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## **A stratified sequence from Wadi el-Obeiyd, Farafra: new data on subsistence and chronology of the Egyptian Western Desert**

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### **Introduction**

Farafra Oasis is situated in the central part of the Egyptian Western Desert, on the eastern margin of the Sahara. Its prehistory was virtually unknown before 1987, when the University of Rome Archaeological Mission initiated a programme of prehistoric and geoarchaeological investigation directed by B. Barich in collaboration with F. A. Hassan (1984-87; Barich et. al. 1991; 1992; 1996). From 1987 the research was oriented towards clarifying the Farafra occupation and subsistence pattern using reconnaissance survey and excavation. Parallel to this, a wider study of site transformation and climatic change, together with exchanges to Saharan occupants and contacts with the Nile Valley, was undertaken. Thanks to the 30 radiocarbon dates available today, a more intense, stable, occupation phase from about 7000 to 6000 bp has progressively come into focus. This phase is well documented in the Wadi el-Obeiyd, in the northern region of Farafra, currently the main area of our field-work.

### **Wadi el-Obeiyd**

Wadi el-Obeiyd is an underdeveloped dry bed in the corridor separating the Northern and el-Quss Abu Said plateau, the two main features of the region (Fig. 1). The floor of the Wadi is mostly covered with residual powdery reddish soil, associated with Holocene playa deposits. During the Holocene, limited amounts of rainfall alternating with dry intervals, led to the formation of ephemeral lakes (playas). Based on palaeoclimatic information, the radiocarbon date  $6050 \pm 75$  bp from a hearth layer at el-Bahr, can be taken as the latest possible date for the regional occupation (Hassan 1996). Playa deposits underwent a sequence of ero-

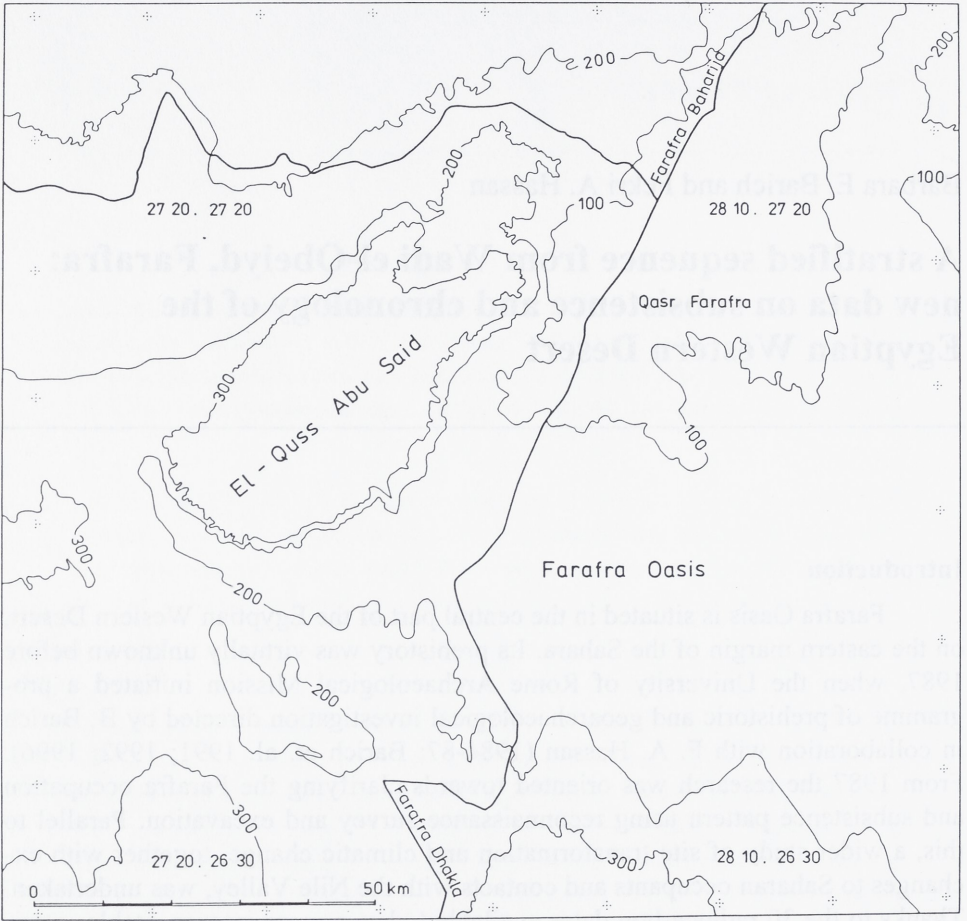


Fig. 1

sional events that ultimately eliminated them.

