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Food for Thought: the Late Paleolithic of WK26 Site, Wadi Kubbaniya, Egypt

Introduction

Wadi Kubbaniya, about 15 km north of Aswan, Egypt, is the largest wadi in Upper Egypt flowing out of the Western Desert. Archaeologically, the wadi is unique as it is probably one of the most intensively investigated prehistoric areas in Upper Egypt (Fig. 1). The Combined Prehistoric Expedition (CPE) spent four field seasons here between 1978 and 1983, documenting the late Pleistocene environments and human occupations. The CPE investigated 27 locales, most of which date to the Late Paleolithic, between 20,000 and 12,000 BP, and are distinguished by the presence of numerous grinding implements; the remaining locales date to the Middle Paleolithic (Wendorf *et al.* 1980; 1986; 1989a; 1989b).

In 2014 the Combined Prehistoric Expedition Foundation and the Aswan-Kom Ombo Archaeological Project (CPEF/AKAP) investigated WK26, another Late Paleolithic occupation in the wadi. Like the other sites WK26 consists of a lithic accumulation but what distinguishes it is the presence of hearths, post-holes, storage features and a possible living floor. Based on radiocarbon dates and stratigraphy, WK26 dates to the end of the Late Paleolithic Kubbaniya sequence and few sites of this period have been investigated in this area of Upper Egypt. The composition of the site provides an insight into settlement and subsistence at the end of the Late Paleolithic.



Fig. 1. The location of Wadi Kubbaniya and WK26 site

1. The Late Paleolithic in Wadi Kubbaniya

During the Late Paleolithic an extensive dune field stretched along the north-east side of this impoundment and about 2 kilometers upstream from the wadi mouth. Throughout, occupations were associated with the seasonal overflow from Nile floods, the overflow forming shallow, intermittent lakes that extended for several kilometers up the wadi. The CPE recorded at least 9 such transgressions during the Late Paleolithic; the last being the Upper Kubbaniyan Silt, which dated between 13000 and 12400 BP (Wendorf and Schild 1989). Late Paleolithic people camped among the dunes and the fronting plain bordering the field and down towards the wadi mouth. This dune field contains the most prominent and extensive evidence of human occupation and paleoenvironments in this portion of the wadi. The evidence consists of fossilized plant casts, deflated hearths, dense scatters of lithic artifacts and bone, and numerous grinding implements; these implements were what attracted the attention of the CPE.

The CPE excavations defined the Late Paleolithic Kubbaniyan industry and documented the presence of other Late Paleolithic industries and, in turn, the complexity of the environment and human occupation during this period. Results of that work are documented in four comprehensive publications that also

synthesize 15 years of work in Upper Egypt and Nubia (Wendorf *et al.* 1980; 1986; 1989a and 1989b). Nowhere else in this portion of Upper Egypt or Nubia does such a complete archaeological and environmental record exist in such a limited area for the Late Paleolithic period.

2. WK26 site

WK26 is situated across the wadi from the Late Paleolithic dune field the CPE explored. The site consists of sparse artifacts on playa silt covered by a thin sheet of dune sand. Based on radiocarbon dates and stratigraphy, WK26 dates to the end of the Late Paleolithic Kubbania sequence and is associated with the Upper Kubbanian Silt (Wendorf and Schild 1989). Few such sites have been investigated in this area of Upper Egypt. Hearths, postholes, possible storage features, and faunal and floral remains provide an insight into settlement and subsistence at the end of the Late Paleolithic.

The site was initially identified in 2012 with the discovery of an Ounan point, circular endscrapers, handstones and grinding stones, and an ashy area on top of playa silt (Fig. 2). This ashy area was dated to 12060 ± 50 BP. The site is higher in elevation than the Late Paleolithic dune field, and the radiocarbon date and position suggest it is associated with Wendorf and Schild's (1989) Upper Kubbanian Silt. Because few sites of this age have been identified in the wadi, excavations were undertaken.



