A Revision of the Noctuid Moths of the Genus *Sugitania* (Insecta, Lepidoptera)

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Abstract. Noctuid moths of the genus *Sugitania* are revised. Five species and one subspecies are recognized in the genus including a new species, *Sugitania chengshinglini* Owada et Tzuoo, from Guangdong and Taiwan and a new subspecies, *Sugitania uenoi sinovietnamica* Owada et Wang, from northern Vietnam and Guangdong. *Sugitania akirai* Sugi, 1990, was newly found in northern Vietnam and Guangdong. For each species and subspecies, diagnostic features and distribution are described in detail, and all the imagines and genitalia are illustrated.

Key words: Lepidoptera, Noctuidae, *Sugitania*, revision, new species, new subspecies, East Asia, Southeast Asia.

The genus *Sugitania* was erected by Matsumura (1926) on the basis of *Sugitania maculifera* Matsumura, 1926 from Kyoto and Kobe, western Honshu, Japan. Sugi (1958) synonymized *S. maculifera* with *Graphiphora lepida* Butler, 1879, and illustrated a female imago and male genitalia under the name of “*Sugitania lepida*”. This genus has been regarded as being monotypic for long time (Sugi, 1982). Sugi (1990) revised his misidentification, described two new species, *Sugitania clara* and *S. akirai*, from Japan, and recorded a female specimen from Vietnam under the name of *S. lepida*, which is considered in this study as a different subspecies of *S. uenoi* Owada, 1995 from Taiwan.

Moths of *Sugitania* are winter noctuids and difficult to collect in mountainous areas of southern countries. They are so similar in wing maculation that we studied genitalia of specimens collected in Taiwan, South China and Vietnam carefully. The male and female genitalia are good features for separating species, and the female 7th abdominal segments are also important for diagnosis as in some moths of *Eupsilia* (Yoshimoto, 1985). In Taiwan and Guangdong, we found another species of *Sugitania*, which is closely related to *S. clara*, the northernmost species distributed from central Korea to Hokkaido. In Vietnam and Guangdong, we collected several specimens, which can be identified with *S. uenoi* in view of the male genitalia and have a wing maculation somewhat different from that of the nominotypical population in Taiwan. In this paper, we are going to describe a new species and a new subspecies, to add new distribution records, and to revise the genus *Sugitania*.

The specimens examined in this study are preserved in the following institutions: The Natural History Museum, London (BMNH), Entomological Laboratory, Hokkaido University, Sapporo (ELHU), Hungarian Natural History Museum, Budapest (HNHM), National Institute of Agro-Environmental Science, Tsukuba (NIAS), National Museum of Natural Science, Taichung (NMNS),
Department of Zoology, National Museum of Nature and Science, Tokyo (NSMT), South China Agricultural University, Guangzhou (SCAU).

Genus *Sugitania* Matsumura, 1926


Diagnosis and notes. As is shown in Figs. 1–24, moths of this genus have unique forewing maculation. The male genitalia are asymmetrical, the costal process of right valva is markedly elongate and curved, and the cucullus is not developed. In the female genitalia, the antrum is shallow, and the lamella antevaginalis is produced posteriorly, forming a process. The ductus bursae and corpus bursae are rather similar to those in *Eupsilia* (Yoshimoto, 1985) and *Rhyndchaglaea* (Owada et al., [2007]), to which *Sugitania* is closely related.

*Sugitania akirai* Sugi, 1990

(Figs. 1–5)

*Sugitania akirai* Sugi, 1990: 59, figs. 3 (male paratype), 5 (male genitalia, paratype), 8 (female genitalia, paratype); Owada, 1995: figs. 5 (male), 8 (male genitalia).


