



RESEARCH ARTICLE

***Calicotis* Meyrick (Lepidoptera: Stathmopodidae) new to China,
with descriptions of three new species**

Wei Guan¹ Houhun Li^{1*}

¹College of Life Sciences, Nankai University, Tianjin 300071, P. R. China. *Corresponding author, e-mail: lihounun@nankai.edu.cn

urn:lsid:zoobank.org:pub:7674FC5F-5AF6-470F-89AC-33828C559048

¹urn:lsid:zoobank.org:author:F213A104-074A-4DA4-8DFF-8A69C94D059A

^{1*}urn:lsid:zoobank.org:author:F6AAB0C0-F312-4035-A08B-3DFE03D02F62

Abstract: The genus *Calicotis* Meyrick, 1889 is recorded from China for the first time. *Calicotis cuspidata* **sp. nov.**, *C. dilatata* **sp. nov.** and *C. uncinata* **sp. nov.** are described as new, and *C. crucifera* Meyrick, 1889 is newly recorded for China. Photographs of adults and illustrations of the genitalia are provided, along with a key to the identification of the described Chinese species and a map to show their distribution.

Key words: Lepidoptera, Stathmopodidae, *Calicotis*, new species, new record, China.

Introduction

Meyrick (1889) established the genus *Calicotis* based on *C. crucifera* Meyrick, 1889. It is a small genus consisting of nine named species: *C. animula* Meyrick, 1911 is distributed in Mahé Island; *C. crucifera* Meyrick, 1889 is distributed in New Zealand; *C. microgalopsis* Lower, 1904, *C. sialota* Turner, 1917 and *C. triploesta* Turner, 1923 are known from Australia; *C. praeusta* Meyrick, 1922 is only known from Fiji; *C. rhizomorpha* Meyrick, 1927 is only known from Samoa; *C. griseella* Sinev, 1988 and *C. luteella* Sinev, 1988 occur in the Russian Far East.

Members of *Calicotis* cannot be well distinguished by the external characters, as the uniform colored forewings do not have apparent markings. Species of the genus are mainly diagnosed on the male and female genitalia.

The genus *Calicotis* was not recorded in China before this study. We report it for the first time, describe three new species to science and newly add one species to the Chinese fauna. The distribution of *Calicotis* species in China is shown on the map (Fig. 1).

Material and methods

This study is based on the examination of the specimens collected using light traps in China (Anhui, Fujian, Guangxi, Guizhou, Hainan, Hubei, Hunan and Yunnan). Morphological terms used in description follow Koster & Sinev (2003) except using appendix bursae instead of bulla. Genitalia dissection and mounting methods follow Li (2002). Photographs of adults were taken with a Leica M205A stereomicroscope plus Leica Application Suite 4.2 software, and illustrations of genitalia and wings were prepared using a Leica DM750 microscope plus the same software. All pictures were refined and assembled with Adobe Photoshop® CS6 software.

All examined specimens, including the types, are deposited in the Insect Collection, College of Life Sciences, Nankai University, Tianjin, China.

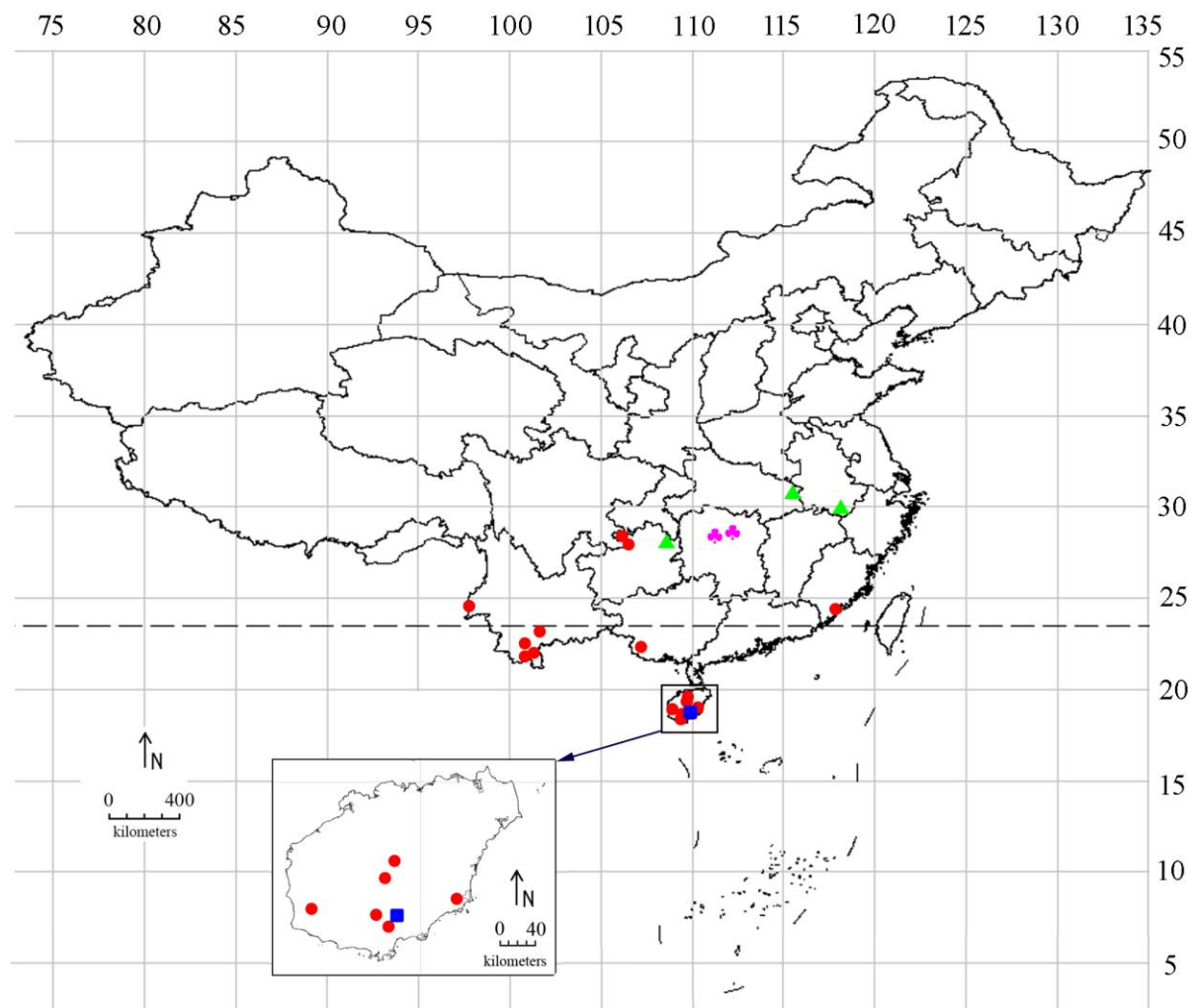


Figure 1. Distribution of *Calicotis* species in China. ●, *C. cuspidata* sp. nov.; ■, *C. dilatata* sp. nov.; *, *C. uncinata* sp. nov.; ▲, *C. crucifera* Meyrick, 1889.

