what-when-how

In Depth Tutorials and Information

Paleolithic cultures, overview (Archaeology of Ancient Egypt)

The record of the Egyptian Paleolithic is found in two very different areas, the Nile Valley and the Sahara. The Nile Valley seems to have been used continuously, or almost so, since more than 500,000 years ago. Use of the Sahara, however, was episodic. There were long intervals when it was hyperarid, with no trace of human presence, but there were also at least seven and probably many more periods of significant rainfall and people were present in the Sahara during all of them.

The Nile is a permanent river, and people lived in its valley no matter how dry the adjacent desert. The behavior of the Nile is influenced primarily by the climate in the area of its headwaters in the highlands of East Africa, where, during cold glacial maxima, there was reduced vegetation cover, more frost action and less rainfall. Thus, there was less water in the Nile and the water carried a heavy sediment load, which was deposited on the floodplain until the valley became choked with silt. This process occurred at least three times during the Middle and Late Pleistocene, with intervening episodes of downcutting. In Upper Egypt and Nubia, remnants of these accumulations stand 20-30m above the modern floodplain and include many Paleolithic sites. The earliest alluvial episode is associated with rare Lower Paleolithic artifacts, the second is late Middle Paleolithic, and the third is Late Paleolithic. Other Paleolithic sites occur near rock outcrops along the margins of the Valley, and there are a few sites in wadi gravels below, between and sometimes within the silt remnants.

The Nile Valley was not luxuriant during the periods of valley filling. The river was much smaller than today and flowed through meandering or braided channels. Large animals were limited to wild cattle, hartebeest, gazelle, hippopotamus and, on the east bank, wild ass. There were, however, other important food resources: ducks and geese were heavily exploited during some periods; fish were used at least from the early Middle Paleolithic; and plant foods, particularly marshland tubers and seeds, were important in the Late Paleolithic.

Lower Paleolithic

Some of the first descriptions (late nineteenth century) of the Paleolithic in Egypt are of handaxes found in the Nile Valley. These characteristic Lower Paleolithic tools tend to be well made, flaked on both faces, pointed at one end and rounded at the other; typologically, they are Late Acheulean. There are no reliable dates for the Egyptian Lower Paleolithic, but elsewhere in Africa, the Late Acheulean is believed to begin around 500,000 years ago, while the earliest Middle Paleolithic is dated to about 230,000 years ago. Most of the Lower Paleolithic sites in Egypt probably fall within this period; a few sites may be older.

Table 1 Correlation of Paleolithic sequence in the Nile Valley

Years B.P.	**Nile**	**Sahara**
10,000	?	Early Neolithic
12,500	Late Paleolithic	Hyperarid
22,000	Upper Paleolithic	No known occupation
40,000	Khormusan	—
70,000	Late Middle Paleolithic	Middle Paleolithic
	Early Middle Paleolithic	—
200,000	Final Acheulean	Final Acheulean
300,000	Late Acheulean	Late Acheulean
500,000	Middle Acheulean?	Middle Acheulean?

Some of the most interesting information on the Lower Paleolithic in the Nile Valley comes from near Wadi Halfa in northern Sudan, where a series of quarries and workshops yielded numerous Acheulean handaxes. Arkin 8, which was embedded in wadi sediments on the western edge of the Valley, may be the largest Acheulean site in this part of Africa. Although the assemblage is crude (perhaps because many of the tools appear to be unfinished), it is classified as Late Acheulean. There are numerous cores (none is prepared), chopping tools and handaxes, the last in a variety of shapes. Other tools include side-scrapers and notches. Late Acheulean sites also occur in the same area on the east bank. The sites were classified as Early, Middle and Late Acheulean on the basis of typology, but there is no stratigraphic evidence to support this.

