

How many mole-crickets are in Romania? The revision of genus *Gryllotalpa* (Orthoptera: Gryllotalpidae)

Elena Iulia IORGU, Ionela ȚÎRDEA, Ionuț Ștefan IORGU

“Ștefan cel Mare” University, Faculty of Medicine and Biological Sciences, Universității 13, Suceava, Romania.
Corresponding author, E-mail: elena.iorgu@usm.ro

Abstract: The family Gryllotalpidae comprises approximately 100 species worldwide, grouped into eight genera. These insects are specially adapted to subterranean environments, with their anterior legs modified for excavation. They utilize these adaptations to construct intricate burrows consisting of an elaborate network of underground tunnels and chambers. In Romania, three species of the genus *Gryllotalpa* have been identified. These species are difficult to distinguish due to their subtle and unreliable morphological differences. Alternative methods for identifying *Gryllotalpa* species include acoustic techniques based on stridulation and molecular techniques utilizing the COI DNA barcoding method. The present study estimated the genetic diversity of the genus *Gryllotalpa* in Romania using the mitochondrial COI marker. High haplotype diversities were obtained, with values ranging between 0.491 and 1 for the three species. The inferred phylogenies grouped our samples with the typical species identified morphologically, demonstrating the utility of the COI marker as an easy and reliable molecular method for taxonomic identification of mole cricket species.

Keywords: integrative taxonomy, DNA barcoding, mitochondrial marker.

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