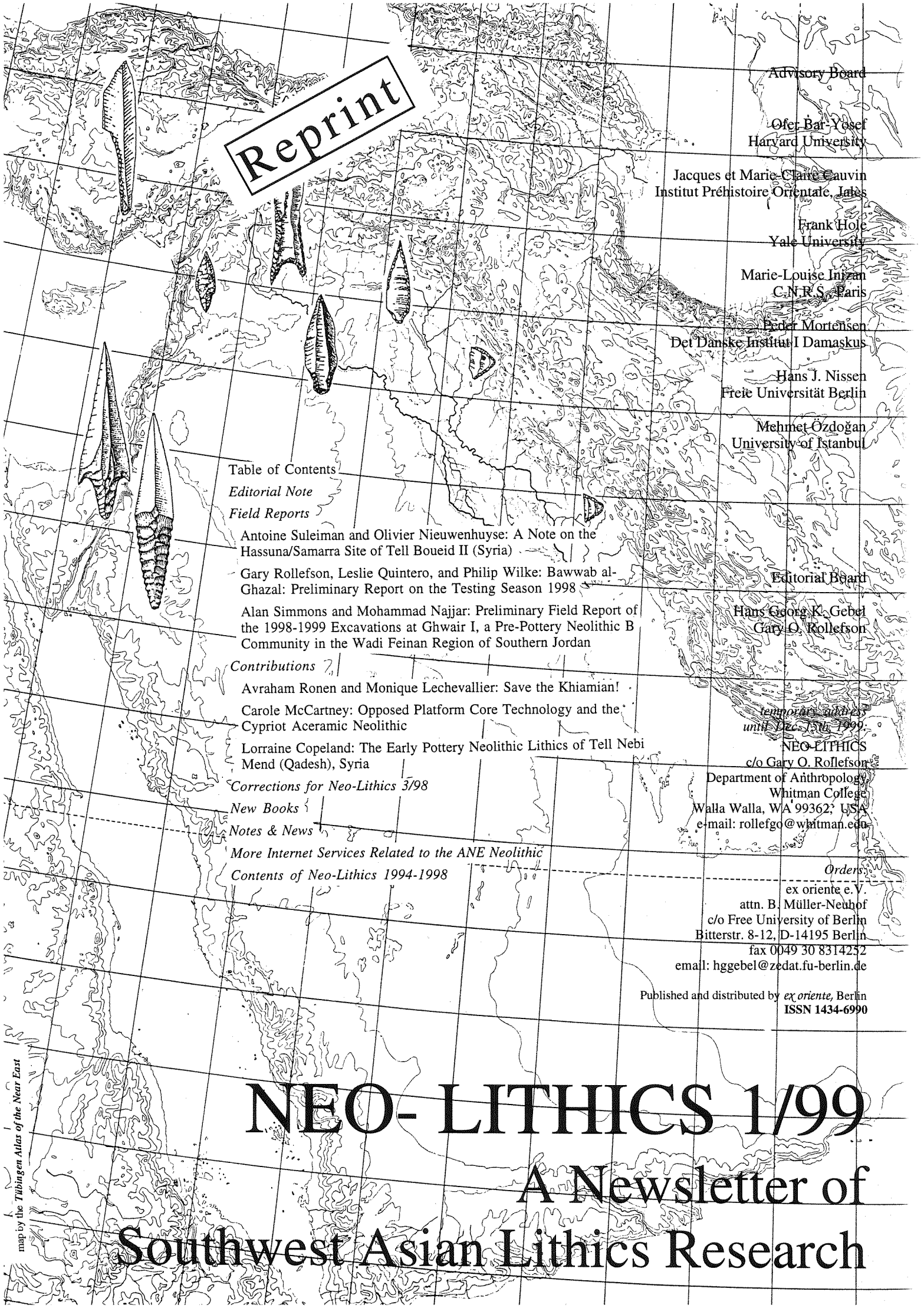

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# NEO- LITHICS 1/99

## A Newsletter of Southwest Asian Lithics Research

## Editorial

Among the contributions in this issue of *Neo-Lithics* is the article by Avraham Ronen and Monique Lechevallier. They dispute Yossi Garfinkel's recent conclusions concerning the "reality" of the Khiamian by setting out their own arguments that they feel support the existence of the industry (Garfinkel was asked to reply to this article if he wished, but declined, noting that Ronen and Lechevallier had a right to their own opinions).

While we very much appreciate the other contributions and field reports, the candid exchange of ideas and data concerning controversial problems in lithics analysis and interpretation was the *raison d'être* of the newsletter when it was first proposed in Berlin in 1993. We think there are many other differences of opinion concerning a wide range of late Epipaleolithic and Neolithic issues that could be aired (and perhaps even resolved?) by using *Neo-Lithics* as a venue for discussion, and we urge the readership to participate.

The regular field season is approaching, and we would like to wish our colleagues successful accomplishment of their research designs.

Gary O. Rollefson and Hans Georg K. Gebel

**Deadline** for the coming issue of *Neo-Lithics* is **Sept. 30th, 1999** (next deadline: Dez. 15th)

Please note a temporary change-of- address for submitting manuscripts: Dr. Gary Rollefson, Department of Anthropology, Whitman College, Walla Walla, WA, 99362 USA; e-mail: rollefgo@whitman.edu .
Illustrations should be sent separately to H.G.K. Gebel at the Berlin address (Free University of Berlin, Bitterstr. 8-12, D-14195 Berlin, email: hggebel@zedat.fu-berlin.de).

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## A Note on the Hassuna/Samarra Site of Tell Boueid II (Syria)

Antoine Suleiman[1] and Olivier Nieuwenhuyse[2]
[1]Archaeological Museum Aleppo, Syria
[2]National Museum of Antiquities, Leiden

Two seasons of excavation in 1997 and 1998 by the Syrian Directorate of Antiquities at the site of Tell Boueid II, situated in the middle Khabur Valley of northeastern Syria, have led to the discovery of a small settlement dated to the end of the sixth millennium BC (uncalibrated). In cultural terms this corresponds to the Hassuna/Samarra period. The Hassuna/Samarra period is not well understood within northeastern Syria, or in northern Mesopotamia in general, and Tell Boueid II is among the few Hassuna/Samarra sites that are currently being investigated[1]. Recent research has shown that in Syria and in the northern Iraqi Jezirah, the Hassuna/Samarra stage plays a crucial role in the development of the Halaf culture. The Halaf will eventually display an unprecedented wide distribution over large parts of the Near East (Akkermans 1993, 1996; Campbell 1992, 1998; Nieuwenhuyse n.d.).

Tell Boueid is a small mound, measuring no more than *ca.* 30 x 40m, and rising to a height of less than 0.5m above the surrounding fields. The site lies directly on the banks of the Khabur River, and is currently submerged by the completion of the Middle-Khabur Lake. The site was discovered during the rescue excavations at the nearby mound of Tell Boueid I (Suleiman 1995). Two periods of occupation have been attested at Boueid II. A large circular pit containing an abundant amount of Late Chalcolithic ceramics attests to a restricted Late Chalcolithic occupation. Apart from this pit, the excavated remains are all dated to the Late Neolithic period. The remains of three, possibly four, structures have been exposed, each composed of multiple square or rectangular rooms. Although some of the walls gave the impression that mud bricks might have been used, it appears that most of the walls were built of *pisé*. Some of the interior floors were made of hard-tamped loam, but plaster floors are found in many of the rooms. Plastered surfaces are also present on exterior surfaces between the houses.

At Tell Boueid II, the most common small finds include various types of grinding tools, such as basalt pestles and mortars. More delicate stone objects have also been recovered, however, including a small bowl with an incised pattern on its polished surface (Fig. 1:8), and a number of stone labrets (Fig. 1:9-11). The lithic finds largely consist of obsidian[2]. Interestingly, three round stamp seal impressions with geometric designs were found, comparable to seal impressions from the so-called 'burnt village' at Tell Sabi Abyad (Duistermaat 1996). Particularly common are white ware containers. These include a number of large bins that were placed in some of the rooms. In addition, white ware was used to produce large bowls and large jars. An intriguing find consists of a series of flattened oval-shaped discs made of plaster (Fig. 1:12). Some of these show crossed string impressions on one surface. No parallels have thus far been found for these objects, but they may have functioned as a particular kind of sealing

Among the pottery, various wares can be distinguished. A coarse, plant-tempered ware is the most common (Fig. 1:1-3, 6). This group is usually undecorated, but vessels with a red paint or with a red-slipped surface occur frequently (Fig. 1:2-3). Appliqué decoration is occasionally attested (Fig. 1:6). In addition to this plant-tempered pottery, a reddish-orange colored, mineral-tempered ware occurs. These vessels too were often red-slipped or painted with a reddish paint (Fig. 1:4). This category shows similarities with the so-called *Orange Fine Ware* from Tell Sabi Abyad (Le Mière and Nieuwenhuyse 1996). Samarra or Samarra-related pottery is found as well, albeit in restricted quantities (Fig. 1:5). Interestingly, a few examples were found of genuine *Dark-Faced Burnished Ware* (Fig. 1:7). These appear to be identical to the Dark-Faced Burnished Ware known from Tell Sabi Abyad (*ibid.*). Analyses by the *Maison de l'Orient* indicate that this pottery must have been brought to the Khabur region from elsewhere, possibly from as far as Amuq or Cilicia (Le Mière and Picon 1987).