Results

Calicotis Meyrick, 1889

Calicotis Meyrick, 1889: 170. Type species: *Calicotis crucifera* Meyrick, 1889, by monotypy.

Generic characters

Adult: Adults with metallic luster; small-sized, with wingspan usually shorter than 10 mm. Head (Figs 2, 6) smooth, scales appressed; frons broadly rounded, face obliquely backward. Antenna (Fig. 6) filiform; scape broadly flat and dilated, concave ventrally and forming an eye-cap, with rough scales on posterior margin; flagellum stouter in male than in female, without cilia. Labial palpus (Figs 2, 7) three-segmented, third segment slightly shorter than second, pointed apically. Maxillary palpus four-segmented, about 2/5 length of first segment of labial palpus. Hindleg arched and forming triangular shape in lateral view in rest; hind tibia with dense long bristles on dorsal surface, tarsus usually with whorls of bristles at apex of each tarsomere. Forewing narrowly lanceolate, widest near base, gradually narrowed to apex; ground color usually pale, markings usually indistinct. Venation (Fig. 3): R₁ arising from before upper angle of cell, R₄ and R₅ stalked, CuA₁ from lower angle of cell, 1A+2A not furcate. Hindwing linear; cilia very long, about 6–7 times length of wing width; cell open between M₁ and CuA₁, M₁ dissociative, M₂ and M₃ absent, 1A+2A furcate basally. Abdominal tergites with spines arranged in broad inverted V shape on second to seventh segments in male (Fig. 4), in broadly arched shape on second to sixth segments in female (Fig. 5).

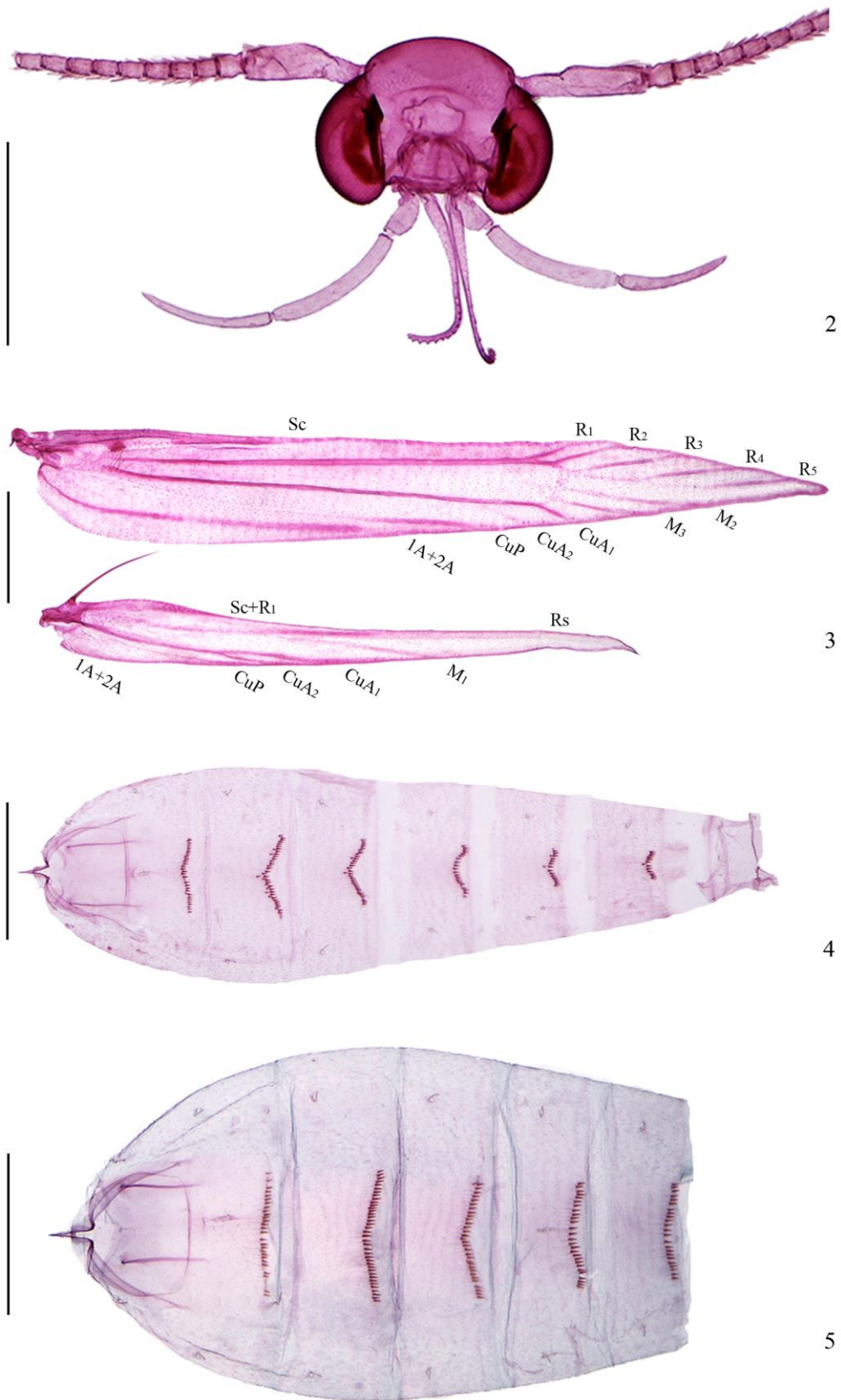
Male genitalia: Uncus and gnathos about equal length. Tegumen branched anteriorly, bluntly rounded anterolaterally. Costa of valva with base usually sclerotized in a ring (costal ring), costal margin often sclerotized more heavily than ventral margin; ampulla present, hooked, situated at distal end of costal ring; sacculus developed; cucullus heavily sclerotized dorsally. Anellar lobes usually shorter than juxta. Aedeagus stout; cornutus absent.