Fig. 2. WK26 as first encountered and artifacts on the surface

Two areas – A and B/C – were excavated (Fig. 3). Area A measured 10 x 10 meters and was centered on the ashy area found in 2012. Area B/C was located north-northeast of Area A and measured 10 x 17 meters, oriented east-west. Both areas were excavated to a depth of approximately 30 centimeters and, to the extent possible, by stratigraphic layer. With respect to elevation, Area A was slightly higher than Area B/C

Two trenches were excavated to understand the stratigraphy. Trench 1, which was 20 meters long and 1 meter wide, connected these areas; it began at the south-east corner of Area A and extended down the north side of Area B/C. This trench was dug to identify the stratigraphic relationship between areas A and B/C. Trench 2 spanned the 10 meters at the north end of Area A and was also 1 meter wide. This trench was placed to examine the stratigraphic relationship of the playa silt and the dune sand in Area A.

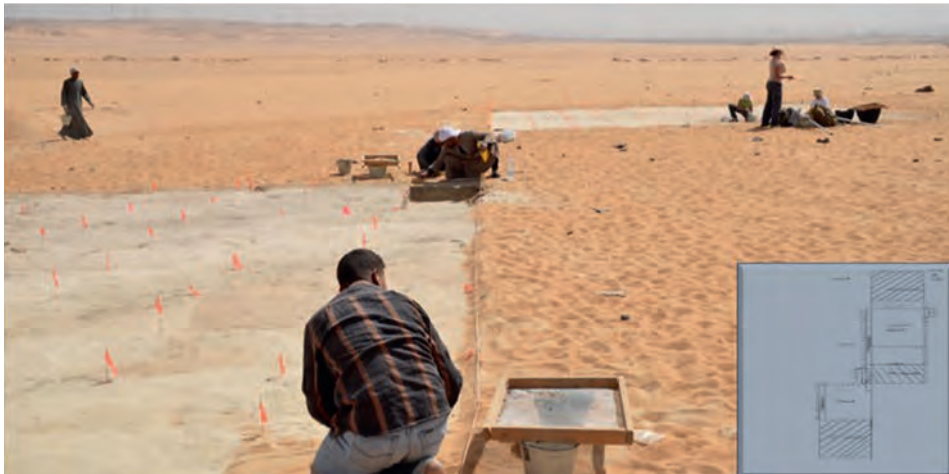


Fig. 3. Excavation units at WK26; Area A in the foreground

2.1. Stratigraphy

Area A

The stratigraphy begins with a coarse, 10YR7/2, dune sand, designated Layer 1, which varies from 5 to 10 centimeters thick and overlay playa silt across most of the block. Artifacts were sparse and consisted mostly of debitage, including microflakes. The rare faunal remains consist almost exclusively of fish with rare

small mammal remains, probably rodent. Layer 2 comprises unconsolidated playa silt. This silt is up to 20 cm thick and, given the elevation of the site, probably corresponds to Wendorf and Schild's Upper Kubbaniyan Silt (Wendorf and Schild 1989). The silt is light gray, varying in color from 10YR5/1 to 10YR8/1 and increases in thickness to the north; the silt is barely discernable at the south end of the block. The increase to the north indicates the silt extends north of Area A; an ash lens and a fire-cracked rock at the same level as the hearths in the profile in the profile of north side of Trench 2 suggest that the site also continues to the north.

The silt is thicker in the northeast quadrant of the block and contains numerous fossil shell casts, probably from *Corbicula* and/or *Pisidium*, root casts, and krotovina; the profile at the east end of Trench 2 indicates that these items extend to a depth of 40 cm. The top of the silt in the northwest quadrant is distinguished by orange-red, 5YR7/6-6/6, irregularly-shaped patches of loosely consolidated silt that appears to have been burned. The sediments here also lack shell casts, root casts, and krotovina. The difference between the northeast and northwest end of Block A suggest that occupation here was adjacent to a body of shallow water.

Because of time constraints, the excavations in Area A did not extend below the playa silt except for Trench 2 at the north end of the block. The stratigraphy in Trench 2 shows the silt is underlain by sterile dune sand that is at least 80 cm thick. This dune sand is broken by two bands of more organic-rich sandy silt that are less than 10 cm thick and contain rare charcoal flecks. The upper band is between 40 and 50 cm and the lower is at 60 cm below surface. Charcoal was collected from both but neither sample was large enough for AMS dating. No artifacts were found in either.

