## Bifacials and ochres revealing MSA cultural dynamics during MIS3 with the West African site of Toumboura III (Senegal)

Viola C. Schmid<sup>\*†1,2,3</sup>, Laure Dayet<sup>4</sup>, Chantal Tribolo<sup>5</sup>, Brice Lebrun<sup>5</sup>, Michel Rasse<sup>6</sup>, Laurent Lespez<sup>7</sup>, Maria Lorenzo Martinez<sup>1</sup>, Katja Douze<sup>1</sup>, and Eric Huysecom<sup>1</sup>

<sup>1</sup>Laboratory Archaeology and Population in Africa (APA), Department of Genetics and Evolution, Anthropology Unit, University of Geneva, – Suisse

<sup>2</sup>Department of Early Prehistory and Quaternary Ecology, University of Tübingen – Allemagne <sup>3</sup>Research group AnTET -Anthropology of Techniques, Spaces and Territories in the Pliocene and the Pleistocene, University Paris Nanterre – UMR 7041 ArScAn - AnTET – France

<sup>4</sup>Laboratoire TRACES, Université Toulouse Jean Jaurès – UMR 5608 - TRACES – France

<sup>5</sup>Research Institute on Archaeological Materials-Centre of Research on Physics Applied to Archaeology (IRAMAT-CRP2A), – CNRS-UMR 5060, University Bordeaux-Montaigne, Esplanade des Antilles,

F-33607 Pessac Cedex – France

<sup>6</sup>Laboratory Archeorient, – CNRS-UMR 5133, Maison de L'Orient et de La Mediterranee, University of Lyon II, 7 Rue Raulin, 69007 Lyon, – France

<sup>7</sup>Laboratory of Physical Geography (LGP), – CNRS-UMR 8591, Department of Geography, University Paris-Est Creteil, 1 Place Aristide Briand, 920195 Meudon – France

## Résumé

The West African Middle Stone Age (MSA) holds a crucial role with respect to the evolution of humankind. In the last decades, the increasing wealth of new data, especially from research conducted in Mali and Senegal, allowed to overcome the neglect of West Africa in the discussion on cultural developments and human dispersals in Africa. The site of Toumboura III encompasses an occupation dated to 33 ka, shedding light on an unprecedented cultural expression of the MIS3 MSA, adding to the variability already suggested for the late MSA in this region.

Our combined studies on the lithics and the ochres led to point out the behavioural repertoire of Toumboura III. First, we performed a technological analysis of the lithic components following the *chaîne opératoire* approach. The lithic assemblage features a prevalence of bifacial shaping involving the production of different tool types such as standardised small bifacial points employing pressure flaking. Secondly, the technological and mineralogical analyses of ochre lumps also showed that part of the ochre pieces shows clear percussion marks. The iron content identified in the ochres is compatible with that of pigments, or with the haematites used in ethnographic contexts. In addition to providing data on a poorly documented period of West African MSA, Toumboura III has demonstrated technological and perhaps symbolic behaviours that are entirely new in the region. By revealing the appearance of innovations

<sup>\*</sup>Intervenant

 $<sup>^{\</sup>dagger} \mathrm{Auteur}$  correspondant: viola.schmid@uni-tuebingen.de

and technological particularities, these results on the techno-cultural dynamics in the MSA of MIS3 within West Africa contributes to the current scientific effort to enhance the knowledge on the complex Pleistocene population history in this part of Africa.

**Mots-Clés:** West Africa, MSA, MIS3, bifacial technology, pressure technique, ochre use, cultural change