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Editorial Board

Hans Georg K. Gebel
Gary O. Rollefson

NEO-LITHICS
c/o Gary O. Rollefson

Department of Anthropology
Whitman College
Walla Walla, WA 99362, USA
e-mail: rollefgo@whitman.edu

Orders

ex oriente e.V.
attn. Bernd Müller-Neuhof
c/o Free University of Berlin
Bitterstr. 8-12, D-14195 Berlin
fax 0049 30 8314252

email: bemuneu@zedat.fu-berlin.de

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A Newsletter of Southwest Asian Lithics Research

map by the Tübingen Atlas of the Near East

Editorial

This issue contains a lengthy report on the important Venice meetings, and in this report is a list of the new working groups. It has been almost five years since any substantive work has been undertaken by the original working groups, and we hope with the new reorganization that progress can begin again. We encourage readers of *Neo-Lithics*, particularly graduate students and new M.A.s and Ph.D.s, to become involved in one or more of these teams and contribute to the goals of improving the standards of lithics research and communication. We hope that the coordinators of the groups will work patiently and persistently to facilitate the interchange of opinions within the specific themes, and that reports on developments will be submitted to *Neo-Lithics* in a timely manner for distribution to the larger community of Neolithic scholars.

The Venice gathering has also shown that the PPN Chipped Lithics Workshops established as an accepted forum of exchange, with the next meetings planned to take place in Nidje (in 2001) and probably in Irbid (in 2004).

We would also like to take this opportunity to wish you all a happy and productive 1999, and that none of us will suffer any consequences of the Y2K bug.

Gary O. Rollefson & Hans Georg K. Gebel

The 1997 Season of Excavations at the Mortuary Site of Kfar HaHoreh, Galilee, Israel

Nigel Goring-Morris, Rosemary Burns, Angela Davidzon, Vered Eshed, Yuval Goren, Israel Hershkovitz, Steve Kangas, and J. Kelecevic (Hebrew University, Jerusalem)

Introduction

A fifth season of excavations, lasting from mid-June through the end of July 1997, was conducted at the Pre-Pottery Neolithic B (PPNB) mortuary centre of Kfar HaHoreh in the Nazareth Hills, Lower Galilee, Israel. Excavations focused upon the expansion of what was previously called the Middle Area, now encompassing some 290 m², which have joined up with the more limited exposures in the Lower Area, previously dug in 1994, so that a total of some 320 m² have now been opened (Figs. 1 - 2). Selected portions of the area were deep-

ned, though sterile sediments have yet to be reached. The stratigraphy is complex, with at least five recognised distinct architectural phases, all provisionally assigned to the Middle Pre-Pottery Neolithic B (MPPNB) dating to the early 9th millennium BP (uncalibrated).

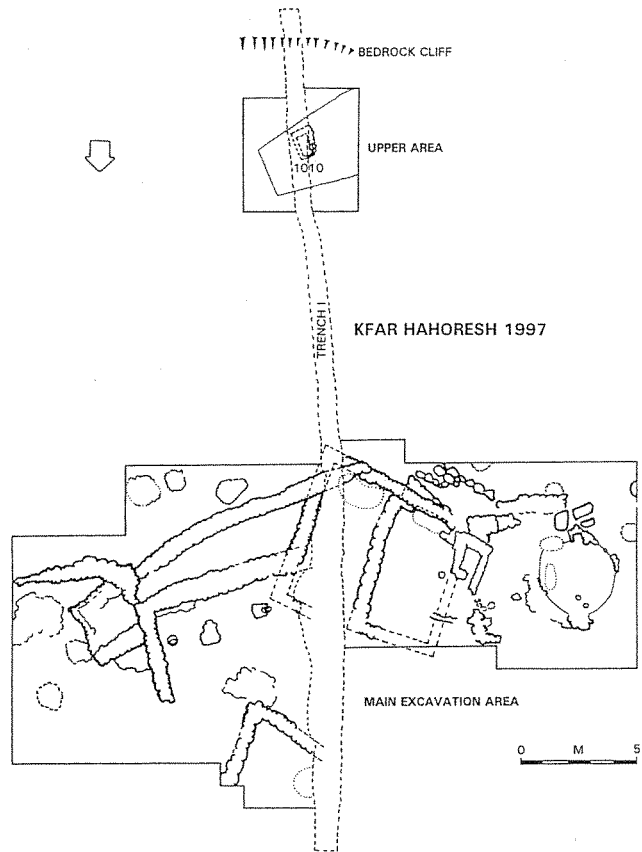


Fig. 1. Plan of the Kfar HaHoreh excavations at the end of the 1997.

Principle Results

The results indicate that the area investigated this season can be broadly divided into three principal activity areas:

1. Funerary installations.
2. Midden deposits. Immediately upslope to the south are midden deposits, perhaps representing associated cult practices.

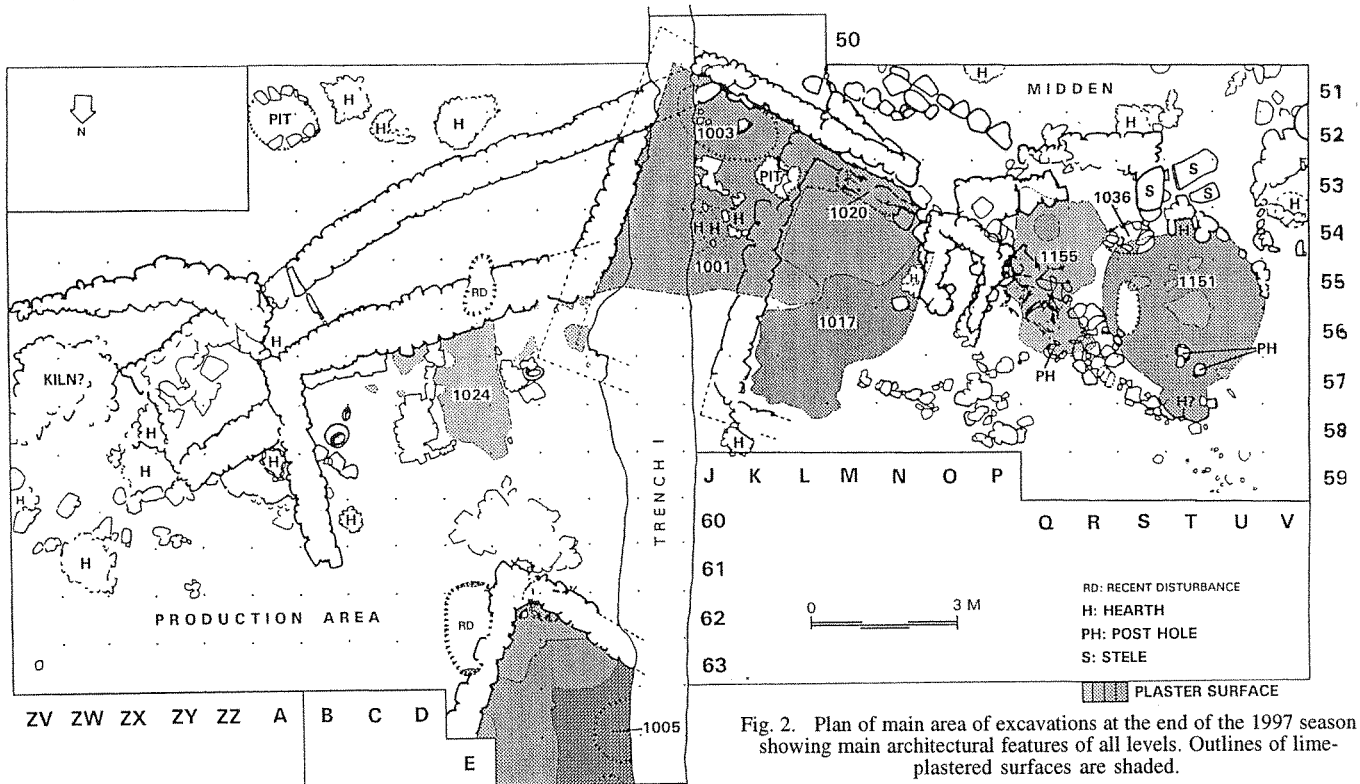


Fig. 2. Plan of main area of excavations at the end of the 1997 season showing main architectural features of all levels. Outlines of lime-plastered surfaces are shaded.

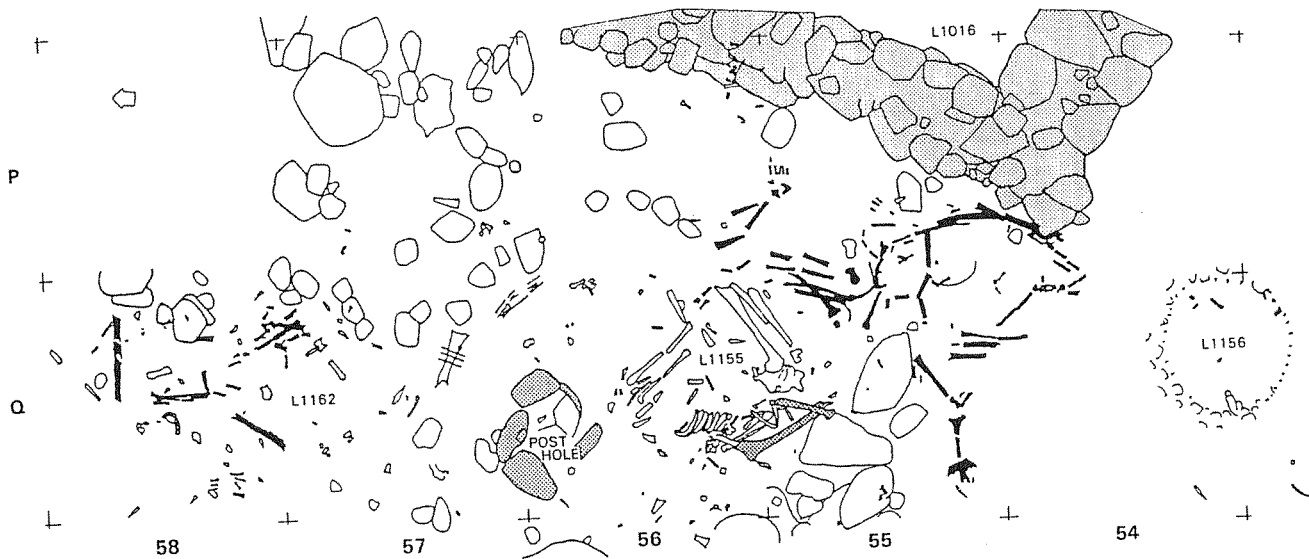


Fig. 3. "Depiction" of the profile of an animal drawn with human and animal bones in Locus 1151 (shown in black) - the animal faces to the right. Note that the hind legs and belly of the animal have been disturbed by a later primary burial. Another poorly preserved "drawn" panel is located to the north of the post-hole in L1162. 1m grid scale.



