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A Newsletter of Southwest Asian Lithics Research

Editorial

In this issue we present, in addition to the regular field reports and other notes, an article on the taxonomic nomenclature (and its implications) of early Neolithic industries of the Near East. Following the intent of the founding of this newsletter (*Neo-Lithics* 1/1994: 1), Prof. Kozłowski invites constructive commentary on his thesis to be published in *Neo-Lithics* as part of an honest exchange of views on this subject. As editors of *Neo-Lithics*, we also invite dialogue on other topics that relate to developments of Neolithic culture and technology in the Levant and adjacent regions.

We are also soliciting contributions for the *Neo-Lithics* 3/99 issue. Articles may be up to 3,000 words and may include black-and-white illustrations (line drawings or high contrast photos). The deadline for submission is December 15. Please send text material on diskette or by email to Gary Rollefson; illustrations should be sent directly to Hans Georg K. Gebel (new address: Institut für Vorderasiatische Altertumskunde, Hüttenweg 7, 14195 Berlin).

We would like to take this opportunity to thank Bernd Müller-Neuhof for his devoted help in the administration and distribution services of *Neo-Lithics*; best of luck in the future, Bernd. We welcome Klaus Traulsen in the job of Bernd Müller-Neuhof, and thank him for his readiness to care further about the distribution issues of *Neo-Lithics*.

G.O. Rollefson & H.G.K. Gebel

Deadline for the coming issue of *Neo-Lithics* is
Dec. 15th, 1999 (next deadline: May 15th, 2000)

Please, note that the text of contributions should be send directly to Dr. Gary Rollefson (Email: rollefgo@whitman.edu or Department of Anthropology, Whitman College, Walla Walla, WA, 99362 USA; *from 15th of Dec. 1999:* gorikr@t-online.de or address: see cover of this issue). Illustrations should be sent separately to H.G.K. Gebel at the Berlin address (Free University of Berlin, Hüttenweg 7, D-14195 Berlin, email: hggebel@zedat.fu-berlin.de).

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Excavations at Tell Rakan, a Neolithic Site in Wadi Ziqlab, Jordan

E. B. Banning (University of Toronto) and
Mohammad Najjar (Department of Antiquities of Jordan)

Introduction

In April and May of 1999, the Wadi Ziqlab Project began excavation of a large, stratified site (WZ 120), west of the spring of 'Ain Jahjah. The site had been brought to our attention after the construction of fish tanks cut into it in the mid-1980s, sectioning a low tell to reveal architectural remains, plaster floors and Pre-Pottery Neolithic B artifacts. Closer examination of the bulldozer section in 1995 showed numerous Late PPNB artifacts in the lower part of this section, few sherds with Yarmoukian decoration, and Early Bronze I sherds on the surface above the cut.

Tell Rakan I (WZ 120) is a Neolithic site some 1 to 1.5 ha in size at an elevation of about 100m asl. It occupies a lower slope close to a waterfall in the main canyon of Wadi Ziqlab, where it takes advantage of perennial water downstream of 'Ain Jahjah and a fertile terrace, some 6 ha in size, that probably provided the

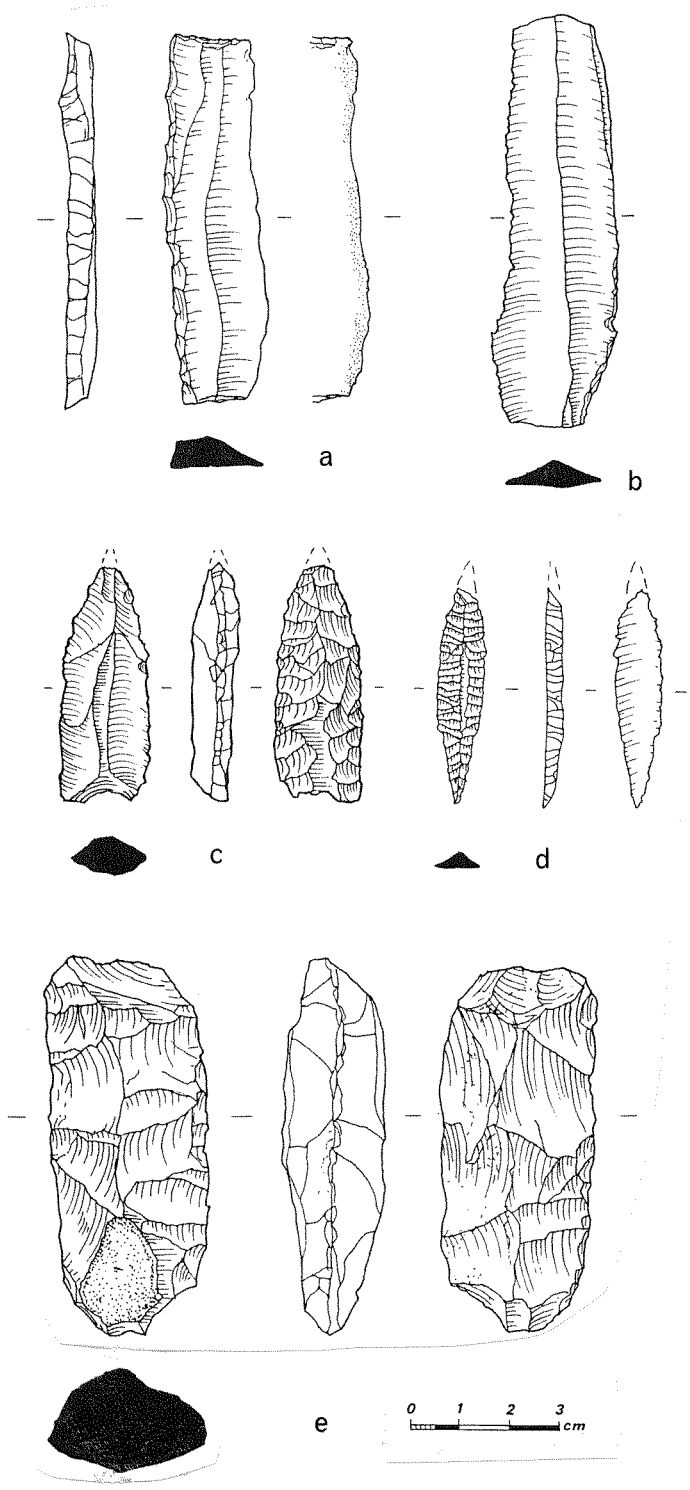

Fig. 1: a-e. A selection of Neolithic and Chalcolithic tools from the 1999 excavations at Tell Rakan I in Wadi Ziqlab, Jordan <drawings by R. Hewitt>.

site's best agricultural land during the Neolithic. The site has been disturbed by agricultural activities as well as movement of sediment during excavation of the fish tanks. Rakan II (WZ 130) is an extension of the site up the slope, and dates mainly to the Early Bronze I period.

We were initially attracted to Tell Rakan I for its stratified Neolithic sequence. We hoped that we would be able to identify the relationship of Tabaqat al-Buma (WZ 200), a Late Neolithic site we excavated in 1990 and 1992 about 3 km upstream (Banning *et al.* 1992; 1994; 1996), to the Yarmoukian facies of the Late Neolithic. To our good fortune, the excavations have shown that Rakan I was occupied during Late PPNB, Late Neolithic, Chalcolithic, and Early Bronze periods. Therefore, it provides important evidence for the Late Neolithic and Chalcolithic sequence. In addition, the site allows us to study the technological changes that occurred about the middle of the Neolithic, at the same time that pottery began to become common. Finally, we

hoped to investigate whether Tell Rakan I could have been the "parent" village for the Late Neolithic settlements we have discovered elsewhere in Wadi Ziqlab.

The 1999 excavation areas were immediately south of the bulldozer cut, where we would pose no danger of sediment collapse into the fish tanks. This had the effect of concentrating work on the periphery of the site, where there was less architecture and many late fills from terracing operations, but did not require us to dig as deeply to reach Neolithic deposits. Nonetheless, several meters of overburden had to be removed, and the Early Bronze and Chalcolithic horizons had to be documented.

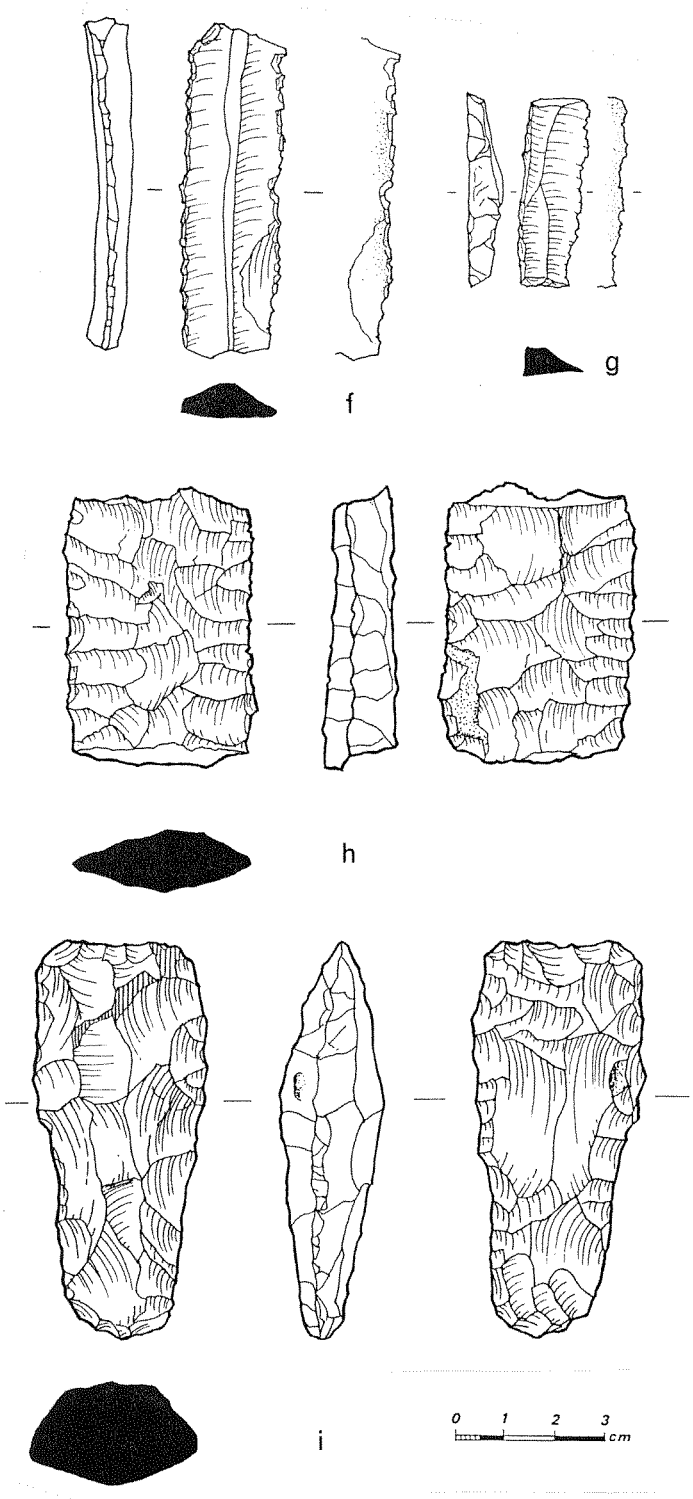

Fig. 1: f-i. A selection of Neolithic and Chalcolithic tools from the 1999 excavations at Tell Rakan I in Wadi Ziqlab, Jordan <drawings by R. Hewitt>.

Stratigraphy and Architecture at Rakan I

Deposits at the site were defined lithostratigraphically, and grouped with the aid of a Harris matrix, rather than on the basis of presumed artifact associations. Consequently, the levels often contain earlier, residual artifacts mixed with ones that probably correspond with the time of deposition. This is due to the nature of most of the deposits on the site periphery, which consist mainly of fairly thick, rubbly fills.

The deepest contexts contain material that belongs to the Pre-Pottery Neolithic B. Apart from distinctive lithics (including crested blades from naviform cores, Amuq and Byblos points and reaping knives), there are traces of plaster floors and other architectural remnants, mainly parts of double-leaf stone walls. Radiocarbon dates on samples taken from two plaster floors near the bottom of the exposed section, near the south end of the fish tanks, were 8430 ± 70 BP (TO-3987, 7550-7305 cal BC) and 8100 ± 70 BP (TO-3986, 7290-6790 cal BC). The former was from a floor built on sterile soil, indicating that, in this part of the site at least, settlement probably began in Middle or, more probably, Late PPNB.

