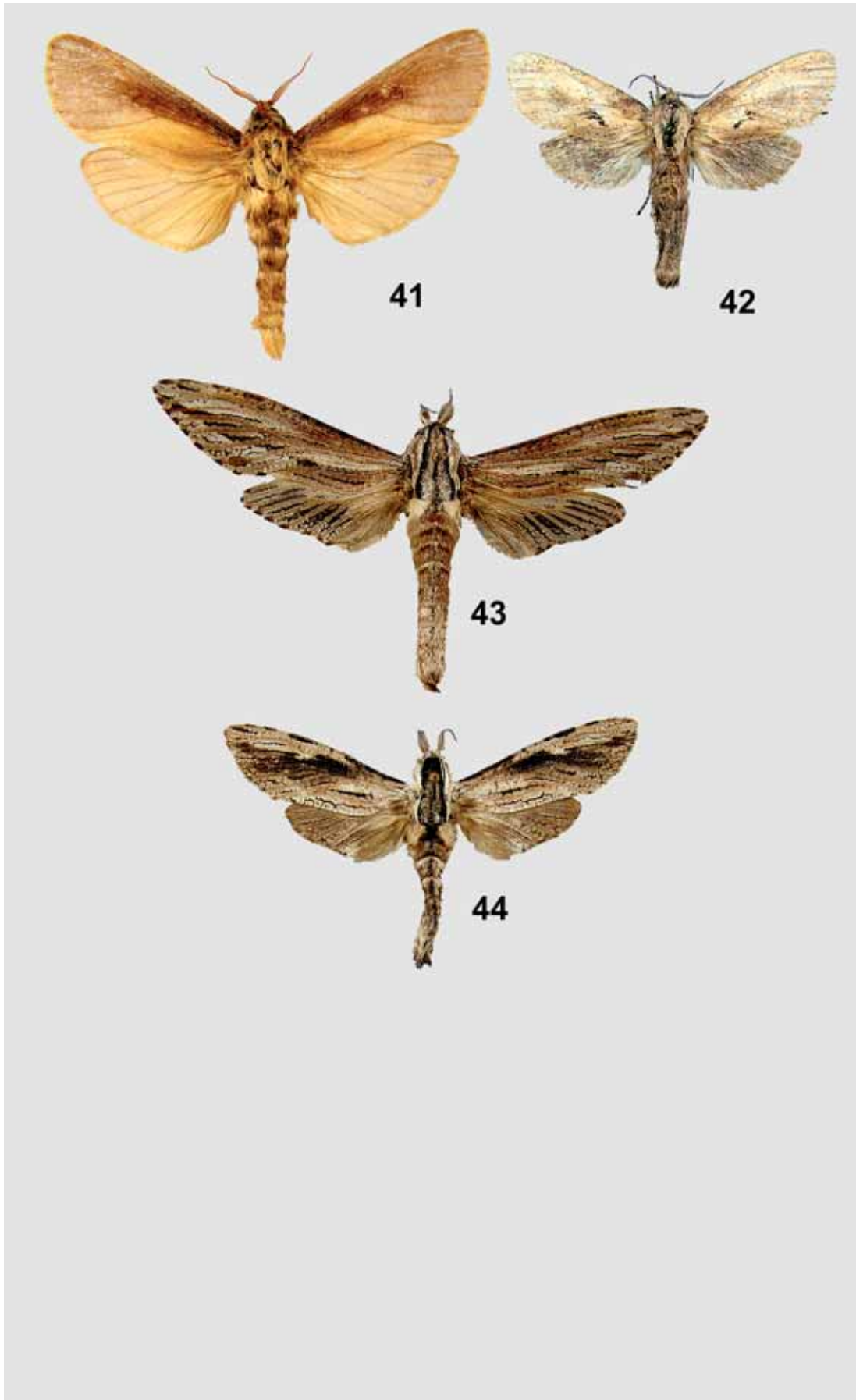
**Plate 5 (Cossidae)**

27. *Duomitus ceramicus* (WALKER, 1865), ♂ (MWM, Thailand) p. 23  
28. *D. ceramicus* (WALKER, 1865), ♀ (MWM, Philippines, Negros) p. 23  
29. *Phragmataecia impura* HAMPSON, 1891, ♂ (MWM, Vietnam) p. 23  
30. *P. impura* HAMPSON, 1891, ♀ (MWM, Vietnam) p. 23  
31. *P. gummata* SWINHOE, 1892, ♂ (MWM, Vietnam) p. 23  
32. *P. gummata* SWINHOE, 1892, ♀ (MWM, Vietnam) p. 23  
33. *P. innotata* (WALKER, 1865), ♂ (MWM, Vietnam) p. 23  
34. *P. parvipuncta* (HAMPSON, 1893), ♂ (BMNH, holotype) p. 24  
35. *P. parvipuncta* (HAMPSON, 1893), ♂ (MWM, Vietnam) p. 24  
36. *Phragmacossia fansipangi* YAKOVLEV & WITT, sp. n., ♂ (MWM, holotype, N. Vietnam) p. 24  
37. *Roerichiora stigmatica* (MOORE, 1879), comb. n., ♂ (MWM, Vietnam) p. 25  
38. *R. stigmatica* (MOORE, 1879), comb. n., ♀ (MWM, Vietnam) p. 25  
39. *R. clara* (BRYK, 1950), comb. n., ♂ (MWM, Vietnam) p. 26  
40. *Bergaris ruficeps* (de JOANNIS, 1929), ♂ (MWM, Vietnam) p. 26



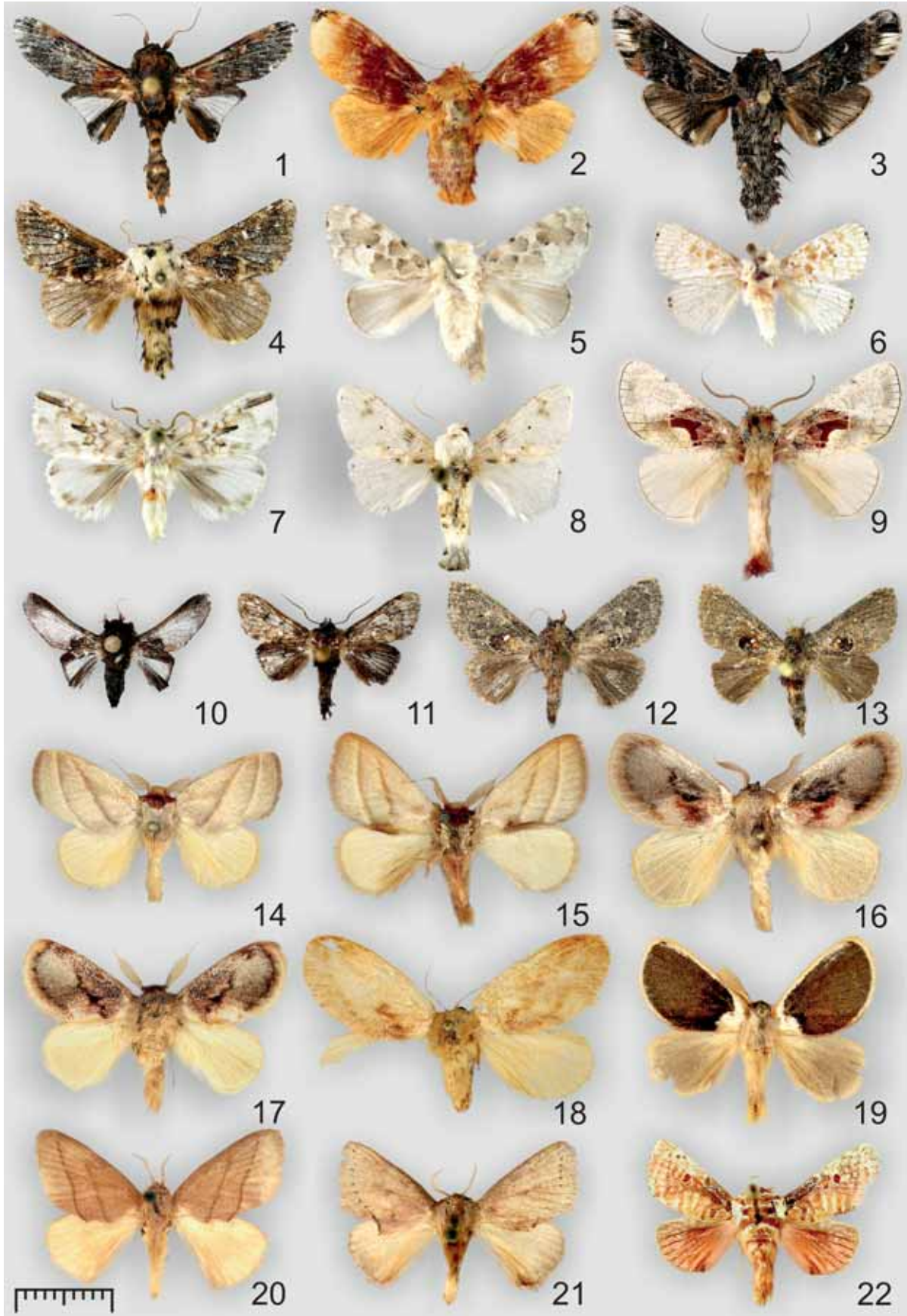
**Plate 6 (Cossidae)**

- |  |       |
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| 41. <i>Relluna nurella</i> (SWINHOE, 1894), ♂ (MWM, Vietnam)             | p. 26 |
| 42. <i>Lakshmia sirena</i> YAKOVLEV, 2006, ♀ (MWM, holotype, S. Vietnam) | p. 26 |
| 43. <i>Panau stenoptera sumatrana</i> (ROEPKE, 1957), ♂ (MWM, Vietnam)   | p. 27 |
| 44. <i>P. adusta</i> (ROEPKE, 1957), ♂ (MWM, Vietnam)                    | p. 27 |