Fig. 4. Photograph of the animal "depiction" in Locus 1155.

3. Production area. Much of the eastern side of the site displays an emphasis upon industrial and maintenance activities.

No obvious domestic architecture has been encountered to date in any of the excavated areas, lending support to the interpretation of the site as a cult centre associated with mortuary practices.

Funerary Installations

The western side of the Main Area was used primarily for mortuary installations. Here, on the western side of the trench a series of lime-plastered surfaces was investigated. Removal of one of these revealed the most spectacular find of the sea

son: a large, shallow ash-filled pit (Locus 1155) into which mostly disarticulated human and animal bones had been intentionally set and arranged to form a 1.5m long collage or depiction of an animal in profile (Figs. 3-4 and Note 1). The head, foreleg, back and tail were all clearly indicated, while the belly and hindleg unfortunately had been disturbed by the inclusion of a slightly later primary human interment, which had pushed the other bones comprising the picture to one side. The human remains used to outline the picture included long bones from at least four individuals, as well as the remains of gazelle. Although it is unclear precisely what animal the "painting" depicts (wild boar, wild cattle, lion?), there can be no doubt that this was an intentional arrangement: the mouth was indicated

by an upturned human skull and mandible, the nostrils by gazelle metapodia, the eye by a stone and a hoof by an upturned mandible. The bushy tail took the form of an articulated human lower limb and foot.

A red patinated, unmodified chunk of flint was also present on the body, though it is not certain that these are part of the picture. A line of sea shells and a probable painted, plastered human skull fragment delineated one side of the drawing. A single, stone-lined post-hole was also integral to the picture, separating it from another seemingly similar drawn panel (L1162), unfortunately only poorly preserved, due to its proximity to the surface. Though the post-hole protruded above the surface of the lime-plastered surface capping the picture (and primary interment), it does not seem to be a structural feature, but rather probably functioned as a marker or totem. Of further interest was a small, circular 'patch' on the lime plastered surface (L1027) overlying the 'picture', in the centre of which had been placed half a human mandible.

Excavation also continued under another nearby lime-plastered surface (L1001). Here full exposure revealed a shallow, kidney-shaped ashy pit (L1003) some 1.5 m across. Large numbers of mostly disarticulated human and some animal bones (wild boar, aurochs, gazelle?) had been intentionally and specifically arranged around the edges of the pit. Although excavation is still incomplete, they included almost exclusively postcranial bones, as well as at least 12 human mandibles. The articulated remains included several instances of limb extremities. There were also "packages" of stacked longbones. Seemingly the only complete articulated burial was of an infant, whose head was resting immediately below the pelvis of a bovid. Probable grave goods included several arrowheads, a tranchet axe, a sickle blade, a finely worked sea shell pendant (fashioned from a large a cowrie), a minute polished pebble, and yellow, orange and red lumps of ochre.

The surface of yet another lime-plastered feature was also exposed (Locus 1151). In contrast to most others, which appear to be generally quadrilateral in shape, this was sub-polygonal to oval, measuring some 3.5 x 3.0 m. The plaster was curled up at the edges in a number of locations. Since stones are absent around most of the circumference, it seems likely that a low parapet of mudbrick or, and perhaps more likely, *pisé* outlined the locus. A sunken, slab-lined hearth containing burnt ashes was set into the plaster on the southern side (L1158), while another, poorly preserved lime-plastered feature abutted the northern edge (L1159). Slightly off-centre were two slab-lined post supports, representing two distinct phases of use; the uppermost one may relate to a poorly preserved overlying plaster surface (L1037). These post supports again seem to represent markers rather than constructional features. At least two later pits had been dug through the surface of the plaster of L1151, one of which contains human remains (L1157); the other had been roughly re-plastered and was not investigated (this directly underlay the location where a fragmentary human plastered skull had been recovered in the 1994 field season - L1036). At least two other areas of the plaster surface, including that in the vicinity of the post-supports, displayed evidence of subsidence, probably indicating the presence of pits under the lime-plaster. On the south side, behind the hearth and outside the plastered surface, was a distinctive, large smooth boulder, measuring ca. 110 x 60 x 45 cm, adjacent to which were two large, flat broken slabs, the larger of which measured ca. 120 x 55 x 8 cm in length. In light of the direction of adjacent stone collapse, it seems these two slabs were originally placed as upright stelae immediately abutting the boulder. Adjacent to these, and lying against a stone at the edge of the lime-plastered surface, was a ca. 20 cm long limestone piece, quadrilateral in cross-section and tapering to a point, with three neatly and regularly spaced drilled holes.

Isolated human remains were also recovered from the vicinity of all the lime-plastered surfaces in this area of the site. When combined with the results obtained in previous seasons, all this evidence lends support to the interpretation of the lime-plastered features as cappings of mortuary installations, the majority, but not all, in secondary burial contexts.

Various lines of evidence indicate that the southwest area east of the trench, adjoining the Lower Area excavated in previous seasons, represents a continuation of the lime-plastered mortuary installations. One rather enigmatic complex (L1024) comprised three separate parallel plastered surfaces judging by the curled up plaster at the edges, one of which was painted red. This whole unit was delineated by only two intersecting walls (W5014 and W5021). Walls were seemingly absent originally on both the south and west sides, though it is possible that Trench I destroyed the latter. Another probable vault (L1114) also with a plastered surface and two walls (W5101 and W5102) was partially exposed further to the north. A poorly preserved but partially articulated burial (L1110) comprising mostly postcranial elements overlay the intersection of the walls, and seemed to be associated with a fragment of an upturned chalk platter, seemingly the third such co-association noted at the site. This locus overlies at least two further lime-plastered surfaces (L1008 and L1009), under both of which a burial pit and 250 bones of aurochs (L1005) had been investigated in previous seasons.

Midden Deposits

The upper, southern part of the Middle Area, on both sides of the trench, comprised a midden deposit, reaching 1 m depth, with quantities of burnt stones and animal bones. However, except in the uppermost levels, it was hardly possible to identify discrete roasting pits or hearths. This could be associated with feasting activities. Roughly constructed walls, one course high, were seemingly located as slope-breakers or retaining walls (e.g. W5009, W5100, W5033) to impede the dispersal of such midden deposits down-slope over the lime-plastered mortuary installations.

Production Area

The eastern portion of the excavated area, however, generally provides more of an emphasis on industrial and maintenance activities. These included several roughly constructed low stone platforms (L1113 and L1108), a slope-breaking retaining wall (W5100) as well as large expanses of burnt rubble. These all abutted the walls of the enigmatic L1024 described above. The remains of a probable lime-kiln (L1104) were also excavated, as well as other more or less discrete pits containing quantities of heavily burnt stones and other materials (L1105 and L1103). Crude knapping debris was also present in some quantity throughout the area, including a huge (?)naviform core pre-form or chopping tool, measuring approx. 33 x 24 x 10 cm, and another large item in L1113. However, a quite distinct coarse, knapped limestone activity area was also recognised in this general area of the site, with discoidal flake cores, choppers and circular scrapers. While some are crudely knapped, others were well-made. Several well-defined concentrations of specific artefact types were also noted, including hammerstones of various sizes and raw materials, and bifacials (most bifacials derive from this area of the excavated area). Groundstone tools, most broken fragments, were also relatively profuse. Querns were located on the floor of the easternmost lime-plastered surfaced structure (L1024). One still contained lime-plaster, as did another bowl fragment, while vascular basalt mullers and pieces of scoria throughout the area also displayed lime-plaster in the pores, attesting to their use in plaster production and application. Fewer animal and almost no human remains were present in this area of the site.

Small finds

Throughout the site large quantities of chipped flint artefacts were recovered, the more standardised of which comprise projectile points, often well-executed with pressure flaking, sickle blades and reaping knives, burins, perforators, bifacials. Projectile points (Helwan, Jericho and especially Byblos and Amuq variants), sickle blades, and many burins are commonly made on blanks from naviform cores. However, most cores and debitage relate to a quite different, coarse *ad hoc* flake technology. Several distinctive reduction sequences can be

recognised using local and non-local raw materials for specific artefact classes.

Marine molluscs from both Mediterranean and Red Seas are quite common, and several items have been intentionally ground down as beads. Small quantities of obsidian were also recovered. Minute coloured and polished pebbles, usually measuring less than 1.5 cm, and some again of non-local derivation, tentatively appear to be associated with some burial pits, as do small quantities of malachite.

Of particular interest, though clearly not in primary context, was a large, but broken limestone cobble with two rows of deeply drilled holes joined by incisions and other engraved markings. Another, smaller limestone fragment had regularly drilled holes joined by grooves in at least two rows. Near to the stela by L1151 was a complete limestone item, quadrilateral in cross-section and tapering to a point, with 3 regularly spaced holes drilled into one surface. While superficially similar to 'gaming boards' from contemporary sites, the contexts, nature and quality of execution are such that it may be surmised that they may have fulfilled a more complex function than for mere leisure activities. Fragments of limestone with multiple parallel grooves were also recovered.

Discussion

The results of the 1997 season at Kfar HaHoresh provide further confirmation that the site functioned as a hitherto unique PPNB mortuary cult centre, probably serving village settlements in the neighbouring lowland valleys of the Lower Galilee. The absence of obvious evidence for residential architecture or activities at the site is notable. Rather, the lime-plastered surfaces seemingly represent vaults for the final disposition of the remains of deceased members of the community/ies using the site, whether following primary interment elsewhere (on or off-site), or following the at least partial decomposition of the soft tissues by other means.

Even the less spectacular east side of the excavation area also provides various novelties. Superficially, at least, many of the items recovered indicate an emphasis on industrial and maintenance activities, most particularly associated with lime-plaster production and application - a possible lime-kiln, higher frequencies of bifacials (for cutting wood as fuel?), hammerstones (for pounding up limestone and chalk and perhaps also the resultant quicklime produced following combustion?), as well as querns, grinding stones, mullers and scoria lumps (for grinding up and applying the plaster?). Interestingly large pebbles and cobbles with one flat, polished surface were more common in the vicinity of the plastered-surfaces (for burnishing?). Certainly these finds call into question the degree to which at least some ground stone assemblages exclusively or even primarily reflect plant processing activities.

Based on the literature concerning lime-plaster manufacture by simple techniques as well as the remains of L1104, an experimental kiln was constructed and fired by Yuval Goren during the season, readily producing quantities of lime. A more rigorous experimental program of lime-plaster manufacture, application and construction of architectural lime-plastered surfaces is planned for 1998. The results will be used to evaluate the hypothesis that lime-plaster production was a significant factor in the PPNB "devolution".

A large faunal assemblage has now been retrieved from the various seasons which should provide important data not only concerning the status of domestication as opposed to hunting, but also differential treatments of animals based on the various contexts within the site.

