

REVISITING THE BIOGEOGRAPHIC PATTERNS OF THE AEGEAN TENEBRIONID BEETLES: NEW DATA AND NEW INSIGHTS

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The Aegean darkling beetles (Coleoptera: Tenebrionidae) have been long regarded as a particularly exciting system for island biogeography and numerous relevant studies have been published during the last decade. However, the majority of these studies have been based on museum collections and literature data, which might be biased in favour of some of the islands that have been traditionally studied more extensively by taxonomists.

We selected 16 of the central Aegean Islands to perform a systematic survey of species richness using pitfall traps and hand collecting. The collected specimens were identified to species level using morphological characters, while we also employed molecular phylogenies as a tool to aid with certain taxonomic difficulties. Additionally, we obtained new unpublished records from the collections of the Natural History Museum of Crete.

The newly compiled dataset increases greatly (50-160%) the existing records of species richness for nine islands, while it includes four islands that had not been studied ever before. The increase in species numbers was lower (5-30%) for the islands of Naxos, Kos and Milos that have been traditionally visited more frequently by taxonomists. The new species richness data for the 16 central Aegean islands, provide a much stronger correlation with island size than the previously published estimates and a steeper curve of the species-area relationship. We show that this imbalance in the existing records may have introduced certain biases in previously published studies. We also demonstrate the utility of molecular data for improving the existing taxonomic knowledge and providing new insights into the biogeographic patterns of the Aegean tenebrionids.