Abstract

The present thesis surveys topic of taxonomic diversity and phylogeny of bears (Mammalia, Ursidae) and aspects of its contextual setting under effects of changing conceptual and methodological viewpoints. This problem is studied from several perspectives. The historical perspective is represented by a critical overview of the history of specific and infraspecific classification of bears with special respect to mutual influences of this classification and theoretical concepts of species accepted in particular periods. The perspective of material approach is exemplified by a material-based study of taxonomical and phyletic status of selected Pliocene to Middle Pleistocene ursine taxa. Along with deconstruction of some traditional hypotheses this produced a model explaining species diversification in ursine bears and its discussion in terms of factual relevance of included background concepts.

In the pre-evolutionary period the bear species were usually understood broadly, as incipient immanent entities, yet exhibiting obvious certain infraspecific variability. This was established using definitions of varieties (mostly not identifiable with present subspecies or infraspecific taxa) considered as unstable modes of particular species. Although, in the post-Darwinian period, the concept and taxonomic treatment of species did not change essentially, significance of the infraspecies variation and its taxonomic meaning grew considerably. The concept of subspecies – the pre-species entities indicating evolutionary dynamics of a species, enriched praxis of taxonomical analyses considerably. Approximately from 1890 to 1930, a large number of new species and subspecies were described, using nominalistic approach, yet mostly based on the differences today interpreted as infrasubspecific. A new taxonomy in 40's, operating with the biological concept of species, brought a strong critical revision upon vast majority of these taxa and the number of valid species declined significantly. This viewpoint and its classification products dominated till the end of 20th century. Since then the taxonomical praxis, operating with formal tools of the cladistic analyses and phylogenetic concept of species, brought a new wave of changes. Among other, this new viewpoint leads to repeated increase in number of valid species.

Naturally, the above mentioned conceptual and methodological shifts considerably influenced also the concepts and ideas of diversity of bear fossil record and its phylogenetic meaning. I confronted the historical issue of these topics with results of my own material-based analysis and taxonomical revision of the Late Biharian bears, mostly from Central Europe. Its outputs suggest that (1) most of the bear remains from this period represent *U. deningeri* which exhibits already most of the spelaeoid apomorphies, (2) *U. suessenbornensis*, *U. e. gombaszogensis* and *U. savini* are synonyms to *U. deningeri*, (3) the presence of arctoid bears in localities Chlum IV and Sackdilling and most probably also Kövesvárad and Voigtstedt suggest sympatry of two different clades in European Biharian stage, while (4) *U. savini* was excluded as a possible ancestor of *U. deningeri*.

The taxonomic diversity of Plio-Pleistocene bears of Europe is further supplemented with another clade: *Ursus* aff. *thibetanus* identified in Villány 3. Its appearance suggests an immigration of this clade from Asia near the Villanyian/Biharian boundary, yet its presence in Europe was probably temporal only as no other positive evidence of *Ursus* gr. *minimus-thibetanus* in Early Pleistocene of Europe is available. Based on the bears, the age of locality Šandalje 1 was newly reevaluated as Toringian.

The speciation dynamics within cave bear and black bear lineages correspond well to the gradualistic models. Contrary to it, at the beginning of these, as well as others bear lineages, origin of species bears evolutionary novelties enabling the qualitatively new response to evolutionary pressures indicate the simultaneous effects of the punctualistic processes. In short, the history of European bears was driven by a complicated complex of the factors responded both by gradualistic and punctualistic phenotype rearrangements.