Other specimens examined. Vietnam: Lao Cai, Sa Pa, 1,300 m, 1♂ (Fig. 1), 17–18. XII. 2001, Koji Suzuki leg. China: Guangdong, Nanling Nature Reserve, 900–1,400 m, 1♂1♀, 3–6. XII. 2008, L. S. Chen *et al*. leg., same locality, 1♂ (Fig. 2), 25–30. XII. 2003, M. Wang *et al*. leg., same locality, 1,500 m, 1♀, 25–30. XII. 2002, M. Wang *et al*. leg., same locality, 700 m, 1♀ (Fig. 3), 29. XII. 2002, M. Wang *et al*. leg., same lo-
cality, 1♀, 1,400 m, 15. IX. 2009, H. Wang et al. leg. Kyushu: Kumamoto, Mt. Shigemi, 1♀ (Fig. 4), 9. XI. 1991, Y. Yanagita leg. Honshu: Aichi, Toyota, Mt. Sanageyama, 500 m, 1♂ (Fig. 5), 11–12. XI. 1994, M. Owada & H. Endo leg.

Distribution. Japan (Kyushu, Shikoku, Honshu). New to northern Vietnam and China (Guangdong).

Diagnosis and notes. In the genus *Sugitania*, this species is rather small, and the thorax is covered with red brownish scales. In the forewing, the ground colour is more tinged with grey, and the postmedial line is edged anteriorly with red brown below the reniform stigma to the dorsum. In the male genitalia (Fig. 25), the vinculum is long, the costal process of valva is markedly curved, and the dorsal margin is corrugated and rugged. In the female genitalia (Figs. 30–31), the antrum is very shallow, the process of lamella antevaginalis is short, the ductus bursae is not well sclerotized, 7th tergite is moderate, 7th sternite is elongate and the distal margin is convex at the centre, forming a V-shape.

*Sugitania uenoi uenoi* Owada, 1995

(Fig. 6)

*Sugitania uenoi* Owada, 1995: 222–223, figs. 1 (male holotype), 6 (male genitalia, holotype).

Type series. Holotype of *Sugitania uenoi* Owada, 1995, male, Taiwan, Taoyuan, Fusing, Suleng, 1,000 m in alt., 23. I. 1992, Mamoru
Figs. 32–34. Female genitalia of *Sugitania* spp. a: 7th sternite, b: 7th tergite. 32, 33. *S. uenoi sinovietnamica* Owada et Wang, subsp. nov. 32. Pia Oac, N. Vietnam, NSMT2662. 33. Nankunshan, Guangdong, NSMT2588. 34. *S. lepida* (Butler, 1879), Mt. Takao, Tokyo, Honshu, NSMT2668.
Distribution. Taiwan.

Diagnosis and notes. This subspecies has a wing maculation which is very similar to that of *S. lepida*. In the male genitalia, the vinculum is long, a little broader than that of *S. akirai*, the costal processes of valvae are flattened and markedly developed, the left process is broad and waved, and the right one is irregularly waved.

*Sugitania uenoi sinovietnamica*

Owada et Wang, subsp. nov.

*(Figs. 7–10)*

*Sugitania leida*: Sugi, 1990: 56, part, fig. 9 (female genitalia), nec Butler, 1879.

Type series. Holotype ♂ (Fig. 7), China, Guangdong, Huizhou, Nankunshan, 900–1,000 m, 2–3. I. 2004, M. Wang *et al*. leg., Genitalia Slide No. NSMT2587♂, in SCAU, Guangzhou. Paratypes: Same data as holotype, 1 ♀ (Fig. 8), Genitalia slide No. NSMT2588; Guangdong, Shaoguan, Nanling Nature Reserve, 1♂, 3–6. XII. 2008, L. S. Chen *et al*. leg., 1 ♀ (Fig. 9), 27. XII. 2003, M. Wang *et al*. leg., Genitalia Slide No. NSMT2674; Guangxi, Dayao Shan, Jingxiu, 1,700 m, 24°07′N, 110°14′E, 1♂, 15–30. XI. 2006, V. Siniaev & Team leg., ex Dr. P. Gyulai Colln.; Guangxi, Moi Shan, near Guanyang, 1,500 m, 25°16′18″; 34′N, 111°08′E, 1♂, 2–20. XII. 2005; Vietnam, Cao Ban, Mt. Pia Oac, 1 ♀ (Fig. 10), 11–13. XII. 2001, K. Suzuki leg.; Vietnam, Vinh Phu, Tam Dao, 1,200 m, 1♂, 20. I. 1986, Genitalia Slide No. SS5911♂; preserved in NSMT, SCAU, HNHM and NIAS.