Note 1. The collaboration and publication has been made possible by a grant from the Netherlands Organization for Scientific Research, but would have been impossible without the help of the Syrian Directorate of Antiquities.
Note 2. The lithic finds have been analysed and will be presented by Y. Nishiaki, University of Tokyo. The faunal remains will be studied by Maria Saña, Universidad Autónoma de Barcelona. Ceramic analyses have been carried out by the Institute of Pottery Technology of the University of Leiden.

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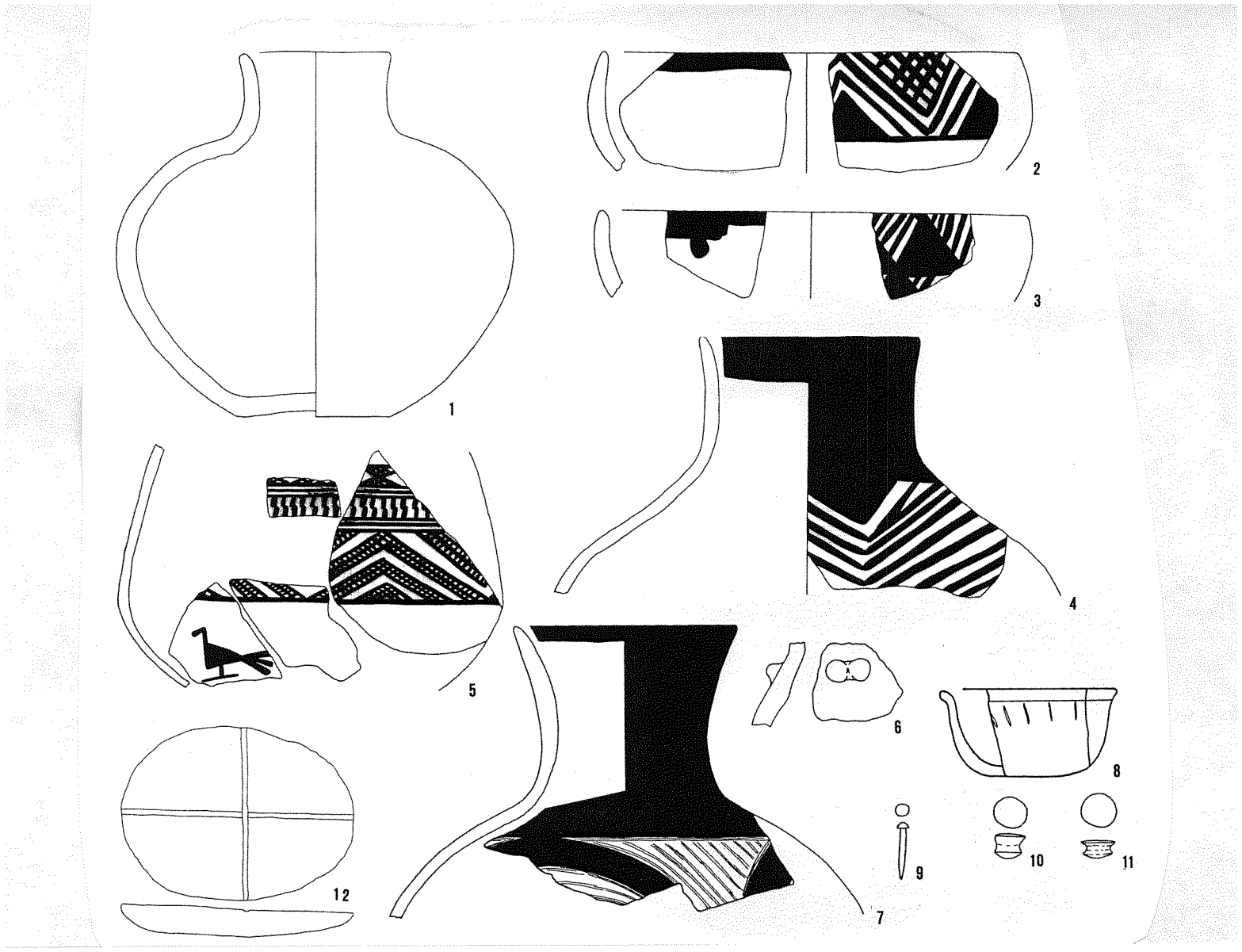

Fig. 1. Selected examples of pottery and small finds from Tell Boueid II (scale: nos. 1-7, 1:4; nos. 8-11, 1:3; no. 12, 1:8).


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## Bawwab al-Ghazal: Preliminary Report on the 1998 Testing Season


Gary O. Rollefson[1], Leslie A. Quintero and Philip J. Wilke [2]
[1]Whitman College, Walla Walla ; [2]Lithic Technology Laboratory, University of California-Riverside


### Introduction

In 1997 a resident of Azraq esh-Shishan brought the attention of a small Neolithic site (which he had named Bawwab al-Ghazal, or "Portals of the Gazelle") at the edge of the dried Azraq lakebed (*qa*) to the attention of the authors. A brief visit to the site that same summer revealed a dense concentration of chipped stone artifacts, animal bone, and beads made of green, red and white stone (Quintero *et al.* n.d.). Because of the oasis location of the site, the high proportions of projectile points and bifacially retouched tabular knives, and the possible presence of ovicaprine bones among the well preserved remains, the authors decided to conduct a self-funded test excavation season in the summer of 1998.

Bawwab al-Ghazal is located in an area of active sand dunes near the eastern edge of the former Pleistocene Lake Azraq (or series of lakes; *cf.* Rollefson *et al.* 1997 for a discussion). A botanical survey has not yet been completed, but modern vegetational cover includes tamarisk, thorny berry-bearing brush, halophytic grasses, and *Phragmites* reeds within a short walk of the center of the archaeological site. The bird population was sparse during August, and the only detectable mammals included a fox species (fennek?) and jackals. August temperatures in 1998 often exceeded 40, and clouds were definitely rare. Breezes were predominantly NW or WNW, often at considerable strength even throughout the day, although usually winds didn't develop until later in the morning hours. The persistent movement of aeolian silty sand revealed the caustic nature of the salts that resulted from the evaporation of the seasonally fluctuating wetlands, for eyes of all the crew were red-rimmed and itchy and throats were raw, soon after the onset of breezes.

### Surface Collection

For four weeks in August 1998 a staff of 9 people worked at Bawwab al-Ghazal. An intensive surface collection of about half of the site, which measured approximately 1.25 hectares in area, confirmed earlier 1997 impressions of the importance of hunting and butchering equipment at the site. Arrowheads accounted for 17% of the tools (N = 1,240), while "tile knife", parallel retouched knives, and "bifaces" (which we take to be unfinished

knives) made up more than 50% of the inventory. (The remaining tools include a heavy presence of burins and borers, but these tools have not been completely tallied yet: see below).

Surface finds also included an extraordinary number (n = 315) of beads made of an as yet unidentified source of "redstone", a white marble-like material, green "Dabba marble", and local gastropods. "Dabba marble" is a limestone first identified as both outcrops and bead material in Garrard's survey of the Wadi Jilat (A. Garrard, pers. comm. ), but it is now clear that the same kind of resource exists as nodular outcrops on the site of Bawwab al-Ghazal itself. Nine blade fragments (two of them pressure blades) of black obsidian were collected, as well as several pieces of a dark crystalline material "superficially resembling obsidian [that] were found embedded in the lavas of a volcanic crater" (Betts 1998: 4) that probably originated from the Wadi Rajil area.

## Excavation

Based on the intensive surface collection, four areas of the site were selected for excavation. The criteria for excavation entailed apparent chronological use, architectural distribution, and evident site stratigraphy.

### *The Stratigraphy Trench*

One of these areas was a "natural", since it consisted of a deep hole excavated earlier into the sediments by the Natural Resources Authority of Jordan in a systematic search for exploitable minerals. The hole measured more than a meter in diameter, the site damage provided a ready-made stratigraphic section. From the surface to the underlying bedrock ("calcrete"), the accumulated archaeological deposits extended for approximately 1m in depth. This area was evidently a midden deposit, for it included considerable amounts of ash, animal bone, chipped stone tools and debitage, and beads. The strata revealed a repeating sequence of ashy cultural deposits separated from similar layers by sterile wind-blown sand. On the other hand, layers of both cultural material and sterile sand were discontinuous, indicating an extended period of shifting use of the area as a trash deposit.

Despite its small size (less than a cubic meter) the stratigraphic trench provided an important record of site use. The entire sequence was rich in chipped stone, ornamental, faunal, and paleobotanical material (including what appears to be peas or lentils), with substantial, sequentially layered charcoal (*Tamarix* and *Populus/Salix*) for normal radiocarbon assays. (Several samples are currently being processed). The base of the trench, about a meter below the present surface, was rich with typical MPPNB "large scale" debitage and projectile points, and the subsequent accumulation was rich in faunal remains, chipped stone tools and debitage, and beads. The entire stratigraphic sequence appears to reflect seasonally intensive use of the site, separated from return visits by periods of dunal development.