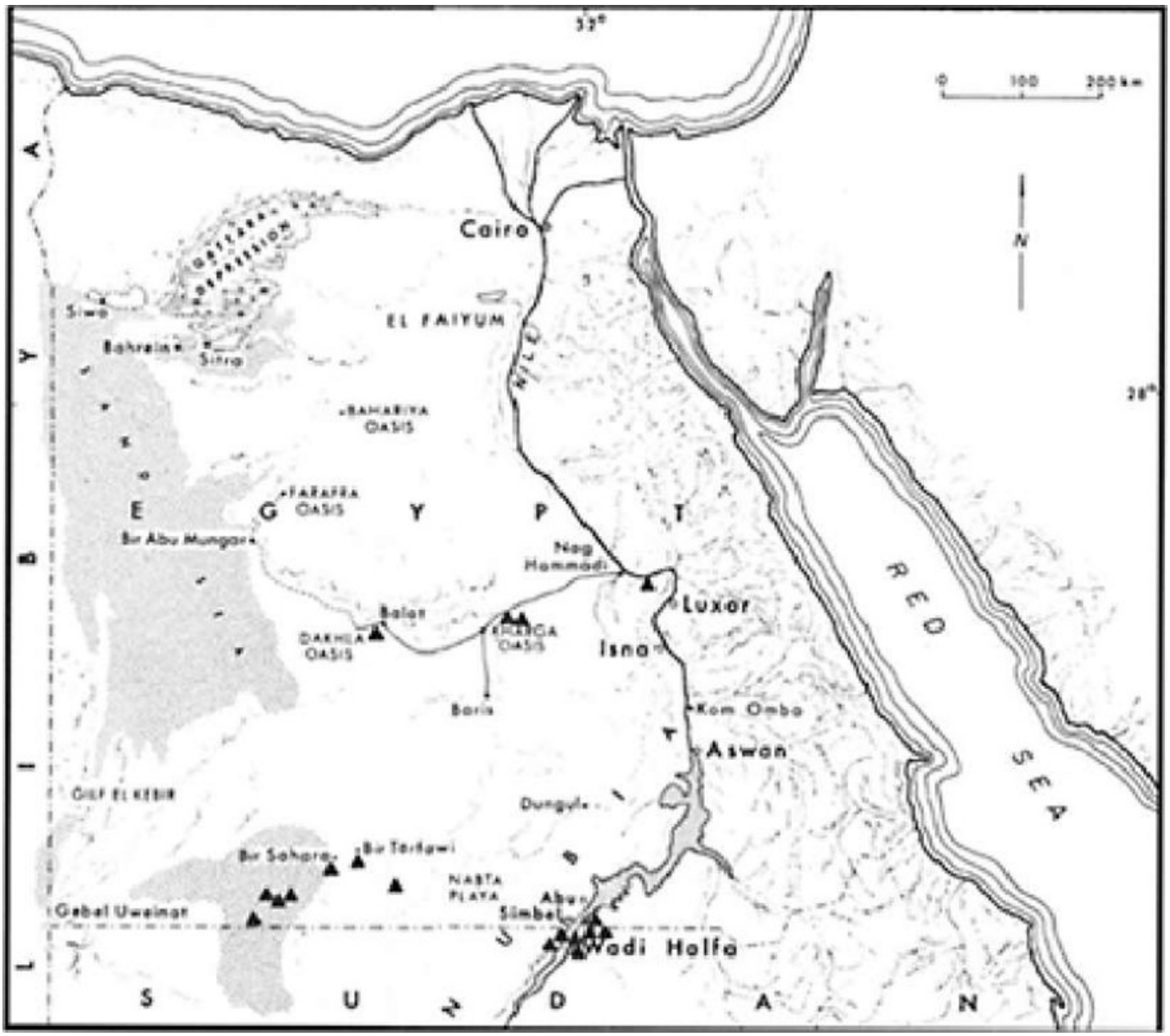

Figure 1 Locations of published Lower Paleolithic sites

Lower Paleolithic sites are also found in the eastern Sahara, in a variety of settings. At Kharga and Dakhla Oases, and Bir Sahara East (about 350km west of Abu Simbel), they represent camps at the edge of a spring pool, probably from multiple occupations, perhaps over several millennia or more. The sites at Kharga and Dakhla are classified as Late Acheulean. The handaxes at the Bir Sahara East site, however, are small, thin and well-executed. This site is regarded as Final Acheulean. Another setting used in the Saharan Lower Paleolithic was on the edges of ponds and lakes. Two such sites are known at Bir Tarfawi, 10km east of Bir Sahara East, both of them Late Acheulean. (Middle) Acheulean assemblages were also found stratified in wadi deposits near Bir Safsaf, about 50km southeast of Bir Tarfawi. Other Acheulean assemblages have been found south of Bir Tarfawi, in an ephemeral lake (playa) and in the large buried channels first discovered by ground-penetrating radar. Some of the latter sites may be very old, possibly Middle Acheulean.

In the Sahara, Lower Paleolithic people used almost every setting where there was water. None of the sites, either in the desert or along the Nile, has yielded sufficient fauna to permit a detailed reconstruction of the environment. There is evidence, however, of considerable local rainfall during several intervals. A characteristic of the Acheulean is that people always used the nearest available raw material. Tools were made for short- term or immediate purposes and were not taken from one area to another, even if the first area had much better raw materials.

