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# Review of the *Eulamprotes wilkella* species-group based on morphology and DNA barcodes, with descriptions of new taxa (Lepidoptera, Gelechiidae)

PETER HUEMER[1], GUSTAV ELSNER[2] & OLE KARSHOLT[3]

[1] *Tiroler Landesmuseen Betriebsges.m.b.H., Feldstr. 11a, A-6020 Innsbruck, Austria, E-mail: p.huemer@tiroler-landesmuseen.at*
[2] *Hůlkova 304, 197 00 Prague 19 – Kbely, Czechia. E-mail: gelsner@seznam.cz*
[3] *Zoological Museum, Natural History Museum of Denmark, Universitetsparken 15, DK-2100 Copenhagen, Denmark. E-mail: okarsholt@snm.ku.dk*

## Abstract

The *Eulamprotes wilkella* species-group is revised based on morphological characters and on DNA barcodes of the mtCOI (Cytochrome c Oxidase 1) gene. Adult morphology combined with sequence information for 9 species supports the existence of 12 species, 7 of which are described as new to science: *E. mirusella* Huemer & Karsholt sp. nov. (France), *E. baldizzonei* Karsholt & Huemer sp. nov. (Italy, Slovenia, Croatia), *E. atrifrontella* Karsholt & Huemer sp. nov. (Turkey), *E. wieseri* Huemer & Karsholt sp. nov. (Kyrgizia), *E. altaicella* Huemer & Karsholt sp. nov. (Russia: Altai, Buryatia, Tuva Republic), *E. kailai* Karsholt & Huemer sp. nov. (Kazakhstan, Kyrgizia, Russia: Buryatia, Tuva Republic) and *E. gemerensis* Elsner sp. nov. (Slovakia). *E. buvati* Leraut, 1991 **syn. nov.** is synonymized with *E. ochricapilla* (Rebel, 1903).

**Key words:** Lepidoptera, Gelechiidae, *Eulamprotes*, cryptic diversity, morphology, DNA barcode, new species, western Palaearctic

## Introduction

The genus *Eulamprotes* Bradley, 1971, includes a total of 16 described species in Europe (Huemer & Karsholt 2011, Karsholt 2011, Šumpich & Skyva 2012) but several additional undescribed species are known from various collections. As the genus will be dealt with in a forthcoming volume of the book series "Microlepidoptera of Europe", we hereby present a revision of the Palaearctic species of an important portion, the *Eulamprotes wilkella*-group. Species of this group include taxa with whitish and or silvery or golden forewing markings. These have occasionally been treated in a separate genus *Argyritis* Heinemann, 1870, which is, however, a homonym of *Argyritis* Hübner, 1821 (a junior synonym of *Cucullia* Schrank, 1802). Species of the *E. wilkella*-group are, besides the silvery and whitish markings in the forewing, characterized by having the phallus (see terminology below) of about the same length as the remaining male genitalia (when seen in lateral position), a weakly sclerotized strip (transtilla) at the base of the anal tube, which is of low diagnostic significance whereas in other groups of the genus it is medially swollen, and the females have a more or less pronounced tendency to brachyptery. The *E. wilkella*-group can further be subdivided into a *E. wilkella*-subgroup (having a small process at the tip of the valva and females with normal or only slightly reduced hindwings) and a *E. libertinella*-subgroup (without a process at the tip of the valva and with more pronounced brachyptery in the females).The *E. libertinella* subgroup was revised by Huemer & Karsholt (2011) whereas the *E. wilkella* subgroup *sensu* Huemer & Karsholt (2011) remained unrevised until now. The newly described species belong to the *E. wilkella* subgroup

The remaining species of the genus with more or less monochromatic forewings and females without tendency to brachyptery were treated by some authors in the genus *Lamprotes* Heinemann, 1870, a homonym of *Lamprotes* Reichenbach, 1817 (Noctuidae). They include further unrevised taxa and are not dealt with in our paper. *E. graecatella* Šumpich & Skyva, 2012, recently described from Greece, is excluded from our study despite its whitish wing markings which resemble some taxa of the *E. wilkella*-group as genitalia morphology and unpublished DNA barcode sequences do not support a close relationship of *E. graecatella* to the *E. wilkella*-group.

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