

First record of the genus *Xeropteryx* Butler, 1883 (Lepidoptera: Geometridae) with one newly recorded species in China

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Abstract: A newly recorded genus *Xeropteryx* Butler, 1883 of Geometridae and a newly recorded species *X. columbicola* (Walker, 1860) from China are reported. Morphological descriptions and illustrations are given.

Key words: Ennominae; taxonomy; morphology; distribution

中国尺蛾科新纪录属——灰尾尺蛾属及其一新纪录种记述（鳞翅目：尺蛾科）

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摘要：首次报道尺蛾科灰尾尺蛾属 *Xeropteryx* Butler, 1883 和灰尾尺蛾 *X. columbicola* (Walker, 1860) 在我国分布，给出了形态描述和特征图。

关键词：灰尺蛾亚科；分类；形态学；分布

Introduction

The rare genus *Xeropteryx* Butler, 1883 is monotypic and distributed in south and southeast Asia (Holloway 1994; Parsons *et al.* 1999). *Xeropteryx* was described by Butler (1883) based on *Urapteryx columbicola* Walker, 1860 from India and *Ourapteryx simplicior* Butler, 1883 from Borneo. Subsequently, Hampson (1895) designated the former as the type species of the genus. Prout (1931) described a new subspecies of *X. columbicola*, *X. columbicola media* Prout, 1931 from the Batu Islands of Indonesia, and considered *simplicior* as a subspecies of *X. columbicola*. Holloway (1994) considered *X. columbicola media* to be identical to *X. columbicola simplicior* (Butler, 1883), gave the diagnosis of the nominate subspecies and *X. columbicola simplicior*, and provided the distribution and habitat preference of *X. columbicola*. Parsons *et al.* (1999) still listed *media* as a subspecies of *X. columbicola*, probably because Holloway (1994) did not formally synonymize *media* with *simplicior*. Since then, no new species of *Xeropteryx* have been described, and this genus was unknown from China. In this paper, this genus is discovered in China for the first time and represented by *X. columbicola* from Yunnan Province.

Material and methods

Material of *Xeropteryx* are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS). The type is deposited at the Natural History Museum, London, United Kingdom (BMNH). Terminology for wing venation follows the Comstock-Needham System (Comstock 1918) and that for the genitalia is based on Pierce (1914, reprint 1976), Klots (1970) and Nichols (1989). Photographs of the adult moth and its genitalia were taken with digital cameras. Composite images were generated using Auto-Montage software version 5.03.0061 (Synoptics Ltd). The plate was compiled using Adobe Photoshop software.

Taxonomy

Xeropteryx Butler, 1883, new record to China

Xeropteryx Butler, 1883, *The Journal of the Linnean Society of London*, 17: 197, 203, pl. 9, Figs. 5, 6. Type species: *Ourapteryx columbicola* Walker, 1860 by subsequent designation by Hampson (1895).

Generic characters. Body large in size. Antennae in male filiform, strongly ciliated. Labial palpus porrect, extending beyond frons terminally. Forewing with costa strongly curved, outer margin straight, apex acute. Hind wing with a short tail at vein M_3 . Wings without transverse striae, distal spot of hind wing black. Wing venation. Forewing. Sc and R_1+R_2 long stalked, R_1+R_2 connected by a short transverse bar with R_{3-5} , R_3+R_4 and R_5 long stalked, arising before anterior angle of cell, M_3 and CuA_1 separate. Hindwing. Sc+ R_1 anastomosing with anterior margin of cell and then rapidly diverging from that before middle, R_s free, M_3 and CuA_1 separate, 3A present. Male genitalia. Uncus short and quadrate. Valva with a spur arising from centre of inner margin of costa, extending towards ventral margin. Saccus long and conical. Aedeagus with a row of serration terminally; vesica without cornuti.

Diagnosis. In the tribe Thinopterygini, this genus is externally similar to *Thinopteryx* Butler, 1883, but can be distinguished by the absence of the transverse striae on the wings; on the male genitalia, the valva is shorter and broader; and the saccus is much longer than that of *Thinopteryx*.

Distribution. South and Southeast Asia.

Xeropteryx columbicola (Walker, 1860) (Figs. 1–3), new record to China

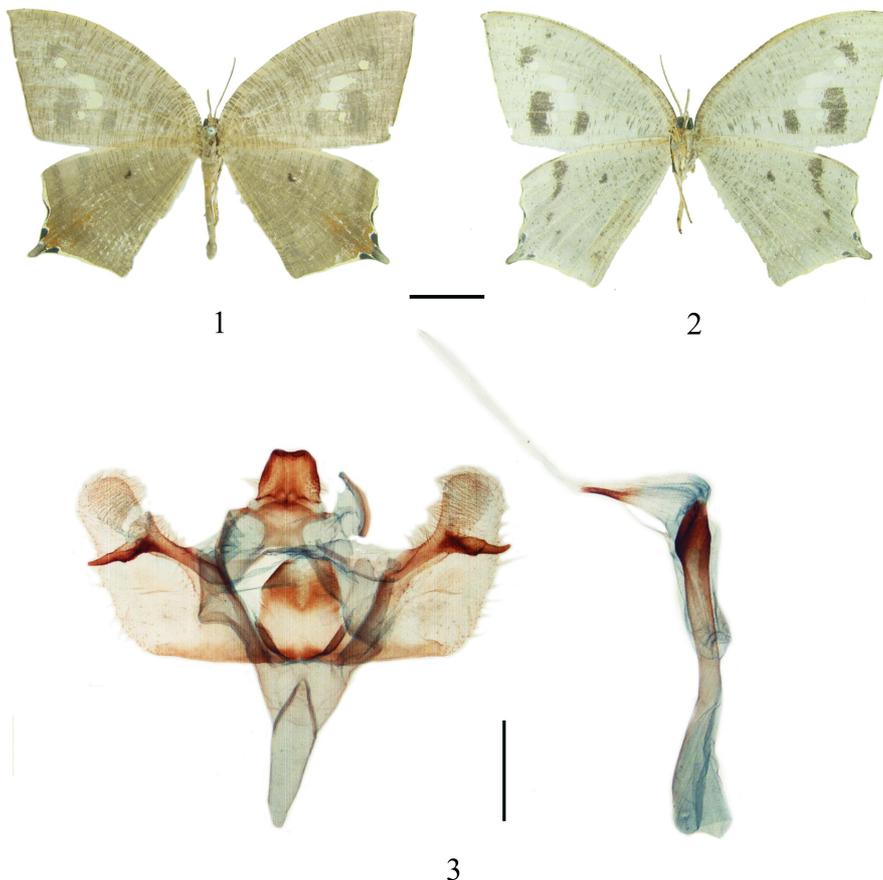
Urapteryx columbicola Walker, 1860, *List of Specimens of Lepidopterous Insects in the Collection of the British Museum*, 20: 11. Holotype ♂, Hindostan? (BMNH).

