



Fig. 1. Map showing routes that populations followed from Africa to other parts of the Old World.

Middle Egypt in Prehistory: A Search for the Origins of Modern Human Behavior and Human Dispersal

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The word *Egypt* for many people evokes images of one of the great civilizations of the ancient world and represents one of the major foci of research by the University of Pennsylvania Museum. Tens of thousands of years before Egyptian civilization, however, early humans living along the Nile River and in the deserts of Egypt left behind stone tools, the remains of meals, and other evidence that is the key to understanding the evolution of modern human behavior and the dispersal of humans from Africa to the Middle East, Europe, and Asia. The archaeological signatures provided by these ancient sites pose a series of intriguing research

problems because interpreting their details is fundamental to deciphering the roots of humanity worldwide.

One of the primary reasons that attention has focused on the African continent as a source of modern humans is advances in genetics. These have allowed scientists to examine the genetic relationships between modern, living groups of people, and the results appear to show that African populations have the most diversity in mtDNA (mitochondrial DNA), a type of DNA that is passed only from mothers to their offspring. Diversity in mtDNA is believed to be the result of mutations that accumulate over

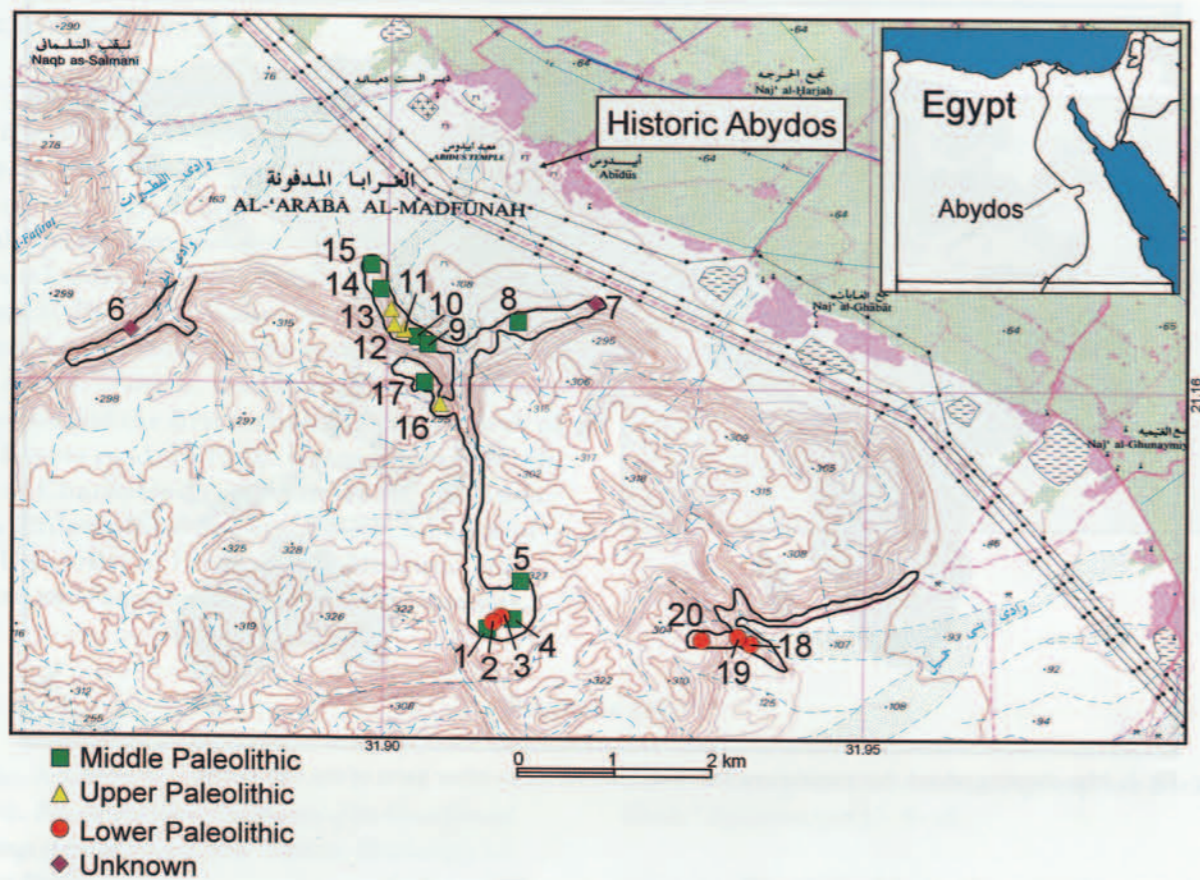


Fig. 2. Location of project areas and ASPS sites.

time (Macaulay et al. 1997). Thus, populations with a higher frequency of diversity in mtDNA must have been in existence longer than other populations.

The appearance of modern humans and of modern human behavior were not necessarily simultaneous. Complicating this is the question of how researchers define modern human behavior and how it is recognized in the archaeological record. One avenue that some scientists have taken is to look for evidence of symbolic behavior such as art and personal ornamentation. Often, however, these types of items are made of organic materials, which are not always preserved over time. The most readily available set of cultural materials is thus stone artifact assemblages since stone is durable and survives. Many researchers believe that careful study of the technology of stone artifact manufacture and the organization of human activities across the landscape will provide clues to the origins of modern human behavior.

