

Revision of the *Scopula dubernardi* species group: how many species? (Lepidoptera: Geometridae, Sterrhinae)

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Abstract

The Palaearctic *Scopula dubernardi* species group (Lepidoptera: Geometridae) is revised on the basis of external and genitalic characters to include *Scopula dubernardi* (Oberthür, 1923) and *Scopula segregata* Prout, 1919. Lectotypes are designated for both species, which were described from more than one specimen without holotype designation. The species delimitation is based on small quantitative differences in the female genitalia, i.e., the degree of turn of the ductus bursae along its axis, and on external features. Furthermore, the recognition of the studied taxa as separate species is strengthened by the observation that they occur sympatrically and synchronously in two localities. Unlike the common situation in the genus *Scopula*, structures of the male genitalia were found uninformative in species delimitation. The length of right ceras on the 8th sternite of *S. segregata* was found to be polymorphic. Adults and genitalia of *S. dubernardi* and *S. segregata* are illustrated, along with the variation in external features and genitalia in both species. The biology and immature stages of both species are unknown.

Key words: China, external variation, revision, *Scopula dubernardi*, *S. segregata*, taxonomy

Introduction

Apart from the Palaearctic and the Nearctic regions (e.g., Covell 1970, Hausmann 2004), species-level taxonomy of the Sterrhinae genus *Scopula* Schrank, 1802, are poorly investigated, with a few exceptions (e.g., Holloway 1997; Wang 1997). Currently, over 800 species are considered valid worldwide (Sihvonen 2005a), but the majority of those species were described prior to the 1930s (Sihvonen & Siljander 2005) before the study of