

ORIGINAL ARTICLE

Taxonomic study of the genus *Stericta* Lederer (Lepidoptera: Pyralidae: Epipaschiinae) from China

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Abstract The genus *Stericta* Lederer, 1863 is reviewed in China. Of the ten species treated, two species are described as new: *S. corollina* **sp. nov.** and *S. digitata* **sp. nov.** Photographs of adults and genitalia are provided. Keys to the available species are given, based on superficial characters and male genitalia.

Keywords Epipaschiinae, *Stericta*, new species, taxonomy, China.

1 Introduction

The genus *Stericta* was erected by Lederer in 1863 to accommodate *Glossina divitalis* Guenée, 1854 from India and *G. habitalis* Guenée, 1854 from Australia, with *G. divitalis* as the type. *Stericta* was sporadically studied from the end of the 19th century to the beginning of the 20th century. Since Hampson (1896) described two species from Indian and Australian and transferred *Pannucha asopialis* Snellen, 1890 and *Scopocera sinuosa* Moore, 1888, *Stericta* has poorly been studied. Solis (1992) provided a list of the Old World Epipachiinae, in which forty-three species of *Stericta* were included. Inoue and Sasaki (1995) described two species from Japan: *Stericta flavopuncta* and *S. kogii*. Shaffer, Nielsen & Horak (1996) transferred *Orthaga orchidivora* Turner, 1904, *Macalla dochmoscia* Turner, 1905, *Macalla chlorophoena* Turner, 1913, and *Oncobela philobrya* Turner, 1937 into *Stericta* in the checklist of the Lepidoptera of Australia.

The genus *Stericta* comprises forty-eight species to date (Nuss *et al.* 2003–2016), occurring mainly in the Oriental and Australian regions, with a few in the Palaearctic and Nearctic Regions. Eight *Stericta* species were recorded in China prior to this study (Wang *et al.* 2003; Li *et al.* 2009). The aim of the present paper is to review *Stericta* in China, including description of two new species.

2 Material and methods

Specimens examined in the present study were collected by light traps. Adults were examined using an Olympus SZX9 stereomicroscope. Permanent mounting methods of genitalia and venation followed the techniques introduced by Li (2002). Images of adults were taken by using a Leica M205A stereo microscope and images of genitalia were taken by using a Leica DM750 microscope, and refined in Photoshop CS5® software.

All the studied specimens, including the types of the new species, are deposited in the Insect Collection of Nankai University (NKU), Tianjin, China.

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3 Taxonomy

Stericta Lederer, 1863

Stericta Lederer, 1863: 340. Type species: *Glossina divitalis* Guenée, 1854, by subsequent designation.

Glossina Guenée, 1854: 124. Type species: *Glossina divitalis* Guenée, 1854, by subsequent designation.

Matalia Walker, 1866: 1727. Type species: *Matalia concisella* Walker, 1866, by monotypy.

Phialia Walker, 1866: 1736. Type species: *Phialia gelechiella* Walker, 1866, by monotypy.

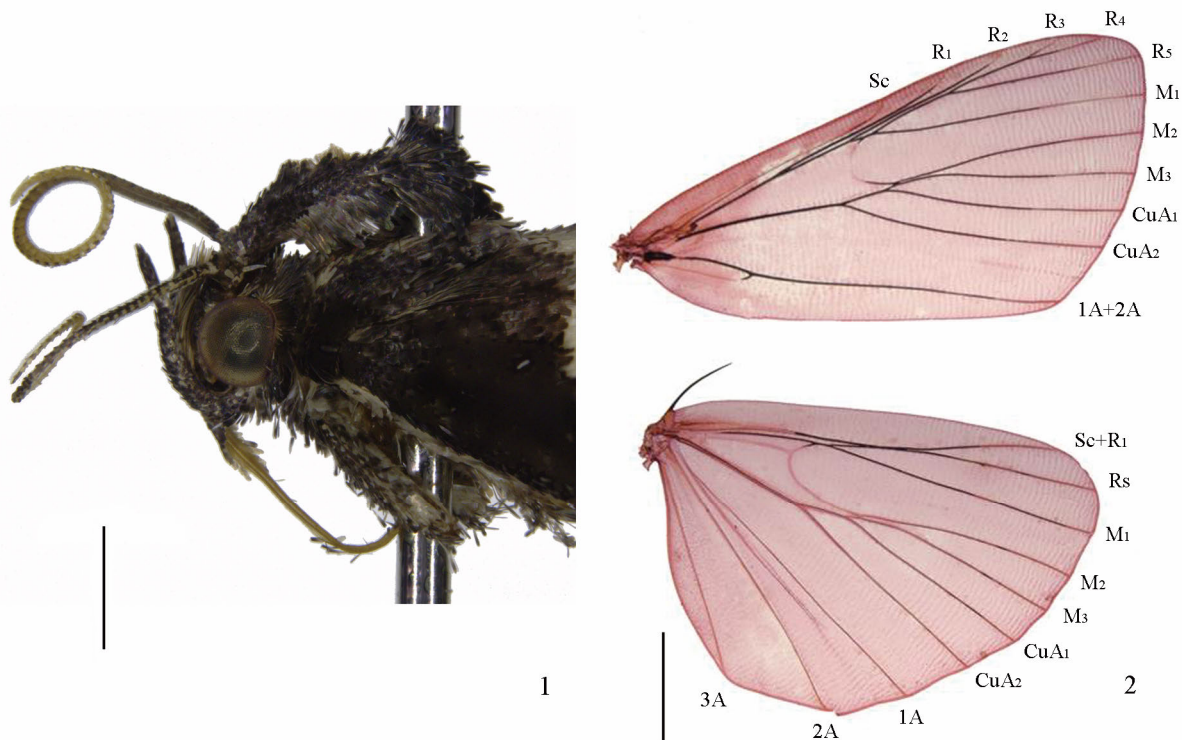
Oncobela Turner, 1937: 72. Type species: *Oncobela philobrya* Turner, 1937, by monotypy.

Diagnosis. *Stericta* is similar to *Lepidogma* Meyrick, 1890 superficially in having a small to median sized body. *Stericta* can be separated from the latter by the hindwing with Sc+R₁ and Rs adjacent, while Sc+R₁ and Rs of the hindwing are anastomosing in *Lepidogma*.

Generic characters. Head (Fig. 1). Labial palpus slender, upturned; first segment usually thicker than second; second segment reaching vertex apically; third segment tapering. Maxillary palpus short in both male and female, or long brush-like in male, short and compressed in female. Antenna usually becoming paler from base to tip, with black annulations on dorsal surface. Male with scape extension thickening from base to tip. Forewing (Figs 3–10) usually without antemedian line (except in *S. sinuosa*); postmedian line wavy, arched outward medially; discal and discocellular spots usually with erect tuft; terminal line with evenly spaced dark spots along its inner side. Hindwing usually darkening from base to apex; postmedian line usually obscure. Wing venation (Fig. 2). Forewing with R₁ and R₂ from cell, R₃, R₄ and R₅ stalked, M₁ from upper angle of cell, M₂ and M₃ from same point on lower angle of cell, CuA₁ from before lower angle of cell. Hindwing with Sc+R₁ and Rs adjacent, M₁ and Rs shortly stalked, M₂, M₃ and CuA₁ from lower angle of cell.

Male genitalia (Figs 11–18). Uncus subrectangular, or large square. Gnathos joined from middle or beyond middle, often hooked distally (except distally trifurcate in *S. sinuosa*). Valva elongate rhombic, with or without a harpe in middle; sacculus with developed distal process in some species. Juxta often with developed lateral lobes. Saccus present (except in *S. sinuosa*). Aedeagus slightly curved, with or without cornutus.

Female genitalia (Figs 19–25). Apophyses anteriores and apophyses posteriores usually curved inward near base, or expanded triangularly near base in some species. Ductus bursae membranous or in part weakly sclerotized, longer than corpus bursae, usually with weakly sclerotized basal ring. Corpus bursae ovate; two heavily sclerotized signa present.