Prehistoric occurrences in the Wadi el-Obeiyd are plentiful, ranging from assemblages of stone implements, grinding stones to hearths and workshops. In 1991 we discovered a series of stone-lined hut foundations along the shores of what seemed to be an old water zone. It was a small depression, approximately 2 km away from the Farafra/Ain Dalla road which we named Hidden Valley (Barich 1998).

### **Hidden Valley Village**

Hidden Valley runs along a north/south axis about 0.5 km long, surrounded by chalk belonging to the Farafra formation. In the middle of the basin there are still residual remains of lake deposits. The presence of water must have encouraged periodic returns, presumably on a seasonal basis. Sandstone hut-circles were detectable on the northern slope of the basin, facing southward, approximately 2 m above the current level of the basin floor. At the time of the first discovery these structures were barely visible, being almost completely buried in the sand. What originally attracted our attention was the great amount of lithic implements, mainly bifacial tools showing a high manufacture standard as well as grinding stones, found all over the surface. We detected the layout of nine hut-circles lined up quite regularly in a E-W direction (perhaps following what may have been the ancient shoreline). At the western edge the row of hut-circles curved southward.

### **The excavation**

The site was mapped and a 20x40 m grid was imposed over the area where structures were mostly detectable, with an extension even towards the centre of the basin (Fig. 2). The first excavation test, limited to 2 m, was opened in 1991 at the eastern edge, where the first hut appeared. In 1995, 1996 and 1997 the excavation was further extended in grid sectors A, E, F and G. The area excavated until now is about 100 m<sup>2</sup>, while the area including the systematic surface artefact collection, where the structures were better highlighted, measured 400 m<sup>2</sup>. Moreover, tests for geomorphology, sedimentology, and C<sup>14</sup> sampling were carried out.

### **Sedimentological cross section**

The general cross-section, drawn by F. Hassan, connecting all of the excavated grid sectors, comprises 12 sedimentological units (Fig. 3). Below the surface sand there are two silty and laminated sand units (1-2) with scarce charcoal remains. Further below, there are six units made up of sand, charcoals and ash layers amongst the frequent stone hearths. Unit 5 - between 8.9-9.1 m - is made up solely of stratified deposits with reworked ash. At the bottom of the section, gravel is more abundant. Several mud crusts with varying thickness in the different excavation sectors were recorded, indicating that water had intermittently