Distribution. Vietnam, China (Guangdong).

Diagnosis and notes. This subspecies is considered to be an Asian continental population of the nominotypical subspecies form Taiwan in view of the similarity of the male genitalic features. In *S. uenoi sinovietnamica*, a distinct pale mark is present in the subterminal line on the dorsum, while such a mark is absent in *S. uenoi uenoi* and other *Sugitania* species. Since we are able to examine a series of specimens from Vietnam and South China, we have come to the conclusion that the female, which was recorded by Sugi (1990) from Vietnam under the name of “*S. lepida*”, is nothing but this subspecies.

In the female genitalia, the antrum is shallower than that of *S. lepida*, the process of lamella antevaginalis is very long, the cervix bursae is smaller, and the ductus bursae is bent rectangularly at the middle, while it is bent at 2/3 in *S. lepida*. In the 7th abdominal segment, this species is more easily distinguished from *S. lepida*, that is, the center of distal margin of sternite (Figs. 32a, 33a) is shallowly concave, while in *S. lepida* (Fig. 34a) it is deeply concave, forming reverse Ω-shape; the tergite (Fig. 33b) is shorter and wider than that of *S. lepida* (Fig. 34b).
**Sugitania lepida** (Butler, 1878)
(Figs. 11–17)

*Graphiphola lepida* Butler, 1879: 362.
*Sugitania maculifera* Matsumura, 1926: 53–54, pl. 1, fig. 13 (male); Matsumura, 1931: 851, fig. 1089 (male); Draudt, 1934: 147, pl. 18-h.

Type series. Syntype of *Graphiphola lepida* Butler, 1879, female, labeled “Japan, Yokohama, Pryer, 79-48/Graphiphora lepida Type/Type on round label” (BMNH). Lectotype of *Sugitania maculifera* Matsumura, 1926, male (Fig. 11, a: labels), “Japan, Kobe, end of November 1913, H. Hoene” (ELHU).


Notes. Butler (1879) did not state the number of specimen(s) of *Graphiphola lepida* in the description, and Sugi (1958, 1990) erroneously referred the original paper of this taxon as Butler (1878: 168). Matsumura (1926) described *Sugitania maculifera* on the basis of two male specimens from Kobe and Kyoto, and a lectotype label is attached on the male from Kobe by Sugi (Fig. 11, a: labels), though he did not confirm the lectotype designation in his later papers (Sugi, 1982, 1990).

Diagnosis. This species is very similar to *S. uenoi uenoi* and the next new species in the wing maculation. In the male genitalia, the vinculum is long and V-shaped; the left process of costa is long and broadened in the apical half; the right one is very long, bent at ca. 2/3, and the distal part is broadened and rounded. The female genitalia are similar to and larger than those of *S. uenoi*, and the differences are enumerated in the latter species.

**Sugitania chengshinglini** Owada et Tzuoo, *sp. nov.*
(Figs. 18–20)

Type series. Holotype ♀ (Fig. 18), Taiwan, Nantou, Meifeng, 1-3. XII. 1988, C. S. Lin leg., NMNS ENT 1116-86, Genitalia Slide No. NMNS, T, MOS ♀ (NMNS). Paratypes. 1 ♂, same data as in holotype; Taiwan, Nantou, Yuanfeng, 2,750 m, 1 ♂, 18. XI. 2006, H. R. Tzuoo leg., Nantou, Hohuanshan, 3,002 m, 1 ♀, 29. XI. 2006, 1 ♂, 6. XII. 2006, H. H. Lin leg.; Guangdong, Shaoguan, Nanling Nature Reserve, 1,700
Sugitania lepida

Distribution. Taiwan, China (Guangdong).