The ongoing excavations at Kfar HaHoresh have already provided a window on what seems most likely to have been a secluded cult and mortuary centre. Here, the unique and strange treatments afforded the bones of deceased members of nearby communities provide further evidence for rich and abundant rituals associated with ancestor veneration or a "cult of the heroes". These should be viewed within the context of attempts at social cohesion in the face of the stresses and complexities involved in the shift to increasingly large PPNB village communities, based initially on agriculture and later on herding

animals. As such the project already offers a glimpse on previously unsuspected facets of early village life and associated community practices some 9,000 years ago in the southern Levant. These already indicate that major revisions of widely held interpretations concerning early Neolithic mortuary practices in the region is warranted.

Acknowledgements: The 1997 season of excavations at Kfar HaHoresh was conducted under the auspices of the Institute of Archaeology, Hebrew University of Jerusalem and was funded by the *National Geographic Society* and the *Irene Levi Sala CARE Foundation*. Additional financial support was provided by the *Brandeis Field School*. S. Kangas and A. Davidzon were area supervisors, R.M. Burns architect, and D. Rosenfeld was in charge of logistics. Specialists participating in the season included Y. Goren (petrography and pyrotechnology), I. Hershkowitz, V. Eshed and J. Kelecevic (physical anthropology). The 20-25 strong crew comprised archaeology and anthropology students from Israel, UK, USA, Italy, Serbia and Sweden. M. Chazan co-ordinated the Brandeis Fieldschool. During the course of the season we benefited from visits, discussions and advice from: B. Ahrensberg, D. Ben-Ami, D. Bar-Yosef, O. Bar-Yosef, A. Belfer-Cohen, M. Chazan, M. Cheche, A. Drori, Z. Gal, P. Goldberg, A. Gopher, N. Goren-Inbar, L.K. Horwitz, S. Kuhn, I. Kuijt, O. Marder, A. Marschack, L. Meignen, D. Nadel, Y. Rak, P. Smith, M. Stiner, A.-M. Tillier, B. Vandermeersch, and H. Wright.

Note 1: Given the unique and spectacular nature of this find, for which we are not aware of any comparisons, it was decided to re-cover the depiction at the end of the season. During the 1998 season it is planned to make a cast for future display and documentation purposes prior to removal of the bones.

A Preliminary Note on the Pottery Neolithic at Tell Hmaira (Lebanon)

Bernd Müller-Neuhof (Freie Universität Berlin)

Introduction

During the 1997 survey campaign in the region of the Akkar plain, northern Lebanon, conducted by Karin Bartl (Freie Universität Berlin, Seminar für Vorderasiatische Altertumskunde) in cooperation with Anis Chaaya, M.A. (Direction Général des Antiquités du Liban), two days were spent surveying the site of Tell Hmaira. (Bartl n.d.)

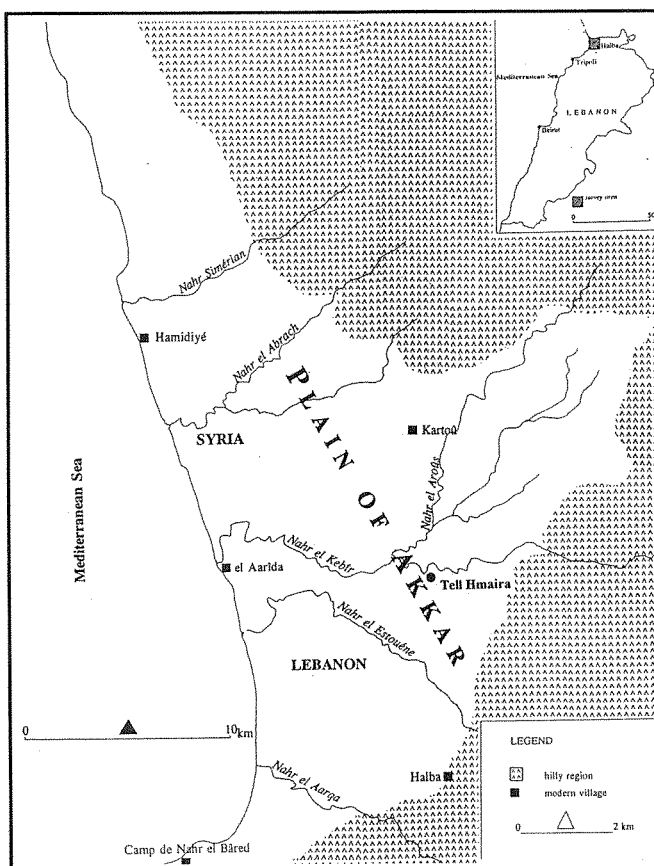


Fig. 1. Location of Tell Hmaira in the Plain of Akkar.

This visit of the site was the fourth but the most intensive one. The first time Tell Hmaira was described in an archaeological context was in 1933, when Jirku published the results of his 1929 expedition in Syria and Palestine (Jirku 1933: 174). Later this site was mentioned but not visited by L. Copeland and P.J. Wescombe (Copeland and Wescombe 1966: 66). More recently, J.P. Thalman investigated the site, but in contrast to the former visitors and authors, it was he who first who referred to the area on the terrace near the tell, which is the subject of the following description (Thalman, pers. comm.).

Location and Description of the Site

Tell Hmaira is situated near the southern bank of the Nahr el-Kebir, the river that today marks the Lebanese-Syrian border (Fig. 1). Like the entire area of the Akkar region, the vicinity of the site is characterized by a fertile plain intensively used for agriculture, with two harvests per year. These agricultural activities are also responsible for the poor state of preservation in the direct vicinity of the tell, marked by topsoil removal and deep ploughing.

The archaeological site of Tell Hmaira consists out of three parts: 1) the tell, with an elevation of 14m and an area of 3.5ha at the bottom; 2) the fields at the foot of the tell, the cultural layers of which were mostly destroyed by agricultural activities; and 3) an area northeast of the tell located on the northern slope of a riverine terrace, which is the topic of this report.

This area is characterized by a curving and gentle slope towards the river and an almost flat area on the top of the terrace. To the south the terrace is cut off by a deep embankment, caused by top soil removal of the adjacent fields. Unlike the top of the terrace, the slope seems not to be used for agricultural activities, probably only as a pasture, instead. The burned off vegetation cover gave us good opportunities for searching this area, and we were able to find grinding stones and -slabs and collect several kinds of artifacts, mainly flints and pottery sherds. No architectural remains were discovered on the surface of this site.

Lithics

Beige, beige-brown and greyish flint is the most common raw material used for the lithic artifacts in this area. Its source is still unknown. According to L. Copeland and P. Wescombe, the foothills bordering the plain of Akkar do not seem to contain these flint types, which are said to be available in the western Arouch area across the river on the Syrian side (Copeland and Wescombe 1966: 14).

Primary production (blank production) is characterized by a high amount of flake cores (Fig. 2:1), core fragments and core-trimming elements, which makes it probable that core-preparation, production of blanks, and tool-preparation were carried out on the site itself. The discovery of parallel-sided blade fragments (Fig. 2:2), beside non-parallel-sided blades and flakes, and their use as blanks for the secondary production (tool production), especially for sickle blades and sickle elements, leads to the assumption that the technology of parallel-sided blade production was known, although no blade cores were found during our visit. Core exploitation that reshaped blade cores into flake cores can be assumed due to the above mentioned difficult raw material situation.

The tool-kit consisted mainly of "Non-Formal Tools" (NFT; Baird *et al.* 1995; Rollefson 1994) mostly with regular retouched edges of acute (AAR) or steep (SAR) angles, some with notches and others with glossy sheen (Fig. 2:3) or traces of burin blows (Fig. 2:4). Beside these NFTs, some multiple tools were discovered, mostly combining retouched lateral edges with a steep and acute angle and combinations of lateral and distal or proximal retouched edges (Fig. 2:5), some with traces of burin blows (Fig. 2:6).

Apart from the NFTs, the lithic material from this site shows a quite broad collection of identifiable tools, among which are hammerstones (Fig. 2:7), a small celt made of pink coloured flint with invasive retouch on the dorsal face and partly invasive retouch on the ventral side (Fig. 2:8), medial fragments of tanged arrowheads (Fig. 2:9) and a high propor-

tion of glossed elements with large irregular denticulations on the lateral edges (Fig. 2:10).

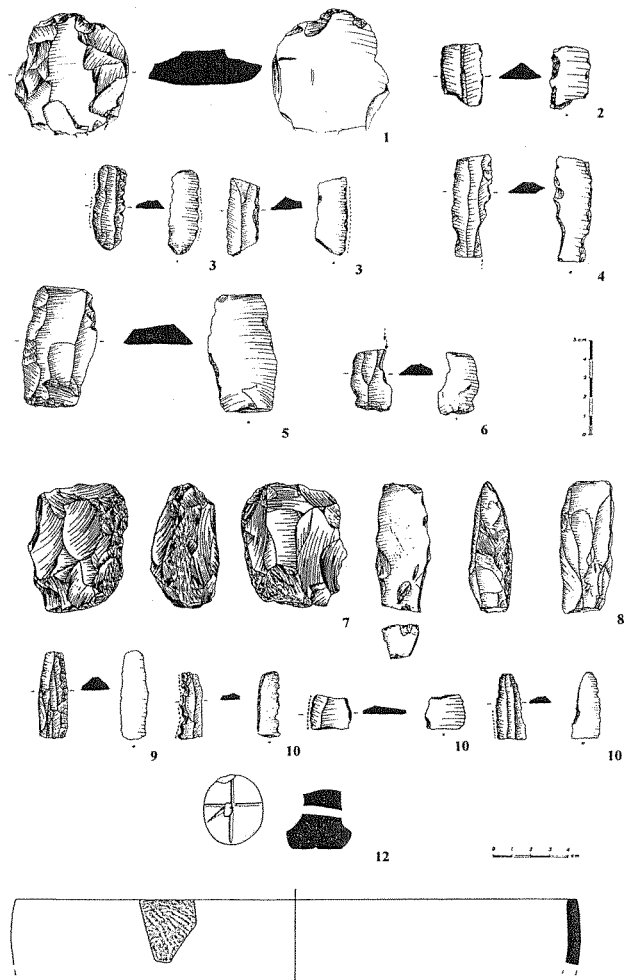


Fig. 2. Artifact selection from the surface collection at Tell Hmaira.

Ceramics and Other Small Finds

The ceramic material found in this area consists of small sherds of a black or brown ware with mineral inclusions and cord impression on the outer surface (Fig. 2:11). Due to the fragmentary state of these sherds a reconstruction of the shapes of the vessels is nearly impossible, but we can probably assume some sort of open bowls.

This ware finds its comparisons from Tabbat al-Hammam, where it is labeled as cord-marked ware, "with strong affiliation to the dark faced burnished ware due to their megascopic appearance" (Hole 1959: 156); at Tell Labwe South in the Beqa'a, where it was described as "ware with combed impressions" (Copeland and Wescombe 1966: 71-73, 94-96, 121-123); and in Byblos (Dunand 1973: 44, Pl. XLV).

