



## A taxonomic revision of the *Elachista bedellella* (Sircom) complex (Lepidoptera: Elachistidae: Elachistinae)

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### Abstract

The *Elachista bedellella* Sircom complex is diagnosed and its taxonomy is revised. The female genitalia, when known, are found to be of good diagnostic value in defining species. In the male genitalia there are subtle, yet decipherable inter-specific differences in the shape of the juxta and the cornutus that correlate with differences in the outer appearance of different populations. As a result, eight species are recognised, including the following new species: *Elachista antonia* sp. n. from Greece (Crete), *E. slivenica* sp. n. from Bulgaria, *E. dorinda* sp. n. from Turkey, *E. versicolora* sp. n. from Russia (Transbaikalia) and *E. camilla* sp. n. from Russia (Kuray). The identity of *E. lugdunensis* Frey is clarified and it is considered a valid species, and *E. coeneni* Traugott-Olsen, 1985 is confirmed to be a junior synonym of it. *E. bedellella*, *E. lugdunensis* and *E. titanella* Kaila & Jalava, 1994 (stat. n.) are diagnosed and illustrated.

**Key words:** Taxonomy, Lepidoptera, Elachistidae, Elachistinae, *Elachista bedellella* complex, new species, revised status

### Introduction

*Elachista bedellella* (Sircom, 1848) is a common and widespread species of Elachistinae in Europe (Kaila, 2004). It is characterised by broad forewings with brownish grey ground colour in which there are two pale markings: a transverse fascia in the middle of the wing, and triangular costal and tornal spots confluent to each other forming another medially outward angled fascia in outer two thirds of the wing. Traugott-Olsen & Schmidt Nielsen (1977) based their *bedellella* group, which comprises a large section of *Elachista*, on this species. They further subdivided this group into *argentella*, *bedellella* and *unifasciella* subgroups, basing this division on the forewing pattern and wing venation characteristics. Albrecht & Kaila (1997), however, refuted the systematic significance of such wing venation traits. Kaila (1997) suggested a somewhat different informal classification pointing out the unreliability of wing pattern and suggested significance in the shape of the juxta in the male genitalia. He divided the ‘*bedellella* group’ of Traugott-Olsen & Schmidt Nielsen (1977) into informal *argentella* and *bedellella* groups, the latter group characterised by a dorsally projected funnel- or tongue-shaped appendix in the median plate of the juxta. This division is perhaps unsatisfactory in a strict phylogenetic sense as it renders the *argentella* group putatively paraphyletic with respect to the *bedellella* group, as noted by Kaila (1997). It is, however, useful as an informal segregation of this large species assemblage. These groups were erected to comprise the subgenus *Apheloseitia* by Kaila (1999) in a phylogenetic treatment of the Elachistidae s. s. The result of this analysis did not, however, unequivocally support any of the previously suggested informal subdivisions of *Apheloseitia*. Kaila & Junnilainen (2002) further discussed the systematics of *Apheloseitia*.