The Late Neolithic overlies LPPNB deposits. No architecture was associated with the Late Neolithic levels in the areas we excavated in 1999, with the possible exception of one wall.

Areas S5 and T6 provided the best Chalcolithic contexts at Tell Rakan I, although sherds usually associated with the Chalcolithic also occur in other areas and in contexts mixed with Early Bronze and later material. In Area S5, a large, slab-lined pit (probably a silo) appears to belong to this phase of occupation at the site, and is virtually identical to another stone-lined pit that is visible in section next to the fish ponds, some 15m to the north. This is also reminiscent of the stone-lined pits found in Areas P22 and Q22 at Tubna (WZ 121) in our 1995 field season (Banning *et al.* 1998), although it seems more carefully constructed. The pit is somewhat oval in plan, about 2m long, and with nearly vertical sides lined with flat, rounded stones 20-30 cm long, and chinked in places with small, nearly spherical stones. The pit is cut into rubble fills containing many Late Neolithic sherds.

Neolithic Ceramics

The late prehistoric pottery from Tell Rakan I consists mainly of coarsely grit-tempered pottery with parallels in Neolithic, Chalcolithic and Early Bronze Age sites. Yarmoukian sherds from the Late Neolithic levels include a few with typical Yarmoukian herring-bone incised decoration within reserved bands, as well as strap-handles, simple hole-mouth rims, cups and bowls, and simple painted and incised decoration. Paint is often simply a band on the lip of the rim or diagonal lines below.

The fabrics of some of the sherds from the Late Neolithic levels are similar to those found in 1990 and 1992 at Tabaqat al-Bûma (WZ 200) and site WZ 310, but we found no evidence of the criss-cross combing/incision that was the chief decoration at those sites. The sherds are friable, poorly fired, and do not withstand washing in water. The fabrics are typically brown, yellow or pink, although some dark gray sherds also occur. Angular chert inclusions 1-3 mm in size and calcite particles less than 0.5 mm appear to be the most common temper. Construction sometimes involved adding clay to thicken bases or vessel walls. The assemblage includes broad strap handles and simple rims of inverted vessels. Surface treatments include red-brown slip or paint and, on one strap handle, a dark coating that may be a resin. Until further analysis of the pottery, radiocarbon samples and stratigraphy, we cannot be sure that these sherds belong to a phase contemporary with the occupation of Tabaqat al-Bûma and postdating the Yarmoukian or are contemporary with the Yarmoukian material at Rakan I.

The Significance of the Site

Tell Rakan I contributes to our goal of placing material culture of the type found at Tabaqat al-Buma (WZ 200), which we tentatively describe as the Ziqlabian facies (Banning 1998), into a stratified sequence with Yarmoukian and later deposits. It has also gives us a fuller understanding of a Neolithic settlement system in the region around Wadi Ziqlab, which, until recently, was represented only by very small sites such as Tabaqat al-Buma and WZ 310. Quite importantly, it documents stratigraphically a succession of components spanning the period from Late PPNB to Early Bronze I. This is a rare phenomenon, and the dearth of such sequences has contributed to confusion over the exact sequence of events in the late prehistory of the region. Further

analysis will allow us to relate this sequence to excavated Chalcolithic assemblages from Tubna (WZ 121) (Banning *et al.* 1998) and Tell Fendi (WZ 126) (Blackham *et al.* 1998), for example.

Acknowledgments: We would like to thank our associates in the Department of Antiquities of Jordan, principally our representatives, Salameh Fayyad and Abd ar-Rauf Tbayshat, Dr. Ghazi Bisheh, Director-General, Dr. Fawzi Zayadin, Acting Director-General, Ismail Milhem, Inspector for al-Kura, and Nizar ash-Shreideh, for their assistance and support during the 1999 field season. We also thank Rakan ash-Shreideh for accommodating our request to excavate in his pomegranate groves. Our work was supported by a grant from the Social Sciences and Humanities Research Council of Canada. The field team included Alicia Beck, Dayle Elder, Sam Gibbin, Brian Gower, Richard Hewitt, David Lasby, Lisa Maher, John Meadows, Penny Middleton, Lu'ai Muhammadiyya, Caroline Puzinas, Sidney Rempel, Cindy Shobbrook, Hikmat Ta'ani, Kathy Twiss, and Ruth Ward.

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Ein Suhun - A PPNA/B Site in The Eastern Samarian Hills

Dani Nadel, Alexander Tsatskin, and Adam Zertal
(Institute of Prehistory, University of Haifa)
and Tal Simmons (Western Michigan University)

Introduction

A new Pre-Pottery Neolithic site was recently found by one of us (Zertal 1996) in the eastern Samarian Hills (Fig. 1). It is located in Wadi el-Suhun (Israel Grid 1888 1651), a tributary of Wadi el-Ahmar, which drains the hills to the Jordan Valley. The surface finds, on a steep slope (*ca.* 20m above msl), cover an estimated area of at least 3,000 m^2. In addition to the Neolithic site, there are several earlier occurrences in the wadi. Ein Suhun is 12 km from Netiv Hagdud and 24 km from Jericho. The site has not been excavated yet, but surface finds are numerous. A brief presentation of the major finds is provided below.

Walls

Several curvilinear walls are visible on the surface of the site. Some are more than 2m long, and all have one or two layers of stones. The sediments within the curved walls appear gray and rich with material remains. In the non-desertic parts of the southern Levant, round or oval stone foundations are typical of Natufian and PPNA structures.

Cupmarks

Eight limestone slabs with cupmarks were recorded so far. Most of the specimens have more than one cupmark on them (Fig. 2). Stone slabs with cupmarks on their surfaces are common in PPNA sites. For example, they are reported from Jericho (*e.g.*, Kenyon and Holland 1981: Plate 37b), Netiv Hagdud (Bar-Yosef and Gopher 1997: Figs. 3.20, 3.21), Hatula section F (Sultanian) (Samzun 1994, see Pl. 6), Nahal Oren (Stekelis and Yizraeli 1963:6, Pl. 1) and Gesher (Garfinkel 1990: Fig. 1). It therefore seems plausible to suggest that Ein Suhun is also a PPNA settlement.

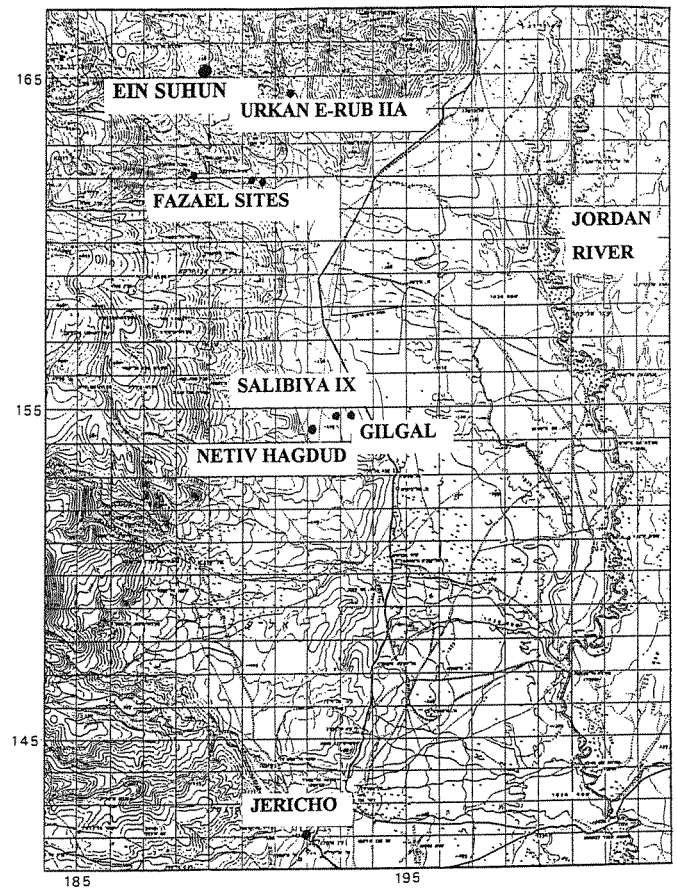

Fig. 1: A topographic map (1: 100,000) showing location of Ein Suhun in the eastern Samarian Hills, Neolithic sites in the Lower Jordan Valley and nearby Upper Pleistocene sites.

Chipped Stone

A small sample of surface finds has been studied (n= 35), among which are two cores, 30 tools, one ridge blade and two blades/bladelets (Fig. 3). Some specimens are made on bright purple-ish flint, which is either natural or heat-treated, found in both PPNA and PPNB industries (Nadel 1989, 1997). One core is a simple blade core, while the other is a naviform core, typical of PPNB industries in the southern Levant.

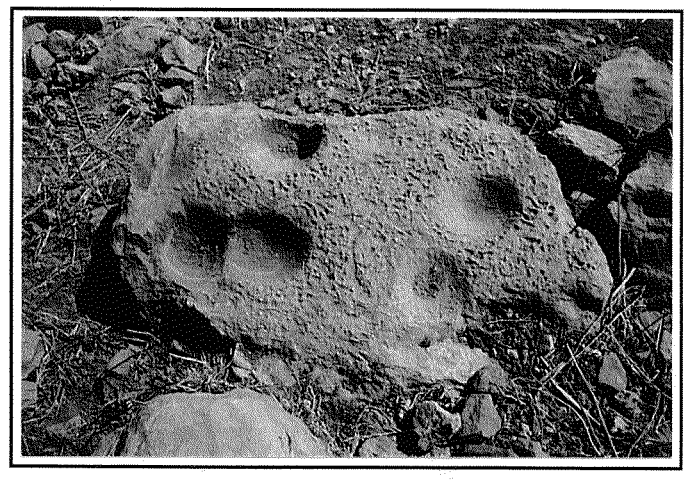

Fig. 2: Limestone slab with cupmarks.

The tools include several Neolithic specimens. The largest are four broken bifaces. The arrowheads include two possibly unfinished or poorly shaped El Khiam points (Fig. 3: 1), and one broken Helwan point, made on a sickle blade (Fig. 3: 11). There

is one wide, irregular double-notched and truncated piece (on purple flint, Fig. 3:2), which could be a variant of the Gilgal truncation (see Noy 1994). Noteworthy is one small (16 mm long) lunate. This surface sample seems to indicate the presence of PPNA and PPNB industries, or a transitional phase that includes elements of both industries.

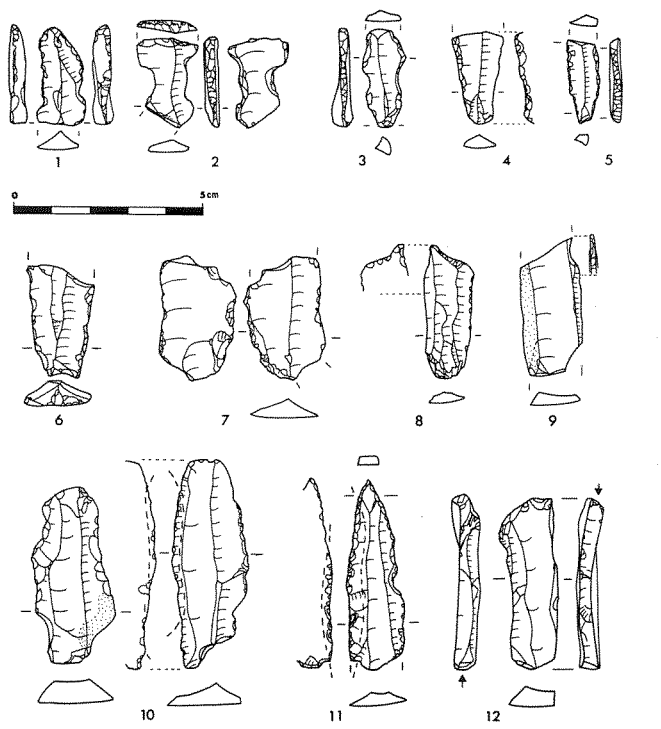

Fig. 3. Flint artifacts from the surface of Ein Suhun.

Ground Stone Implements

Five basalt implements have been found. Three are small pestles, of which only one is complete. One piece seems to be a fragment of a bowl, while another fragment belongs to a polished handstone. A unique pebble was recovered during the first survey of the site. Most of the artifact is polished, and one end is broken. A pattern of parallel incisions accompanied by a zigzag motif is depicted on one wide face.