Middle Paleolithic

The Middle Paleolithic began in Egypt more than 175,000 years ago, and possibly more than 200,000 years ago; it may have lasted until around 45,000 years ago. It was during the Middle Paleolithic, and probably early in that stage, that the modern form of our species first appeared.

The Egyptian Middle Paleolithic shares the basic elements of the Middle Paleolithic throughout North Africa and Europe. Handaxes are absent or very rare, and most of the tools are made on flakes, often produced with Levallois technology, where a core was prepared in order to produce a flake of a predetermined shape. There are usually quite high frequencies of unretouched Levallois flakes, as well as various kinds of side-scrapers, denticulates and retouched pieces. Some sites also yield high proportions of Upper Paleolithic-type

tools, particularly end-scrapers and burins; others contain large, bifacially worked, leaf-shaped pieces (foliates), and there are a few sites with tanged or stemmed (pedunculated) tools.

The Egyptian Middle Paleolithic has been traditionally classified into four major variants: Nubian Middle Stone Age, Mousterian, Aterian and Khormusan. The Khormusan appears to be late and is confined to the Nile Valley. The Aterian is essentially restricted to the Sahara, and it too may be late. Apart from this, there are very few differences between any of the Middle Paleolithic entities, and they may reflect no more than minor differences in behavior; there is no reason to believe that they represent self-conscious social entities.

Middle Paleolithic in the Sahara

The best data on the Egyptian Middle Paleolithic come from Bir Tarfawi and Bir Sahara East. These two basins have a sequence of five Middle Paleolithic wet intervals, with permanent lakes, separated by periods of aridity; in Bir Tarfawi there was also a Middle Paleolithic playa, which may precede the earliest permanent lake.

The wet periods occurred between circa 175,000 and 70,000 years ago, and the major permanent lakes probably date to the last interglacial period. The lakes reflect local rainfall, which resulted from the intensification and northward movement of the tropical monsoon. The associated faunal remains indicate that there was perhaps as much as 500mm of rain a year, and that the lakes existed in a savanna or wooded savanna landscape which supported large animals such as rhinoceros, giant buffalo, giraffe, giant camel, wild ass and various antelopes and gazelles. Fish were present in the lakes, including species that today are found only in the Nile, Chad and Niger basins, evidence that the lakes were occasionally part of a regional drainage system.

There are many Middle Paleolithic sites associated with the lake deposits. They occur in a variety of settings, each with distinctive assemblages of artifacts and apparently used in different ways. The sites were probably used only during the day because of the danger of large predators near the lakes at night. The night camps are likely to have been on the adjacent plateau. The artifacts are made of quartzitic sandstone of various colors and textures. Quarries for these materials lie 3-5km east of Bir Tarfawi, where outlines of pits and trenches are evident on the surface and the surrounding area is littered with thick flakes and other workshop debris, but almost no cores or tools.

One of the interesting features to emerge from Bir Tarfawi and Bir Sahara East is that almost all of the sites were used repeatedly, and evidence suggests that the same activities took place during every episode of use. It is clear that even during the early part of the Middle Paleolithic, there were well-established patterns of resource exploitation across this landscape; patterns that were maintained over the enormous periods of time represented in this sequence. Neither significant change nor increasing complexity was characteristic of the Middle Paleolithic. Not only did the settlement system and raw material economies continue virtually unchanged for more than 100,000 years, but there was also no marked improvement in the tools. The only evident changes are the appearance of bifacial foliates around 130,000 years ago, and of stemmed tools about 70,000 years ago. Neither of these is likely to have been a local development.

There was a somewhat different raw material economy in the Middle Paleolithic of Kharga Oasis. Most of the Kharga sites were at spring pools, and the tabular flint cobbles preferred as raw material were available in the nearby wadis. The sites contain numerous primary flakes and early stage and Levallois core preparation flakes, but few cores and tools. The sites are classified as Mousterian or Aterian (indicated by pedunculate tools and bifacial foliates), and there is some stratigraphic evidence that the Aterian is the later one. The Kharga night camps were probably at a distance from water, but none is known. The availability of water and related resources and the proximity of suitable stone seem to have been the major features of Middle Paleolithic settlements in the Kharga area.