Besides the lithic and ceramic material, grinding stones and -slabs made of basalt were found on the surface of this area. Of particular significance is one clay stamp with a cross-shaped engraving and a groove from the centre outwards on the stamp surface. The handle of the stamp has a drilling hole in the centre, probably for suspension purposes. (Fig. 2:12). Comparable stamps are reported from Byblos, dated into the *Néolithique Ancien* and *Moyen* (Dunand 1973: 84 ff., 125ff., Pl. CXVI, CXVIII).

Dating and Conclusion

Compared to the other parts of Tell Hmaira, where the collected ceramic material reflects a settlement period ranging from the Early Bronze Age to the Ottoman period, the occupation of the described area came probably from only a single period, for no later ceramic material was found here, and other archaeological finds that clearly belong to an older or younger phase were also not detectable.

The sites with the strongest affiliations to the ceramic and lithic material from Tell Hmaira are Byblos (Dunand 1973), Tabbat al-Hammam on the Syrian coast (Braidwood 1940: 200, 223ff.; Hole 1959: 160ff.) and Tell Labwe South in the northern Beqa'a (Copeland and Wescombe 1966: 71ff., 94ff., 121ff.). Compared with the material of these sites the artifacts from Tell Hmaira point to settlement activities during the 6th-5th millennium B.C., ranging from the *Néolithique Ancien* to the *Néolithique Moyen* according to the terminology of the Byblos chronology. Due to the inaccuracy of surface material for dating purposes, this date should be treated as a preliminary one until more intensive examinations are carried out on this site.

Acknowledgements: I am indebted to Karin Bartl for the opportunity to publish this short note on the finds from Tell Hmaira. Other participants of the survey were A. Chaaya, L. Salloum, W. Bouvié, C. Müller, T. Kastner, and A. Pfeiffer. Drawings of the ceramic and small finds are by C. Müller, lithics by the author.

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Excavations of the Halaf Occupation at Kazane Höyük, 1998

Cheryl Coursey, Reinhard Bernbeck, and Susan Pollock
State University of New York - Binghamton

During the summer of 1998, investigations of the Late Halaf levels at the site of Kazane continued. Kazane is located 3 kilometers south of Şanlıurfa at the northern tip of the Harran plain in southeastern Turkey. Survey conducted by Dr. Patricia Wattenmaker and team in 1992 discovered that the Halaf settlement may have covered as much as 20 ha., making Kazane one of the largest Halaf sites known (Wattenmaker and Mısır 1994). Preliminary investigations by the authors in 1996 and 1997 involved the excavation of several small soundings (Bernbeck, Coursey, and Pollock 1996; Bernbeck, Pollock, and Coursey n.d.). During a two week field season in 1998, five 5x5m units in the southeastern sector of the site were excavated, revealing the remains of a tholos and associated surfaces and features immediately below the plowzone.

The tholos had a diameter of approximately 4.5 m. Aside from a few possible roughly-shaped mud-bricks, only the stone foundation of the structure was preserved. The foundation of the building consisted of a double line of stones, one course deep. The structure included a rectangular annex that measured 4 x 3 m. This annex also had a stone foundation, constructed at a slightly lower level than that of the main part of the tholos. The remains of structures found in previous seasons were made of mud brick and *pisé*. Although we did not reach the foundation levels in all of them, the clear absence of a stone foundation in at least one case offers evidence that inhabitants at the site used a variety of building techniques during the Late Halaf period.

Interior surfaces associated with the tholos were difficult to identify, probably because they were often destroyed by plowing or erosion. There does seem to have been a variety of ground stone implements found within the tholos walls and probably associated with its use. Outside the tholos entrance immediately to the west, southwest, and northwest, we encountered a series of rubbish-strewn surfaces composed of pebbles, small cobbles, sherds, and other small, embedded artifacts. Associated with one of these surfaces was a fire installation. It appears that exterior surfaces included trash from activities that took place in exterior spaces. The cleanness of the interior of the tholos suggests that inhabitants of the tholos may also have thrown smaller bits of trash outside, and they then became incorporated into the outside surfaces. Previous excavations have also revealed evidence for the disposal of burnt debris and other refuse in middens.

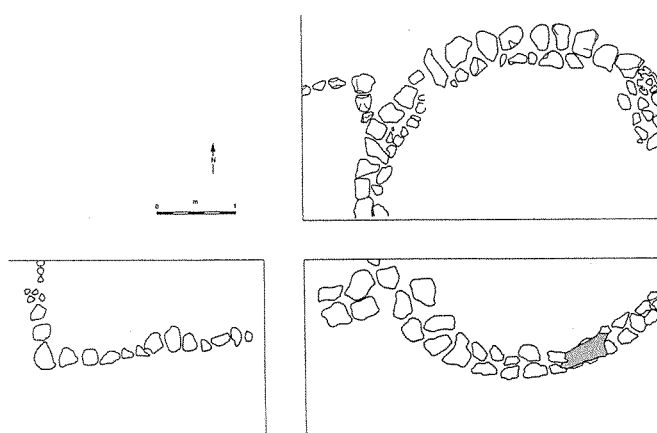


Fig. 1. Tholos excavated in 1998.

In addition to the rubbish-strewn surfaces, we also discovered several burnt, packed-mud surfaces. Although one was inside the tholos, most were outside it. Such surfaces are typical of interior surfaces at other sites, such as Sabi Abyad (Akkermans 1989). No direct stratigraphic link between the surfaces and the tholos could be detected, so we cannot say for certain whether they are contemporary with the tholos or part of a slightly later phase of occupation. All were irregular in terms of their slope, with two undulating quite dramatically. The largest appears to have been circular in shape with an approximate diameter of 1.5 m. Bricky debris and one intact mud-brick were found around the circumference of the surface, but no walls could be defined. It appears that the associated walls were either extremely flimsy and did not survive or tents may have been used as a covering. Excavation below one of these burnt surfaces revealed fragments of at least three other similar ones. Although none of these surfaces could be traced (presumably each was destroyed or disturbed with the preparation of the subsequent one), they provide evidence that this area was used for the same purpose over time. Perhaps the successive burnt surfaces may represent the annual preparation and/or fumigation of some kind of associated facility for storage of grain or some other material (cf. Akkermans 1993: 230). Unfortunately, all of the surfaces were cleaned thoroughly upon the termination of their use, so no distinctive debris that might provide clues concerning their function was recovered. Samples of each of the surfaces were collected and will be submitted for further analysis.

Small finds recovered this season include three seals. Two are button-shaped and made of a dark green stone, probably chlorite, whereas the third was of a white stone and a more elaborate shape. Two examples of sealings were recovered, and a third was identified during the sorting of sherds from the 1996 season.

Amongst the most curious finds are the many chipped sherds that we recovered. Sherds of both undecorated coarse wares and finer painted wares were selected for chipping. Some had only a few flakes removed and may have been used as scrapers, while others were carefully shaped into disks of varying sizes. The latter do not show any obvious signs of use-wear

along their chipped edges. Analysis is currently underway to possibly determine the function of these objects.

Although the bulk of the pottery and chipped stone recovered from this season still awaits in-depth analysis, a few preliminary observations can be made. All pottery appears to be Late Halaf in date, and there is seemingly a great deal of variability in the design motifs used to decorate vessels. In terms of chipped stone, flint continues to dominate obsidian as the material used for tool production. As in previous seasons, the assemblage consists of both flakes and blades, many of which were used without further modification. More formal tools include burins, perforating tools, and scrapers. A preliminary examination of burin spalls for microwear traces indicates that they were used as tools, rather than representing solely the discard from the production of burins.

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Re-thinking Burial and Society at Çatalhöyük

Naomi Hamilton, University of Cambridge

In his preliminary reports on his 1960s excavations, Mellaart gradually created a picture of burial customs at Çatalhöyük, ideas that were finalised in his 1967 book (Mellaart 1962, 1963, 1964, 1966, 1967). Burial was intramural, beneath the house platforms; it was generally, if not always, secondary inhumation; it was normally communal; and this communality was usually diachronic. Excarnation took place prior to burial, possibly carried out by vultures. Men were buried below the northeast platform, generally singly, while women and children were buried in groups beneath the east-central, high-status platform. Burials could be placed beneath other platforms, but burial beneath the southwest platform was extremely rare. Mellaart believed some elaborate buildings were shrines, and that they contained more and/or richer burials.

Grave goods were relatively rare. Necklaces of tiny beads, usually of stone, were by far the most common, and were associated with women and children, although men occasionally had a few large beads. Other artefacts were rare, and generally sex-linked. A few skeletons had pigment on them, and red ochre - the most common - was thought to be restricted to women. Almost all buildings contained burials, with a maximum of 32 in one building. Burials of children sometimes occurred beneath floors, but adults were only buried below floors when the platforms were full. Overall, women outnumbered men by nearly 2:1 on Angel's data (Angel 1971).

Using Mellaart's information, various ideas have been put forward regarding social structure at the site - a female-dominated society which has been elaborated by various researchers; a patriarchal polygynous society; and a society with strong symbolic gender segregation. However, until now no research has been carried out on the original data, and it was not until 1995 that excavation started again at the site, after two seasons of intensive survey. I am fortunate to have responsibility for the burials at the site, and in that capacity have had access to the skeletal records and all the artefacts from Mellaart's excavations in addition to our new data. My re-assessment of Mellaart's data has been published (Hamilton 1996), but the most important point for this paper is that the

sex segregation and differentiation has been over-stated, leading to errors in interpretation. Modern scholars have recognised the problems with assumptions of binary sex and gender, which compound these errors. Despite the problems of sex and gender in social terms, I shall be using the standard sex identification given by our human remains team for the rest of this paper.

During the current work at Çatalhöyük, Neolithic burials have been found in three buildings (Molleson and Andrews n.d.), but due to lack of space I shall confine my comments to Building One although the other data support me. Building One is the only building that has been excavated completely. Burials were found beneath the northwest and east-central platforms, below the floor in the north-central area, and in the foundations. The east-central platform contained the remains of at least 15 individuals, of whom seven are unsexed, five were male, one possibly male, and two female. The age range was from c. 10 years to elderly, but predominantly adult. Three complete, tightly flexed skeletons were found, but it was clear from the presence and articulation of every single bone, particularly the hyoid and sesamoids, that they had been buried with the flesh on. Grave goods were mainly of bone or wood. This platform would contain women and children in Mellaart's scheme. There is no evidence that any skeletons had been defleshed prior to burial, but several had been re-organised post-burial and many were partial.

The northwest platform contained the jumbled mass of bones familiar from Mellaart's work, but these were unraveled into the remains of a minimum of 26 individuals. Four were adults, of which two were elderly and three were male, all basically complete; the rest were infants and juveniles ranging in age from neonate to around 10. Only eight were roughly complete, some of the others being represented by just a skull or a few fragments. Some skeletons had clearly been swept aside while still partially articulated, to make way for another burial. Grave goods were beads and pendants, mainly stone and shell. Wall paintings were found on the walls around this platform, mainly on the earlier layers, the time when most of the burials were made in this area.

