

A new species in the genus *Ourapteryx* Leach (Lepidoptera: Geometridae) from Xizang, China

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Abstract: One new species of the genus *Ourapteryx* Leach, 1814, from Jilong Valley, Xizang, China, is described: *O. jilongensis* sp. nov. Illustrations of external features and male genitalia of this new species are provided. Morphology traits are compared with two other closely-related species, *O. excellens* Butler, 1889 and *O. convergens* Warren, 1897.

Key words: Geometroidea; Ennominae; taxonomy

中国尾尺蛾属 *Ourapteryx* 一新种记述 (鳞翅目: 尺蛾科)

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摘要: 记述在中国西藏吉隆沟发现的尾尺蛾属 1 新种: 吉隆尾尺蛾 *Ourapteryx jilongensis* sp. nov. 提供了新种的成虫及雄性外生殖器图, 并与其形态近似的 2 种尾尺蛾: 优尾尺蛾 *O. excellens* Butler, 1889 和聚尾尺蛾 *O. convergens* Warren, 1897 进行了形态学比较。

关键词: 尺蛾总科; 灰尺蛾亚科; 分类

Introduction

The genus *Ourapteryx* Leach, 1814 belongs to the tribe Ennomini of the subfamily Ennominae according to morphology and molecular studies (Beljaev 2008; Murillo-Ramos *et al.* 2019). It is widely distributed in the Palaearctic and Oriental regions, and especially in China (Skou & Sihvonen 2015; Cheng *et al.* 2024). The typical species in this genus have features as follows: white wing with deepening colored straight transverse lines, a swallowtail-like process on the hindwing at vein M₃, and the male genitalia special asymmetrical furca (Prout 1915; Wehrli 1939; Inoue 1985; Holloway 1994). Because of much morphological similarity, multiple hidden species have been found within *Ourapteryx* (Cheng *et al.* 2024), which increased the species richness of this genus.

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Until 2022, 83 *Ourapteryx* species have been described worldwide (Rajaei *et al.* 2022). An 11 further new species have since been described (Cheng *et al.* 2024). At present, 94 species are known. During the process of field collection and specimen examination, we found a new species similar to *O. excellens* Butler, 1889 and *O. convergens* Warren, 1897 and it can be distinguished by some morphological features. In this paper, we describe the external features and male genitalia of this new species. In addition, diagnostic characters and plates of adults and genitalia are presented.

Material and methods

Specimens were collected by light trap and are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS), the Zoological Research Museum Alexander Koenig, Bonn, Germany (ZFMK) and the Natural History Museum, London, UK (BMNH). Terminology for wing venation follows the Comstock-Needham System (Comstock 1918). Terms for the genitalia are based on Pierce (1914, reprinted 1976), Klots (1970) and Nichols (1989). Photographs of the adult moth and genitalia were taken with digital cameras. The plate was assembled using Adobe Photoshop software.

Taxonomy

Ourapteryx jilongensis Mi & Cheng sp. nov. (Figs 1A, 1B, 2A)

Description (male). Antennae filiform, black; with coxa white. Frons greyish brown, and diffused with white ventrally. Labial palpus greyish brown, slightly longer than frons. Vertex white. Tegula and patagia white, with a hint of yellow near base. Dorsal side of thorax white, with a slight yellowish tinge near legs on ventral side. Femur of mid and hind legs grey, with white long hair-like scales on dorsal side; tarsus dark greyish brown and spiny. Forewing length: 24 mm. Forewing with costa straight, apex blunt, outer margin slightly curved; outer margin of hindwing with a triangular tail about 2 mm, with inapparent shoulder. Wings white with a slight yellowish hue, with markings mostly dark greyish brown to greyish black. Forewing with costa dark greyish brown; from base to postmedial line decorated with short lines of various density extending to hind margin, some lines reach to lower margin of cell; antemedial and postmedial lines thick at the costa, tapering downwards; antemedial line extending to near terminal part of anal margin; postmedial line extending to anal angle; vein 2A dark greyish brown from base to outer side of antemedial line; discal spot fusiform and slightly curved; outside of the postmedial line with densely located grey lines of different length and density. Terminal line and hind margin greyish-brown; fringes greyish brown on outer margin and white on anal angle. Hindwing with costa dark greyish brown, short lines and dots with obscure edges of same color below costa; discal spot fusiform, slightly curved; Medial and postmedial lines narrow band-like; medial line distinct between costa and vein CuA₂ with indistinct edge; postmedial line from vein Rs to vein CuA₂ and slightly curved between vein M₁ and M₃; vein M₃ to CuA₂ dark greyish brown inside postmedial line, vein 2A dark greyish brown from base to anal angle; area between postmedial and terminal lines

with densely arranged dark greyish brown piecemeal stripes from apex to vein M_3 , one irregular yellow spot below vein M_3 ; submarginal line present as a series of large black dots, partly contacting with terminal line; terminal line and fringes blackish brown. Underside similar to upper side, transverse lines thicker than those of upper side. Abdomen back side white, dorsal side greyish white with setal comb on third sternite.

