

the mitochondrial gene fragments and molecular taxonomy, more cryptic species of bats could be identified, such as *M. punicus*, *M. aurascens*, *Myotis alcathoe* etc. The study of cryptic diversity in Romanian bat species is incipient, so, our goal is to find discriminatory functional characters for local populations and to identify new species for local fauna. Our aim is to undertake a morphologic, ecologic and genetic analysis of the main sibling species (*Myotis myotis*/*M. blythii*, *M. mystacinus*/*M. brandtii* și *P. auritus*/*P. austriacus*). The characters taken into account in the present study are: external morphological analysis, cranial morphometry, microclimatic conditions in shelters, the study of hunting behaviour and ultrasound analysis, identification of arthropods in guano and the study of diet, as well as the genetic analysis. Preliminary results presented in this study show that the condylobasal length (LCB), the cranial length (LC) and the Canin-Molar³ length (length of maxillary toothrow, C-M³) are discriminatory characters. According to the statistics revealed by these measurements, specimens of Romanian populations of *M. myotis*, *M. blythii* și *M. brandtii* are bigger compared with those from other European regions. In what the diet of species *M. myotis*/*M. blythii* concerns predominant were Lepidoptera (52,63%) and Carabidae (31,57%) species. Further studies will complete these data, contributing to a better knowledge of cryptic diversity of bat in Romania.

Specii criptice – în ce metodă să avem încredere?

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Descoperiri recente în complexurile *Plecotus*, *Myotis mystacinus/brandtii* și *Pipistrellus* au mărit considerabil diversitatea liliiecilor de pe teritoriul Europei, numărul speciilor crescând de la 31 la 38. Având în vedere evoluția metodelor de identificare (morfologice, ecologice, moleculare, etc.), această creștere în numărul speciilor pare a fi o consecință normală. În trecut metodele morfologice erau considerate cele mai sigure în identificare și clasificare taxonomică. Cu apariția metodelor sofisticate (mai ales cele moleculare), rezultatele din trecut și taxonomia clasică au fost puse sub semnul întrebării, respectiv biogeografia speciilor noi și existente a fost și este în curs de reevaluare. Probleme apar însă în identificarea speciilor noi prin observări directe pe teren. Datorită faptului că metodele moleculare (sau ecologice) sunt costisitoare și necesită echipament specific, respectiv există o mare varietate și disimilaritate în metodele folosite (ADNmt, ADNnc, microsatețiți, radiotelemetrie, detectori de ultrasunete, PIT tag-uri, etc.), aplicarea lor pe teren este dificilă, iar compararea datelor între diferite studii devine imposibilă. Prin prezenta lucrare încercăm să adunăm la un loc toate (sau aproape toate) datele obținute prin diferite metode din studii taxonomice și biogeografice despre speciile de lilieci din Europa, în vederea identificării avantajelor sau dezavantajelor unor metode, totodată încercând să evidențiem metoda (sau combinația metodelor) cea mai adecvată. În final, bazându-ne pe date proprii, prezentăm un scenariu

existent despre discrepanța rezultatelor obținute prin două metode de încredere la o specie des studiată, liliacul comun mare, *Myotis myotis*.

Cryptic species – in which method to trust?

Recent discoveries in the species complex *Plecotus*, *Myotis mystacinus/brandtii* and *Pipistrellus* led to a considerable increase of diversity in European bats, with species numbers rising from 31 to 38. Taking into account the evolution of methods for identification (morphology, ecology, molecular methods, etc.), this increase in species number seems to be a natural process. In the past, morphological methods were considered the most reliable in identification and taxonomic assignment. With the advent of more sophisticated methods (ex. molecular techniques), results from the past and classical taxonomy were questioned, and subsequently, biogeography of new and extant species was and is under the process of reevaluation. Problems arise, however, when new species are to be identified in the field. Due to the fact that molecular (but also ecological, etc.) methods have high costs and require highly specialized equipment, not to mention the use of a great variety of different methods (mtDNA, ncDNA, microsatellites, radiotelemetry, ultrasound detectors, PIT tags, etc.), their application in the field is difficult and comparison between studies almost impossible. In the present study we intend to gather in one place all (or nearly all) the existing taxonomical and biogeographical data about European bats, obtained through various methods, in order to evidence benefits or drawbacks of different methods, and to identify the most reliable method (or combination of methods). Finally, using our own data, we present highly contrasted results based on two reliable methods, in case of a well studied species, the Greater Mouse-eared bat *Myotis myotis*.

Influența antropizării Peșterii Cioclovina Uscată asupra chiropterelor

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The authors present the results of the researches made after the first environment reconstruction from Romania of a subterranean habitat who suffered apparently irreversible anthropic degradations. Using the presence of the Chiroptera as a bio-indicator, the capacity of a quick and positive answer of the habitat at the diminution of the anthropic pressure was demonstrated. Before the environment reconstruction, 10 bat individuals hibernated in this site, while after the protection systems were installed, the bat number increased to 83 individuals in 2004 and 406 individuals in 2005. The species from this colony are *Myotis myotis*, *Myotis blythi*, *Rhinolophus hipposideros* and *Rhinolophus ferrumequinum*. The experiment also takes into account the monitoring of the cavernicolous invertebrate fauna. In 2006, the authors found other four species in this cave: *Myotis nattereri*, *Myotis daubentonii*, *Plecotus austriacus*, *Miniopterus schreibersii*.