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Revision of the family Metarbelidae (Lepidoptera) of the Oriental Region. III. Genus *Stueningeria* Lehmann, 2019

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Abstract

In the third part of the revision of the family Metarbelidae (Lepidoptera) of South-Eastern Asia, we provide a revision of the genus *Stueningeria* Lehmann, 2019 with description of six new species: *Stueningeria htetae* sp. nov. (Type locality: Myanmar, 21 km E Putao), *Stueningeria csovarai* sp. nov. (Type locality: Thailand, Changwat Nan, 15 km N of Bo Luang), *Stueningeria loeffleri* sp. nov. (Type locality: Thailand, Sakhon Nakhon Prov., Phu Pan NP), *Stueningeria ihlei* sp. nov. (Type locality: Vietnam (C.), Prov. Thua-Thien-Hue, Kreis A Luoi, Gemeinde A Rong, Passastrasse ca. 30 km S A Luoi.), *Stueningeria murzini* sp. nov. (Type locality: China, SW Yunnan, Xishuanbanna, Guanping env., 60 km N Jinghong), and *Stueningeria pinratanai* sp. nov. (Type locality: NW Thailand, Chiangmai, Doi Pui Forest Res. Stat.) Two new combinations are established: *Stueningeria campbelli* (Hampson, 1910) comb. nov. and *Stueningeria phaga* (Swinhoe, 1894) comb. nov. Both species are redescribed. The type species of the genus *Stueningeria nepalensis* Lehmann, 2019 is reported for the first time for the fauna of India (Uttarakhand). We also give for the first time the description of female genitalia of the genus *Stueningeria*. The genus distribution map is provided.

Key words: biodiversity, Cossoidea, entomology, Asia, Paleotropics, Metarbelidae, taxonomy, new species.

Introduction

In the first two parts of the revision on the poorly studied family Metarbelidae (Lepidoptera) (Yakovlev & Zolotuhin 2020, 2021) we gave a brief overview on the genera distributed in South-Eastern Asia, and described 4 new genera. Lehmann (2019) described the monotypic genus *Stueningeria* Lehmann, 2019 (type species: *Stueningeria nepalensis* Lehmann, 2019) from Nepal. As apomorphic features, Lehmann (2019: 52) indicated several characteristics in the wings venation, male and female genital structures. Examining the materials on Metarbelidae, deposited in museums and private collections, we were able to establish that two previously described species from India: *Arbela campbelli* Hampson, 1910 and *Arbela phaga* Swinhoe, 1894 belong to the genus *Stueningeria*. Additionally, we revealed six new species from various localities of

Indochina (Myanmar, Thailand, and Vietnam) and South China (Yunnan Province), their descriptions are given below.

Material and methods

The materials for the study were the adult Metarbelidae specimens deposited in various collections:

MWM – Museum of Thomas Witt (Munich, Germany) – nowadays a part of ZSM since 2020;

NHMUK – National Museum of Natural History (formerly: The Natural History Museum, London, U.K.);

RYB – collection of Roman Yakovlev (Barnaul, Russia);

ZFMK – Zoological Research Museum Alexander Koenig (Bonn, Germany);

ZISP – Zoological Institute (Saint-Petersburg, Russia);

ZSM – Zoologische Staatssammlung der Bayerischen Staaten (Munich, Germany).

The male and female genitalia were mounted in euparal on slides following Lafontaine and Mikkola (1987) and examined with an Olympus SZX16 microscope. The images were taken with the digital camera CMOS 20.7 megapixels and processed using Corel Photo-Paint 2017 software.

Taxonomical part

Genus *Stueningeria* Lehmann, 2019

Lehmann, 2019, *Heterocera Sumatrana* 13(2): 52, Figs 1–6.

Type species (by original designation): *Stueningeria nepalensis* Lehmann, 2019.

Stueningeria nepalensis Lehmann, 2019

Figs 1–3, 16, 27

Lehmann, 2019, *Heterocera Sumatrana* 13(2): 55, Figs 1–6.

Type locality: Nepal, Kathmandu Valley, Godavari (Lalitpur District, Bagmati Zone, Central Region).

Type material: holotype (male) in ZFMK.

Material examined. **Nepal:** 2 males, Nepal, Annapurna Himal, valley of Kali Gandaki, 1300 m, near Tatopani, 83°39'E, 28°29'N, 03.vi.1996, leg. Gy.M. Laszlo and G. Ronkay (GenPr MWM: 28.023); 2 males, Nepal, Kathmandu, 1320 m, 9–11.vi.1993, leg. M. Hreblay, G. Csorba (MWM); 1 male, Nepal, Annapurna Himal, 1700 m, 1 km N of Tal, 84°23'E 28°28'N, 08.vi.1996, leg. Hreblay & Szaboky (MWM); 1 male, Nepal, Annapurna Himal, Naya Pul at Birethanti, 1050 m, 26.iv.1995, 83°46'E; 28°12'N, leg. Lajos Szecsenyi & Atilla Szabo (GenPr MWM: 28.025); 1 male, Nepal, Godawar, 16 k SE Kathmandu, 27°34'N; 85°23'E, 1500 m, 23.v.1989, legit. Schnitzler (MWM); **India:** 4 males, India, Kumaon Himalaya Distr., Naini Tal, Bhim Tal, 1500 m, 10.v.1971, leg. de Freina (GenPr MWM: 28.022); 5 males, NW India, Bhimtal, 1500–2500 m, 5.vi.1982, leg. Smetacek (MWM); 3 males, same data, 7.vi.1979 (GenPr MWM: 32.909).