During a later phase of occupation, burials were also made below the north-central floor. Remains of 19 individuals were found here, of whom three were mature or old females, all reasonably complete. The rest were mainly juveniles ranging in age from very young to around 10, and many of these were complete, but there were also fragments of two adults and one late adolescent. One grave contained several articulated vertebral columns, some with ribs, as well as some disarticulated bones, from 5 individuals. Surface modifications and staining, along with the absence of peripheral bones, suggest that these skeletons had been exposed outdoors and largely defleshed before burial. The head of one humerus has two cuts with bone fragments embedded in them, which may be parts of a bone implement. These secondary burials were accompanied by a primary burial of an articulated infant. No grave goods were found in this area.

Seven skeletons were found in the foundation layers. The earliest were an elderly male placed halfway along the western side of the main room, wrapped in abundant textile, and a mature female in the centre-north area with a neonate on her skull, each of them tied with straps. Next, three neonates were placed in a row at the base of the wall which would contain the crawl-hole between the main and subsidiary rooms, in the area later covered by the southwest platform that had evidence of food-processing activity and no burials. Finally, a ca. 9-month old baby was buried adjacent to the female. These were all covered by the floors of the building. Although placed in the foundations, these are no different from other burials other than that, with the exception of the latest one, they were not disturbed. Some had possible grave goods.

The human remains team has found some evidence of genetic links between the adult female in the foundations and several of the burials beneath the east-central platform, and also among several skeletons in the north-central area. It is possible that the three areas used for burial during the occupation of the house were used by different branches of a family or lineage. It is possible that initially only two burial areas were

envisaged, beneath the platforms. The foundation burials are in different areas to those of the main burial platforms.

So what does the new information tell us about burial and society at Çatalhöyük? Building One has far too many burials in it, if our current view that the building lasted for c. 40 years is correct. So far parts of some 64 individuals have been recognised, twice as many as the greatest number for one building in Mellaart's reports. We know that most were primary, although many were later disturbed, but a number of bones had been placed in secondary contexts, particularly skulls. The building underwent several phases of re-organisation, including the walling-off of the southern part after a severe fire. Certain elements suggest the kind of elaboration found in so-called shrines: a cattle horn built into the west wall, wall-paintings, and a strange plastered object inserted into the south wall. After the building was abandoned, a pit was dug to remove a fixture from the west wall, where damaged traces of plaster moulding remain to tantalise us.

I suggest that rather than thinking of shrines and houses, we explore the idea of lineage buildings. Lane's description of the Dogon system seems very appropriate here (Lane 1994). These buildings house the lineage head, and ideally everyone should be born in them although they will normally live elsewhere. They contain ritual information that is handed on from one lineage head to the next. They are a material record of the strength and longevity of the lineage, and are repaired more often than other houses. They contain communal stores, and offer a place for lineage activities. If this model were applied to Building One, it could explain some features. The presence of foundation burials with a high number of neonates could reflect the importance of being born in the lineage house. The large number of individuals buried here could similarly reflect its role as a central place or unifying structure for a lineage. The genetic evidence suggests the presence of three lineage branches, each buried in a different part of the building, and the presence of a group of skeletons in a secondary context in the latest burial area – the centre-north floor – suggests the importation of the bones of relatives to a new lineage house, to initiate a third burial area. This might also explain the abundance of skulls as potentially the most important skeletal element to bring to a new lineage house. It could also explain the movement of bones, possibly a deliberate mixing of relatives in death. In Building One we do not see any sex-segregation of burials, each area containing male and female burials. Age distribution shows strong differences between areas and phases, which will be investigated further in future. The most striking segregation is the distribution of grave goods: their total absence from the centre-north, the presence of necklaces and stone items in the northwest platform, and of bone and wooden items in the east-centre platform. The wall-paintings and sculptures, the repair and remodeling of the building after a major fire, and the retrieval of a wall-sculpture from a well-remembered place all add to a picture of a building of lineage significance which is still an ordinary house.

This is only a suggestion, and there are still many issues to deal with. For instance, although there was no burial in the northeast corner of Building One, Mellaart seems to be right that it was generally occupied by adult males, although there were clearly juveniles of unknown sex as well. While this has been seen by some as a superior and exclusive place of burial reserved for the patriarch, it is worth considering that it could be used for in-coming men, who belonged to a different blood line. This could imply matrilineal descent. The presence of red ochre painted on some skulls is difficult to explain if we abandon the hypothesis of excarnation and secondary burial, and must certainly be considered further. The presence of burials in the southwest corner of Building One is unusual and needs to be considered, perhaps taking into account structural and decorative features of buildings. Finally, if we abandon excarnation as a normal burial rite, what were the vultures in the paintings really doing?

Acknowledgments: The skeletal remains at Çatalhöyük are studied by our human remains team, led by Dr. Theya Molleson and Dr. Peter Andrews of the Natural History Museum, London, assisted by Ms. Basak Boz of Ankara University and Dr. Jo Sofaer-Derevenski of Cambridge University. Without their work, I could not have written this paper.

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Two Radiocarbon Dates from Göbekli Tepe, South Eastern Turkey

Bernd Kromer (Institut für Umweltp Physik, Univ. Heidelberg)
and Klaus Schmidt (Universität Bamberg)

The Early Neolithic site of Göbekli Tepe in south-eastern Turkey has been excavated since 1995 under the direction of the Museum of Şanlıurfa and the German Archaeological Institute in Istanbul. In the 1997 campaign botanical analysis was started by Reinder Neef (Deutsches Archäologisches Institut, Eurasien Abteilung, preliminary report in preparation). In addition to paleobotanical identifications, Neef's research also provided samples for radiocarbon dating. The results of two samples from the fill of the *Schlangenfiebergerbaude* ("Snake Pillar Building") in area L9-75 (cf. Schmidt 1998) are given below.

1. Area L9-75, locus 48.1, botanical sample 17, charcoal (*Pistacia* sp., *Amygdalus* sp.), Hd-20036: 9559 ± 53 bp. Calibrated ages: cal BC 9110, 9068, 9056, 9008, 8888, 8883, 8815 (cf. Stuiver *et al.* n.d.). The cal BC age ranges are from the probability distribution (Method B), % area enclosed. The cal BC age ranges relative to the area under probability distribution are:

68.3 (1 sigma)	9123-8989	0.513
	8920-8795	0.487
95.4 (2 sigma)	9163-8744	1.000

2. Area L9-75, locus 44.3, botanical sample 5, charcoal (*Pistacia* sp., *Amygdalus* sp.), Hd-20025: 9452 ± 73 bp. Calibrated ages: cal BC 8739, 8696, 8695 (Stuiver *et al.* n.d.). The cal BC age ranges are from the probability distribution (Method B), % area enclosed. The cal BC age ranges relative to the area under probability distribution are:

68.3 (1 sigma)	9103-9071	0.094
	9048-9014	0.093
	8808-8624	0.787
	8623-8613	0.027
95.4 (2 sigma)	9136-8986	0.240
	8934-8933	0.004
	8922-8546	0.751
	8484-8483	0.005

The calibrated age clearly gives dates within the PPNA-period, or in Upper Mesopotamian terminology, in the time range of Mureybet IIIB. The theoretical possibility that the *Schlangenfiebergerbaude* was filled with debris older than the building itself can not yet be excluded, but a Mureybetian date for that building complex seems to be most probable. This complex so far includes four *in situ* limestone relief pillars with a height of more than 3 m decorated with snakes, foxes, a bucranium, a bull, and a crane (zoological determinations by Angela von den Driesch, University of Munich). The upper part of a new one with the relief of a fox was found in the 1998 campaign.

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The Neolithic Seminars at the Department of Archaeology, University of Ljubljana

Mihael Budja (University of Ljubljana)

In order to initiate a more lively discussion in Mesolithic and Neolithic studies, and to develop a programme of a more balanced exchange of research data of the processes of neolithization in Eurasia, the Department of Archaeology at the University of Ljubljana has organised five international Neolithic Seminars in the past few years. Topics such as the context of the processes of Mesolithic-Neolithic transition and the transition to farming in East Asia, the Near East, Anatolia, and Europe have been discussed.

On the interpretative level, different concepts and models, such as "agricultural frontiers" and "demic diffusion", "the availability" model of the transition to farming, and the models of "wave of advance", "secondary centers of colonization" and "maritime pioneer colonization of Europe" were discussed. On the analytical level we have addressed the taphonomic filter in the context of Mesolithic-Neolithic transition in the western Mediterranean. The emergence and spread of agriculture have been examined in view of the pollen-sedimentological evidence at the beginning of agriculture in south-eastern Europe and Anatolia. Microwear analysis and the analysis of the depositional formation processes of use-wear polish preserved on the working edges of stone tools were linked to different processes of early agricultural activities in Late Mesolithic and Early Neolithic contexts.

The programme of the fifth Neolithic Seminar, organized in May this year, focused on the transition from the Paleolithic to the Neolithic and on the identification of regional, cultural and chronological sequences of the Early Neolithic in China; on the Natufian and Pre-Pottery Neolithic horizons in the southern Levant; on the definition of the Neolithic Circumpontian cultural zone; on the Bulgarian Early Neolithic Sequences in the context of the neolithization of the Balkans; on the modeling of the Mesolithic-Neolithic transition in the Carpathian Basin; and on the transition to farming in the context of the earliest phases of the Linear Pottery culture in Central Europe. The results on new research at Çatalhöyük in reference to the activities that took place in the "houses" and "shrines" were also presented.

Special attention was devoted to the identification of wheat domestication sites pinpointed by DNA fingerprinting and to the results of carbon isotope analysis of skeletal remains, which have shown some remarkable patterns about sudden changes of diet during the transition to farming. For the first time it was shown that the cultivated einkorn could be traced back to the Fertile Crescent. The genetic data indicate that einkorn domestication was initiated in the Karacadag Mountains about 9,500 years ago. But the transition to food production on the northwestern fringes of Europe has to be viewed in terms of complex interactions between incoming and indigenous populations, leading to continuity and acculturation rather than replacement. Much current opinion holds that this was in many areas (particularly southern Scandinavia and the British Isles) a gradual process, and that radical changes did not occur in the subsistence economy, which is seen as retaining a fishing-hunting-gathering character. However, such a view is not in accordance with a considerable body of stable isotope (^{13}C) evidence. Moreover, faunal evidence and radiocarbon dates can also be interpreted as suggesting rapid and significant changes in many aspects of society at the transition, including the subsistence economy.