Area B/C

Like Area A, Area B/C is covered by the same yellow sand, Layer 1, characterized by larger grains of sand that give way to sands of much finer texture. This layer produced abundant lithic material, scant faunal remains, and a few grinding implements. Layer 2 is a white dune containing the remnants of several features. In the central portion of the area, a thin sheet of remnant playa silt separates the two layers. Features appear to have been excavated through this silt. Area B/C is slightly lower than Area A and this remnant silt suggest that any silt originally present for the most part have since eroded away.

The profile of Trench 1, which bordered the north side of Area B/C and extended to the southeast corner of Area A lacked evidence of the playa deposit

noted in Area A and the underlying thin layers of more organically rich sand observed in Trench 2. Instead, the profile consisted of unconsolidated dune sand. The absence of playa silt here and the sparseness in Area B/C intimate that any silt that was present in this area of the site have eroded away except for thin remnants. Conversely, given the complexity of the profile at the east end of Trench 2 and the thickness of the playa silt here, the playa may have been situated to the north of Area B/C and only occasionally covered this area.

2.2. Features

WK26 is distinguished by the presence of numerous features – hearths, pits, postholes, and ashy and organic stains – in both areas A and B/C. The number and variety was greater than that among the Late Paleolithic sites in the dune field across the wadi. Features identified there included ash stains and hearth remnants but nowhere in the number, variety, and density as at WK26. The features at WK26 suggest a level of occupation and site use different from that observed across the wadi.

Surface Features

Surface features consisted exclusively of hearths, noted as dispersed scatters of fire-cracked rock, 2 to 3 meters in diameter. Some were inverted mounds but the majority were distinguished as single, scattered layers of rock. Ash was not evident in any and associated artifacts were sparse to non-existent.

Area A

Area A contained 27 features: two hearths, three ashy areas, one stained area possibly organic in origin, one natural depression, the remnants of a pit, and 19 postholes (Fig. 4). The pit was in the southeast quadrant, extended through the playa silt, and had an ashy fill but lacked artifacts. The ashy areas were irregular smears in the sand containing rare charcoal flecks.

The two hearths consisted of adjacent clusters of mounded fire-cracked rock that measured 1.5 x 2 meters, two to three layers high, irregular in plan view, and intermixed with ashy sediments and charcoal flecks. The hearths were embedded in the playa silt, just above the underlying dune sand, and surrounded by a large black, ashy stain. Within this stain and just southeast of the hearths is a brown stain, possibly organic in origin. An ash lens and at least one fire-cracked rock in the north wall of Area A at the same level as the hearths, suggest the presence of a third hearth to the north.

