Site E-77-7 Revisited: The Early Neolithic of El Adam Type at El Gebal El Beid Playa

by Angela E. Close and Fred Wendorf

INTRODUCTION

El Gebal el Beid Playa ("The White Hills Playa") is a basin some 40 km northeast of Gebel Nabta. It is separated from El Kortein Playa to the south by a line of three prominent white hills, for which it is named, and extends northward almost 10 km towards the Eocene scarp. A brief survey was conducted here in 1977, sufficient to establish that the basin is several kilometers in extent, but it was not mapped in detail (Wendorf and Schild 1980:100-101).

One of the sub-basins in the playa contained a cluster of recently exposed Early Neolithic artifacts and bones on the deflated surface of the playa sediments; it was named Site E-77-7. Because of its freshness and the apparent integrity of the cluster, the surface material was mapped and collected (Wendorf and Schild 1980:Figure 3.28). A 2 x 1 m test-excavation revealed that essentially nothing remained in situ within the area collected but did yield charcoal on which a radiocarbon date of 8960 bp ± 110 years (SMU-440) was obtained. A borehole at the site showed approximately 6 m of underlying playa silts and clays, indicating the occurrence of rainfall and of playa sedimentation for some time before the occupation took place.

The few identifiable bones from E-77-7 consisted of dorcas gazelle (Gazella dorcas) (Gautier 1980:Table A4.3; some were originally attributed to G. rufifrons, but further consideration suggested that all are more likely to be dorcas [Gautier 1984:57-59]), a large bovid tentatively identified as domestic cattle, and fragments of ostrich eggshell. The stone artifacts, almost all made on Eocene flint, included elegant bladelet cores, numerous backed bladelets (mostly straight backed and pointed), and a quota of notches and denticulates, truncated bladelets, and microburins. In 1977, assemblages of this type were unknown in the Eastern Sahara and E-77-7 was simply assigned to the "Terminal Paleolithic" (Wendorf and Schild 1980:103-107). Closely related sites were later discovered in the region of Bir Kiseiba and the group was renamed "Early Neolithic of El Adam Type" (Wendorf and Schild 1984:409-411). Like E-77-7, the Kiseiba sites also yielded rare bones of a large bovid and, unexpectedly, occasional sherds of pottery (Close 1984b:346; Connor 1984b:239-243; Gautier 1984).

THE 1991 EXCAVATION

The site was revisited in 1991. The test excavation and nails marking the corners of the 1977 grid were easily located. Fresh artifacts were weathering out of the playa silts to the north of the 1977 grid, indicating the presence of in situ material in that area. Excavation would, thus, offer the possibility of reconfirming the association of potsherds with the very early Neolithic and, perhaps, of recovering identifiable charcoal and other plant remains. A 7 x 11 m grid was laid out, tied to the grid of the 1977 surface collection and extended 2 m farther north and 1 m farther east (Figure 4.1).

Excavation was carried out with trowels, or, on the more cemented parts of the site, with small picks (Figure 4.2). All objects located during excavation were scatter patterned, and all deposits were passed through a 4 mm screen. Retouched tools and cores were individually numbered and tied to the scatter pattern. Debitage and ostrich eggshell fragments were bagged by square-meter unit. All bone was combined.

In all, 64 m² of the 1991 grid were excavated to a depth of 15 cm (Figure 4.1). Almost all cultural material was confined to the upper 10 cm. In three squares in the center of the grid, excavation was deepened to 30 cm, but this yielded almost no additional material.

There was very little cultural material in the eastern part of the site so that only two squares of Row 10 were actually excavated (Figure 4.1). The density of material dropped off rapidly in both the northern (F) and western (20) rows (Figures 4.3 and 4.4). Just south of the 1991 grid was a slight deflational hollow, marking where the southern part of the cultural layer had been exposed; as expected, this is precisely the area from which most of
the surface material was recovered in 1977 (Wendorf and Schild 1980:Figure 3.28). Thus, the limits of the site were reached in all directions.

Six rather small areas of burned earth were observed during excavation, indicating the locations of fires, although there were no constructed hearths. The reddening of the earth reached a depth of 15 - 20 cm, indicating that the fires may have been quite intense. Bulk samples were taken from the vicinities of the hearths to be examined for floral remains. One of the hearths (in square 115) was both larger and somewhat higher in the playa sediments than the others. The other five hearths form an irregular arc around the northern part of the concentration (Figure 4.1), but this is probably fortuitous. The number of hearths, their close spacing, and what variation in depth could be detected all suggest that E-77-7 resulted from several episodes of use.

The episodic use of the site is further indicated by the sheer density of cultural material (Figures 4.3 and 4.4). The distribution of the stone artifacts (Figure 4.3) shows several clear and dense clusters. None of the peaks is greater than 2 m from its nearest neighbor, so they are not likely to result from contemporaneous activities. The actual hearths do not tend to have artifacts in them, and there is no clear relationship between the artifact clusters and the hearths. Near the easternmost hearth, there were a few pieces of bone and almost no artifacts.

In contrast, there seems to be a negative correlation between the distribution of the artifacts and that of the ostrich eggshell fragments (Figures 4.4). Some, but probably not all, of the eggshell is related to the manufacture of beads. The densest concentration of eggshell is at the center of the southern edge of the 1991 grid; this abuts an area of particularly dense eggshell concentration from the 1977 surface collection (Wendorf and Schild 1980:Figure 3.28). The two more northerly eggshell concentrations fall precisely between the artifact clusters.

**ARTIFACTS**

The debitage and core types used in the analysis of the lithic artifacts have been defined in detail elsewhere (Close 1989); the typology of the retouched tools is that of Tixier (1963). The debitage was classified into a possible 25 types. For the flakes and blades, these types are based upon the amount of dorsal cortex and the type of core from which each was struck, as determined from the pattern of dorsal flake scars. For broken or unidentifiable flakes, only type and raw material were noted. For complete and identifiable flakes, length, width, thickness (all in mm), the amount of dorsal cortex, and the type of platform were also recorded. The methods of analysis are described in greater detail in Close (1989).

**DEBITAGE**

It is apparent from Table 4.1 that flint was, by far, the most important raw material at E-77-7. Not only does it make up 82.9 percent of all debitage, but it was also worked more carefully than the other types of stone. The sandstone and quartz consist predominantly of chips and unidentifiable flakes. The few non-primary flakes that could be identified are all derived from simple, single platform cores. All the quartz flakes are small and thick (Table 4.2). Petrified wood shows more variety in flake types, but its flaking was not so focused upon the production of elongated pieces as was that of flint. Compared with flint, the petrified wood includes a much higher proportion of primary flakes but no lames à crete (Table 4.1); a higher frequency of cortical platforms and almost no pointed ones (Table 4.3); and wider and thicker flakes (Table 4.2). In fact, the petrified wood flakes have a markedly bimodal length distribution and a less marked bimodality in thickness (Table 4.2), suggesting the production of small and large flakes. However, none is very elongated.

The flint debitage is numerous and most is of blade proportions. There are no significant differences between flint, petrified wood, and quartz in length, but the flint flakes are narrower, thinner, and have a higher mean length:width ratio ($p < 0.05$) than do those made from the other two raw materials (Table 4.2).

Only 5.8 percent of the flint flakes are primary, and they are actually shorter than the secondary or tertiary