**Plate 7 (Lamacodidae)**

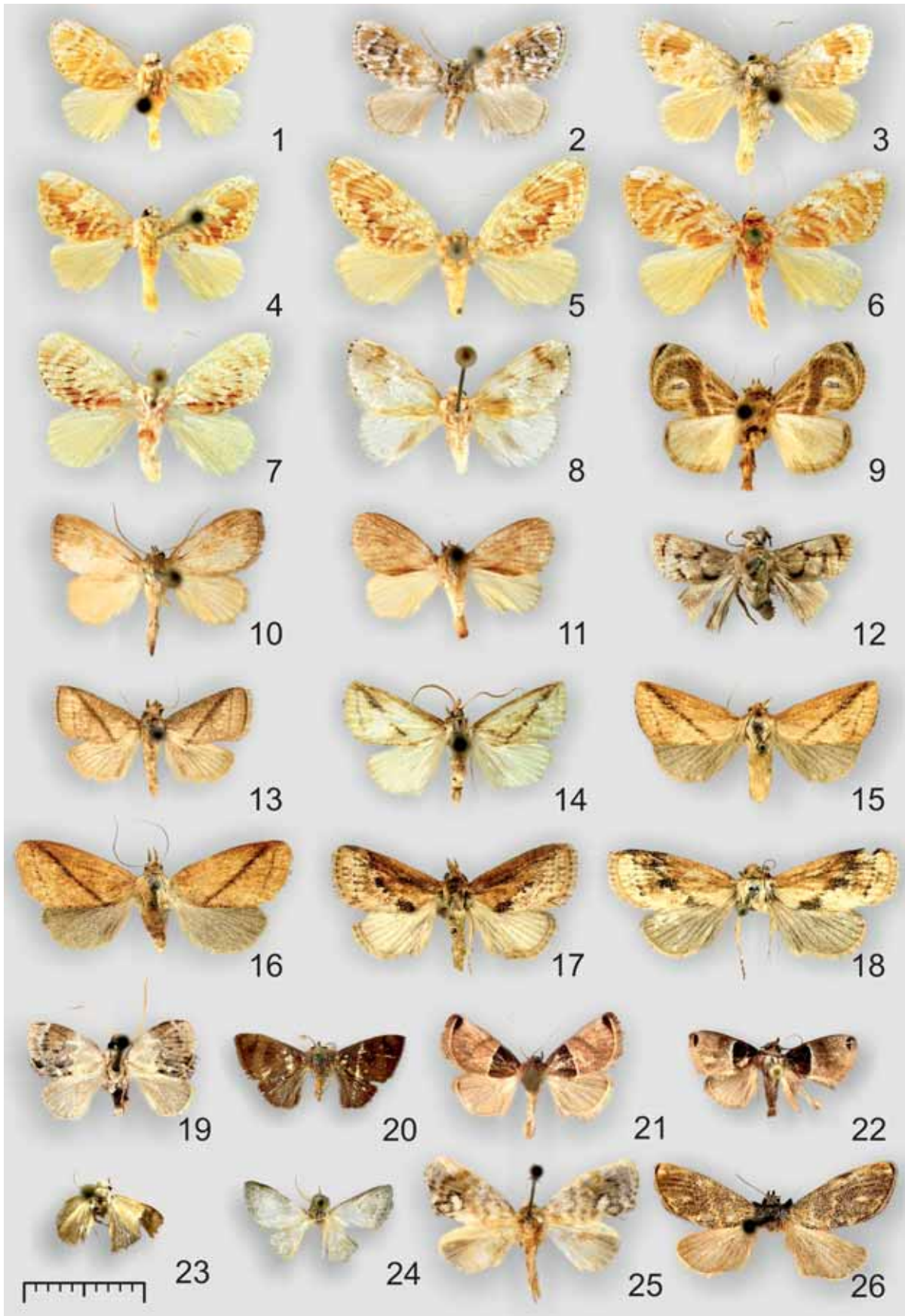
1. *Cheromettia alaceria* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, Thailand, Chiang Mai) p. 48
2. *Ch. alaceria* SOLOVYEV & WITT, sp. n., ♀ (MWM, northern Vietnam) p. 48
3. *Belippa horrida* WALKER, 1865, ♂ (MWM, northern Vietnam) p. 51
4. *B. aeolus* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 51
5. *Altha (Altha) nivea* WALKER, 1862, ♂ (MWM, northern Vietnam) p. 53
6. *A. (Belgoraea) nix* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 54
7. *Pseudaltha sapa* SOLOVYEV, ♂ (MWM, northern Vietnam) p. 56
8. *Althonarosa horisyaensis* KAWADA, 1930, ♂ (MWM, northern Vietnam) p. 57
9. *Chalcoscelides castaneipars* (MOORE, 1865) (MWM, northern Vietnam) p. 91
10. *Calauta martini* SOLOVYEV & WITT, sp. n., ♂ (BMNH, holotype, Thailand, Chiang Mai) p. 49
11. *Nagodopsis alethis* SOLOVYEV & WITT, sp. n., ♂ (MWM, northern Vietnam) p. 74
12. *Chalcocelis albor* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 93
13. *Ch. dydima* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, China, Hainan) p. 94
14. *Cania bilinea* (WALKER, 1855), ♂ (MWM, Vietnam) (photo: A. GURKOVICH) p. 77
15. *C. robusta* HERING, 1931, ♂ (MWM, northern Vietnam) p. 78
16. *C. siamensis* TAMS, 1924, ♂ (MWM, central Vietnam) p. 80
17. *C. accea* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 80
18. *C. accea* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, southern Vietnam) p. 80
19. *C. victori* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, southern Vietnam) p. 82
20. *Rhamnosa (Rhamnosa) kwangtungensis* HERING, 1931, stat. n., ♂ (MWM, holotype, China, Guangdong) p. 83
21. *Rh. (Caniodes) takamukui* MATSUMURA, 1927, ♂ (MWM, northern Vietnam) p. 84
22. *Demonarosa rufotessellata* (MOORE, 1879), ♂ (MWM, northern Vietnam) p. 69



**Plate 8 (Limacodidae, enlarged)**

1. *Narosa (Penicillonarosa) nigrisigna* WILEMAN, 1911, ♂ (MWM, northern Vietnam) p. 58
2. *N. (Penicillonarosa) nigrisigna* WILEMAN, 1911, ♂ (CAS, central Vietnam) p. 58
3. *Quasinarosa fulgens* (LEECH, 1888), ♂ (MWM, northern Thailand) p. 61
4. *Q. laesara* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 62
5. *Q. laesara* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, central Vietnam) p. 62
6. *Tennya propolia* (HAMPSON, 1900), ♂ (MWM, northern Vietnam) p. 63
7. *Caelestomorpha albiceris* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 65
8. *Vipaka niveipennis* (HERING, 1931), ♂ (MWM, northern Vietnam) p. 66
9. *Atosia himalayana* HOLLOWAY, 1986, ♂ (MWM, northern Vietnam) p. 75
10. *Flavinarosa alius* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 67
11. *F. glaesa* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, southern Vietnam) p. 68
12. *Triplophleps inferna* (SWINHOE, 1890), ♂ (BMNH, holotype, Myanmar) p. 90
13. *Barabashka bilineatum* (HERING, 1931), ♂ (ZMHB, holotype, China, Guangdong) p. 71
14. *B. mirus* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 72
15. *B. cf. obliqua* (LEECH, 1890), ♂ (CAS, central Vietnam) p. 72
16. *B. cf. obliqua* (LEECH, 1890), ♀ (CAS, central Vietnam) p. 72
17. *Euphlyctinides laika* SOLOVYEV & WITT, sp. n., ♂ (MWM, paratype; central Vietnam) p. 73
18. *E. laika* SOLOVYEV & WITT, sp. n., ♀ (CAS, paratype, central Vietnam) p. 73
19. *Limacocera hel* HERING, 1931, ♂ (ZMHB, holotype, China: Guangdong) p. 76
20. *Spatulifimbria castaneiceps* HAMPSON, 1893, ♂ (BMNH, lectotype, Ceylon) p. 97
21. *Pseudidonauton siamica* SOLOVYEV, 2009, ♂ (MWM, holotype, northern Thailand) p. 160
22. *P. vexa* SOLOVYEV, 2009, ♂ (MWM, genital slide 0065, northern Vietnam) p. 160
23. *Trichogyia gemmia* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 189
24. *Caniatta levis* SOLOVYEV & WITT, sp. n. ♂ (MWM, holotype, central Vietnam) p. 199
25. *Fignya melkaya* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 197
26. *Euphlyctina phaeopasta* (HAMPSON, 1906), ♂ (ZMHB, type, India) p. 200





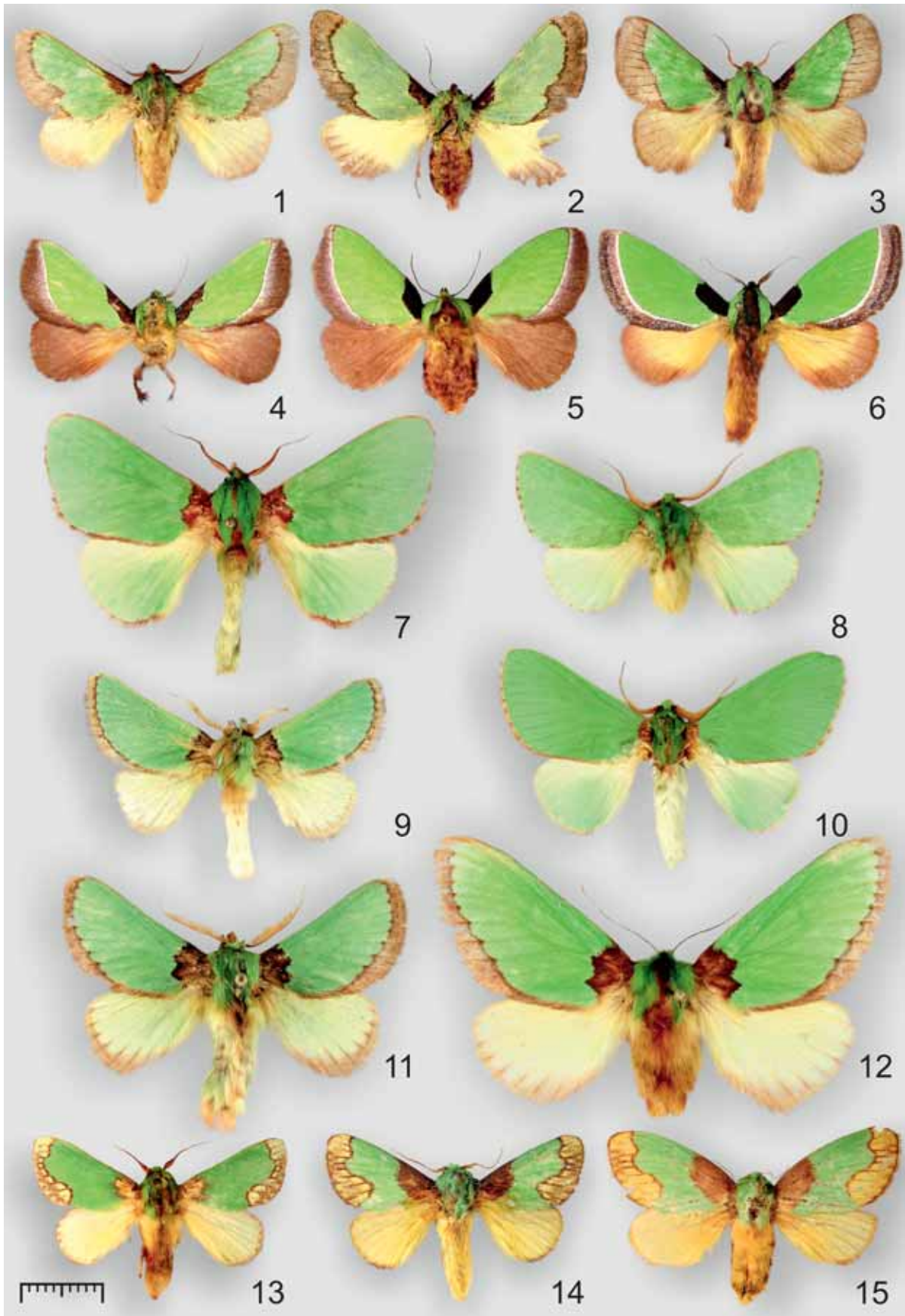
**Plate 9 (Limacodidae)**

1. *Caissa aurea* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 85
2. *C. bezverkhovi* SOLOVYEV & WITT, sp. n., ♂ (MWM, paratype, central Vietnam) p. 86
3. *C. parenti* ORHANT, 2000, ♂ (MWM, Myanmar) p. 87
4. *Pseudocaissa apiata* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 88
5. *Hampsonella membra* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 89
6. *Arabessa plumata* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, C.Vietnam) (photo: A. GURKOVICH) p. 90
7. *Sansarea zeta* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 96
8. *S. grata* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 96
9. *Monema meyi* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 108
10. *Miresa burmensis* HERING, 1931, ♂ (CAS, southern Vietnam) p. 99
11. *M. fulgida* WILEMAN, 1910, ♂ (MWM, northern Vietnam) p. 99
12. *M. demangei* DE JOANNIS, 1930, ♂ (MWM, northern Vietnam) p. 100
13. *M. exigua* HERING, 1931, ♂ (MWM, northern Vietnam) p. 101
14. *M. polargenta* WU & SOLOVYEV (in print), ♂ (MWM, paratype, northern Vietnam) p. 104
15. *M. urga* HERING, 1933, ♂ (MWM, northern Vietnam) p. 102
16. *M. kwangtungensis* HERING, 1931, ♂ (ZMHB, lectotype, China: Guangdong) p. 102
17. *M. fangae* WU & SOLOVYEV (in print), ♂ (MWM, paratype, China, Hainan) p. 103
18. *M. sagitovae* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 103
19. *M. rorida* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 105
20. *Narosoideus vulpina* (WILEMAN, 1911), ♂ (MWM, northern Vietnam) p. 106
21. *N. morion* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 107