All the Neolithic Seminars in Ljubljana are being recognised as the meeting point where the data of transition to farming in Eurasia are being exchanged and the regional Mesolithic – Neolithic palimpsests are presented. However, the papers were delivered by Yamei Hou (Institute of Vertebrate Palaeontology and Palaeoanthropology, Academia Sinica, Beijing), Xingcan Chen (Institute of Archaeology Chinese Academy of Social Studies, Beijing), Chaohong Zhao (Department of Archaeology, Peking University, Beijing), Mehmet Özdoğan (Prehistorya Anabalım Dalı, Edebiyat Fakültesi, İstanbul Üniversitesi), Jak Yakar (Sonia and Marko Nadler Institute of Archaeology, Tel-Aviv University), Nikos Efstratiou (Department of Archaeology, University of Thessaloniki), Vassil Nikolov (Institute of Archaeology, Bulgarian Academy of Science, Sofia), Tatjana Stefanova (Department of Archaeology, Sofia University), Ivana Radovanovic (Department of Archaeology, University of Belgrade), Ester Banffy (Institute of Archaeology, Hungarian Academy of Science), Eva Lenneis (Institut für Ur- und Frühgeschichte, Universität Wien), Detlef Gronenborn (Johann Wolfgang Goethe Universität, Frankfurt am Main), Mihael Budja (Department of Archaeology, University of Ljubljana), Ziga Smit (Jozef Stefan Institute, University of Ljubljana), Simona Petru (National Museum, Ljubljana), Paolo Biagi (Dipartimento di Scienze Storico-Archeologiche e Orientalistiche, Università di Venezia), Livia Calani (Department of Archaeological Sciences, Pisa University), Andrea Pessina (Department of Archaeological Sciences, Pisa University), Giovanni Boschian (Department of Archaeological Sciences, Pisa University), Manuela Montagnari (Dipartimento di Scienze dell' Antichità, Università Trieste), Jean-Paul Demoule (Centre de Recherches Protohistoriques, Université de Paris I), Michel Seferiades (Institut de Paléontologie Humaine, UMR 9948 du C.N.R.S., Paris), Marianne Christensen (Centre de Recherche Préhistorique, Université de Paris I), Joan Bernabeu Aub-n (Departament de Prehistoria i Arqueologia, Universitat de València), Marek Zvelebil (Department of Archaeology and Prehistory, University of Sheffield), Ian Hodder (Department of Archaeology, University of Cambridge), Preston Miracle (Department of Archaeology, University of Cambridge), Katherine Willis (Department of Plant Sciences, University of Cambridge), Adam Gardner (Department of Plant Sciences, University of Cambridge), Liliana Janik (Department of Archaeology, University of Cambridge), Rick J. Schulting (Department of Archaeology, University of Reading), Alasdair Whittle (The School of History and Archaeology, University of Cardiff), Pavel M. Dolukhanov (Department of Archaeology, University of New Castle-upon-Tyne), Stefan K. Kozłowski (Instytut Archeologii, Uniwersytet Warszawski), Helle Juel Jensen (Department of Prehistoric Archaeology, University of Aarhus), Manfred Heun (Ås, Agricultural University of Norway), Claude Björk (Department of Classical Archaeology and Ancient History, University of Stockholm).

All the papers that have been presented to the seminars are available in the volumes of *Porocilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji XXI* (1994); *XXII* (1995); *XXIII* (1996); *XXIV* (1997); *XXV* (1998, in press).

3rd Workshop on PPN Chipped Lithic Industries, Venice University, November 1-5, 1998

Hans Georg K. Gebel (Free University of Berlin)

The Venice meeting, our third gathering since 1993, was splendid. Organized under the title "Beyond Tools. Reconsidering Definitions, Counting, and Interpretation of Lithic Assemblages" by Isabella Caneva (Universities of Venice and Roma), in cooperation with Paolo Biagi (University of Venice), Cristina Lemorini and Daniela Zampetti (University of Roma), and much facilitated by Angela, Karin, Lecilia, Lorenzo, Manuela, and Salvina as the helpful staff from the students' side, it was a great success.

Much of the atmosphere was also supported by the historic environment of the lagoon city, acquainting us with an unusual daily life controlled by water streets and water levels. We again heartily thank both the organizers and their assistants for this wonderful experience and the fine atmosphere they helped to create. Thanks also go to the rector of the university, who kindly provided his boat for occasional transports, and an excellent dinner.

It was the decision of the organizers to underline the informal character of the meeting by omitting chairmen/ chairwomen for the sessions (which would have helped the discipline). However, the programme was managed since six contributions of the original 50 (including posters) were not presented (list of contributions: see below).



A coffee during the lunch break on a *piazza*: J. Cauvin, M.-C. Cauvin, E. Coqueugnot, and N. Goring-Morris (from right to left) <photo by Frank Hole>.

The atmosphere in general was very friendly and vivid and, in part, fruitfully discursive (if one ignores a hitherto unknown tone from a few participants). The meeting was structured into a general discussion on cooperation structures and the past success and problems of the subgroups on the day of registration, followed by three days of lecture and poster presentations, and a final forenoon (originally reserved for a final discussion) devoted to a general summary (by Jacques Cauvin) and organizational decisions and arrangements. The sessions of the three central days were:

The Grammar of Lithic Assemblages

Theme 1a: Technology (raw material knapping strategy, tool and core curation)

Theme 1b: Documentation (illustration, sampling, and recording systems)

The Functional Interpretation of Tools

Theme 2a: Trace analysis

Theme 2b: Contextual Analysis (spatial distribution; excavation techniques)

Tool Classification and Comparison

Theme 3a: Typology (theory, terminology, etc.)

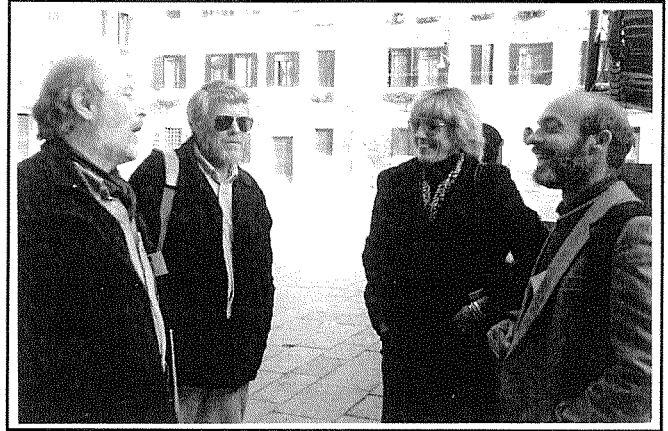
Theme 3b: Chronology (seriation, cultural comparison)

General Discussion on Cooperation Structures (Nov. 1, afternoon)

This meeting was intended to be a brainstorming session on issues of the status of progress and problems among the subgroups, possible improvements by restructuring the groups, and the general problems of cooperation in the PPN chipped lithic family. This lively discussion was a good start for the workshop, directly introducing problems "beyond the tools". The discussion started on the character of the general meetings; Phil Wilke proposed that the workshops be held as poster meetings rather than a series of formal lectures.

At the beginning, Hans Georg K. Gebel gave an overview on the cooperative structures and problems he sees in the subgroups. It was understood that the subgroups born in the spirit of the 1993 Berlin meeting (*cf. Neo-Lithics* 1/94) basically did not establish constant patterns of interaction, except for the

Non-Formal-Tools-Group. Originally, it was conceived that they function as independent work units to cover the five sections of a planned dictionary/ handbook, and that their results were expected to be presented and mutually agreed on in the general workshops in order to reach commonly used standards in analysis and documentation. A basic problem of why cooperation did not continue after the initial meetings took place is probably related to the fact that the members of these groups are spread around the globe, aside from the general problem of affiliations to different schools and research methodologies. The latter reasons did not become a matter of discussion in this session.



A chat on the *piazza*: D. Nadel, L. Quintero, P. Wilke, and St. Kozłowski (from right to left) <photo by Frank Hole>.

As for a future structure of the subgroups, contradicting opinions arose: some criticized the splitting into subjects, and that there are too many subgroups. For example, Anna Belfer-Cohen remarked that materials can only be studied in the overall framework of the whole assemblage. Others felt that we need a better arrangement of the subjects in fewer groups; Deborah Olszewski suggested three groups: Function/Wear Traces, Technology (including NFTs), and "Typology". Jacques Cauvin argued much more basically, stressing that chipped lithic analysis cannot be done isolated or even outside a study of the complexity of cultural systems and evolution.

As for modes of cooperation, most of the discussant see possibilities to overcome at least the spatial separation of group members by using email (mailing lists) exchange, a facility that was not common in 1993 when planning started. This suggestion was opposed by Frank Hole, who stressed the values that face-to-face meetings have.

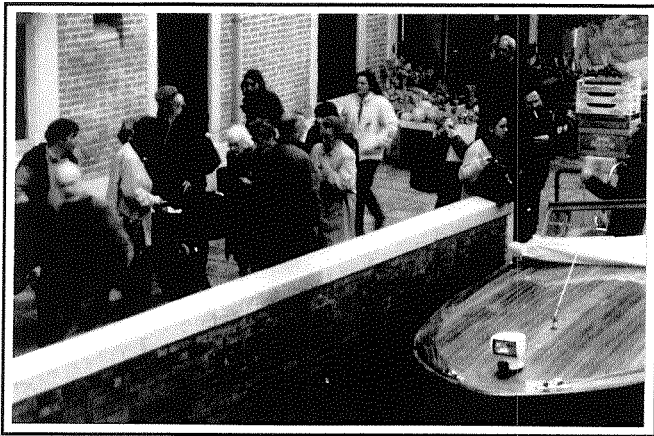


Waiting for the next session: D. Olszewski, E. Clegg, and D. Baird (from right to left) <photo by Frank Hole>.

The Grammar of Lithic Assemblages (Nov. 2)

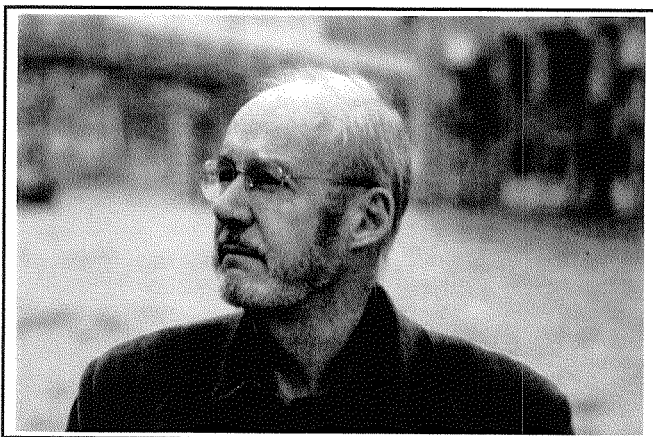
Technology in its broadest sense was under consideration in the first session (10 contributions), and many of the contributions elaborated on raw material questions, including procurement techniques. Leslie Quintero emphasized that distinct deb-

itage assemblages occur in distinct contextual situations at 'Ain Ghazal, which allows for interpretations in behavioral terms. Another excellent contribution by Didier Binder and Nur Balkan-Atlı on the obsidian and blade technology at Kömürcü-Kalatepe underlined the need and potential of more *chaîne opératoire* approaches in our discipline, although this raised the statement by Belfer-Cohen that this represents a dogmatic approach to analysis.



