Poster Abstract

DNA Barcoding of Austrian molluscs

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In the course of the initiative Austrian Barcode of Life (ABOL), molluscs were chosen for several reasons as group for a three-year pilot study. (i) They are important indicator species, suitable for evaluation of habitat quality and therefore of general interest for different nature conservation issues. (ii) Many mollusc taxa have a high risk of extinction and are protected: about 35% of the snail species and 37% of the mussel species are endangered. (iii) There is a high number of endemics (19.3%). (iv) Approximately 30% of the 400 native species are divided into subspecies. Genetic investigations in land pulmonates showed extremely high intraspecific diversity. Hence there is no standard value for genetic distances, which marks taxonomic delimitations. Due to the overlap of intra- and interspecific variation often no barcoding gap can be found. Previously collected data and experiences from past and running projects on snail species in Austria provide excellent pre-conditions for successful DNA barcoding. Up to now tissue samples from approximately 250 Austrian mollusc species are available. This includes material collected and preserved for DNA analyses during concerted field trips to different parts of Austria, but also older material from the collections of the Natural History Museum Vienna and the Biology Centre of Linz. DNA from museum material is often fragmented and of low concentration, therefore it is only chosen, when no other material from a particular species is available (this concerns at the moment approximately 35 species). Until now, from 185 different species 548 DNA barcodes with all relevant metadata were established. From our results we find cryptic species, but also different morphologically described species that cluster in one barcoding BIN. This project provides DNA barcodes for the challenging group of molluscs. Data are sampled in a relatively small geographic scale, which is essential for taxa with low dispersal capacity. The DNA barcodes provide a reference which will facilitate determination, which is often difficult and vague in molluscs and hence their use in evaluations of nature conservation issues.

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