Figures 1–2. Morphology of *Stericta asopialis*. 1. Head. 2. Venation. Scale bars: 1 = 1.0 mm; 2 = 4.0 mm.

Remarks. The geographical distribution of the two genera are also showed differences: *Stericta* mainly occurs in the Australian, Nearctic (Costa Rica, Porto Rico and Trinidad), Neotropical and Oriental Regions, while *Lepidogma* is mainly distributed in the Oriental, Palearctic and Afrotropical Regions as well as in the Nearctic Region (Guatemala and Panama).

Key to *Stericta* species in China based on superficial characters (excluding *S. angustalis*, *S. centralis* and *S. lactealis*).

1. Forewing with antemedian line (Fig. 7)	<i>S. sinuosa</i>
Forewing without antemedian line	2
2. Forewing with discal spot	3
Forewing without discal spot	4
3. Forewing with distal area grayish green (Fig. 3).....	<i>S. digitata</i> sp. nov.
Forewing with distal area grayish black (Fig. 4).....	<i>S. corollina</i> sp. nov.
4. Hindwing with a spot on CuA ₂ distally	5
Hindwing without a spot on CuA ₂ distally	6
5. Forewing with an inverted trapezoidal reddish brown patch on median area (Fig. 8).....	<i>S. kogii</i>
Forewing without an inverted trapezoidal reddish brown patch on median area (Figs 9–10)	<i>S. flavopuncta</i>
6. Forewing with postmedian line (Fig. 6)	<i>S. hoenei</i>
Forewing without postmedian line (Fig. 5)	<i>S. asopialis</i>

Key to *Stericta* Lederer species in China based on male genitalia.

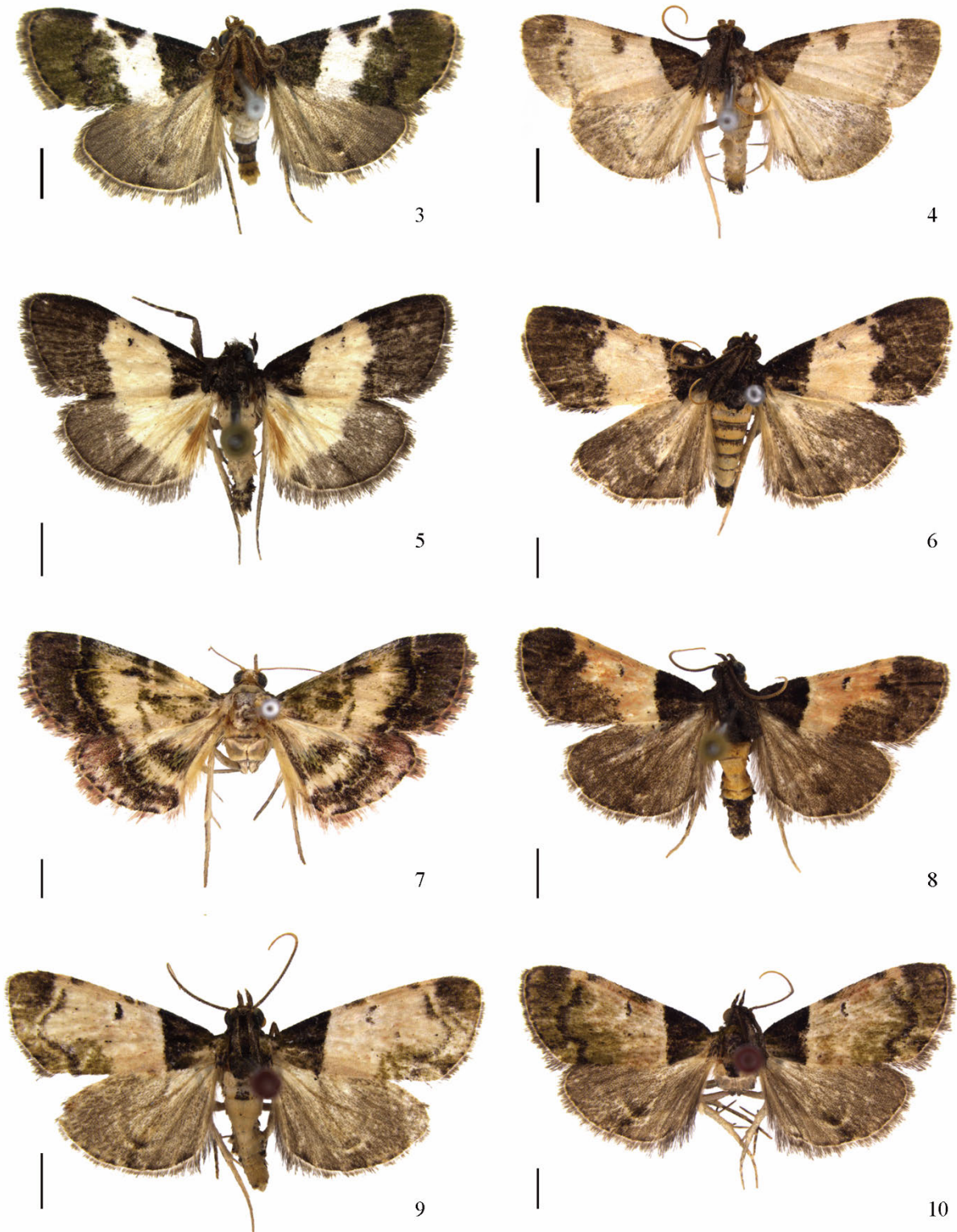
1. Valva with a harpe in the middle	2
Valva without a harpe in the middle	3
2. Aedeagus with a bunch of spine-shaped cornuti (Fig. 12)	<i>S. corollina</i> sp. nov.
Aedeagus with a nail-shaped cornutus (Fig. 13)	<i>S. asopialis</i>
3. Gnathos hooked distally	4
Gnathos trifurcate distally (Fig. 15)	<i>S. sinuosa</i>
4. Sacculus with a distal process	5
Sacculus without a distal process	6
5. Juxta with lateral lobes dentate on lateral margin (Fig. 16).....	<i>S. kogii</i>
Juxta lateral lobes not dentate on lateral margin (Figs 17–18)	<i>S. flavopuncta</i>
6. Juxta with two short thumbed processes posteriorly (Fig. 11)	<i>S. digitata</i> sp. nov.
Juxta with lateral lobes narrowed from base to apex (Fig. 14).....	<i>S. hoenei</i>

***Stericta digitata* sp. nov.** (Figs 3, 11, 19)

Diagnosis. This species is similar to *S. asopialis* in the forewing having a white rectangular patch in the median area. It can be distinguished from the latter by the uncus expanded medially, and the valva without a harpe in the middle (Fig. 11). In *S. asopialis*, the uncus is expanded distally, and the valva has a harpe bearing two long spines (Fig. 13).

Description. Adult (Fig. 3). Wingspan 16.0–18.0mm. Head grayish white. Male labial palpus with first segment grayish white on basal half, black on distal half, about 1/3 length of second, thicker than second; second segment white, mixed with grayish black scales, reaching vertex apically; third segment white, mixed with gray and black scales, tapering, slightly shorter than second; female labial palpus slightly thinner than male. Maxillary palpus short, brush-like, upturned, white mixed with gray. Antenna yellowish brown, with black annulations on dorsal surface, in male with short pale gray cilia ventrally; scape extension slender, apically exceeding metathorax, thickening from base to tip, reddish brown mixed with grayish black scales, with long grayish black and reddish brown hairs distally and ventrally. Thorax and tegula reddish brown mixed with white scales, or reddish brown mixed with black scales. Forewing with basal 1/4 black, somewhat forming a black patch, mixed with reddish brown and black scales, with a longitudinal erect black tuft at base of cell; median area with a white rectangular patch, its inner margin straight, outer margin sinuate, anterior margin with a grayish green rectangular patch along costa; distal area grayish green, mixed with black scales; antemedian line absent; postmedian line black, extending from anterior 1/4 of outer margin of median white rectangular patch to dorsum before tornus, sinuate and arched outward medially; discal and discocellular spots black, each with erect tuft, discocellular spot just below grayish green rectangular costal patch; terminal line grayish white, with evenly spaced black rectangular spots along its inner side, interrupted with grayish green on veins; cilia grayish green. Hindwing gray, darkening from base to apex; postmedian line grayish white, ill-defined, arched outward between M₁ and 1A, with a black spot at distal 1/4 of CuA₂; cilia grayish black. Legs yellowish white, femora and tibiae with black scales; tarsi black, fore and mid tarsi with each tarsomere white at apex. Abdomen white mixed with black scales on ventral surface; dorsal surface with 1st segment white mixed with black scales, 2nd to 5th segments white, 6th to 8th segments yellow diffused with black scales.

