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Original article

# Nadaouiyeh – A *Homo erectus* in Acheulean context

*Nadaouiyeh – Un Homo erectus en contexte acheuléen*

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## Abstract

The Middle East is apparently the most important passage for the dispersal of early hominins. Numerous archeological sites prove the existence of hominin populations in this region, but despite these rich cultural remains, hominin fossils are very rare. In 1996, a hominin left parietal was found in an Acheulean context. In addition, the faunal remains indicate a steppe environment. What does this single cranial fragment tell us? Based on new publications and in particular on recent finds, the value of isolated elements is discussed. © 2015 Published by Elsevier Masson SAS.

*Keywords:* *Homo erectus*; Acheulean; Syria; Lower Palaeolithic; Hominidae

## Résumé

Le Moyen-Orient est certainement le passage le plus important pour la dispersion des premiers humains. Un grand nombre de sites archéologiques démontrent l'existence de populations humaines dans cette région. Malgré la richesse en restes culturels, les fossiles d'hominidés restent très rares dans ces territoires. En 1996, un pariétal gauche d'hominidé a été découvert dans un contexte acheuléen. De plus, les restes fauniques correspondent à un environnement steppique. Quelles informations peuvent nous fournir ce fragment crânien ? La signification de tels éléments isolés est discutée à la lumière des publications récentes et des nouvelles découvertes.

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*Mots clés :* *Homo erectus* ; Acheuléen ; Syrie ; Paléolithique ancien ; Hominidés

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## 1. Introduction

Originating in Africa, early humans spread into the northern hemisphere during the Early Pleistocene, soon after the appearance of the earliest hominins, and persisted throughout the entire Middle Pleistocene. The earliest date of “Out of Africa” was originally determined to be about 1.4 my based on the Jordan Valley site 'Ubeidiya, located at the juncture of Africa and Eurasia (Feibel, 2004; Ronen, 2006; Tchernov, 1988).

The driving force of the first migration is a critical topic that requires further research. Global climate and environmental changes are the most decisive factors affecting human emergence and dispersal. Moreover, some researchers consider that the Late Pliocene “cooling event” not only triggered the early emergence of *Homo habilis* and *H. ergaster* from *Australopithecus* but also spurred them to leave their African home in the search of new resources. The success of the hominin occupation of Eurasian habitats may not have been primarily facilitated by the availability of food. Flexibility in food procuring techniques and the absence of zoonotic diseases that plagued and constrained hominins in their African cradle of evolution may also be further explanations (Bar-Yosef and Belfer-Cohen, 2001).

By about 1.8 my, evidence of humans was not only vastly distributed in many parts of Africa, the assumed place of human origin, but also expanded throughout most parts of Eurasia, including East Asia and Java. Artifacts and human fossils found in East Africa date to ca. 2.5 my (de la Torre, 2004; Delagnes and Roche, 2005; Hovers et al., 2002; Kimbel et al., 1996; Roche et al., 1999). In Asia and Europe, such evidence is 500 ky younger; these indications are therefore strong arguments for an African origin of the genus *Homo* (Dennell, 2011).

The earliest “pre-human” fossils (e.g., *Ardipithecus* sp.) dated to 4.4 my in Africa lacked tool technology, but walked upright and possessed other key hominin characteristics (White et al., 2009). With some exceptions, they generally belong to the genus *Australopithecus*. Because no such evidence has as yet been discovered in East Asia or Europe, it can be assumed that *Homo* initially spread to the northern border of the temperate zone represented by the Zagros mountains and was present in both West and East Asia (Gabounia et al., 2002; Larick et al., 2001; Swisher et al., 1994; Vekua et al., 2002).

A web of ecological factors fueled the expansion of *Homo* from Africa into Asia in the Early Pleistocene (Bar-Yosef and Belfer-Cohen, 2001; Feibel, 2004; Gaudzinski, 2004). Such hominid dispersal did not occur simply out of sheer curiosity. Progressive population growth and increased energy needs triggered by increased body and brain size made them dependent of food resources especially rich in fat and protein. Therefore, these early hunters likely responded to changing ecological conditions and followed their food resources to remote areas.

It has been generally assumed that expansion occurred via a northern route along the Nile Valley to the shores of the Mediterranean. The direction of movement was across a major desert towards the Middle East.

However, another dispersal route, a southern route through the Horn of Africa towards the Arabian Peninsula, was also used by animals in the past and use of this route by expanding hominins has also been suggested (Groucutt and Petraglia, 2012; Lahr and Foley, 1994; Petraglia, 2005).

The main regions of Ethiopian non-forest faunal expansions were south to north, reaching into the Levant via the Sinai Peninsula and the Bab el Mandeb in Southern Arabia (Kopp et al., 2014; O'Regan et al., 2011). Savanna conditions are indicated by *Struthio camelus* and *Camelus dromedarius* fossils (Payne and Garrard, 1983; Tchernov, 1992).

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