Xeropteryx columbicola: Hampson, 1895, *The Fauna of British India Including Ceylon and Burma (Moths)* 3: 149.

Redescription (male). Head. Antennae filiform, strongly ciliated, segments of antennae with tufts of hairs on each side, dorsal surface greyish black, mixed with white at basal 10 segments. Frons greyish white. Labial palpus porrect, extending beyond frons; third segment conical, white and suffused with pale grey on dorsal surface and apically. Thorax. Patagia, tegulae, thorax and abdomen pale grey. Hind tibia not dilated in male, without hair-pencil. Setal comb absent on third sternite of male abdomen. Forewing length 30 mm. Forewing with costa strongly curved, outer margin straight, apex forming a small acute process. Hind wing

with a short tail at vein M_3 , rounded at tip, outer margin wavy above M_3 , and straight below M_3 . Wings pale grey, densely striated with dark grey. Forewing with costa broad, greyish white; four translucent patches present centrally, middle ones larger; terminal line black; fringes white. Hind wing with black discal spot; diffused with reddish brown shadow above tail; outer margin white with black terminal line above M_1 ; tail black with black conical spots on each basal side. Underside white; distal spot of hind wing black; a black marking present at middle of forewing between CuA_2 and $2A$; submarginal lines of both wings incomplete and irregular, black and broad, often only distinct between M_1 and M_3 and between CuA_1 and $2A$ of forewing and at anterior part of hind wing.

Male genitalia. Uncus short and quadrate, apical part strongly sclerotized with a pair of short processes extending towards dorsal surface. Valva with a strongly sclerotized spur, slightly stout at basal half, extending from central part of inner margin of costa; ventral margin forming a right angle. Juxta plate-like. Saccus long and conical, rounded terminally. Aedeagus with a row of serrations terminally; vesica partly sclerotized, without cornuti.



Figures 1–3. *Xeropteryx columbicola* (Walker, 1860). 1, 2. Adult male (1. Upperside; 2. Underside); 3. Male genitalia. Scale bars = 1 cm (Figs. 1, 2); 1 mm (Fig. 3).

Specimens examined. 1♂, **China**, Mohan, Mengla, Xishuangbanna, Yunnan, 680 m, 21-V-2017, light trap, coll. Shan JIANG.

Distribution. China (Yunnan); India; Myanmar; Indo-China Peninsula; Mindanao; Sundaland.

Remarks. Populations of *X. columbicola* from China belong to the nominate subspecies. *X. columbicola simplicior* (Butler, 1883) (= *X. columbicola media* Prout) can be distinguished from the nominate subspecies by the indistinct translucent patches of the forewing and the longer saccus of the male genitalia (Holloway 1994).

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References

- Butler AG. 1883. On the moths of the family Urapterygidae in the collection of the British Museum. *The Journal of the Linnean Society of London*, 17: 195–204.
- Comstock JH. 1918. *The Wings of Insects*. Comstock Publishing Company, Ithaca, New York, 430 pp.
- Hampson GF. 1895. *The Fauna of British India Including Ceylon and Burma (Moths)*. Volume 3. Taylor and Francis, London, 546 pp.
- Holloway JD. 1994. The moths of Borneo: family Geometridae, subfamily Ennominae. *Malayan Nature Journal*, 47: 1–309.
- Klots AB. 1970. Lepidoptera. In: Tuxen SL (Ed.), *Taxonomist's Glossary of Genitalia in Insects*. Munksgaard, Copenhagen, pp. 115–130.
- Nichols SW. 1989. *The Torre-Bueno Glossary of Entomology*. New York Entomological Society in cooperation with the American Museum of Natural History, New York, 840 pp.
- Parsons MS, Scoble MJ, Honey MR, Pitkin LM & Pitkin BR. 1999. The catalogue. In: Scoble MJ (Ed.), *Geometrid Moths of the World: A Catalogue (Lepidoptera, Geometridae)*. Volume 1 & 2. CSIRO Publishing, Collingwood, Australia; Stenstrup, Denmark, pp. 1–1016.
- Pierce N. 1914 [reprint 1976]. *The Genitalia of the Group Geometridae of the British Islands*. E.W. Classey Ltd., Middlesex, 88 pp.
- Prout LB. 1931. Spolia Mentawiensia. Geometridae (Lepidoptera). *Novitates Zoologicae*, 37: 1–17.
- Walker F. 1860. *List of Specimens of Lepidopterous Insects in the Collection of the British Museum*. Volume 20. The order of the Trustees, London, 276 pp.