SPECIAL ISSUE

Variability of Late Pleistocene and Holocene Microlithic Industries in Northern and Eastern Africa: Recent Interpretations and Perspectives

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Published online: 18 August 2020
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The Last Glacial Maximum has a clear technological imprint in the archaeological record of North Africa and elsewhere. This is in the form of toolkit miniaturization—the advent of the Later Stone Age (LSA) microlithic technologies. These new technologies were associated with a global change towards sophisticated hunting strategies. However, for several decades, microliths (including small retouched/backed tools on flakes and bladelets) were defined and analyzed using a wide range of approaches, which have led to a loss of accuracy in understanding the miniaturization phenomenon. This special issue addresses the question of variability in backed bladelet-based technologies. It also examines the role of LSA microlithic industries as adaptive strategies for coping with paleoenvironmental changes in North Africa. The multidisciplinary research activities conducted in caves and open-air sites in North Africa over the past two decades have highlighted the importance of this region for understanding the development of LSA microlithic technologies in Africa. This special issue, therefore, enriches the debate of origin and the spread of Late Pleistocene microlithic technologies in North Africa and beyond.

The articles originated from the session that we co-organized at the 23rd Congress of the Union Internationale des Sciences Préhistoriques et Protohistoriques (UISPP) in Paris (France), June 4–9, 2018 (Fig. 1). The session “Variability of Late Pleistocene and Early Holocene Microlithic Industries in Northern Africa: Recent Interpretations and Perspectives” was organized under the auspices of Commission XXIII “Paleolithic landscapes, techniques and cultures of Western North Africa.” What follows are five articles covering a wide geographical area in Northern and Eastern Africa (Algeria, Morocco, Egypt, and Ethiopia) and cutting across the Late Pleistocene and Early Holocene periods. The articles present the latest results of research on the evolution of lithic and bone technologies, hunting and hafted technologies, mobility patterns, settlement strategies, and use of territorial space. One of the articles also employs multivariate statistical analyses to understand the variability of backed artifacts in the Late Pleistocene and Holocene microlithic assemblages of the Horn of Africa.

The first two articles focus on Late Pleistocene microlithic assemblages, specifically the Iberomaurusian of the Maghreb. These are characterized by the presence of small chipped stone artifacts on diminutive blanks. Latifa Sari examines the role of microlithic technologies as adaptive strategies during the Late Pleistocene in Algeria. The adoption of microlithic technologies represented the use of a wide range of technological options by hunter-gatherer populations to diversify the procurement of animal food resources. The diachronic changes

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Fig. 1 Participants and attendees to the XXIII.2 session of the XXIII^e congress of UISPP. From left to right: Tiphaine Dachy, Alice Leplongeon, Latifa Sari, Amandine Delaplace, Giacoma

Petrullo, Giuseppina Mutri, Giulio Lucarini, Nicolas Perrault, Eslem BEN AROUS, Emmanuelle Stoëzel, and Alessandro Poti

in techno-economic patterns reflect the changing hunting strategies and adaptations to fluctuations in resource patterns due to climate changes during the Last Glacial Maximum, Heinrich 1 event, and Greenland interstadial 1. Far to the west, Alessandro Poti et al. present the Iberomaurusian lithic assemblages from Ifri El Baroud in northeast Morocco, focusing on techno-economic and functional patterns. The analysis of the lithic artifacts at Ifri El Baroud shows diachronic changes in human behavior, especially a strong relationship between paleoenvironmental shifts and changes in settlement/mobility strategies and lithic production after Heinrich 1 event.

The next two articles deal with the Holocene microlithic tools in Egypt and Algeria, respectively. Giuseppina Mutri et al. reinforce the conclusion that the Early Holocene microlithic tools in Farafra oasis, on the fringes of the Eastern Sahara, were used as composite hafted tools and were an adaptation to the Early Holocene environment. Differences between the lithic complexes are stylistic in character and are believed to express the social identity of the different groups who lived in the oasis. Together with the chronological and paleoenvironmental data, the techno-typological characters of the finds led to the recognition of numerous cultural units and the existence of two settlement strategies dictated by seasonality. The next article, by Giacoma Petrullo

and Amandine Delaplace, brings forth a new approach that uses technological, typological, and functional analyses to study the early Holocene microlithic and worked bone industries (Capsian) in eastern Algeria. The study identifies, for the first time, the common techno-economic indicators of bone and lithic production systems that represent a strong cultural marker of the Upper Capsian Tradition in the Maghreb. The study compares and contrasts the *shémas de taille* of lithic core reduction and the matrix partition methods of the bone artifacts. The highly standardized microliths obtained from pressure débitage and used in hafted tools shared common technical features with multi-structured débitage observed in bone tool production. Unlike North Africa, the microlithic phenomenon in Eastern Africa suffers from the lack of consensus on terminology and common typology. Alice Leplongeon et al. take up this issue in the fifth article by examining the variability of backed pieces from securely dated contexts in the Horn of Africa. Most especially, they seek to understand the degree of continuity and discontinuity in backed microliths between the Late Pleistocene and Holocene periods in Ethiopia. Rather than using subjective typological categories for the comparison of these multi-sited collections, they employ multivariate statistical analysis and 2D morphometrics. The analyses provide

complementary results that show chronological trends in the technology and morphology of backed microliths during the Middle and Late Holocene.

There are gaps in the representation of countries in this volume, which we regret. The aim is to stimulate further discussion on the variability of Late Pleistocene microlithic industries in northern and eastern Africa. This collection of articles is dedicated to Jacques Tixier (1925–2018), who contributed immensely to the knowledge of North African prehistory. As shown in the

obituary written by Jim Phillips and David Lubell, Tixier's pathbreaking work laid the foundations that make the articles in this special issue possible.

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