### *The Natufian Camp*

Surface collection in the eastern sector of the site produced several lunates with Helwan backing, so a test trench (later expanded to 16 $m^2$) investigated subsurface deposits. What emerged was a small, repeatedly used Natufian camp with several hearths, abundant charcoal, and numerous chipped stone artifacts, including more than 40 lunates (most with Helwan retouch).

### *Stone Alignments*

An important aspect of the surface survey was the identification of more than 10 stone alignments ("stone" referring to the local calcrete evaporite) that for the most part ran at angles perpendicular to the prevailing NW wind. Excavation on both sides of one of these stone rows demonstrated an accumulation of use levels ("floors" ), although an "inside" vs. "outside" function of the strata relative to the stone alignments couldn't be determined on the basis of the small (*ca.* 5 $m^2$) excavated area. The excavated area indicates that the stones were never more than three courses high (total ca. 30 cm), so it is likely that the alignments represent foundations for temporary shelters using local reed/grass.

One aspect of the stone alignments concerns the number, orientation, and general dimensions (noting that the data are based mostly on surface indications). The linear disposition of the calcrete blocks reflects a concern for the prevailing wind: even those few alignments that are not SW-NE are essentially right-angle corner returns; in a couple of cases there are clear subdivisions of space using short arcs, but they are rare. Altogether, the number and orientation of the stone walls can be interpreted as reflecting more than one nuclear family, and perhaps more than one extended family, at Bawwab al-Ghazal for a temporary period, reusing the calcrete "anchors" each time they returned to the camp.

## Bead Industry

The numerous beads and pendants (the latter make up ca. 5% of the total ornaments) represent the products of a well-documented bead industry carried out at Bawwab al-Ghazal by the inhabitants. Material at all stages of the manufacturing process was present, including pieces that broke during the initial shaping, drilling, and final polishing steps. More than half of the beads were disk-shaped, with barrel, tubular, "loaf", and rare "butterfly" shapes making up the remainder. About a fifth of the beads were made of small, local gastropods; bird bone accounted for *c.* 5% of the beads; and stone of various sorts made up the balance. The stone included a red material of unknown type (*c.* 35%), a white marble-like substance (*c.* 25%), and green Dabba marble (*c.* 40%). For the last raw material, small nodules of the green limestone were embedded in the local bedrock, exposed where the wind had blown the dune sands away.

Associated with the manufacturing process were numerous concave truncation burins that were the source of drills made on burin spalls. This confirms a similar situation that was predicted by Betts some time ago (Finlayson and Betts 1990), and the "burin sites" take on a new dimension (but see Quintero *et al.* n.d. for an expanded explanation of the burin concentrations). The manufacture of beads was evidently part of the pastoral routine, producing the ornaments for exchange with full-time residents of the permanent farming settlements to the west (e.g., Rollefson *et al.* 1990: 103).

## Faunal Remains and Pastoralism

It has not yet been possible to undertake a thorough analysis of the faunal remains, but a preliminary assessment indicates that during the LPPNB period Bawwab al-Ghazal was used as a temporary station by pastoralists herding sheep and goats. This assessment is based on several probable ovicaprine horn cores from *in situ* deposits and associated directly with long to medium Byblos points. The animal bones, which include substantial numbers of delicate bird bones, appear to be dominated by gazelle, and much of the gazelle bone is immature; both sets of bones should be useful for determining the season of occupations at the camp. Ovicaprine remains appear to be relatively rare, as one would expect for a group protecting its capital by taking advantage of the local wild species (Köhler-Rollefson 1992).

Acknowledgement: We would like to thank Dr. R. Neef for his preliminary analysis of the charcoal from Bawwab al-Ghazal.

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## Preliminary Field Report of the 1998-1999 Excavations at Ghwair I, A Pre-Pottery Neolithic B Community in the Wadi Feinan Region of Southern Jordan

Alan H. Simmons[1] and Mohammad Najjar[2]
[1]Univ. of Nevada-Las Vegas; [2] Ministry of Tourism, Amman

### History of Investigations and Research Context

The third season of the joint University of Nevada-Las Vegas (UNLV) and Jordanian Department of Antiquities interdisciplinary excavations at the small Neolithic community of Ghwair I in the remote Wadi Feinan of southern Jordan was completed in late January of 1999. This year the season was approximately one month long, from around mid December 1998 through late January 1999. Research efforts concentrated at four areas of the site, including one new section. The preliminary results of these are summarized below.

The settlement of Ghwair I is an exceptionally well-preserved Pre-Pottery Neolithic B (PPNB) village first investigated by M. Najjar in 1993 (Najjar 1994). Subsequent to that study, UNLV and the Department of Antiquities, with the support of the Curtis Brennan Foundation and UNLV, reinitiated investigations in 1996 (Simmons and Najjar 1997). That short season led to additional funding by the National Science Foundation and the National Geographic Society, which allowed a major season to be conducted in 1997/98 (Simmons and Najjar 1998a,b) and the 1998/99 investigation reported on in this brief report.

A major goal of our interdisciplinary investigation is to investigate Neolithic "core/periphery" relationships (*cf.* Algaze 1989). In particular, we wished to examine whether Ghwair I, located in the periphery of the Neolithic world, functioned as a "frontier outpost" with minimal amenities, or if it was an elite, but small center. We ultimately wish to compare small settlements such as Ghwair I with larger Neolithic core centers, such as 'Ain Ghazal, Wadi Shu'eib, and Basta. Another project objective is to initiate paleoenvironmental and palaeoecological reconstruction, and decide if the occupants of Ghwair I contributed to environmental degradation. Finally, we wish to determine better the site parameters of Ghwair I, seeking to well define its boundaries, architectural layout and possible social indicators, material culture, and chronology. While the "core/periphery" perspective will be fully evaluated in the project's final report, most of our research attention has necessarily focused on documenting the composition of the site itself.

### Area 1

Area I is in the western end of the site, where erosion has exposed several intact rooms. This year, we expanded the excavations to include units adjacent to "Room 1," a possible ceremonial or special purpose structure that was exposed last season. The new units included portions up to the eroded western edge of the site. Excavation was to the approximate levels of Room 1, and a complex of structures has now been exposed. Based on current exposures, Room 1 appears to be a core from which surrounding rooms expanded off (Fig. 1). Many of these are small bins, several with passageways. Rather than follow typical rectangular arrangements, however, these are arranged less symmetrically. Eight bins were excavated, in arrangements of four, three, and one contiguous units. Most had plastered floors. Portions of attached rooms also were excavated. Material was relatively rich, although the floors were usually cleared. Plaster, much of it red painted, also extended up the walls of some of these structures. Chipped stone and, especially, ground stone was abundant and varied in this region.

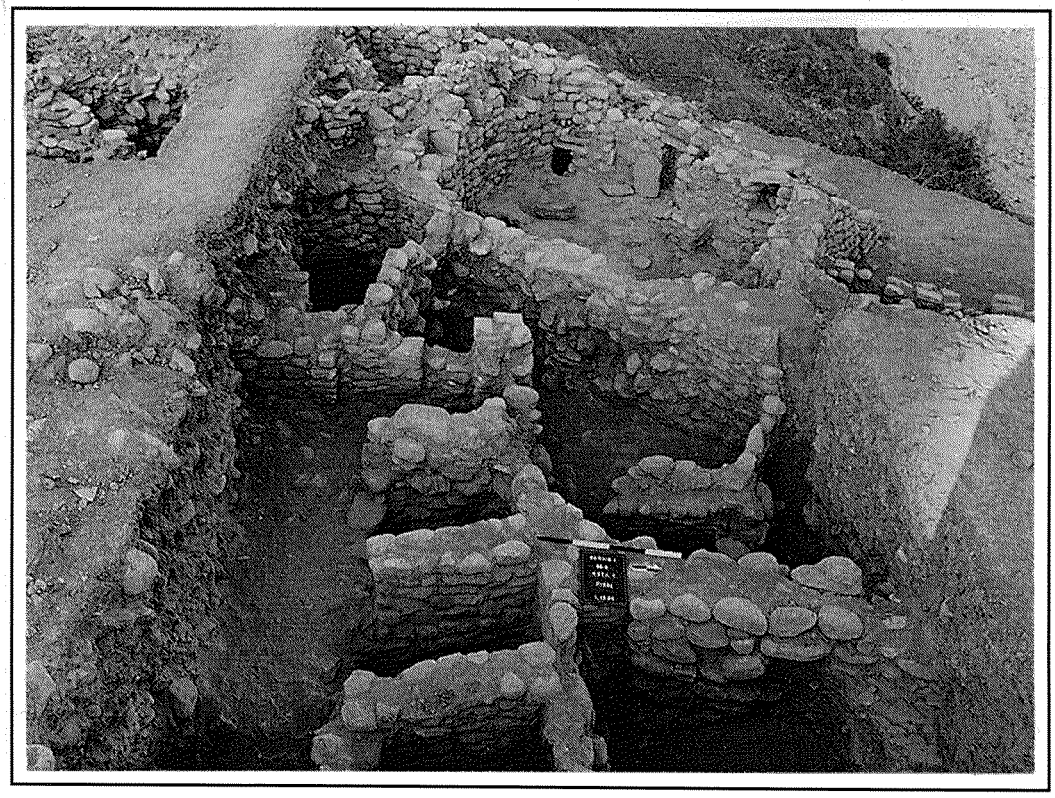

Fig. 1. Area 1, Room 1 Complex.