Male genitalia (Fig. 11). Uncus subrectangular, slightly expanded medially, obtuse on posterior margin, covered with dense short hairs. Gnathos joined from middle, hooked distally. Valva subparallel, length about 1.5 times of width, obtuse terminally, covered with long hairs distally; costa about 2/3 length of dorsal margin of valva; sacculus weakly sclerotized,



Figures 3–10. Adults of *Stericta* spp. 3. *S. digitata* **sp. nov.**, paratype, male. 4. *S. corollina* **sp. nov.**, paratype, male. 5. *S. asopialis*, male. 6. *S. hoenei*, male. 7. *S. sinuosa*, female. 8. *S. kogii*, male. 9. *S. flavopuncta*, male, from Yunnan. 10. *S. flavopuncta*, male, from Sichuan. Scale bars = 2.0 mm.

ill-defined. Saccus triangular. Juxta subtrapezoidal, with two short thumbed processes posteriorly. Aedeagus curved medially, distal half with dense denticles; without cornutus.

Female genitalia (Fig. 19). Papillae anales triangular, covered with dense long hairs. Eighth sternite subrectangular, membranous medially, with sparse setae posteriorly. Apophyses anteriores slightly shorter than apophyses posteriores, curved inward at basal 1/6 by 150°; apophyses posteriores curved inward at basal 1/3 by 120°. Ductus bursae membranous, with a wide weakly sclerotized ring at basal 1/4. Corpus bursae ovate, slightly shorter than ductus bursae; signum small and round.

Material examined. China. Holotype ♂, Shuiman Village (18°53'N, 109°40'E; elev. 766 m), Wuzhishan, Hainan, 5 July 2015, coll. Qingyun Wang, Suran Li, Mengting Chen, slide No. RH15466. Paratypes (25♂, 8♀). Hainan: 7♂, 5–8 July 2015, other same data as holotype, slide No. RH15148♂; 1♀, Shuiman Village, Wuzhishan (elev. 700 m), 19 June 2013, coll. Yinghui Sun, Wei Guan, Tengting Liu, slide No. RH15498♀; 1♀, Wuzhishan Nature Reserves (elev. 742 m), 18 May 2015, coll. Peixin Cong, Wei Guan, Sha Hu, slide No. RH15497♀; 5♂, 4♀, Wuzhishan Nature Reserves (elev. 738 m), 27–30 July 2016, coll. Xia Bai, Shuonan Qian, Wanding Qi, slide Nos. RH16159♂, RH16160♀; 1♂, Hongkan, Yinggeling Nature Reserves (elev. 954 m), 4 September 2013, coll. Weicai Xie; 1♂, Hongkan, Yinggeling (elev. 508 m), 16 June 2015, coll. Peixin Cong, Wei Guan, Sha Hu; 2♂, Hongkan, Yinggeling (elev. 540 m), 25–26 July 2015, coll. Qingyun Wang, Suran Li, Mengting Chen, slide No. RH15467♂. Zhejiang: 2♂, 1♀, Huangtanyu, Mt. Jiulong (elev. 467 m), 3–9 July 2013, coll. Aihui Yin, Xiuchun Wang, slide Nos. RH16065♂, RH16066♀; 1♂, 1♀, Neijiujuan, Mt. Jiulong (elev. 430 m), 7 July 2013, coll. Aihui Yin, Xiuchun Wang; 1♂, Jiufu Village, Mt. Longtang (elev. 20 m), 26 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang; 3♂, Shimendong, Qingtian County (elev. 102 m), 19–21 August 2016, coll. Qingyun Wang, Meiqing Yang, Ping Liu; 1♂, Linkeng Village, Yongjia County (elev. 387 m), 27 August 2016, coll. Qingyun Wang, Meiqing Yang, Ping Liu.

Distribution. China (Hainan, Zhejiang).

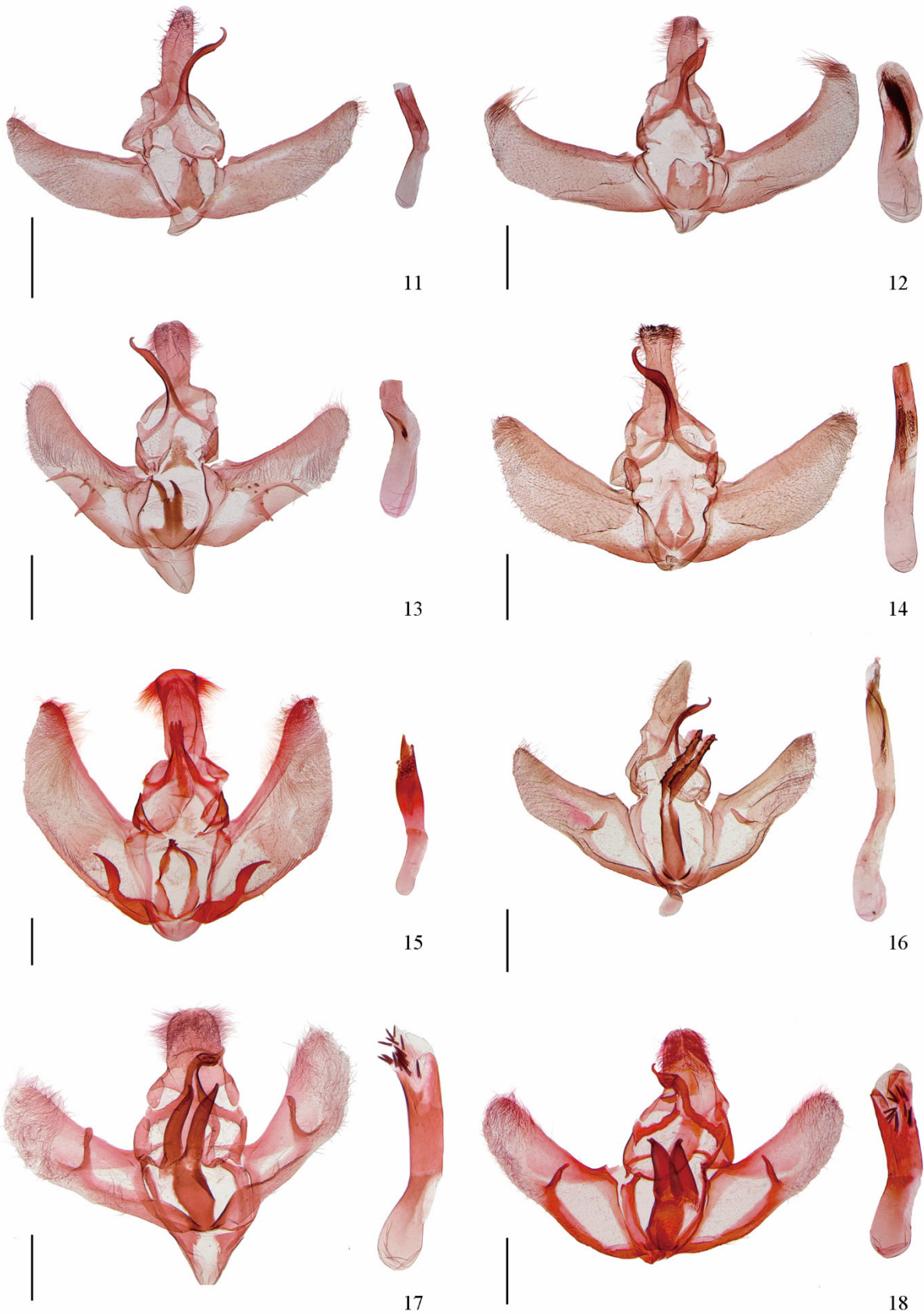
Etymology. The specific name is derived from the Latin *digitatus*, meaning digitate, referring to the short thumbed posterior processes of the juxta in the male genitalia.

