

A new species of the genus *Epiplema* Herrich-Schäffer, [1855] from China (Lepidoptera: Uraniidae, Epipleminae)

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Abstract

A new species *Epiplema sinica* Han & Han, sp. nov. is described from Guangxi Zhuang Autonomous Region and Guangdong, Fujian, Jiangxi, Sichuan, Yunnan Provinces, China. The images of the adults and the genitalia of both sexes are illustrated and compared with the related species *E. albida* (Hampson, 1891).

Keywords: Lepidoptera, Uraniidae, Epipleminae, *Epiplema*, new species, China.

**Una nueva especie del género *Epiplema* Herrich-Schäffer, [1855] de China
(Lepidoptera: Uraniidae, Epipleminae)**

Resumen

Se describe una nueva especie, *Epiplema sinica* Han & Han, sp. nov., procedente de la región autónoma de Guangxi Zhuang y las provincias de Guangdong, Fujian, Jiangxi, Sichuan y Yunnan, en China. Se ilustran las imágenes de los adultos y la genitalia de ambos sexos y se comparan con los de la especie relacionada *E. albida* (Hampson, 1891).

Palabras clave: Lepidoptera, Uraniidae, Epipleminae, *Epiplema*, nueva especie, China.

Introduction

The genus *Epiplema* Herrich-Schäffer, [1855] with type species *E. acutangularia* Herrich-Schäffer, [1855] from Brazil. To date, this genus includes more than one hundred species, among them, many species had been misplaced, and the Southeast Asia species were transferred to other genera: *Chaetoceras* Warren, 1896, *Chionoptema* Holloway, 1998, *Dysaethria* Turner, 1911, *Europlema* Holloway, 1998, *Leucoptema* Janse, 1932, *Oroplema* Holloway, 1998, *Pseudodirades* Janse, 1932 and *Rhombophylla* Turner, 1911 (Holloway, 1998). The species of *Epiplema* are mainly distributed in the tropical and subtropical regions, only a few species extend into the Palaearctic region, and one species: *E. styx* (Butler, 1881) was recorded in Japan and South Korea (Sohn et al. 2005; Kishida et al. 2011). Up to now, this genus with 5 species is recorded in China: *Epiplema arizana* Matsumura, 1931, *E. arcuata* Warren, 1896, *E. columbaris* (Butler, 1889), *E. himala* (Butler, 1880) and *E. strigulicosta* (Strand, 1916) (Chu et al. 2004; Fu et al. 2020).

Materials and methods

The materials were collected in Guangxi Zhuang Autonomous Region and Guangdong, Fujian, Jiangxi, Sichuan, Yunnan Provinces, China, using 220V/450W mercury lamp and DC black light. Standard methods for dissection and preparation of genitalia slides were used (Kononenko & Han, 2007). The specimens were photographed using a Nikon Z6II camera; the genitalia slides were photographed using an Olympus

photomicroscope and were stacked using Helicon Focus 7.6, and further processed in Adobe Photoshop CC2019. The holotype of the new species is deposited in the collection of Northeast Forestry University, Harbin, China, and the paratypes are deposited in the collection of Northeast Forestry University (NEFU), Harbin, China, and Sun Yat-sen University (SYSU), Guangzhou, China.

Taxonomic account

Genus *Epiplema* Herrich-Schäffer, [1855] 1850-1858

Epiplema Herrich-Schäffer, [1853] 1850-1858. *Samml. aussereurop. Schmett.* (I) 1 (13-17), p. 25, 38, 62

Type species: *Epiplema acutangularia* Herrich-Schäffer, [1855] 1850-1858. *Samml. aussereurop. Schmett.*

(I) 1 (13-17), pl. 58, fig. 324

Type locality: BRAZIL

Descriptions of new species

***Epiplema sinica* Han & Han, sp. nov.** (Figures 1, 2, 3, 7, 10, 13, 14)

<https://zoobank.org/06961C4F-DEA5-47A8-A485-AD6A9DDE4F0D>

Material: Holotype ♂, CHINA, Guangxi Zhuang Autonomous Region, Yinzhulaoshan National Nature Reserve, Hengjiang Station, 15-16-VII-2021, JJ. Fan, B. Gao leg., genitalia No. hmx-120-1, coll. NEFU. Paratypes: 1 ♂, CHINA, Guangdong Province, Maoming City, Xianrendong Nature Scenic Area, 10-VI-2020, FL. Jia, ZY. Jiang leg., genitalia No. hmx-80-1, coll. SYSU; 1 ♀, Guangdong Province, Shaoguan City, Chebaling National Nature Reserve, 29-V-3-VI-2019, HL. Han, J. Wu, WJ. Li leg., genitalia No. hmx-126-2, coll. NEFU; 1 ♀, Fujian Province, Nanping City, Mangdangshan National Nature Reserve, 1-V-2024, Z. Peng leg., genitalia No. hmx-192-2, coll. NEFU; 1 ♀, Jiangxi Province, Jinggangshan City, Jinggangshan National Nature Reserve, Fire command center, 1-VIII-2024, HL. Han, LY. Ha leg., coll. NEFU; 1 ♂, Sichuan Province, Guangyuan City, Tangjiahe National Nature Reserve, 14-X-2024, J. Wu, TT. Zhao, WH. Xu leg., coll. NEFU; 1 ♂, Yunnan Province, Pu'er City, Jiangcheng County, 1-2-VIII-2018, HL. Han, MR. Li, J. Wu leg., genitalia No. hmx-240-1, coll. NEFU.