Female genitalia: Intersegmental membrane between papilla analis and eighth segment usually as long as papilla analis; apophysis anterioris thicker than apophysis posterioris. Eighth segment heavily sclerotized on posterior margin, with long setae. Antrum developed. Ductus bursae often as long as or longer than antrum. Corpus bursae ovate or elongate, with signum. Appendix bursae arising from region of transition between ductus bursae and corpus bursae, tube shaped, with vesicular dilation. Ductus seminalis slender.

Diagnosis: The genus *Calicotis* can be apparently identified by the adult having an eye-cap formed by the dilated scape of the antenna, and the stout flagellum without cilia; and the developed costal ring in the male genitalia; the apophysis anterioris thicker than the apophysis posterioris and the ductus bursae as long as or slightly longer than the antrum in the female genitalia. *Calicotis* is superficially similar to *Pachyrhabda* Meyrick by having a broadly rounded vertex and paired stout antennae without cilia. It can be distinguished by the spines on the abdominal tergites in male arranged in a broad inverted V shape, which are arranged in a broadly arched shape in *Pachyrhabda*.

Biology: Meyrick (1889) mentioned that larvae of *C. crucifera* fed on *Platycerium grande* (Fée) Kunze.

Distribution: China, Russia, Mahé Island, Australia, New Zealand, Samoa, Fiji.



Figures 2–5. Morphological features of *Calicotis cuspidata* sp. nov. **2**, head; **3**, wing venation; **4**, spines on abdominal tergites of male; **5**, spines on abdominal tergites of female. (2–4, slide No. NKUGW007; 5, slide No. NKUGW006; scales = 0.5 mm).

Key to Chinese species of *Calicotis*

1. Male 2
 – Female 5
2. Valva pointed apically (Fig. 12) *C. cuspidata* sp. nov.
 – Valva bluntly rounded apically 3
3. Sacculus apically reaching 1/2 of valva on ventral margin (Fig. 14) *C. uncinata* sp. nov.
 – Sacculus apically reaching basal 1/3 of valva on ventral margin 4
4. Uncus hooked apically (Fig. 13) *C. dilatata* sp. nov.
 – Uncus bluntly rounded apically (Fig. 15) *C. crucifera* Meyrick
5. Corpus bursae elongate elliptical (Fig. 17) *C. uncinata* sp. nov.
 – Corpus bursae subovate 6
6. Antrum inverted trapezoidal (Fig. 16) *C. cuspidata* sp. nov.
 – Antrum subrectangular (Fig. 18) *C. crucifera* Meyrick

***Calicotis cuspidata* sp. nov. (Figs 8, 12, 16)**

urn:lsid:zoobank.org:act:7D876BC6-BC3E-4AC5-8790-20C7C2EE1FDA

Type material: **Holotype** ♂, **China:** Mt. Diaoluo National Nature Reserves (19°8'N, 106°42'E), Lingshui, Hainan Province, 922 m, 10.vii.2014, coll. Peixin Cong, Linjie Liu and Sha Hu, genitalia slide No. GW14045. **Paratypes:** **China: Hainan Province:** 7♂, 2♀, same data as holotype; 1♀, Mt. Diaoluo National Nature Reserves, 940 m, 31.v.–2.vi.2007, coll. Zhiwei Zhang and Weichun Li; 1♀, Nanxi Village, Mt. Diaoluo National Nature Reserves (18°40' N, 109°56' E), 75 m, 21.iv.2013, coll. Yinghui Sun, Wei Guan and Tengting Liu; 5♂, same locality as holotype, 24–27.v.2015, coll. Peixin Cong, Wei Guan and Sha Hu; 2♀, Jianfengling National Nature Reserves (18°43'N, 108°53'E), 940 m, 6–7.vi.2007, coll. Zhiwei Zhang and Weichun Li; 8♂, 1♀, Jianfengling National Nature Reserves, 770 m, 31.v.–5.vi.2015, coll. Peixin Cong, Wei Guan and Sha Hu; 1♀, Xinzhong Farm (18°48'N, 110°23'E), Wanning, 4.viii.2008, coll. Bingbing Hu and Li Zhang; 2♂, Yinggeling National Nature Reserves (21°4'N, 109°29'E), 620 m, 7–10.xii.2009, coll. Zhaohui Du and Linlin Yang; 1♀, Yinggeling National Nature Reserves, 620 m, 19.vi.2010, coll. Bingbing Hu and Jing Zhang; 1♀, Mt. Limu Nature Reserves (19°10'N, 109°44'E), Qiongzong, 640–700 m, 4.v.2014, coll. Tengting Liu, Wei Guan and Xuemei Hu; 1♀, Mt. Wuzhi National Nature Reserves (18°32'N, 109°24'E), 742 m, 6.vii.2014, coll. Peixin Cong, Linjie Liu and Sha Hu; 1♂, Mt. Wuzhi National Nature Reserves, 742 m, 20.v.2015, coll. Peixin Cong, Wei Guan and Sha Hu. **Fujian Province:** 1♀, Mt. Tianzhu National Forest Park (24°35'N, 117°55'E), Xiamen, 220 m, 30.viii.2010, coll. Bingbing Hu and Jing Zhang; **Guangxi Zhuang Autonomous Region:** 1♂, Shaoping Forest Centre (22°8'N, 106°42'E), Pingxiang, 190 m, 27.vii.2011, coll. Bingbing Hu; **Guizhou Province:** 1♂, Suoluo National Nature Reserves (28°26'N, 106°01'E), Chishui, 390 m, 29.v.2000, coll. Yanli Du; 1♂, Linjiang (28°09'N, 105°54'E), Xishui, 500 m, 25.ix.2000, coll. Haili Yu; **Yunnan Province:** 1♂, 1♀, Menglun (21°56'N, 101°9'E), Mengla, Xishuangbanna, 18.viii.2010, coll. Yinghui Sun and Lixia Li; 1♂, Tropical Botanical Garden (21°55' N, 101°16' E), Xishuangbanna, 531 m, 19.viii.2010, coll. Yinghui Sun and Lixia Li; 1♀, Tropical Botanical Garden, Mengla, 21.xi.1987, coll. Houhun Li; 1♂, Yexianggu (22°10'N, 100°52'E), Xishuangbanna, 762 m, 19.vii.2014, coll. Shurong Liu, Yuqi Wang and Kaijian Teng; 1♂, Jinghong (22°0'N, 100°46'E), 550 m, 23.xi.1987, coll. Houhun Li; 1♂, 2♀, Yayi (23°14'N, 101°45'E), Pu'er, 21.x.2010, coll. Bingbing Hu, Jing Zhang and Yanpeng Cai; 1♀, Jingpozhai (24°43'N, 97°23'E), Nabang, Yingjiang, 231 m, 2.viii.2013, coll. Shurong Liu, Yuqi Wang and Kaijian Teng.