Diagnosis. In the contrasting discal spot on the fore wing, the species is most close to *S. phaga* (Swinhoe, 1894) and *S. htetae* Yakovlev & Zolotuhin **sp. nov.** From which it differs in a dimmer color and in the blunt apex of the harpe on the sacculus edge of the valve.

Distribution. Nepal, India (Uttarakhand).

Stueningeria campbelli (Hampson, 1910) **comb. nov.**

Figs 4, 24

Arbela Campbelli Hampson, 1910, *Journ. Bombay Society* 20: 97

Type locality: Madras, Horsleykonda [Horsley Hills, 13.651105 N / 78.403806 E].

Type material: holotype (female) in NHMUK, examined.

Material examined. Holotype (female), **S. India**, Horsleykonda, Campbell, 1908, 262 (NHMUK, slide NHMUK: Coss-260♀).

Redescription. We know only one specimen of this species (holotype, female). Length of fore wing 13 mm. On fore wing, reticulated pattern of wide light-brown spots and transverse thin light lines. Hind wing light-brown, with poorly expressed reticulated pattern. Fringe on all wings mottled, light between veins, brown at veins.

Female genitalia (Fig. 24). Papillae anales conical, apically semicircular; apophyses anteriores and posteriores short, apophyses anteriores 3 times longer than apophyses posteriores; antrum sclerotized, narrow, funnel-like; ductus long, bursa absent on preparation.

Notes. The original description (Hampson 1910: 97) contains two significant mistakes. Firstly, the holotype is a female, not a male, as indicated in the description. Secondly, there is a mistake in the name of the type habitat. Hampson gives a non-existent locality, “Madras. Horsleyhonda”, while on the geographical label of the holotype we clearly see “S[outhern]. India, Horsleykonda”.

Biology. Larva lives in stem of *Ochna squarrosa* L. (Ochnaceae) (Hampson 1910).

Distribution. India (Andhra Pradesh).

Etymology. William Howard Campbell (1859–1910) was an Irish Presbyterian missionary who worked with the London Missionary Society in southern India. He was a member of the Bombay Natural History Society who collected specimens, mostly of moths, and made natural history observations during his travels between 1901 and 1908 (Mackenzie 1910).

***Stueningeria phaga* (Swinhoe, 1894) comb. nov.**

Figs 5–6, 17

Arbela phaga Swinhoe, 1894, Ann. Mag. Nat. Hist. 6 (14): 440.

Type locality: Cherra Punji.

Type material: holotype (female) in NHMUK, examined.

Material examined. Holotype (female) Khasi Hills, Cherra Punji (NHMUK); 1 male, India [Assam], Cachar, Silchar, Kanny-Koory, 12.iv.1907, C.B. Antram, “Moths of Bark eating borer caterpillar on Mango, Siris [*Albizia lebbek* (L.) Benth. (Fabaceae)] and other trees. Bred from mango tree” (NHMUK, individual number NHMUK: 012832501; slide NHMUK: 010315532).

Redescription. Male. Length of fore wing 13 mm. In cubital area of fore wing, from base to middle of wing, portion with long white androconium scales. Brown reticulated pattern on fore wing, with more contrasting dark-brown spots on light-brown background, expressed band of separate dark-brown spots postdiscally (from distal third of costal edge to medium third of rear edge). Hind wing light-brown, without pattern. Fringe on all wings mottled, light between veins, brown at veins.

Male genitalia (Fig. 17). Uncus wide, with extended semicircular bifurcation apically, apical halves of uncus diverging at a right angle, wide, shirt, apices of uncus halves smooth; scaphium and subscaphium fused into long spindle-like tube; gnathos arms short, lamellar; gnathos lamellar, with long thin lateral processes; valve short, with strongly curved semicircular costal edge and poorly curved saccular and outer edges; saccular edge (in basal half) strongly sclerotized, tubulate, with acute pyramidal harpe directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus 2.5 times shorter than valve, thick, with robust spiky Cornutus in distal third, directed proximally.

Female. Length of fore wing 18 mm. Pattern the same as that of male. Setae on antennae shorter than those of male.

Female genitalia not studied.

Diagnosis. Externally, the species is most close to *S. nepalensis* and *S. htetae*, from which it differs in the acute harpe on the saccular edge of the valve.

Biology. Larva lives in the bark of *Mangifera indica* L. (Anacardiaceae) and *A. lebbeck*.

Distribution. India (Meghalaya and Assam).

***Stueningeria htetae* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:5457BA28-7AFC-454B-B216-F7499849C569>

Figs 7, 18, 28

Material examined. Holotype. Male, Myanmar (Burma), 21 km E Putao, Nan Sa Bon village, 550 m, 1–5.v.1998, leg. Murzin & Siniaev (MWM, GenPr-Heterocera MWM – 28.019). Paratypes: 8 males, same locality (MWM); 6 males, Myanmar (Burma), 25 km E Putao, env. Nan Sa Bon village, 800 m, 6–9.v.1998, leg. Murzin & Siniaev (MWM); 1 male, Myanmar (Burma), Putao, 500 m, 27.iv.1998, leg. Murzin & Siniaev (MWM); 1 male, Myanmar (Burma), 40 km N Myitkyina, Chanc Kand village, 236 m, 23–24.iv.1998, leg. Murzin & Siniaev (MWM).

Description. Length of fore wing 15 mm. Antenna short, bipectinate, setae in medium third of antenna twice longer than antenna rod diameter, thorax and abdomen from above covered with long brown scales, long modified scales on apex of abdomen. Fore wing light-brown with bright brown round spots along costal and lower edges and in discal cell, oblique band of small brown spots from top area of costal edge to medium third of lower edge; portions with long grey-white androconium scales cubitally (from base to postdiscal area), at base of radial veins and postdiscally. Hind wing light-brown with poorly developed blurred brown pattern. Fringe on all wings mottled, light between veins, brown at veins.

