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The Middle Stone Age archaeology of the Senegal River Valley

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A B S T R A C T

The importance of Africa in human origins is widely recognised, yet knowledge remains strongly biased towards certain regions of the continent at the expense of others. West Africa in particular is a vast area with extremely limited archaeological, environmental and fossil records. In this paper, we contribute towards redressing this imbalance though a summary of the state of knowledge of the West African Middle Stone Age (MSA), and the presentation of preliminary analyses of ten newly discovered MSA archaeological sites situated along the Senegal River. Archaeological, fossil and genetic data relevant to the West African MSA, a period currently thought to span from at least ~150 ka until the Terminal Pleistocene, are first discussed. Technological analyses of newly discovered MSA assemblages in Senegal are then presented and contextualised with the ecology and environmental evolution of West Africa. Our preliminary findings suggest an overall high level of technological diversity along the Senegal River, but identify common technological features between assemblages in northern Senegal. These include an emphasis on centripetal methods of Levallois reduction (both preferential and recurrent). The discovery of tools in northern Senegal with basal modifications consistent with tanging may also suggest some form of connection with North African assemblages and is commensurate with the role of Senegal as a transitional zone between sub-Saharan and Saharan Africa. Although preliminary, the emerging results demonstrate the potential of the region to contribute to debates on intra-African dispersals, including population persistence and turnovers.

1. Introduction

Africa is generally regarded as the birthplace of our species, as well as a key area for hominin evolution. However, little is known about the continental variability of Pleistocene archaeological, fossil and climatic records beyond the relatively intensively researched areas of South and East Africa (including northeast Africa) and the Maghreb (Willoughby, 2007; Barham and Mitchell, 2008). This patchy state of knowledge is increasingly problematic given the growing requirement for a fuller understanding of the African Stone Age, involving spatially and temporally representative samples from across the continent. Fuelling the need to fill this research gap are fossil and genetic data indicating a complex transition to *Homo sapiens*, involving multiple sets of spatially subdivided African populations (Gunz et al., 2009; Crevecoeur et al., 2010; Scally and Durbin, 2012; Scerri et al., 2014).

In the light of such scientific insights, the current lack of Pleistocene hominin fossils, together with weak and/or patchy chronological control on a poorly understood archaeological record is problematic. The only known early human skeletal remains to come from West Africa are from the Iwo Eleru rockshelter in southwestern Nigeria. The skeleton was found in an undisturbed Later Stone Age (LSA) context and dated by radiocarbon to 11,200 ± 0.2 ka (~13 ka calibrated) (Allsworth-Jones et al., 2010; Harvati et al., 2011) and between 11,700 ± 1.7 ka and ~16.3 ± 0.5 ka by Uranium series (Harvati et al., 2011). However, despite this terminal Pleistocene/early Holocene (Marine Isotope Stage [MIS] 1 or 2) date, the skull presents a mosaic of primitive and derived features (Brothwell and Shaw, 1971; Stringer, 1974). Harvati et al. (2011) found the skull to be outside the range of modern human variability, and similar to the ~100 ka *Homo sapiens* specimens from the Middle Eastern sites of Skhul and Qafzeh. The young age was taken by these authors to suggest a complex transition to anatomical 'modernity'. The late survival of 'archaic' features is likely to represent a deep and persistent population substructure in Africa, a conclusion also reached by other fossil and archaeological

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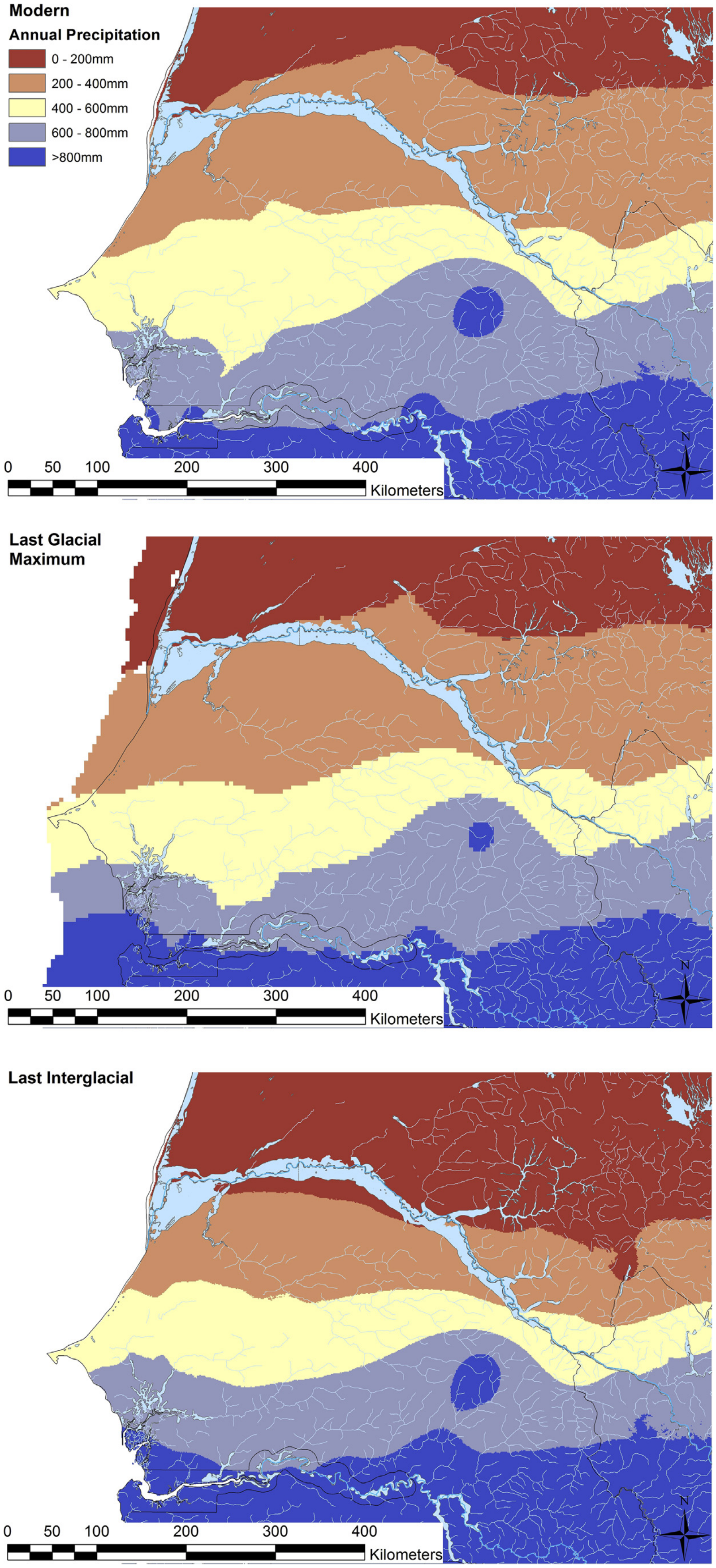

Fig. 1. Precipitation maps in mid and lower Senegal basin based upon modern rainfall data (top; following Hijmans et al., 2005) and modelled rainfall data for the Last Glacial Maximum (centre; following Braconnot et al., 2003) and Last Interglacial (bottom; following Otto-Bliesner et al., 2006) illustrating minimal changes to regional annual precipitation.