Stericta corollina sp. nov. (Figs 4, 12, 20)

Diagnosis. This species is similar to *S. asopialis* in the forewing pattern. It can be distinguished from the latter by the uncus slightly wider on basal half, the valva with a small longitudinal flake-shaped harpe at base, and the aedeagus with a bunch of spine-shaped cornuti (Fig. 12). In *S. asopialis*, the uncus is slightly wider distally, the valva has a narrow harpe bearing two long spines in the middle, and the aedeagus has a nail-shaped cornutus (Fig. 13).

Description. Adult (Fig. 4). Wingspan 16.0–18.0 mm. Head grayish white, mixed with black scales. Male labial palpus grayish white, mixed with black scales; first segment grayish white on basal half, grayish black on distal half, about 1/3 length of second, thicker than second; second segment reaching vertex apically; third segment tapering, about 1/2 length of second; female labial palpus with first segment white on basal half, black on distal half, about 1/3 length of second; second segment black, mixed with white scales, reaching vertex apically; third segment white basally and distally, black medially, about 1/2 length of second. Male maxillary palpus long brush-like, pale yellow; female maxillary palpus short, compressed, black. Antenna dark gray on basal half, brownish yellow on distal half, with black annulations on dorsal surface; scape extension apically exceeding metathorax, thickening from base to tip, grayish black, with grayish black scale hairs ventrally and distally. Thorax and tegula black. Forewing with basal 1/4 black, somewhat forming a black patch; median area white, with a black inverted trapezoidal patch on costa; distal 1/4 grayish black; antemedian line absent; postmedian line black, extending from middle of R_5 below costal margin obliquely outward, arched outward between M_1 and CuA_2 , then inward to dorsum before tornus, edged with white along its outer margin; discal spot indistinct, merged with basal patch; discocellular spot black, with black fan-shaped erect tuft, just below black inverted trapezoidal costal patch; terminal line gray, with evenly spaced obscure black spots along its inner side. Hindwing with basal half white, distal half gray; postmedian line grayish white, edged with black along its inner margin; cilia of both wings gray. Legs white on inner side; black mixed with white scales on outside; fore and mid tarsi with each tarsomere white at apex. Abdomen white on dorsal surface, white mixed with black scales on ventral surface, black terminally.

Male genitalia (Fig. 12). Uncus rectangular, straight on posterior margin, covered with dense setae of varying length dorsally, basal half slightly wider. Gnathos joined from middle, ovate, hooked distally. Valva with basal 3/4 almost uniform in width; distal 1/4 slightly upturned, narrowed to obtuse apex, covered with dense hairs of varying length; costa about 3/4 length of dorsal margin of valva; sacculus weakly sclerotized, about 1/4 length of ventral margin of valva; harpe a small longitudinal flake-shaped process, covered with sparse hairs. Saccus triangular. Juxta U-shaped; lateral lobes narrowed from base to apex. Aedeagus stout, length approximately 2.5 times of width, approximately 4/5 length of valva; cornuti consisting of a bunch of spines.



Figures 11–18. Male genitalia of *Stericta* spp. 11. *S. digitata* **sp. nov.**, holotype, slide No. RH15466. 12. *S. corollina* **sp. nov.**, holotype, slide No. RH15475. 13. *S. asopialis*, slide No. RH15479. 14. *S. hoenei*, slide No. RH16143. 15. *S. sinuosa*, slide No. RH16143. 16. *S. kogii*, slide No. RH16146. 17. *S. flavopuncta* from Guangxi, slide No. RH15199. 18. *S. flavopuncta* from Sichuan, slide No. RH15484. Scale bars = 0.5 mm.

Female genitalia (Fig. 20). Papillae anales triangular, covered with dense hairs of varying length. Eighth sternite rectangular, with sparse long hairs posteriorly. Apophyses anteriores and posteriores both expanded triangularly near base, apophyses anteriores slightly thicker and shorter than apophyses posteriores. Ductus bursae thick, membranous, weakly sclerotized in distal 1/3, with a wide weakly sclerotized ring at basal 1/3. Corpus bursae subrounded, about 1/2 length of ductus bursae; signum ovate, with four teeth forming a crown on posterior margin.

Material examined. China. Holotype ♂, Yajia Hydropower Station (19°05'N, 109°06'E; elev. 261 m), Bawangling, Hainan, 21 July 2015, coll. Qingyun Wang, Suran Li, Mengting Chen, slide No. RH15475. Paratypes (3♂, 5♀). Hainan: 2♂, 3♀, 19–22 July 2015, other data the same as holotype, slide No. RH15476♀; 1♂, Bawangling (elev. 169 m), 10 May 2013, coll. Xiaohua Chen, slide No. RH16328♂; 1♀, Bawangling Nature Reserves (elev. 161 m), 11 July 2015, coll. Peixin Cong, Linjie Liu, Sha Hu, slide No. RH15506♀; 1♀, Lizu Hall, Shuiman, Wuzhishan (elev. 766 m), 5 July 2015, coll. Qingyun Wang, Suran Li, Mengting Chen.

Distribution. China (Hainan).

Etymology. The specific name is derived from the Latin, *corollinus*, meaning crown-shaped, referring to the signum with four sclerotized teeth forming a crown on the posterior margin in the female genitalia.

Stericta asopialis (Snellen, 1890) (Figs 5, 13, 21)

Pannucha asopialis Snellen, 1890: 568; TL: India (Darjiling).

Stericta asopialis (Snellen): Hampson, 1896: 121.

Diagnosis. Adult (Fig. 5). Wingspan 18.0–20.0 mm. *Stericta asopialis* is similar to *S. hoenei* in the forewing pattern. It can be distinguished from the latter in the male genitalia by the valva bearing a narrow harpe with two long spines directing ventrad in the middle, and the aedeagus with a spine-shaped cornutus (Fig. 13); and in the female genitalia by the subrectangular signum (Fig. 21). In *S. hoenei*, the valva is absent of a harpe in the middle and the aedeagus is absent of a cornutus (Fig. 14); and the signum is ovate (Fig. 22).

Variation. There is a considerable variation in the ground color of the hindwing: grayish, darkening from base to apex, or yellowish white in the basal half and gray in the distal half.