Workshop participants leaving the rector's boat and heading off for the morning session <photo by H.G.K. Gebel>.

The contribution on obsidian in the Neolithic Levant (Gopher, Marder, and Barkai) nicely worked out the beginning of obsidian use as early as the 9th millennium, followed by increasing evidence in the 8th millennium of pressure-flaked artefacts. No obsidian cores traveled into the area during the Natufian/ PPNA, which are (as pressure-flaked pieces) attested only from the MPPNB. Plenty of obsidian raw material appeared in the Wadi Rabah culture, flaked on-site (*e.g.*, Hagoshrim, where pressure and percussion techniques are attested with single-platform cores!). Detailed reference was made to resource situations in the contributions of Frédéric Abbès and Wilke & Quintero. Especially in the latter example, the hill quarry at the Colorado River made clear what sort of information should be surveyed in Near Eastern contexts. The critical presentation on points from Çayönü illustrated not only the need of proper definitions supported by firm statistics, it also recalled a statement on the workshop cartoon "Not all Points are Points ...". These and the other contributions to "The Grammar of Lithic Assemblages" made quite clear that systemic approaches are now a recognized need and a welcome new trend in chipped lithic analysis, tracing and understanding an artefact by its the flow through the system of procurement, production, use, and depositional stages.



Frank Hole on the boat in the Venice scenery <photo by H.G.K. Gebel>.

Drawing problems were discussed after the contributions of G. Deraprahamian and F. Parenti, including cost questions. Using photographs of artefacts coated by a film from the smoke of ammonium chloride (see the photographs in the contributions of Quintero and Wilke in the Berlin and Warsaw pro-

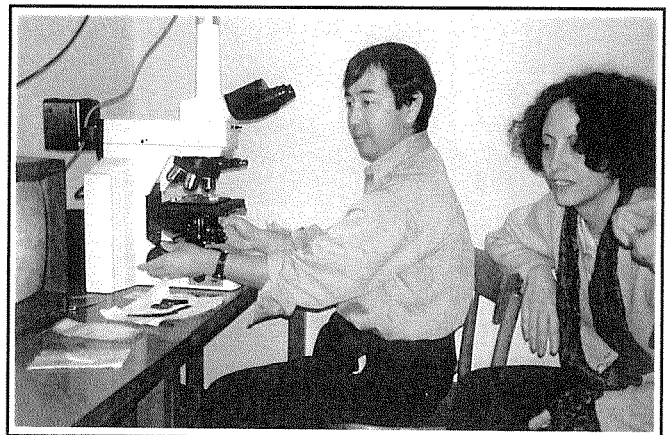
ceedings) was considered as an alternative to time-consuming drawings, if not an advanced interpretative level as required from an illustration.

Yoshi Nishiaki presented six theoretically different schemes of hafting sickle elements (grouped into four types), which were applied to evidence from the late PPNB to the Chalcolithic of northern Mesopotamia. Meaningful results show that certain hafting types occur in specific chronological contexts, and that rules were much more rigid than desk-bound analysts assumed.

The Functional Interpretation of Tools (Nov. 3)

Eight contributions were devoted to traceology studies, followed by five contributions devoted to contextual analysis. PPN trace wear analysis currently concentrated on researchers with material from Çayönü (Italian-Turkish working group) and Mureybet (French-Spanish working group that includes materials from Tell Halula and Jerf al-Ahmar). Another working group is established around Shoh Yamada with material from Nahal Issaron.

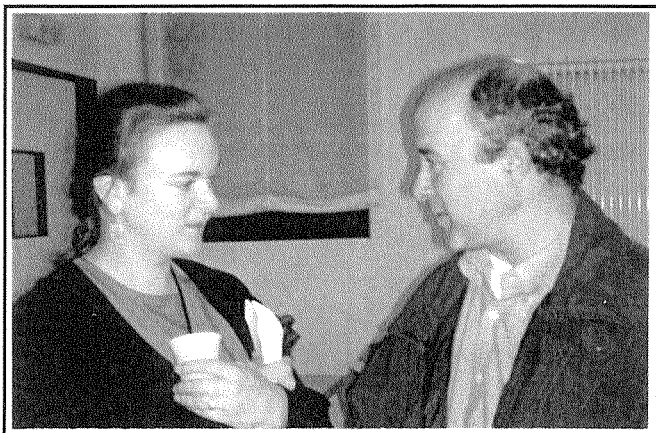
Cristina Lemorini and Maria Rosa Iovino investigated specialized production modes at Çayönü and found clear differences for tools from flint and obsidian raw materials. G. Çoskunsu and Lemorini raised the problem if points/pointed tools addressed typologically as projectiles really reflect this function by their trace wear. A similar approach was connected with experiments for drills presented by Çoskunsu, Dede, Lemorini and Özdoğan. The workshop report of Yamada, Goring-Morris, Gopher, and Perron illustrated well the basic difficulties involved in gloss studies, but it also illustrated the potential of residue and mechanical traces research when products (*e.g.* ornaments) are included in the study.



Cristina Lemorini with Shoh Yamada at specially established facilities for trace wear analysis at the workshop <photo by Frank Hole>.

The Contextual Analysis session included as many approaches as contributions, showing the large variability contextual studies may have. The work of Abbès, Marie-Claire Cauvin, J.J. Ibanez, and J.E.G. Urquijo on the chipped lithic inventory of House XLVII from Mureybet is a paradigmatic contextual study that should become a standard in flint studies, where non-contextual standard "bag-analysis" prevails without trying to understand an assemblage from all sides, including its traceology. Michael Rosenberg and Brian Peasnell presented a first "point sequence" from the Aceramic Round House Horizon along the upper Tigris. Nigel Goring-Morris described technological parameters of some PPNB blade caches. Together with Belfer-Cohen, in another contribution, he stressed a rarely discussed aspect: that of detailed lithic studies being used "to verify contentions of synchronic changes" among the various classes of other Neolithic product classes (even more: to contribute to the "investigation of spheres of influence and the interrelations of different coeval Neolithic populations".) More than in Epipalaeolithic contexts with less evidence in other find classes, the widened materials catalogue of Neolithic communities would allow the investigation of an assumed concurrence between changes in chipped lithics and those of other

crafts, including architecture. Again, this claim from another perspective fits into general demand formulated during the workshop, that of systemic approaches.



A. Gopher and C. McCartney in discussion. <photo by Frank Hole>.

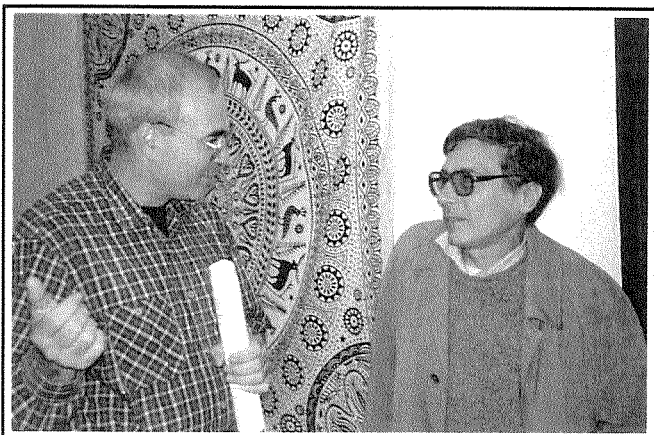
Tool Classification and Comparison (Nov. 4)

14 contributions were presented in the Typology (theory, terminology, etc.) session, and two were given in the Chronology (seriation, cultural comparison) session.

Gebel's contribution tried to examine the various established schools in PPN chipped lithic research in view of their development since the seventies and how such approaches could translate results into socioeconomically meaningful information. Claiming that analysis only devoted to descriptive results (normative and functionalistic approaches) does not help much such a translation, he argued for a future orientation on a more "attributive" analysis together with *chaîne opératoire* approaches. This received the reproach of being a "colonial" and "imperialistic" attitude by two colleagues in the audience. Unfortunately no proper discussion of arguments was possible after these comments.

Kozłowski's contributions produced some provocative statements for discussion. For example, when he claimed that the PPNB in the lithic taxonomic sense does not exist: an industry cannot be understood by a culturally loaded term. (Kozłowski prefers the term Big Arrowhead Industries, as this concept better fits for a "techno-taxologist" arguing from outside the western Fertile Crescent). The hitherto ignored influences of Trialetian traditions in the central Fertile Crescent were another element in his presentations that should demand for a look at evidence immediately outside the PPN horizon.

Zeidan Kafafi gave a superb overview on the PN chronology of the southern Rift Valley. Douglas Baird discussed degrees of specialization reflecting (changes of) socioeconomic structures. Eileen Clegg presented a first study of the Wadi Fidan assemblage, with interesting results on change-of-orientation at-tested with flake cores.



F. Valla and Y. Garfinkel exchanging on lithics <photo by Frank Hole>.

Ran Barkai gave insights into the remains of axe (celt) workshops in Nahal Lavan 109, posing questions about their function in the ecological context of the area. Strikingly enough, no other heavy duty tools seem to have been found with the assemblage Barkai: adzes are not to be found in Israel before the PN!). E. Healey spoke about the obsidian use in Domuztepe, and Carole McCartney reported about the Tenta industry, Cyprus, where opposed platform blade cores occur which resemble the naviform PPNB cores of the Levant.



L. Quintero and R. Barkai in joyful conversation <photo by Frank Hole>.



A coffee during the lunch break on a piazza: Y. Garfinkel, H.G.K. Gebel, E. Healey, E. Clegg, C. McCartney, D. Baird, B. Müller-Neuhof, and M. Rosenberg (from right to left) <photo by Frank Hole>.

Final Statements and Agreements (Nov. 5)

Summary by J. Cauvin

Jacques Cauvin had accepted the invitation by the organizers to present a critical overview of the workshop meeting on the last day (although he claimed that researchers of the C.N.R.S this day should be on strike!). He first stressed the good quality and number of the contributions delivered in the previous days. He emphasized that many more young colleagues came and enthusiastically presented their results, esp. in the field of functional/ traceological studies. This shows a promising development for both the field of research as well as for the workshops. Turning to the *chaîne opératoire* topic, J. Cauvin explained that a *chaîne opératoire* not only shows the details of a technological process, but they also are most significant for the evaluation and understanding of cultural evolution and processes. *Chaînes opératoires* allow basic insights into human social behavior and the patterns of the exchange of ideas. In this general perspective, it is especially necessary to study also the special cases, such as the axe production presented in this meeting. The study of primary production in our field has gained more importance than ever before. Functional studies that include the non-formal tools will change our understanding of the tool kits. We can see new approaches in the field of typology, approaches with a more morpho-techno-

logical orientation. Cauvin also expressed an understanding for the "Big-Arrowheads" - concept (the BAI of S.K. Kozłowski). There are some disagreements concerning the Trialetian, but we should see the two big traditions to the west and the east of the Fertile Crescent. But a presence-absence approach, however, is unacceptable since it does not meet the complexity of the phenomena and evolution. A need for discussion was apparent also on the use of a chipped lithic taxon named "PPNB". At the end of his statement, J. Cauvin turned to the topic of understanding lithics in their symbolic value: lithics are part of the thinking traditions, and their study cannot be reduced to mere technological aspects. Much work has to be devoted to this in future.