The routes by which humans dispersed from Africa—the probable source region for modern humans—into other parts of the world are of considerable interest. The two major proposed routes (Fig. 1) are along the Nile Valley Corridor, and from present-day Somalia, across the Red Sea, and into the Arabian Peninsula. Evidence for the origins of modern human behavior may also be preserved along these routes.

These landmark events occurred during the Paleolithic (or Old Stone Age), which extends from the time of the earliest known stone tools about 2.5 million years ago to about 10,000 years ago when the northern latitudes began to recover from the onslaught of the last major glacial advance of the Pleistocene epoch (“Ice Age”). Archaeologists have divided the Paleolithic into Lower, Middle, and Upper phases. Research into all three phases in Egypt has a long and distinguished history, but it has only been in the last few decades that systematic

archaeological investigations have been undertaken (e.g., Vermeersch 2000; Wendorf and Schild 1976; Wendorf, Schild, and Close 1989). This research has provided an excellent baseline of Paleolithic sites, but the framework contains many gaps, including how ancient human settlements were structured across the landscape, and the implications of this patterning for understanding the origins of modern human behavior and dispersal from Africa. Our project, the Abydos Survey for Paleolithic Sites (ASPS), focuses on settlement patterning, applying a landscape archaeology approach to the region near Abydos in Middle Egypt (Fig. 2).

In January 2000, the authors conducted a reconnaissance survey to thoroughly examine small portions of the topography within a 5-kilometer radius southwest of Abydos. The topographic contexts included sand dunes, fluvial sediments, gravel terraces, and high desert hamma (a surface characterized by a paving of desert-weathered stones that can include stone artifacts; see Fig. 7). Our reconnaissance was designed to assess the occurrence of Paleolithic

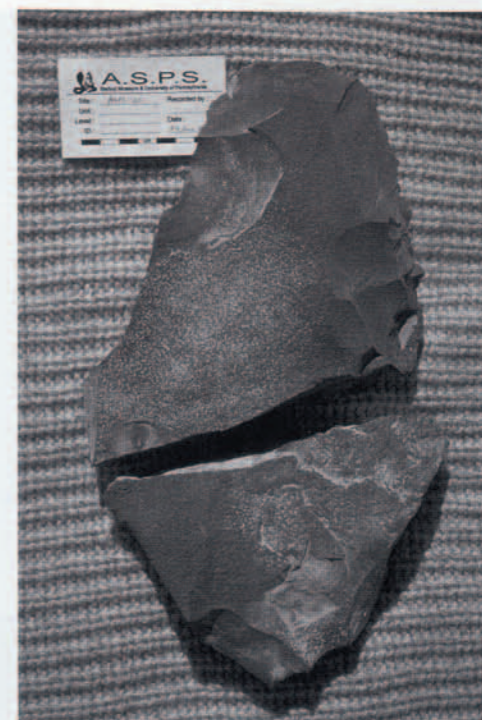


Fig. 3. A Lower Paleolithic (Acheulian) biface from ASPS-20.