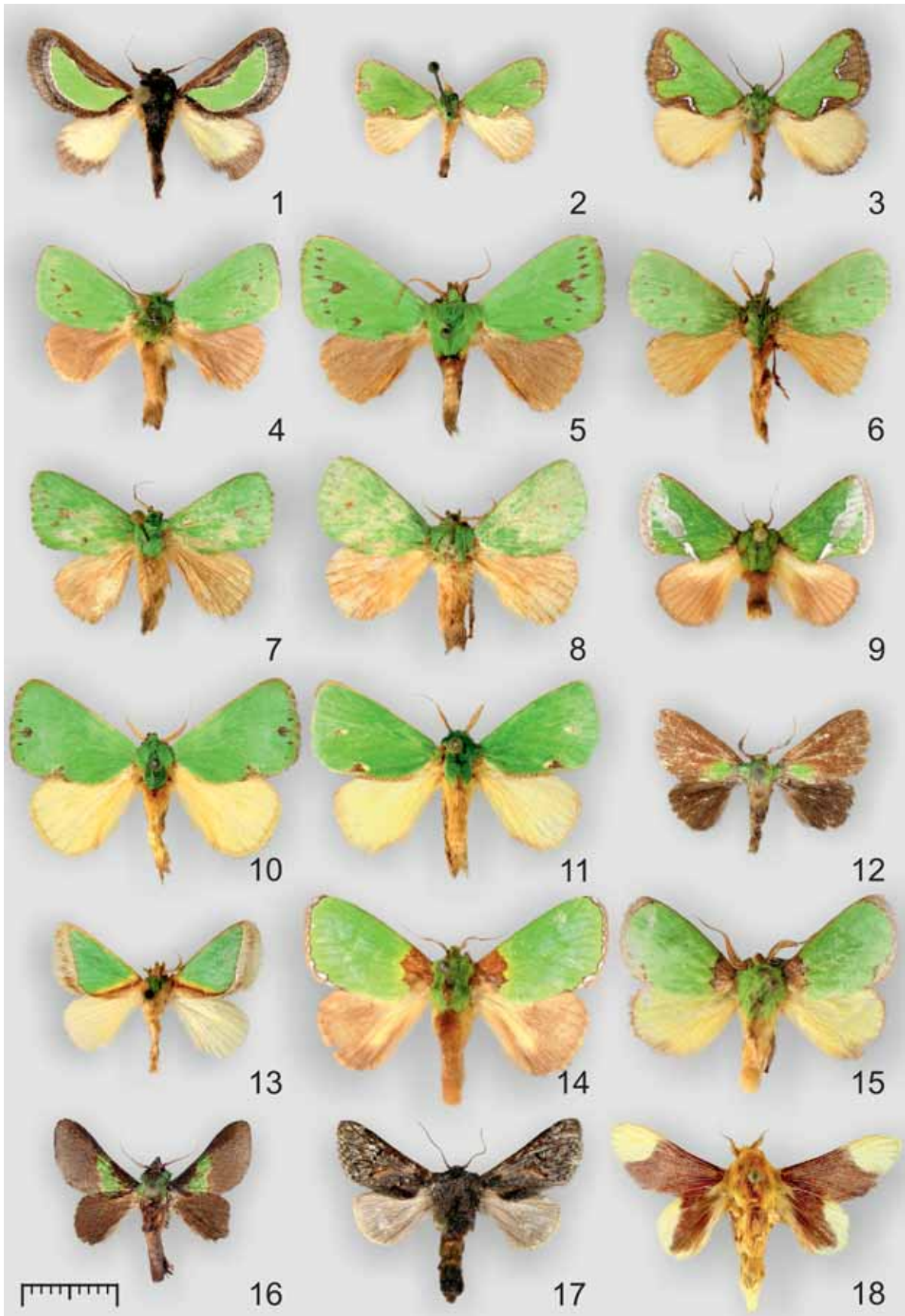
**Plate 10 (Limacodidae)**

1. *Parasa julikatis* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 113
2. *P. julikatis* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, northern Vietnam) p. 113
3. *P. emeralda* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 114
4. *P. campagnei* DE JOANNIS, 1928, ♂ (MWM, southern China) p. 116
5. *P. campagnei* DE JOANNIS, 1928, ♀ (MWM, China, Wuyshan) p. 116
6. *P. pseudorepanda* HERING, 1933, ♂ (MWM, northern Vietnam) p. 116
7. *P. ostia* SWINHOE, 1902, ♂ (MWM, northern Vietnam) p. 118
8. *P. prasina* ALPHERAKY, 1895, ♂ (MWM, northern Vietnam) p. 118
9. *P. altilis* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 120
10. *P. shaanxiensis* (CAI, 1983), ♂ (MWM, northern Vietnam) p. 119
11. *P. vadimi* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 119
12. *P. vadimi* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, northern Vietnam) p. 119
13. *P. pastoralis* BUTLER, 1885, ♂ (MWM, northern Vietnam) p. 121
14. *P. stekolnikovi* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 122
15. *P. stekolnikovi* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, northern Vietnam) p. 122



**Plate 11 (Limacodidae)**

1. *Parasa darma* MOORE, 1859, ♂ (MWM, Myanmar) p. 123
2. *P. albipuncta* HAMPSON, 1893, ♂ (MWM, northern Vietnam) p. 124
3. *P. zhudiana* (CAI, 1983), ♂ (MWM, northern Vietnam) p. 124
4. *P. bicolor* (WALKER, 1855), ♂ (MWM, northern Thailand) p. 126
5. *P. hainana* (CAI, 1983), ♂ (MWM, northern Vietnam) p. 126
6. *P. yana* (CAI, 1983), ♂ (coll. HAUENSTEIN, north-eastern Laos) p. 127
7. *P. foliola* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 128
8. *P. umbra* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 129
9. *P. argentifascia* (CAI, 1983), ♂ (NSMT, northern Vietnam) p. 130
10. *P. flavabdomena* (CAI, 1983), ♂ (MWM, northern Vietnam) p. 126
11. *P. jade* SOLOVYEV & WITT, sp. n., ♂ (NSMT, paratype, southern Thailand) p. 127
12. *P. atera* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 130
13. *P. argentilinea* HAMPSON, 1893, ♂ (MWM, northern Vietnam) p. 131
14. *P. badia* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 132
15. *P. dilucida* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 132
16. *P. bana* (CAI, 1983), ♂ (MWM, northern Vietnam) p. 131
17. *Prapata owadai* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 109
18. *Barisania honeyi* SOLOVYEV, 2009, ♂ (MWM, central Vietnam) p. 134



**Plate 12 (Limaconidae)**

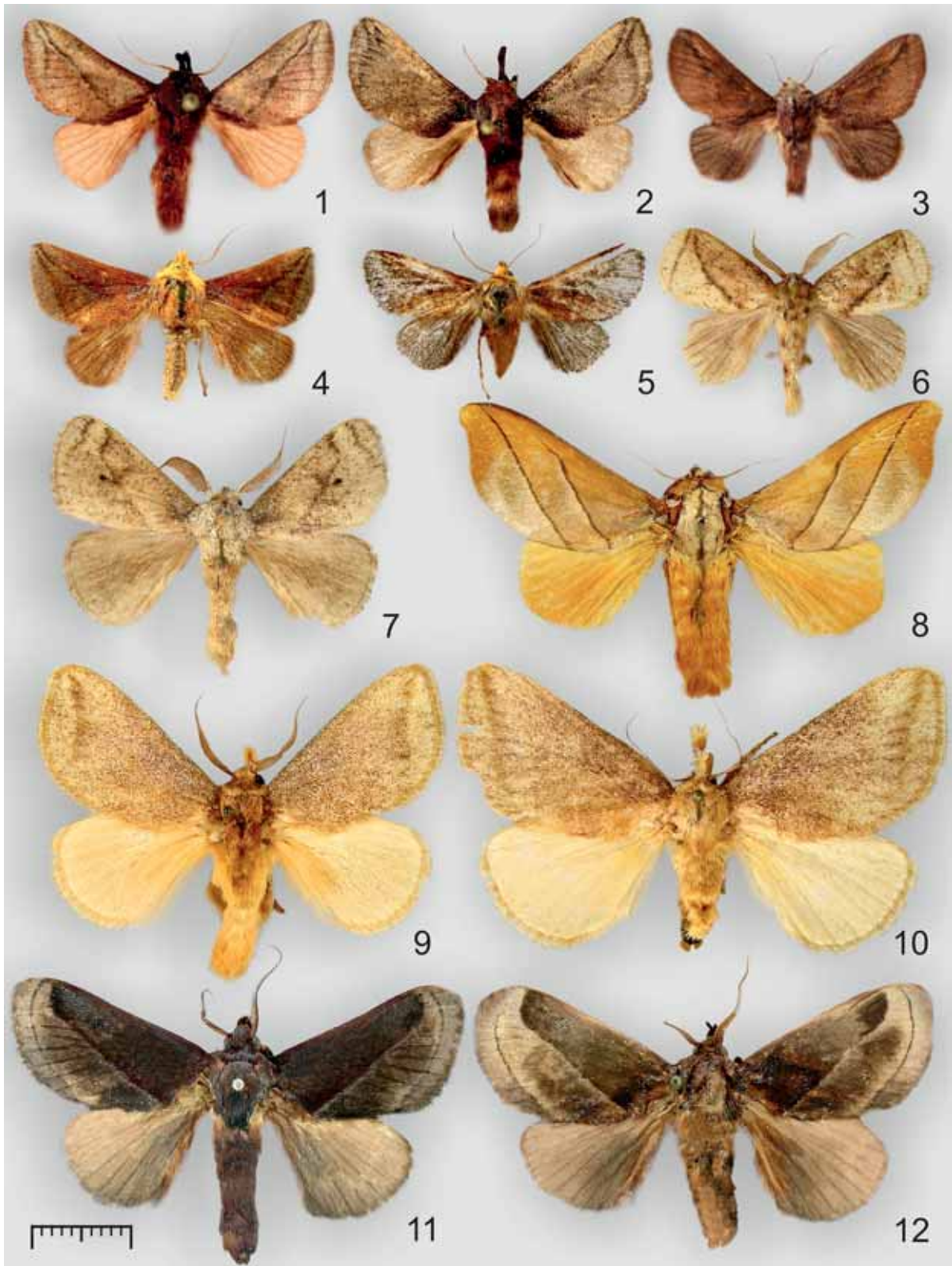
1. *Scopelodes vulpina* MOORE, 1879, ♂ (MWM, northern Thailand) p. 137
2. *S. vulpina* MOORE, 1879, ♀ (MWM, northern Thailand) p. 137
3. *S. testacea* BUTLER, 1886, ♂ (MWM, northern Vietnam) p. 137
4. *S. testacea* BUTLER, 1886, ♂ (CAS, central Vietnam) p. 137
5. *S. testacea* BUTLER, 1886, ♀ (MWM, northern Vietnam) p. 137
6. *S. sericea* BUTLER, 1880, ♂ (MWM, southern Vietnam) p. 138
7. *S. venosa* WALKER, 1855, ♂ (MWM, central Vietnam) p. 140
8. *S. kwangtungensis* HERING, 1931, stat. n., ♂ (MWM, northern Vietnam) p. 141
9. *S. kwangtungensis* HERING, 1931, stat. n., ♀ (MWM, northern Vietnam) p. 141





