

A new species of *Tabidia* Snellen (Lepidoptera: Crambidae) from China

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Abstract: *Tabidia longatuba* Wang, Du & Xiao **sp. nov.** is described as new to science based on specimens collected from the Dabie Mountains, Hubei, China. DNA barcodes of this species are provided. This new species is similar to *Tabidia candidalis* in morphology, but can be distinguished by the body and wings yellowish white, female with a blackish brown stigma near 1/3 of posterior margin in the forewing, ambilateral of transtilla expanded and saccus somewhat shovel-shaped in the male genitalia, the ductus bursae length about 18 times of apophysis anterioris in the female genitalia.

Key words: Pyraloidea; Spilomelinae; DNA barcodes; taxonomy

中国条纹野螟属 *Tabidia* 一新种记述 (鳞翅目: 草螟科)

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摘要: 记述采自中国湖北大别山的条纹野螟属 *Tabidia* 1 新种: 长管条纹野螟 *Tabidia longatuba* Wang, Du & Xiao **sp. nov.**, 并提供该新种的 DNA 条形码。该新种形态特征与黑斑条纹野螟 *Tabidia candidalis* 相似, 但新种躯体和翅黄白色, 雌性前翅后缘 1/3 处有 1 黑褐色斑点; 雄性外生殖器中抱器背基突两侧发达, 囊形突似铲状; 雌性外生殖器中输卵管长度约为前表皮突的 18 倍。

关键词: 螟蛾总科; 斑野螟亚科; DNA 条形码; 分类

Introduction

The genus *Tabidia* was established by Snellen (1880) with *T. insanalis* Snellen as the type species from Indonesia. To date, this genus is comprised of twelve species worldwide which are mainly distributed in the Oriental and Australian regions (Nuss *et al.* 2023). Three species, namely *T. candidalis* (Warren, 1896), *T. strigiferalis* Hampson, 1900 and *T. obvia* Du & Li, 2014 have been reported in China (Snellen 1883; Warren 1896; Hampson 1896, 1898; Caradja 1925; Caradja & Meyrick 1933; Klima 1939; Lu & Guan 1953; Park 1983; Kirpichnikova 1999; Wang *et al.* 2003; Bae *et al.* 2008; Li *et al.* 2009; Du & Li 2014). Du and

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Li (2014) redescribed the first two species and newly reported the latter species, providing a key to the Chinese species of this genus. In this study, we describe a new species, *Tabidia longatuba* **sp. nov.**, and provide DNA barcodes.

Material and methods

The specimens in this study were collected by light traps in the Dabie Mountains, China. Morphological terminology follows Maes (1995) and Kristensen (2003). Genitalia were dissected and mounted according to the methods introduced by Li and Zheng (1996). Images of adults and genitalia were taken with a Canon EOS70D camera using an EF 180mm F/3.5L USM lens and Nexcope NE930 microscope respectively. The holotype and paratypes of this new species are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS).

DNA was extracted from legs of dry adult specimens using TINAamp Genomic DNA Kit (DP304). The 658bp barcode region of COI was amplified with the LepF1 and LepR1 primers (Hajibabaei *et al.* 2006). PCR products were sent to Tianyi Huayu Gene (Wuhan, China) for sequencing using the aforementioned primers (<https://www.tyhygene.com/>).

Taxonomy

Tabidia longatuba Wang, Du & Xiao **sp. nov.** (Figs 1–3)

Description. Adult (Figs 1A, 1B) Wingspan 18.0–22.0 mm. Body yellowish white, mixed with pale ochreous or pale brown scales dorsally. Head pale yellow and pale ochreous, except vertex yellowish white. Antennae pale ochreous. Patagium and tegula yellowish white, slightly pale yellow at the base. Fore- and hind wings yellowish white, along veins pale ochreous. Forewing orbicular stigma blackish brown, and postmedial line discontinuously curved from 3/5 of costal margin to 3/5 of posterior margin, extending outward between M_2 and CuA_1 in U shape, with apex angle, anal angle and 1/2 of outer margin light brown. Female with a black-brown stigma near 1/3 of posterior margin. Hindwing with a continuously curved posterior median line from 3/5 of costal margin to 2/3 of posterior margin, posterior median line with shape similar to that of forewing. Hindwing blackish brown along outer margin, except yellowish white from 2/5 to 3/5. Legs inner side yellowish white, outer side pale yellow and pale ochreous.