Male genitalia (Fig. 18). Uncus wide, with extended semicircular bifurcation apically, apical halves of uncus diverge at a right angle, wide, short, apices of halves concave; scaphium and subscaphium fused into long spindle-like tube; gnathos arms short, lamellar; gnathos lamellar with long thin lateral processes; valve short with semicircular costal edge, saccular and outer edges slightly curved; saccular edge (in basal half) strongly sclerotized, tabulate, distally sharply cut, with pyramidal harpe directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus 2.5 times shorter than valve, thick, in distal third with robust spiky cornutus directed distally.

Female unknown.

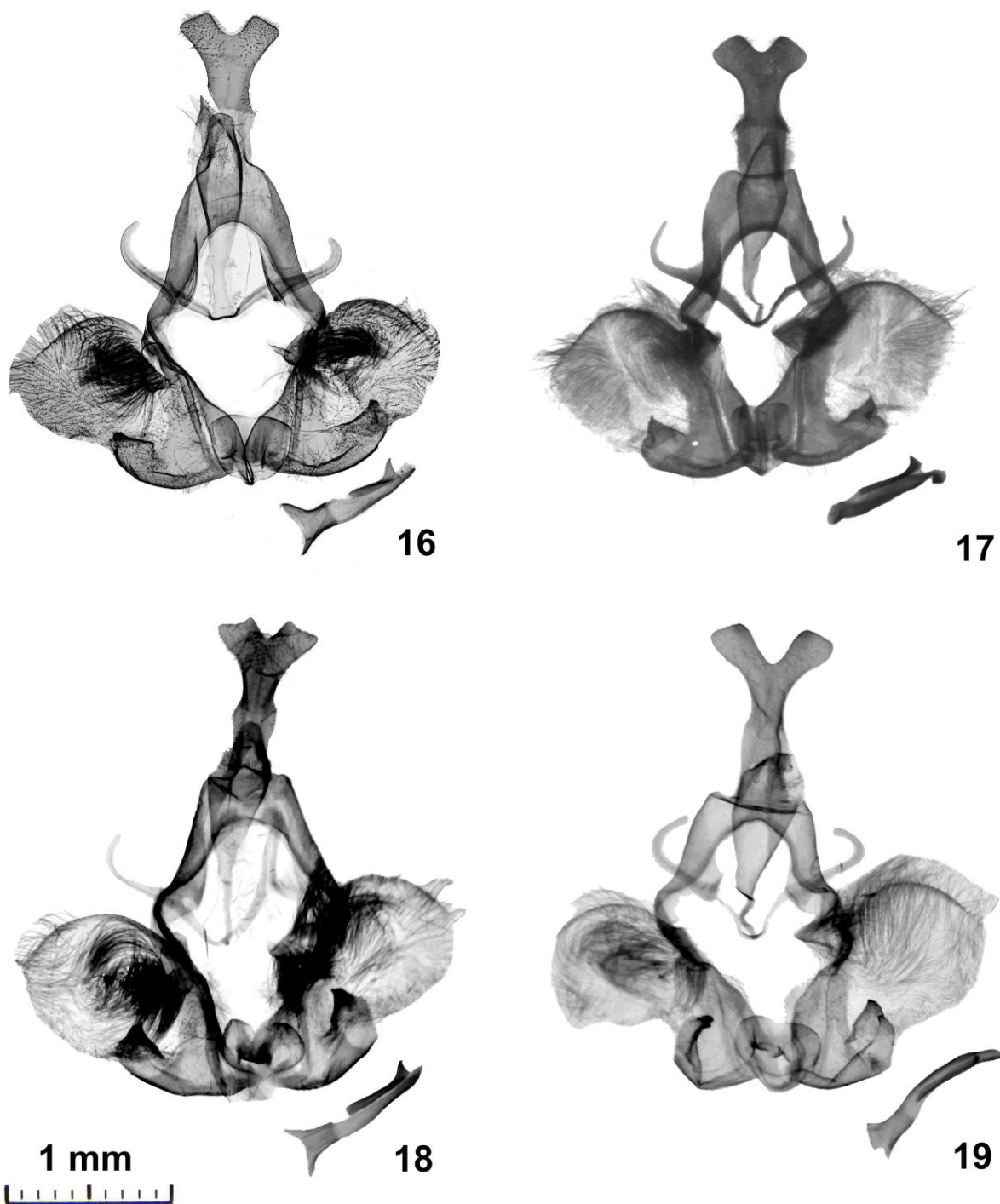
Diagnosis. The new species is most close to *S. nepalensis*, from which it differs in the clearly expressed androconium portions on the fore wing, the poorly developed postdiscal band on the fore wing, the concave halves of the uncus, and the saccular sclerotized edge which is distally sharply cut.

Distribution. Northern Myanmar (Kachin State).

Etymology. The new species is named after Ms. Htar Htet Htet – Former Myanmar beauty queen, who sided with the partisans against the military junta during the 2021 coup in Myanmar.