Diagnosis. Expanse: 32–36 mm. The wing maculation is very similar to that of S. uenoi and S. lepida. The male genitalia (Fig. 28) are very similar to those of S. clara, except for the sacculus without short process; the costal process of left valva is broader than that of S. akirai and shorter than that of S. lepida; the costal process of right valva is smooth and bent at middle, the distal part is not so broadened as in that of S. lepida; the vinculum is V-shaped, shorter than those of S. akirai, S. uenoi and S. lepida. The female genitalia and 7th segment (Figs. 35, 36) are very similar to those of S. clara, the ductus bursae is longer and the cervix bursae is larger and round; the process of lamella antevaginalis is shorter than that of S. uenoi and S. lepida; the 7th sternite is concave in U-shape, while it is shallowly concave in S. uenoi, in V-shape in S. akirai, and in reverse Ω-shape in S. lepida; a pair of sclerotized farrowed patches are present on the 7th tergite.

Notes. This species is closely related to S. clara distributed in central Korea and Japan. Although they are easily distinguished by the wing maculation, their genitalia are very similar. In Taiwan, this moth seems to inhabit higher mountains than S. uenoi does.

This species is dedicated to Dr. Cheng Shing Lin, NMNS, Taichung, who laid the foundation of the moth collection in his museum, and collected the holotype of this species.

Sugitania clara Sugi, 1990

(Figs. 21–24)

Sugitania lepida: Sugi, 1958: 208, part, fig. 13, pl. 31, fig. 12; Ogata, 1958: 99, part, fig. 2034; Sugi, 1959: 118, part, pl. 77, fig. 9 (male); Sugi, 1982, 1: 732, part, pl. 180, fig. 18 (male); nec Butler, 1879.

Sugitania clara Sugi, 1990: 56, figs. 1 (male holotype), 6 (male genitalia, paratype), 7 (female genitalia, paratype); Owada, 1995: figs. 3 (female), 4 (male), 7 (male genitalia); Kononenko et al., 1998: 288, fig. 769.


Distribution. Korea, Japan (Kyushu, Shikoku, Honshu, Hokkaido).

Diagnosis and notes. In the genus Sugitania, this species has the northernmost distributional range from central Korea to Hokkaido, and is distinguished from other species by the pale ochre ground colour of forewing, in which the subterminal line is associated with two black dots.
at the middle. In the male genitalia, this species is clearly separated from the other species by the presence of the short process of sacculus. In the female genitalia, the ductus bursae is not so heavily sclerotized and bent, and the 7th segment is similar to that of *S. chengshinglini*.

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ヤガ科の蛾類スギタニモンキリガ属（昆虫綱、鱗翅目）の再検討

大和田 守・左 漢栄・王 敏

スギタニモンキリガ属 Sugitania の再検討を行い、5 種の亜種を認めた。九州、四国、本州に分布するスミレモンキリガ Sugitania akirai Sugi, 1990 をベトナム北部と中国広東省から新たに記録した。台湾から知られていたウエノモンキリガ Sugitania uenoi uenoi Owada, 1995 の新亜種 Sugitania uenoi sinovietnamica Owada et Wang をベトナム北部と中国的広東省から記載した。屋久島、九州、対馬、四国、本州に分布するスギタニモンキリガ Sugitania lepida (Butler, 1876) は、過去にベトナムから記録されたことがあるが、ウエノモンキリガの大陸亜種の誤同定であった。本属の中で一番北に分布するヤマノモンキリガ Sugitania clara Sugi, 1990 は、韓国中部、九州、四国、本州、北海道に生息するが、この種に近縁の新種ミナミノモンキリガ Sugitania chengshinglini Owada et Tzuoを台湾と中国広東省から記載した。