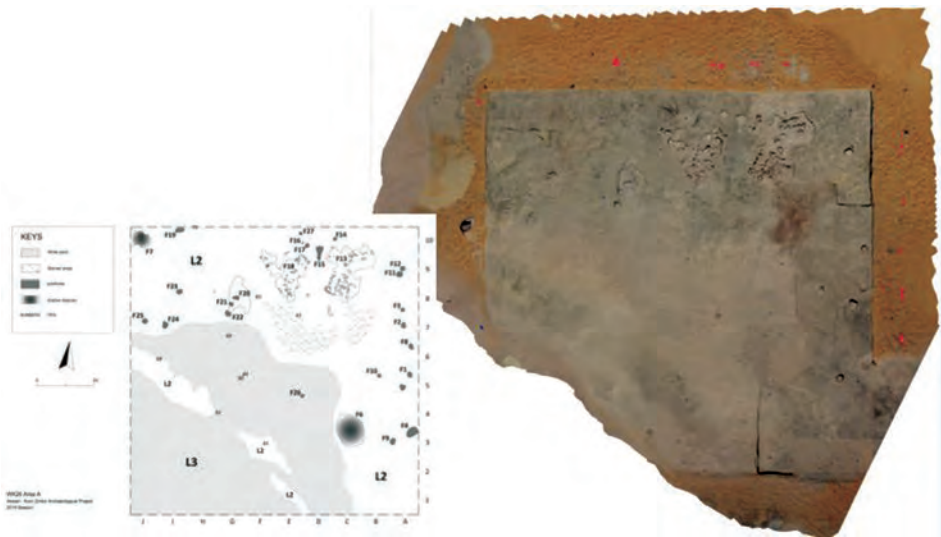


Fig. 4. Area A – note the features

The postholes were scattered across the playa silt. These features were generally irregularly shaped, 10 to 15 cm across, and extended approximately 7 cm into the playa silt. The postholes tended to be lighter in color and more compact than the surrounding silt. Four postholes lay between the two hearths, five to the west, and seven to the east and south. Their arrangement and distribution suggest that these could be the remnants of three or four structures, possibly windbreaks or drying racks, or a combination of these.

Area B/C

Area B/C contained 18 features that comprised ashy areas, remnants of pits, and at least one posthole. Ashy areas were the most prevalent and consisted of smears of ash in the dune sands. Depths of pits varied but were generally shallow – no more than 15 cm deep – and the ashy areas may represent the last vestiges of pits. All features appear to be the eroded remnants although being in dune sand made identification of their boundaries difficult.

Features 1, 12 and 14 were of particular interest. Feature 1 was about 1.5 meters long and about 15 cm deep at most, and consisted of a dark-to-black oval ring in the white dune sand. Excavation recovered lithic artifacts, a grinding stone, and a shell (Fig. 5).

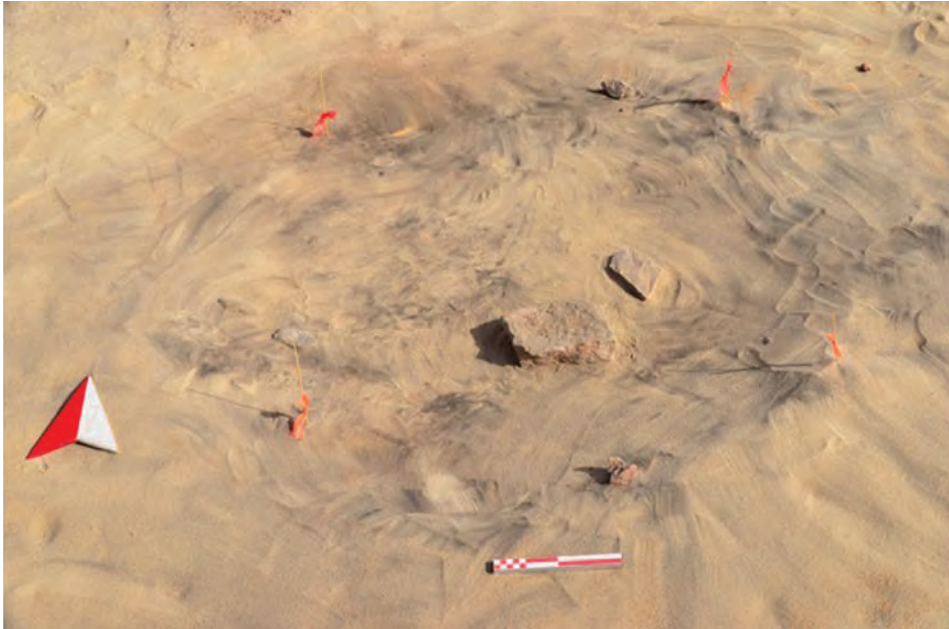


Fig. 5. Area B – excavated feature with broken grinding stone

Feature 12 was located adjacent to the southern edge of Area B/C where wind erosion had partially exposed a grinding stone. The stone sat in a circular area of dark-to-black sands rich in charcoal flecks and lithic material. The deposit was ephemeral and 5 cm thick at its maximum.

Feature 14 exhibited two small circular posthole-like depressions side-by-side. One depression was deeper than the other and filled with an organically-rich brown deposit. A flat piece of sandstone was found inside the smaller depression; it may have been used as a wedge.

Most of the other features in Area B/C were more or less circular areas of dark brown to black thin ashy deposits that were archaeologically unproductive. As Feature 1 and these ashy areas demonstrate Area B/C has suffered erosion that has removed much of these features. Erosion has affected Area B/C more so than Area A and determining the function of most of the features is difficult as is whether the features reflect one or multiple occupations.