Fig. 4. Flakes refitted to a nodule (core) from ASPS-19.





Fig. 5. A Middle Paleolithic Nubian Levallois core.

industries of the Lower Paleolithic, and examples are found not only in Africa, but also in the Middle East and Europe. It generally dates from 1.5 million years to about 200,000 years ago. The ancestors to modern humans (most likely members of the species *Homo erectus* or *Homo ergaster*) who manufactured these bifaces and other stone tools were among the earliest waves of humanity to leave Africa. Understanding where they were in the landscape and how they exploited their surroundings provides valuable clues to their migration out of Africa. Several other sites, such as ASPs-19, may also date to the Lower Paleolithic. These are locales where stone raw material was tested for its usefulness in producing flakes

sites in each context, the integrity of those sites (such as the degree of disturbance), and the potential for buried, stratigraphic deposits. We also gathered information on the different kinds of stone tool industries occurring in the area, which is central to interpretations of the origins of modern human behavior. Based on the chronological affiliation and distribution of the more than twenty sites we found, as well as six sites identified by an earlier survey (Vermeersch 2000), we know that site density in this region of Middle Egypt is quite high and variable enough in topographic position to allow for the detailed reconstruction of Paleolithic settlement.

THE SITES

Lower Paleolithic

The most prominent Lower Paleolithic site located by our survey is incorporated into a high desert hamma (ASPs-20). This site contains numerous examples of Acheulian bifaces (handaxes; Fig. 3). The Acheulian is one of the most widely recognized stone tool

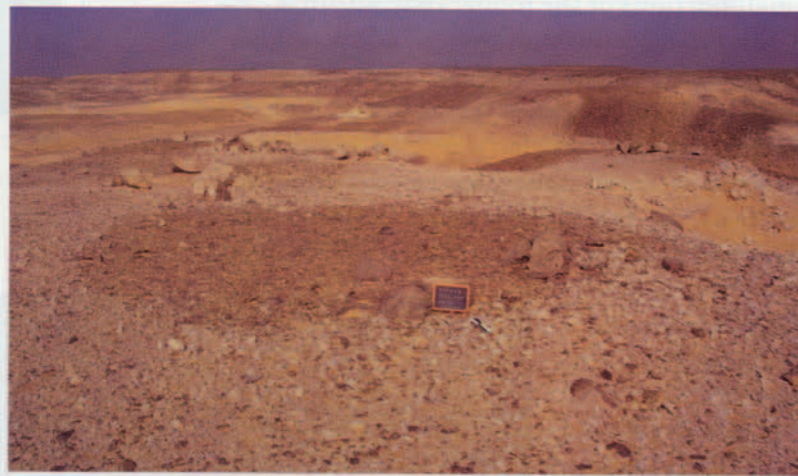


Fig. 6. Middle Paleolithic flint-knapping episode (dark circle) from ASPs-4.