Figures 1–15. Adult specimens of *Stueningeria*: 1. *S. nepalensis*, male, Nepal, Annapura Himal (MWM); 2. *S. nepalensis*, male, Nepal, Annapura Himal (MWM); 3. *S. nepalensis*, male, India, Kumaon-Himalaya (MWM); 4. *S. campbelli*, female, holotype (NHMUK); 5. *S. phaga*, female, holotype (NHMUK); 6. *S. phaga*, male, India, Assam (NHMUK, individual number NHMUK: 012832501); 7. *S. htetae*, male, holotype (MWM); 8. *S. csovarii*, male, holotype (MWM); 9. *S. csovarii*, female, paratype (MWM); 10. *S. loeffleri*, male, holotype (MWM); 11. *S. ihlei*, male, holotype (ZISP); 12. *S. murzini*, male, holotype (MWM); 13. *S. murzini*, female, paratype (MWM); 14. *S. pinratanai*, male, holotype (MWM); 15. *S. pinratanai*, female, paratype (MWM).



Figures 16–19. Male genitalia of *Stueningeria*: 16. *S. nepalensis*, India, Kumaon-Himalaya GenPr MWM: 32.909; 17. *S. phaga*, India, Assam (slide NHMUK: 010315532); 18. *S. htetae*, holotype (GenPr MWM: 28.019); 19. *S. csovarii*, holotype (GenPr MWM: 28.020).

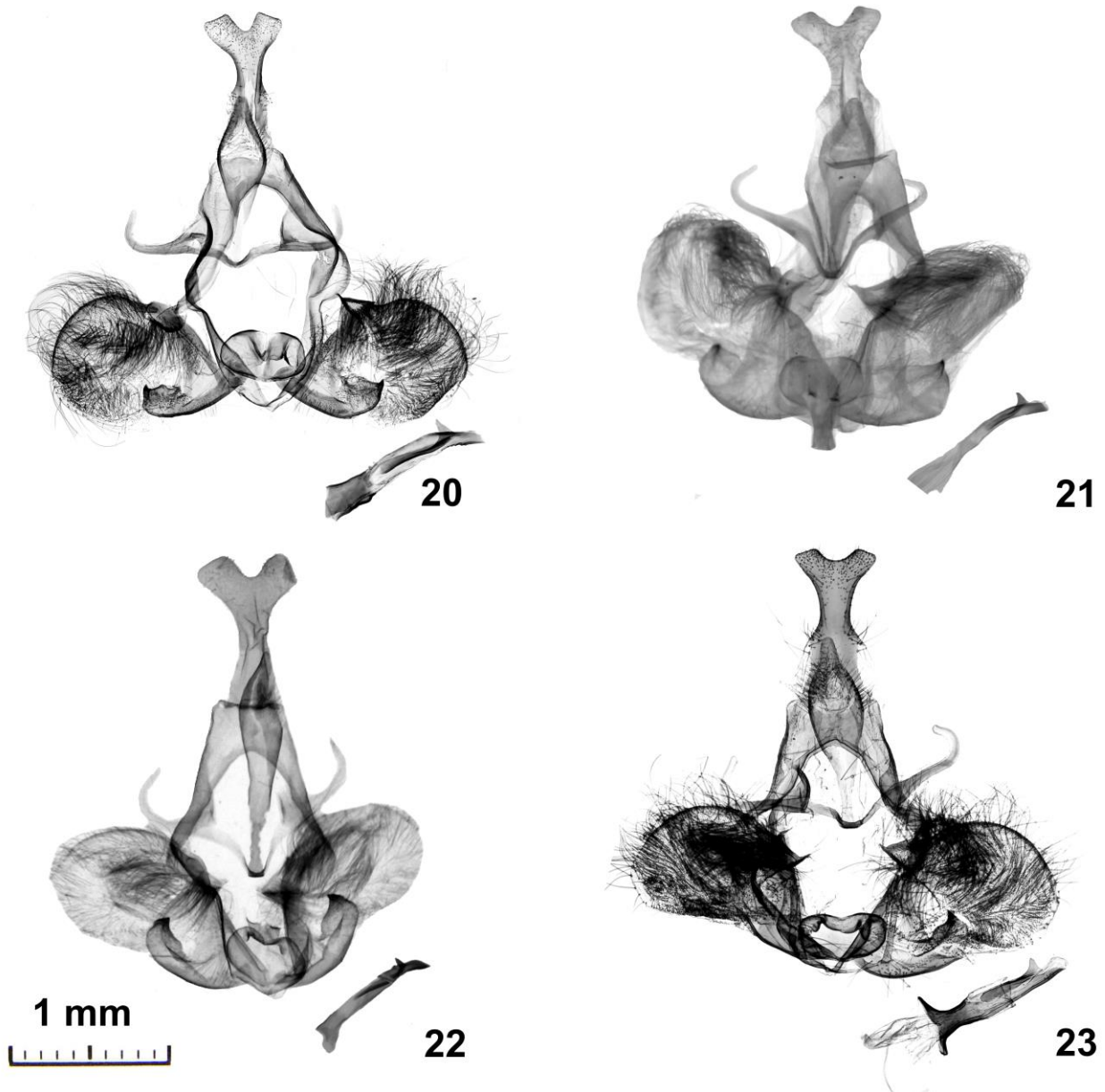
***Stueningeria csovarii* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:DE0C3CBF-2947-4B87-A7F8-BE88565B4049>

Figs 8–9, 19, 25, 29

Material examined. Holotype. Male, Thailand, Changwat Nan, 15 km N of Bo Luang, 1000 m, 7.iv.1998, leg. Tibor Csovári & Pal Steger (MWM, GenPr-Heterocera MWM – 28.020). Paratypes: 1 male, 1 female, same locality (MWM, GenPr-Heterocera MWM – 32.907).

