



PRESS RELEASE

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An outstanding discovery shed light on African prehistory

A UNIGE team's discovery of a prehistoric workshop in Senegal sheds light on the little-known hunter-gatherer presence in West Africa.

What do we know about the last hunter-gatherers who lived in West Africa? While these prehistoric populations have been extensively studied in Europe and Asia, their presence in this vast region — covering 6 million square kilometres, more than ten times the size of France — remains poorly documented. Using an interdisciplinary approach, a team from the University of Geneva (UNIGE) working on one of the rare archaeological sites in Senegal dating back to the early Holocene, over 9,000 years ago, has now uncovered new insights into these communities and the stone-knapping techniques they used to make their tools. These findings are published in *PLOS One*.

The subsistence of prehistoric hunter-gatherers relied on hunting, gathering, and fishing. Nomadic or semi-nomadic, their groups moved with the seasons and the availability of resources. Present on every continent, this way of life dominated human history until the gradual emergence of pottery, animal husbandry, and agriculture during the Neolithic, which unfolded at different times and in different ways across the world.

Numerous excavations in Europe, Asia, and southern and eastern Africa have allowed researchers to study and document hunter-gatherer populations in detail. In other regions, however — particularly in West Africa — their presence is much harder to trace. “In this part of the continent, climatic and geological factors have not favored the preservation of stratified remains in the soil. Yet stratification is crucial: it captures successive phases of occupation and provides key information on chronology, lifestyle changes, and climatic and environmental evolution,” explains Anne Mayor, director of the ARCAN Laboratory at UNIGE’s Faculty of Science and senior lecturer and researcher at the Global Studies Institute.

At the heart of prehistoric know-how

The discovery in 2017 of the Ravin Blanc X site in Senegal’s Falémé Valley, led by Eric Huysecom — honorary professor at UNIGE and then director of the research project Human Population and Paleoenvironment in Africa — is beginning to shed light on these questions. Exceptionally well preserved despite its small surface area of 25 m², the deep layer of this site, uncovered beneath a much more recent Neolithic deposit, offers a rare snapshot of the early Holocene — the temperate interglacial era we still live in today. This period followed nearly 10,000 years of severe drought in the region.



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The UNIGE team has unearthed fragments and waste from quartz knapping, used by hunter-gatherers to craft their tools.

High resolution pictures

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Using an interdisciplinary approach in collaboration with the Institut Fondamental d'Afrique Noire, Charlotte Pruvost, a doctoral student at the ARCAN Laboratory, has uncovered and analysed the remains of a 9,000-year-old quartz knapping workshop, along with a fireplace. "We didn't find any formal quartz tools — the hunter-gatherers took them — but we did find a pile of production waste. By patiently piecing together the flakes and cores that had remained in place since then, like a jigsaw puzzle, we were able to reconstruct the techniques used, the criteria for selecting high-quality quartz, and the skill level of the knappers," explains Charlotte Pruvost, lead author of the study.

The few archaeological sites from this period in West Africa are characterised by very small stone tools, or "microliths", designed to be hafted and used as hunting weapons. By comparing the Ravin Blanc X remains with those from the few other well-dated West African sites, researchers observed technical similarities that may point to shared traditions among the last hunter-gatherers of the West African savannahs. Indeed, the microliths found at these savannah sites reveal sophisticated craftsmanship aimed at producing highly standardised, identical tools.

"Conversely, sites further south, in tropical forest settings, show different, more opportunistic technical choices. The lack of standardisation in tools suggests that cultural groups were already quite distinct between regions with differing environments," explains Anne Mayor, who led the research.

Multidisciplinary approach

These results stem from interdisciplinary collaboration. Charcoal from the fireplace was analysed by carbon-14 specialists and anthracologists, who identified the wood species used to make the fire. Soils were studied by geomorphologists, sedimentologists, and palaeoenvironmentalists, who examined phytoliths — silica remains from plants — to reconstruct the climate and landscape in which these quartz knappers lived.

This research involved institutions in Switzerland, Senegal, France and Germany. It sheds new light on the diversity of technical practices and material cultures in West Africa at a pivotal moment marked by simultaneous cultural, climatic and environmental transformations.

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