Middle Paleolithic along the Nile

Three different settings were used by Middle Paleolithic groups along the Nile. From Wadi Halfa at the Second Cataract to beyond the Qena bend in Upper Egypt, there are many quarries and workshops near rock outcrops, usually against the escarpments that border the Valley on each side or in gravel benches between the escarpments and the river. The debris from the quarries is sometimes buried in colluvial sediments, but none of the sites can be tied to the Nilotic sedimentary sequence, and none is dated. The quarries have been classified as Nubian Middle Stone Age (in Lower Nubia) or Mousterian (in Upper Egypt and Lower Nubia).

Middle Paleolithic is also found in the silts of the second of the Middle and Late Pleistocene episodes of valley filling, which coincided with a period of hyperaridity. There is a group of small sites north of Aswan, and another (Site 440, which may be Nubian Middle Stone Age) in a dune at the base of the silts just south of Wadi Halfa. Site 440 had two horizons, both with rich faunas which were mostly wild cattle in the lower level and fish in the upper one. The fish include several large, deep-water species, suggesting the use of boats, traps or other relatively sophisticated fishing techniques. The sites near Aswan are Mousterian. There are five TL (thermoluminescence) dates between 66,000 and 45,000 BP from the deposits of two of the sites; these are the only dates available for the Mousterian in the Nile Valley.

Near the Second Cataract are several Khormusan sites, which seems to be the most recent Middle Paleolithic complex in the Valley. The age of the Khormusan is estimated to be between 45,000 and 55,000 years ago. Some Khormusan sites contain abundant fauna, mostly wild cattle, with a few hartebeest, gazelle and hippopotamus; other sites are rich in fish. The Khormusan stone artifacts are distinctive, with an emphasis on burins, plus occasional side-scrapers, end-scrapers and denticulates, all frequently made on Levallois flakes. No Khormusan workshops or quarries are known.

The third Nilotic setting of the Middle Paleolithic is the wadis along the margin of the Valley. There are massive terraces of wadi gravels in most of the major wadis that enter the Nile on each side; the terraces lie under the silts of the Middle Paleolithic valley filling and therefore precede it. All the wadis are now dry, and therefore reflect intervals of much greater rainfall than today, which

probably coincided with the permanent lakes in the Sahara. The very rolled artifacts within the terraces are thus likely to be the same age as the Middle Paleolithic artifacts associated with the lakes at Bir Tarfawi and Bir Sahara East.

There are also occasional clusters of Middle Paleolithic artifacts in or on the older wadi deposits, and some of them appear to be in situ. One such site, on the eroded surface of (and probably post-dating) the older wadi terrace near Aswan is the only known Aterian site in the Valley. All of the other sites associated with the older wadi deposits are Mousterian.

Information on the Middle Paleolithic in the Valley is less detailed than that from the Sahara, but it is clear that the workshops and quarries along the Nile functioned very differently from those in the desert. The Nilotic quarries are often surrounded by debris that includes unretouched Levallois flakes, finished tools and cores. This pattern, seen in both Upper Egypt and Nubia, indicates that these sites were also workshops for the final shaping and exploitation of cores and for some tool manufacture (unlike the quarries at Bir Tarfawi, where only initial shaping was done).

The Middle Paleolithic in the Sahara ended when hyperaridity made the desert uninhabitable shortly after 70,000 years ago. In the Nile Valley, however, the Middle Paleolithic persisted throughout the valley filling that seems to have begun at about the same time as local rainfall ceased. About 45,000 years ago or slightly later, the regimen of the river changed again, as the Nile cut a deep channel and the Middle Paleolithic ended.

Upper and Late Paleolithic

Some ten millennia separate the most recent Middle Paleolithic from the earliest Upper Paleolithic known in the Nile Valley. The appearance of the Upper Paleolithic is marked by a major change in stone-working technology. In the Middle Paleolithic, there was a strong preference for wide, flat flakes, often struck from preshaped (Levallois) cores. In the Upper Paleolithic, the emphasis was on the production of long, narrow blades, which made more efficient use of raw material and resulted in blanks that were more consistent in shape and size; the latter may be a major factor in the increased standardization evident in the retouched tools of the Upper Paleolithic.

There are no Upper Paleolithic sites in the Sahara, since the desert was hyperarid. The earliest Upper Paleolithic site known in the Nile Valley is Nazlet Khater-4 in Upper Egypt, a flint mine with several radiocarbon dates of about 33,000 BP. Levallois technology appears to be absent and there are many Upper Paleolithic-type blade cores. The associated tools are retouched blades, denticulates and bifacial adzes, apparently used for quarrying. A bifacial adze was found nearby with a human skeleton, which is of a modern type but retains primitive features (similar to the Mechtoids described below). It is the oldest human skeleton known from Egypt.