Diagnosis: This new species is similar to *C. crucifera* Meyrick, 1889 by having similar forewing markings, but can be distinguished from the latter by the forewing with a band extending from basal 1/6 to 2/3 along the fold, the subtriangular cucullus pointed at apex in the male genitalia, and the inverted trapezoidal antrum in the female genitalia. While in *C. crucifera*, the forewing has no band along the fold, and the cucullus is fingerlike and bluntly rounded at apex in the male genitalia, and the antrum is subrectangular in the female genitalia.

Description: Adult (Fig. 8). Forewing length 4.0–5.0 mm. Head with frons pale brown, occiput pale yellowish brown, silvery white in some individuals. Antenna with scape pale brown, flagellum silvery brown. Labial palpus with inner surface silvery white, outer surface brown on entire first segment and basal half of second segment, pale yellowish brown on distal half of second segment and entire third segment. Thorax brown; tegula pale brown in basal half, silvery brown in distal half. Forewing silvery white, in some individuals creamy white or pale yellowish brown; costal margin brown in basal 1/3; cell with an elliptical yellowish brown spot at 2/3, which is dark brown in some individuals, a pale yellow streak extending from its outer margin to lower angle of cell, indistinct in some individuals; fold with a pale yellowish brown band extending from basal 1/6 to 2/3; cilia greyish white, tinged with yellowish brown. Hindwing pale brown, cilia pale greyish brown. Foreleg greyish brown, middle of femur and entire outer surface of tibia blackish brown, tarsus ringed with brown at apex of each tarsomere; midleg greyish yellow, except tarsus blackish brown at apex; hindleg silvery white, tibia dorsally with long bristles from pale grey deepening to brown, ringed with blackish brown at apex, with apical long whorls of bristles from greyish white deepening to brown, tarsus ringed with black brown scales, with whorls of bristles greyish white mixed with brown at apex of first three tarsomeres. Abdomen ochreous yellow on dorsal surface. Anal tuft silvery white.

Variation: In most individuals, the forewing has no pale yellowish brown spot at distal 1/4 medially; in some individuals, such a spot exists.

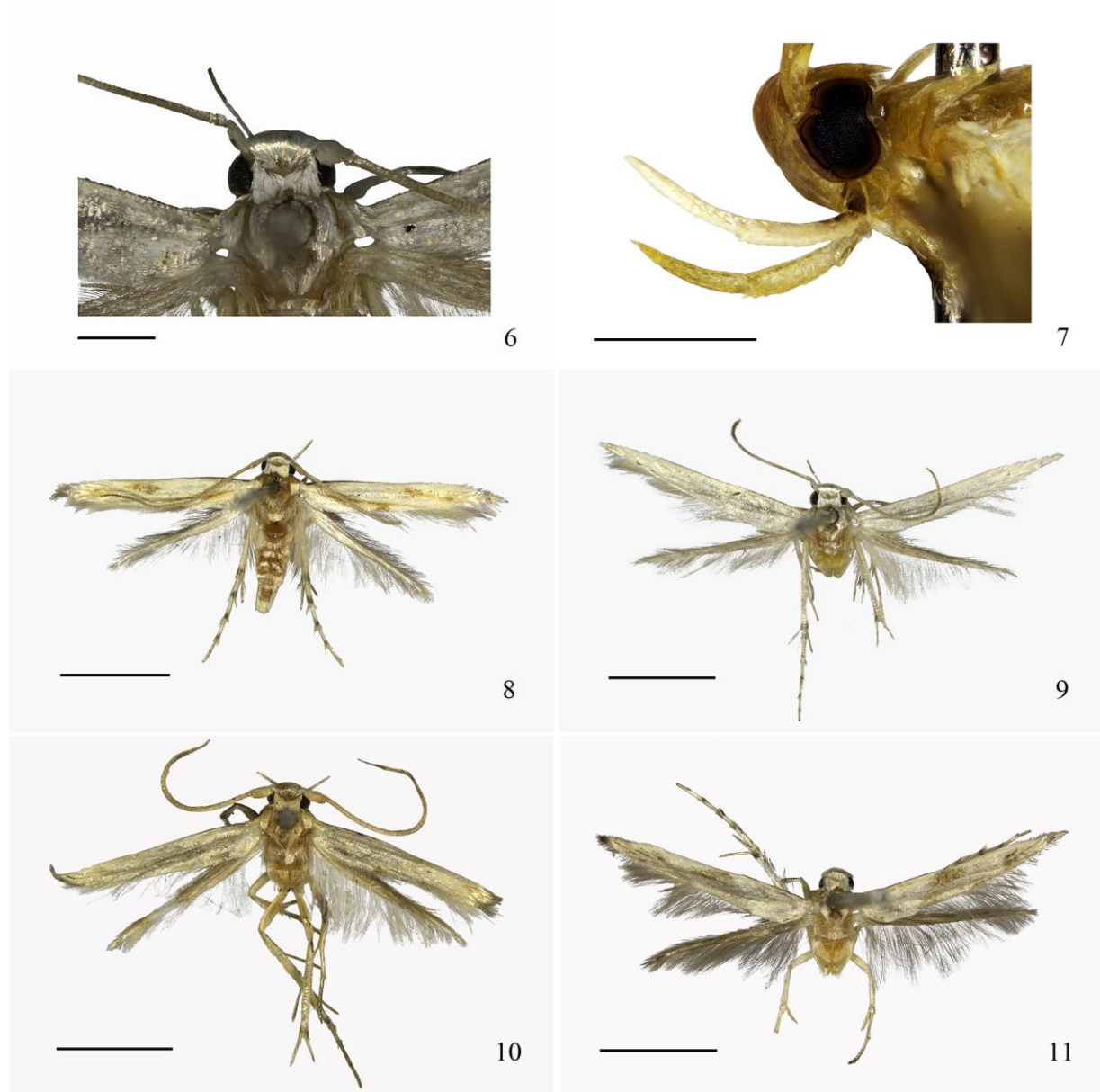
Male genitalia (Fig. 12): Uncus elongate triangular, wide at base, gradually narrowed to apex, slightly concave medially on posterior margin, apically hooked in lateral view (Fig. 12a), with long hairs laterally. Gnathos elongate triangular, wide at base, gradually narrowed to rounded apex. Tegumen about same length as uncus. Valva nearly pediform, pointed apically; costa broad at base, slightly narrowed to apex, apically reaching 3/4 of valva; costal ring developed, heavily sclerotized; sacculus S shaped, broad in basal 1/4, slightly narrowed to 1/2, uniformly narrow in distal half, ventral margin deeply concave near base, with long setae in distal 3/4, apically reaching basal 1/3 of valva on ventral margin; cucullus subtriangular, broad at base, gradually narrowed to pointed apex, dorsal margin straight, ventral margin arched in basal 3/5, slightly concave at 3/5. Vinculum narrowly banded; saccus about 1/8 length of uncus. Juxta subrounded; anellar lobes rounded, shorter than juxta, with long setae. Aedeagus about 1.5 times length of valva, basal 2/3 nearly uniform, distal 1/3 slightly narrowed, distal 1/4 heavily sclerotized ventrally, produced to a bullet-like apical projection; sclerotized plate located at basal 1/4; cornutus absent.