J. Cauvin presents his concluding remarks, with Isabella Caneva
<photo by H.G.K. Gebel>

Agreements on Subgroup Cooperation

There was no support for maintaining the former subgroup divisions (microliths, projectiles, NFTs, technology, glossy pieces), and new associations were discussed and decided under the coordination of different colleagues:

Technology Subgroup (coordination: L. Quintero), now working closely together with the *Non-Formal Tools Subgroup* (coordination: G.O. Rollefson) and the new *Milling Tools-Subgroup* (coordination: Phil Wilke)

The following colleagues are interested to work in the Technology Subgroup: Frédéric Abbès, Ran Barkai, Didier Binder, Carole McChartney, Geraud Deraprahamian, Bernd Müller-Neuhof, Dani Nadel, Yoshihiro Nishiaki, Leslie Quintero, Philipp Rassmann, Phil Wilke. For the Milling Tools Subgroup, Michael Rosenberg, Hara Procopiou, Leslie Quintero, and Phil Wilke are the first colleagues interested.

Typology (coordination: D. Olszewski)

Traceology (coordination: C. Lemorini)

Documentation Standards (coordination: I. Caneva)

Colleagues interested in working in one of the groups are requested to contact the coordinators. Work of the subgroups is expected to take place in the framework of mailing lists to be established.

Publication of the Venice Proceedings

Isabella Caneva asked the participants to send in their contributions to the workshop by the end of the year 1998 (within two months). The style and formats should follow that of the previous proceedings published in the *Studies in Early Near Eastern Production, Subsistence, and Environment*.

Discussion and Decisions on Future Workshops

Discussion re-entered a topic of the first day: a structure for the next workshop that allows more time for exchange and discussion. Phil Wilke suggested that many presentations could be made in poster format, and that these should be self-explanatory, and that time should be provided for informal workshops by working groups. Others stressed that much more space should be reserved for younger colleagues to present

their results for discussion. Kozłowski proposed rapporteurs who summarize pre-circulated contributions, and Rosenberg suggested that working groups should have the opportunity to present their results. Barkai, in a basic criticism, showed his disappointment with this discussion which he expected to be a discussion of general conclusions, and workshop findings.

After this brainstorming there was some sort of a very general agreement: a next workshop should be more "mixed" with equal shares of poster and lecture presentations, examination of materials, and discussions in working groups. It might be a solution to have four half-days with lectures (since many have to be expected), and four half-days with poster, material, and working group discussions.

A vote was taken on two possibilities for the next workshop in 2001: an invitation to Nidge in Cappadocia by Nur Balkan-Atlı and an invitation to be negotiated by Zeidan Kafafi at Yarmouk University in Irbid. The majority voted for Nidge as the next place of gathering, but Irbid was considered as a good option for 2004. By having meetings in the Near East, participants wish to have the chance of post-workshop excursion programs to the sites discussed, and also for a sometimes better access to original material.

Below we present the actual program of the workshop:

The Grammar of a Lithic Assemblage (Nov. 2)

Theme 1a: Technology (raw material knapping strategy tool and core curation)

L. Quintero: Interpreting waste disposal, tool production, and core reduction through debitage analysis.

N. Balkan-Atlı & D. Binder: Obsidian and blade technology at Kömürcü-Kaletepe (Central Anatolia).

A. Gopher, O. Marder & R. Barkai: Obsidian technology in the southern Levant.

R. Barkai & A. Gopher: Neolithic flint economies: a new case from Northern Israel.

F. Arnau, J. Emilio, G. Urquijo, J.J.I. Estévez, M. Molist Montana & A. Palomo: The elaboration and use of stone tools at Tell Halula (North Syria) from 8,700 to 7,500 BP.

F. Abbès: Etude du mobilier lithique d'une unité d'habitation de Jerf el Ahmar. Comparaison avec Mureybet.

P. Wilke, L. Quintero: Identification of Neolithic millstone production loci and debitage.

I. Kuijt: Analysis of lithic technology and tools from Tell Dhra, Jordan.

N. Balkan-Atlı, N. Kavacan, M. Özbaşaran & S. Yılıdırım: Variability in the arrowheads of Central Anatolia from technological and chronological aspects (poster).

L. Quintero: Neolithic axe and adze production: data from 'Ain Ghazal (poster).



Nur Balkan-Atlı presents her poster (in the left foreground: Z. Kafafi)
<photo by H.G.K. Gebel>

Theme 1b: Documentation (illustration, sampling, and recording systems)

G. Deraprahamian: Dessin du matériel lithique (poster).

E. Parenti: The utility and meaning of stone tool drawing.

Y. Nishiaki: Hafting systems of sickle elements from Neolithic and Chalcolithic sites in Northern Mesopotamia.

The Functional Interpretation of Tools (Nov. 3)

Theme 2a: Trace analysis

L. Astruc: Definition of the lithic tools involved in the manufacture of stone ornaments and utilitarian products at Khirokitia (Aceramic Neolithic, Cyprus).

M.R. Iovino & C. Lemorini: Stone working at Çayönü: a functional perspective.

O. Çoskunsu & C. Lemorini: The functional meaning of point types. The limits of morphological analogy.

S. Yamada, N. Goring-Morris, A. Gopher & T. Perron: Analysis of faintly glossed blades from Pre-pottery Neolithic Nahal Issaron (Israel).

J.E. Urquijo & J.J.I. Estévez: The contribution of microwear analysis to the definition of instruments. Examples from Tell Mureybet, Jerf el Ahmar and Tell Halula (N-Syria; 10,000-7,500 BP).

H. Procopiou: A methodological approach to grinding stones: the examples of Mureybet and Jerf el-Ahmar.

C. Altınbilek, G. Çoskunsu, Y. Dede, M.R. Iovino, C. Lemorini & A. Özdoğan: Drills from Çayönü: a combination of ethnographic, experimental and use-wear analysis (poster).

C. Altınbilek & M.R. Iovino: From shape to function: note on some end-scrapers from Çayönü (poster).

Theme 2b: Contextual Analysis (Spatial Distribution; Excavation Techniques)

M. Rosenberg & B.L. Peasnell: Lithics and the definition of cultural entities along the Upper Tigris during the Aceramic Round House Horizon.

I. Caneva, M.R. Iovino, C. Lemorini, A. Özdoğan, D. Zampetti: A combined analysis of lithic assemblage from Çayönü.

F. Abbès, M.-C. Cauvin, J.J. Ibanez & J.E.G. Urquijo: La Maison XLVII de Mureybet: étude technologique, typologique et tracéologique du mobilier lithique.

N. Goring-Morris: Lithic caches in the PPNB.

A. Belfer-Cohen & N. Goring-Morris: The definition of culture: the weight of lithics in the late Quaternary.

D. Nadel: Hut floors and tool densities.

Tool Classification and Comparison (Nov. 4)

Theme 3a: Typology (theory, terminology, etc.)

H.G.K. Gebel: Traditions in lithic analysis and their translation into socioeconomic meaning.

S.K. Kozłowski: Pre-big arrowheads industries (BAI) local traditions in the big arrowhead industries of Greater Mesopotamia.

S.K. Kozłowski: The phenomenon of the big arrowhead industries in the Near East.

F. Valla: Problèmes posés par l'industrie de la couche Ib (Natoufien final) de Mallaha (Eynan), Israel.

D. Olszewski: Creating terminology: tool type examples from the Levantine Epipalaeolithic.

D. Baird: Interpreting change in lithic assemblages in the southern Levant from the 7th to the 6th millennium BC (uncalibrated).

Y. Garfinkel: The flint assemblages of the 6th millennium BC from the southern coastal plain of Israel.

E. Clegg: The chipped stones from Wadi Fidan.

Z. Kafafi: Chronological problems of the sixth/fifth millennia BC in Jordan.

B.L. Peasnell & M. Rosenberg: A preliminary description of the lithic industries from Demirköy Hüyük.

E. Healey: Obsidian consumption and use at Domuztepe.

A. Gopher & R. Barkai: Trends in sickle blade production in the Neolithic of the Hula Valley, Israel.

R. Barkai: Flint axes from the Early PPNB site of Nahal Lavan 109.

McCartney: The chipped stone assemblage from Tenta (Cyprus). Cultural and chronological interpretation.

Theme 3b: Chronology (seriation, cultural comparison)

F. Hole: History and variety of glossed flint elements.

F. Abbès & M.-C. Cauvin: Les phases II et III de Mureybet (PPNA)

Notes and News

Mini-Symposium on

Selected Neolithic Problems at the ICAANE - Congress in Copenhagen, May 2000

Dear colleagues,

By invitation of one of the organizers of the 2nd International Congress on the Archaeology of the Ancient Near East (Copenhagen 23-27 May 2000), Ingolf Thuesen, we

are going to organize a "mini-symposium" on current problems and perspectives in the Neolithic in the framework of this conference. Since we do not want to impose topics, but prefer instead to find those of common and urgent interest, we would like to give the opportunity for a broader discussion prior to decisions.

We plan to have this mini-symposium as a workshop/closed session. Problem-orientation for this meeting is more encouraged than topic-minded status discussion. Thus, we are more interested in receiving a choice of topics that represent a "buffet of new ideas and approaches".

Topics in Neolithic research that open new fields of approaches and thus having a perspective potential for future research e.g. are:

- Shamanism in the ANE Neolithic?
- Tracing Neolithic Cultural Evolution through *Chaîne Opératoire* Approaches
- Patterns of Neolithic Architectural Pre-Planning

To ensure the success of the mini-symposium, it has to be prepared by pre-conference circulated papers or thesis presentations from participants, which would count as a congress contribution or could also be presented as a topic. It is planned to have these contributions summarized by invited rapporteurs, who also will help to guide the discussion on the individual topic during the mini-symposium. Thus, the mini-symposium will not be devoted to presentations of contributions, but to their discussion by the audience and the invited discussants. A publication of the mini-symposium is planned (e.g. The ANE Neolithic: Current Problems and Their Perspectives).

We shall collect statements and proposals reaching us by email, the mailing list "ForumNeo-Lithics", or by other correspondence until the middle of February, and then will approach you again.

Sincerely,

Charlott Hoffmann Jensen Hans Georg K. Gebel
chp@coco.ihl.ku.dk hggebel@zedat.fu-berlin.de

More Internet Services Related to the ANE Neolithic

The Turkish Neolithic Database is now online at:

<http://tayproject.eies.itu.edu.tr/>

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Deadline for the coming issue of *Neo-Lithics* is March 15th, 1999 (next deadline: May 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: rollefo@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, e-mail: hggebel@zedat.fu-berlin.de).

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