### Area 2

During the last season, limited testing in Area 2 revealed a considerable depth, and this year we continued excavations in this area with the goal of exposing an intact floor at the lower base of the deep wall revealed in 1997/98. Excavation revealed a remarkable degree of wall construction and rebuilding: at least 33 separate walls/-building episodes were recorded. In section, one standing wall (toppled at the top) reaches a height of ca. 3.6m. At the bottom on the wall construction region, footed upon an apparently sterile yellowish clay matrix, we revealed the last floor construction. It was here that an intact work area, with a hearth, large and flat stones that apparently functioned as "chairs", and numerous ground stone artifacts occurred *in situ*, suggesting an intact work surface. Near the floor of this we also recovered impressions of mats, indicating the type of flooring present. We also excavated a small sounding below the work surface/floor into the yellow matrix. Immediately below the floor was an intact circular

hearth. We excavated below this area as well, but this area was sterile. This suggests, however, that bedrock is far below the cultural deposits.

Area 2 now has a depth of approximately 4 meters. Continued excavation here, however, may be too dangerous to continue due to the depth of the deposits and the extremely loose structure of the walls.

Table 1. Preliminary sort of the chipped stone assemblage from Ghwair I, 1996-1999 seasons. For the R% column, N = 30,087, which does not include hammerstones, debris, mtb and mtf. cte = core trimming element; mtb = massive trimming blade; and mtf = massive trimming flake.

| Category | n | % | R% |
|---|---|---|---|
| TOOLS | 2 735 | 5.6 | 9.1 |
| DEBITAGE: | | | |
| cortical flakes | 907 | 1.9 | 3.0 |
| secondary flakes | 3 832 | 7.9 | 12.7 |
| tertiary flakes | 5 484 | 11.3 | 18.2 |
| cortical blades | 253 | 0.5 | 0.8 |
| secondary blades | 2 842 | 5.8 | 9.4 |
| tertiary blades | 7 566 | 15.5 | 25.1 |
| bladelets | 3 749 | 7.5 | 12.5 |
| cte | 349 | 0.7 | 1.2 |
| core tablets | 82 | 0.2 | 0.3 |
| CORES | 613 | 1.3 | 2.0 |
| OTHER: | | | |
| mtb | 107 | 0.2 | .. |
| mtf | 265 | 0.5 | .. |
| burin spalls | 203 | 0.4 | 0.7 |
| microflakes | 1 472 | 3.0 | 4.9 |
| DEBRIS | | | |
| chunks | 9 182 | 18.9 | .. |
| chips | 8 949 | 18.4 | .. |
| HAMMERSTONES | 81 | 0.2 | .. |
| TOTAL | 48 671 | 100.0 | 99.9 |

## Area 4

Area 4 was extensively excavated in 1993 during the first season at Ghwair I (Najjar 1994), and this year we excavated an additional four five by five meter units to the south. As expected, complex architectural features are present here. One of the units was placed in the far west of Area 4, to where the side wadi has exposed the cultural features. This area had no architecture associated with it, at least to the depth of our excavation. This indicates that this is the western extent of the roomblock.

Of particular note was one room with a "cache" of goat and cattle skulls lying nearly directly on a plastered floor. This room appears to be a workshop of some sort, since in addition to the goat skulls there was another "cache" of chipped stone blades and points, a polishing stone with malachite imbedded into it, and several malachite pendant "blanks." Finally, beneath this floor, where the plaster was disturbed, was an intact burial, the first for the site. This appears to be a "typical" Neolithic burial in that it is beneath a structure's floor and is in a flexed position. What is not typical, however, is that the skull is intact. The burial appears to be a young individual. Due to time constraints, we did not excavate this burial, but rather re-buried it for excavation next year.

## Area 6

Area 6 is a new area located between Areas 3 and 4. During the summer of 1998, Dr. Jon Cole and associates conducted a brief Ground Penetrating Radar (GPR) study of Ghwair I, and their results suggested considerable depth and/or major wall features in the area examined. During the current season, we excavated one five by five meter unit to test these results. Although we did not fully excavate this unit, the results were positive, as a large and apparently deep wall was exposed precisely in the area indicated by the radar.

## Material Remains

As expected, a huge assemblage was recovered. This consisted primarily of chipped stone artifacts and a surprising varied and complex ground stone assemblage. The chipped stone continues to reflect a typical PPNB assemblage, with a very large number of projectile points. The majority are Byblos types, but there also is a considerable variation expressed here, indicating one more nearly el-Khiam type (another was recovered in 1996). Other tools include perforating implements, burins, and numerous microliths. Surprisingly rare are scrapers. A wide variety of cores is present, including numerous naviform examples. Future analyses will examine intra-site variability in the chipped stone materials.

Table 1 provides a preliminary summary of the major classes of chipped stone artifacts recovered to date. While the categories used are consistent with the system proposed by Gebel and Kozlowski (1994), we have further defined two other classes. These are "massive trimming blades" (MTBs) and "massive trimming flakes" (MTFs). These artifacts are large blades and flakes with two of three dimensions exceeding 100 cm in length, 50 cm in thickness, or 25 cm in thickness. Many are crudely retouched and thus are technically "tools." The function of these artifacts is as of yet unknown, but one suggestion is that they may have been used in trimming building stones in architectural construction.

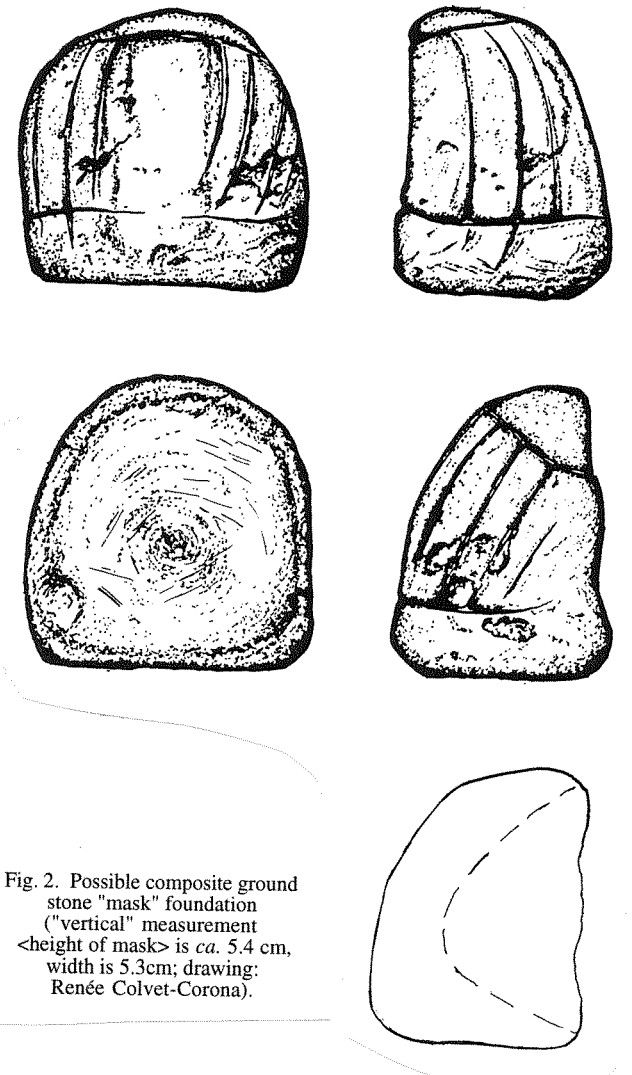

Fig. 2. Possible composite ground stone "mask" foundation ("vertical" measurement <height of mask> is *ca.* 5.4 cm, width is 5.3cm; drawing: Renée Colvet-Corona).

As is clear from Table 1, all aspects of chipped stone reduction are represented at Ghwair I. Blades are especially abundant, and exceed flakes. The ratio of blades to flakes is 1.04:1. If bladelets are added to blades, this ratio increases to 1.41:1. The presence of so many bladelets suggests that a microlithic technology was still important to the residents of the community. Although Wilke and Quintero (1994) have provided convincing evidence that bladelets are a by-product of naviform core reduction, the presence of both bladelet cores and numerous microlithic tools (primarily retouched bladelets) indicates that bladelets were a desired tool blank.

The ratio of debitage (that is, usable tool blanks) to cores is a high 40.18:1. If this is representative, it suggests a very efficient core reduction strategy. The majority of the raw material is

locally available, and no exotic (e.g., obsidian) artifacts have yet been recovered.