**Plate 13 (Limaconidae)**

1. *Hyphorma minax* WALKER, 1865, ♂ (MWM, southern Vietnam) p. 134
2. *H. minax* WALKER, 1865, ♂ (MWM, northern Vietnam) p. 134
3. *H. minor* DE JOANNIS, 1930, ♂ (CSI, northern Vietnam) p. 135
4. *H. flaviceps* (HAMPSON, 1910), ♂ (BMNH, type, India) p. 134
5. *H. avanta* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 135
6. *Susica pygmaea* HERING, 1931, ♂ (MWM, central Vietnam) p. 148
7. *S. sinensis* (WALKER, 1856), ♂ (MWM, northern Vietnam) p. 147
8. *Mahanta fraterna* SOLOVYEV, 2005, ♂ (MWM, northern Thailand) p. 146
9. *Tanvia zolotuhini* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 142
10. *T. zolotuhini* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, northern Vietnam) p. 142
11. *Phocoderma velutina* (KOLLAR, 1844), ♂ (MWM, southern Vietnam) p. 144
12. *Ph. betis* DRUCE, 1896, ♂ (CAS, central Vietnam) p. 145



**Plate 14 (Limacodidae)**

1. *Thosea sinensis* (WALKER, 1855), ♂ (MWM, northern Vietnam) p. 149
2. *Th. lutea* HEYLAERTS, 1890, ♂ (MWM, central Vietnam) p. 150
3. *Th. bipartita* HERING, 1933, ♂ (MWM, central Vietnam) p. 151
4. *Th. bipartita* HERING, 1933, ♂ (MWM, central Vietnam) p. 151
5. *Th. vulturaria* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 152
6. *Th. unius* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 153
7. *Quasithosea obliquistriga* (HERING, 1931), ♂ (MWM, northern Vietnam) p. 154
8. *Griseothosea fasciata* (MOORE, 1888), ♂ (MWM, northern Thailand) p. 156
9. *G. sordeo* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 156
10. *Avatara onyx* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 158
11. *A. sicilis* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 158
12. *Pretas furcillata* (WU & FANG, 2008), ♂ (MWM, northern Vietnam) p. 167
13. *Setora postornata* (HAMPSON, 1900), ♂ (MWM, northern Vietnam) p. 161
14. *S. baibarana* (MATSUMURA, 1931), ♂ (MWM, northern Vietnam) p. 162
15. *S. cf. fletcheri* HOLLOWAY, 1987, ♂ (BMNH, holotype, southern Myanmar) p. 163
16. *Praesetora divergens* (MOORE, 1879), ♂ (MWM, central Vietnam) p. 164
17. *P. kwangtungensis* HERING, 1931, ♂ (MWM, central Vietnam) p. 165
18. *P. confusa* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 165
19. *Birthamoides junctura* (WALKER, 1865), ♂ (MWM, southern Vietnam) p. 167
20. *Birthamula rufa* (WILEMAN, 1915), ♂ (MWM, northern Vietnam) p. 168
21. *B. rufa* (WILEMAN, 1915), ♂ (MWM, northern Vietnam) p. 168



**Plate 15 (Limacodidae)**

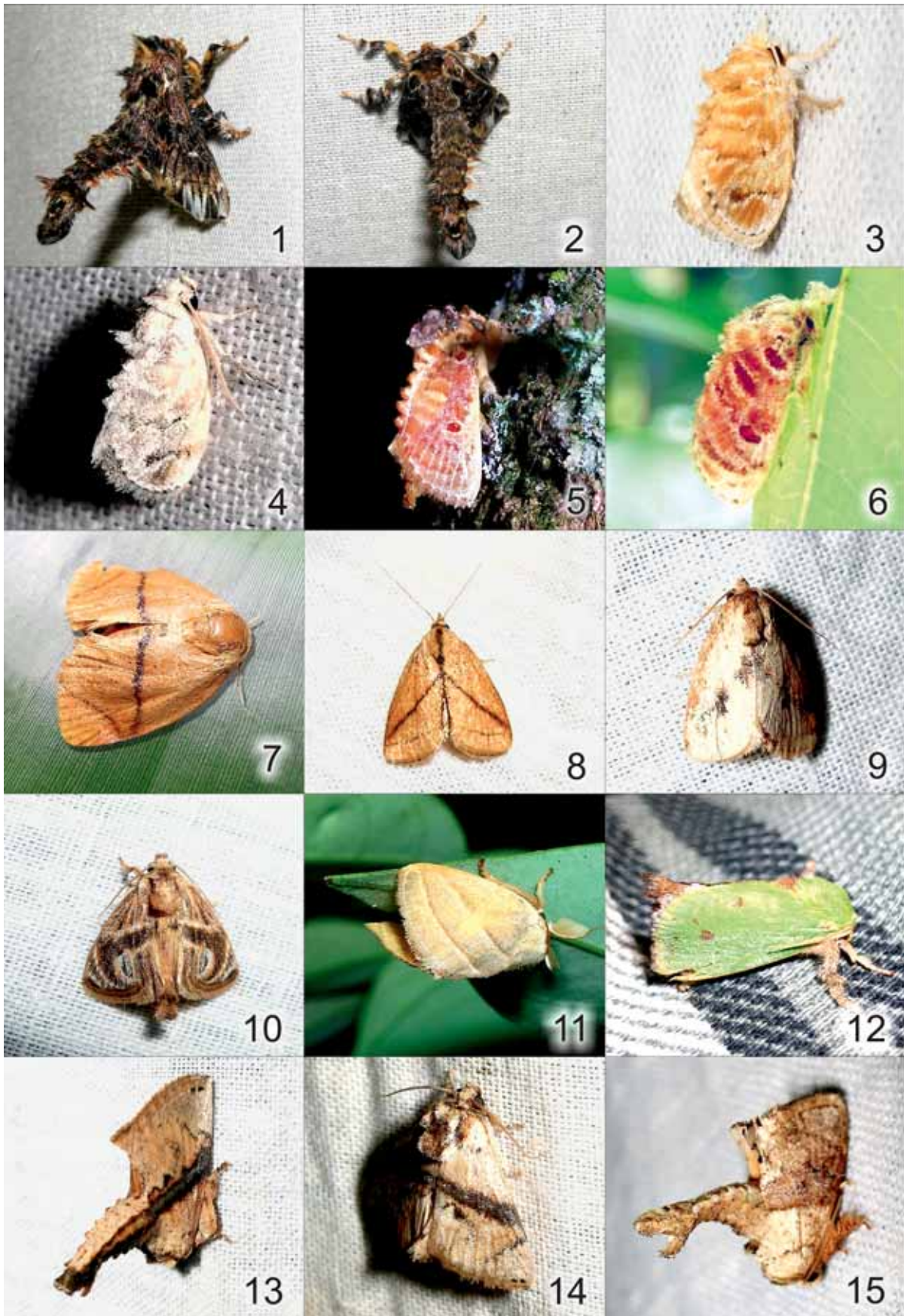
1. *Matsumurides thaumasta* (HERING, 1933), ♂ (ZMHB, holotype, southern China) p. 171
2. *Birthisma roseum* (DE JOANNIS, 1930), ♂ (MWM, northern Vietnam) p. 171
3. *B. roseum* (DE JOANNIS, 1930), ♀ (MWM, holotype, northern Vietnam) p. 171
4. *Mambarona congrua* (WALKER, 1862), ♂ (MWM, central Vietnam) p. 172
5. *M. congrua* (WALKER, 1862), ♀ (MWM, Borneo) p. 172
6. *Vanlangia uniformis* (HERING, 1931), ♂ (MWM, northern Vietnam) p. 174
7. *Phlossa conjuncta* (WALKER, 1855), ♂ (MWM, northern Vietnam) p. 176
8. *Iragoides crispa* (SWINHOE, 1889), ♂ (MWM, northern Vietnam) p. 177
9. *I. elongata* HERING, 1931, ♂ (MWM, northern Vietnam) p. 177
10. *Pseudiragoides spadix* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 178
11. *Squamosa svetlanae* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 186
12. *Iraga rugosa* (WILEMAN, 1911), ♂ (CSI, northern Vietnam) (photo: S. IHLE) p. 187
13. *Nirmides altadim* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Thailand) p. 180
14. *N. mimur* SOLOVYEV & WITT, sp. n., ♂ (CYB, holotype, central Vietnam) p. 180
15. *N. trani* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, southern Vietnam) p. 181
16. *Limacolasia suffusca* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 184
17. *Pseudonirmides* cf. *cyanopasta* (HAMPSON, 1910), ♂ (MWM, northern Vietnam) p. 182
18. *P.* cf. *cyanopasta* (HAMPSON, 1910), ♀ (MWM, northern Vietnam) p. 182
19. *Mummu aerata* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, northern Vietnam) p. 183
20. *M. aerata* SOLOVYEV & WITT, sp. n., ♀ (MWM, paratype, northern Vietnam) p. 183
21. *Phrixolepia sinyaevi* SOLOVYEV (in print), ♂ (MWM, northern Vietnam) p. 188
22. *Darna sybilla* SWINHOE, 1903, ♂ (MWM, southern Vietnam) p. 190
23. *Orthocraspeda sordida* SNELLEN, 1900, ♂ (CAS, northern Vietnam) p. 191
24. *O. furva* (WILEMAN, 1911), ♂ (CAS, central Vietnam) p. 192
25. *Oxyplax ochracea* (MOORE, 1883), ♂ (MWM, northern Vietnam) p. 193
26. *O. pallivitta* (MOORE, 1877), ♂ (MWM, southern Vietnam) p. 194
27. *Devaz senescoides* (HOLLOWAY, 1990), ♂ (BMNH, holotype, Sumatra) p. 196
28. *D. vetus* SOLOVYEV & WITT, sp. n., ♂ (MWM, holotype, central Vietnam) p. 196