2.3. Artifact Assemblages

The site is not artifact-rich. The assemblage from both areas comprise less than 2,000 artifacts but includes debitage, cores, retouched tools, and grinding implements. Egyptian flint, followed by chert, predominates. The lithic technology, at least in Area A, revolves around the removal of flakes from single platform cores, although cores are not prevalent (Table 1).

Table 1. Cores from WK26

Cores	Area A	Area B/C
Single Platform	10	
Opposed Platform		
90 Degree Platform	1	2
Multiplatform		3
Initially Struck	1	1
Whole Pebble		1
Total	12	7

Table 2: Retouched tools from site WK26

Retouched Tool Class	Area A	Area B/C		
		Total from Layers	Total Features	Total Area B/C
Tools				
Scrapers	2	17	4	21
Burins		2		2
Backed and ouchtata bladelets	1	38	8	46
Notches and denticulates	1	8	1	9
Truncations	1	17	4	21
Geometric microliths		19	5	24
Piece esquille		1		1
Continuously retouched pieces		3		3
Retouched flakes/blades	7	13	2	15
Unidentifiable Retouched Fragments		25	2	27
Total	12	143	26	169

Tools are nine times as prevalent as cores although cores are more prevalent in Area A compared to retouched tools. The retouched tools include end-scrapers,

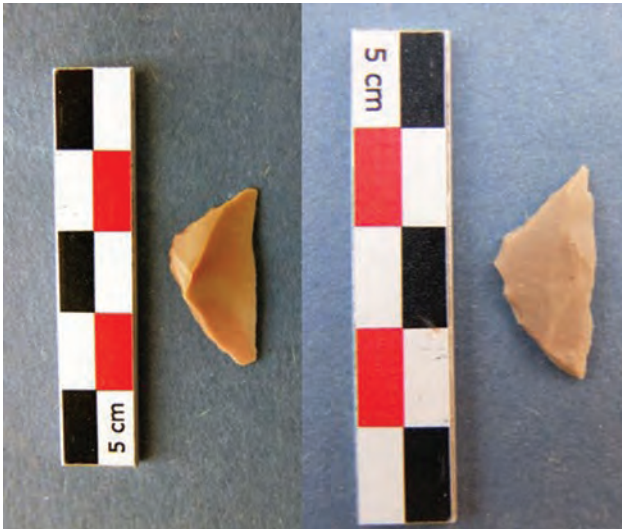


Fig. 6. Examples of large isosceles triangles

backed and Ouchtata elements, truncations, geometric microliths, and retouched elements; the same tool classes as found across the wadi (Table 2). Most of the backed elements, 64%, are partially backed with Ouchtata retouch. The truncations exhibit a pattern to their morphology as 72% are truncated at the proximal end and most often from the left side. A distinguishing feature of the geometric microliths are large isosceles triangles which are most often truncated from the right side (Fig. 6). These triangles appear to be a distinguishing feature of the assemblage.

Handstones and grinding stones were scattered across the surface and several were recovered *in situ*. Morphologically, slab from the surface differ from those subsurface. The grinding stones from the surface are purposefully shaped, oval in plan, have distinct grinding surfaces, and resemble Neolithic or more recent slabs (Banks 1980; 1982). The stones from subsurface are irregular to square in plan and thin and rectilinear in cross-section (Fig. 7). Grinding surfaces are distinct and well used; one stone had been ground all the way through. The morphology of these stones contrasts with the blocky nature of stones in the dune sites (Banks 1980; 1982). All WK26 slabs are silicified sandstone. The raw material source may have been from nearby hills. The handstones, both surface and subsurface, are generally quartzitic sandstone cobbles, circular to oval in plan and with either one or two grinding surfaces. Ochre was identified on a number of grinding stones and handstones.



Fig. 7. Example of a grinding stone

2.4. Faunal Remains

Mention has been made of the possible *Corbicula* and/or *Pisidium* shell in Area A. Overall, faunal remains were sparse and consisted mostly of small slivers and bone fragments. A cursory field examination indicates that most are fish remains, with identifiable fragments being Nile catfish (*Clarias*). Other remains appear to be from small rodents; a lagomorph, and some birds, including the remnants of a bird bead, and a fragment of an ostrich eggshell bead. No large mammal remains were identified.