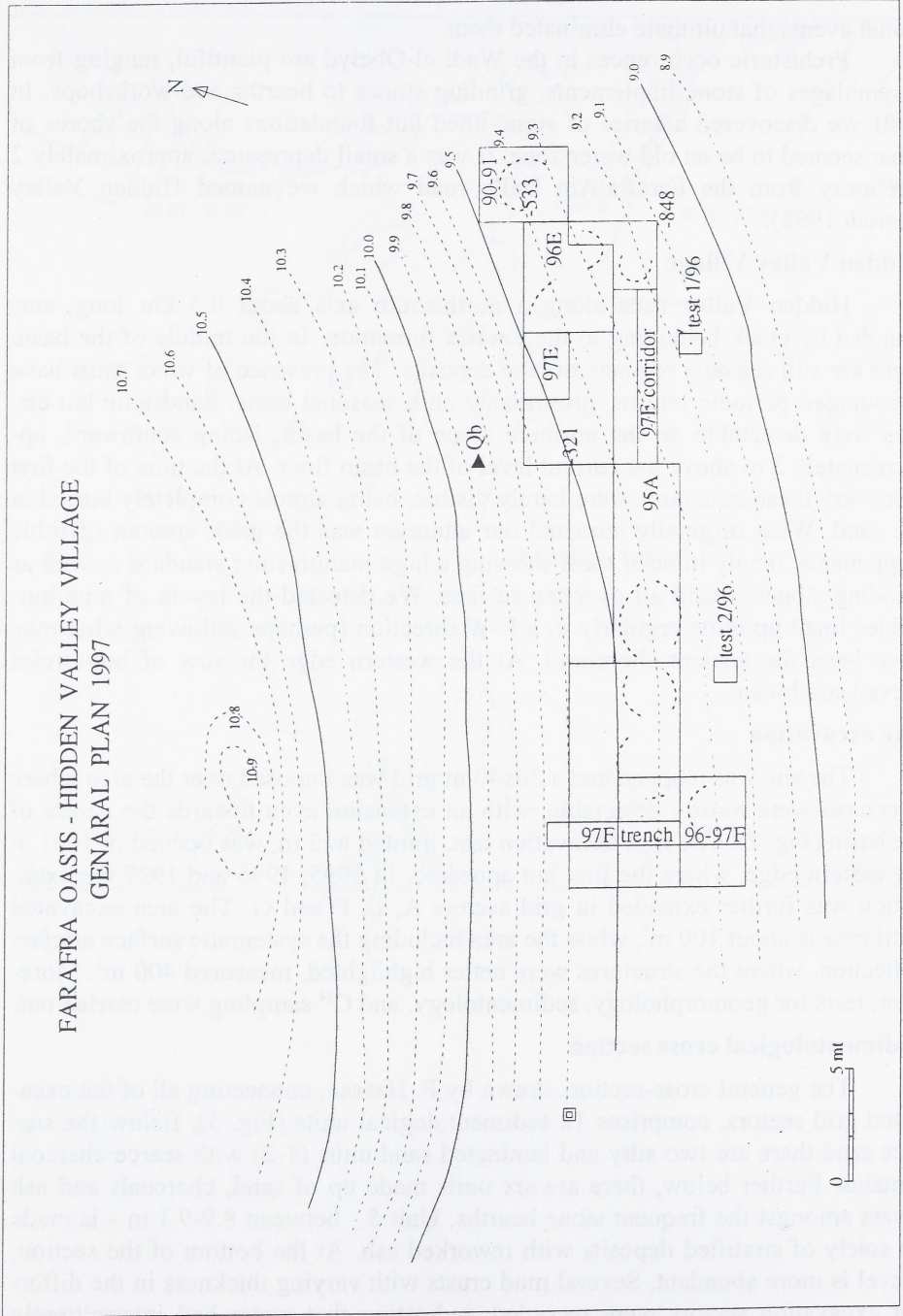


Fig. 2

FARAFRA OASIS - HIDDEN VALLEY VILLAGE  
 General Cross - Section (F.A. HASSAN 1997)