The ground stone is abundant and includes many large implements, such as manos, metates, and bowls. "Washes" were taken from several of these artifacts and are presently under analysis for phytoliths and other microscopic residues. Other ground stone includes numerous small "cups," possible phallic representations, two "gaming boards," possible "tokens," and "palettes" with pigment still adhering to them. We also recovered large perforated ground stone artifacts that superficially resemble "weights" of some sort. The ends of these artifacts opposing the perforation, however, are smoothly ground and polished, and suggests that the perforation could, in fact, have functioned as a handle for some sort of grinding activity.

Finally, one unusual artifact is a small, finely incised piece (Fig. 2). When viewed laterally, it resembles a small bowl or cup of some sort with one extremely flat end. When placed vertically on the flat end, however, it is suggestive of the back part of a composite figurine bust. The artifact could represent the back of a head, with the incisions indicating a stylized "hairdo;" a molded face or "mask" could have been fitted into the hollow formed by this foundation. This admittedly is speculative, but it is a tantalizing functional reconstruction. On a larger scale, human facial masks are known from other PPNB sites, such as 'Ain Ghazal (Rollefson 1998) or Nahal Hemar (Bar-Yosef and Allon 1988).

### Faunal Remains

A large and well preserved faunal assemblage is present and is under study by Dr. Paul Croft. The species present include *Bos*, sheep/goat, and, somewhat surprisingly, several birds. Other species also are represented.

### Botanical Remains

Botanical and charcoal specimens are relatively abundant and are under study by Dr. Reinder Neef. Preliminary analyses indicate the presence of species typical for PPNB villages in southern Jordan.

### Geoarchaeology

Dr. Rolfe Mandel continued his examination of geomorphic features at and near the site. He documented the presence of a paleosol near the site and is presently working on the depositional sequence of materials at the site.

### Chronology

We presently have nine radiocarbon determinations (see Simmons and Najjar 1998a: 99, 1998b: 7). These suggest a relatively early middle PPNB placement. Several more are presently under analysis.

### Conclusions / Acknowledgements

The results of both the 1997/98 and 1998/99 seasons were beyond our expectations. Even though it is a small site, covering approximately two acres, Ghwair I now appears to have been an exceedingly complex village. This suggests that it was more than a mere frontier "outpost." Another major season is anticipated during 1999/2000, and continued interdisciplinary investigations will greatly expand our knowledge of Neolithic adaptations in this region.

The co-directors wish to thank the Department of Antiquities of Jordan, and its director, Dr. Ghazi Bisheh, for assistance with the project. We also would like to thank the American Center for Oriental Research, the British Institute in Amman for Archaeology and History, and the Royal Society for the Conservation of Nature for their support. Finally, we are indebted to the people of Wadi Feinan for their continued help and interest throughout the project.

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## Save the Khiamian !

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### Introduction

In a recent article Garfinkel (1996) questions the validity of the cultural entity at the beginning of the PPNA known as the Khiamian. Garfinkel concluded that the term should be abandoned because the assemblages in question are in reality a mixture of the Natufian and Sultanian. The latter, according to Garfinkel, is the only valid term to designate the PPNA, which constitutes, in Garfinkel's view, a single-phase period. Garfinkel summarizes his arguments as follows (1996: 19-20):

1. Khiamian levels always occur between Natufian and Sultanian.

2. Khiamian levels are thin, whereas Sultanian levels are thick.

3. Many of the sites concerned occupy slopes, where erosion may be intensive and may cause a mixture of artifacts.

4. By radiocarbon chronology, the Khiamian does not always fall in its expected age, 8,300-8,000 bc.

Arguments 1 and 2 are interesting observations. The fact that a certain archaeological phenomenon always occurs in a thin layer and always between entities X and Y calls for explanation, but this tells us nothing about the validity or otherwise of the phenomenon in question. The fourth argument is weakened by the major 14C plateau that exists in the time period considered here (Stuiver and Reimer 1993). 14C chronology, then, can not support the elimination of the term Khiamian.

The third of Garfinkel's arguments above is treated at some length in his article and should be addressed seriously. Slopes are, no doubt, a source for potential mixture of artifacts. But even without the help of slopes, human activities in permanent or quasi-permanent Neolithic settlements involved excavation and other modifications of unprecedented magnitude, for example "... Yarmoukian residents [at 'Ain Ghazal], who notoriously excavated into earlier deposits..." (Rollefson 1998: 8). These modifications could have contributed to mixed artifacts from different periods as effectively as slope erosion. Yet in spite of this situation, Garfinkel's view of the Khiamian as resulting from a straightforward mixture of Natufian and Sultanian seems to us as mechanistic and far too simple. As far as microliths are concerned, by the way, they should not be regarded as solely the product of mixture with underlying Natufian, as Garfinkel claims. Lunates and other forms are present in the PPNA even in sites where there is no underlying Natufian (e.g., Rosenberg and

Peasnall 1998: 198). Furthermore, Garfinkel's view of the PPNA as a single-phase culture that requires a single name is not confirmed by our observations at the site of Hatula, which we summarize below. Page numbers alone refer to Lechevallier and Ronen (1994).

### Stratigraphy

In Area A of Hatula - the major Khiamian occurrence at that site - there is no Sultanian level (p. 24), although it cannot be ruled out that a Sultanian layer may have been eroded. On the other hand, in Area A there is a quasi-sterile horizon ca. 5 cm thick between the Natufian and the Khiamian (Ronen and Lechevallier 1991), which does not concord with Garfinkel's idea of mixture.

In fact, the differences between the Khiamian and Sultanian at Hatula seem to be too systematic to result solely from a mixture. For examples, two types of El-Khiam points were distinguished at Hatula (pp. 171, 180). Type A points are irregular and briefly retouched, while Type B points are more symmetrical, better retouched and, in general, of a more careful workmanship than Type A. El Khiam points form a very similar proportion of the tool inventory in both Khiamian and Sultanian industries, slightly more than 2% in each. At the same time, the points largely differ between the two assemblages: in the Khiamian 94% are of type A while in the Sultanian, 83% are type B. This dichotomy is unlikely to be the result of mixture in the sense of Garfinkel.

| Khiam Points | Khiamian | | Sultanian | |
|---|---|---|---|---|
| | n | % | n | % |
| Type A | 32 | 94 | 11 | 17 |
| Type B | 2 | 6 | 55 | 83 |
| Total | 34 | 2.3 | 66 | 2.4 |

Nor would the size difference observed between various classes of Natufian, Khiamian and Sultanian artifacts support a simple mixing. For example, the average length of Natufian blades (p. 169) is 35 mm, with a maximum of 52 mm; in the Khiamian these values are respectively 38 and 74 mm, and in the Sultanian, 44 and 116 mm. The average width of Natufian sickle blades (p. 171) is 14 mm, 20 mm in the Khiamian and 28 mm in the Sultanian. Could systematic trends like these result from a mixture?

The steady increase of the importance of awls in the three Hatula assemblages (p. 170) is one of the most interesting trends observed at the site: from a mere 6% in the Natufian, awls form 15% of the Khiamian toolkit and 30% of the Sultanian, a trend interpreted by us as linked with subsistence. Simultaneously with the increase in awls, the importance of birds (Pichon in Lechevallier and Ronen 1994: 103) and of fish (Lernau and Lernau in Lechevallier and Ronen 1994: 121) in the diet also grows, and the size of the captured animals gradually increases (Davis in Lechevallier and Ronen 1994: 97). Finally, one may note that at Hatula, chipped adzes and Hagdud truncations occur only in the Sultanian (p. 171). It seems extremely unlikely that such a picture could result from a simple mixture between two assemblages, as claimed by Garfinkel.

There is thus no escape from concluding that two phases are clearly distinguishable in the PPNA of Hatula, a lower and an upper phase. Hence, Garfinkel's single-phase assumption cannot be maintained. The lower entity might, of course, be called "Sultanian I" or "PPNA I", but then why reject the good old Khiamian?

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## Opposed Platform Core Technology and the Cypriot Aceramic Neolithic


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Until recently, the Cypriot Aceramic Neolithic has been viewed primarily as "*une civilisation origionale*" showing little in common with the cultural developments of the PPNB in the Levant and Taurus regions of the surrounding mainland (Le Brun 1986). The interpretation of the Aceramic Neolithic period in Cyprus as distinct from the PPNB of the mainland was based largely on data from sites such Khirokitia and Cap Andreas, which revealed chipped stone assemblages characterized by large numbers of flakes with plain butts struck from predominantly single platform cores (Le Brun 1981: 31-32, 1993: 71; M.-C. Cauvin 1984: 85). Current evidence collected from a number of newly investigated Aceramic Neolithic sites, as well as the analysis of chipped stone materials from previously uninvestigated assemblages, and an increased number of early radiocarbon dates provide a dramatically altered picture of the pre-ceramic period of Neolithic Cyprus. Three sites, Shillourokambos, Mylouthkia and Asprokremnos, in addition to the previously documented early phase at Tenta, provide evidence of a coherent pre-"Khirokitia culture" phase, with direct parallels with the PPNB cultural horizon of the surrounding mainland (Todd 1987; Gulain *et al.* 1995; Briois *et al.* 1997; McCartney 1998, n.d. a, n.d. b; see also Table 1). The description of the relationships between aspects of the lithic industry (such as opposed platform core reduction) and the newly available chronological sequence is vital for understanding how the Cypriot Aceramic Neolithic developed and the extent to which it was part of the larger PPNB interaction sphere.