Material examined. China. Tianjin: 1♂, Heishuihe, Mt. Baxian (elev. 600 m), 28 July 2010, coll. Yinghui Mou, Shurong Liu. Hebei: 11♂, 4♀, Mt. Bulaoqing, Xingtai County (elev. 952 m), 10–11 July 2016, coll. Sihan Lu, Hua Rong; 1♀, Piancheng, She County, Handan (elev. 915 m), 13 July 2016, coll. Sihan Lu, Hua Rong. Shanxi: 3♂, 3♀, Dahe Tree Farm (elev. 1340 m), 12–15 July 2012, coll. Qiang Gao, Na Chen; 1♂, Zhongtiaoshan Nature Reserves, 14 July 2012, coll. Qiang Gao, Na Chen; 26♂, 11♀, Manghe, Yangcheng County (elev. 594 m), 13–16 July 2012, coll. Wei Guan, Xiuchun Wang, slide Nos. RH15194♀, RH15195♂, RH15196♀, RH16145♂; 1♂, 1♀, Zhangma Village, Lishan Nature Reserves, Jincheng (elev. 1095 m), 22 July 2013, coll. Shulian Hao, Mingqing Li; 1♀, Zhangma Village, Qinshui County (elev. 1116 m), 22 July 2013, coll. Renchao Lin; 1♀, Zhangma Village, Qinshui County (elev. 1116 m), 22 July 2013, coll. Weicai Xie; 1♂, Shangchuan Village, Qinshui County (elev. 1619 m), 25 July 2013, coll. Xiaolin Liu; 1♀, Dahe Village, Yicheng County (elev. 1204 m), 29 July 2013, coll. Xiaolin Liu; 1♀, Pubu Villa, Manghe Nature Reserves, Yangcheng County (elev. 580 m), 1 August 2013, coll. Shulian Hao, Mingqing Li; 1♂, 1♀, Houshan, Manghe Nature Reserves, Yangcheng County, 3 August 2013, coll. Shulian Hao, Yanjun Fan; 1♂, Manghe Nature Reserves, Yangcheng County (elev. 595 m), 5 August 2013, coll. Shulian Hao, Mingqing Li; 1♂, Sijiao Forest Farm, Taikuanhe Nature Reserves, Yuncheng County (elev. 893 m), 6 August 2013, coll. Shulian Hao, Yunfei Peng; 2♂, Aigou, Taikuanhe Nature Reserves, Yuncheng County (elev. 1020 m), 7 August 2013, coll. Shulian Hao, Yunfei Peng. Zhejiang: 2♂, 3♀, Xianrending, Mt. Tianmu (elev. 1500 m), 18 August 1999, coll. Houhun Li *et al.*, slide Nos. DYL00036♀, DYL00037♀, WSS03040♂, WYP05180♀; 1♂, 2♀, Kaishanlaodian, Mt. Tianmu (elev. 1140 m), 20 August 1999, coll. Houhun Li, Xipu Wang; 1♀, Qingliangfeng, Lin'an (elev. 900 m), 8 August 2005, coll. Yunli Xiao; 3♂, 5♀, Mt. Fengyang, Longquan, Lishui (elev. 1470 m), 25–31 July 2007, coll. Qing Jin; 1♂, Mt. Tianmu, Lin'an (elev. 350 m), 8 August 2007, coll. Qing Jin; 1♂, Shunxi, Lin'an (elev. 420 m), 11 August 2007, coll. Qing Jin; 3♀, Xianrending, Mt. Tianmu (elev. 1500 m), 25 July 2011, coll. Xicui Du, Xiaobing Fu; 4♂, 4♀, Xianrending, Mt. Tianmu (elev. 1500 m), 26 July 2011, coll. Linlin Yang, Na Chen; 1♂, Zhonglieci, Mt. Tianmu (elev. 400 m), 26 July 2011, coll. Xicui Du, Xiaobing Fu; 2♂, 1♀, Mt. Jiulong (elev. 400 m), 4–6 August 2011, coll. Linlin Yang, Na Chen; 1♂, Laoan, Mt. Tianmu (elev. 555 m), 6 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang; 1♂, Pinggang, Mt. Longxu (elev. 754 m), 21 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang, slide Nos. RH15481♂, RH15482♀; 1♀, Qianqingtang, Qingliangfeng (elev. 1059 m), 28 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang; 1♀, Laoan, Mt. Tianmu (elev. 555 m), 16 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 1♂, Longxu Village, Mt. Longxu (elev. 778 m), 21 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 6♂, 1♀, Pinggang, Mt. Longxu (elev. 754 m), 23–25 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 1♂, 1♀, Jiufu Village, Mt. Longtang (elev. 520 m), 27 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 2♂,

2♀, Wangdongyang Wetland Reserves, Jingning County (elev. 1301 m), 12 August 2016, coll. Qingyun Wang, Meiqing Yang, Ping Liu. Anhui: 1♀, Mozitan, Huoshan County, 12 August 2004, coll. Jiasheng Xu, Jialiang Zhang. Fujian: 13♂, 7♀, Guadun, Wuyishan (elev. 1100 m), 26 July–2 August 2008, coll. Weichun Li, Yongling Sun, Haiyan Bai. Henan: 4♀, Baiyunshan, Luoyang (elev. 1560 m), 22–24 July 2001, coll. Dandan Zhang; 5♂, 1♀, Guanshan, Hui County (elev. 550 m), 15–26 July 2006, coll. Denghui Kuang, Hui Zhen; 17♂, 3♀, Wangwushan, Jiyuan (elev. 800 m), 28–30 July 2006, coll. Denghui Kuang, Hui Zhen; 7♂, 7♀, Huaguoshan, Xinyang (elev. 1000 m), 1–3 August 2006, coll. Denghui Kuang, Hui Zhen; 1♂, Dakuaidi, Lushi (elev. 1100 m), 6 August 2006, coll. Denghui Kuang, Hui Zhen; 8♂, 3♀, Shibanyan, Linzhou (elev. 550 m), 21–23 August 2006, coll. Denghui Kuang, Hui Zhen. Hubei: 1♀, Mahexiang, Xianfeng (elev. 400 m), 24 July 1999, coll. Houhun Li *et al.*; 1♀, Songbaizhen, Shennongjia (elev. 1200–1400 m), 17 July 2003, coll. Shulian Hao. Chongqing: 1♀, Tudiyan, Mt. Simian (elev. 1200 m), 15 July 2012, coll. Yinghui Sun, Aihui Yin; 2♀, Mt. Simian (elev. 1200 m), 8 August 2012, coll. Xiaofei Yang, Tengting Liu. Guangxi: 2♂, 1♀, Huaping (elev. 950 m), 7–8 August 2006, coll. Weichun Li; 1♂, 1♀, Mt. Shengtang, Jinxiu, 25–26 August 2011, coll. Dandan Zhang; 1♂, 1♀, Yangmeiao, Jiuwandashan (elev. 1183 m), 22 July 2015, coll. Kai Chen; 2♂, Jiuniutang, Mao'ershan Nature Reserves, Guilin (elev. 1016 m), 23–25 July 2015, coll. Mujie Qi, Shengnan Zhao; 5♂, 1♀, Yangmeiao, Huanjiang County, Hechi (elev. 1180 m), 24–26 July 2015, coll. Meiqing Yang, Ga-Eun Li, slide Nos. RH15479♂, RH15480♀. Sichuan: 1♀, Labahe, Daquan (elev. 1300 m), 28 July 2004, coll. Yingdang Ren, slide No. WYP05056♂; 2♂, Wanniansi, Mt. Emei (elev. 830 m), 14 July 2014, coll. Kaijian Teng, Wei Guan, Xiuchun Wang, Shurong Liu; 1♂, Hailuogou, Luding County (elev. 1695 m), 1 July 2016, coll. Kaijian Teng, Xiaofei Yang. Guizhou: 2♂, 2♀, Huguosi, Huguosi, Mt. Fanjing, 2 August 2001, coll. Hong Pang; 3♂, 1♀, Huguosi, Mt. Fanjing (elev. 300 m), 2–3 August 2001, coll. Houhun Li, Xinpu Wang; 2♂, Mt. Fanjing, Jiangkou County, 25–26 August 2012, coll. Jinwei Li, Xiaohua Chen; 1♂, Chengjiashan, Daozhen County (elev. 1300 m), 18 August 2004, coll. Yunli Xiao, slide No. WYP05087♂. Yunnan: 1♂, Weibaoshan, Weishan (elev. 2200 m), 20 July 2001, coll. Houhun Li, Xinpu Wang, slide No. WYP05022♂; 1♂, Haba Village, Diqing, 17 July 2011, coll. Jinwei Li; 1♂, 1♀, Weibaoshan, Weishan (elev. 2244 m), 21 July 2013, coll. Shurong Liu, Yuqi Wang, Kaijian Teng; 5♂, 1♀, Mt. Weibao, Dali (elev. 2205 m), 30 July–1 August 2014, coll. Kaijian Teng, Wei Guan, Xiuchun Wang, Shurong Liu, slide Nos. RH15193♂, RH15488♂; 1♂, Xishuangbanna Wild Elephant Valley (elev. 762 m), 18 July 2014, coll. Kaijian Teng, Wei Guan, Xiuchun Wang, Shurong Liu; 1♀, Xishuangbanna Wild Elephant Valley (elev. 762 m), 12 July 2015, coll. Kaijian Teng, Xia Bai, slide No. RH16150♀. Shaanxi: 1♂, 1♀, Zhaozhuang, Chengcheng (elev. 1000 m), 9–11 August 1993, coll. Houhun Li; 2♂, Haopingsi, Yingtouzhen (elev. 1251 m), 17–18 July 2012, coll. Jinwei Li.