Male genitalia (Figs 2A–C) Uncus subrectangular, with a truncated apex. Gnathos slightly inflated in distal half. Valva tongue-shaped, with dense fine hairs, terminally with thicker hairs. Costa ossified. Transtilla middle 1/2 transversal, ambilateral 1/4 irregularly expanded. Saccus somewhat shovel-shaped, with base 1/2 narrowly handle-shaped, distal 1/2 broadly heart-shaped, with a small dented process at middle of anterior margin. Juxta cylindrical, length about 3 times of width. Phallus cylindrical, length about 5 times width, and 0.8 times length of valva. Ductus ejaculatorius thin and very long, slightly spiral curved.

Female genitalia (Figs 2D–F) Apophysis anterioris about 1.2 times as long as apophysis posterioris, expanded and acutely projected in I-shaped at about basal 1/3, apophysis posterioris projected to an elongated conical shape at about basal 1/3. Ductus bursae thin and

very long, about 18 times as long as apophysis anterioris, slightly spiral curved. Corpus bursae small, oval; signum absent.

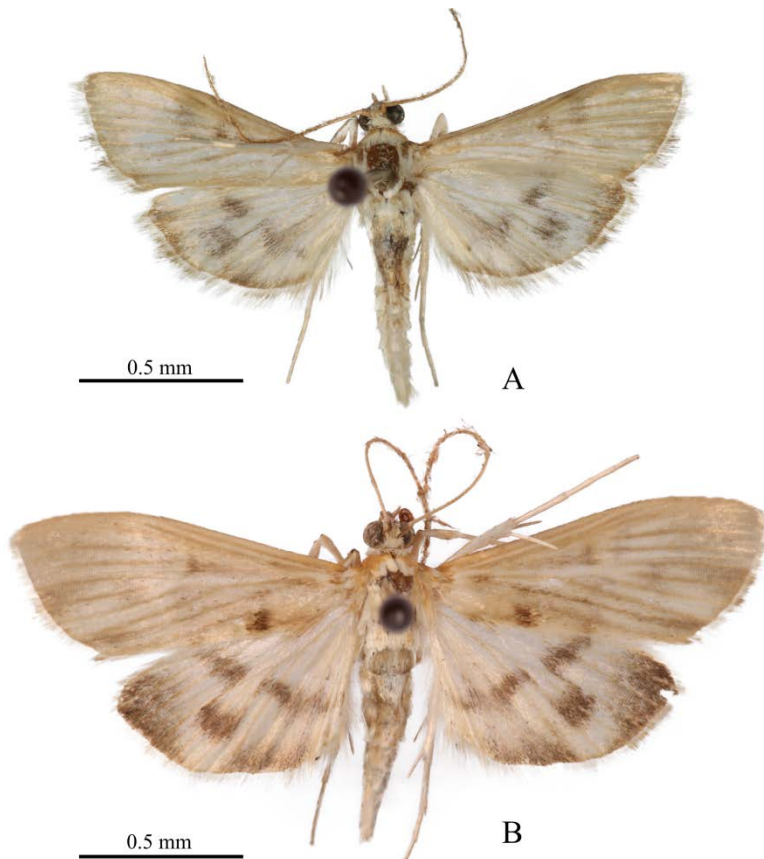


Figure 1. *Tabidia longatuba* Wang, Du & Xiao **sp. nov.** adult. A. Holotype, ♂, specimen no. IOZ(E)224468; B. Paratype, ♀, specimen no. IOZ(E)224469.

Holotype. ♂, **China**, Hubei Province, Henggang Mountain, Yuchuan Town, Wuxue City, 30°10'21"N, 115°39'52"E, alt.193 m, 24-VIII-2022, leg. Jiaxin WANG & Peng YU, specimen no. IOZ(E)224468, genitalia slide no. Lep3048, GenBank accession no. OR371986, DNA voucher slide no. WJXC3. **Paratypes.** 1♀, **China**, Hubei Province, Wujia Mountain, Dabie Mountain National Nature Reserve, Ying Shan County, 31°4'21"N, 115°49'38"E, alt. 262 m, 06-VI-2022, leg. Jiaxin WANG & Peng YU, specimen no. IOZ(E)224469, genitalia slide no. Lep2200, GenBank accession no. OR371985, DNA voucher slide no. WJXC2. 1♂, **China**, Hubei Province, Sanjiao Mountain, Xishui County, 30°29'56"N, 115°33'32"E, alt. 444 m, 24-VIII-2022, leg. Jiaxin WANG & Peng YU, specimen no. IOZ(E)224470, GenBank accession no. OR596416, DNA voucher slide no. WJXC2.

Etymology. The specific epithet is derived from the Latin words *longus*- (= long) and *tubus* (= tube), in reference to the long ductus ejaculatorius of male genitalia and ducts bursae of female genitalia.