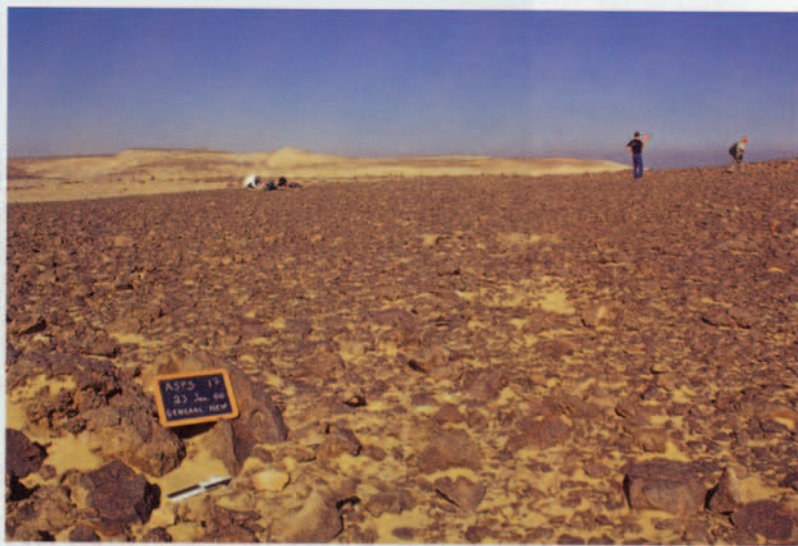


Fig. 7. ASPs-17, a Middle Paleolithic site on the desert hamma.



Fig. 8. A windbreak structure of possible Upper Paleolithic age at ASPs-16.

to use as tools or to fashion into tools. One of the remarkable aspects of these sites is that it is possible to refit the flakes onto the nodules (or cores; Fig. 4), demonstrating that these sites are intact.

Middle Paleolithic

The majority of the sites found during the 2000 ASPs project date to the Middle Paleolithic (from ca. 250,000 to 40,000 years ago). It is during this period that modern human behaviors began to emerge, and that additional ancient human groups migrated from Africa to the Middle East and beyond. Perhaps one of the most fascinating problems is why the stone tool industries of Egypt during the Middle Paleolithic are apparently so different in aspects of technology and typology from analogous industries in the neighboring Middle East when it is likely that human groups traveled there directly from Egypt. For example, one distinctive Egyptian technology is a variation of the Levallois

technique (first defined in France) for removing flakes from cores. It is classified by archaeologists as Nubian Levallois (Fig. 5), and is absent in regions such as the Middle East and Europe.

By closely studying not only the settlement patterns and adaptations of the Middle Paleolithic, but also the technology and typology of the stone tool industries, we will be better able to understand why the signs of human behaviors in Egypt look different from elsewhere in the Old World. Of relevance to this problem are sites such as ASPs-4 (Fig. 6), a high desert locale with dozens of individual flint-knapping events—episodes of removing flakes from cores in the pursuit of flakes that are especially suitable for modification into tools such as points. Refitting the artifacts onto the cores (a process analogous to doing a three-dimensional jigsaw puzzle) will allow us to “see” the sequence involved in the removal of artifacts from cores. In addition, we will be able to observe how the core was prepared so that artifacts of predictable

shape and size could be struck from it. Comparisons can then be made to industries in the Middle East and Europe. Other sites, such as ASPS-17, an extensive site in the high desert hammada (Fig. 7), may help us trace the movement of people within Egypt. ASPS-17 has numerous bifacial foliates (which closely resemble small handaxes identified from the Middle Paleolithic of Western Europe). Bifacial foliates are best known from near the Sudanese border and from sites far out in the deserts. They had been thought to be uncommon elsewhere, such as the region where we work.

Upper Paleolithic

We found only a small number of Upper Paleolithic sites (ca. 40,000 to 18,000 years ago). They were located in sand dunes in the low desert, as well as along water courses in the high desert. An example is the high desert site of ASPS-16, which is characterized in some areas by hammada and in others by accumulated sand. Small wind-break structures are found here (Fig. 8), as well as at other sites in the region. They may have been hunting blinds, and most likely date to either this period or earlier. The scarcity of sites of this period until very late in the sequence is typical of the Egyptian Upper Paleolithic. Why they developed later here than in other areas is critical to our understanding of the process and pace of adaptation in different regions.

The goal of the ASPS project over the next six years is to intensively survey the region

near Abydos in Middle Egypt and create a GIS (Geographical Information System) map of the distribution of Paleolithic sites, using GPS (Global Positioning System) to accurately record site locations. We will study the technology and typology of stone artifacts, excavate a number of promising sites, and clarify the adaptations of these early groups of humans in order to examine the origins of modern human behavior and the dispersal of humans from Africa. The indelible impressions they left on the landscape will contribute not only to our understanding of the prehistoric underpinnings of later Egyptian civilization at Abydos, but also to what is ultimately the story of all humanity. 🚶

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