Distribution. China (Anhui, Chongqing, Fujian, Guangxi, Guizhou, Hebei, Henan, Hubei, Shaanxi, Shanxi, Sichuan, Tianjin, Yunnan, Zhejiang), Japan, India, Bhutan.

***Stericta hoenei* Caradja, 1935** (Figs 6, 14, 22)

Stericta hoenei Caradja, 1935, *In*: Caradja & Meyrick: 28. TL: China (Zhejiang).

Diagnosis. Adult (Fig. 6). Wingspan 23.0–24.0 mm. *Stericta hoenei* is similar to *S. asopialis*. The differences between the two species are stated under the latter species *S. asopialis*.

Material examined. China. Zhejiang: 1♀, Zhonglieci, Mt. Tianmu (elev. 400 m), 27 July 2011, coll. Xicui Du, Xiaobing Fu; 6♂, 1♀, Huangtanyu, Mt. Jiulong (elev. 467 m), 3–9 July 2013, coll. Aihui Yin, Xiuchun Wang, slide No. RH16144♀; 4♂, Neijiujiian, Mt. Jiulong (elev. 430 m), 7 July 2013, coll. Aihui Yin, Xiuchun Wang, slide No. RH16143♂; 1♂, 1♀, Shimendong, Qingtian County (elev. 102 m), 20–21 August 2016, coll. Qingyun Wang, Meiqing Yang, Ping Liu.

Distribution. China (Zhejiang).

***Stericta sinuosa* Moore, 1888** (Figs 7, 15, 23)

Scopocera sinuosa Moore, 1888: 203. TL: India (Darjiling).

Stericta sinuosa (Moore): Hampson, 1896: 122.

Diagnosis. Adult (Fig. 7). Wingspan 27.0–28.0 mm. *Stericta sinuosa* is characterized superficially by the same colored forewings and the hindwings covered with black and yellowish long white scale hairs; in the male genitalia (Fig. 15) by the trifurcate distal process of the gnathos, the lateral lobes of the juxta joined distally, and the sacculus with a large knife-shaped process at dorsal 1/3; and in the female genitalia (Fig. 23) by the semicircular papillae anales.

Material examined. China. Guangxi: 1♂, Yangmeiao, Rongshui County, Liuzhou (elev. 1240 m), 27 July 2015, coll. Meiqing Yang, Ga-Eun Lee, slide No. RH15528♂. Hainan: 1♀, Mt. Diaoluoshan (elev. 940 m), 31 May 2007, coll. Zhiwei Zhang, Weichun Li; 1♀, Diaoluoshan Nature Reserves (elev. 922 m), 27 May 2015, coll. Peixin Cong, Wei Guan, Sha Hu; 1♀, Wuzhishan Nature Reserves (elev. 738 m), 4 July 2015, coll. Qingyun Wang, Suran Li, Mengting Chen, slide No. RH15340♀;

1 ♀, Wuzhishan Nature Reserves (elev. 738m), 27 July 2016, coll. Xia Bai, Shuonan Qian, Wanding Qi, slide No. RH16154 ♀.

Distribution. China (Fujian, Guangxi, Hainan, Yunnan), India, Bhutan.

Remarks. *Stericta sinuosa* is different from its congeners in both superficial and genitalia characters. It is closer to members of the genus *Lista* Walker, 1859 by having similar long scale hairs in the both wings. But in *S. sinuosa*, wings are dim in color, and tibiae of mid legs have no hairs on outside; in *Lista*, wings are bright in color, and tibiae of mid legs bear hairs on outside. The assignment of *S. sinuosa* needs further study.

***Stericta kogii* Inoue & Sasaki, 1995** (Figs 8, 16, 24)

Stericta kogii Inoue & Sasaki, 1995: 245.

Stericta atribasalis Hampson, 1900: 376. TL: Amurland. (Preoccupied).

Diagnosis. Adult (Fig. 8) wingspan 17.0–20.0 mm. *Stericta kogii* is similar to *S. flavopuncta* superficially. It can be distinguished from the latter in the male genitalia by the uncus wide medially, narrowed distally, the lateral lobes of the juxta with denticles on the lateral margins, and the aeseagus with a long needle-shaped cornutus (Fig. 16); and in the female genitalia by having a rectangular antrum (Fig. 24). In *S. flavopuncta*, the uncus is aequilate, the lateral lobes of the juxta have no denticles on the lateral margins and the aeseagus bears a few spine-shaped cornuti (Figs 17–18); and the female antrum is inverted trapezoidal (Fig. 25).