Host plant. Unknown except that the new species occurs in pine, shrub and broadleaf forests (Fig. 3) at low altitudes in early June and late August.

Diagnosis. According to the genetic analysis, male and female specimens of *T. longatuba* **sp. nov.** display no genetic distance, indicating that they belong to the same species. The female has an additional blackish brown stigma near 1/3 of posterior margin in the forewing, which represents the dimorphism between the male and female.

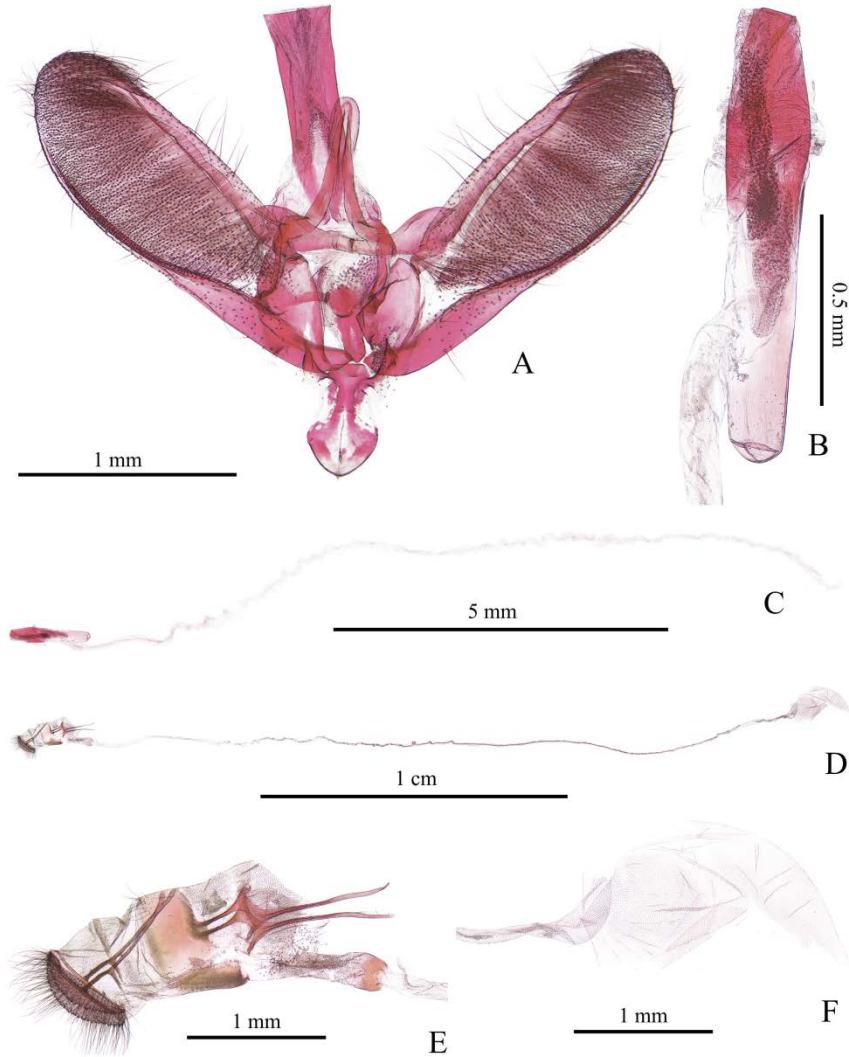


Figure 2. *Tabidia longatuba* Wang, Du & Xiao **sp. nov.** genitalia. A–C. Holotype, ♂, slide no. Lep3048; D–F. Paratype, ♀, slide no. Lep2200.

Remarks. This species is similar to *Tabidia candidalis* (Warren, 1896) in morphology, but can be distinguished by the body and wings yellowish white, female with a blackish brown stigma near 1/3 of posterior margin, transtilla ambilaterally expanded, saccus somewhat shovel-shaped, the ductus bursae length about 18 times of apophysis anterioris. In *T. candidalis*, the body and wings are white, the transtilla does not swell, the saccus is oval, and the ductus bursae is about 7 times as long as apophysis anterioris.



Figure 3. Habitat of *Tabidia longatuba* **sp. nov.** A. Holotype locality, altitude 193 m, date 24-VIII-2022, Henggang Mountain, Wuxue City, Hubei Province; B. Paratype locality, altitude 262 m, date 06-VI-2022, Wujia Mountain, Yingshan County, Hubei Province; C. Paratype locality, altitude 444 m, date 23-VIII-2022, Sanjiao Mountain, Xishui County, Hubei Province.

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