2.5. Floral Remains

Grinding faces of six implements were washed to recover phytoliths, pollen, and starch (Scott Cummings 2014). This was the first use of a pollen wash technique in investigating sites at Wadi Kubbaniya. Four implements were found “face down” on the surface at WK26 and two were subsurface. Pollen from members

of the mustard and amaranth families suggest seed processing. Phytoliths typical of festucoid grasses predominate followed by a few chloridoid and panicoid phytoliths. Identified charcoal remains include *Tamarix* and a broad-leaved flowering tree or shrub. Two of the four stones from the surface yielded phytoliths that indicate cutting by a threshing sledge or trampling. These surface stones could not be dated. Several “modified” sheet phytoliths had been burned, indicated parching grass seed or cereal prior to grinding. One surface grinding stone also contained a phytolith with torn edges, typical of stems cut with sickles. Another surface grinding stone without dendritic phytoliths exhibited a phytolith from a palm suggesting processing dates.

One of the subsurface handstones recovered from Area B yielded phytolith sheet elements exhibiting cuts suggesting post-harvest processing. These sheet elements are still under study. The second subsurface grinding stone from Area B had ochre, few phytoliths, but pollen from the mustard family (Brassicaceae) goosefoot (*Chenopodium*), and marshelder (Low-spine Asteraceae).

2.6. Radiocarbon Dates

In addition to the date of 12060 ± 50 BP recovered in 2012 from an ashy area, charcoal from the hearths in Area A and two features in Area B recovered in 2014 was dated to $13,100 \text{ BP} \pm 35$, $13478 \text{ BP} \pm 35$, and $13553 \text{ BP} \pm 34$, respectively. That the dates from Area B are slightly older than that from Area A is consistent with the almost complete absence of silt in Area B. Area A appears to have been occupied a bit later than Area B. Combined with the 2012 date, the site dates to the end of the Late Paleolithic sequence and the Upper Kubbaniyan Silt and associated with high stands of the “wild Nile” (Paulissen and Vermeersch 1987; 1989; Butzer 1997; Vermeersch and Van Neer 2015).

Conclusions

Several factors distinguish WK26 site from the dune field sites across the wadi. One was predominance of fish over other faunal remains, particularly larger herbivores. Although fish predominate at the sites across the wadi, the almost complete lack of evidence for large herbivores further distinguishes WK26 from the majority of the other sites (Gautier and Van Neer 1989). Second were the number and variety of features; a few features were identified across the wadi but nowhere comparable to the number and variety at WK26. Third were the distinctive

large backed and truncated isosceles triangles. Fourth was the morphology of the grinding stones; those at WK26 were thin and rectangular, with shallow grinding surfaces, while those across the wadi were blocky with more distinct surfaces. The stones in the dune field sites were quarried from the valley edge overlooking the dune field; those from WK26 probably came from nearby outcrops. Finally, plant remains at WK26 were recovered via a pollen wash, which is the first use of this technique at Wadi Kubbania.

The presence of hearths and post molds embedded in playa silt along with fish remains, suggest WK26 was occupied during drier seasons. The variation in the depth and composition of the silt between the northwest and northeast end of the block suggests that occupation at Block A was at the edge of a shallow body of water. The profile at the east end of Trench 2 – the krotovina and *Corbicula* and/or *Pisidium* – suggest a marsh environment. The occupation appears to have been located so its occupants could harvest fish from this pool. The apparent paucity of contemporary sites elsewhere in the wadi may reflect that occupation was possibly sporadic and as part of a settlement round that extended outside the wadi.

WK26 underscores the settlement and subsistence complexity and typological diversity of the Late Paleolithic in this portion of Nubia/Upper Egypt. Wadi Kubbania is the only place investigated to date where this diversity is exemplified to such an extent. Although most of the sites are associated with the Kubbanian industry, other sites are related to a greater or lesser extent with another five industries. The differences in lithic typology and technology, including the presence/absence of grinding implements, can be interpreted as demonstrating that the Late Paleolithic was a period of diversification and regional differentiation.

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