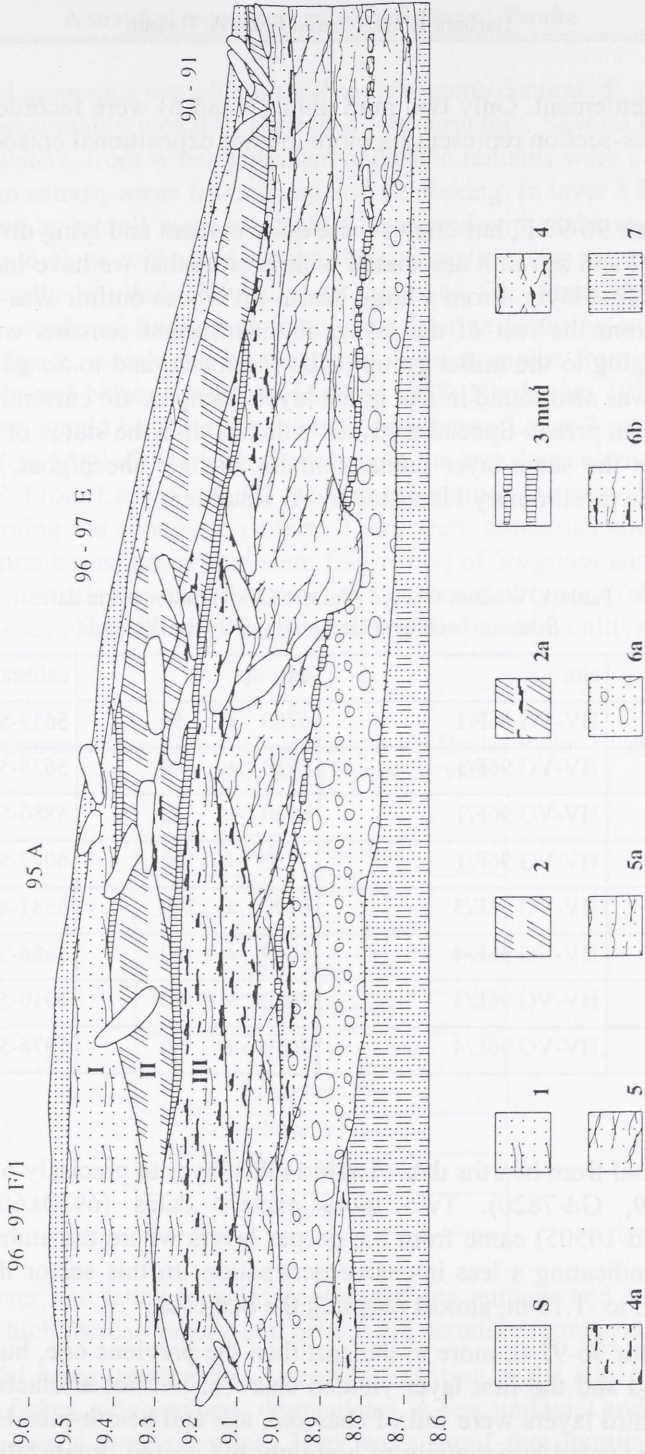


Fig. 3

flooded the settlement. Only two mud units (3 and 6) were recorded throughout the entire cross-section representing more intense depositional episodes.

### Archaeology

In sector 96-97 F, hut-circles were quite evident and lying directly over the sand, charcoal and ash unit associated with hearths that we have indicated in the profile as the first layer. From a large hearth-pit whose outline was perfectly preserved and from the rest of the layer, abundant plant remains were collected, mostly belonging to the millet group (tribe *Paniceae*) and to *Sorghum*. A rubber for grinding was also found in situ in the layer. Samples are currently under study by A. Fahmi (in press). Special analyses will establish the status of the identified species. From the same layer faunal remains include sheep/goat, together with *Dorcas* gazelle (preliminary identified by A. Gauthier).

Table 1. Wadi el-Obeiyd (Farafra Oasis) radiocarbon dates.  
Silesian Technical University, Gliwice (Poland)

sample	site	date bp	calibrated
Gd 7819	HV-VG 96F/1	6700 ± 50	5639-5476 BC
Gd 7820	HV-VG 96F/1	6710 ± 40	5638-5561 BC
Gd 11281	HV-VG 96F/1	6930 ± 60	5880-5661 BC
Gd 10505	HV-VG 96F/1	7130 ± 100	6077-5751 BC
Gd 9629	HV-VG 96E/3	6190 ± 270	5581-4511 BC
Gd 7823	HV-VG 96E/4	6750 ± 50	5686-5571 BC
Gd 11279	HV-VG 96E/3	7040 ± 90	6010-5696 BC
Gd 11277	HV-VG 96E/4	7030 ± 70	5976-5723 BC

Charcoal from hearths date (Table 1) this layer to precisely 6700 and 6710 bp (Gd-7819, Gd-7820). Two more ancient dates (6930±60, Gd-11281; 7130±100, Gd-10505) came from the deeper layers where the anthropic remains were scant, indicating a less intensive occupation. In this sector the excavation was deepened to -1.10 m, almost reaching the bed-rock.

In sector 96-97 E, more to the east than the previous one, hut-circles were not uncovered and the first layer yielded charcoal but not artefacts. Instead, the second and third layers were full of charcoal, ash and hearth-pits. Here the excavation was extended horizontally to highlight the spatial organization. The floor

of Layer 2 had numerous ostrich eggshell sherds (some decorated), pot-holes and 3 post-holes presumably meant to support a roof structure. Several hearths made up of stone clusters, from which abundant anthropic remains were collected, represent the main activity areas for cooking and for flaking. In layer 3 a large hearth was surrounded by a wall more carefully constructed with slabs regularly juxtaposed. The mud floor with mud cracks, whose surface was so smooth that it seemed artificially levelled, showed clear traces of fire. From this feature we collected an exceptional finding: an intact clay figurine featuring a schematic female or bird figure, which can be compared with examples from the Neolithic Badari, Naqada and Nubian A-Group (Adams 1988; Nordström 1972). The Hidden Valley item would be the most ancient one because Layer 3 gave a dating of  $6750 \pm 50$  bp (cal  $5680 \pm BC$ ) which clusters with the two dates already mentioned from Sector F. From Layers 2 and 3 we further obtained the same type of information concerning the economic pattern. There were numerous charred remains (spikelets, glume bases, grains and stem fragments) of *Sorghum* and other cereal species. It is interesting to note that most of the recorded types (Table 2) belong to the millet assemblage which is the genetic pool for modern cultivated species.

Table 2. Preliminary identification of plant taxa at site Hidden Valley Village-Farafra.  
A. Fahmi, Cairo University 1996.