Female genitalia (Fig. 16): Papilla analis broad, with dense setae. Apophysis posterioris about 1.3 times length of apophysis anterioris. Eighth sternite straight on posterior margin, triangular in anterior half; eighth tergite rectangular. Antrum inverted trapezoidal, posterior margin concave medially. Ductus bursae narrow posteriorly, slightly broadened towards

corpus bursae, about 4/5 length of corpus bursae. Corpus bursae subovate; signum situated near posterior margin of corpus bursae, elliptical, more heavily sclerotized in anterior half, with longitudinal sclerotized carina medially. Appendix bursae in form of long narrow tube, with two vesicular dilations at middle and at apex, with dense micro spines, originating from ductus bursae anteriorly. Ductus seminalis slender.

Distribution: China (Fujian, Guangxi, Guizhou, Hainan, Yunnan).

Etymology: This specific name is derived from the Latin *cuspidatus*, meaning pointed, referring to the pointed apex of the valva.



Figures 6–11. Adults of *Calicotis* spp. **6**, *C. dilatata* sp. nov., holotype, ♂, head (dorsal view); **7**, *C. dilatata* sp. nov., holotype, ♂, head (lateral view); **8**, *C. cuspidata* sp. nov., paratype, ♀; **9**, *C. dilatata* sp. nov., holotype, ♂; **10**, *C. uncinata* sp. nov., holotype, ♂; **11**, *C. crucifera* Meyrick, 1889, ♂ (Scales = 2.0 mm except 6–7 = 0.5 mm).

***Calicotis dilatata* sp. nov. (Figs 9, 13)**

urn:lsid:zoobank.org:act:F2063F3F-A3EE-4953-80EC-AE80261B498D

Type material: Holotype ♂, **China:** Mt. Diaoluo National Nature Reserves (18°34'N, 109°55'E), Hainan Province, 940 m, 31.v.2007, coll. Zhiwei Zhang and Weichun Li, genitalia slide No. GW12278.

Diagnosis: This new species is characterized by the uniform forewing without any markings, the gnathos slightly shorter than the uncus, and the subrectangular cucullus dilated in distal 1/5 in the male genitalia. This new species is similar to *C. microgalopsis* Lower, 1904 by having a uniform forewing, but can be distinguished from the latter by the silvery white forewing with diffused brown scales. In *C. microgalopsis*, the forewing is shining snowy white without diffused brown scales.

Description: Adult (Fig. 9). Forewing length 4.7 mm. Head silvery white. Antenna with scape silvery white, flagellum greyish yellow, each segment ringed with yellowish brown at apex. Labial palpus silvery white, third segment pale yellowish brown on outer surface. Thorax and tegula silvery white, tegula with brown dots medially. Forewing silvery white, with diffused brown scales; costal margin brown in basal 1/4; cilia silvery white, tinged with pale brown. Hindwing pale brown; cilia pale greyish brown. Legs silvery white: fore tibia with dark brown streak on outer surface, fifth tarsomere blackish brown at apex; midleg with fifth tarsomere dark brown apically; hind tibia dorsally with sparse long bristles from pale brown deepening to blackish brown except at apex, hind tibia and first three tarsomeres ringed with brown band at apex, with whorls of silvery white bristles apically. Abdomen pale ochreous brown on dorsal surface.

Male genitalia (Fig. 13): Uncus narrow triangular, wide at base, gradually narrowed to hooked apex (Fig. 13a), with long hairs laterally. Gnathos elongate triangular, broad at base, slightly narrowed to rounded apex, slightly shorter than uncus. Tegumen broad, about 1.2 times length of uncus. Valva broad basally; costa apically reaching 3/5 of valva on dorsal margin; costal ring developed, more sclerotized dorsally; sacculus S shaped, wide in basal half, slightly narrowed to pointed apex in distal half, ventral margin concave at middle, apically reaching basal 1/3 of valva on ventral margin; cucullus about 3/4 length of valva, subrectangular, slightly arched in basal 1/5 on ventral margin, dorsal and ventral margins almost parallel between basal 1/5 and 4/5, distal 1/5 slightly dilated. Vinculum narrowly banded; saccus about 1/7 length of uncus. Juxta pyriform; anellar lobes subrounded, with long setae. Aedeagus about 1.2 times length of valva, basal 2/3 uniform, distal 1/3 gradually narrowed to apex, distal 1/4 heavily sclerotized ventrally, produced to a thin distal projection; sclerotized plate located at basal 1/4; cornutus absent.

Female: Unknown.

Distribution: China (Hainan).

Etymology: This specific name is derived from the Latin *dilatatus*, meaning dilated, referring to the dilated distal 1/5 of the cucullus.

***Calicotis uncinata* sp. nov. (Figs 10, 14, 17)**

urn:lsid:zoobank.org:act:FAADB0C4-526F-4CC5-8558-C9B729CBEB1F

Type material: Holotype ♂, **China:** Lianhe Village, Chengguan Town, Taojiang County (28°30'N, 112°8'E), Hunan Province, 27.vii.2004, coll. Yunli Xiao, genitalia slide No. GW13016. **Paratype:** 1♀, Cangxi Town, Xinhua County (28°20'N, 111°7'E), Hunan Province, 9.viii.2004, coll. Yunli Xiao, genitalia slide No. GW12279.