Description: Wingspan 16-18 mm in male, 21 mm in female. Head pale grey; labial palpus short; antenna filiform, light taupe. Thorax and tegula pale grayish brown; legs with pale grey scales. Abdomen grayish brown to yellowish-brown. Forewing light grey; antemedial line very slender, with curved outward on costal margin region, then extend inwardly curved to the inner margin, and connect with the reddish-brown patch; medium line reddish-brown, outward curved on Cu vein, and closed to reniform spot; postmedial line reddish-brown, broadest accompanied by pale white and slender line on the outside, and outward curved at front of M_2 , then inward curved to inner margin; subterminal line very slender, wave and indistinct; terminal line area with reddish-brown inverted triangle on M vein; reniform spot reddish-brown and narrow eye shaped; tornus with blackish-brown and short tuft; postmedial and median line regions appear a reddish-brown patch on inner margin area; inner margin with gently arc concave at outer half. Hindwing colour same as forewing; antemedial line reddish-brown, broadest, and curved at Cu vein; postmedial line reddish-brown, mixed yellow appear a dot, and parallel to antemedial line; outer margin with short extension at R_5 and M_3 veins.

Male genitalia: Uncus long, slender, slightly hook shaped, strongly sclerotized. Tegumen triangular narrow ca $1.5\times$ the length of uncus. Valva board bar shaped, covered with densely hair; cucullus smooth arc shaped; thick and narrow, extend to cucullus; sacculus rather thick and sclerotized at basal part; sacculus process very board and covered valva; basal of sacculus small and half-moon shaped; peniculus narrow. Saccus "U" shaped. Juxta membranous, slender water chestnut shaped. Aedeagus long cylinder-shaped, slightly wave, carina slender; caecum short, as $1/6$ long as aedeagus. Vesica membranous, with densely small grain, without cornutus.

Female genitalia: Papillae anales sclerotized conical shaped, covered with short setose. Apophysis posterioris same as apophysis anterioris. Ostium bursae funnel shaped, slightly sclerotized. Ductus bursae membranous, long, common and straight, ca $1.5\times$ the length of corpus bursae. Corpus bursae membranous, olive shaped, densely covered with small grain; signum absent.

Diagnosis: Superficially this new species is similar to *E. albida* (Hampson, 1891) (Figures 4, 5, 8, 11)

and *Oroplema oyamana* (Matsumura, 1931) (Figures 6, 9, 12), but has several distinguishing features as follows: in adult, the postmedial line accompanied with grayish-white slender line on the outside (in *E. albida* and *O. oyamana* absent); terminal line area curved into inverted triangle shaped on M vein (in *E. albida* and *O. oyamana* doesn't curved into inverted triangle shaped); antemedial line connect with the bar shaped patch on the back of postmedial and median line regions at inner margin (in *E. albida* and *O. oyamana* far from). In the male genitalia, the aedeagus is long, thin and weakly wave (in *E. albida* short and broad; in *O. oyamana* long and curved); cornuti (in *E. albida* absent; in *O. oyamana* short hook shaped); basal of sacculus small and half-moon shaped (in *E. albida* large circular shaped; in *O. oyamana* common). In the female genitalia, ductus bursae straight and common (in *E. albida* curved and broad; in *O. oyamana* wave and slender); corpus bursae olive shaped (in *E. albida* irregular gourd shaped; in *O. oyamana* oval shaped).

Distribution: China (Guangxi: Ziyuan; Guangdong: Maoming, Shaoguan; Fujian: Nanping; Jiangxi: Jinggangshan; Sichuan: Guangyuan; Yunan: Pu'er) (Figure 14).

Etymology: The species name *sinica* is named after the distribution region of this new species.

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Conflict of Interest

The authors declare that there are no known financial interest or personal relationship that could have influenced the work presented in this article.

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Figures 1-6. Adults of *Epiplema* and *Oroplema* spp. **1.** *Epiplema sinica* Han & Han, sp. nov., male, holotype, Guangxi, China **2.** Ditto, male, paratype, Guangdong, China **3.** Ditto, female, paratype, Guangdong, China **4.** *E. albida* (Hampson, 1891), male, Sri Lanka, (after Cock & Shaw, 2017) **5.** Ditto, female, Sri Lanka, (after Cock & Shaw, 2017) **6.** *Oroplema oyamana* (Matsumura, 1931), male, Fujian, China. Scale bar: 1 cm.