Description. Length of fore wing 14 mm. Antenna short, bipectinate, setae in antenna medium third twice longer than antenna rod diameter, thorax and abdomen covered with long brown scales (except for medium third of abdomen which is covered with light-grey scales, abdomen apically with long modified scales. Fore wing very mottled, bright, with bright brown spots of various shape and size throughout all wing area, thin creamy lines between spots; oblique band submarginally expressed from R_2 to CuA_2 ; long narrow crescent spot of grey androconium scales cubitally (from base to tornal angle), two short thin portions of grey androconium scales between radial trunk veins; marginal area and fringe mottled (with alternating brown and creamy spots). Hind wing light-brown with poorly expressed blurred dark-brown pattern, anal edge creamy, without pattern, marginal area and fringe mottled (with alternating brown and creamy spots).



Figures 20–23. Male genitalia of *Stueningeria*: 20. *S. loeffleri*, holotype (GenPr MWM: 32.908); 21. *S. ihlei*, holotype (slide RYB 2017/5); 22. *S. murzini*, holotype (GenPr MWM: 28.018); 23. *S. pinratanai*, holotype (GenPr MWM: 32.906).

Male genitalia (Fig. 19). Uncus with deep semicircular bifurcation, uncus halves slightly extended apically, relatively long; scaphium and subscaphium fused into wide short spindle-like tube; gnathos arms short, lamellar; gnathos lamellar with long thin lateral processes; valve short with semicircular costal edge, slightly

curved saccular and outer edges; saccular edge (in basal half) strongly sclerotized, tubulate, distally sharply cut, short, with pyramidal twin-peaked harpe directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus twice shorter than valve, poorly curved in medium third, relatively thin, with small spiky cornutus in distal third.

Female (Fig. 9). Length of fore wing 12 mm. Antenna short, bipectinate, setae in medium third of antenna 1.5 times longer than antenna rod diameter, thorax and abdomen from above covered with light-grey scales, abdomen apically with long modified brown scales. Fore wing creamy with poorly expressed brown pattern of small spots along costal edge and submarginally, big brown spot in discal cell, slight sputtering of brown scales throughout all wing area. Hind wing light-brown with poorly expressed dim dark-brown pattern, anal angle creamy without pattern. Fringe on all wings mottled, light between veins, dark at veins.

Female genitalia (Fig. 25). Ovipositor very short, papillae anales semicircular, anterior apophyses almost equal to posterior apophyses in length, short, antrum strongly sclerotized, elongated, funnel-like; ductus wide, smoothly passing into small bursa copulatrix without signa.

Diagnosis. Externally, the new species is similar to *S. ihlei* sp. nov. and *S. pinratanai* sp. nov., from which it differs in very narrow androconium portions in the radial area of the fore wing, in the long distal halves of the uncus and in the twin-peaked harpe on the saccular edge of the valve. From *S. loeffleri* the new species differs in the absence of small serrations on the phallus.

Distribution. Thailand (Nan Province).

Etymology. The new species is named after the entomologist Tibor Csovari – the new species collector.

***Stueningeria loeffleri* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:F7177DAD-E401-489F-BFBF-53F7DB9B1F19>

Figs 10, 20

Material examined. Holotype. Male, Thailand, Sakhon Nakhon Prov., Phu Pan NP, 400 m, 22–27.iv.2004, ex coll. S. Loeffler (MWM; GenPr Heterocera – 32.908).

Description. Male. Length of fore wing 14 mm. Antenna short, bipectinate, setae in medium third of antenna twice longer than antenna rod diameter, thorax and abdomen from above covered with long brown scales (except for medium third of abdomen, covered with light-grey scales), abdomen apically with long modified scales. Fore wing creamy with mottled pattern of brown spots of various shape and size throughout all wing area, thin creamy lines between spots; dark-brown stroke in discal cell at base, big dark-brown spot at top of discal cell; narrow crescent portion of grey androconium scales cubitally (from base to middle of wing in length); small androconium portion of the same scales in radial area; marginal area and fringe mottled (with alternating brown and creamy spots). Hind wing light-brown without pattern, anal edge creamy, without pattern, fringe mottled (with alternating brown and creamy spots).

Male genitalia (Fig. 20). Uncus wide, with extended semicircular bifurcation apically, apical halves of uncus diverging at a right angle, wide, short, halves of uncus apically almost smooth; scaphium and subscaphium fused into short wide spindle-like tube; gnathos arms short, lamellar; gnathos lamellar, with long thin lateral processes; valve short with equally rounded edges; saccular edge strongly sclerotized in basal half, tubulate, with short pyramidal harpe directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus 2.5 times shorter than valve, thick, in distal third with robust spiky cornutus, directed proximally, and small serrations on abdominal surface.

Female unknown.



Figures 24–26. Female genitalia of *Stueningeria*: 24. *S. campbelli*, holotype (slide NHMUK: Coss-260♀); 25. *S. csovarui*, paratype (GenPr MWM: 32.907); 26. *S. pinratanai*, paratype (GenPr MWM: 32.905).

Diagnosis. The new species is most close to *S. ihlei* sp. nov., *S. csovarui* sp. nov. and *S. pinratanai* sp. nov., from which it differs in the lighter color, the short androconium portion in the cubital area and the serrations on the abdominal surface of the phallus.

Distribution. Thailand (Sakhon Nakhon Province).

Etymology. The new species is named after the entomologist Swen Löffler – the collector of the new species.