**Plate 16 (Limacodidae: resting posture of adults)**

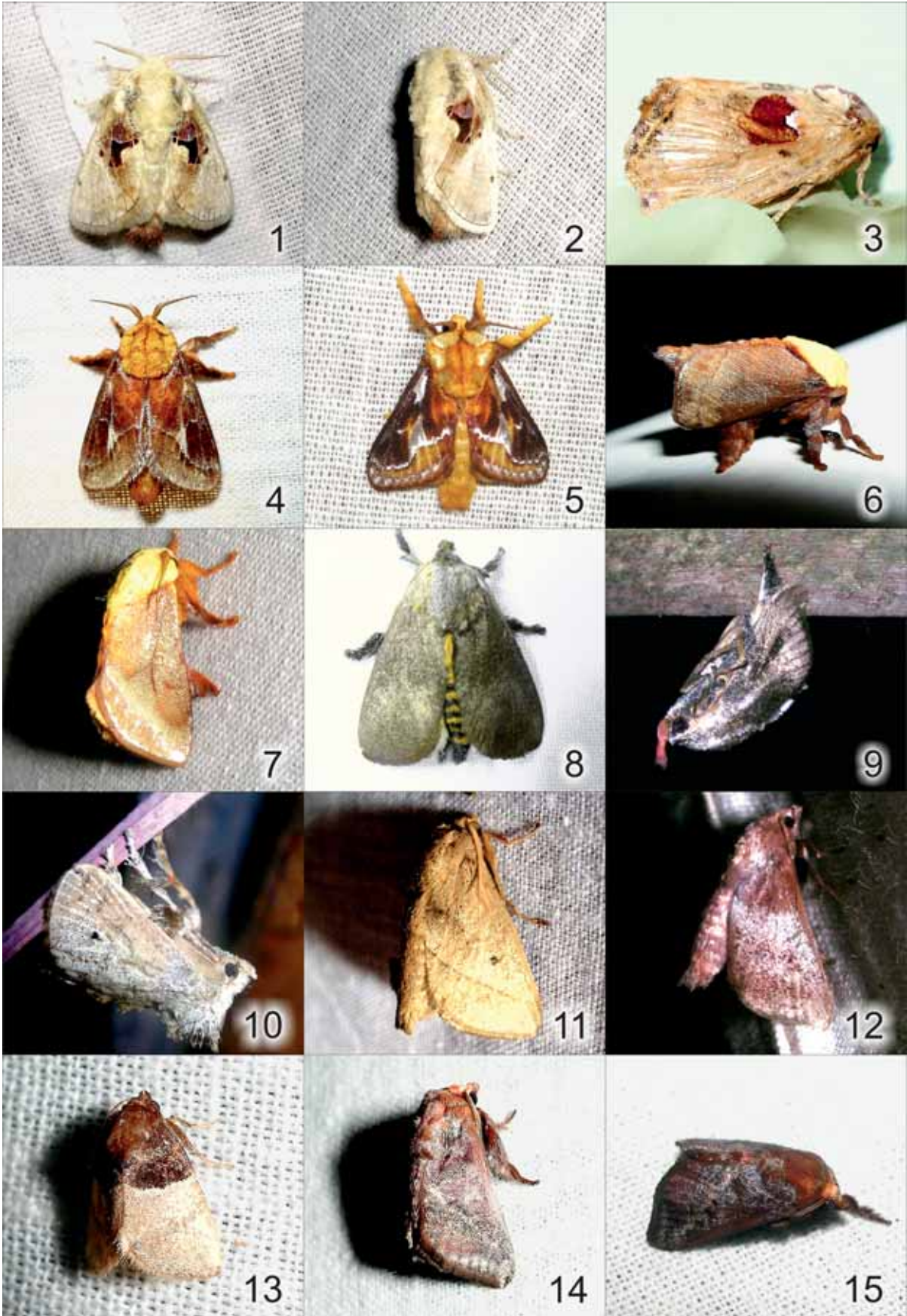
1. *Belippa horrida* WALKER, 1865, ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 51
2. *B. horrida* WALKER, 1865, ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 51
3. *Narosa (Penicillonarosa) nigrisigna* WILEMAN, 1911, ♂ (northern Vietnam, Cuc Phuong N. P.) p. 58
4. *N. (Penicillonarosa) nigrisigna* WILEMAN, 1911, ♂ (northern Vietnam, Cuc Phuong N. P.) p. 58
5. *Demonarosa rufotessellata* (MOORE, 1879), ♂ (northern Vietnam, Cuc Phuong N. P.) p. 69
6. *D. rufotessellata* (MOORE, 1879), ♀ (northern Vietnam, Cuc Phuong N. P.) p. 69
7. *Ceratonema* sp., ♀ (central Vietnam, Pu Mat N. P.) p. 70
8. *Barabashka* cf. *obliqua* (LEECH, 1890), ♂ (central Vietnam, Pu Mat N. P.) p. 72
9. *Euphlyctinides laika* SOLOVYEV & WITT, sp. n., ♂ (central Vietnam, Pu Mat N. P.) p. 73
10. *Atosia himalayana* HOLLOWAY, 1986, ♂ (northern Vietnam, Cuc Phuong N. P.) p. 75
11. *Cania bilinea* (WALKER, 1855), ♂ (northern Vietnam, Cuc Phuong N. P.) p. 77
12. *Parasa umbra* SOLOVYEV & WITT, sp. n., ♂ (central Vietnam, Pu Mat N. P.) p. 129
13. *Caissa bezverkhovi* SOLOVYEV & WITT, sp. n., ♂ (northern Vietnam, Cuc Phuong N. P.) p. 86
14. *C. bezverkhovi* SOLOVYEV & WITT, sp. n., ♂ (northern Vietnam, Cuc Phuong N. P.) p. 86
15. *C. parenti* ORHANT, 2000, ♂ (central Vietnam, Pu Mat N. P.) p. 87





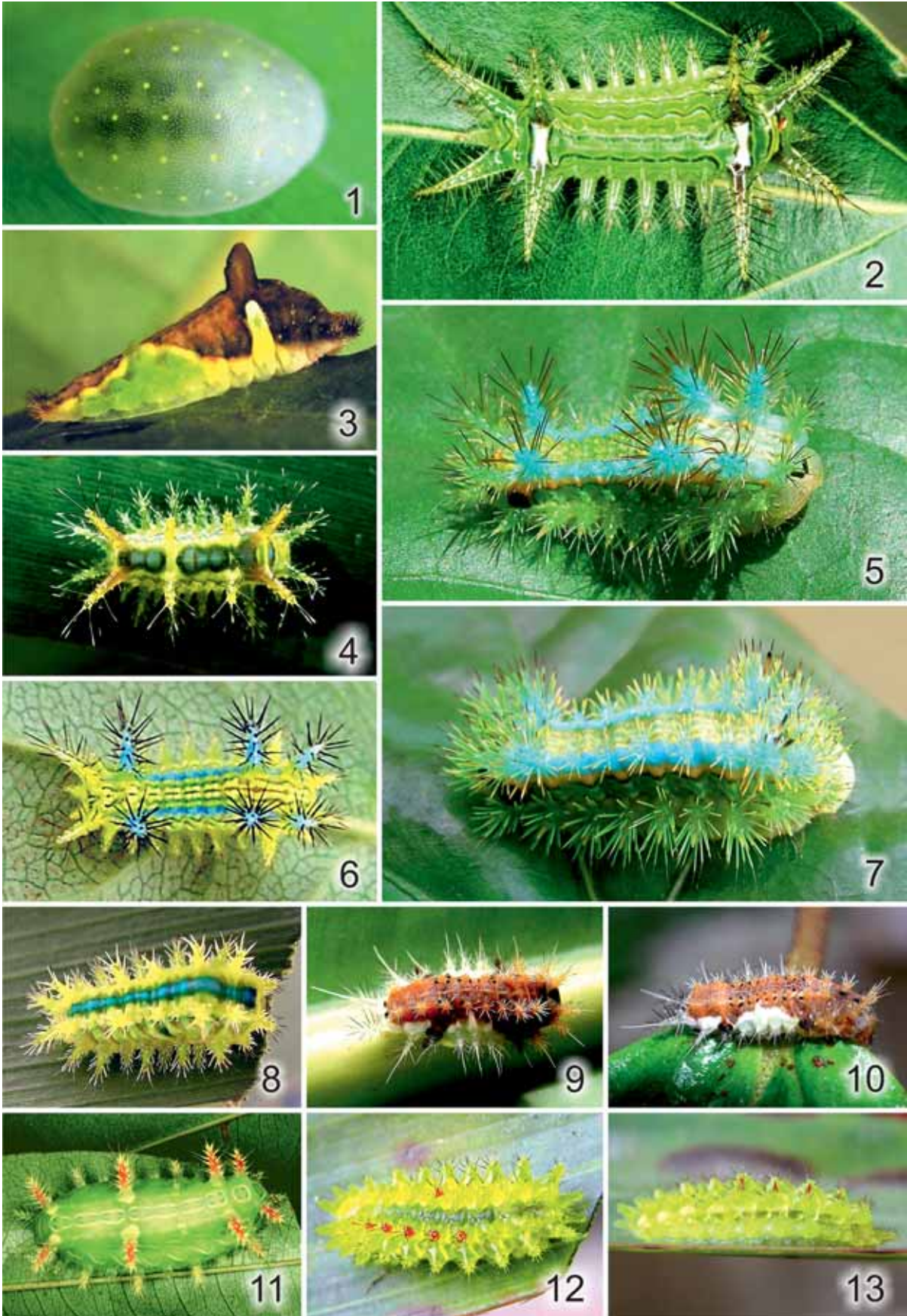
**Plate 17 (Limacodidae: resting posture of adults)**

1. *Chalcoscelides castaneipars* (MOORE, 1865), ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 91
2. *Ch. castaneipars* (MOORE, 1865), ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 91
3. *Chalcocelis dydima* SOLOVYEV & WITT, sp. n., ♀ (central Vietnam, Pu Mat N. P.) p. 94
4. *Miresa fulgida* WILEMAN, 1910, ♂ (northern Vietnam, Cuc Phuong N. P.) p. 99
5. *M. demangei* DE JOANNIS, 1930, ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 100
6. *M. kwangtungensis* HERING, 1931, ♂ (northern Vietnam, Cuc Phuong N. P.) p. 102
7. *M. sagitovae* SOLOVYEV & WITT, sp. n., ♂ (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 103
8. *Scopelodes testacea* BUTLER, 1886, ♂ (southern Vietnam, Dong Nai province, photo: TRAN Thieu Du) p. 137
9. *S. venosa* WALKER, 1855, ♂ (central Vietnam, Pu Mat N. P.) p. 140
10. *Susica sinensis* (WALKER, 1856), ♂ (central Vietnam, Pu Mat N. P.) p. 147
11. *Thosea sinensis* (WALKER, 1855), ♂ (central Vietnam, Pu Mat N. P.) p. 149
12. *Griseothosea fasciata* (MOORE, 1888), ♂ (northern Vietnam, Me Linh biological station) p. 156
13. *Pseudidonauton siamica* SOLOVYEV 2009, ♂ (central Vietnam, Pu Mat N. P.) p. 160
14. *Vanlangia uniformis* (HERING, 1931), ♂ (northern Vietnam, Cuc Phuong N. P.) p. 174
15. *V. uniformis* (HERING, 1931), ♂ (northern Vietnam, Cuc Phuong N. P.) p. 174