One primary change in the study of the Cypriot Aceramic Neolithic chipped stone material is the recognition of opposed platform and naviform (*sensu strictu*) core reduction within the industry (Fig. 1). Because opposed platform core reduction in general, and the naviform method in particular, represents one of the hallmarks of PPNB, the presence of this strategy in Cyprus helps to confirm the origin of the Cypriot Neolithic in the PPNB, or at least the existence of intercommunication between Cyprus and the mainland during this period (*e.g.*, Baird 1994: 525). The details of the character of naviform core reduction and history of research need not be repeated here. Useful summaries of this research can be found in Baird (1994), Wilke and Quintero (1994), McCartney and Betts (1998) and the references cited in these articles.

Evidence of the naviform core reduction method (*sensu strictu*) is still relatively slight on Cyprus. The most explicit evidence comes from the EPPNB occupation at Shillourokambos, where classic naviform cores are represented and bidirectional debitage dominated the debitage sample through the MPPNB. A change in the core technology of the site was noted for the LPPNB phase with a simplified core technology used in the production of robust blades, providing a model of the industry that characterizes the classic "Khirokitia culture" phase (Briois *et al.* 1997: 97). While not yet fully published, the presence of complete reduction sequences permitting core refitting

in this assemblage will provide important details of the naviform method (*sensu strictu*) in the future.

A second site with parallels to the early Shillourokambos sample in core technology and raw material selection comes from an inland surface site named Ayia Varvara Asprokremnos (McCartney 1998; see also below). Opposed platform cores represent 38% of the Asprokremnos core sample, demonstrating a strong focus on this reduction strategy. Most of these cores exhibited opposed platforms aligned on a single removal face, but they were so heavily reduced that bidirectional removals have obliterated possible evidence of a dorsal cresting needed to characterize classic naviform cores. Although a small sample, a full 90% of the Asprokremnos opposed platform cores were used for blade production.

At Tenta, opposed platform cores represent 9.6% of the core sample, accounting for 142 of a total of 1477 cores. While the larger Tenta sample demonstrates a decrease in the total proportion of opposed platform cores, it should be noted that the sample represents materials from all periods of occupation from the Aceramic through the Ceramic Neolithic. Importantly, opposed platform cores account for 23% of all blade cores relative to only 6.8% of the flake cores. In the Kataliondas assemblage only 2.4 % of the cores could be characterized as opposed platform, and 2.4 % of this core type was also assigned to the later Aceramic sample from Mylouthkia (though the debitage and core samples from both assemblages are of poor quality). At Cape Andreas, 4.35% of the cores were characterized as opposed platform, and such cores were noted as present in the Khirokitia assemblage (Le Brun 1981: 32; M.-C. Cauvin 1984: 85).

Opposed platform reduction methods, therefore, were a consistent part of the Aceramic reduction strategy on the island. Opposed platform core reduction, including the classic naviform method, was introduced to the island during the EPPNB and continued in use primarily for blade production, becoming less frequent over time from the LPPNB onwards. While exhibiting a lower proportion of opposed platform cores in comparison to the surrounding mainland, the pattern of change shown by this core type in Cyprus mirrors that of naviform cores, which decreased in importance from the LPPNB onwards following an earlier peak in the MPPNB (*e.g.*, Baird 1994: 536-539).

From the better preserved core and debitage samples it is possible to piece together evidence for variability in the methods of opposed platform core reduction used in Cyprus. Crested blades (both primary and secondary), faceted platform removals, platform and core-face correction flakes and blades, tabular core trimming flakes, upsilon blades and opposed platform overshots can be found in most Cypriot Aceramic assemblages. While classic crested blades suggest core shaping practices seen in naviform core reduction (*sensu strictu*), other core trimming elements, particularly in the Tenta and Asprokremnos assemblages, demonstrate an alternative approach to core-shaping based on the transverse preparation of the core surface. Other opposed platform cores, mainly in the larger Tenta sample, show very little or no alteration of the initial block of raw material. Though it is possible that more than one of the core trimming approaches was used on a single core, in practice these differences suggest three distinct approaches or methods (crested, transverse and unprepared) within the overall opposed platform strategy used on the island (see Wilke and Quintero 1994: Table 1).

What is interesting about the distinctive opposed platform reduction methods in the Cypriot industry is the similarity in the response to an abundance of tabular raw materials, as seen in other regions of the Levant (Baird 1994: 531; Wilke and Quintero 1994: 38-39; McCartney and Betts 1998: 68, 80-81 and references therein). The naturally parallel-sided character of the abundant tabular cherts on the island favoured the use of "sub-naviform" opposed platform reduction methods that employed little or no shaping of the parent core. Such "sub-naviform" opposed platform cores and the transverse and unshaped methods that characterize them are frequent in assemblages like that of Tenta in which the local tabular raw materials predominate. While it seems likely that "sub-naviform", or simplified tabular opposed platform cores, increased in the LPPNB and Final PPNB in Cyprus as on the mainland, the transverse preparation of tabular core forms began as early as the EPPNB (Baird 1994: 531, 536). That tabular forms were preferred in the Cypriot opposed platforms reduction strategy is also attested to by the frequent use of cortically backed blades for unretouched utilized blades and other retouched tool types.

Table 1. Radiocarbon dates for Aceramic Neolithic sites in Cyprus (references in text).

| | |
|---|---|
| **EPPNB (9600-9200 BP)** | |
| Shillourokambos | 9310 ± 80 |
| Tenta | 9240 ± 130 |
| Mylouthkia | End 10th mill. |
| **MPPNB (9200-8500 BP)** | |
| Tenta | 8870 ± 500 |
| | 8720 ± 400 |
| Shillourokambos | 8825 ± 100 |
| | 8725 ± 100 |
| | 8655 ± 65 |
| Khirokitia | 8850 ± 650 |
| **LPPNB (8500-8000 BP)** | |
| Tenta | 8480 ± 110 |
| | 8350 ± 200 |
| | 8020 ± 90 |
| | 8010 ± 360 |
| Shillourokambos | 8125 ± 70 |
| Mylouthkia | End 9th mill. |
| **Final PPNB (8000-7500 BP)** | |
| Tenta | 7600 ± 100 |
| Khirokitia | 7930 ± 130 |
| | 7930 ± 320 |
| | 7700 ± 150 |
| | 7655 ± 160 |
| | 7540 ± 180 |
| | 7515 ± 125 |
| Dhali-Agridhi | 7990 ± 80 |
| Cape Andreas | 7775 ± 125 |
| **Post-PPNB (after 7500 BP)** | |
| Tenta | 7400 ± 260 |
| | 7380 ± 100 |
| | 7250 ± 100 |
| | 7180 ± 90 |
| | 7140 ± 90 |
| | 7130 ± 410 |
| | 7120 ± 90 |
| | 7110 ± 90 |
| | 6970 ± 310 |
| | 6300 ± 80 |
| Khirokitia | 7470 ± 140 |
| | 7451 ± 81 |
| | 7445 ± 160 |
| | 7442 ± 61 |
| | 7308 ± 74 |
| | 7294 ± 78 |
| | 7070 ± 610 |
| | 7000 ± 150 |
| | 6590 ± 260 |
| | 6310 ±170 |
| | 6230 ± 160 |
| Dhali-Agridhi | 7400 ± 60 |
| | 7290 ± 465 |
| Cape Andreas | 7450 ± 120 |
| | 6140 ± 200 |

A strong correlation in raw material utilization, opposed platform core reduction, and time is suggested by the utilization of high quality red-brown cryptocrystalline translucent chert in the E/MPPNB assemblages of Shillourokambos (70%) (Gulain *et al.* 1995: 14-15), Mylouthka (75%), and the undated assemblage from Asprokremnos (71%). At Asprokremnos this chert type was found eroding out of the earth in nodules, a material form that could have required more intensive core shaping indicative of the naviform method (*sensu strictu*) than for the tabular materials relied upon elsewhere on the island (Wilke and Quintero 1994: 38). The correspondence between the shift away from translucent red-brown chert documented at both Shillourokambos (74-85% opaque cherts) (Gulain *et al.* 1995: 14-15) and My

