

## A study on the genus *Glaucochroe*, with descriptions of two new species from China (Lepidoptera: Geometridae: Larentiinae)

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### Abstract

Chinese material of the Palearctic geometrid genus *Glaucochroe* Herbuleot is reassessed, with the description of two new species *G. magaria* sp. nov. and *G. exilaria* sp. nov. Illustrations of adults and genitalia of all the species are provided.

**Key words:** Lepidoptera, Geometridae, *Glaucochroe*, new species, China

### Introduction

The genus *Glaucochroe* was erected by Herbuleot (1951) based on the type species *Cabera unduliferaria* Motschulsky, 1860, mainly on characters of the male genitalia. The genus is placed in the tribe Xanthorhoini as defined by Pierce (1914). Prout (1938) considered *Emmelesia albostrigaria* Bremer, 1864 as a subspecies of *G. unduliferaria*, and named a new subspecies *G. unduliferaria geraea* from Kunkala-Shan, Sichuan, China. Xue & Zhu (1999) provided the first records of *G. unduliferaria albostrigaria* (Bremer, 1864) in Northeast China, which was treated as a synonym by Scoble (1999). Choi (2002) recorded *G. unduliferaria* (Motschulsky, 1861) in Korea.

When two specimens of *Glaucochroe* from Qinghai and Henan provinces were selected for molecular analysis to reconstruct the phylogeny of the Larentiinae, we discovered that their sequences differed at 81 variable sites in the investigated 661 bp fragment of the COI gene (i.e., 12.25 percent sequence divergence; GenBank accession nos. EU797613, EU797614). These specimens from Qinghai and Henan province were postulated to differ at the species level (Hebert *et al.* 2003). Following up on these molecular data, we conducted further morphological analysis on a series of specimens of this genus from different localities in China. The results from the morphological study parallel the molecular findings: material from Qinghai and Gansu, as well as from Shaanxi have different genitalia from material collected in Heilongjiang, Shanxi, Henan, Hubei, Sichuan as well as in Jilin where there is some variability in genitalic characters (unfortunately, DNA sequences could not be obtained from older Shaanxi specimens in museum collections, and no new material has been taken despite many expeditions around Mt. Taibaishan during the past 20 years). Accordingly, we herein recognize two new species of *Glaucochroe* from the Chinese fauna.