Diagnosis: This new species is similar to *C. luteella* Sinev, 1988 by having an apex-hooked gnathos in the male genitalia and the cordiform signum in the female genitalia. It can be distinguished from the latter by the forewing having a spot at basal 2/3 of the cell and at basal 2/5 of the dorsum respectively, and the sacculus with the apex reaching 1/2 length of the valva on the ventral margin, and the cucullus with dorsal and ventral margins subparallel distally in the male genitalia, and the appendix bursae having a vesicular dilation at middle in the female genitalia. While in *C. luteella*, the forewing has a streak extending from basal 2/3 of the cell to basal 2/5 of the dorsum instead of the two spots, the sacculus apically reaches basal 1/3 of the valva on the ventral margin and the cucullus is slightly narrowed in distal 1/3 in the male genitalia, and the appendix bursae lacks the obvious vesicular dilation in the female genitalia.

Description: Adult (Fig. 10). Forewing length 3.5–4.0 mm. Head greyish brown; occiput pale yellowish brown. Antenna pale yellowish brown. Labial palpus pale yellowish brown, outer surface brown on basal half of second segment. Thorax and tegula pale yellowish brown. Forewing creamy white except brown along basal 1/4 of costal margin, with a pale yellowish brown dot at distal 1/6 medially; cell with an indistinct pale yellowish brown spot at basal 2/3; dorsum with an indistinct yellowish brown spot at basal 2/5; cilia pale greyish white. Hindwing pale brown; cilia pale grey. Foreleg greyish brown, femur and tibia dark brown on outer surface, tarsus ringed with dark brown band at apex of each tarsomere; midleg pale yellowish white, tibia dorsally with pale yellowish brown bristles, tarsus ringed with blackish brown band at apex of each tarsomere; hindleg silvery white, tibia dorsally with long yellowish white bristles, tibia and first three tarsomeres ringed with dark brown band at apex, with whorls of yellowish white bristles. Abdomen dorsally pale ochreous white.

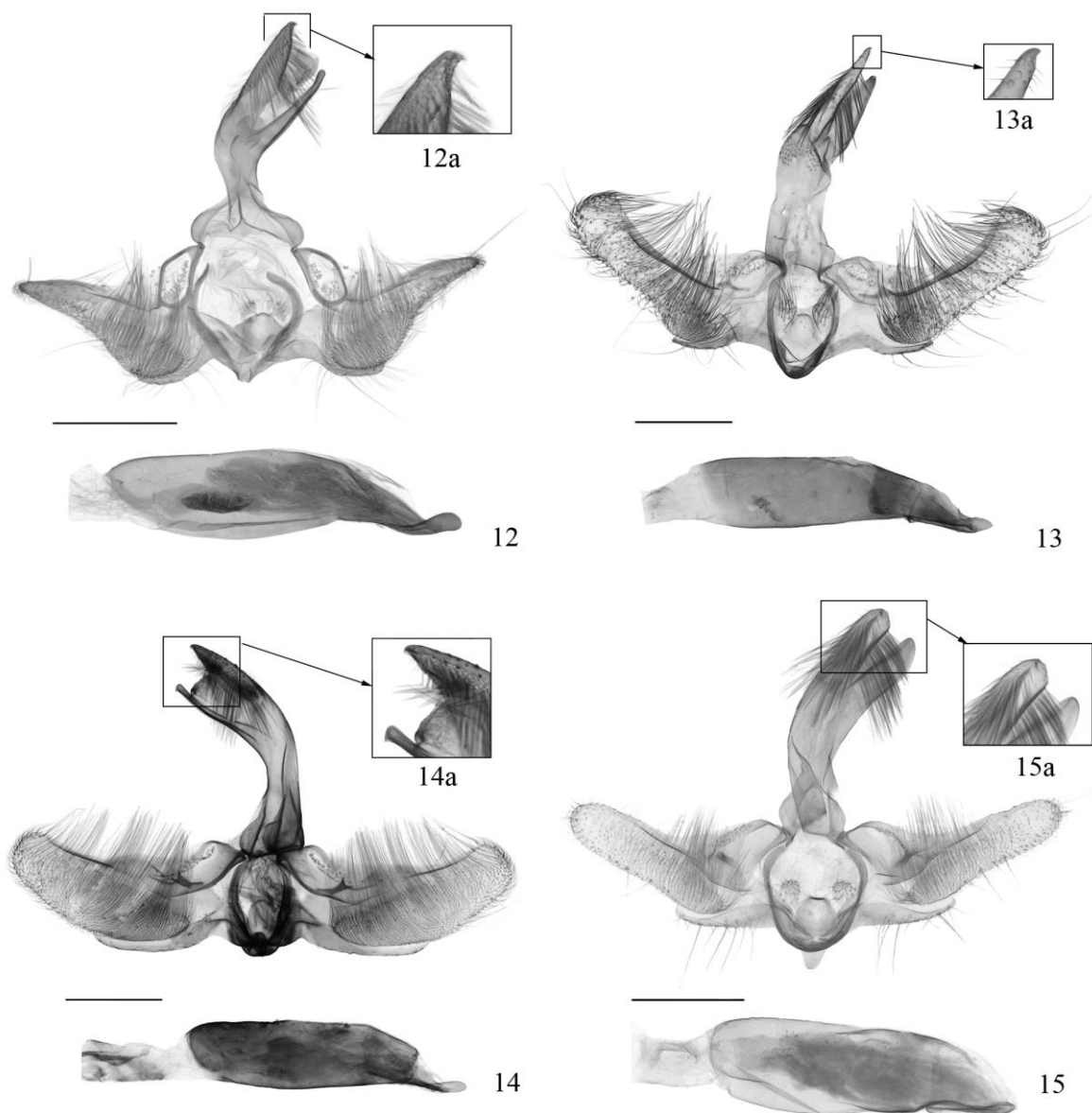
Male genitalia (Fig. 14): Uncus elongate triangular, wide at base, gradually narrowed towards apex, slightly hooked apically in lateral view, with long hairs laterally. Gnathos wide at base, gradually narrowed towards apex, reflexed and hooked apically (Fig. 14a). Tegumen broad, about 1.5 times length of uncus. Valva with dorsal and ventral margins nearly parallel basally; costa apically reaching 3/4 length of valva on dorsal margin; costal ring developed; sacculus wide basally, slightly narrowed to 1/2, evenly narrow in distal 1/2, apically reaching 1/2 length of valva on ventral margin; cucullus thumb shaped, broadened medially, nearly parallel distally, bluntly rounded apically. Vinculum narrowly banded; saccus short, about 1/6 length of uncus. Juxta subovate, with two longitudinal parallel wrinkles medially; anellar lobes ill-defined. Aedeagus about 1.2 times length of valva, basal 2/3 nearly uniform, distal 1/3 slightly narrowed, distal 1/4 heavily sclerotized ventrally, produced to a thin distal projection; cornutus absent.

