ENCONTROS SCIENTIA

SUBTERRANEAN BEETLES OF THE AZORES: WERE THE ISLANDS COLONIZED BY CAVE ADAPTED FORMS?

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The Azores is a young (0.25-8.2 Mya) and remote volcanic archipelago in the North-Atlantic composed by nine islands. It is inhabited by many endemic species, mostly Arthropods, and the multitude of underground habitats has created the opportunity for speciation of cave-adapted forms. The beetle genus *Trechus* is the group with the highest number of cave-restricted species known from the Azores, with seven species described from caves on four islands, and with surface relatives on two islands. Molecular markers have been used to investigate wether species are more related to each other based on island or habitat affiliation, and to infer phylogenetic relationships with *Trechus* from other geographic areas. Conclusions include: i) Azores form a monophyletic clade; ii) Madeira island harbours the closest relatives; iii) intraspecific genetic variability is geographically structured; and iv) cave species are more closely related to each other, suggesting that islands were colonized by cave-adapted forms from nearby islands.

More than 75% of insects that went extinct in the last 300 years vanished from islands, i.e., insects are among the animals most severely affected by extinction on island. *Trechus* beetles are important to the total biodiversity of the Azores and multiple approaches (field surveys, traditional taxonomy, molecular data) were used to evaluate how appropriate is the currently protected area in the Azores to preserve them. In order to maintain current levels of biodiversity it is argued that each *Trechus* population should be treated as a distinct conservation unit and the maximum number of different populations should be protected.

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