
Phylogeography – Session 2

Collagen fingerprinting of Late Pleistocene rodents

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Microfaunal remains are often used as palaeoenvironmental proxies and underpin studies of phylogeography and climate. They provide physical evidence for the presence of species at particular locations and times, and are used to define faunas related to climate stages or events. Consequently, they provide a context in which to examine genetic data and may be used to validate phylogeographic studies. Rodent remains are abundant in numerous sites of archaeozoological interest, potentially forming an important part of the fauna represented there, but are often difficult to identify. For example, postcranial elements from different species are frequently incomplete and indistinguishable, as are many isolated teeth of arvicoline rodents, and this has led to significant mis-identifications in the past. We demonstrate the application of a relatively recent method, collagen fingerprinting (or Zooarchaeology using Mass Spectroscopy: ZooMS), to rodent remains from a Late Pleistocene cave site in England. The method distinguished the arvicoline rodent genera that were present and a range of extant and extinct *Microtus* vole species. ZooMS is much less time-consuming and expensive to apply than modern morphometric or DNA-based techniques, allowing bulk sampling of thousands of specimens. It can be used on a wider variety of material than the former and is not subject to the chronological limits of DNA preservation. It is also less destructive than sampling for ancient DNA, so material is still available for subsequent studies of morphological variation, preservation and taphonomy. The data provide an accurate and comprehensive record of the species present at the site, Pin Hole Cave in Derbyshire, which has previously been designated as the British type location for the Marine Isotope Stage 3 fauna (ca. 60-30 Kya). It is important that definitive faunal data are available from such sites, to provide the essential background for studies of phylogeography and climate change.

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Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

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Book of Abstracts



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