

On the taxonomic status of *Cicada orni* Linnaeus (Hemiptera, Cicadidae) from Lesbos island in Greece

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Abstract

A male of *Cicada orni* Linnaeus, 1758 from the island of Lesbos (Greece) was found in a recent study to be different from the typical species on the basis of longer echemes and a higher peak frequency. As such it was described as the new subspecies *C. orni lesbosiensis* Boulard, 2000. The present study is a more thorough analysis of the calling song of further material of *C. orni* collected in the island of Lesbos as well as in the surrounding area, i.e., other Aegean islands and the Greek and Turkish mainlands. This acoustic signal was recorded, comparatively analysed in time and frequency domains and no significant differences were found between this Lesbos sample with nearby populations. Therefore, the present results do not support the designation of the Lesbos material as an independent subspecies.

Key words: Hemiptera, *Cicada orni*, taxonomic status, acoustic signals, bioacoustics, Lesbos, Greece

Introduction

As emphasized by Paterson (e.g., 1985), sexually reproducing species can be defined as a set of organisms with a common specific mate-recognition system (SMRS). Therefore, the defining properties of most species are their unique SMRSs. In many insects such as cicadas, the SMRSs are mostly acoustic, and the structure of the calling song is an important component. Thus, the evolution of such unique mate-recognition systems is the crucial event for the divergence of populations and the origin of new species (Paterson, *op. cit.*).

Several cicada studies have shown that species are usually isolated by ethological mechanisms, and good examples may be found in the genus *Cicada* L. For instance, the species *C. barbara* Stål and *C. orni* Linnaeus (e.g., Quartau & Rebelo 1994) are sympatric