The location of the site in the hilly area above the Lower Jordan Valley is of particular interest in the study of PPNA settlement patterns in the southern Levant. It is hoped that future research at the site will contribute to a better understanding of man - land relationships during the Upper Pleistocene / Early Holocene in the Jordan Valley and the surrounding hills.

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Fıstıklı Höyük 1999

Reinhard Bernbeck and Susan Pollock
(State University of New York at Binghamton)

General Results

Fıstıklı Höyük is a 0.5 ha site located near the eastern edge of the Euphrates River plain, just south of the modern town of Birecik. The site was occupied principally during the Halaf period, but it was also used in Roman times. Our work at the site was occasioned by the building of the Carcemish Dam on the Euphrates near the Syrian border. The dam endangers Fıstıklı Höyük as well as numerous other sites.

Our goals for the 1999 season were twofold. First, we wanted to document the stratigraphy and occupation span of the site. Our short investigation in 1998 (Pollock and Bernbeck n.d.) suggested that there was a pre-Halaf, Halaf, and Roman component on the mound. Second, we hoped to begin to examine intrasite variability in artifact distributions that can tell us about similarities and differences in activities among households. Similar ideas had guided our investigations of the Halaf occupation at Kazane Höyük near Şanlıurfa.

Our work at Fıstıklı Höyük has to contend with the presence of a pistachio orchard atop the mound. Our choice of locations to excavate was constrained by available spaces between the trees. Tree roots as well as animal burrows disturbed upper layers in many of the excavation units but were less troublesome as we reached deeper levels.

Our excavation units were, for the most part, 5x5m. Trenches were then further subdivided into smaller units, gene-rally 1x1m, to permit greater spatial control. Thus, when loci (for example, a surface) were larger than 1x1m, our data collection strategies enable us to examine whether there is variability in artifact types and densities within them, even when there were no obvious distinctions in soil color or texture. Nearly all contexts were dry screened, and the volume excavated was noted as exactly as possible (1). Many primary and secondary contexts were partially wet screened.

We excavated four 5x5m squares, Units A, B, C, and D (Fig. 1). Later in the season, a long narrow trench, Unit E, was opened immediately adjacent to D. Unit A was also expanded towards the south to uncover the full plan of a tholos that had extended partially into that unit. Two small units, F and G, were excavated in order to address specific questions about site stratigraphy.

The Halaf Levels: Architecture and Artifacts

Halaf levels with significant architectural remains were discovered in Units A, D, and E. Portions of at least three large and three small tholoi were excavated as well as a cell-plan structure adjacent to the largest tholos, Tholos I, in unit D (Fig. 2).

Large tholoi at Fıstıklı were quite distinct from the smaller versions. The large tholoi have stone foundations of limestone boulders, which may be one or two courses high. They served as footings for walls made of pisé. The foundations of Tholos I were 0.8m wide, whereas the pisé walls atop them were considerably thinner. In several instances, for example in Tholos II in Unit A, repairs of the pisé walls were observed in which the color and coarseness of the clay and the types and quantities of inclusions (straw and pebbles) changed abruptly in one section of a wall. Whether this is an indication for a prolonged use of these

structures or for periodic abandonment and subsequent repair and reuse remains to be established.

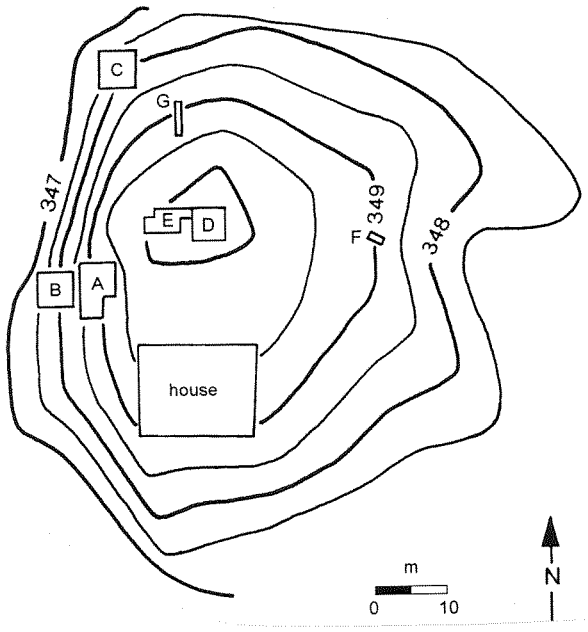

Fig. 1. Fıstıklı Höyük with units of excavation.

Tholos I had a narrow bench running along its interior wall, on which sherds were found, and a wider platform on the southern side. Tholos II seems to have had a rectangular annex to its southeast, only a small portion of which was exposed, and a circular, burnt clay floor in the northern corner of the main room, perhaps from a separate installation.

Some of the smaller tholoi had foundations consisting of fist-sized stones as well as flimsy pisé walls and burnt clay floors. It has been suggested (Akkermans 1993: 228) that hard burnt floors were important if these buildings were used for storage (2). The function of the building with a cell-plan structure is as yet uncertain, since we found relatively few objects clearly associated with surfaces inside the building. We cannot rule out the possibility of a second story (as, for example, at Beidha: Byrd 1994: 653-54). Two of the rooms had doorways that had later been blocked. This practice might be interpreted as an indication for periodic use of the site: present-day transhumant groups in the Near East who use permanent structures close them during their absence. On the other hand, however, the massive architecture of the adjacent tholos (Tholos I) could be interpreted as an indication for greater sedentariness.

In addition to architecture we excavated portions of extensive and complexity stratified trash deposits in Units B and G. These middens contained large quantities of ash and burnt debris as well as numerous artifacts.

Sterile soil was reached in several of the units. Based on the elevations at which sterile deposits were found, it appears that the site was located on a natural rise. The maximum depth of cultural deposits is, as a result, considerably less than we had anticipated. Into the sterile soil in Unit A were cut several small channels. While they may have been used for irrigation, it seems more likely that they were used to drain rainwater away from the neighboring tholos. The common use of stone footings for walls at Fıstıklı Höyük might also result from a need to protect wall bases from water damage.

Pottery from the Halaf levels can be divided into two large groups. One is a coarse, thick-walled, vegetal-tempered group that is almost always unpainted but frequently burnished. The other consists of thin-walled, mostly mineral-tempered ceramics, usually painted in colors ranging from black to red. Most of the coarse wares were fired at low temperatures, probably in open fires, whereas the often delicately painted wares were almost certainly kiln-fired. A single pottery waster – a sherd with bubbling and vitrification – suggests that there may have been a pottery kiln(s) at Fıstıklı Höyük.

Coarse ware vessels were mostly jars with slightly everted or straight necks and large open bowls. The finer painted wares exhibit an array of shapes characteristic of the earlier part of the Halaf period, including cream bowls and simple bowls with flat bases. A preliminary comparison of painted patterns at Fıstıklı Höyük and Sabi Abyad suggests a close connection between Sabi Abyad Level 3 and Fıstıklı Höyük. Parallels also exist between Fıstıklı Höyük motifs and those from Sakçegözü and Kazane (for example, Bernbeck *et al.* 1999: Fig. 13 f-j). Ceramic parallels suggest a date early in the 6th millennium B.C., but this suggestion will require confirmation from C-14 determinations.

The chipped stone industry seems to be primarily flake-based, though blades are also well represented. Nearly all of the raw material is chert, with only a tiny component of obsidian (in contrast to Domuztepe, for example: Campbell *et al.* 1999: 20). A wide range of debitage is present, and preliminary inspection suggests that most if not all stages of reduction took place at the site. Formal tools include borers/piercers, denticulates and notches, transverse arrowheads, scrapers, and – very occasionally – sickle blades and burins. This assemblage shows some marked contrasts to that from Kazane, where burins and burin spalls were quite common (Bernbeck *et al.* 1999: 123).

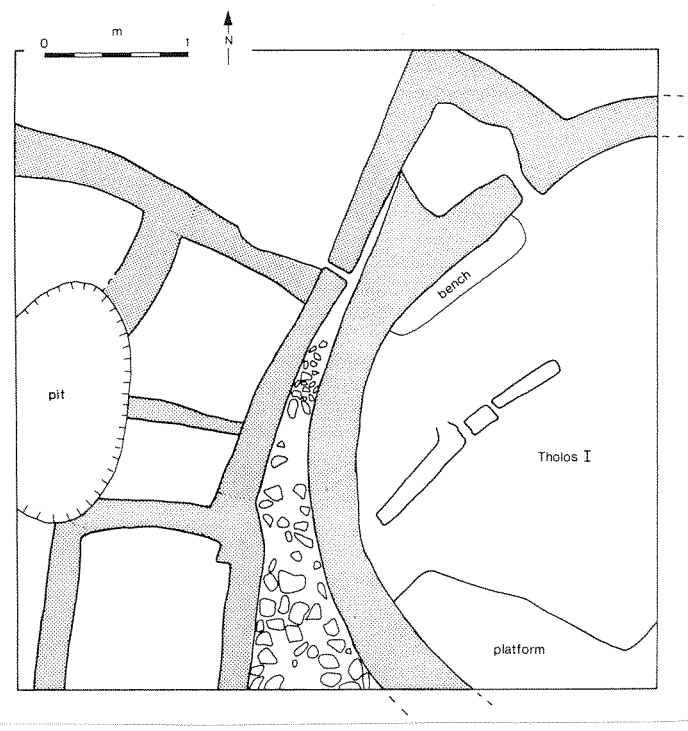

Fig. 2. Fıstıklı Höyük: Tholos I in Unit D.

Bone preservation was somewhat disappointing, although it improved with increasing depth. Through systematic screening, a reasonable sample of animal bone was recovered. Sheep/goat and cattle are well represented in our samples.

Remarkable among the small finds are four seals. Three were found in well stratified contexts. One has a square shape, one a squarish clover-shaped surface (for a similar shape, see Campbell *et al.* 1999: Fig. 14.4), and both have geometric motifs. The two others are amulet seals. In the wall of one tholos, a sealing was found whose impression is very similar to the square seal.

Several clay "tokens" attest to the use of mnemonic devices. Further indications of the use of mnemonic devices may come from the numerous sherd disks found at Fıstıklı Höyük, as at other Halaf sites. In addition to sherds, flat river pebbles seem to have been used for a similar function, judging by their frequency and carefully selected sizes and shapes (3). Sarah Kielt is carrying out further research on these clay and stone disks.

Bone awls and spatulae as well as sherds of soft, blue-green stone from stone vessels and clay sling pellets find parallels at Sabi Abyad and other Halaf sites. The ground stone tools used at the site also merit attention. We found a large number of limestone disks with heat cracks. These items are coarsely chipped at the edges and one side is regularly blackened by smoke. Most of them have a diameter of approximately 15-20 cm and a thickness of 3-5 cm. A large number of pestles was found, made of elongated river pebbles from the Euphrates, often with heavy use wear on

both ends. Some were also used as grinding stones. No unequivocal examples of mortars were recovered. Most grinding stones were made of basalt. For grinding slabs, or querns, a very coarse-grained basalt was used, whereas the handstones were made of a much finer variety. The grinding slabs were probably saddle-shaped (4); the handstones were pillow-shaped.

Roman Occupation

The preserved evidence of the Roman use of Fıstıklı Höyük is limited thus far to burials and trash- filled pits. Especially in Units A and B, a number of Roman (and perhaps later?) burials were excavated. One contained an eastern sigillata cup; another grave, with two individuals, included two glass vessels. In Unit C, on the northwestern slope of the mound, several trash-filled pits were excavated, containing numerous fragments of Roman roof tiles and storage jars. The presence of roof tiles and jars suggests that somewhere on the site there must have been at least one building from Roman times; it must lie either in the unexcavated portion of the mound or have been completely destroyed by later agriculture.

Summary

Fıstıklı Höyük was apparently occupied for a relatively short time in the Early Halaf period, probably in the early 6th millennium B.C. Whether the excavated tholoi and other structures were used simultaneously or sequentially remains to be established by means of absolute and relative dating. Only after resolving the detailed chronological relationships can we fully investigate our second research question, the relationship among households and their activities at this small site. During the remaining excavation season in the summer of 2000, we hope to increase significantly our excavated sample and our data on the spatial layout and distributions of activities at this site.