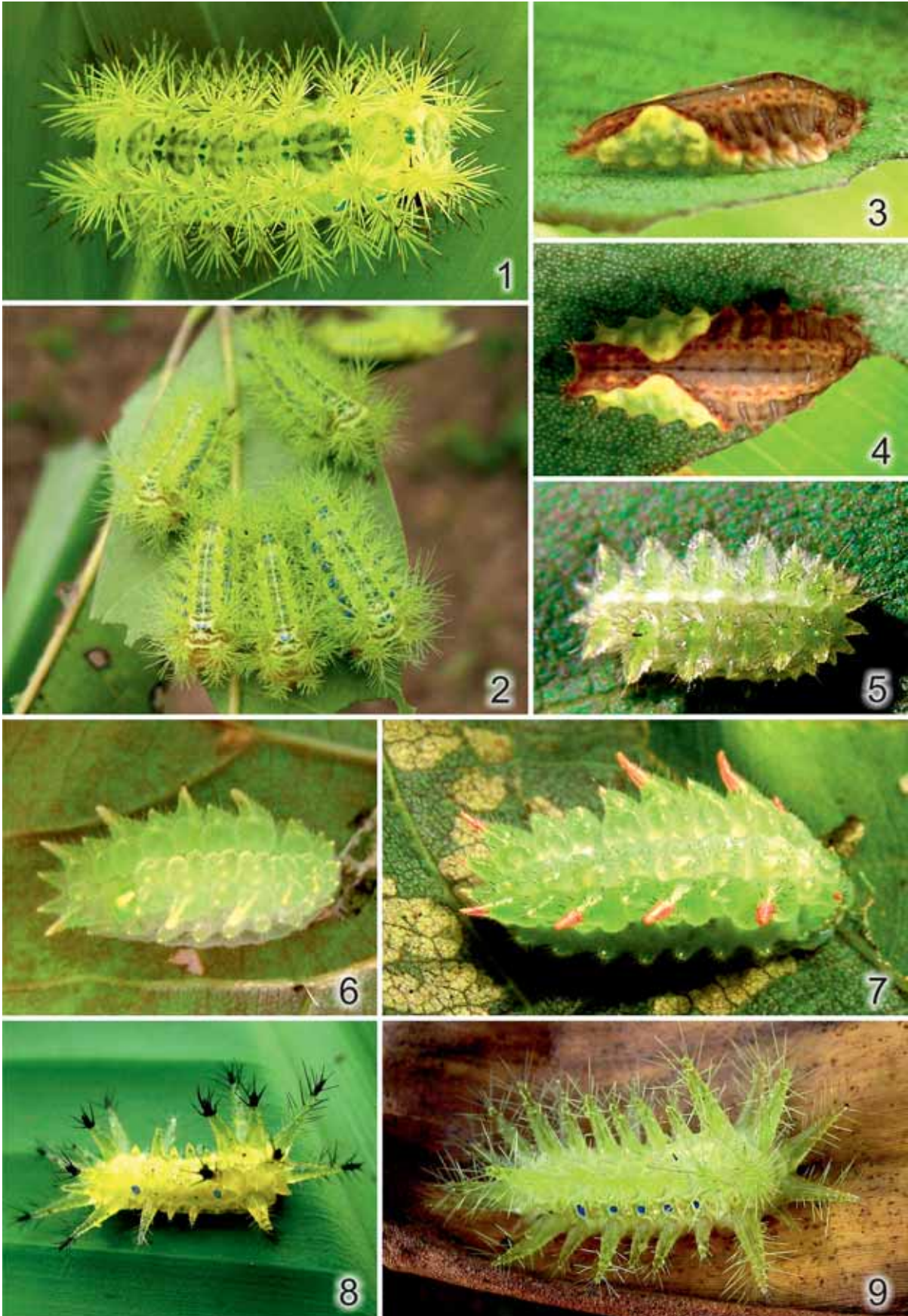
**Plate 18 (Limacodidae: larvae)**

1. *Cheromettia* sp. (?), mature instar, on banana (southern Vietnam, Ninh Thuan prov., photo: TRAN Thieu Du) p. 48
2. *Narosoideus vulpina* (WILEMAN, 1911), late instar (from BMNH archive) p. 106
3. *Spatulifimbria* sp., late instar (from BMNH archive) p. 97
4. *Parasa* sp., middle instar, on banana (central Vietnam, Pu Mat N. P.) p. 110
5. *P. julikatis* SOLOVYEV & WITT, sp. n., late instar (northern Vietnam, Mt. Fan-si-pan) p. 113
6. *P. julikatis* SOLOVYEV & WITT, sp. n., young larvae (northern Vietnam, Mt. Fan-si-pan, photo: V. ZOLOTUHIN) p. 113
7. *P. julikatis* SOLOVYEV & WITT, sp. n., mature instar (northern Vietnam, Mt. Fan-si-pan) p. 113
8. Unidentified young larva sp. 1 on palm (northern Vietnam, Hanoi) p. 40
9. *Orthocraspeda furva* (WILEMAN, 1911), mature instar (central Vietnam, Pu Mat N. P.) p. 192
10. *O. furva* (WILEMAN, 1911), mature instar (central Vietnam, Pu Mat N. P.) p. 192
11. *Phlossa conjuncta* (WALKER, 1855), mature instar (from BMNH archive) p. 176
12. Unidentified mature larva sp. 2 on a palm (northern Vietnam, 60 km N Hanoi, photo: V. ZOLOTUHIN) p. 40
13. Unidentified mature larva sp. 2 on a palm (northern Vietnam, 60 km N Hanoi, photo: V. ZOLOTUHIN) p. 40



**Plate 19 (Limacodidae: larvae)**

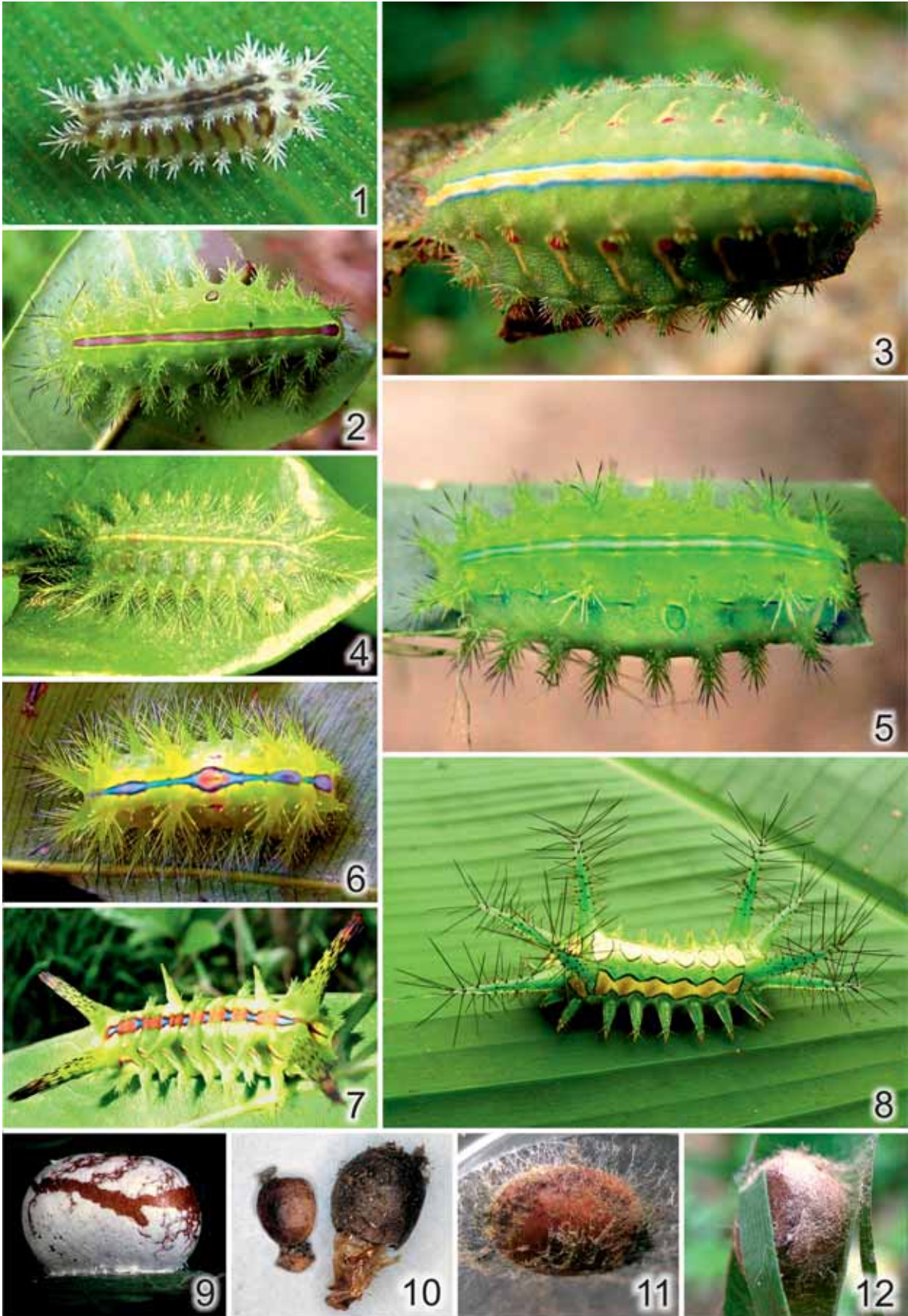
1. *Scopelodes testacea* BUTLER, 1886, on mango (northern Vietnam, Hanoi) p. 137
2. *S. testacea* BUTLER, 1886, on mango (northern Vietnam, Hanoi, photo: V. ZOLOTUHIN) p. 137
3. Unidentified larva sp. 3, middle instar, on banana (northern Vietnam, Hanoi) p. 40
4. Unidentified larva sp. 3, middle instar, on banana (northern Vietnam, Hanoi) p. 40
5. *Phrixolepia sericea* BUTLER, 1877, young larva (Far East of Russia) p. 187
6. *Ph. sericea* BUTLER, 1877, middle instar (Far East of Russia) p. 187
7. *Ph. sericea* BUTLER, 1877, mature larva (Far East of Russia) p. 187
8. Unidentified young larva sp. 4 on banana (central Vietnam, Pu Mat N. P.) p. 40
9. Unidentified young larva sp. 4 on banana (central Vietnam, Pu Mat N. P.) p. 40



**Plate 20 (Limacodidae: immature stages, figs 1-8 larvae, figs 9-12 cocoons)**

1. *Thosea sinensis* (WALKER, 1855), first instar (central Vietnam; Pu Mat N. P.) p. 149
2. *Th. sp.*, late instar (northern Vietnam, Cuc Phuong N. P.) p. 149
3. *Th. sp.*, late instar on *Homonoia riparia* LOUR. (Euphorbiaceae) (southern Vietnam, Phuoc Binh N. P., photo: TRAN Thieu Du) p. 149
4. *Quasithosea obliquistriga* (HERING, 1931), young larva (from BMNH archive) p. 154
5. *Q. obliquistriga* (HERING, 1931), on palm (northern Vietnam, Hanoi, photo: V. ZOLOTUHIN) p. 154
6. Unidentified mature larva sp. 5 on *Rosa* sp. (northern Vietnam, Sa Pa, photo: V. ZOLOTUHIN) p. 40
7. Unidentified mature larva sp. 6 (central Vietnam, Kon Tum, photo: TRAN Thieu Du) p. 40
8. Unidentified mature larva sp. 7 on banana (central Vietnam, Pu Mat N. P.) p. 40
9. *Spatulifimbria* sp. (from BMNH archive) p. 97
10. *Narosoideus vulpina* (WILEMAN, 1911) (from BMNH archive) p. 106
11. *Parasa julikatis* SOLOVYEV & WITT, sp. n. (northern Vietnam, Mt. Fan-si-pan) p. 113
12. *Orthocraspeda furva* (WILEMAN, 1911) (central Vietnam; Pu Mat N. P.) p. 192

