

## Two new species of *Pangrapta* Hübner (Lepidoptera: Erebidae) from China

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**Abstract:** Two new species, *Pangrapta paraumbrosa* **sp. nov.** (Hunan, Shaanxi, Sichuan) and *P. hutiaoxiaensis* **sp. nov.** (Yunnan), are described from China. *P. paraumbrosa* is similar to *P. umbrosa*, but it can be easily distinguished by a larger wingspan, a grayish white reniform spot, valva without process, vesica with the different size cornuti, and a screwy and membranous ductus bursae; *P. hutiaoxiaensis* is similar to *P. shivula*, but it can be easily distinguished by forewing with a big orbicular spot with blackish brown circle, a gray reniform spot with brown circle and partially apparent stripes in the hindwing, and male genitalia with a cluster of cornuti on vesica. Detailed illustrations of adults and genitalia are provided.

**Key words:** Noctuoidea; Pangraptinae; taxonomy

### 中国眉夜蛾属二新种（鳞翅目：裳蛾科）

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**摘要:** 描述中国眉夜蛾属 2 新种: 拟淡眉夜蛾 *Pangrapta paraumbrosa* **sp. nov.** (湖南、陕西、四川) 和虎跳峡眉夜蛾 *P. hutiaoxiaensis* **sp. nov.** (云南)。拟淡眉夜蛾与比较种淡眉夜蛾的区别如下: 拟淡眉夜蛾翅展更宽大, 肾纹灰白色, 雄性抱器无凸起结构, 阳茎端膜具大小不一的角状器, 囊导管膜质且扭曲; 虎跳峡眉夜蛾与比较种小刀眉夜蛾 *P. shivula* 的区别如下: 虎跳峡眉夜蛾前翅的环纹较大, 呈黑褐色圆环, 肾纹灰色, 呈褐色环状, 后翅具明显的不完整带状条纹, 雄性阳茎端膜具 1 簇角状器。成虫和生殖器以图版展示。

**关键词:** 夜蛾总科; 眉夜蛾亚科; 分类

### Introduction

The genus *Pangrapta* was established based on the type-species *Pangrapta decoralis* Hübner, 1818 from America. Recently, *Pangrapta* has been comprised of about 100 species in the world (Poole 1989; Holloway 2005; Kishida 2010; Hu & Wang 2013, 2019; Hu *et al.*

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2017). This genus was once placed in several subfamilies in different studies, e.g., in Catocalinae (Holloway 2005), Eublemminae (Fibiger & Lafontaine 2005) and Pangraptinae (Holloway 2011; Kishida 2011). Zahiri *et al.* (2012) assigned it to the subfamily Pangraptinae of Erebidae based on integrated data. This genus can be externally recognized according to the adult features having the stretched upward labial palpus, a triangle or trapezium between postmedial and subterminal lines along the costal margin and an angled centrally forewing (Holloway 2011; Kishida 2011).

In China, *Pangrapta* consists of 32 species (Galsworthy 1997; Chen 1999; Hu & Wang 2013, 2019; Hu *et al.* 2017). In the present study, we describe two new species.

## Material and methods

All specimens studied here were collected at a 500W light tent. Specimens were anaesthetized by ammonium-hydroxide. During the dissection of the genitalia, abdomens were macerated in 10% sodium hydroxide (NaOH) and genitalia were mounted in glycerin (C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>). The color images of the adults were taken by a NIKON D780 digital camera, while the genitalia were photographed by the Phenix Phmias X64 system. Plates were compiled by Adobe Photoshop software CC 14.0. All specimens illustrated in this paper are deposited in the collection of the Southwest University of Science and Technology (SWUST), Mianyang, China. Terminology of genitalia follows the book Atlas Genitalia of Noctuidae in Korea (Kononenko & Han 2007).

## Taxonomy

### 1. *Pangrapta paraumbrosa* sp. nov. (Figs. 1A–E)

Description. Head blackish brown; antenna brown, filiform; labial palpus white with black, stretched upward beyond the vertex. Thorax and abdomen blackish brown. Forewing ground color pale blackish brown with the medial area grayish white; an approximately quadrangular and grayish white patch (the triangular patch in female) between postmedial and subterminal lines; a grayish white patch at apical angle; basal line black; antemedial line broad, arc-shaped, blackish brown; orbicular spot blackish brown circle; reniform spot a blackish brown circle, filled with gray, with a blackish brown and curved line in the middle; medial line sinuate, blackish brown, widened above cell, thin at posterior part, parallel with postmedial line; postmedial line sinuate, blackish brown, widened above cell, thin at posterior part; subterminal line grayish white, vague; terminal line black, wavy; cilia brown. Hindwing ground color pale blackish brown; medial line black; discal spot blackish brown, filled with grayish white; postmedial line black, sinuate, with a bronze area inside and a black area outside; subterminal line blackish brown, sinuate, with the brown area inside; terminal line black, wavy; cilia brown.