Footnotes

1. We counted buckets per locus, rather than calculating volumes from profiles and plans. Bucket counts are more precise, especially when loci are of irregular shapes. Volume measurements allow the calculation of densities of artifacts per context (Pollock n.d.), and through comparisons of densities we hope to be able to specify whether, for example, certain kinds of activities were carried out preferentially in different portions of a room or on an exterior surface.
2. Phytolith analyses of similar burnt clay floors from Kazane Höyük show that the floors were extremely clean (A. Rosen, pers. comm.), contrary to what one might expect if they were part of storage structures. However, samples submitted for analysis consisted of actual pieces of the floors, rather than material directly above them. Additionally, it is likely that grain or other stored materials would have been removed from these structures prior to abandonment.
3. Similar flat pebbles are attested at Domuztepe (Stuart Campbell and Elizabeth Carter, pers. comm.).
4. No complete example was found.

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El-Hemmeh: A Late PPNB - PPNC Village in the Wadi el-Hasa, Southern Jordan

Gary Rollefson (Whitman College, Walla Walla)

Introduction

In reaction to the planned construction of a new dam near Khirbet el-Tannur in the Wadi el-Hasa, the Jordanian Department of Antiquities conducted a survey of the region upstream of the projected dam in 1999. The survey located an aceramic Neolithic settlement just below Jebel Hemmeh edh-Dhikr, the prominent black volcanic plug 3 km west of where the Kerak-Tafila road crosses the bottom of the Wadi el-Hasa. Visible in a 2m high bulldozer cut (1) were stone walls of one or more structures that recalled Neolithic buildings elsewhere in southern Jordan.

Site Size, Location, and Situation

Based on the distribution of surface artifacts and ashy sediments, the village appears to be small in extent, reaching approximately 150m downslope and perhaps 80m across at the base; altogether, the settlement is probably about 1 hectare in size.

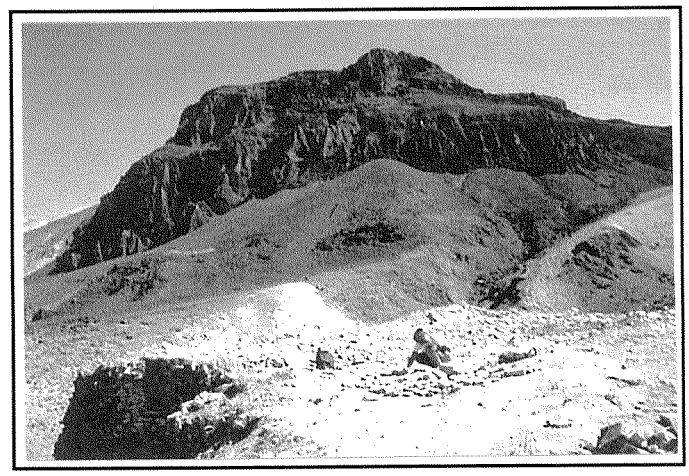

Fig. 1. The black volcanic plug of el-Hemmeh dominates the NW horizon from the Neolithic site. In the foreground, Leslie Quintero examines some of the more than one hundred milling stones.

The site hangs on the southwest facing slope of a small but steep (*ca.* 30%) hill 35° 43' 52" E and 30° 58' 00" N on the north bank of the Wadi el-Hasa, between the deeply incised (15 m) gorge of the wadi to the south and a prominent but unnamed wadi that leads down the face of Jebel Hemmeh edh-Dhikr to the west (Fig. 1). The altitude of the site is roughly 450m a.s.l. At the present time there is very little vegetation on the slopes of the non-irrigated hills around the site, although in the western wadi there are patches of reeds and some tamarisk trees and oleander bushes.

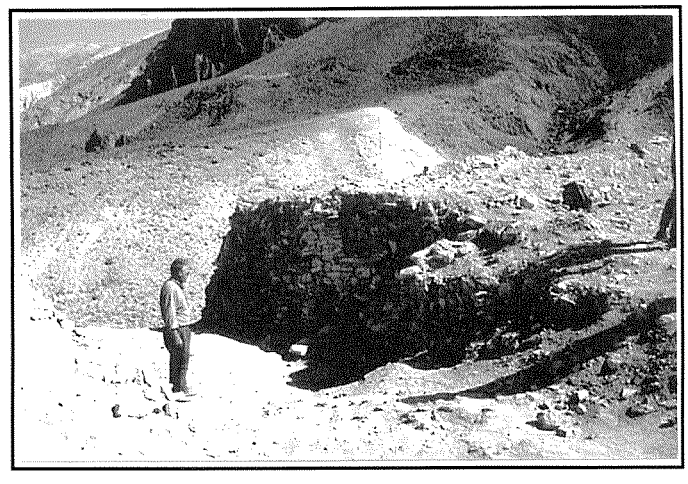

Fig. 2. Phil Wilke stands in the bulldozer cut that exposed a Neolithic structure.

Architecture

It is likely that at one time there were stone alignments on the surface of the site, but various activities associated with farming (stone clearance, terracing and terrace wall construction, plowing) have obscured and destroyed the bulk of the evidence for former architectural distribution and density. The bulldozer cut was around 3m deep and about 5m wide, running E-W for a distance of about 15m, opening out onto the precipitous cliff at the wadi on the western end of the cut (Fig. 2). The bulldozer shoved much of the dirt into the wadi, which cleaned off the cover deposits above bedrock through the abrasion caused by gravity. The cut reveals that the cultural deposits are relatively shallow, extending perhaps a half meter below the wall exposed in the main bulldozer cut.

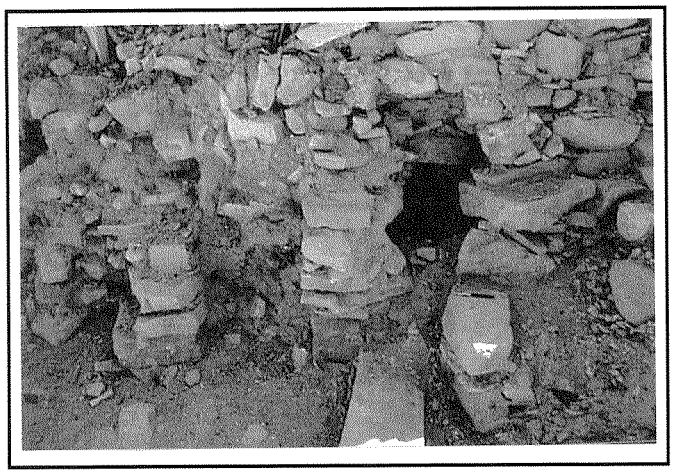

Fig. 3. Three of the subfloor channels that characterize the architecture at el-Hemmeh.

Along the northern section of the bulldozer cut was the corner of a room of a house. A section of a (lime?) plaster floor with sporadic evidence of red paint on it was preserved in the northeast corner of the room, although it had been badly damaged (and in places destroyed) in antiquity. The floor was laid on relatively large and flat slabs that covered sub-floor channels, an architectural strategy for generating level areas for house construction noted at Basta (Nissen *et al.* 1987; Nissen 1990:89), es-Sifiya (Mahasneh 1997: 229-230 and Fig. 3), and possibly at LPPNB 'Ain Ghazal (Rollefson *et al.* 1991: 105 and Fig. 7). The channels were up to 50 cm high and 30 cm wide (Fig. 3).

Fig. 4. Passageway in the northern wall of the room exposed in Fig. 2. Note the wall repair that filled in an opening to the right of the passageway.

The wall exposed in the northern section is 16-17 courses high, consisting of a "course unit" made up of long, flat limestone slabs underlain by narrow stone wedges. Altogether, the wall is preserved to approximately 2m in height. An opening preserved to a height of 75 cm is located in the north wall, and the base is situated about 60 cm above the floor; it is likely that this opening was a passageway into and out of the room. At some time during the occupation of the building a major repair was made to the wall just east of the doorway, using large irregular boulders instead of rectangular slabs to patch the hole in the wall (Fig. 4).

Other walls are visible at the site, including a corner of two bonded walls at the southwestern end of the bulldozer cut, and another wall 2m high observable from across the unnamed wadi west of the site. Although only a small area has been exposed, it appears that architectural density was fairly high.

Artifacts

Surface density of artifacts was very low, but during a visit to the site we were able to examine 116 items, not counting groundstone artifacts (see below). Table 1 provides a summary of the chipped stone material.

Chipped stone artifacts

Table 1. Chipped stone artifacts found on the surface at el-Hemmeh.

Class	Count
Core	16
Blade/bladelet	77
Flake	16
Burin spall	2
Other	1
Total	112

The cores included both flake and blade cores, and notably no naviform examples were present. Almost all the blades and bladelets were non-naviform, although there were at least two "upsilon blades"; four of the pieces were made of purple/pink flint. Among the flakes were two pieces of orthquartzite, a resource utilized at 'Ain Jammam and Basta. The "other" item in Table 1 is an overshot unidirectional blade.

Among the chipped stone tools (Table 2) is one small Byblos point (a "PPNC Byblos"); the other two points are represented only by the tangs, but they are probably also variants of the general Byblos type. There were flakes and blades that had been damaged by plowing on the agricultural terraces on and below the site, and it is not clear if there was any retouch ascribable to the Neolithic period.

Groundstone artifacts

More than a hundred groundstone artifacts were noted on the surface (many dislodged from the sediments by the bulldozer), including both handstones (*manos*) and querns. The latter were varied in shape, with some that were virtually flat, while others had been shaped into deep trough- or bowl-like objects. One fragment of a thin stone bowl was also noted.

Table 2. Chipped stone tools on the surface at el-Hemmeh.

Type	N
Arrowheads	3
Glossed pieces	4
Burins on break	2
Endscraper	2
Sidescraper	1
Cortical scraper	1
Steep scraper	2
Serrated scraper	1
Transverse scraper	1
Raclette	1
Borer	2
Denticulate	1
Notch	2
Biface	2
Pick (Chisel?)	1
Rubbing stone	1
Tanged blade	1
Diverse	1
Total	30

Pottery

Potsherds were very rare. Of the four pieces noticed on the surface, three are probably attributable to Iron II in the opinion of Prof. Zeidan Kafafi, although the fourth appears to be a late 6th/early 5th millennium PN sherd with burnished red paint; the fragment is too small to determine if there was any patterning to the paint. The potsherd recalls the material from a PN site disco-

vered a few hundred meters downstream as well as the pottery from Site WHS 524 in the Wadi Laban along the highway from the Wadi el-Hasa to Tafila, both discovered during the Wadi el-Hasa Survey (*cf.* MacDonald *et al.* 1982). Because the Pottery Neolithic period is so poorly documented in southern Jordan, we prefer not to assign the Wadi Hasa specimens to a particular named entity (e.g., "Yarmoukian" or "Wadi Rabah", etc.).

Concluding Remarks

The presence of subfloor channels beneath the structure exposed in the bulldozer cut suggests that the architecture originally dates to the LPPNB period, but the rarity of any evidence for the use of the naviform blade technique indicates that the occupation of the site extended well into the PPNC period in the early 6th millennium. The single PN potsherd is an unlikely indication of a ceramic occupation at el-Hemmeh: instead, it is more probable that the pottery fragment represents a brief visit by someone who lived at the settlement downstream from el-Hemmeh.

The construction of the dam had just begun when we visited the site. The construction will take at least a year to complete, if not more, and the accumulation of water behind the dam will also take an appreciable amount of time. There could be as much as two years to mount a salvage operation at the site.

Footnote

1. The landowner, learning that the property would be inundated, used a bulldozer in an attempt to locate any possible "Turkish gold".

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The Big Arrowhead Industries (BAI) in the Near East

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Introduction

This brief analysis is intended to overcome the terminological impasse and chaos that has dogged the late prehistory of the Near East for quite some time now – a task we realize may well be hopeless. I am referring here to the dismally polysemous concept of the Pre-Pottery Neolithic B (PPNB), which is becoming less and less acceptable to at least some prehistorians and almost beyond the powers of comprehension of our students.

Lacking the ambition to tackle all of the problems of this world, we will be dealing here exclusively with flint industries included in the PPNB, while examining only the historical aspect of the other facets of this designation.

Turbulent History

The term PPNB was originally coined following the interpretation of the results of Kathleen Kenyon's excavations at Jericho. Kenyon was confident that the post-Natufian settlement at Tell es-Sultan was Neolithic (in Gordon Childe's sense of the term). Since the remains of this settlement comprised two distinct artifact assemblages, she assumed that the one recovered from the lower stratigraphic sequence was older (accordingly named PPNA) than the later, overlying assemblage (PPNB).