TRIBE <i>Panicaceae</i>
<i>Digitaria</i> type
<i>Echinochloa</i> type
<i>Gramineae</i> type
<i>Bracharia</i> type
<i>Cenchrus/Pennisetum</i>
<i>Panicum</i> sp.
<i>Setaria</i> type
TRIBE <i>Andropogoneae</i>
<i>Sorghum</i> sp

Moreover, the fauna includes goat and sheep remains and other wild species among which *Dorcas* gazelle and ostrich are certainly represented.

Plentiful items, relative to stone manufacturing at the site, were also collected: cores, flakes, side-scrapers, denticulates. A few unifacial and bifacial leaf-shaped arrow-heads were recorded. They were proof that hunting, along with

herding and cultivation continued to be in use. Ostrich eggshell sherds, some of which were decorated, were frequently found.

Based on the radiocarbon datings available from the 1996 excavation (Gd-9629, Gd-7823, Gd-11279, Gd-11277; Table 1), layers 3 and 2 can be dated between the end of the VIII and the first half of the VII millennium bp. However, an inconsistency must be noted between the date  $6750 \pm 50$  from Layer 3 and the two others, around 7000, which come from Layer 2. This fact allows us to interpret charcoal from Layer 2 as reworked material, washed away from an older deposit contemporary with the lower unit in 96-97 F. A single date,  $6190 \pm 270$  (Gd-9629) is available for the top (first) layer.

### Discussion

In the cross-section we have tentatively indicated the correspondence between sedimentological units and occupation horizons. The first horizon would represent the latest occupational phase associated with hut-circles. As the cross-section shows, this horizon diminishes towards the eastern end of the settlement. The chronology of this horizon, for the moment, is based only on the  $6190 \pm 270$  bp date cited before. We also propose dating the previously mentioned bifacially flaked artefacts, systematically collected in the grid areas, to this horizon. Altogether they total several hundred pieces. The type list includes eight tool classes. Particularly significant are the leaf-shaped tools, such as tranchets, drills, arrow-heads, knives.

On the other hand, the accumulation phase of the ash and charcoal layers shows a great thickness throughout the entire section. It represents the most intensive occupation phase of the settlement and is characterized by hearths, pot-holes, post-holes, ostrich eggshell deposits. We have distinguished two layers (II and III) which are separated by a mud layer. Three firm dates are available for this occupational phase: 6700, 6710 and 6750 bp. From the basal part of the stratigraphy we had already obtained in 1995 the  $C^{14}$  datings  $7140 \pm 110$  (Gd-9518) and  $7160 \pm 60$  (Gd-11221). Charcoals coming from these levels were later on washed away and redeposited as reworked materials over the deposits of the main occupation horizon.

### General comment

In light of these results we can infer that the human presence in the Hidden Valley area might have begun at the end of the VIII millennium bp becoming more stable during the VII millennium. Groups were probably attracted by the abundant cereal grasses which ripened at the end of summer. Pot-holes and hearths lead us to believe that roof-arrangements of the same type suggested for Nabta E-75-6 were in practice.



These groups were equipped with bifacial implements. The bifacial technique experimented for the first time on the arrow-heads, firmly dated 6700 bp, was perfected on tools used for tilling soil and reaping cereals (such as gouges, drills, sickles, knives) that we suggested as associating with the settlement's last occupation phase, ending at ca 6200 bp. These tools are also common to the Mid-Neolithic Horizon at Site E-75-8 of Nabta and to Dakhla Bashendi B (Wendorf and Schild 1980; McDonald 1991). The Hidden Valley chronology has allowed for their more precise dating between 6500 and 6200 bp. We must note that the bifacial technique and artefacts of the same type appear in the Nile Valley at least a few centuries later. While ostrich eggshell are numerous, no ceramic vessel fragments have been found. Nevertheless, the finding of the clay figurine rejects the erroneous idea that these groups had no experience with ceramics. Presumably their use was limited, as other Western Desert contexts imply.

Our radiocarbon datings for sheep/goat are consistent with datings from the Nabta Middle Neolithic (Site E-75-8: from 7120 to 6130 bp, Banks 1984: 230) and from Dakhla Site 270 (McDonald 1994). These are the most ancient dates for small livestock known so far in North Africa. The association, both at Hidden Valley and at Nabta, of sheep/goat exclusively with autochthonous cereals would mean that sheep/goat and wheat/barley were not an inseparable "package".

The Hidden Valley chronology confirms that the Western Desert experienced an intensification of subsistence activities between 7000 and 6000 bp. Sheep-goat, probably also cattle herding was then gradually added to the local pre-agricultural economy. Once again these results emphasize the importance of the Western Desert in the transition from hunting-gathering to food production which afterwards exerted a strong influence on the societies of the Nile Valley.

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