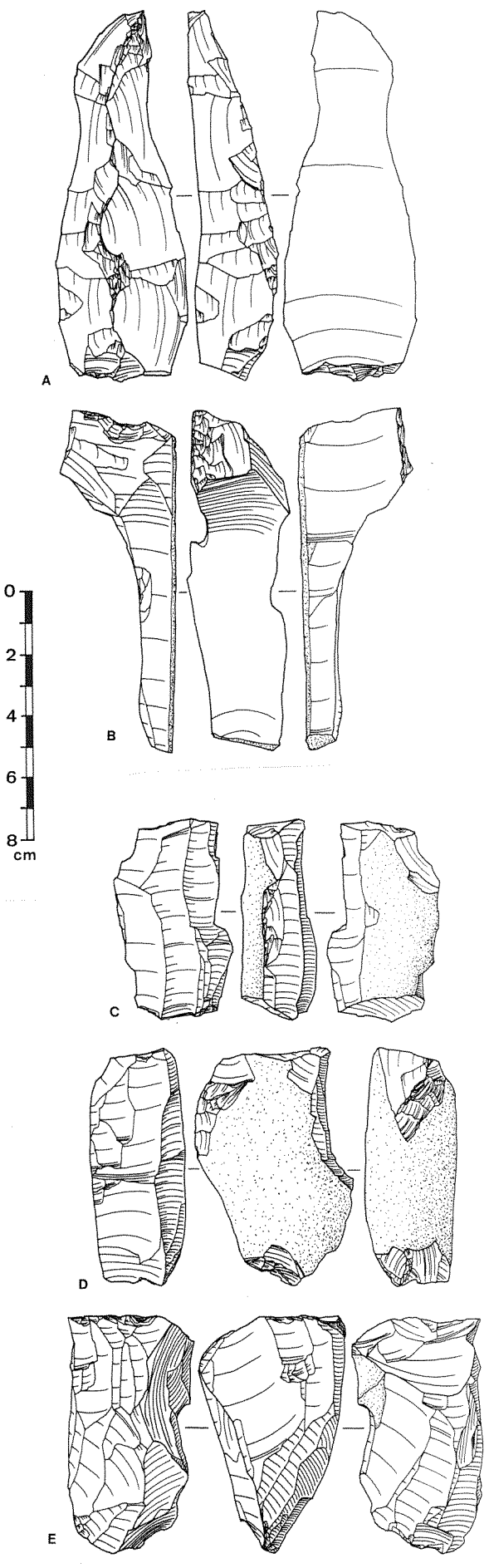


Fig. 1. A: crested blade, Tenta; B: overshot, Asprokremnos; C-D: opposed platform cores, Tenta; E: opposed platform core, Asprokremnos.

louthkia (Lefkara, Moni and other cherts 89%) in the LPPNB samples of these sites and the absence of classic naviform cores is striking. These later-period raw materials are more commonly found in tabular form and represent cherts of a relatively average quality in comparison with the very fine quality of the E/MPPNB preferred material.

Lefkara translucent materials, in particular, represent a very tough chert that often exhibits a quartz-like fracture surface. The blanks produced from this chert type are quite sharp, but they have the tendency to be brittle. In the Tenta assemblage, some 74-76% of the artifacts were produced on Lefkara translucent cherts as well as a more locally prevalent dense variant of the same chert type. Interestingly, period 5 at Tenta, despite the small sample size, demonstrated a somewhat higher proportion of the red-brown translucent cherts so diagnostic of the other E/MPPNB samples (19% compared to only 6-8% in periods 4 and 2). Locally available cherts were utilized in all Cypriot assemblages, and it is likely that site location was in part chosen on the basis of the locally available resource. At Kataliondas, a site located at the junction of volcanic and limestone geologic zones, silicified umbers and jaspers form a significant part of the assemblage (c. 22%). That Kataliondas belongs to the LPPNB horizon, or later, is defined partly on the lower proportion of red-brown translucent cherts (21%) and the higher proportion of Lefkara cherts (56%). More generally, we should note that opposed platform core technology was exclusively a chert-based blade production strategy; in contrast, obsidian was used as small single-platform bladelet cores using the pressure technique (Briois 1997: 98; Finlayson and McCartney 1998; personal observation).

It is important to note that the Cypriot Aceramic Neolithic industry remained blade-based throughout all its phases, while bladelets (not considered to be the desired products of opposed platform core reduction) were relatively insignificant (Wilke and Quintero 1994: 40). From such blades, both unutilized blanks as well as retouched and utilized tools, one further diagnostic element of opposed platform core reduction can be found. Though unidirectional dorsal scar patterns can result from opposed platform cores, the proportions of bidirectional dorsal scars in an assemblage represent a good relative indicator of the amount of opposed platform core reduction in an assemblage. In the otherwise impoverished EPPMB sample from Mylouthkia, opposed dorsal scar patters account for 60% of all blanks and tools. This value is substantially reduced in the subsequent LPPNB to only 12% with the majority of blades exhibiting unidirectional dorsal scars (56%) or scars crossed at 90 degrees (26%). The sample from Asprokremnos exhibits a more moderate proportion of blades exhibiting bidirectional dorsal scars (22%), demonstrating the importance of the well-formed single platform cores in the assemblage with the greater value of 45% for unidirectional dorsal scar patterns (McCartney 1998). Both Tenta and Kataliondas, with 60% and 59% (respectively) of all blades exhibiting unidirectional dorsal scars, follow the more unidirectional pattern favoured at Asprokremnos. It is important to note, however, that both samples show higher proportions of bidirectional dorsal scars in the blade samples relative to those of the flake samples (20-29% compared to 18-19% in the Tenta sample and 23% relative to 15% in the Kataliondas sample). Within the Tenta assemblage, a gradual decline of the importance of opposed platform cores is suggested by the decrease in the proportion of blades with bidirectional dorsal scars from 30% in period 5 to 20% in period 4 and 14-15% in period 2 and the succeeding ceramic phase. In the Tenta assemblage, as seen at Mylouthkia, the decrease in opposed platform core reduction paralleled an increase in single and crossed (90 degree) platform core reduction.

Data from the Shillourokambos assemblage suggests that a shift in raw material type between the E/MPPNB and LPPNB samples was accompanied by a corresponding technological change in the character of the blades produced. Thus, while blades produced on the high quality translucent cherts were finer and more regular in shape, those of the succeeding period have been described as more robust (Briois 1997: 97). The majority of blanks in the assemblages studied in this analysis show high proportions of plain (Tenta 49-55%, Asprokremnos 22%, Mylouthkia 55% and 47% and Kataliondas 38%) and faceted butts

(Tenta 31-35%, Asprokremnos 47%, Mylouthkia 18 and 28% and Kataliondas 36%). Unfortunately, only three butts were preserved in the early Mylouthkia sample, although the sample from Asprokremnos exhibits a higher proportion of punctiform and very small plain butts (17%), suggesting a greater degree of platform preparation in the earlier E/MPPNB horizon. This figure is, however, contradicted by a similarly high proportion of preparation in the later Kataliondas sample (up to 17% of the blades), suggesting that preparation of the core edge prior to blank removal was a more situational aspect of the core technology in Cyprus. In general, blanks were removed with little preparation leading to the production of rather thick blanks that usually exhibited large plain or faceted butt types, as well as a relatively frequent occurrence of overshots (Wilke and Quintero 1994: 41). While a purely methodological shift in blade production is possible, it seems probable that a technological response was also made in opposed platform core reduction with the greater utilization of Lefkara cherts on the island. The more robust blades made from Lefkara translucent cherts, as noted above, are more resistant to breakage than finer examples. It is also important to note that many of the long thin blades produced in PPNB assemblages on the mainland were intended for use as projectile points, a tool category that was superfluous in a landscape essentially devoid of large wild mammals. The suggestion by Baird (1994: 539) that methodology may be expected to be relatively consistent across space, while specific technological aspects may be expected to vary in response to local constraints, seems appropriate for the situation in Cyprus.

The evolution of the relative importance of opposed platform core reduction methodology in Cyprus appears broadly parallel to the development of naviform core technology (*sensu lato*) during the PPNB on the mainland. While opposed platform core reduction decreased over time, it was maintained as a consistent part of the blade production strategy on the island. The character of the blades produced differs from that of the surrounding mainland, but so too did the raw materials and performance requirements of the island's inhabitants. It must be emphasized that the artifact numbers and percentages discussed above are preliminary. Further testing of the relationships discussed here is needed, but the patterns of the evidence currently available are consistent enough to form a working hypothesis that argues that the Cypriot Neolithic both originated in the interaction sphere of the EPPNB and later developed similarly in terms of the core technology. Differences between the lithic assemblages of Cyprus and the mainland are as likely to have arisen as a consequence of the new performance requirements faced by the island's inhabitants as by any "impoverishment" experienced by the Neolithic colonizers. It is within these constraints that we should look for evidence documenting how and why differences in the industry developed over time.

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## The Early Pottery Neolithic Lithics of Tell Nebi Mend, (Qadesh), Syria.


Lorraine Copeland
Chateau de Marouatte, France


The historic site of Qadesh, now known as Tell Nebi Mend, is located in the Homs Basin of central Syria on the banks of the Orontes River. The tell was investigated by Pézard (1931) and more recently by P. Parr (1991). Pezard's huge section was utilised so as to examine the lowest deposits at its base, and Neolithic materials were found below Early Bronze layers (Mathias and Parr 1989). The lithics from the 1988 season have been studied by Y. Nishiaki (1991), while material from the 1982 to 1995 excavations are the subject of a report by the present writer (Copeland n.d.). The following is a brief summary of their main attributes.