Without going into the details of Jericho's cultural stratigraphy (especially the break between the PPNA and PPNB), we may safely assume two things. Namely, that both the proposed designations were applied on an *ad hoc* basis to just one site, and that both were more synonymous to settlement phases rather than taxa.

Then studies of the PPNB phenomenon became distinctly two pronged. On the one hand, efforts were made to fill the gaps in the incomplete sequence observed at Jericho. The greatest contribution here was made by Ofer Bar-Yosef. At the 1980 symposium "Préhistoire du Levant", he presented a coherent and complete taxonomic/evolutive scheme of the southern Levantine industries that featured a division into the PPNA and PPNB phases, with the latter being further subdivided into three sub-phases (Early, Middle and Late). Bar-Yosef's system describes primarily the individual features of chipped stone industries, with each description also including brief characteristics of other cultural aspects (economy, architecture, stone industry, etc.). The overall impression is that the various taxonomic denominations (Harifian, Natufian, Sultanian, PPNB, Yarmoukian) were described based on non-lithic elements.

At the same time, or even earlier, there were attempts to define the individual nature of the various taxonomic units of subregional importance based exclusively on characteristics of chipped industries. The periods thus explored were mostly the older ones – Natufian (Garrod in 1932), Khiamian (Echegaray in 1966), Sultanian and Tahunian (Crowfoot Payne in 1976), Mureybetian and Aswadian (J. and M.-C. Cauvin in the 1980s), Harifian (Marks in 1973) – but also the more recent Horsfelder and Kilwa cultures (Rhotert in 1938), the Dhobaian (Waechter and Seton-Williams in 1938), etc. The only scholar to make some effort to determine individual characteristics of the phase B-type industry from Jericho was Crowfoot Payne, but her approach failed to win support in the literature of the time. In contrast to trends prevailing in studies of earlier the periods, the then preferred designation of PPNB remained unchallenged.

"PPNB" was originally intended as the later settlement phase of the "Neolithic" in Jericho, but this meaning was eventually broadened, which led to increased vagueness of the designation. Most importantly, it became the stadial name of the second phase of the "Neolithic" (the erroneous denomination of phase A was not abandoned), at first for the southern Levant (Prausnitz). It was also used, slightly later as new sites were being discovered in the north, for the entire Levantine province all the way to the upper Euphrates and Tigris River basins, where materials resembling those from the southern Levant were also uncovered (J. Cauvin). Other scholars (e.g. Mazurowski, Betts, K. Wright) were using – and continue to use – the name PPNB to describe the younger phase of the whole Aceramic Neolithic in all of the Near East.

On the other hand, the name PPNB was increasingly consistently being used as a taxonomic designation applying first and foremost to industries of the aceramic period that typologically and technologically resembled the PPNB phase industry from Jericho (Bar-Yosef, Gopher, Goring-Morris, Moore, M.-C. Cauvin, Rollefson). However, it continued to be used in the broader sense (J. Cauvin) to describe and name the entire PPNB "*koine*", which was also being characterized on non-lithic sources. As we see, taxonomically, too, the term PPNB was never unequivocal, being defined according to different criteria and depending on the views of individual scholars.

Excavations of numerous "Neolithic" sites conducted in various regions of the Near East over the past few decades began to supply data that undermined the "canon" of Kenyon's original definition. To begin with, the initial association of the Jericho PPNB – the combination of the Jericho-type PPNB industry (Tahunian), Neolithic economy, and rectangular architecture, – for years considered to be typical for the PPNB formation, has been brought into doubt by several factors. They include, first, the discovery of rectangular architecture that predates the PPNB phenomenon (whatever its definition) along the middle Syrian Euphrates (Mureybit III, Sheik Hassan, Jerf el-Ahmar) and the Turkish Euphrates (Çayönü-grill, Nevalı Çori, Göbekli Tepe). Additionally, there is the local survival of circular structures in some PPNB villages (Beidha) and desert camps (Sinai, Negev, Black Desert, etc.). Furthermore, there is the discovery that early manifestations of the PPNB, predating 7,000 bc ("EPPNB" in

Israel and Syria, "PPNB *ancien*" along the middle Syrian Euphrates, and the "Nevalıçorian" in southeast Turkey) are not all Neolithic in the economic sense of the word. Finally, the fact that the PPNB is inhomogeneous not only in regard to architecture and economy (hunting sites in the desert vs. agricultural villages in the river valleys), but also with respect to other elements of culture including stone bowls (three main regional differences), shaft straighteners, and lithics.

Despite all the confusion, it is fair to say that the PPNB phenomenon is described quite well, and detailed divisions, both territorial and chronological, have been proposed. Two basic systems have emerged: the South Levantine (Bar-Yosef) and the North Levantine (J. and M.-C. Cauvin). A third one, extending over the entire area of the phenomenon, was suggested by Rollefson. All the systems have their advantages and disadvantages, highlighting the individual character of the local industries (facies, groups), but, very sadly, they fail to do away with the evolutionary approach to prehistoric reality. (Are the transregional development phases of the entire phenomenon properly identified and dated?). Regrettably, the various systems are not fully compatible, having been devised based on different principles. Here are a few examples:

1. The "Early PPNB" as described by Israeli authors is more reminiscent of the Mureybetian and Aswadian industries, which are not included in the PPNB by J. Cauvin, than of Cauvin's "PPNB *ancien*".

2. The chronological divisions (development phases) of the PPNB are described and dated differently, for example, by O. Bar-Yosef and J. Cauvin.

3. The local facies distinguished by J. Cauvin and G. Rollefson apparently also have different scopes, and we must also mention here the western facies described by A. Moore, which is overlooked by the other two authors.

Another significant element in this comedy of errors is logical inconsistency. It is not true (*cf. supra*) that the entire PPNB, whatever its definition, is a Neolithic phenomenon. We know that the final neolithization (except for southeastern Turkey) took place only around 7,000 bc, which was after the "Early" (Gopher) or "*ancien*" (J. Cauvin) phase. And contrary to what J. and M.-C. Cauvin tell us, not every PPNB site really has to be "pre-pottery" in the existing systems. The Cauvins' "PPNB *final*" nearly always has pottery, but El Kom - Caracol 2 does not! The French authors are right in saying that the introduction of ceramics does not have to alter the style of flint industries, which for a very long time yet can – and did – retain PPNB characteristics, but they fail to draw any terminological conclusions from this observation. Others, too, follow this line of reasoning (Bar-Yosef, Gopher), stressing the stylistic and technological continuation of the entire phenomenon in the ceramic period, but without applying the name PPNB to the industries with pottery.

All that has been said so far is really like a description of a kind of Biblical chaos preceding the creation of the world, a chaos that requires radical ordering for the sake of clarity and the benefit of our students. In what follows, we propose certain solutions with regard to "PPNB" flint industries, since only those, without exception, appear to exhibit a fairly homogeneous structure displaying features of an elaborate system.

The Big Arrowheads Industries (BAI) of the Near East

If we are not happy with the polysemous name criticized above, we should replace it with a new one. In keeping with taxonomic nomenclature traditions of world prehistory (and taxonomy is what we will be dealing with here), the new name may be derived from either a geographical designation (name of a site, natural environmental element or region, big or small) or from characteristic morphological features of representative relics (shape, ornamentation, etc.). In any case, this should be a neutral descriptive name rather than an interpretive one (which PPNB in fact is).

The territorial expanse of the considered phenomenon, from the Sinai to Cappadocia, and from Cyprus to the Arabian Peninsula, its internal differentiation (in both time and space) coupled with its considerable morphological and technological homogeneity, prompt us to abandon any idea of using for a single territorial name and to look instead for a descriptive designation reflecting the morphological and technological features characteristic of the phenomenon in question. This is all the more justified in view of the fact that this phenomenon is a technocomplex (as defined by David Clarke), meaning a set of industries/cultures rather than a single industry/culture, with the scope of this technocomplex, determined using uniform criteria (see *infra*), extending over both the aceramic and ceramic periods.

To achieve our objective, we need to examine the morphological and technological features of assemblages included in the PPNB complex (in its taxonomic sense), including those with ceramics, and single out those features which we feel to be characteristic of the phenomenon as a whole.

As regards technology, there are two features that are metrical rather than strictly technological, namely: 1) large cores to produce large blades (opposed platform in the west, single platform in the east), and 2) large arrowheads (especially Amuq and Byblos types), large burins, and large retouched blades ("sickles") which, however, are not found in many cases, such as at desert sites. Other features of "PPNB" industries are either local (see remarks on regionalism below) or of limited duration.

Having decided to abandon the imperfect designation and to replace it with one that would be neutral and more descriptive, we must look to the above list for inspiration. If we want a name that will be at once short and synthetic, our only choice is "Big Arrowheads". Logically, the only name for the entire complex is "the Big Arrowhead Industries", or BAI. This proposition is in tube with suggestions put forward by many speakers at the first PPN Chipped Lithics Workshop in Berlin, suggested in the first place by Ofer Bar-Yosef.

The BAI is an intricate phenomenon that can be subdivided in the following two ways. Territorial subdivision into local varieties/industries/facies that display typological and/or raw material differences. Significant contributions to these subdivisions are due to J. and M.-C. Cauvin, A. Moore, A. Gopher, and G. Rollefson, whose respective propositions differ only in details. Some of the local peculiarities stem from local industries that preceded the BAI. In the classical BAI period (7th millennium bc) there are suggestions of at least several local varieties (Taurus, Euphrates, West Syrian, Tahunian, Iraqi, Asikli, etc.), with several additional regionally distinct entities identifiable in the late period (PPNC, Thuwalian, Sawwan, Yarmoukian, "Burin Sites", etc.).

The BAI can also be subdivided chronologically, with division points separating development rhythms of varying duration in the regions mentioned above. These rhythms cannot always be synchronized to form a single system, as made evident by the recently obtained old dates from Nevalı Çori, Göbekli Tepe, and Horvat Galil have shown. It can logically be surmised, though, that the oldest BAI phases (in each given territory, and nowhere else) will include elements of pre-BAI industries. Another apparent regularity is a measure of the "deterioration" of the "elegant" BAI style in the 6th millennium bc (everywhere?) and the gradual replacement of big arrowheads with small ones (Thuwalian, Yarmoukian, Sawwan, Halula, Sotto, Bouqras I-III, Çayönü ceramic).

The emergence of the BAI, both as regards chronology and the mechanism of the proliferation of the technocomplex to new territories, appears to be a sensitive issue. Until recently it was believed that it first appeared along the middle Syrian Euphrates. Today there is also talk of southeastern Turkey and perhaps also the northern part of the southern (and thus also central) Levant. The migration model of northwestern and southeastern expansion was generally assumed, although this does not have to be the best choice.

Conclusion

All that has been said above prompts us to discard the existing name of the technocomplex (defined as a homogeneous set or system of similar flint industries), called the PPNB by Kenyon based on her excavations at Tell es-Sultan. There is no ill intent in our proposition. We simply are trying to be consistent, while maintaining the taxonomic nomenclature tradition embraced by some scholars studying the late prehistory of the Near East. We see no reason to be consistent in just one area of description and classification of source materials. As shown by the turbulent history of the relevant research, the existing name PPNB is, unfortunately, burdened by inconsistencies that we see as too numerous to warrant the term's applicability to flint industries under

consideration here. It remains our hope that this proposition will not be just a voice in the wilderness.

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When the Bullet Hits the Bone

Peter M.M.G. Akkermans (Netherlands National Museum of Antiquities) and Chiara Cavallo (University of Amsterdam)

The major part of the faunal assemblages recovered during excavation from the various occupation levels at late Neolithic Tell Sabi Abyad in northern Syria belongs to the main domestic species: sheep, goats, pigs and cattle. The hunting of animals played a minor role at the site, as less than 10% of the identified skeletal remains belong to wild species (or about 3 to 5% per level, if we count mammals only). Hunting mainly aimed at gazelle (*Gazella subguttorosa*) and onager (*Equus hemionus*), but a wide range of other species was occasionally caught as well. About 10% of the animals taken from the wild were cattle, with the distinction between the aurochs (*Bos primigenius*) and its domestic counterpart (*Bos taurus*) mainly based on a metrical analysis of the available bones (*cf.* Cavallo 1996, 1997). Another solid confirmation for the hunting of the aurochs comes from the rather exceptional find of a large bovid shoulder blade, with a fragment of a small flint arrowhead still in it (Fig. 1).

