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Species delimitation among the “manna lichens” has been poorly understood. Previous studies have mainly been based on external thallus morphology and very few discriminating characters have been utilized. Many authors seem to have neglected applying the variation of conidia size, texture of cortex layers and chemistry. A taxonomic revision of the “manna lichens” based on morphological, ecological and molecular data is presented. In the study an extensive number of herbarium specimens and fresh collections were examined. The phylogenetic relationships of the species by using nuclear ribosomal sequence data (nITS) were analyzed. The analysis supports certain morphological characters for distinction of species among “manna lichens.” Three new species are described: one species exclusively from Iran, one vagrant species from Iran, Turkey and Spain and one saxicolous-vagrant species from Greece. In addition, the generic circumscription of the “manna lichens” and their phylogenetic relationships with three presumably related genera namely *Circinaria* (with saxicolous generic type), *Sphaerothallia* (with vagrant generic type) and *Aspicilia* (with saxicolous generic type) is tested using a combined dataset of nLSU and mSSU sequences and applying parsimony and Bayesian methods. Biogeography of “manna lichens” is shortly discussed and distribution maps are provided.

Poster I-128

Validation of the DNA barcoding approach to survey ant communities in the Ecuadorian Andes

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Measurement of ant species richness is regularly used for biodiversity assessments. Nevertheless, inventorising ant communities can be complicated in habitats that contain ant species that are diverse and difficult to identify morphologically. In this view, DNA barcoding has been proved to be an effective tool to identify species based on genetic characters present in a short fragment of a mitochondrial gene.

As a pilot study, we tried to set up and validate a procedure to identify fire ants (*Solenopsis*) using the DNA barcoding approach. This genus (more than 200 described species) contains many species that were frequently collected (17% of the species) in the Podocarpus National Park of the Ecuadorian Andes and that are difficult to identify morphologically. Complete specimens were used for DNA extraction and subsequently preserved as vouchers to allow further morphological analysis. Microscopic examination of processed specimens confirmed that anatomical features used for species determination were preserved. Sequences of 658 bp from the standard DNA barcode region could differentiate molecular operational taxonomic units that corroborate most

identifications based morphology. The divergence between these units ranges from ca. 2 to 17%. These preliminary results are promising to establish an improved procedure to survey ant communities in the Ecuadorian Andes.

Talk S18

Where did they survive?

Comparison of rainforest fish distribution pattern and phylogeography with two different hypotheses of potential pleistocene forest refuges

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Survival of rainforest adapted organisms during climatic changes is strongly associated with rainforest refuges. For Africa, several refuge areas were postulated, based e.g. on the distribution of endemic rainforest species and paleobotanical/freshwater sediment studies, which fit well with the distribution of rainforest endemics if viewed on a continental scale.

However, having a closer look on the phylogeography of rainforest bound fish species in one of the most species rich rainforest areas, it is difficult to explain current distribution patterns with postulated forest refuges.

We studied the molecular phylogeography of three nothobranchiid (Teleostei: Cyprinodontiformes) species groups, which are adapted to rainforest streams.

Our results indicate that the current distribution of species and haplotype lineages can only be partially related to the postulated refuge areas, whereas a comparison of the distribution pattern is better explained with the availability of (micro)-refuges within the current distribution area.

Poster II-102

Ecological status assessment of the wider Athens International Airport area based on plant-species indicators

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Within the frames of a bio-monitoring programme for the wider Athens International Airport area, among other parameters, the plant species indicators of ecological status were studied. Böhling's classification system of indicator plant-species for South Aegean was applied for the plants of the study area. The assessment concerns seven climatic and soil ecological parameters (eco-factors): light, temperature, continentality, moisture, soil reaction, nutrient supply and salt tolerance. 505 plant species out of 756, were identified as indicators of one or more ecological parameters. This amount (66,8%) represents more than 50% of the total plant taxa, therefore our results may be safely used for the ecological evaluation of the area.