***Stueningeria ihlei* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:351A567A-A75E-42A2-ABD6-6D2157EEABE4>

Figs 11, 21, 30

Material examined. Holotype. Male, Vietnam (C.), Prov. Thua-Thien-Hue, Kreis A Luoi, Gemeinde A Rong, Passastrasse ca. 30 km S A Luoi, Naturschutzgebiet / Regenwald, N 16°06.425'; E 107°26.338', 01–02.iv.2009, 750 m, leg. Swen Löffler, Thomas Ihle & Hoa Binh Nguyen, coll. S. Löffler (ZISP, slide RYB 2017/5). Paratypes. 1 male, Central Vietnam, Gia Lai Prov., Kon Ka Kinh NP, general office, 820 m, 14°11.32'N/ 108°18'E, 12–13.iii.2012, leg. V. Zolotuhin (MWM, GenPr-Heterocera MWM – 28.012); 2 males, Sued-Vietnam, Bao Loc, Rung Cat Tien, 1500 m, 11°32'N 107°48'E, 10–20.xii.1992, leg. Sinajev & Simonov (GenPr MWM: 28.021).

Description. Male. Length of fore wing 13 mm. Antenna short, bipectinate, setae in medium third of antenna twice longer than antenna rod diameter, thorax and abdomen from above covered with long brown scales (except for medium third of abdomen covered with light-grey scales), abdomen apically with long modified scales. Fore wing very mottled, bright, with bright brown spots of various shape and size throughout all wing

area; wide creamy lines between spots; oblique band submarginally, expressed from R_2 to CuA_2 , consisting of semicircular brown spots; in discal cell bright black stroke cut with thin transverse creamy lines; cubitally (from base to tornal angle) long narrow crescent portion of grey androconium scales; two wide short portions of grey androconium scales between veins of radial trunk; marginal area and fringe mottled (with alternating brown and creamy spots). Hind wing light-brown with poorly expressed reticulated dark-brown pattern, anal angle light-grey without pattern, marginal area and fringe mottled (with alternating brown and creamy spots).

Male genitalia (Fig. 21). Uncus wide, with extended semicircular bifurcation apically, apical halves of uncus diverging at a right angle, wide, short, apices of uncus halves almost smooth; scaphium and subscaphium fused into long extended spindle-like tube; gnathos arms short, lamellar; gnathos lamellar with long thin lateral processes; valve short with equally rounded edges; saccular edge (in basal half) strongly sclerotized, tubulate, with very short pyramidal harpe directed dorsally; juxta lamellar, robust; saccus practically reduced; phallus 2.5 times shorter than valve, thick, in distal third with robust spiky cornutus directed at a right angle towards phallus axis.

Female unknown.

Diagnosis. The new species is close to *S. ihlei* sp. nov. and *S. pinratanai* sp. nov., from which it differs in the very mottled pattern and the very small harpe on the saccular edge of the valve. From *S. loeffeleri* the new species differs in the absence of serrations on the phallus.

Distribution. Vietnam (Thua-Thien-Hue Province).

Etymology. The new species is named after the entomologist Thomas Ihle – the collector of the new species.

***Stueningeria murzini* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:493B8753-ACD7-493D-8A90-74DF54270340>

Figs 12–13, 22, 31

Material examined. Holotype. Male, China, SW Yunnan, Xishuanbanna, Guanping env., 1000 m, 60 km N Jinghong, 28–30.iv.2003, leg. S. Murzin (MWM, GenPr-Heterocera MWM – 28.018). Paratypes: 2 males, same locality (MWM); 1 female, China, W. Yunnan, Mou Ding county, 1300 m, 25°19'N / 100°32'E, 16.iii.–10.iv.2000, leg. Brechlin's loc. coll (MWM); 1 male, Yunnan, Manxi Ba Mts., Simao distr., 18 km S Simao city, 16.iii.–10.iv.2000, ex coll. R. Brechlin (MWM).

Description. Male. Length of fore wing 13–13.5 mm. Antenna short, bipectinate, setae in medium third of antenna twice longer than antenna rod diameter, thorax and abdomen from above covered with long brown scales (except for medium third of abdomen, covered with light-grey scales), abdomen apically with long modified scales. Fore wing with blurred brown pattern, brown spots in discal cell; cubitally (from base to tornal angle) long, relatively wide crescent portion of grey androconium scales, between veins of radial trunk – two relatively wide short portions of grey androconium scales; marginal area and fringe mottled (with alternating brown and creamy spots). Hind wing light-grey with poorly expressed reticulated dark-grey pattern, anal angle creamy without pattern, marginal area and fringe mottled (with alternating brown and creamy spots).

Male genitalia (Fig. 22). Uncus wide, with wide semicircular bifurcation apically, apical halves of uncus diverging at a right angle, wide, short, apices of uncus halves almost smooth; scaphium and subscaphium fused into long, relatively narrow spindle-like tube; gnathos arms short, lamellar; gnathos lamellar, with long thin lateral processes; valve short with equally rounded edges; saccular edge (in basal half) strongly sclerotized, tubulate, curved in distal third, with pyramidal harpe directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus 2.5 times shorter than valve, thick, in distal third with robust spiky cornutus directed at a right angle to axis of phallus.

