



***Myrmeleotettix* Bolivar (Orthoptera, Gomphocerinae) in Anatolia on the basis of morphological and behavioural characters: data suggest a new species from southern end of the Anatolian refugium**

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Abstract

Myrmeleotettix Bolivar, 1914 (Orthoptera, Acrididae, Gomphocerinae) is a genus represented by nine species in the whole Palaearctic. It is poorly known in Anatolia except some records of *M. maculatus*. As for the other glacial refugia, cold preferring members of this genus are discontinuously distributed on high altitudes in Anatolia. Additionally, morphology is not sufficiently useful in taxonomy of gomphocerinae members for those producing a complicate courtship song. Thus an accurate taxonomy requires extensive materials and different character sources. In this study, the taxonomy of Anatolian *Myrmeleotettix* is reexamined on the basis of qualitative and morphometric morphology, and male calling and courtship songs. Song and morphology both suggest the existence of two species in Anatolia. The first is *M. maculatus* (Thunberg) which is distributed along the northern one-third of Anatolia in addition to other parts of West Palaearctic. The second is a new species, *Myrmeleotettix ethicus* **sp. n.** possibly endemic to the southwest corner of Anatolia. The new species can be easily distinguished from the most similar species *M. maculatus* by morphology as well as by song characters. The conclusions are: (i) similarities in courtship and calling songs of these two species may indicate that they are sister species (ii) from habitat preference and distribution patterns it can be inferred that they diverged following a cold period and the new species is a remnant of ancestral population in southern Taurus, and (iii) the new species is a range restricted, vulnerable species as is the case for many other taxa present in the Mediterranean Taurus biodiversity hotspot.

Key words: *Myrmeleotettix*, *Myrmeleotettix ethicus* **sp. n.**, song, morphology, biogeography, Anatolia, Southern Anatolian Taurus, Europe

Introduction

In recent decades, the diversity in the glacial refugia of the western Palaearctic has been examined primarily from phylogeographic or evolutionary perspectives and some general patterns become apparent (Hewitt 1999, 2000; Schmitt 2007; Weir & Schlutter 2004). A few studies on the Anatolian species/populations have produced striking results. For example, there seems to be a faunal break between Balkans (and other northern areas) and Anatolia at least for some lineages (Ciplak *et al.* 2010). However, the most prominent is possibly the clear faunal break between northern and southern parts of the Anatolian refugia itself especially for the lineages represented on north and south of this refugium (Ciplak *et al.* 2005; Gunduz *et al.* 2007; Sirin *et al.* 2010a; Mutun 2010). Results from such studies are still not sufficiently reflected in taxonomy of the lineages inhabiting in refugial areas. Taxonomic studies of comprehensive and contemporary approaches showed that there are lineages represented by different but sister species in southern and northern parts of refugium. This pattern is especially prominent for southern Anatolian Taurus since recently some new species were described from here not only in insects (Ciplak *et al.* 2005; Sirin *et al.* 2010a) but also in mammals (Gunduz *et al.* 2007). These studies also highlight the biodiversity hotspot characteristic of the southern Anatolian highlands especially for the cold preferring mountainous taxa (Medail & Quezel 1997; Ciplak 2003, 2008). Present study aims to consider another lineage showing a similar distribution pattern.