Female genitalia (Fig. 17): Papilla analis broad, rounded caudally, with short setae. Apophysis posterioris about 1.3 times length of apophysis anterioris. Eighth sternite straight on posterior margin, slightly arched on anterior margin; eighth tergite rectangular. Antrum subrectangular, width about 1.5 times of length, with several longitudinal wrinkles medially.

Ductus bursae about 1/4 length of corpus bursae, narrowed posteriorly, slightly widened towards corpus bursae. Corpus bursae elongate elliptical, with numerous micro spines near base of appendix bursae; signum cordiform, with a large spine anteromedially, located at middle of corpus bursae. Appendix bursae arising from posterior 1/4 of corpus bursae, long tube shaped, with numerous micro spines at transition with corpus bursae, with a large vesicular dilation at middle, with helical loops bearing minute micro spines distally. Ductus seminalis thin.

Distribution: China (Hunan).

Etymology: This specific name is derived from the Latin *uncinatus*, meaning hooked, referring to the gnathos with a hooked apex.



Figures 12–15. Male genitalia of *Calicotis* spp. **12**, *C. cuspidata* sp. nov., holotype, slide No. GW14045 (**12a**, uncus); **13**, *C. dilatata* sp. nov., holotype, slide No. GW12278 (**13a**, uncus); **14**, *C. uncinata* sp. nov., holotype, slide No. GW13016 (**14a**, uncus and gnathos); **15**, *C. crucifera* Meyrick, 1889, slide No. GW13152 (**15a**, uncus and gnathos) (Scales = 0.2 mm).

***Calicotis crucifera* Meyrick, 1889 (Figs 11, 15, 18)**

Calicotis crucifera Meyrick, 1889: 170.

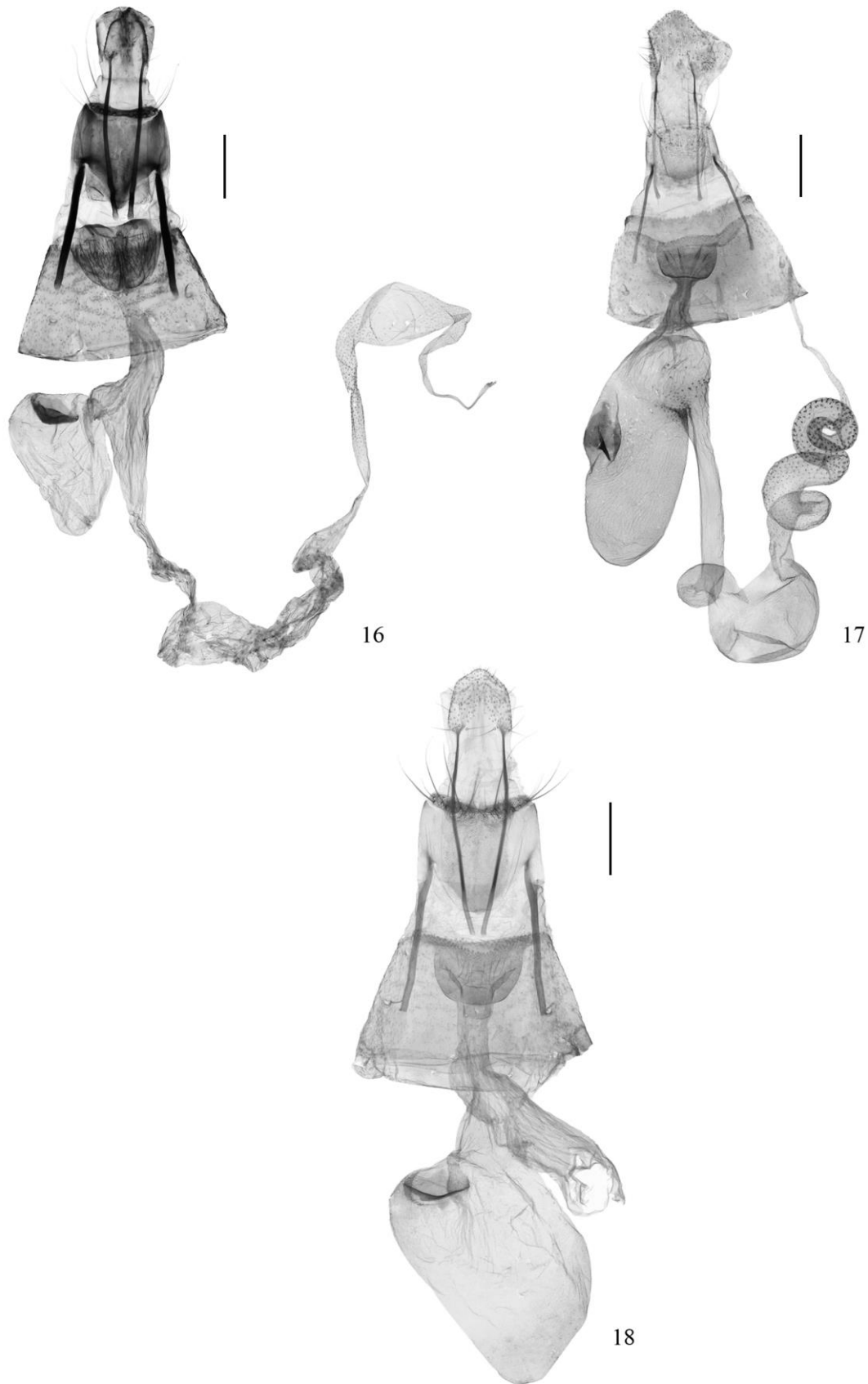
Calicotis caucifera Fletcher, 1929. Misspelling.

Material examined: China: 1♂, Huangshan City (29°43'N, 118°20'E), Anhui Province, 3.viii.2004, coll. Jiasheng Xu and Jialiang Zhang; 1♀, Lijiaba, Mayang River (28°32'N, 108°29'E), Guizhou Province, 700 m, 30.ix.2007, coll. Hui Zhen; 1♂, Taohuachong (30°59'N, 116°02'E), Yingshan County, Hubei Province, 635 m, 27.vi.2014, coll. Wei Guan and Meiqing Yang.

Diagnosis: This species is similar to *C. luteella* Sinev, 1988 by the forewing having an apical spot, but can be distinguished from the latter by the forewing having a spot at basal 3/5 of the cell and at basal 1/3 of the dorsum respectively, the gnathos blunt apically and the cucullus with the dorsal and ventral margins nearly parallel (except at base) in the male genitalia; and the signum located at the posterior part of the corpus bursae in the female genitalia. In *C. luteella*, the forewing has a streak extending from basal 2/3 of the cell to basal 2/5 of the dorsum instead of having the above mentioned two spots, the gnathos is reflexed and hooked at apex, the cucullus is slightly narrowed toward apex in the male genitalia; and the signum is located at the middle of the corpus bursae in the female genitalia.