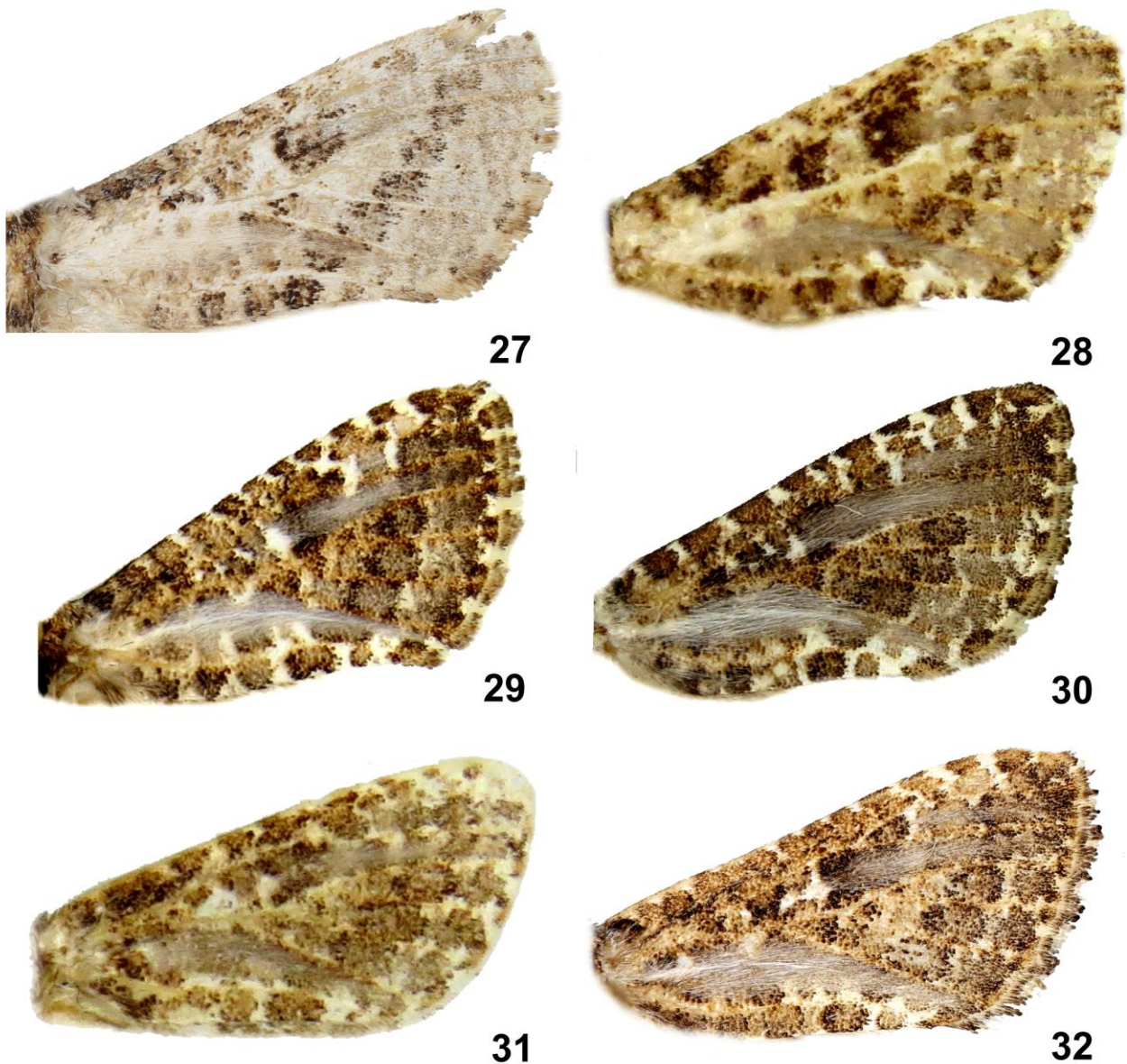
Female (Fig. 13). Length of fore wing 17 mm. Antenna bipectinate, setae 1.5 times longer than antenna rod diameter. Thorax and abdomen (except for base of abdomen covered with brown scales) covered with creamy scales. Fore wing creamy with small brown spots along costal edge, brown strokes basally, underlining discal cell from below, brown stroke at top of discal cell, postdiscally – short oblique band from R_5 to CuA_1 consisting of three round brown spots, postdiscally and submarginally – dense sputtering of brown scales. Hind wing creamy with dense reticulated brown pattern of strokes. Fringe on all wings mottled, light at veins, brown between veins.

Female genitalia not studied.

Diagnosis. The new species clearly differs from all the species of the genus in the blurred brown pattern, in the curved end of the sclerotized saccular edge of the valve, and in the large females.

Distribution. China (Yunnan Province, south-western part).

Etymology. The new species is named after the collector of the type series – Sergej Murzin (Moscow).



Figures 27–32. Forewings of males of *Stueningeria*: 27. *S. nepalensis*, India; 28. *S. htetae*, holotype; 29. *S. csovarui*, holotype; 30. *S. ihlei*, holotype; 31. *S. murzini*, holotype; 32. *S. pinratanai*, holotype.