The next known Upper Paleolithic sites are Shuwikhat-1, on the east bank near Qena slightly upstream from Nazlet Khater, and Site E71K9, a little farther upstream on the west bank near Esna (Isna). There are TL dates of 24,700 BP±2,500 years for Shuwikhat-1 and 21,590 BP±1,500 years for E71K9 (the standard errors overlap between 23,000 and 22,000 BP). The artifacts in both sites are large blades, and the tools include numerous denticulates, a variety of well-made burins, retouched pieces and long pointed blades. Endscrapers and perforators are frequent. Both sites had rich fauna, mostly hartebeest and wild cattle, with occasional gazelle, hare and hyena; fish were rare.

About 21,000 years ago, there was another change in the lithic technology. Large blades were replaced by bladelets, some of them microlithic (less than 30mm long), with steep retouch or backing along one edge. There was also a shift in subsistence to the exploitation of a wider range of resources and more intensive use of the river. These changes mark the beginning of the Late Paleolithic. There are more Late Paleolithic than Middle or Upper Paleolithic sites, and there is more regional variation. The material from Lower Nubia is often different from that of Upper Egypt, and there are local differences within each region. The tempo of change also accelerated, and similar changes in artifacts occurred at about the same time throughout the Valley. Stylistic studies suggest a high degree of interaction along the Valley, with intervals of cultural turmoil and rapid change. The cultural boundary between Lower Nubia and Upper Egypt shifted from time to time, varying from near the First Cataract to near Esna. There may have been other cultural boundaries farther down the Nile, but these cannot be defined since we have almost no information on the Late Paleolithic north of Qena.

A complex series of stone tool industries has been defined for both Lower Nubia and Upper Egypt, each with distinctive features among the tools. Each occurs in several different settings, reflecting seasonality of occupation and showing a variety of activities; they are thought to represent distinct social groups. Most of the sequence records cultural developments through time, rather than changes in population.

However, one stone tool industry, the Sebilian, is so different from what preceded it that population replacement seems likely. For at least six millennia, Late Paleolithic people in both Lower Nubia and Upper Egypt had used bladelets for the production of most retouched tools. Suddenly, about 14,000 years ago, many small Sebilian sites appear, from the Second Cataract to the Qena bend, in which most of the tools are large, wide, flat flakes (struck from Levallois or discoidal cores) retouched into geometric shapes never or rarely seen in earlier sites. Furthermore, Sebilian tools were preferentially made on quartzitic sandstone, diorite and other basement rocks, instead of the Nile chert and agate pebbles preferred by earlier Late Paleolithic groups. Only in Upper Egypt did the Sebilian people use flint, in those areas where there is no sandstone or basement rock.

The closest parallels to the Sebilian are in tropical Africa, and this may represent groups who came from the south, moving along the Nile from central Sudan or beyond. This was a period of climatic change in tropical Africa; temperatures had begun to rise, with accompanying shifts in the distributions of both plants and animals. If this represents an intrusion, it was brief and had almost no effect on later stone tool industries. The Sebilian people were soon replaced by other groups using artifacts that closely resemble the pre-Sebilian complexes in the area. All of these later industries, however, contain geometric microliths, mostly triangles, trapezes or crescents. This may represent new kinds of composite tools or a new weapon, such as the bow and arrow.

The disappearance and reappearance of Levallois technology is a noteworthy feature of the Nilotic Late Paleolithic, and the distribution of this technology illustrates the type of interaction that seems to have gone on throughout this period. Levallois technology, characteristic of the Middle Paleolithic, is not found in the Upper Paleolithic sites of Upper Egypt. Nothing is known about the Upper Paleolithic in Lower Nubia, but Levallois technology reappeared there (if indeed it had disappeared) at the same time as the Late Paleolithic bladelet complexes, around 21,000 years ago. However, the technology was now used differently. In the Middle Paleolithic, it was used to produce the flake blanks that were then retouched into almost all classes of tools; in the Late Paleolithic, it was used to produce only a blank of a particular shape, and this shape varied by industry. The Levallois technique was more important in Lower Nubia throughout the Late Paleolithic, and it may have been reintroduced into Upper Egypt from that direction.