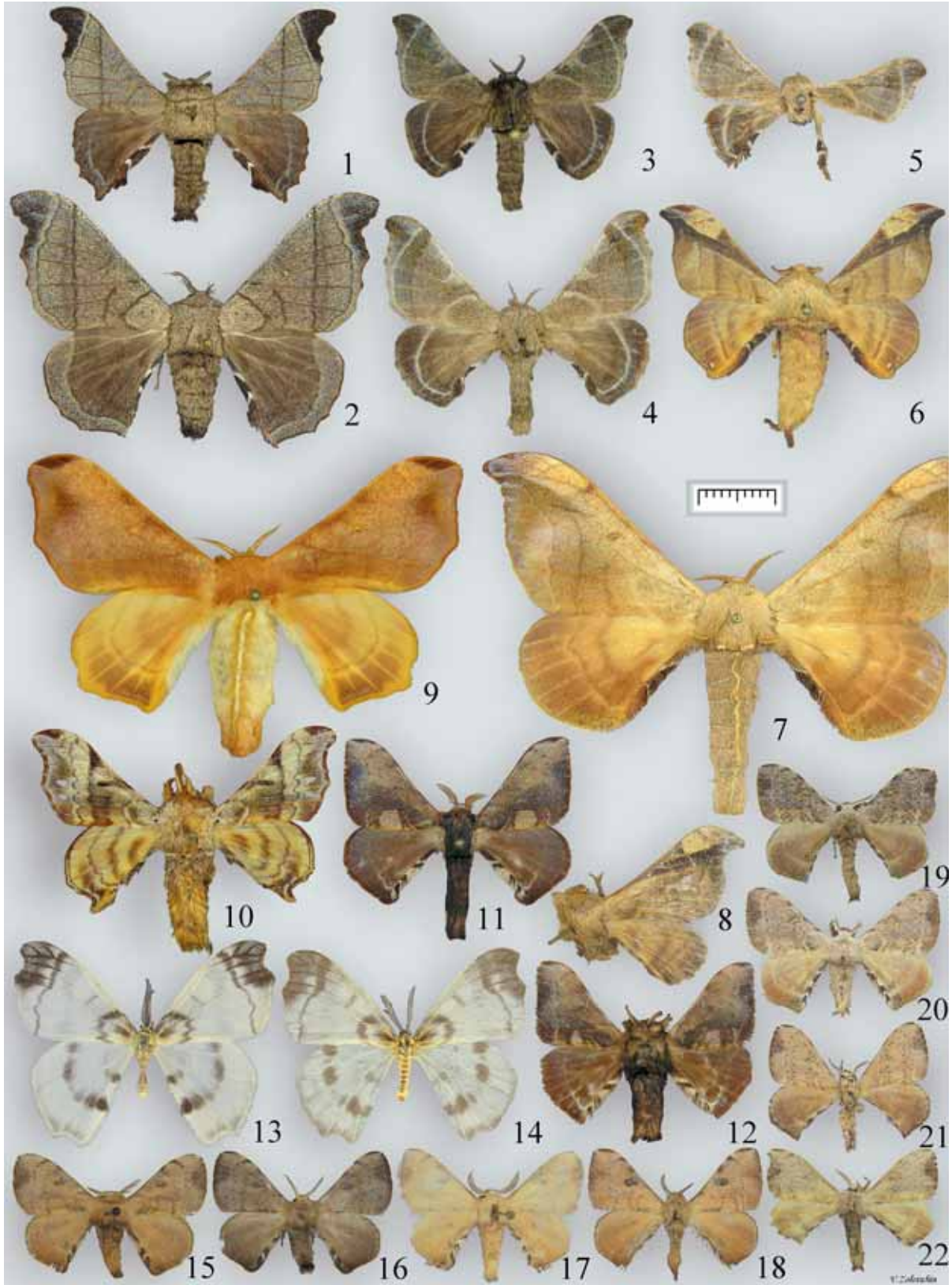




**Plate 21 (Bombycidae)**

1. *Bombyx huttoni* WESTWOOD, 1847, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 237
2. *B. huttoni* WESTWOOD, 1847, ♀ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 237
3. *B. lemeepauli* LEMÉE, 1950, ♂ (MWM, Vietnam, Prov. Nghe An) p. 238
4. *B. lemeepauli* LEMÉE, 1950, ♀ (MWM, N. Vietnam, Ben En Nat. Park) p. 238
5. *B. lemeepauli* LEMÉE, 1950, ♂ (MNHN, holotype, Backan) p. 238
6. *Gunda javanica* (MOORE, 1872), ♂ (MWM, N. Vietnam, Cuc. Phuong) p. 239
7. *G. javanica* (MOORE, 1872), ♀ (MWM, Süd-Burma, Tenasserim) p. 239
8. *G. javanica* (MOORE, 1872), ♂ (MNHN, holotype of *Gunda tonkinensis* LEMÉE, Backan) p. 239
9. *G. ochracea* WALKER, 1862, ♀ (MWM, Malaysia, Sabah) p. 239
10. *G. ochracea* WALKER, 1862, ♂ (MWM, N. Vietnam, Cuc. Phuong) p. 239
11. *Triuncina diaphragma* (MELL, 1958), ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 243
12. *T. diaphragma* (MELL, 1958), ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 243
13. *Rondotia diaphana* (HAMPSON, [1893]), ♂ (NSMT, N. Vietnam, Ba Be) p. 250
14. *R. diaphana* (HAMPSON, [1893]), ♂ (BMNH, N. Thailand, Fang) p. 250
15. *Trilocha varians* (MOORE, 1855), ♂ (MWM, N. Vietnam, Tam Dao) p. 241
16. *T. varians* (MOORE, 1855), ♂ (MWM, Vietnam, Sa Pa) p. 241
17. *T. friedeli* DIERL, 1978, ♂ (MWM, S. Vietnam, Bao Loc) p. 242
18. *T. friedeli* DIERL, 1978, ♂ (MWM, N. Vietnam, Ben Nat. Park) p. 242
19. *Ocinara albicollis* (WALKER, 1862), ♂ (MWM, N. Vietnam, Cuc Phuong) p. 240
20. *O. albicollis* (WALKER, 1862), ♂ (MWM, Hoa Bihn) p. 240
21. *O. bifurcula* DIERL, 1978, ♂ (MWM, Borneo, Kalimantan) p. 241
22. *O. bifurcula* DIERL, 1978, ♂ (MWM, N. Vietnam, Cuc Phuong) p. 241

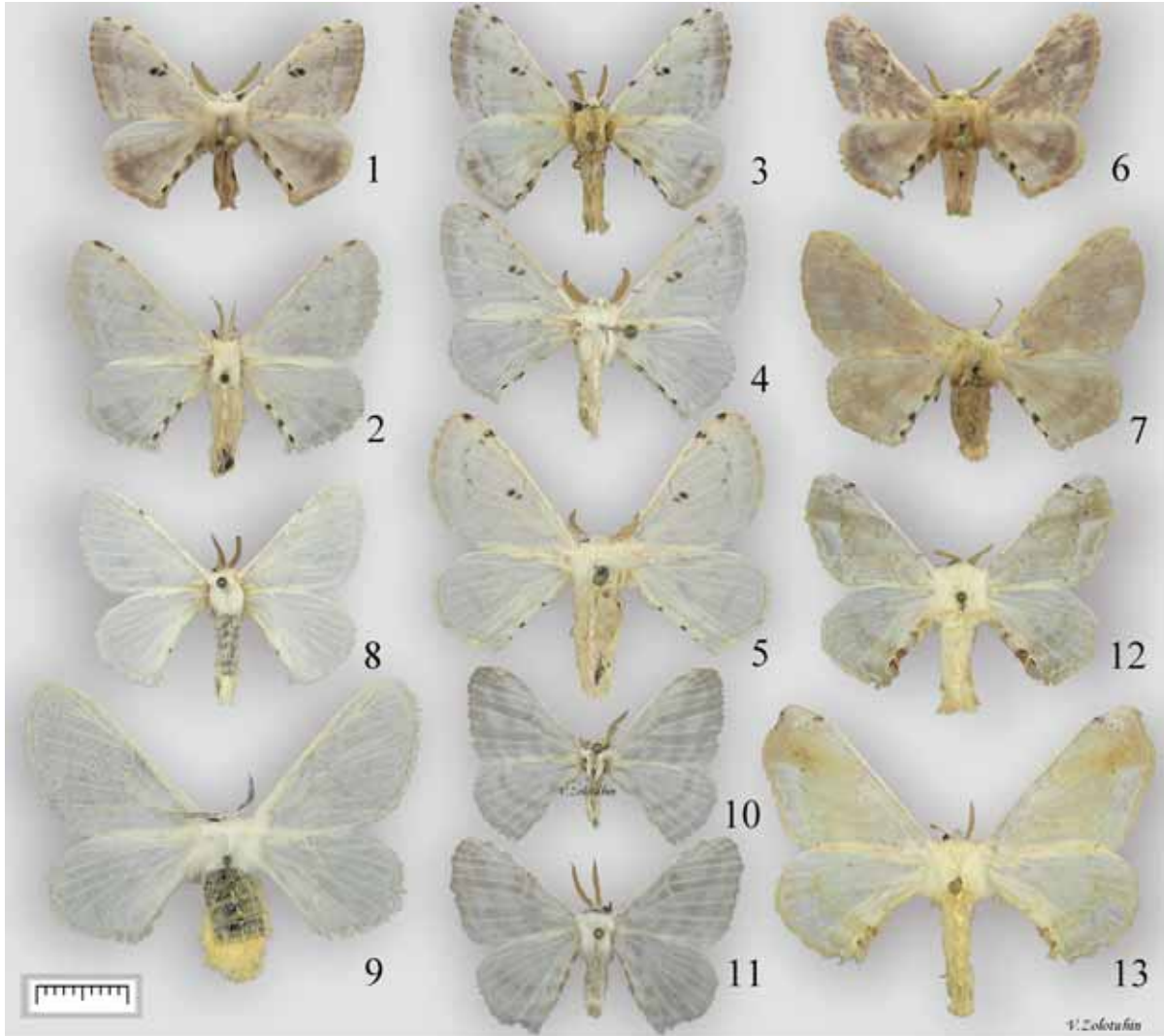
Scale bar: 1 cm



**Plate 22 (Bombycidae)**

1. *Penicillifera lactea* (HUTTON, 1865), ♂ (MWM, Vietnam, Na Hang Nature Reserve) p. 245
2. *P. lactea* (HUTTON, 1865), ♀ (MWM, N. Vietnam, Tam Dao) p. 245
3. *P. apicalis* (WALKER, 1862), ♂ (MWM, N. Vietnam, Tam Dao) p. 244
4. *P. apicalis* (WALKER, 1862), ♂ (MWM, N. Vietnam, Mai-chau) p. 244
5. *P. apicalis* (WALKER, 1862), ♀ (MWM, N. Vietnam, Yen-Bai - An-chy) p. 244
6. *P. tamsi* (LEMÉE, 1950), ♂ (MWM, neotype, Vietnam, Prov. Nghe An) p. 246
7. *P. tamsi* (LEMÉE, 1950), ♀ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 246
8. *Gnathocinara situla* (van EECKE, 1929), ♂ (MWM, N. Vietnam, Mai-chau) p. 249
9. *G. situla* (van EECKE, 1929), ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 249
10. *Bivincula diaphana* (MOORE, 1879), ♂ (MWMN. Vietnam, Mai-chau) p. 247
11. *B. diaphana* (MOORE, 1879), ♂ (MWM, N. Vietnam, Mai-chau) p. 247
12. *Ernolatia moorei* (HUTTON, 1865), ♂ (MWM, N. Vietnam, Tam Dao) p. 248
13. *E. moorei* (HUTTON, 1865), ♀ (MWM, Thailand, Changwat Nan) p. 248
14. *Mustilia sphingiformis* MOORE, 1879, ♂ (resting posture, N. Vietnam, Fan-Si-Pan Mts.,  
photo: V. ZOLOTUHIN) p. 254
15. *Mustilizans hepatica* (MOORE, 1879), ♂ (resting posture, N. Vietnam, Fan-Si-Pan Mts.,  
photo: V. ZOLOTUHIN) p. 256
16. *Prismosticta regalis* ZOLOTUHIN & WITT, sp. n. (paratype, resting posture, Central  
Vietnam, Mang Cahn, photo: V. ZOLOTUHIN) p. 252
17. *Trilocha varians* (MOORE, 1855), cocoon on *Ficus* sp. (Central Vietnam, Mang Cahn,  
photo: V. ZOLOTUHIN) p. 241
18. *Penicillifera* sp., cocoon on *Ficus* sp. (N. Vietnam, Fan-Si-Pan Mts., photo: V.  
ZOLOTUHIN) p. 244

