

Micropalaeontological investigations of the hominine site Bilzingsleben – new insights into a Middle Pleistocene Travertine deposit

Thomas DANIEL & Peter FRENZEL

The hominine site Bilzingsleben is one of the most famous and important Pleistocene archaeological find bearing sites amongst some few others in Central Europe. 40 years of scientific investigation enable to reconstruct a very detailed insight into a 370,000 year old Holsteinian travertine deposit with a strong archaeological and palaeontological background. Based on new archaeological excavations of the last years, the interpretation of the site as a non- or minimal overprinted “landscape” impacted by *Homo erectus*, has been reset into the focus of scientific controversy about “site formation processes” and their influence on the sites genesis and the incorporated archaeological record.

We evaluate the ostracod assemblages of three new sections to compare them with micropalaeontological samples taken and published by DIEBEL & PIETRZENIUK (1980), unpublished results from PIETRZENIUK and new geochemical and sedimentological data. In combination of all archaeological and geoscientific data, we can identify a typical travertine sequence from fluvial, limnic, and finally palustrine conditions.

The sections differ in ostracod-association and can be deduced from different spatial habitat settings as well as different sedimentation patterns within the excavated area. By analysing the ostracod association it was also possible to reconstruct the temperature with the new method of Mutual Ostracod Temperature Ranges (MOTR). Hence, mean temperature was -4 up to 4 in January and 16 up to 20°C in July. This temperature range encompass today's mean temperature of -1 in January and 17°C in July but climate was slightly warmer than today. The stratigraphical setting is confirmed by index fossils *Ilyocypris quinculminata* and *Scottia browniana*, reviewed from museum material and first published by DIEBEL & PIETRZENIUK (1980).

For palaeoenvironmental reconstruction we use different ostracod species such as *Heterocypris salina*, *Notodromas monacha*, *Cryptocandona vavrai*, and *Fabaeformiscandona breuili* to detect habitat changes or freshwater influx. Rare species like *Notodromas monacha*, *Cypridopsis vidua*, or *Prionocypris zenkeri* are used as habitat indicators.

Overall, we are able to reconstruct a small scale facies zonation which implies different spatial sedimentation patterns of erosion and deposition and therefore different scopes of interpretation of the archaeological record.

Reference

DIEBEL, K. & PIETRZENIUK, E. (1980): Pleistozäne Ostrakoden vom Fundort des *Homo erectus* bei Bilzingsleben. – Ethnographisch-Archäologische Zeitschrift, 21: 26-35, Berlin.

Authors addresses:

Thomas Daniel & Peter Frenzel

Friedrich Schiller University of Jena, Institute of Earth Sciences, Burgweg 11, 07749

Jena, Germany

t.daniel@uni-jena.de