Material examined. China. Beijing: Xiaolongmen Forest Farm (elev. 1030 m), 31 July 2009, coll. Aihuan Zhang, Ping Liu. Tianjin: 1 ♂, Mt. Baxian, Ji County (elev. 500 m), 16 July 2005, coll. Houhun Li *et al.*; 5 ♂, 2 ♀, Heishuihe, Mt. Baxian (elev. 600 m), 28 July 2010, coll. Yinghui Mou, Shurong Liu, slide Nos. RH16067 ♂, RH16068 ♀. Hebei: 2 ♂, Mt. Baishi, Laiyuan County (elev. 1300 m), 20 July 2000, coll. Haili Yu, slide Nos. ZDD01104 ♂, WYP05021 ♂; 1 ♂, 1 ♀, Suanzaoping, Neiqiu County (elev. 670 m), 28 July 2000, coll. Haili Yu, slide Nos. ZDD01105 ♀, WSS03070 ♂; 2 ♂, Suobao, She County (elev. 700 m), 31 July–1 August 2000, coll. Haili Yu; 2 ♀, Mt. Wuling, Xinglong County (elev. 800 m), 26 July 2009, coll. Aihuan Zhang, Xueling Tian; 1 ♂, Mt. Wuling, Xinglong County (elev. 800 m), 27 July 2009, coll. Xueling Tian, Long Liao; 1 ♀, Mt. Wuling, Xinglong County (elev. 800 m), 27 July 2009, coll. Aihuan Zhang, Ping Liu; 1 ♀, Mt. Wuling, Xinglong County (elev. 800 m), 29 July 2010, coll. Aihuan Zhang, Xiaoyu Shi; 6 ♂, 5 ♀, Shuangyuanfeng, Mt. Wuling, Xinglong County (elev. 800 m), 17–28 July 2011, coll. Houhun Li, Yanpeng Cai, slide Nos. RH15197 ♂, RH15198 ♀, RH16111 ♂, RH16112 ♀; 2 ♂, Mt. Bulaoqing, Xingtai County (elev. 952 m), 10–12 July 2016, coll. Sihan Lu, Hua Rong. Shanxi: 2 ♂, 1 ♀, Dahe Forest Farm (elev. 1340 m), 14 July 2012, coll. Qiang Gao, Na Chen, slide Nos. RH15491 ♂, RH15492 ♀; 1 ♂, 7 ♀, Manghe, Yangcheng County (elev. 594 m), 14–18 July 2012, coll. Wei Guan, Xiuchun Wang, slide Nos. RH16110 ♀, RH16146 ♂; 1 ♀, Dashuang Village, Lingchuan County (elev. 773 m), 21 July 2012, coll. Wei Guan, Xiuchun Wang; 1 ♂, 1 ♀, Dahe Forest Farm, Yicheng County, Linfen (elev. 1201 m), 25 July 2013, coll. Shulian Hao, Mingqing Li; 1 ♂, 1 ♀, Manghe Nature Reserves, Yangcheng County (elev. 580 m), 1 August 2013, coll. Shulian Hao, Mingqing Li; 1 ♀, Taikuanhe Nature Reserves, Yuncheng (elev. 1020 m), 7 August 2013, coll. Shulian Hao, Yunfei Peng. Liaoning: 1 ♂, 2 ♀, Wangyeling, Faku County, 27–29 July 2006, coll. Yiping Wang; 2 ♀, Hongshadi, Faku County, 3 August 2006, coll. Yiping Wang; 1 ♂, 1 ♀, Laotuding, Huanren County, 28 July 2012, coll. Dandan Zhang, Lijun Yang; 1 ♂, Binyugou, Zhuanghe, 30 July 2012, coll. Dandan Zhang, Lijun Yang; 1 ♂, 1 ♀, Da'ansi, Qianshan, Anshan (elev. 245 m), 2016.VIII.6, coll. Mujie Qi, Juan Li, Yanyan Jia. Jilin: 1 ♀, Fusong County, Changbai Mountains (elev. 920 m), 20 July 2016, coll. Mujie Qi, Juan Li, Yanyan Jia; 3 ♀, Changbaishan Animal Rescue Station (elev. 741 m), 21 July 2016, coll. Mujie Qi, Juan Li, Yanyan Jia. Heilongjiang: 1 ♂, Liangshui, Yinchun, 18 July 2012, coll. Lijun Yang, Xiaohua Chen. Zhejiang: 1 ♂, Xiguan, Mt. Tianmu (elev. 566 m), 18 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang; 3 ♂, 1 ♀, Qianqingtang, Qingliangfeng (elev. 1059 m), 28–29 July 2014, coll. Aihui Yin, Xuemei Hu, Qingyun Wang, slide No. RH15486 ♂; 9 ♂, Sanmuping, Mt. Tianmu (elev. 789 m), 9–11 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 4 ♂, Qianjiangyuan, Mt. Tianmu (elev. 866 m), 12–15 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 1 ♂, Jiufu Village, Mt. Longtang (elev. 520 m), 27 August 2014, coll. Aihui Yin, Qingyun Wang, Suran Li; 1 ♂, 1 ♀, Sanmuping, Mt. Tianmu (elev. 789 m), 16–17 July 2015, coll. Aihui Yin, Kang Lou, Tao Wang, slide Nos. RH15471 ♂, RH15472 ♀. Fujian: 1 ♂, Sangang, Wuyishan (elev. 740 m), 26 July 2008, coll. Weichun Li, Yongling Sun, Haiyan Bai. Henan: 1 ♂, Baotianman, Neixiang County (elev. 1200 m), 4 June 2006, coll. Jinmei Lv, Xu Zhang; 1 ♂, 2 ♀, Shibanyan, Linzhou City (elev. 550 m), 22 July 2006, coll. Hui Zhen, Denghui Kuang; 11 ♂, 12 ♀, Mt. Guan, Huixian (elev. 550 m), 25–26 July 2006, coll. Hui Zhen, Denghui Kuang; 1 ♂, 3 ♀, Wangwushan, Jiyuan (elev. 800 m), 29–30 July 2006, coll. Hui Zhen, Denghui Kuang; 1 ♂, 2 ♀, Huaguoshan, Yiyang County (elev. 1000 m), 1–3 August 2006, coll. Hui Zhen, Denghui Kuang, slide No. WYP06028 ♂; 4 ♂, 1 ♀, Xiuwu Forest Farm, Mt. Yuntai, Jiaozuo (elev. 1028 m), 7 August 2014, coll. Peixin Cong, Linjie Liu, Sha Hu. Guangxi: 4 ♂, 3 ♀, Huaping (elev. 950 m), 7–8 August 2006, coll. Weichun Li; 2 ♀, Mt. Shengtang, Jinxiu, 25 July 2011, coll. Dandan Zhang; 1 ♂, Jiuniutang, Mao'ershan Nature Reserves, Guilin (elev. 1016 m), 23 July 2015, coll. Mujie Qi, Shengnan Zhao. Sichuan: 2 ♀, Hailuogou, Luding County (elev.

3478 m), 2–3 July 2012, coll. Jinwei Li. Guizhou: 1♀, Huguosi, Mt. Fanjing (elev. 300 m), 3 August 2001, coll. Houhun Li, Xinpu Wang; 1♀, Wanxiang, Leishan County (elev. 900 m), 13 September 2001, coll. Jialiang Zhang. Yunnan: 1♂, Linjiapu, Tengchong County (elev. 2144 m), 16 August 2014, coll. Kaijian Teng, Shurong Liu, Hua Rong. Shaanxi: 1♂, Haopingsi, Yingtouzhen (elev. 1251 m), 17 July 2012, coll. Jinwei Li, slide No. RH16327♂. Gansu: 1♂, 1♀, Yanghuamiao, Tianshui (elev. 1331 m), 28–29 July 2006, coll. Xinpu Wang, Xiangfeng Shi.

Distribution. China (Beijing, Fujian, Gansu, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Henan, Hubei, Jilin, Liaoning, Shaanxi, Shanxi, Tianjin, Yunnan, Zhejiang), Japan.

***Stericta flavopuncta* Inoue & Sasaki, 1995** (Figs 9, 10, 17, 18, 25)

Stericta flavopuncta Inoue & Sasaki, 1995: 247.

Diagnosis. Adult (Figs 9–10). Wingspan 17.0–19.0 mm. *Stericta flavopuncta* is similar to *S. kogii* superficially. The differences between the two species are stated under the latter species *S. kogii*.

Variation. One specimen collected from Sichuan is different from other specimens in the forewing with grayish green scales on the median area (Fig. 10), the valva with the saccular process about 1/2 the width of the valva, and the length of the juxta lateral lobes about 2.0 times of its width at base (Fig. 18). In other specimens, the forewing bears pink scales on the median area (Fig. 9), the length of the saccular process is about 2/3 the width of the valva, and the length of the juxta lateral lobes is about 4.0 times its width at base (Fig. 17).