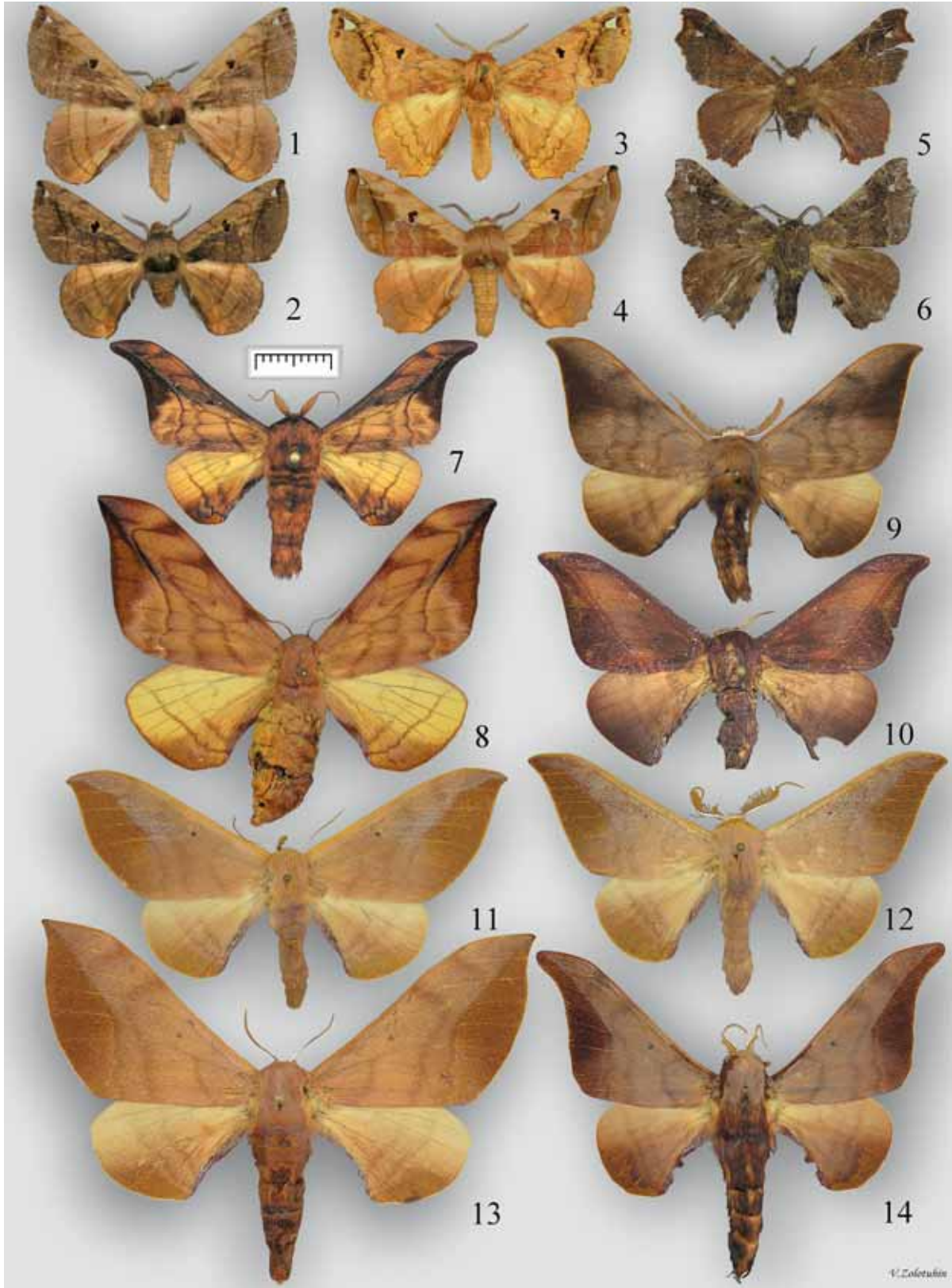
Scale bar for pinned moths: 1 cm



**Plate 23 (Bombycidae)**

1. *Prismosticta microprisma* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, paratype, Cambodia, Mondolkiri Prov.) p. 251
2. *P. microprisma* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, holotype, N. Vietnam, Ben En Nat. Park) p. 251
3. *P. regalis* ZOLOTUHIN & WITT, sp. n., ♂ (ZFMK, holotype, [China] Kuatun) p. 252
4. *P. tiretta* SWINHOE, 1903, ♂ (ZSSM, S. Thailand, 20 km O. von Krabi) p. 252
5. *Sesquiluna theophoboides* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, holotype, N. Vietnam, Tuan-giao) p. 266
6. *S. forbesi* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, holotype, N. Vietnam, Mt. Fan-si-pan) p. 266
7. *Mustilia lobata* ZOLOTUHIN, 2007, ♂ (MWM, paratype, Vietnam Fan-si-pan Mts.) p. 253
8. *M. lobata* ZOLOTUHIN, 2007, ♀ (MWM, paratype, N. Vietnam, Mt. Fan-si-pan) p. 253
9. *M. phaeopera* HAMPSON, 1910, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 255
10. *Falcogona gryphea* ZOLOTUHIN, 2007, ♂ (MWM, holotype, N. Vietnam, Mt. Fan-si-pan) p. 259
11. *Mustilia craptalis* ZOLOTUHIN, 2007, ♀ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 256
12. *M. craptalis* ZOLOTUHIN, 2007, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 256
13. *M. sphingiformis* MOORE, 1879, ♀ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 254
14. *M. sphingiformis* MOORE, 1879, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 254

Scale bar: 1 cm

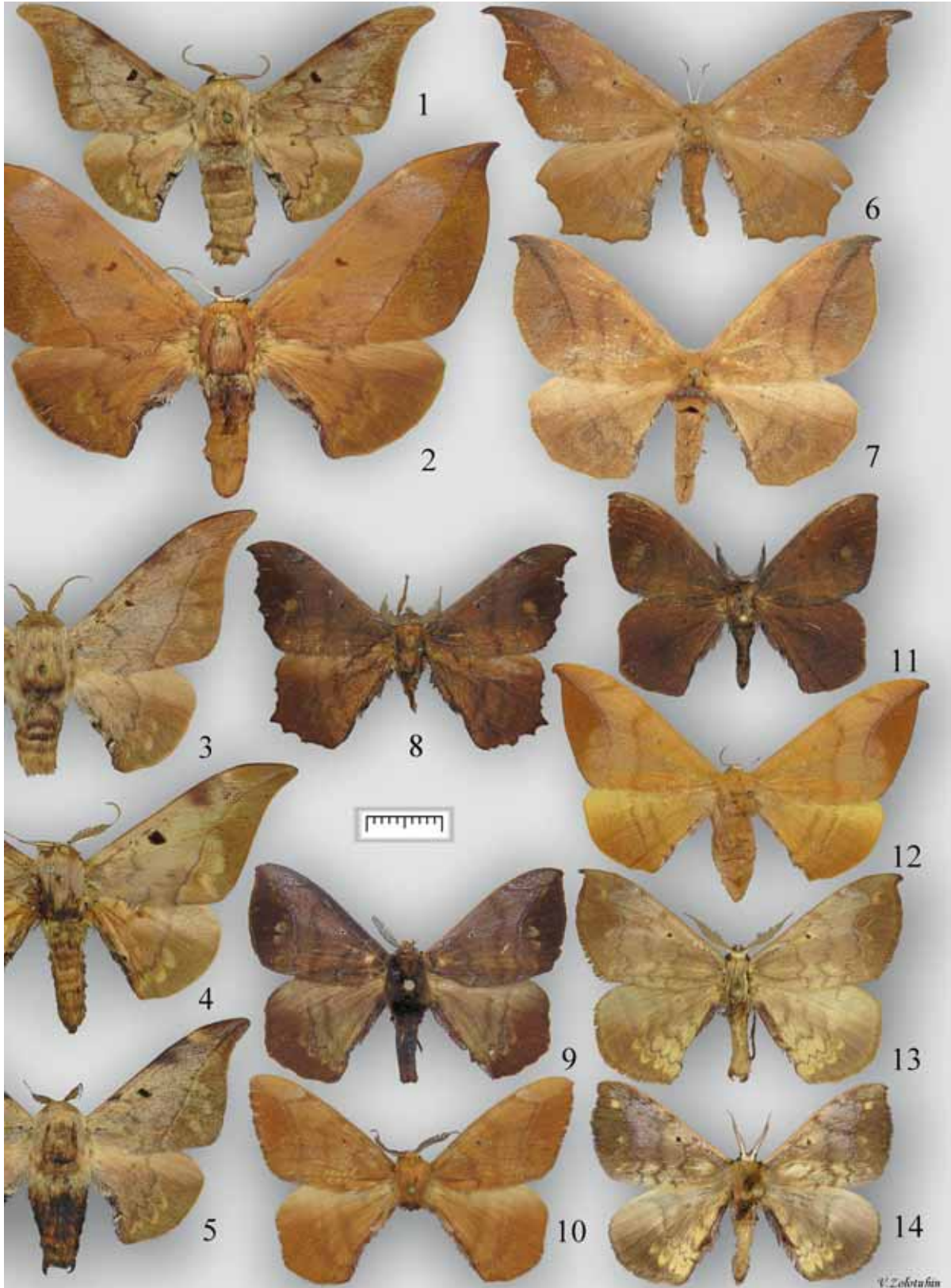


**Plate 24 (Bombycidae)**

1. *Mustilizans hepatica* (MOORE, 1879), ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 256
2. *M. hepatica* (MOORE, 1879), ♀ (MWM, Süd-Burma, Tenasserim, III 1996) p. 256
3. *M. lepusa* ZOLOTUHIN, 2007, ♂ (MWM, holotype, N. Vietnam, Cuc Phuong) p. 258
4. *M. sinjaevi* ZOLOTUHIN, 2007 (MWM, paratype, N. Vietnam, Mt. Fan-si-pan) p. 258
5. *M. dierli* (HOLLOWAY, 1987), ♂ (MWM, Thailand, Changwat Nan) p. 257
6. *Andraca stueningi* ZOLOTUHIN & WITT, sp. n., ♀ (MWM, paratype, N. Vietnam, Mt. Fan-si-pan) p. 261
7. *A. trilochoides roepkei* BRYK, 1944, ♀ (MWM, Thailand, Chiang Mai, Doi Inthanon Nat. P.) p. 259
8. *A. stueningi* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, holotype, Nord Vietnam, Yen Bai – An-chy) p. 261
9. *A. trilochoides roepkei* BRYK, 1944, ♂ (MWM, Thailand, Mt. Doi Phahompok) p. 259
10. *A. apodecta* SWINHOE, 1907, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 261
11. *A. melli* ZOLOTUHIN & WITT, sp. n., ♂ (MWM, holotype, China, Sichuan) p. 262
12. *A. melli* ZOLOTUHIN & WITT, sp. n., ♀ (MWM, paratype, N. Vietnam, Mt. Fan-si-pan) p. 262
13. *A. olivacea* MATSUMURA, 1927, ♂ (MWM, N. Vietnam, Mt. Fan-si-pan) p. 263
14. *Pseudandraca flavamaculata* (YANG, 1995), ♂ (NSMT, holotype of *Andraca nabesan* KISHIDA & OWADA, 2002, Vietnam, Cao Bang) p. 264

Scale bar: 1 cm





**Plate 25 (Lasiocampidae)**

1. *Bezverkhovia lydia* ZOLOTUHIN & SINYAEV, sp. n., ♂ (MWM, holotype, S. Vietnam) p. 276
2. *B. lydia* ZOLOTUHIN & SINYAEV, sp. n., ♂ (CYBM, paratype, S. Vietnam) p. 276
3. *B. lydia* ZOLOTUHIN & SINYAEV, sp. n., ♀ (MWM, paratype, S. Vietnam) p. 276
4. *Dendrolimus kikuchii* MATSUMURA, ♂ (MWM, China, Jiangxi) p. 276
5. *Radhica vasilissae* ZOLOTUHIN & SINYAEV, sp. n., ♂ (MWM, holotype, S. Vietnam) p. 277
6. *R. vasilissae* ZOLOTUHIN & SINYAEV, sp. n., ♀ (CYBM, paratype, S. Vietnam) p. 277

Scale bar 1 cm

