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A new, prairie-restricted species of *Filatima* Busck (Lepidoptera: Gelechiidae) from Illinois

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Abstract

Filatima revisensis (Gelechiidae) is described from individuals collected as larvae feeding inside shelters constructed of silked-together leaflets of leadplant, *Amorpha canescens* (Fabaceae). *Filatima revisensis* is bivoltine; overwintering occurs in the larval stage. Because this insect is restricted to tallgrass prairie, it is likely to be of concern to conservation biologists. In the interest of naming this moth and clarifying its identity, a description is provided, and diagnoses are given to differentiate it from *F. ornatifimbriella*, *F. xanthuris*, *F. adamsi*, and *F. occidua*, all of which are externally similar to *F. revisensis*.

Key words: *Amorpha canescens*, microlepidoptera, Gelechioidea, taxonomy, North America, tallgrass prairie, habitat-restricted species, conservation biology

Introduction

Filatima Busck (Lepidoptera: Gelechiidae) is a large, primarily Holarctic assemblage of species, of which most in the Nearctic region occur in semiarid regions of the western USA and Mexico (Hodges and Adamski 1997). Lee et al. (2009) listed 57 species of *Filatima* for North America north of Mexico. This number is an underestimate, as no comprehensive taxonomic revision has been published for the Nearctic component of the genus. Accurate identification of moths belonging to this genus can be problematic because some species have yet to be described, types of described species have not been examined, and biologies of species are poorly known. Adding to the problem of identification is the fact that *Filatima* includes groups of externally similar species, these groups not necessarily being monophyletic.

Hodges and Adamski (1997) provided redescriptions of two externally similar *Filatima* species, *F. ornatifimbriella* (Clemens) and *F. xanthuris* (Meyrick), along with original descriptions of two additional species, *F. adamsi* and *F. occidua*, that are similar in appearance to *F. ornatifimbriella* and *F. xanthuris*. Based on genital morphology, Hodges and Adamski concluded tentatively (pending a complete phylogenetic analysis of *Filatima*) that these four species do not represent a monophyletic unit. In the context of baseline taxonomy and identification in the present paper, however, it is useful to consider this assemblage of species together. It is referred to here as the *ornatifimbriella* color group.

During the course of our study of microlepidoptera of tallgrass prairies, we reared an undescribed *Filatima* species of the *ornatifimbriella* color group from larvae feeding on leadplant, *Amorpha canescens* Pursh (Fabaceae), a prairie-restricted plant. The insect appears to be monophagous, in that larvae have been observed to feed neither on other prairie legumes nor on non-prairie species that are taxonomically proximate to leadplant, e.g., false wild indigo, *Amorpha fruticosa* (L.) (which is the larval host plant of *F. ornatifimbriella*). Through its obligate association with leadplant, the undescribed moth is restricted to a biotic community, tallgrass prairie, that is of interest to conservation biologists because of its present, extremely limited occurrence within its original range. It is advisable, therefore, that the leadplant-feeding *Filatima* should be named, to facilitate communication regarding the moth, and that diagnoses should be provided to differentiate it from the other four species of the *ornatifimbriella* color group, some of which are known or likely to be sympatric with it (Hodges and Adamski 1997). The purpose of this paper is to provide a description and diagnosis of the leadplant-feeding *Filatima* species.

with Hodges and Adamski (1997) that "until a phylogenetic analysis is completed for all *Filatima*, a suitable hypothesis of relationships among species cannot be made."

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