Material examined. China. Tianjin: 2♂, Mt. Jiulong, Jixian, 10–12 July 2009, coll. Weichun Li; 1♂, Heishui River, Mt. Baxian (elev. 600 m), 28 July 2010, coll. Yinghui Mou, Shurong Liu. Hebei: 1♂, Gaoyu Village, Jingxing County, 22–28 July 1998, coll. Xinsheng Tian, slide Nos. WYP05033♂, WYP05177♂; 1♀, Mt. Bulaoqing, Xingtai County (elev. 952 m), 10 July 2016, coll. Sihan Lu, Hua Rong; 1♂, Piancheng, She County, Handan (elev. 915 m), 13 July 2016, coll. Sihan Lu, Hua Rong. Jilin: 1♀, Dongliao, 16 July 1991. Zhejiang: 4♂, 1♀, Sanmuping (elev. 800 m), 29 July 2011, coll. Xicui Du, Xiaobing Fu; 1♂, Mt. Jiulong (elev. 400 m), 4 August 2011, coll. Linlin Yang, Na Chen. Henan: 1♂, 1♀, Shibanyan, Linzhou (elev. 550 m), 22–23 July 2006, coll. Hui Zhen, Denghui Kuang, slide Nos. WYP05285♀, WYP05286♂; 1♀, Wangwushan, Jiyuan (elev. 800 m), 29 July 2006, coll. Denghui Kuang, Hui Zhen, slide No. WYP06030♀; 1♂, Dakuaidi, Lushi (elev. 1100 m), 6 August 2006, coll. Denghui Kuang, Hui Zhen. Guangxi: 3♂, Huaping (elev. 950 m), 7–8 August 2006, coll. Weichun Li, slide No. WYP05284♂; 1♂, 1♀, Mt. Daming (elev. 1250 m), 24–29 May 2011, coll. Linlin Yang, Yinghui Mou, slide Nos. RH15199♂, RH15200♀. Sichuan: 3♀, Fengtongzhai, Baoxin (elev. 1600 m), 2 August 2004, coll. Yingdang Ren, slide No. WYP05030♀; 1♂, Caoping Village, Sanjiang County (elev. 1557 m), 12 July 2014, coll. Kaijian Teng, Wei Guan, Xiuchun Wang, Shurong Liu, slide No. RH15484♂. Guizhou: 1♀, Huguosi, Mt. Fanjing (elev. 300 m), 3 August 2001, coll. Houhun Li, Xinpu Wang, slide No. WYP05028♀. Yunnan: 1♂, 1♀, Ruili Rare Botanical Garden (elev. 1000 m), 6 August 2005, coll. Yingdang Ren, slide No. WYP05097♀; 1♂, Zijiaosuo, Jingdong County (elev. 1244 m), 4 July 2013, coll. Shurong Liu, Yuqi Wang, Kaijian Teng; 1♀, Mt. Yunpan, Pu'er (elev. 1400 m), 9 July 2014, coll. Zhenguo Zhang, slide No. RH16198♀; 1♂, Baihualing, Baoshan (elev. 1473 m), 7 August 2014, coll. Kaijian Teng, Shurong Liu, Hua Rong, slide No. RH15493♂; 1♂, Daluo, Menghai County, Jinghong (elev. 640 m), 2 August 2016, coll. Kaijian Teng, Ga-Eun Lee, Tao Wang, slide No. RH16161♂; 1♂, Taiyanghe Nature Reserves, Pu'er (elev. 1450 m), 14 August 2016, coll. Kaijian Teng, Ga-Eun Lee, Tao Wang.

Distribution. China (Gansu, Guangxi, Guizhou, Hebei, Henan, Jilin, Sichuan, Tianjin, Yunnan, Zhejiang), Japan, Russian (the Far East).

***Stericta angustalis* Caradja, 1925**

Stericta angustalis Caradja, 1925: 314. TL: China (Guangdong).

Diagnosis. This species is similar to *S. digitata* **sp. nov.** in the forewing with the basal 1/4 black, the median area having a white rectangular patch, and the distal area grayish green. It can be distinguished from the latter species by the forewing with a small black triangular patch at basal 1/3 on the dorsum, which is absent in *S. digitata* **sp. nov.**

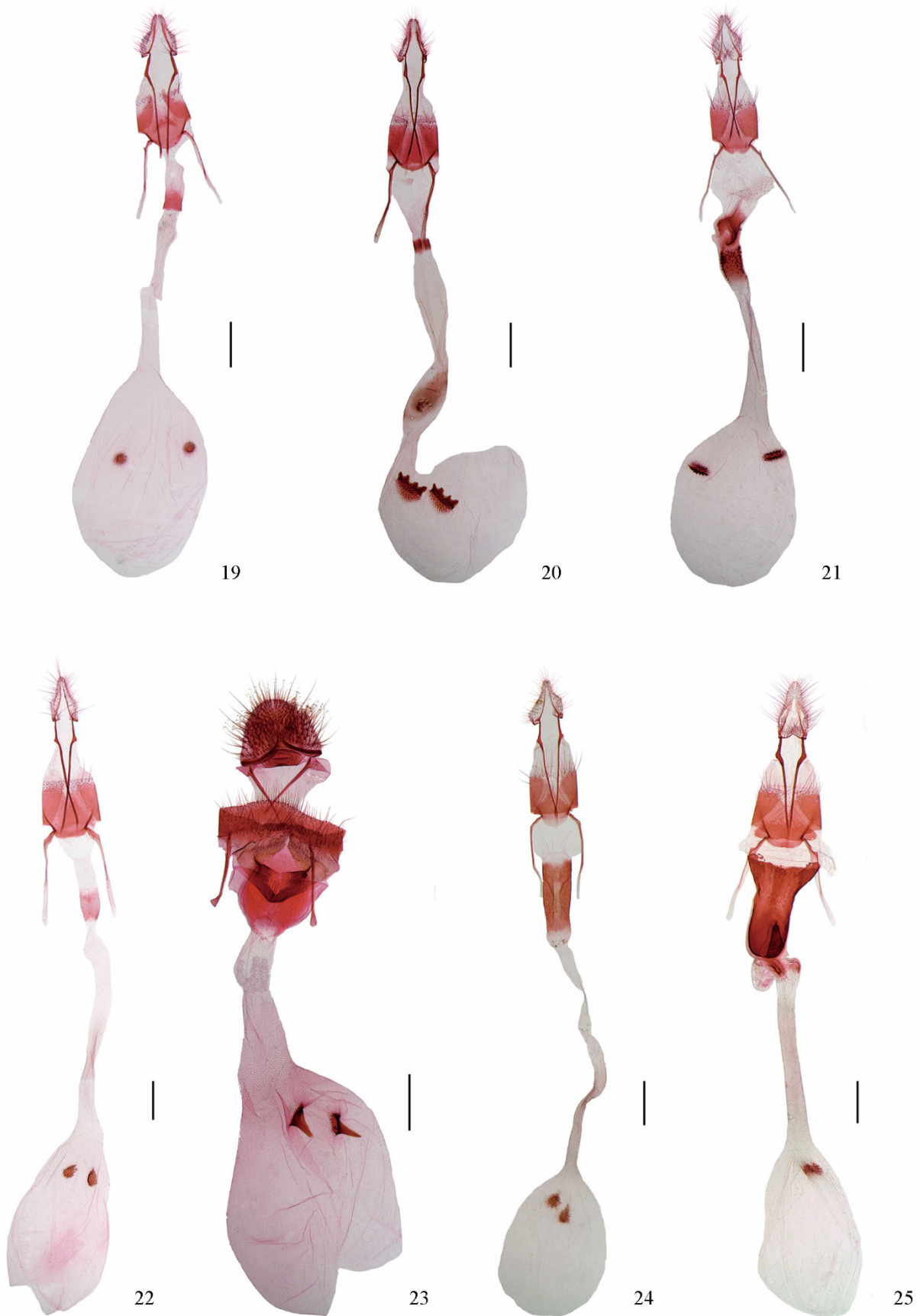
Material examined. None.

Distribution. China (Guangdong).

***Stericta centralis* (Wileman & South, 1917)**

Orthaga centralis Wileman & South, 1917: 129. TL: China (Taiwan).

Stericta centralis (Wileman & South): Solis, 1992: 290.



Figures 19–25. Female genitalia of *Stericta* spp. 19. *S. digitata* **sp. nov.**, paratype, slide No. RH16066. 20. *S. corollina* **sp. nov.**, paratype, slide No. RH15476. 21. *S. asopialis*, slide No. RH15196. 22. *S. hoenei*, slide No. RH16144. 23. *S. sinuosa*, slide No. RH16154. 24. *S. kogii*, slide No. RH16112. 25. *S. flavopuncta*, slide No. RH15200. Scale bars=0.5 mm.

Diagnosis. This species can be easily distinguished by the forewing having a white spot between the discal and discocellular spots.

Material examined. None.

Distribution. China (Taiwan).

***Stericta lactealis* Caradja, 1931**

Stericta lactealis Caradja, 1931: 206. TL: China (Sichuan).

Diagnosis. This species is similar to *S. corollina* **sp. nov.** in the forewing pattern. It can be distinguished from the latter by the forewing without a postmedian line, which is present in *S. corollina* **sp. nov.**

Material examined. None.

Distribution. China (Sichuan).

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