

Palaeoenvironment and human population in West Africa: an international research project in Mali

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FIGURE 1 (top, right). The banks of the Yamé: sequence extending from the Pleistocene era to the 12th century AD.

FIGURE 2 (right). Excavation of strata dating back to 8000 BC.

FIGURE 3 (top, left). MSA lithic industry (OSL Mean Age Estimate: $29,000 \pm 4300$ BC).

FIGURE 4 (above). Pottery from Dangandouloun rock shelter, 7th–12th centuries AD.

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The site of Ounjougou, Mali, provides evidence of a variety of human activities. The geological and palaeoenvironmental sequence offers a wealth of micro and macro plant remains. All the requisite elements for setting the cultural, climatic and environmental changes into chronological perspective are gathered here. Since 1997, as part of the *Paleoenvironment and Human Population of West Africa* project, four seasons of field work have taken place, which confirm that investigation of the site will substantially modify our understanding of Dogon prehistory and history, and ultimately that of the whole of West Africa.

An international and multidisciplinary research team has been formed to exploit to the full the potential of this remarkable site under the auspices of the UNESCO Mali and Swiss Commissions. Archaeological, ethno-archaeological and ethno-historic studies are currently being carried out by the Universities of Geneva (A. Gallay, E. Huysecom, A. Mayor, S. Ozainne, F. Raeli and A. Robert), Mali (D. Konaté, O. Sow) and Paris X-Nanterre (E. Boeda, S. Soriano), with the collaboration of the Institut des Sciences humaines of Bamako (K. Sanogo) and the Mission Culturelle of Bandiagara (L. Cissé). Palaeoenvironmental studies are directed by the University of Angers (A. Ballouche), the geological aspect being handled by the University of Rouen (M. Rasse) and the Institut national agronomique of Paris-Grignon (N. Fedoroff). An OSL dating programme is being conducted by Oxford University (S. Stokes).

Palaeomagnetic analyses and OSL dating will determine the chronology of quartz tools discovered in a stratified context, which are typologically similar to those found in Olduvai in East Africa. Last year, OSL datings of sedimentary samples confirmed the existence of several Middle Paleolithic periods dating from between 50,000 and 29,000 BC. These revealed a typo-technical evolution as yet unknown in West Africa.

Ceramic sherds found in Holocene layers dating from 9000 and 8000 BC, together with grinding implements, bifacial arrowheads, quartz microliths and massive stone tools, substantially change our understanding of the period for this region. There then follows a hiatus. In the middle of the 3rd millennium BC, populations are observed showing similarities with certain Neolithic populations of Central Sahara. Some thousand years later, riverside stone structures appear, containing heavy grinding tools and a significant amount of charred remains of tall grasses, suggesting that millet cultivation was

known, although it is premature to say so with certainty.

Excavations in protohistoric levels reveal the way of life of the populations who lived on the Bandiagara Plateau before the arrival of the Dogon. Our next study aims to identify possible links between these populations and those of the Inner Delta of the Niger and the cliffs of Bandiagara. Oral tradition reveals much about the history of these people and their migrations, and enables us to understand the links forged between groups and to determine their ancient boundaries.

A survey of traditional ceramic artefacts, ancient and modern, collected on historical sites or simply from abandoned villages (known to us through oral tradition), shows the evolution of styles, and helps to develop hypotheses on the population of the plateau. An excavated rock-shelter, used for ritual purposes, has already yielded ceramic objects of high quality, comprising several chalices on tripods as well as iron arrowheads.

Finally, extensive ethno-archaeological research has been carried out into the traditions of modern Dogon ceramics. Tradition A is typical of the farmers, as opposed to traditions B and H which are typical of the wives of ironsmiths. These artisans were either local or came from outside groups. In Gourma des Monts, the local native tradition, shared by the Rimaibe, is probably of Fulani origin. The map of these tradition tendencies is very useful for understanding the archaeological remains.

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