Male genitalia. Uncus strong, relatively broad, pointed and thin at the top. Tegumen broad, 1.5 times as long as uncus. Valva relatively thin and long, with the parallel margins, almost 3 times as long as uncus. Sacculus slender. Saccus approximately U-shaped. Aedeagus straight, medium long; vesica with two apical diverticula, two cornuti plates on each diverticulum.

Female genitalia. Papillae anales short and broad. Apophysis posterioris thin; apophysis

anterioris relatively broad, divided basally. Ostium slightly sclerotized at both sides. Ductus bursae membranous, long and strongly screwy; appendix bursae membranous, oval, smaller than corpus bursae. Corpus bursae approximatively round, sclerotized partially.

**Holotype.** ♂(SWUST), **China**, Hunan, Sangzhi, Badagongshan, 25–30-IV-2006, coll. Min WANG, Slide No. hyq 750. **Paratypes.** 1♂1♀, same data as holotype, Slide Nos. hyq 338-female, hyq 285-male; 1♀(SWUST), Sichuan, Yingjing, Longcanggou, 1,500 m, 22–30-VII-2015, coll. Min WANG; 3♀(SWUST), Shaanxi, Baoji, Jialingjiangyuantou, 1,020 m, 10-VIII-2012, coll. Min WANG, Slide Nos. hyq 843, hyq 844, hyq 845; 1♀(SWUST), Sichuan, Baoxing, Donglashan, 1,482 m, 29°43'N, 102°37'E, 15-VI-2012, coll. Min WANG, Slide No. hyq 814.

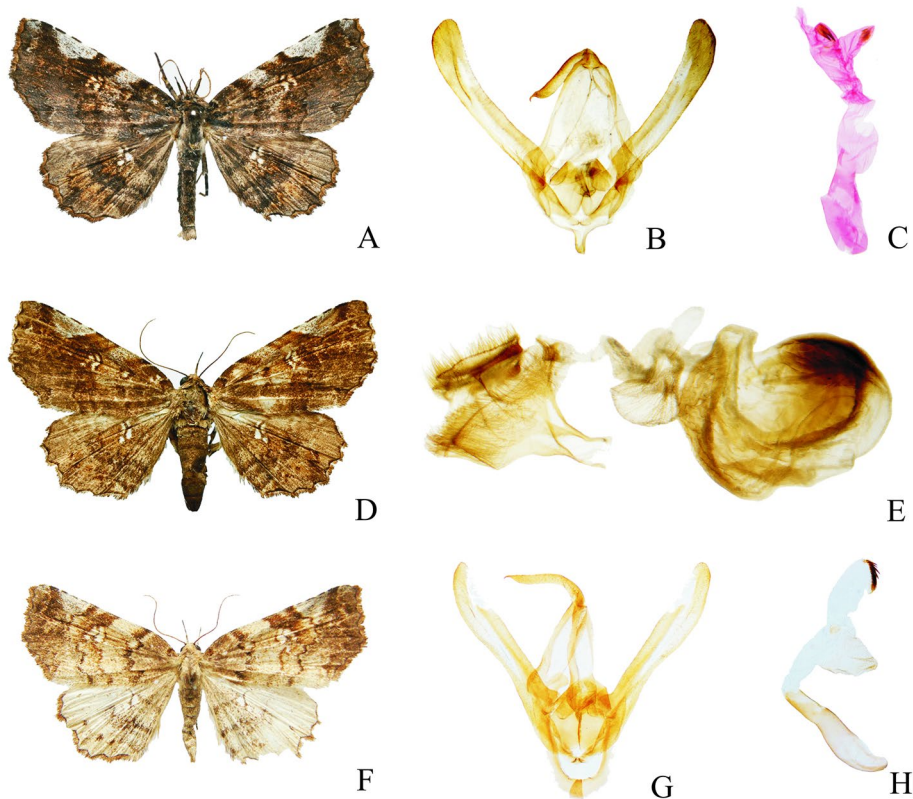


Figure 1. *Pangrapta* spp., adult & genitalia. A–C. *Pangrapta paraumbrosa* sp. nov., holotype: A. Adult; B, C. Male genitalia; D, E. *P. paraumbrosa* sp. nov., paratype (female, slide No. hyq 338): D. Adult; E. Genitalia; F–H. *P. hutiaoxiaensis* sp. nov., holotype: F. Adult; G, H. Male genitalia.