The stone artifacts consist of flint (1,354 pieces) and obsidian (58 pieces). Fine-grain flint was used to make the blanks for the retouched tools such as arrowheads and sickle blades, while coarse-grain flint was more often used to make axes and scrapers, burins and denticulates. Cores were sparse, those present being worked down, which made it difficult to discern the methods of reduction and the original shapes. None were naviform blades cores, and blade cores were absent even though most of the tools were made on blade blanks struck from unipolar and bipolar cores.

The arrowheads consisted of Byblos points and (rarely) Amuq points in the same styles known from other 6th millennium Near Eastern sites, such as Abu Hureyra (Moore 1992) and Byblos *néolithique ancien* (Cauvin 1968). The lustred sickle elements were mainly made on blade-blank mid-sections in beige, fine-grain flint without any pressure-flaking or backing retouch. They were occasionally retouched on the truncations, and many of the working (lustred) edges had small-to medium-sized denticulations. The lustre occurred longitudinally down the blade edge, suggesting use of a straight sickle haft, and unlike the sickle elements at some northern sites, as at Assouad, where the lustre is oblique, suggesting use of a curved haft. Many were attached to the haft by bitumen adhesive (Copeland and Verhoeven 1997).

The axes were of flaked and partly polished flint, with straight bits, parallel sides and either lenticular or trapezoidal sections. In the obsidian there was a surprise: corner-thinned blades (CBTs) were present. So far this curious artifact type has only been found in the Jazireh sites, including Abu Hureyra (Moore 1992), Kashkashok (Nishiaki 1992) and Sabi Abyad I (Copeland 1996), all referring to the late PPNB to early Pottery

Neolithic times. At Tell Nebi Mend they are quite typical and most have the 'thinning' facet on all four corners of the blade or bladelet segment.

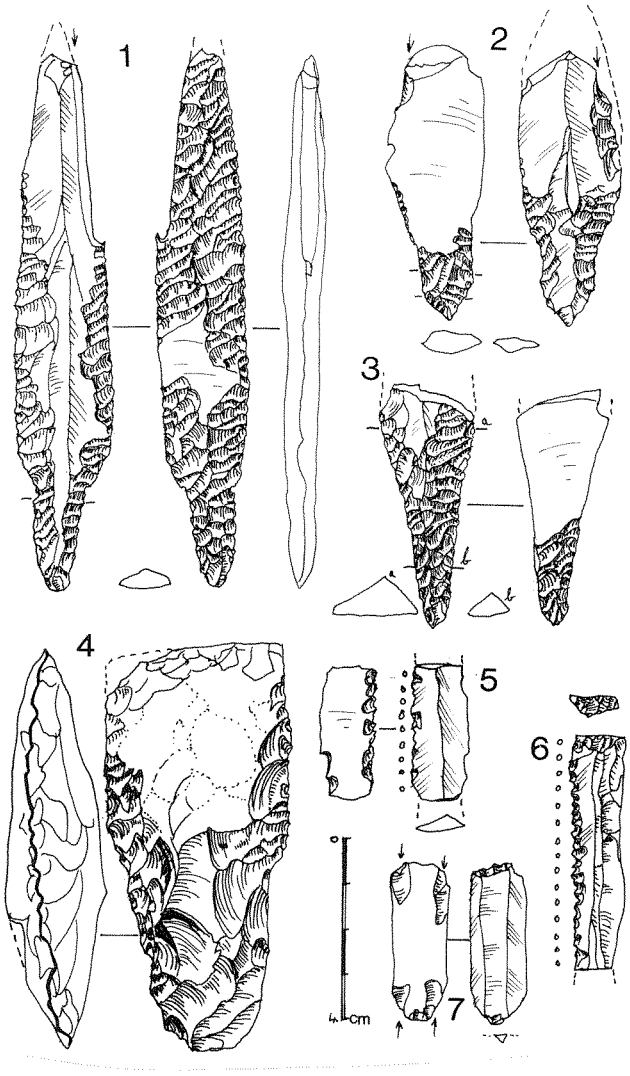


Fig 1. Selection of lithic types from Tell Nebi Mend.
1 tanged Byblos point; 2 lower part of a Byblos point; 3 tang of Amuq point; 4 axe of flint, flaked and partly polished on upper half; 5 sickle element on a snapped blade segment; 6 denticulated sickle element on a truncated blade segment; 7 corner thinned blade (CBT) in obsidian, quadruple type.

The Neolithic pottery includes Dark-faced Burnished Ware and a particular type of cord-impressed ware (Mathias and Parr 1989). Similar decoration occurs on pots at Labwe (Copeland and Westcombe 1966) and Tabbat al-Hamman (Hole 1959). Thus, Nebi Mend joins the last mentioned two sites in forming, ceramically speaking, a "mini-province" in the Homs-Tripoli region of the Central Levant, defined by the special impressions on many of the pots. This decoration seems to have been made by use of a paddle bound with fine cords, which gives an "all over" effect reminiscent of the "chicken feet" impressions on Byblos pots in the *néolithique ancien*. The same pottery has recently been reported from Tell Hmaira in the Akkar Plain north of Tripoli (Müller-Neuhof 1998).

Five phases of occupation have been recognised, consisting of traces of white plaster floors, mud-brick walls, pits and burials, ending (Phase 5) with erosional soils representing the end of the Neolithic village. Two uncalibrated radiocarbon dates were obtained: 6069 ± 90 bc (BM 2932) and 5870 ± 90 bc (BM 2935).

Tell Nebi Mend's nearest contemporaries to the north may be Hama M (Theusen and Gwozdz 1982) and Apamea/Qalaat al-Mudiq (Balty and Zakzouk 1970). From the lithic viewpoint, Nebi Mend has some southern traits (the sickle blades and axes) and some northern affiliations (arrowheads and obsidian CTBs), reflecting its location in the Central Levant. Studies on the flora and fauna are continuing and promise to give us insights as to the lifeways of the Nebi Mend Neolithic population.

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## Corrections for *Neo-Lithics* 3/98

1. Naomi Hamilton wrote to us and pointed out that the affiliation attributed to her in her article on burials at Çatal Höyük in *Neo-Lithics 3/98* was incorrect. She is affiliated with the University of Edinburgh. We regret the error.

2. Bernd Müller-Neuhof also contacted us concerning his article on Tell Hmaira in *Neo-Lithics 3/98*. Discussing the pottery from the site, his citation of Copeland and Wescombe 1966 refers to "ware with combed impressions." The correct description should be "cord impressions."

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## New Books

Betts A. (ed.)
1998 *The Harra and the Hamad. Excavations and Surveys in Eastern Jordan* I. Sheffield Archaeological Monographs 9. Sheffield, Sheffield Academic Press.

Contents: 1. Introduction (A. Betts); 2. The Epipaleolithic periods (A. Betts, with a contribution by A. Garrard); 3. Dhuweila: Stratigraphy and construction (A. Betts); 4. Dhuweila: Chipped stone (C. McCartney and A. Betts); 5. Dhuweila: Ground stone

(K. Wright); 6. Dhuweila: Pottery, miscellaneous objects and imported items (A. Betts, with contributions by D. Reese, L. Cooke and C. McClintock); 7. Dhuweila: Rock carvings (A. Betts); 8. The animal bones (L. Martin); 9. Dhuweila: Botanical remains (S. Colledge, with a contribution by J. Hather); 10. Dhuweila: Area survey (A. Betts); 11. "Arrow-shaped" structures in the Aralo-Caspian steppe (V. Yagodin); and 12. Conclusion (A. Betts).

Grindell, Beth
1998 *Unmasked Equalities: An Examination of Mortuary Practices and Social Complexity in the Levantine Natufian and Pre-Pottery Neolithic.* Tucson, University of Arizona: unpublished doctoral dissertation.

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1997 Die Entdeckung von Çatal Höyük. Der archäologische Jahrhundertfund. München, C.H. Beck.
(computer animation of the housing areas and interiors of Chatal H.)

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## Notes and News

Win a bottle of champagne!
It has been reported that in the *Atlas des Sites du Proche Orient* (1994), ed. by Hours/ Aurenche/ Cauvin/ M.C. Cauvin/ Copeland/ Sanlaville a deliberate mistake was hidden. One of the ATLAS editors offers a bottle of champagne to colleagues who will find the mistake.

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## More Internet Services Related to the ANE Neolithic

Marc Verhoeven invites to visit the website made for his Ph.D. project:

http://archweb.leidenuniv.nl/fa/onderzoek/sabi.html

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## 1994- 1998

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NEO-LITHICS was established in response to the phenomenal growth of research dealing with PPN-PN lithics industries of the Near East. NEO-LITHICS is an international forum for the discussion of problems in the technological description and typological classification of chipped stone artefacts from the Fertile Crescent region although comparisons with material from the fringes of the area (North Africa, Central Asia, Eastern Europe) are encouraged to place Near Eastern developments in a clearer perspective. NEO-LITHICS developed also into a forum for the quick publication of notes on current field work in the Neolithic as well as it provides information on Near Eastern Neolithic research in general.

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