Description: Adult (Fig. 11). Forewing length 4.5–5.5 mm. Head greyish white; occiput silvery white. Antenna with scape greyish white, flagellum pale yellowish brown. Labial palpus greyish yellow, first and third segments brown apically on outer surface, second segment greyish white on inner surface. Thorax and tegula pale yellowish brown in anterior half, silvery white in posterior half. Forewing silvery white, costal margin dark brown in basal 1/3; large pale brown spot placed before middle below costal margin, suffused brown scales beyond outer margin of cell; dorsum with a diffused blotch consisting of pale brown scales near base, with an indistinct pale brown spot at basal 1/3; apex with a dark brown spot; cilia pale brown. Hindwing brown; cilia pale brown. Legs pale yellowish white: fore femur and tibia dark brown on outer surface, fore tarsus dark brown apically; mid tibia and each tarsomere with yellowish white bristles apically, tarsus dark brown apically; hind tibia dorsally with long bristles from silvery white deepening to brown, tibia brown apically, with whorls of long brown bristles, each tarsomere pale brown at apex, with whorls of short silvery white bristles. Abdomen ochreous yellow on dorsal surface, pale yellow on ventral surface.

Male genitalia (Fig. 15): Uncus elongate rectangular, bluntly rounded apically, with long hairs laterally. Gnathos elongate tongue shaped, wide at base, bluntly rounded at apex (Fig. 15a). Tegumen about 1.6 times length of uncus. Valva broad basally; costa apically reaching 4/5 length of valva; costal ring developed, more sclerotized dorsally; sacculus broad at base, gradually narrowed to apex, apically reaching basal 1/3 length of valva on ventral margin, ventral margin nearly straight; cucullus fingerlike, with dorsal and ventral margins nearly parallel, about 2/3 length of valva. Vinculum narrowly banded; saccus short V shaped, about 1/5 length of uncus. Juxta nearly rounded, with sclerotized carina on posterior margin; anellar lobes small and rounded, with long hairs. Aedeagus about 1.3 times length of valva, basal 3/4 uniform in width, distal 1/4 slightly narrowed, heavily sclerotized ventrally, produced to a thin distal projection; cornutus absent.



Figures 16–18. Female genitalia of *Calicotis* spp. **16**, *C. cuspidata* sp. nov., paratype, slide No. GW13015; **17**, *C. uncinata* sp. nov., paratype, slide No. GW12279; **18**, *C. crucifera* Meyrick, 1889 (Part of appendix bursae and ductus seminalis missing), slide No. GW13153 (Scales = 0.2 mm).

Female genitalia (Fig. 18): Papilla analis broad, posterior margin arched medially, with short setae. Apophysis posterioris about 1.5 times length of apophysis anterioris. Eighth sternite straight on posterior margin, anterior half subtriangular, bluntly rounded anteriorly; eighth tergite rectangular. Antrum subrectangular, width about 1.5 times of length, arched anterolaterally, slightly concave on posterior margin, with symmetrical folds and some wrinkles. Ductus bursae about 2/3 length of corpus bursae, uniformly narrow in posterior 3/4, slightly broadened towards corpus bursae. Corpus bursae subovate; signum crescent, dentate on anterior margin, with sclerotized carina on posterior margin. Appendix bursae anterior to middle of ductus bursae.

Distribution: China (Anhui, Guizhou, Hubei); Australia.

Host plant: Polypodiaceae: *Platycerium grande* (Fée) Kunze.

Remarks: This species is recorded from China for the first time.

Acknowledgements

We express our cordial thanks to Dr. C. Guillermet (Muséum National d'Histoire Naturelle, Paris, France) for helping us check the species *Stathmopoda attiei* Guillermet, 2011. We also thank two anonymous reviewers for their comments. This study was supported by the National Natural Science Foundation of China (No. 31272356).

References

- Kasy F. 1973.** Beitrag zur Kenntnis der Familie Stathmopodidae Meyrick, 1913 (Lepidoptera, Gelechioidea). *Tijdschrift voor Entomologie* 116(13): 227–299.
- Koster J. C. Sjaak & Sinev S. Yu. 2003.** Family Stathmopodidae, pp. 59–67. In: Huemer P., Karsholt O. & Lyneborg L. (eds.), *Microlepidoptera of Europe*. Vol. 5. Stenstrup: Apollo Books, 387 pp.
- Li H. H. 2002.** *The Gelechiidae of China (I) (Lepidoptera: Gelechioidea)*. Tianjin: Nankai University Press, 504 pp.
- Lower O. B. 1904.** Descriptions of New Species of Australian Elachitidae, etc. *Transactions of the Royal Society of South Australia* 28: 168–180.
- Meyrick E. 1889.** Descriptions of New Zealand Microlepidoptera. *Transactions and Proceedings of the New Zealand Institute* 21: 154–188.
- Meyrick E. 1911.** Tortricina and Tineina of the Percy Sladen Trust Expedition to the Indian Ocean in 1905. *Transactions of the Linnean Society of London* 14(2): 263–307.
- Meyrick E. 1922.** *Exotic Microlepidoptera* 2: 481–608.
- Meyrick E. 1927.** Microlepidoptera. In: Insecta of Samoa and other Samoan terrestrial Arthropoda. *Insects of Samoa* 3(2): 65–116.
- Sinev S. Yu. 1988.** A review of bright-legged moths (Lepidoptera: Stathmopodidae) in the fauna of USSR. *Trudy Zoologicheskogo Instituta, Leningrad* 178: 104–133.
- Turner A. J. 1917.** Lepidopterological Gleanings. *Proceedings of the Royal Society of Queensland* 29: 70–106.
- Turner A. J. 1923.** New Australian Microlepidoptera. *Proceedings of the Royal Society of Victoria* 36: 58–81.

Correspondence: Houhun Li, e-mail: lihuhun@nankai.edu.cn

Received: 19.04.2015 Accepted: 07.08.2015 Published: 01.09.2015

Cite paper: Guan W. & Li H. 2015. *Calicotis* Meyrick (Lepidoptera: Stathmopodidae) new to China, with descriptions of three new species. *Journal of Insect Biodiversity* 3(13): 1–13.

<http://dx.doi.org/10.12976/jib/2015.3.13>

<http://www.insectbiodiversity.org>