Table 2 Distribution and chronological range of Late Paleolithic industries in the lower Nile Valley

Lower Nubia	**Upper Egypt**
Arkinian (10,600 BP)	
	Isnan (12,700-11,500 BP)
	Afian (13,500-12,300 BP)
Qadan (14,500-12,000 BP)	
Sebilian (ca. 14,000 BP)	Sebilian (ca. 14,000 BP)
Ballanan-Silsilian (16,000-15,000 BP)	Ballanan-Silsilian (16,000-15,000 BP)
	Idfuan (17,500-17,000 BP)
Halfan (19,500-18,500 BP)	Kubbaniyan (19,000-16,500 BP)
	Industry D (19,100 BP)
	Fakhurian (21,000-19,500 BP)

The subsistence economy is one of the most interesting aspects of the Late Paleolithic. Fishing was an important part of the diet at some early Middle Paleolithic sites, but the hunting of large mammals seems to have been more important in the later Middle Paleolithic and Upper Paleolithic. The Late Paleolithic saw a shift away from large mammals to a more diversified subsistence basis. Many Late Paleolithic sites contain large quantities of fish bones, mostly catfish, and it is believed that these were harvested during the seasonal spawn at the beginning of the flood, when more fish could easily have been taken than could be immediately consumed. In some sites there are pits and other features which may have been used for smoking fish. This is the earliest indication in Egypt of the storage of food for future use.

The greater diversity of foods is also evident in the importance of waterfowl and shellfish, which were first eaten in significant quantities during the Late Paleolithic. The most dramatic change in subsistence, however, was in the use of plant foods, particularly those from the marshes and swamps along the edge of the Nile. Tubers and seeds of wetland plants have been recovered from several Late Paleolithic sites in Wadi Kubbaniya, together with the grinding stones presumably used to process them. (Many of the tubers contain toxins which can be removed by grinding and roasting.) Grinding stones occur in many Late Paleolithic sites along the Nile, suggesting that plant foods were an important component of the diet.

The earliest burials known in the Nile Valley are those at Nazlet Khater and Kubbaniya, mentioned above. A group of three slightly younger burials was found at Deir el-Fakhuri, near Esna. All of these skeletons are of fully modern Homo sapiens sapiens, but they were very robust, with short wide faces and pronounced alveolar prognathism. They have been compared with a type known as Mechtoid (from the site of Mechta el-Arbi), which are found in Late Paleolithic sites throughout North Africa, and particularly in the Maghreb.

In the Nile Valley there are three Late Paleolithic graveyards, all associated with Qadan assemblages: Jebel Sahaba, a few kilometers north of Wadi Halfa on the east bank of the Nile, with 59 burials; Site 6-B-36, on the west bank almost opposite Wadi Halfa, with 39 burials; and Wadi Tushka, north of Abu Simbel in southern Egypt, with 19 burials. The radiocarbon dates range

between 14,000 and 13,000 BP. All of the skeletons are Mechtoid, indicating a long and unbroken history for this type in the Nile Valley.

Several of the Jebel Sahaba skeletons had pieces of stone embedded in their bones; these and other signs of trauma indicate that more than 40 percent of the men, women and children in the graveyard had died by violence, and this may well be the earliest evidence for conflict. The Kubbaniya skeleton also had pieces of stone embedded in his bones and pelvic cavity, suggesting some intergroup competition even before 20,000 years ago. At the Tushka graveyard, skulls of wild cattle were used as markers for several of the graves, suggesting a special attitude toward wild cattle which may anticipate the emphasis on cattle seen several thousand years later in the early Neolithic.

Between 14,000 and 12,000 BP, there were rapid cultural changes in the Nile Valley, some of which may be related to changes in the behavior of the river. Rainfall was increasing in East and Central Africa, and the White Nile, which was previously dry, began to flow again. About 12,500 BP the increased rainfall in the Nile's headwaters resulted in a series of exceptionally high floods in Egypt, followed by downcutting and a change in the river's morphology from numerous small braided channels to the single large channel that is seen today.

Two Late Paleolithic stone tool industries (the Qadan in Lower Nubia and the Isnan in Upper Egypt) survived the onset of these changes, but their subsistence economies must have been seriously affected. Almost nothing is known about the period between 11,500 and 8,500 BP; these sites are either buried in the floodplain or destroyed by cultivation. Our next information relates to 8,500 years ago, when people were still living in small groups in essentially Late Paleolithic ways, with an economy based on fishing, hunting and, to judge by the grinding stones, plant gathering.

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