The bone under consideration is a right and largely complete scapula. The spine, the proximal, and the central part of the blade are missing, mainly due to post-depositional processes. The bone is 390mm long and 198 mm wide; originally it must have been at least 30mm longer. The distal end is preserved best, with its width of maximally 80 mm. The distal articulation (glenoid cavity) is 72.3 mm long and 62.5mm wide. These measurements clearly indicate that we are dealing with a rather large bovine, *i.e.*, the aurochs. The shoulder blade was found, among other refuse materials, in the gray-brown loamy fill of one of the buildings of the so-called "Burnt Village" at Sabi Abyad, dated at about 6000 B.C. (All dates used here are calibrated). The building in which it was found must have stood empty for a considerable period of time and fallen into decay, after which it was used for the discarding of domestic waste (see, *e.g.*, Akkermans and Verhoeven 1995 and Akkermans 1996 for a detailed account on the Burnt Village).

The flint arrowhead had penetrated the bone laterally and transverse to its axis, indicating that the animal was shot at from the front. The implement is only partially visible with the naked eye but X-ray photos and, particularly, a computed tomography scanning revealed its proper shape in detail. It is more or less triangular in form, 14.5mm long, 17.4mm wide at the wings, and only 1 to 1.6 mm thick. Fine pressure retouch covers about two-thirds of its dorsal surface but much less of its ventral face as we see it now (admittedly, the larger part is hidden in the bone). The implement is broken at its proximal end, where a short tang must have been present originally. Microscopic analysis has revealed that this breakage was not due to the impact of the weapon (evidence of the so-called impact shock is lacking) but resulted from subsequent attempts to remove the arrow from the flesh and bone, after the killing of the animal. Microscopic examination also showed traces of a black adhesive (probably bitumen) still preserved on the lower ventral face.

It can hardly be doubted that this arrowhead is of the Haparsa point-type, found in very limited numbers both in flint and obsidian at late Neolithic Sabi Abyad (*cf.* Copeland 1996:292, 297 and Fig. 4.12, nos. 2, 5, who refers to two specimens, one from the Burnt Village, the other from the surface of the site. Another specimen with traces of an adhesive on the tang has been found more recently, again in a Burnt-Village context; see our Fig. 2). The short Haparsa point is mainly known from seventh to late 5th millennium sites in the deserts of the southern Levant (Sinai, Negev, southern Jordan) and the Arabian peninsula (hence the often-used term "desert arrowhead"; *Cf.* Rosen 1997 for an updated account). But the present evidence makes it clear that it was also used in wholly different environments much further north in Syria. At Sabi Abyad, the use of the Haparsa points in the Level 6 Burnt Village was followed shortly afterwards by transverse arrowheads in the next Level 5 occupation (Copeland and Akkermans 1994; Copeland 1996; the two types have not been found together at the site so far).

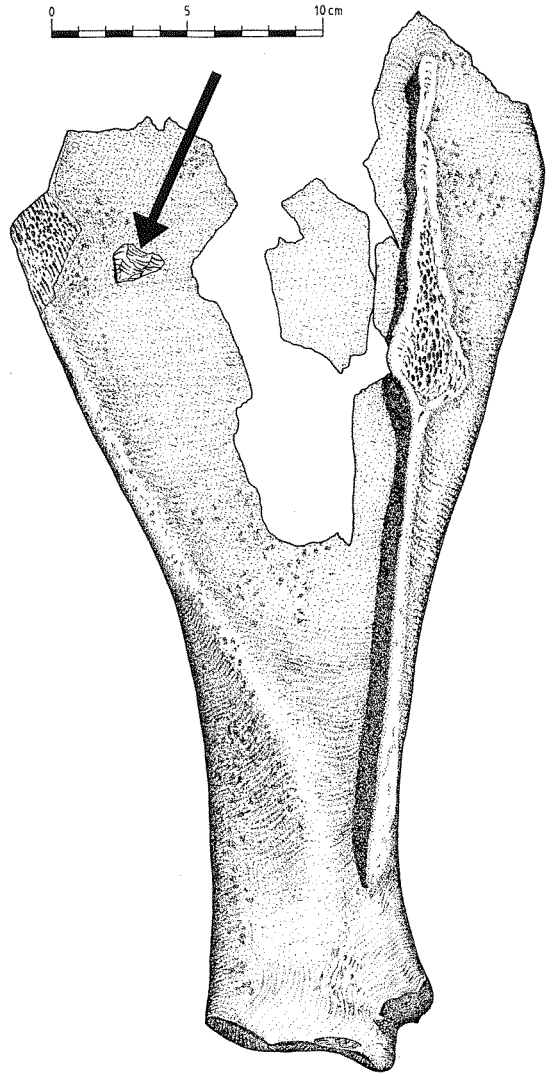

Fig. 1. The aurochs shoulder-blade with (arrow) the fragment of the Haparsa Point still in it <drawing by Pieter Collet>.

Generally, arrowheads are rare to absent in the Late Neolithic occupations at Tell Sabi Abyad, with the notable exception of the cache of 56 transverse arrowheads in one of the Level 5 buildings. A few large Byblos points are present in the form of tip or tang fragments only, and they may easily have been an intrusive element from much earlier, PPNB strata. The morphologically analogous but much shorter Haparsa points as well as the transverse arrowheads seem to have wholly replaced this earlier type at about 6000 B.C. Hunting techniques and strategies must have changed at the end of the Neolithic. A new set of weaponry was introduced, including small and light arrowheads probably requiring a kind of bow different from the ones used during the preceding PPNB with its heavy missiles. Ethnographic examples indicate that transverse points have often been used in association with poison (Clark 1975-77). New also was the abundant use of clay sling missiles in the Late Neolithic (thousands have been found at Sabi Abyad), which may have served mainly to obtain small mammals and birds.

The ecology and distribution of the now extinct aurochs is poorly known. We assume that it was an animal at home both in park forests and more open lands, feeding mainly on grasses and some kinds of shrubs. In the case of Tell Sabi Abyad, small populations of aurochs may have browsed through the riverine vegetation along the Balikh River and its side channels, as well as grazed the expanse of steppe away from the site. We have some evi-

dence (based on the mortality patterns of gazelle and the distribution of bird species) that hunting at Sabi Abyad mainly took place in autumn and winter, when the herds were generally large and confined within a limited territory. In view of its very considerable meat yield, the aurochs undoubtedly was a much appreciated prey.

But the hunting of this large and fierce animal must have been a rather tiresome task, most likely involving the joint efforts of a group of hunters, not only during the kill itself but also during the subsequent stages of butchering and/or transport of the heavy carcass to the settlement. The small but sharp Haparsa point was an effective weapon, deeply penetrating its target and immediately lethal when hitting vital organs, such as the throat artery, lungs, heart and spinal cord. But this was not the case at Sabi Abyad, and many more hits may have been required to bring the animal to its knees.

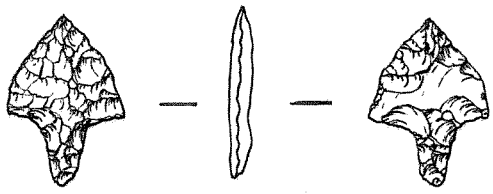

Fig. 2. Complete Haparsa Point with traces of a black adhesive on the tang; from Level 6 of the Burnt Village at Tell Sabi Abyad, *ca.* 6000 B.C. <drawing by Pieter Collet, scale: 1:1>.

Undoubtedly, the animal, once frightened, would have tried to flee in a direction away from its assailants, but as we have seen, the hunter using our Haparsa point must have stood somewhere in front of his prey. This position makes sense only when assuming that the animal was either caught in ambush or stood isolated from the rest of the herd and surrounded by a group of hunters, who were shooting from various directions while coming closer.

To the best of our knowledge, the present scapula with its arrowhead and unhealed lesion is unique for the Near East of this period. Evidence for similar injuries on aurochs shoulder-blades and other skeletal elements mainly comes from northwestern Europe, in particular from Mesolithic sites and peat bogs in Denmark, such as at Grønge Mose and Vig (Noe-Nygaard 1974: 220-21). At Stellmoor in northern Germany, it was the shoulder blades, vertebrae and ribs of reindeer that showed numerous unhealed fractures due to the impact of hunting weapons. Notably, in many cases the flint implements were still present in the bone, as at Sabi Abyad (Bratlund 1991).

Acknowledgements: We are sincerely grateful to George Licher, Free University Hospital Amsterdam, for the X-ray photographs; to Hans Koens, University of Amsterdam, for the computed tomography scanning; to Anneloe van Gijn, Lithic Laboratory of Leiden University, for the microscopic examination, and to Pieter Collet for the drawings.

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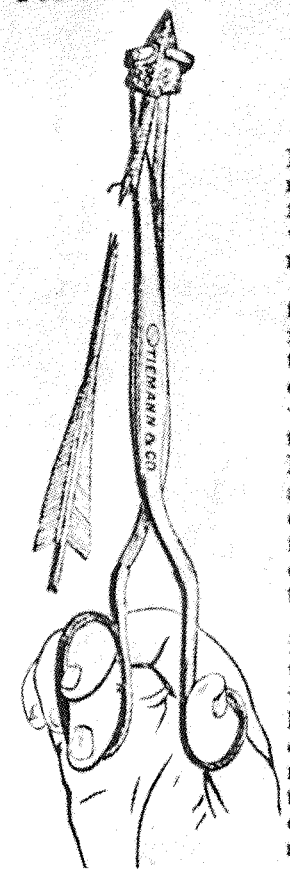
found in The Medical Review (1876) :

FORCEPS FOR THE EXTRACTION OF ARROW-HEADS.

By J. H. BILL, M.D.,

SURGEON U. S. ARMY.



I HAVE devised the forceps represented in the wood-cut for the extraction of arrows, which have been made for me by Tiemann & Co.

The cut describes itself sufficiently, but I will add that for arrows not lodged in bone they should be introduced closed, and used as a snare by which the iron or flint point of the arrow may be entangled. For an arrow lodged, they are to be introduced closed, carried down alongside the flat surface of the arrow-head, opened, and then closed on the foreign body.

In length they are nine inches. From the points to the joint—which must be very strong—is two and a half inches. The handles are crossed, and provided with a ring large enough to admit three fingers. The points are one-half inch or a little less across.

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A Third Little Head From LPPNB Basta, Southern Jordan

Hans Georg K. Gebel (Free University of Berlin) and
Bo Dahl Hermansen (Carsten Niebuhr Institute, Copenhagen)

During the 1999 season of excavations at Ba'ja, local residents brought a small human head carved from steatite to one of the authors (HGKG), explaining that it was found in Basta while digging in a building plot, and that it was kept to hand it over to one the excavators of Basta. The find was then reported to the Department of Antiquities in Petra and Amman, and inventoried with the finds of Ba'ja 1999 (Field number 11803). It is now stored in the Department of Antiquities, Amman, with other exceptional finds from the Ba'ja 1999 season.

The head is roughly similar both in size and shape to the two heads already published from LPPNB layers in Basta (Hermansen 1997: Plate 4:A-B.). The styles of all the three are different, however, as are their raw materials. The new head is made from a hitherto unknown exotic mineral at Neolithic Basta, a soft schist-

like steatite of an ochre-greenish colour with "cloudy" black and brown bands. All the surfaces are smooth and bear a greasy gloss, which is characteristic for the raw material but is possibly also the result of rubbing wear ("Taschenglanz", or "pocket polish"). The direction of the stone grain follows the longitudinal axis of the artefact.

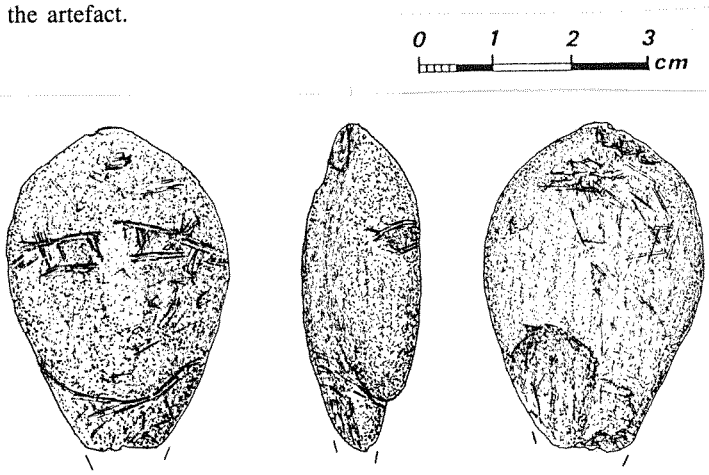

Fig. 1. The new head from Basta (steatite, preserved length: 44.3mm, max. width: 29.4mm, max. thickness: 15.3mm; drawing by H.G.K. Gebel).