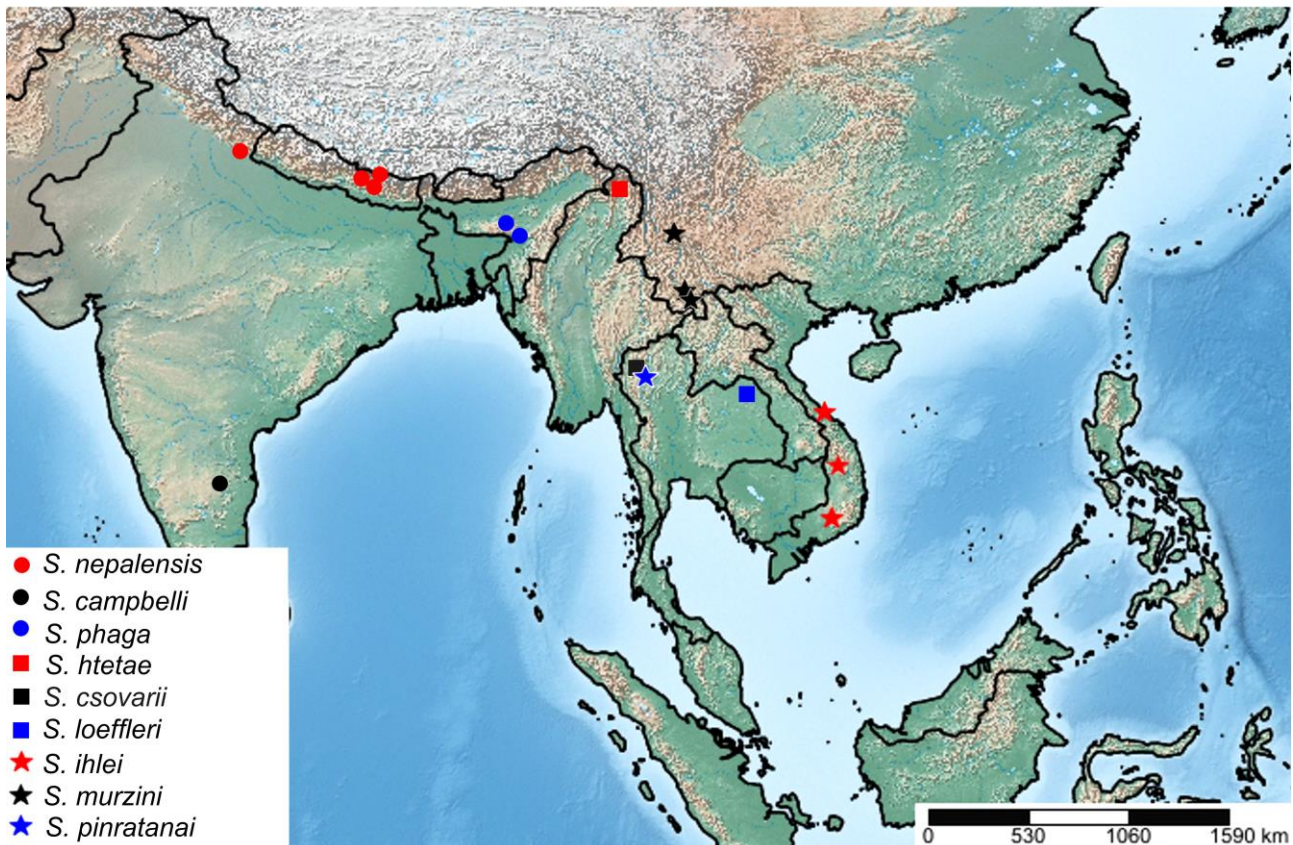


Figure 33. Distributional map of genus *Stueningeria*.

***Stueningeria pinratanai* sp. nov.**

<https://zoobank.org/urn:lsid:zoobank.org:act:9F99A1DE-04F5-41EA-94C1-6D4AF5F1E473>

Figs 14–15, 23, 26, 32

Material examined. Holotype, male, NW Thailand, Chiangmai, Doi Pui Forest Res. Stat., 7.iv.1988, 1450 m (MWM). Paratypes: 12 males, 2 females, same locality (MWM).

Description. Male. Length of fore wing 12–13.5 mm. Antenna short, bipectinate, setae in medium third of antenna 2 times longer than antenna rod diameter, thorax and tegulae from above covered with long brown scales (except for medium third of abdomen covered with light-grey scales), abdomen apically with long modified scales. Fore wing light-brown with bright pattern of dark-brown elements: series of spots along costal edge of wing, spots in discal cell, postdiscally and submarginally; in cubital area (from base to tornal angle) long crescent portion of grey androconium scales extended in medium third, two wide short portions of grey androconium scales between radial trunk veins; border creamy. Hind wing light-grey, without pattern, anal edge creamy without pattern, border dark-grey. Fringe on all wings mottled, light between veins, brown at veins.

Male genitalia (Fig. 23). Uncus wide, with extended semicircular bifurcation apically, apical halves diverging at right angle, wide, short, apices of uncus halves almost smooth; scaphium and subscaphium fused into long extended spindle-like tube; gnathos arms short, lamellar; gnathos lamellar, with long thin lateral processes; valve short, with equally rounded edges; saccular edge (in basal half) strongly sclerotized, tubulate, with pyramidal, apically acute harpe, directed dorsally; juxta lamellar, robust; saccus almost reduced; phallus 2.5 times shorter than valve, very thick, in distal third with robust spiky cornutus directed at right angle to phallus axis.

Female (Fig. 15). Length of fore wing 14.5 mm. Antenna bipectinate, setae 1.5 times longer than antenna rod diameter. Pattern analogous to that of male, but significantly dimmer.

Female genitalia (Fig. 26). Ovipositor very long, papillae anales semicircular, anterior apophyses almost equal to posterior apophyses in length, short, thick; antrum strongly sclerotized, elongated, funnel-shaped, slightly narrowing in medium third; ductus wide, smoothly passing into small bursa copulatrix, bursa without signa.

Diagnosis. The new species is most close to *S. ihlei* sp. nov. and *S. csovarii* sp. nov., from which it differs in the wider androconium portion in the cubital area. From *S. loeffeleri* it differs in the absence of small serrations on the phallus. Additionally, in contrast to other species, the females of which are known, the species is characterized by a weak sexual dimorphism.

Distribution. Thailand (Chiangmai Province).

Etymology. The new species is named after Bro. Amnuay Pinratana (1930–2017), ex headmaster of St. Gabriel's College, Bangkok, a well-known Thai entomologist, who oversaw the publication of a series of books on the nature of Thailand.

Discussion

Thus, the genus *Stueningeria* currently includes 9 species (Fig. 32) distributed in the continental part of Southern and South-Eastern Asia: from southern slopes of the Himalayas in India and Nepal, locally in Hindustan, in the East – throughout Indochina.

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