6th Annual Meeting of the

European Society for the study of Human Evolution

14-17 September 2016
MADRID / SPAIN

ESHE

Journal of Human Evolution

ELSEVIER

The *Journal of Human Evolution* concentrates on publishing the highest quality papers covering all aspects of human evolution. The central focus is aimed jointly at palaeoanthropological work, covering human and primate fossils, and at comparative studies of living species, including both morphological and molecular evidence. These include descriptions of new discoveries, interpretative analyses of new and previously described material, and assessments of the phylogeny and palaeobiology of primate species.

2015 Impact Factor*

3.767

*Journal Citation Reports published by Thomson Reuters 2016

Supports Open Access

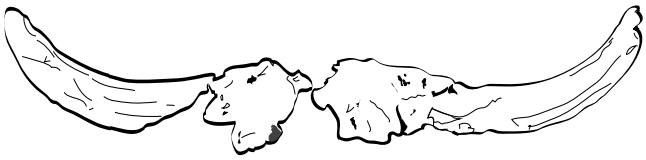
To submit your paper online and for more information, visit:
elsevier.com/locate/jhevol

European Society for the study of Human Evolution

ESHE

6th Annual Meeting

Madrid, Spain 14 -17 September, 2016



Proceedings of the European Society for the study of Human Evolution 5

Cover image: Bison Horns courtesy of the Museo Arqueológico Regional
Proceedings of the European Society for the study of Human Evolution Vol. 5
Citation: PESHE 5, 2016

PESHE 5 compiled and designed by Mikaela Lui

ISSN 2195-0776 (Print)
ISSN 2195-0784 (Online)

Poster Presentation Number 52, We (17:00-19:00)

Patterns of long-term change in Middle Paleolithic stone tool technology at Gruta da Oliveira (Almonda karst system, Torres Novas, Portugal)

Marianne Deschamps[1,2], **Henrique Matias**[1], **João Zilhão**[1,3,4]

1 - UNIARQ - Centro de Arqueologia da Universidade de Lisboa, Portugal · 2 - UMR 5608-TRACES, Université Toulouse 2, France · 3 - ICREA (Catalan Institution for Research and Advanced Studies), Barcelona, Spain · 4 - Department of History and Archaeology, University of Barcelona, Spain

The geographic and temporal diversity of Middle Paleolithic technological systems remains poorly understood, due to the limited number of sites with long stratigraphic sequences associated with a reliable chronometric framework. Gruta da Oliveira [1-3] is exceptional in this regard, particularly where the early parts of the Upper Pleistocene (MIS 5 and MIS 4) are concerned. Discovered in 1989, the site was excavated until 2012 by J. Zilhão. Its 9 m-thick archeo-stratigraphic sequence is sealed by a thick colmatation breccia and the stone tool assemblages found therein are of Middle Palaeolithic technology from top to bottom. Made on flint, quartz and quartzite, these assemblages are associated with abundant faunal and microfaunal remains. Fragmentary Neandertal fossils were also found in a number of stratigraphic units.

Combined with the results of radiocarbon, TL and U-series dating, stratigraphic constraints suggest that the upper part of the sequence (layers 7-12) is of MIS-3 age, its middle part (layers 13-14) of MIS-4 age, and its lower part (layers 15-27) of MIS-5 age [4-5]. In the interest of documenting diachronic techno-economic change across these phases, we present preliminary results of our ongoing work on the unpublished lithic artefacts from the sequence (>29,000 items catalogued so far, and counting). We will place special emphasis on the lower part of the sequence, for which the TL date obtained on burnt flints recovered in overlying layer 14 (77±8 ka) provides a reliable terminus ante quem. Our conclusions are based on a taphonomical critique of the archaeo-stratigraphy, based on the systematic intra-level and inter-level refitting of all quartzite artefacts (preferred over flint due their higher "phenotypic" diversity, which makes for a higher rate of success in the identification of the original nodule of provenience). The spatial distribution of the refit units (148 so far for layers 15-27, 213 so far for layers 8-13) is then used to (a) evaluate the degree of post-depositional integrity of the stratigraphic units recognized in the field and (b) define layer groupings that are meaningful for the purposes of assessing change through time.

As is common in the Middle Paleolithic of Portugal, the percentage of retouched tools, mostly notches and denticulates, is very low throughout; typological analysis is therefore of little utility for the characterization of the Gruta da Oliveira assemblages. This scarcity remains to be fully understood but can be related to raw-material procurement and the economy of the débitage, ultimately determined by settlement-subsistence systems quite distinct from those documented in the Middle Paleolithic elsewhere in Western Europe. The Levallois method is well represented. Macro-tools — cleavers made on flakes, and hand-axes — are found in low numbers in layers 19-17, but they are entirely missing above and below. This pattern suggests that their production is a temporally discrete phenomenon and, hence, a distinctive feature of the late MIS 5 stone tool assemblages of the region, begging the question of their relationship with the cleaver-yielding assemblages from Northern Spain and Southwestern France, which we will discuss.

This work is supported by a Fyssen Foundation post-doctoral grant.

References:[1] Zilhão, J., Angelucci, D., Aubry, T., Badal, E., Brugal, J.-P., Carvalho, R., Gameiro, C., Hoffmann, D., Matias, H., Mauricio, J., Nabais, M., Pike, A., Povoas, L., Richter, D., Souto, P., Trinkaus, E., Wainer, K., Willman, J., 2013. A Gruta da Oliveira (Torres Novas): uma jazida de referência para o paleolítico médio da península ibérica, in: Arnaud, J., Martins, A., Neves, C. (Eds.), Arqueologia em Portugal 150 anos. Associação dos Arqueólogos Portugueses, Lisboa, pp. 259-268.[2] Angelucci, D. E., Zilhão, J., 2009. Stratigraphy and Formation Processes of the Late Pleistocene Deposit at Gruta da Oliveira, Almonda Karstic System, Torres Novas, Portugal. Geoarchaeology, 24 (3), 277-310.[3] Willman, J. C., Maki, J., Bayle, P., Trinkaus, E., Zilhão, J., 2012. Middle Paleolithic Human Remains from the Gruta da Oliveira (Torres Novas), Portugal. American Journal of Physical Anthropology 149, 39-51.[4] Hoffmann, D., Pike, A., Wainer, K., Zilhão, J., 2013. New U-series results for the speleogenesis and the Palaeolithic archaeology of the Almonda karstic system (Torres Novas, Portugal). Quaternary International 294, 168-182.[5] Richter, D., Angelucci, D., Dias, M., Prudêncio, M., Gouveia, M., Cardoso, G., Burbidge, C., Zilhão, J., 2014. Heated flint TL-dating for Gruta da Oliveira (Portugal): dosimetric challenges and comparison of chronometric data. Journal of Archaeological Science 41, 705-715.