



Revision of the genus *Glyphotmethis* Bey-Bienko, 1951 (Orthoptera: Pamphagidae)

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Abstract

The complicated genus *Glyphotmethis* Bey-Bienko, 1951 is revised using the previous materials including the type specimens preserved in Museums and an abundance of new material collected mainly in Turkey. Diagnoses, ecology, distribution and taxonomic characters for the genus are provided. The function of Krauss' organ is discussed. The following

seven taxa are proposed as junior synonyms: *Glyphotmethis holtzi spinosus* Karabağ, 1956 is synonym with *G. holtzi pulchripes* (Uvarov, 1943), *Glyphotmethis holtzi extimus* Bey-Bienko, 1951 is synonym with *G. holtzi holtzi* (Werner, 1901), *Glyphotmethis escherichi coloripes* Cejchan, 1965 is synonym with *G. escherichi elatior* (Ramme, 1951), *Glyphotmethis guichardi* Cejchan, 1964 is synonym with *G. escherichi escherichi* (Krauss, 1896), *Glyphotmethis raggei* Cejchan, 1965 and *Glyphotmethis adaliae angorensis* Cejchan, 1965 are synonyms with *G. escherichi inermis* (Uvarov, 1934) and *Glyphotmethis heldreichi macedonicus*, Bey-Bienko, 1951 is synonym with *G. heldreichi heldreichi* (Brunner, 1882). One species, *Glyphotmethis arasi*, is removed from the genus and three new taxa, *Glyphotmethis holtzi brachypterus* ssp.n., *Glyphotmethis holtzi turcicus* ssp.n. and *Glyphotmethis efe* sp.n. are described. The taxonomical status of some taxa are rearranged. A neotype is designated for *Glyphotmethis escherichi escherichi* (Krauss, 1896) from Ankara known as the type locality. Misidentified specimens and inaccurate records for taxa in previous papers are corrected and their geographical distributions adjusted. Many records are provided for new localities. Keys for the identification of species and subspecies are prepared using traditional and some new distinctive characters. A short description and comparison with close allies are given for each taxon. Distribution areas of the taxa and the contact zones between some subspecies are determined. In addition, 126 figures and 3 distributional maps are given.

Key words: Orthoptera, Pamphagidae, *Glyphotmethis*, taxonomy, morphology, key, distribution, synonyms, new taxa, Turkey, Greece, Macedonia

Introduction

Glyphotmethis was erected by Bey-Bienko in 1951. The first species of this group was described from Greece as *Eremobia heldreichi* (Brunner von Wattenwyl 1882). Krauss (1896) gave the first Anatolian species, describing *Eremobia escherichi* from Ankara. Werner (1901) described *Eremobia holtzi* from Taurus Mountains and Uvarov (1928) added the fourth new taxon as *Tmethis (Glyphanus) heldreichi adaliae* from Antalya in Turkey.

The taxa as a whole were studied first by Uvarov (1934). He prepared a key to subspecies and described the forms *dimorphus*, *inermis*, *ovipennis*. He gave *holtzi* in species level and all the others as subspecies of *heldreichi* in the genus *Tmethis*. Once again Uvarov (1943) transferred all of the above forms to his new genus *Asiotmethis*. He gave the all taxa as subspecies of *heldreichi*, including *holtzi* and described *Asiotmethis pulchripes*, re-identifying the specimens given under *Tmethis holtzi* in his previous paper dated 1934. Ramme (1951), in his study contains the Anatolian species of *Asiotmethis*, changed the taxonomic status of many taxa. He raised the taxa *ovipennis*, *inermis*, *adaliae*, *escherichi*, *dimorphus*, *holtzi* to species level, and reduced that of *pulchripes* to a subspecies of *holtzi*. Also described *Asiotmethis sevketi*, *A. escherichi elatior*, *A. dimorphus armenus* from Turkey and *A. heldreichi rubrescens* from Greece as new taxa. Besides Ramme (1951) provided the name “*brevipes* n.sp.” in the introduction part of this group (Ramme 1951: 272) but was not described or mentioned this name later in this text. Besides no specimens with the name of *Glyphotmethis brevipes* were found in the collections. On the other hand, Ramme described *Paranocarodes brevipes* from Anatolia in the same paper so far. Probably he erroneously used this name under *Asiotmethis*.

Bey-Bienko (1951) erected the genus *Glyphotmethis*, with *Eremobia escherichi* Krauss, 1896 as the type species. He included the followings taxa to his new genus: *holtzi*, *pulchripes*, *escherichi* and *heldreichi* in species level, *dimorphus* as subspecies of *Glyphotmethis holtzi*, *inermis*, *adaliae* and *ovipennis* as subspecies of *G. escherichi*. In addition he described *G. holtzi extimus* from Turkey and *G. heldreichi macedonicus* from Greece as new subspecies. Karabağ (1956) added another new subspecies, *G. pulchripes spinosus*, from W of Tuz Gölü, Central Anatolia.

Cejchan (1964) described *G. guichardi* from Ankara. Later, he prepared a preliminary revision of *Glyphotmethis* (Cejchan 1965). In this study, Cejchan gave the following taxa in species level *holtzi*, *dimorphus*, *escherichi*, *ovipennis*, *sevketi*, *inermis*, *adaliae*, *heldreichi*. He arranged the taxa *extimus*, *pulchripes* and *spinus* as subspecies of *G. holtzi*; *armenus* as subspecies of *G. dimorphus*; *macedonicus* as subspecies of *G. hel-*