



Revision of the *Botanophila helviana* species group (Diptera: Anthomyiidae) in Europe

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Abstract

Species of the *Botanophila helviana* species group are small, blackish anthomyiids known from temperate to subarctic (northern/elevated) parts of the Holarctic Region. Adult flies are anthophilous, obtaining pollen and nectar from various flowering plants. Preliminary evidence suggests that the larvae may attack developing seed heads of *Ranunculus* (Ranunculaceae). The male and female terminalia are very characteristic and support the monophyly of the species group. Further evidence for this is provided by the peculiar structure of their prestomal teeth. A taxonomic revision of the European species with illustrated descriptions and an identification key to males and females is given. The following six species are treated: *Botanophila helviana* Michelsen, 1983, *B. kitadakeana* Suwa, 1998 and the new species *B. minuta* (Norway, Sweden), *B. nigra* (Norway, Finland and Sweden), *B. peristeriensis* (Greece) and *B. saliciphila* (Spain).

Key words: Diptera, Anthomyiidae, *Botanophila*, new species, Europe

Introduction

The large anthomyiid genus *Botanophila* Lioy is very heterogeneous, but contains several assemblages of morphologically very similar and obviously closely related species. One such assemblage is the *Botanophila helviana* species group proposed by Xue & Song (2007) for species with a number of shared, derived character states of the male terminalia (see below). They named the species group after the European *B. helviana* Michelsen, 1983 and further included four Chinese endemic species: *B. brevipalpis* (Jin, 1983) from Gansu, *B. truncata* (Fan, 1988) from Xizang, *B. alcaecerca* (Deng, 1997) and *B. papiliocerca* (Deng, 1997) from Sichuan. On the basis of the original illustrations of the male terminalia (Fan 1988: figs. 8–10), the species *B. truncata* appears as strongly deviating and not a member of a monophyletic *B. helviana* species group. However, two other described species obviously belong here, viz. *B. miniatura* (Huckett, 1965) from Alaska and northern Canada and *B. kitadakeana* Suwa, 1998 from Honshu, Japan.

The occurrence of the *Botanophila helviana* species group in Europe remained unnoticed for a very long time. The reasons might be that they are small and unimpressive anthomyiid flies, rather demanding in their habitat requirements, and tend to have a single, early-season generation. The first European species, discovered simultaneously but independently in Britain and Denmark in the early 1980s by D.M. Ackland and the present author, was *Botanophila helviana*, described from Denmark by Michelsen (1983), while Ackland (1989) recorded it from England and France. It was reported subsequently from the Czech Republic (Michelsen & Barták 2001), Spain (Michelsen & Báez 2002) and from Slovakia and Sweden (Michelsen 2004).

After my description of *Botanophila helviana* I soon realized that other, closely related species occur in elevated and northern parts of Fennoscandia. On collecting trips in 1983 and 1985 to the Kongsvoll Biological Station, situated in a species-rich, calcareous high-altitude area in south-central Norway, I found no less than