**Etymology.** The specific epithet *paraumbrosa* is derived from the Latin word “para” and “umbrosa”, indicating shading.

**Diagnosis.** Externally, this new species closely resembles *Pangrapta umbrosa* (Nakao 2023) with highly uniform wing patterns, but this new species has a larger wingspan (34–39 mm) and a grayish white reniform spot, while *P. umbrosa* has a smaller wingspan (25–31 mm) and a grayish brown reniform spot. The other features for identification are found as follows: in the

forewing, male adult of the new species has a quadrangular patch between postmedial and subterminal lines, while male adult of *P. umbrosa* has a triangular patch between postmedial and subterminal lines. In the male genitalia, this new species has a relatively long tegumen, a longer valva without process, parallel margins of valva with a slightly sclerotized costal margin, a slender sacculus and a relatively long vesica with the different size cornuti, while *P. umbrosa* has a relatively short tegumen, a shorter valva with an approximately triangular process medially, tapering margins of valva with the slightly membranous costal margin distally, a big and similarly triangular sacculus and a relatively short vesica with the same size cornuti. In the female genitalia, this new species has a strongly screwy and membranous ductus bursae, an oval appendix bursae and a partially sclerotized and round corpus bursae, while *P. umbrosa* has a twisty and partly sclerotized ductus bursae, an approximately rounded appendix bursae and an almost entirely sclerotized and oval corpus bursae.

## 2. *Pangrapta hutiaoxiaensis* sp. nov. (Figs. 1F–H)

Description (male). Head light brown; antenna brown, filiform in the male; labial palpus porrect and predominantly covered with blackish brown scales. Thorax light brown. Abdomen brown. Forewing ground color pale brown; antemedial area grayish brown, terminal and sectional subterminal areas brown; an approximately triangular and grayish white patch between postmedial and subterminal lines; basal line dark brown, just represented at anterior part; antemedial line broad, sinuate and blackish brown; orbicular spot blackish brown circle; reniform spot brown circle, filled with gray, with a brown and curved line in the middle; medial line sinuate, widened and dark brown before cell, thin and brown at posterior part, parallel with postmedial line; postmedial line sinuate, blackish brown and broad closing to costal margin; subterminal line grayish white; terminal line black and wavy; cilia brown. Hindwing ground color gray; medial line dark brown; discal spot brown and arc-shape; postmedial line dark brown, double lines, represented at posterior part; subterminal line dark brown, represented at the last third, with several dots outside; cilia brown.

Male genitalia. Uncus slender, pointed and thin at the tip, as long as tegumen. Tegumen broad. Valva slender, almost 3 times as long as uncus, ventral margin broad distally. Saccus U-shaped. Aedeagus slender. Vesica with a median diverticulum and a cluster of cornuti on apical diverticulum.

Female genitalia. Unknown.

**Holotype.** ♂(SWUST), **China**, Yunnan, Shangri-la, Hutiaoxia, 26-VI-2004, coll. Min WANG, Slide No. hyq 306. **Paratype.** 1♂, same date as holotype, Slide No. hyq 307.

**Etymology.** The specific epithet *hutiaoxiaensis* is derived from the type locality, Hutiaoxia, Yunnan.

**Diagnosis.** This new species is closer to *Pangrapta shivula* (Hu & Wang 2019, Figs. 30, 31) with the patterns of wings and the configurations of male genitalia. The main diagnostic differences can be observed as follows: in the forewing, the new species has a pale brown ground color, a big orbicular spot with blackish brown circle, a gray reniform spot with brown circle and partially apparent stripes in the hindwing, while *P. shivula* has a brown with black ground color, a small orbicular spot with black circle, a brown reniform spot with indistinct circle and apparent stripes in the hindwing; in the male genitalia, the new species has an uncus with parallel margin

distally, a constricted margin of valva medially and a cluster of cornuti on vesica, while *P. shivula* has an uncus with hump distally, a parallel margin of valva and two cornuti on vesica.

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