Figures 7-12. Genitalia of *Epiplema* and *Oroplema* spp. **7.** *E. sinica* Han & Han, sp. nov., male, holotype, genit. prep. hmx-120-1 (in NEFU) **8.** *E. albida* (Hampson, 1891), male, (after Cock & Shaw, 2017) **9.** *Oroplema oyamana* (Matsumura, 1931), male, genit. prep. hmx-43-1 (in NEFU) **10.** *E. sinica* Han & Han, sp. nov., female, paratype, genit. prep. hmx-126-2 (in NEFU) **11.** *E. albida* (Hampson, 1891), female, (after Cock & Shaw, 2017) **12.** *Oroplema oyamana* (Matsumura, 1931), female, genit. prep. hmx-132-2 (in NEFU)

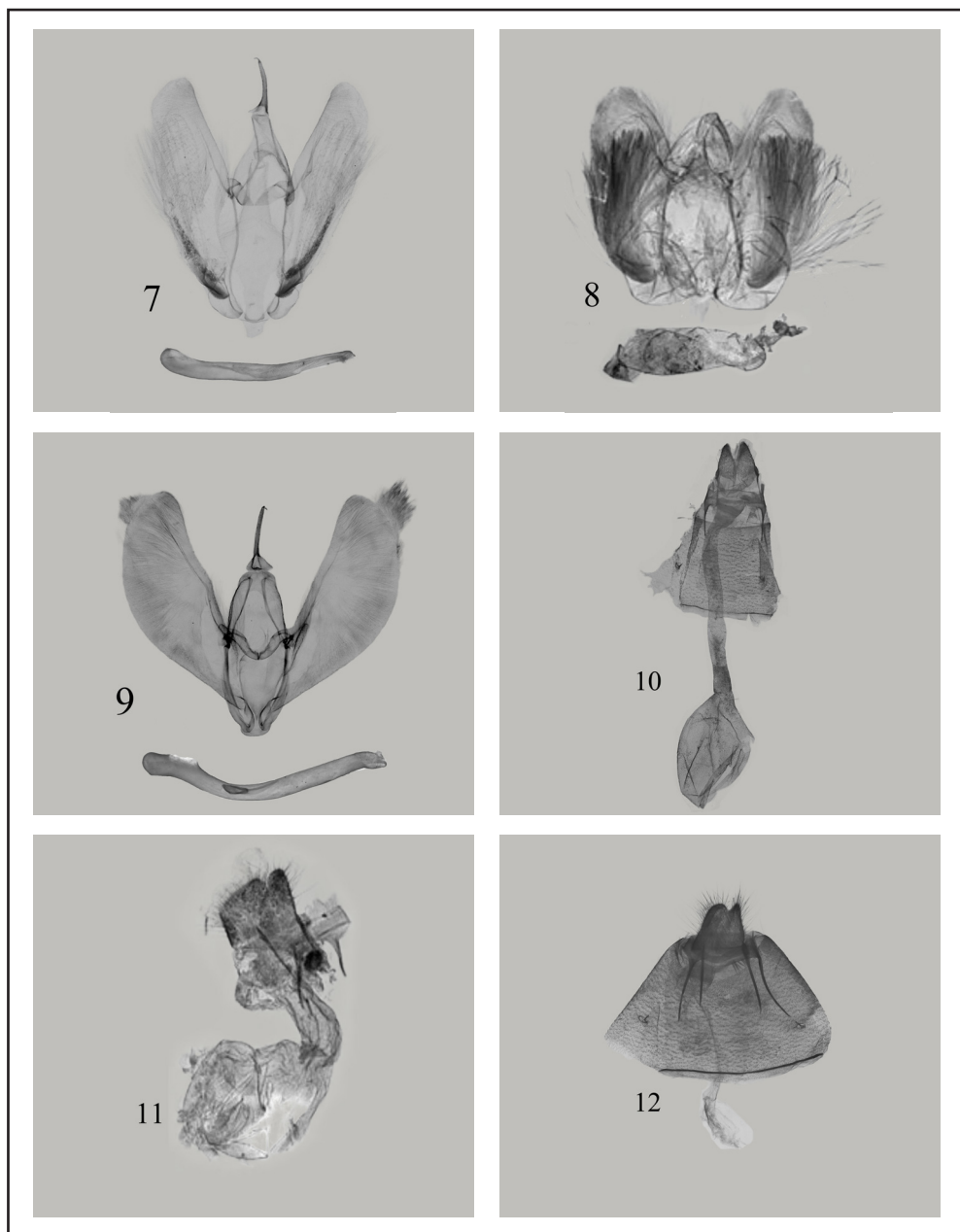


Figure 13. Living male adult, Sichuan Provinve, Guanyuan City, Tangahe National Nature Reserve, Photograph by Dr. Jun Wu.



Figure 14. Collecting site of *Epiplema sinica* Han & Han, sp. nov.

