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The Late Pleistocene-Holocene community development in Central and SE-Europe in direct fossil record: scope of the approach, common patterns and inter-regional differences.

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The information provided by modern instrumental approaches (molecular phylogeography, ancient DNA analyses, large scale radiocarbon datings etc.) refined the knowledge on Late Quaternary faunal development and range history of particular taxa in essential way. Nevertheless, the direct fossil record remains still an essential substrate in study of that topics, and to reveal all the information, that it may provide, and integrate it with the outputs of the other approaches presents one of the essential aim of the present meeting. Unfortunately, the immediate use of fossil record for the paleoecologic and paleobiogeographic inferences is often limited by its fragmentarity (both in temporal and spatial respects), taphonomic influences and/or locally specific post-sedimentary effects which all may bias it in a considerable degree. Hence, each particular record is to be carefully reexamined in respect to all factor which may bias it - unfortunately, often it is not too easy to respond that task, particularly when the record is retrived from secondary sources. It should also be remembered that the records representing narrow time slices without a robust lithostratigraphic context do not provide any information on the historical and contextual setting of the respective faunal situation. Such information that is essential for reconstructions of paleobiogeography of community development and similar locally-sensitive phenomena can only be retrived from the continuous sedimentary series which establish the sequence of particular faunal events by direct superposition. A sufficiently dense network of such series provides than a possibility of direct inter-regional comparisons and a high resolution information on the paleobiogeography of the Late Pleistocene-Holocene rearrangements of mammalian communities, local variation in history of particular species and its community context.

We illustrate productivity of such approach on with aid of the fossil record obtained from continuous sedimentary sequences from different regions of Czech Republic and Slovakia (850 community samples, 29,800 MNI) and neighbouring countries of Central Europe. Despite common general trends we demonstrated stricking local and regional specificities. Among other they include (a) continuous survival of several woodland elements (Clethrionomys glareolus, Sorex araneus, Micotus subterraneus, Microtus agrestis) throughout Weichselian (including LGM) in the Carpathians, (b) prolonged survival of the glacial elements Ochotona pusilla and Microtus gregalis in Pannonian basin and (c) Dicrostonyx gulielmi in the Carpathian foredeep, contrasting to (d) the early disappearance of them in S-Germany and Bohemia, and (e) similar difference were found also in other cenologic traits. While the glacial communities were nearly homogenous in their structure throughout whole the region, the Holocene development produced a considerable faunal provincialism, which was the most pronounced during Boreal. In contrast to central Europe, the available sequences from the SE-Europe and Asia Minor show only minute faunal changes during the Vistulian and Holocene, no essential rearrangements in community structure were observed (at least as the core species are concerned) and except for Lagurus no glacial immigrant did invade the region. At the same time a degree of local provincialism was continuously high and, in a regional scale, it continuously exceeded that of the Boreal central Europe.