The state of preservation is unclear: obvious damage in the neck area indicates that at least the neck was longer than preserved. If the completely preserved Green Head from Basta represents a common figurine type (amulet), we may not reconstruct more than the stump of a neck here. If it represents part of a human figurine with a body, we would not be able to quote parallels with such a head style. However, the neck of such a piece would have been the weakest part and vulnerable to breakage.

Fig. 2. Enlargement of the new Basta head (view of face).

It also is not certain whether the modeling of the head's details was finished. While the general shape of the head looks finished and possibly results from a combined carving/ grinding process (there are no traces of carving, except for below the chin), only the squarish-rectangular eyes were marked by linear cut marks that meet in approximately rectangular angles (as deep as 1.2mm). No mouth or nose is indicated, but the presumed nose area is the most prominent elevation in the section. Some cut marks in other parts of the face may represent earlier attempts to shape the head (it would be going too far to interpret these as representations of tattoos).

The new head has a common style of shape with the two other heads (Hermansen 1997), which would allow us to speak of a distinctive LPPNB type:

1) an inverted drop-shaped face with a somewhat pointed head,
2) similar dimensions ("micro-heads")
3) flattish, plano-convex longitudinal section (between the back of the head and the face), and
4) massive, plano-convex transverse section (between the head and the face)

To our knowledge, this type of artefact is so far known only from Basta. Their original meaning remains insecure, but some context of their finding might be related to reciprocal practices between living and dead (*cf.* Hermansen 1997). As for their original meaning (use), we think that they may be fetishes that are unconnected with gender representation. Subrecent and elsewhere, similar small miniature masks (pendants, called *ikhokho*) are reported from the Middle Pende groups on the Kwilu in southwestern Zaire. Here they are reported to occur in two contexts: as made by relatives to represent an ill person in a healing ceremony, or pieces manufactured by specialists as ornaments (pendants) in order to testify to the good taste of the bearer (Biebuyck and Herreman 1995/96: 262 *f*).

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Flint "Bowlets" from the LPPNB of Southern Jordan

Hans Georg K. Gebel
Institut für Vorderasiatische Altertumskunde,
Free University of Berlin

We report here a distinctive but rare flint item that so far -according to our knowledge- has only been recorded in southern Jordan, from Basta (Nissen, Muheisen and Gebel *et al.* 1991: 25*f*, Pl. III: upper left) and now from Ba'ja. In both sites these naturally concave flint "bowlets" occur in very small numbers (from each site there are only 3 specimens). With their shallow concavities, which are mostly natural depressions in the raw material, they appear bowl-like after having been flaked to have a rounded shape. Their general characteristics are:

- -round shapes (diameter 5-10 cm) cvreated around a natural depression
- -concave-convex sections
- -concave natural surfaces that result from thermal impacts (hea ting or freezing, so-called "weather pops") or represent a cortical depression (e.g. the above quoted example from Basta)
- -convex bottoms which either represent the spherical/ rounded parts of a nodule (bearing either cortex or wadi battering) or which were flaked in the manner of a one-sided discoidal core
- -lateral flaking and chipping along (parts of) the perpendicular obverse in order to create a more round shape and smooth edges.

The three pieces presented here (Fig. 1: a-c) all were found in the 1999 season of Ba'ja excavations (*cf.* report to come in *Neo-Lithics* 3/99), and are described here in detail in order to draw attention to these items among the flint specialists and excavators.

Ba'ja 12026 (Fig. 1:a). The basic form is one half (a natural fragment) of a small flat nodule with preserved cortex. Over most of the (upper) surface of the break, natural heat spalls (flakes) created a depression. The bottom surface is abraded cortex (with

reddish pigments?). Flaking and lateral chipping towards the depression's center were carried out along parts of the perimeter to produce a more perfectly rounded shape.

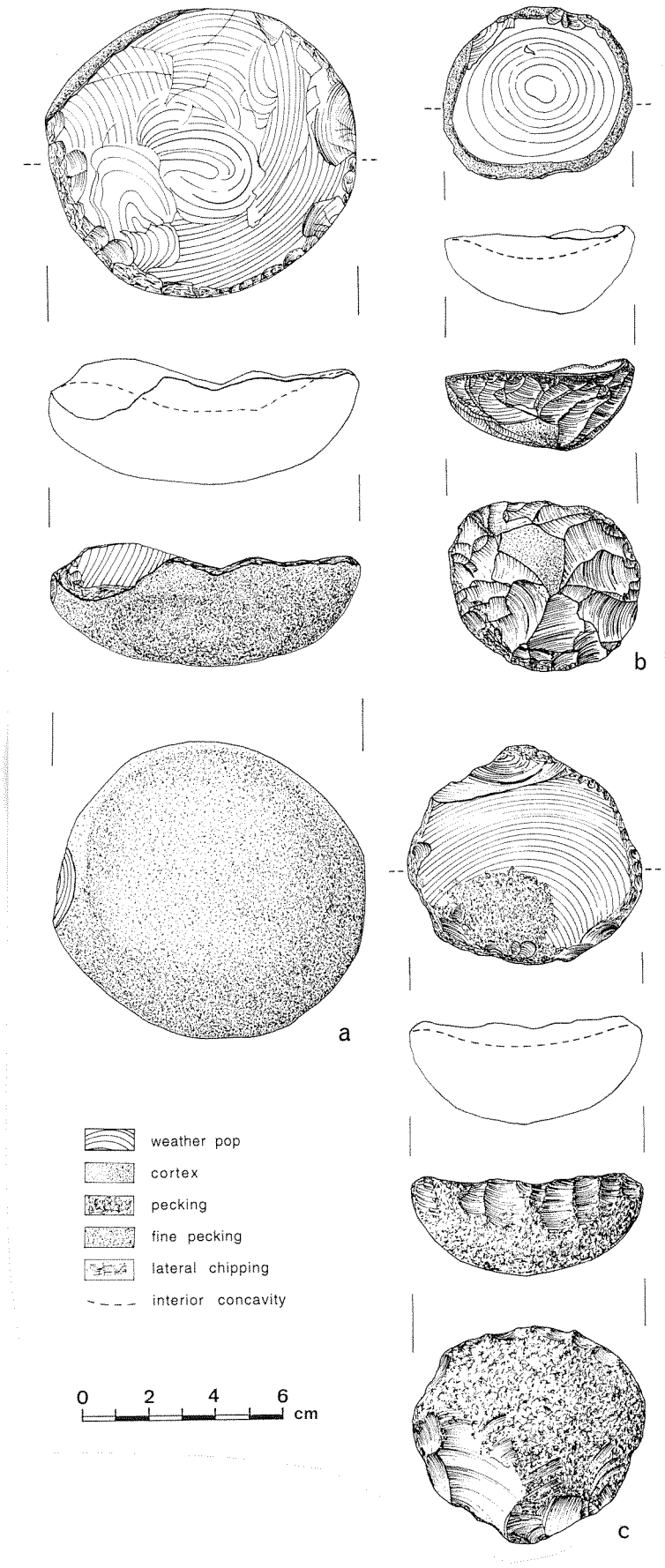

Fig. 1a-c: Flint "bowlets" from LPPNB Ba'ja (1999 finds) <drawings by H.G.K. Gebel>.

Ba'ja 12070 (Fig. 1:b). The basic form is a chunk of flint with a round and shallow negative created by a weather pop in its cortex surface. (The "negative" shows a slight desert varnish). The cortical surface served as a platform to remove flakes around the edges of this negative, leaving a "ring" of cortex around it (obverse surface). These flakes were directed towards the center of the bottom side, in the manner of a discoidal core, from all around the irregular rounded perimeter, leaving here an "island" of the chunk's desert varnish bearing surface.

Ba'ja 12033 (Fig. 1:c). The basic form is a chunk of flint with a natural, very shallow patinated depression that resulted from a „weather pop". The bottom surface and some of the sides were at least partly shaped to a round, convex contour by flaking from the surface of the depression. Later, fine pecking finished the shaping of the bottom, obscuring completely the flake scars on the bottom and continuing onto the negative scars on the sides. On the obverse (the shallow patinated depression), a circular area of even finer pecking exists, although this feature may have resulted from a pecking use of the piece. Here a rough surface could have been created for rubbing pigments that were processed further on the other parts of te surface. Small lateral flakes and chipping along the obverse perimeter indicate the interest to produce a more round and smooth shape before the pecking was carried out.

So far the function of the pieces remains obscure. They look like hand-held palettes to process unknown materials. Only in two cases of all known six pieces were red pigments observed, both on the "obverse" depression.

Acknowledgements: I thank L. Quintero, P. Wilke, and G.O. Rollefson for their valuable comments on the material discussed here.

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Announcements

Research Opportunity: Postgraduate Research Opportunity with the ZAD Project

Are you fascinated by stone tools, have a good First Hons degree/ MA/ or published papers, and love working in the Middle East? If this is you, then we are still entertaining options for a Ph.D. student to analyse the new Zahrat adh-Dhra' 2 (ZAD 2) Pre-Pottery Neolithic A (PPNA) site flaked stone tool assemblage (dating *ca.* 10,200 - 9,500 bp) from Jordan. The successful candidate will be enrolled at La Trobe University, be supported for a post-graduate scholarship application, be transported to the site, and maintained on the excavations at the ZAD Project's expense. Lithics may be exported and flown to LTU for analysis in the off-season.

The site will be dug, sieved, and the artefacts collected to the highest standards. The candidate will be expected to be responsible for the analysis of the assemblage, contribute to the ZAD project's publications, and attend conferences to report on the findings. If you think this is you, then please contact me:

Dr Phillip Edwards, Department of Archaeology, La Trobe University, Bundoora, Melbourne, Victoria 3083, Australia
Telephone: (03) 9479-1978, Email: p.edwards@latrobe.edu.au

The ZAD project is an Australian Research Council (ARC)-supported joint investigation conducted by La Trobe University and Arizona State University, directed by Phillip Edwards, Steven Falconer (archaeologists), Pat Fall (geographer and palaeobotanist) and Phillip Macumber (geomorphologist). The project aims to develop new understandings of the cultural and natural history of the Dead Sea Plain in Jordan by investigating ZAD 2 and the neighbouring site of ZAD 1, a large Middle Bronze Age (*ca.* 2,000-1,500 BC) town.

The proximity of the two sites provides a unique opportunity for investigating the ways in which human settlement and

agriculture have affected and been constrained by the local natural environment during two of the region's most significant eras of prehistoric agricultural intensification.

(message by Phil Edwards)

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Tamar Noy Prizes Established, Awarded

Two prizes were recently established in memory of Tamar Noy by her family and friends. On May 10 the Hebrew University Annual Noy-Foundation Prize in Prehistoric Archaeology was awarded (for the second time) at an impressive ceremony. The winner, Hamoudi Khalaily, wrote his prize-winning MA thesis ("The Lithic Assemblage of Level 5 at Hagoshrim: The Neolithic Assemblage of the 6th millennium BCE in the Huleh Valley") under the supervision of Dr. Nigel Goring-Morris.

On May 30 (Tamar Noy's birthday) a parallel annual prize established at the Haifa University was awarded (for the first time) at the 18th Annual Israel Inter-University Conference of folklorists. The prize-winner, Ron Shimmelmits of the Tel-Aviv University (the Haifa University Prize is an inter-university one) wrote his term-paper ("Aspects of Social Complexity in the Neolithic Pre-Pottery B: The Flint Industry as a Specialization Industry") under the supervision of Prof. Avi Gopher and Ran Barkai.

[message by Dov Noy]

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TAY Project Announces New Homepage Adress

TAY Projesi: Turkiye Arkeolojik Yerlesmeleri
TAY Project: The Archaeological Settlements of Turkey

address: Aslanyatagi Sok. Sedef Palas 35/2, 80060 Cihangir Istanbul, Turkey
Tel/Fax: 90 (212) 249 0520
web: **http://tayproject.org/**
email: mail@tayproject.org, info@tayproject.org

(message by the TAY Projesi)

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Cahiers de l'Euphrate 8 Published

Éditions Recherche sur les Civilisations. Paris, 1998
(240 pages).

Table of Contents
(contributions réunies par Jacques Cauvin)

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New Dissertation

Verhoeven, Marc
1999 *An Archaeological Ethnography of a Neolithic Community- Space, Place and Social Relations in the Burnt Village at Tell Sabi Abyad, Syria.* Istanbul, Nederlands Historisch-Archaeologisch Instituut.