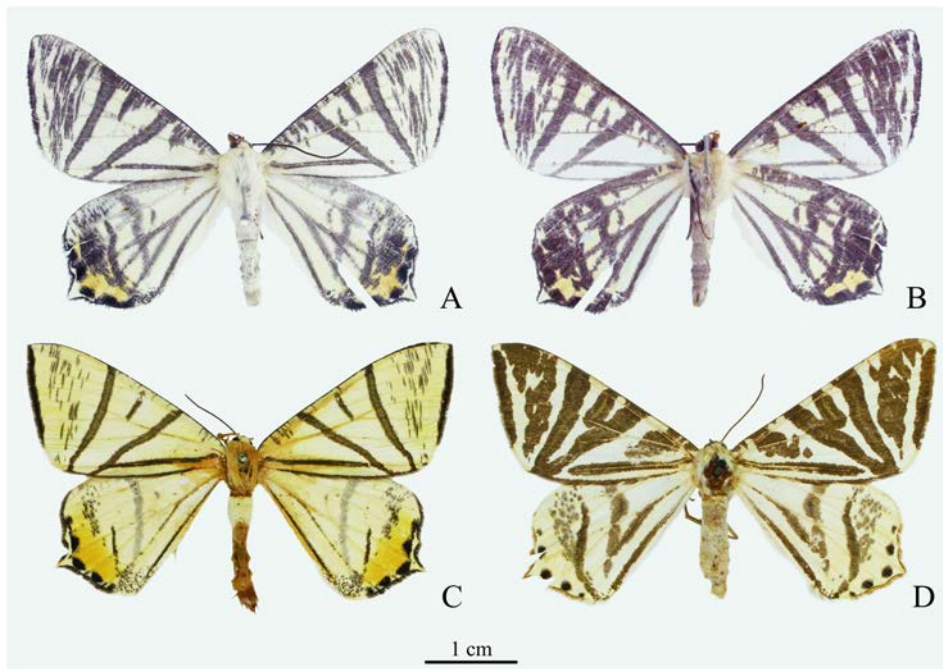


Figure 1. Adults of *Ourapteryx* spp. A. *Ourapteryx jilongensis* **sp. nov.**, holotype, upperside; B. Ditto, Underside; C. *O. excellens* Butler, syntype (BMNH); D. *O. convergens* Warren, holotype (BMNH).

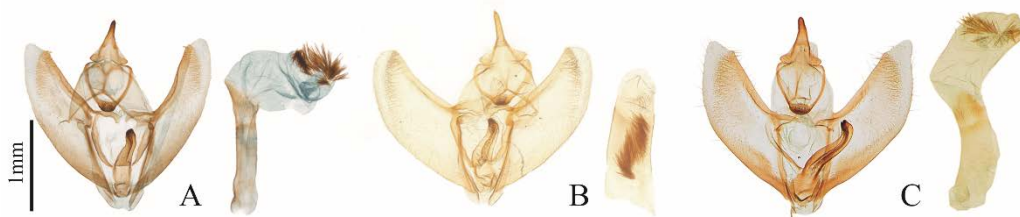


Figure 2. Male genitalia of *Ourapteryx* spp. A. *O. jilongensis* **sp. nov.**, holotype; B. *O. excellens* Butler (BMNH); C. *O. convergens* Warren (ZFMK).

Male genitalia. Uncus slender with acute apex. Socii small, rounded and membranous with seta. Gnathos with median process spiny, short and rounded. Valva simple, tapered apically; a circle of short seta extending from terminal sclerotized part of costa to sacculus. Furca slightly extending to right side, apical width two thirds of basal width, with a dense row of thorns at apex, not reaching transtilla. Aedeagus thin cylindrical, uniform thickness with apex slightly swollen; vesica with hundreds of short cornuti.

Female genitalia. Unknown.



Figure 3. Habitat photo of light trap for *O. jilongensis* sp. nov.

Holotype. ♂ (IZCAS), **China**, Xizang, Jilong, Kongsangqiao, 2,671 m, 29-VI-2023, coll. Gongga, Baima & Nima, IZCAS slide no. Geom-07154. **Paratype.** 1♂, same data as holotype, IZCAS slide no. Geom-07171. The photo of the light trap at Jilong Valley is shown in Fig. 3.

Etymology. The specific epithet is named after the type locality.

Remarks. *O. jilongensis* is similar to *O. convergens* (Fig.1) in wing pattern, but can be easily distinguished from *O. convergens* by the greyish brown short lines distributed along the forewing costa and outside the postmedial line. Moreover, the transverse lines of the forewing are obviously narrower than those on *O. convergens*; the terminal line and fringes of the hindwing of *O. jilongensis* is blackish brown, while those are reddish brown in *O. convergens*; a yellow band is on the hindwing along hind margin of *O. jilongensis*, but the band is absent in *O. convergens*. The male genitalia of *O. jilongensis* is similar to *O. excellens* (Fig. 2), but can be easily distinguished by the narrower valva, the slender apex of the furca and the narrower aedeagus.

O. jilongensis, *O. excellens* and *O. convergens* are partly sympatric and distributed in the western and middle Himalayas. In contrast, this new species is only found in Jilong Valley, while *O. excellens* lives in India and Pakistan and *O. convergens* is distributed in India, Pakistan and Afghanistan. Based on our knowledge of this genus, *O. jilongensis* is the rarest among these three species.

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