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Upcoming Conferences

The Transmission and Assimilation of Culture in the Near East

A conference to be held in Jerusalem,
28th February - 2nd March 2000

The Council for British Research in the Levant promotes the study of the Arts and Social Sciences in Cyprus and the Levant. The Jerusalem Office, which is hosting this conference, facilitates and promotes projects and individuals working specifically with Israeli, Palestinian and Cypriot academic and governmental departments.

This conference aims to explore the transmission, adoption, consumption and re-interpretation of various facets of human culture in Cyprus and the Levant. Anthropologists have long considered the effects of what is termed "cross-cultural consumption" on ideology and society. We would like to extend this discussion to incorporate other fields of enquiry.

Certain elements of cultural repertoires are closely integrated with a specific cultural or ethnic identity, and will be assigned certain meanings by the social groups that create them. Once these elements move from their indigenous environment to a new cultural setting they may be attributed new functions or imbued with new meaning.

Cross-cultural consumption plays a role in three key areas: 1. Material Culture: do objects retain and communicate similar mea-

nings when they move beyond their culture of origin? 2. Cultural Homogenisation: are cultural differences eroded through the circulation of mass produced goods, the spread of iconography, religious symbolism and architectural forms, and the establishment of empire? 3. Ideology and Identity: iconography and ideology have an important cultural function as a means of establishing group identity. How are material culture items and ideologies re-interpreted or misinterpreted by the recipient society? Does this trend move in both directions?

The conference aims to bring together a range of scholars from Europe, the United States, Israel and the Palestinian Territories. We hope that discussions will lead to informative and thought provoking interchange in an academic, a-political setting. The proceedings of the conference will be published as part of the CBRL, British Academy monograph series.

Please contact:

Dr Joanne Clarke, Council for British Research in the Levant,
P.O. Box 19283, Jerusalem 91192
Tel: 00-972-2-628 3616, Fax: 00-972-2-626 3617
Email: cbrl@actcom.co.il

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The Wadi Faynan 2000 Conference: The Archaeology and History of Southern Jordan

Dates: 16-19 April 2000
Venue: Jordan (Amman & Wadi Faynan)

The Council for British Research in the Levant has been carrying out and promoting research in the archaeologically rich landscape of the Wadi Faynan area in southern Jordan for the past five years. We now wish to host a conference to set some of the results of this work in its regional context. Thus the Conference aims to explore the issues and challenges confronting archaeological research in the southern Jordan region as a whole.

The Conference will be organised along thematic lines. Listed below are topics that are intended to offer delegates a broad platform to present relevant ideas, opinions and studies. We wish to encourage practical workshops to give specialists working in the region the opportunity to discuss their fields in more depth and compare their materials and approaches. A two-day field trip to Wadi Faynan is planned for delegates to debate issues linked to the Wadi Faynan Project such as mining, environmental change, landscape survey, ceramic and lithic studies, and paleobotany.

Topics:

Pleistocene and Holocene environments
Farming and Pastoralism from Neolithic to Islamic Period
Metallurgy, exchange and complexity
Imperialism and culture change
Death, religion and society
Archaeology and contemporary society.

All papers given at the conference will be published as a CBRL Monograph, subject to editorial review by the CBRL Conference committee.

Please contact:

Wadi Faynan Conference, CBRL Amman, P.O. Box 519,
Jubaiha, Amman 11941, Jordan, Tel: 00962-6-5341317,
Fax: 00962-6-5337197, Email: biaah@nets.com.jo

Wadi Faynan Conference 2000 Update (September 1999)

Preamble

In this first update bulletin for the Wadi Faynan Conference, you will find details concerning the conference arrangements, and an indication of the costs.

We have already received many abstracts following our initial mailing about the Conference. All enquiries should have received at least an acknowledgement, if you have not received one, please let us know so that we can check our files. The many people who have promised to submit abstracts, and have not yet done so must do this as soon as possible. New abstracts can still be sent in for submission to the Conference Paper Selection Committee.

Timetable

The dates of the conference are to remain the same, and will follow this basic schedule. The two day lecture sessions in Amman will be held in the lecture theatres of The Royal Cultural Centre, Amman.

15th April (Saturday): Arrival and Registration. Evening Lecture (to be decided).
16th April (Sunday): Opening of the Conference. Special Introductory Morning Session: Archaeology and the Contemporary Environment of Wadi Faynan. Afternoon Lecture sessions.
17th April (Monday): Second day of Lecture sessions.
18th April (Tuesday): Morning transfer to Wadi Faynan. Afternoon tour of sites.
19th April (Wednesday): All day Workshops and Field presentations around Wadi Faynan.
20th April (Thursday): Return to Amman.

Sessions and Offers of Papers

From the offers of papers we have received, five sessions relating to Wadi Faynan and southern Jordan have so far naturally presented themselves, these are:

Archaeology and the Contemporary Environment of Wadi Faynan
The Early Prehistory of Southern Jordan
Chalcolithic and Early Bronze Age Exchange Systems
The Metallurgy of the Southern Levant
Past Environments of Southern Jordan

We are happy to receive more offers of papers on these themes and other topics. Due to the short period available for formal lectures, please consider whether your paper could be better discussed at the workshops and/or presented in the field at Wadi Faynan. All presentations either from the lecture sessions in Amman or from the more informal field sessions in Wadi Faynan will be considered for the final Conference Publication.

Conference Accommodation

Accommodation for delegates, while at Amman for the two day lecture sessions and for the evening following the return from Wadi Faynan, will be provided at the Grand Palace Hotel. This recently refurbished four star Hotel is conveniently located next door to the Royal Cultural Centre, and is within easy reach of Downtown Amman. To help us administer the conference, potential delegates are asked to fill and return the Accommodation Booking Form (WFCBF.rtf) attached as the second document to this email.

The environmentally friendly Wadi Faynan Research Station will provide comfortable accommodation for delegates whilst they are attending the Field presentations and Workshops.

Conference Fees

To attend the conference the following fees apply.

Salaried delegates: 40 GBP
Non-salaried, unwaged and retired delegates: 25 GBP

This charge is payable upon arrival in Amman.

Other Information

For the next Update - planned for December 1999 - we will include information on the proposed papers, and more details on events related to the conference.

Accommodation Booking Form (Wadi Faynan Conference)

I would like to reserve my accommodation for the Wadi Faynan 2000 Conference.

Name:
.....
Address:
.....
.....

.....
.....
Telephone: Fax:
.....
email:
.....

I confirm that I will be attending the Conference for the dates
.....
(inclusive of days of arrival and departure)

I wish to reserve accommodation in:

The Grand Palace Hotel (4*) for [ ] nights

I will require a single room [ ]
(single supplement of 20 GBP payable by the delegate)

I would like to share my room with
.....

****

Magic Practices in the Near Eastern Neolithic

a Mini-Symposium organized by Hans Georg K. Gebel & Charlott Hoffmann Jensen

in the framework of the

2nd International Congress on the Archaeology of the Ancient Near East (Copenhagen, 23-27 May, 2000)

August/ September 1999

Invitation to the Mini-Symposium
Magic Practices in the Near Eastern Neolithic
(First Circular)

Dear Colleague,

We are pleased to invite you to a mini-symposium to be held during the forthcoming *2nd International Congress on the Archaeology of the Ancient Near East* in Copenhagen.

The topic of the mini-symposium, *Magic Practices in the Near Eastern Neolithic*, is a slight modification of an earlier proposal, which found widest acceptance by colleagues answering our request for suggestions on today's most pressing topics in the study of the Near Eastern Neolithic.

We consider that, at the present stage of the debate, the symposium should give more emphasis to the collection and examination of hard evidence for magical practices, rather than entering the subject by theoretical approaches. Nevertheless, the latter should also be an element of the symposium's discussions, for which we hope to win the interest of distinguished colleagues in this field. In addition, we encourage the participation of ethnologists and historians of religion interested in Near Eastern prehistory.

In recent years a large number of new findings of Neolithic cognitive environments have laid the ground-work for revised or even fundamentally different approaches, and we are tempted even to speak of an emerging history of religion reaching back into the Pleistocene / Early Holocene. The evidence begins to allow the tracing of links from Late Palaeolithic representations through the Neolithic into ancient Near Eastern traditions, and developments seem to run through the millennia.

When planning your contribution, please consider that your presentation should find its place in the following framework of headings: The power of images (including rock art); Spatial organization of ritual; Magical connotations of behavioral patterns. It would be most appreciated if you question whether elements of shamanism or "universal" symbols are represented in your evidence.

In order to help the success of the mini-symposium, conclusions or thesis papers (no abstracts!) of the contributions will be circulated before the conference. They are intended to help the participants to prepare and to allow a reduction in the time needed for the lectures themselves. *The deadline for submitting summaries is 1st April.*

Registration for the mini-symposium should be made directly with us, separately from your registration with the organizers of the main congress (please also indicate to them your participation in our mini-symposium). No additional fees are connected with participation in the mini-symposium. It is planned to publish the mini-symposium proceedings.

Please do not forget to return the attached registration form before December 15, 1999.

Looking forward to much support,

Cordially yours,

sgd. Hans Georg K. Gebel Charlott Hoffmann Jensen

Registration Form

Magic Practices in the Near Eastern Neolithic

a Mini-Symposium organized by Hans Georg K. Gebel & Charlott Hoffmann Jensen

in the framework of the

2nd International Congress on the Archaeology of the Ancient Near East (Copenhagen, 23-27 May, 2000)

Registration Form

to be returned by 15th December, 1999 to

Charlott Hoffmann Jensen
Carsten Niebuhr- Institute
Copenhagen University
Snorresgade 17-19
DK- 2300 Copenhagen

Hans Georg K. Gebel
Seminar für Vorderasiat.
Altertumskunde
Freie Universität Berlin
Hüttenweg 7
D-14197 Berlin

Name:

Institution:

Address:

Phone:

Fax:

Email:

○ I plan to attend the mini-symposium.

○ I plan to contribute a paper entitled

I am aware that this presentation only is possible if I send the conclusions/ a thesis paper before 1st of April, 2000).

Date/ Signature:

Note: The registration can be made by email, too. Addresses see next page.

ddresses of the Mini-Symposium *Magic Practices in the Near Eastern Neolithic*

Charlott Hoffmann Jensen, Carsten Niebuhr- Institute, University of Copenhagen, Snorresgade 17-19, DK- 2300 Copenhagen
tel. +45 35 32 89 08, fax +45 35 32 89 26, email: chp@coco.ihi.ku.dk

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Address of the *2nd International Congress on the Archaeology of the Ancient Near East* (Copenhagen, 23-27 May, 2000)

2ICAANE, Carsten Niebuhr- Institute, University of Copenhagen, Snorresgade 17-19, DK- 2300 Copenhagen, fax +45 35 32 89 26, email: 2icaane@coco.ihi.ku.dk

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First Intern. Conference on Science and Shamanism

(March 2001, Palm Springs, Southern California)

The purpose of this conference is to launch a forum for the development of a scientific framework for the study and research of shamanism and the processes underlying its phenomenon, such as shamanic states of consciousness, healing, and journeys. It intends to focus on the understanding of some of the techniques employed by the shamans in their practices, particularly in Mongolia and Siberia, both in terms of western empiricism and traditional cosmologies. The exchange is open to behavioral, social, physical, and biological scientists who can shed empirical light on the phenomenon of shamanism.

Preliminary proposals and abstracts can be submitted either by electronic or regular mail. Final acceptance is contingent upon review of the actual paper by the conference committee. The final versions of all accepted papers and accompanying illustrations will be published in the Conference Proceedings, and should be submitted by regular post. The abstracts of accepted papers will be published in a booklet for use at the conference. The conference is planned for March 2001, in the Palm Springs/Palm Desert area of the Southern California desert, which offers exceptional sightseeing attractions, as well as world-class conference, resort, and hotel facilities. It is about a 2.5 hour drive from Los Angeles (UCLA, USC), a 2 hour drive from Pasadena (CalTech), a 2 hour drive from San Diego, where three major universities are located, and a 1 hour drive from Riverside (UC Riverside).

For regular updates on the conference, please check our webpage:

http://www.shamanicdimensions.com/confer1.html

For information and proposals, contact:

Prof. Michael Ripinsky-Naxon, PMB 504, 44489 Town Center Way, Suite D, Palm Desert, CA 92260-2723, U.S.A.
Fax: (760) 773-5168, Email: conference@shamanicdimensions.com

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