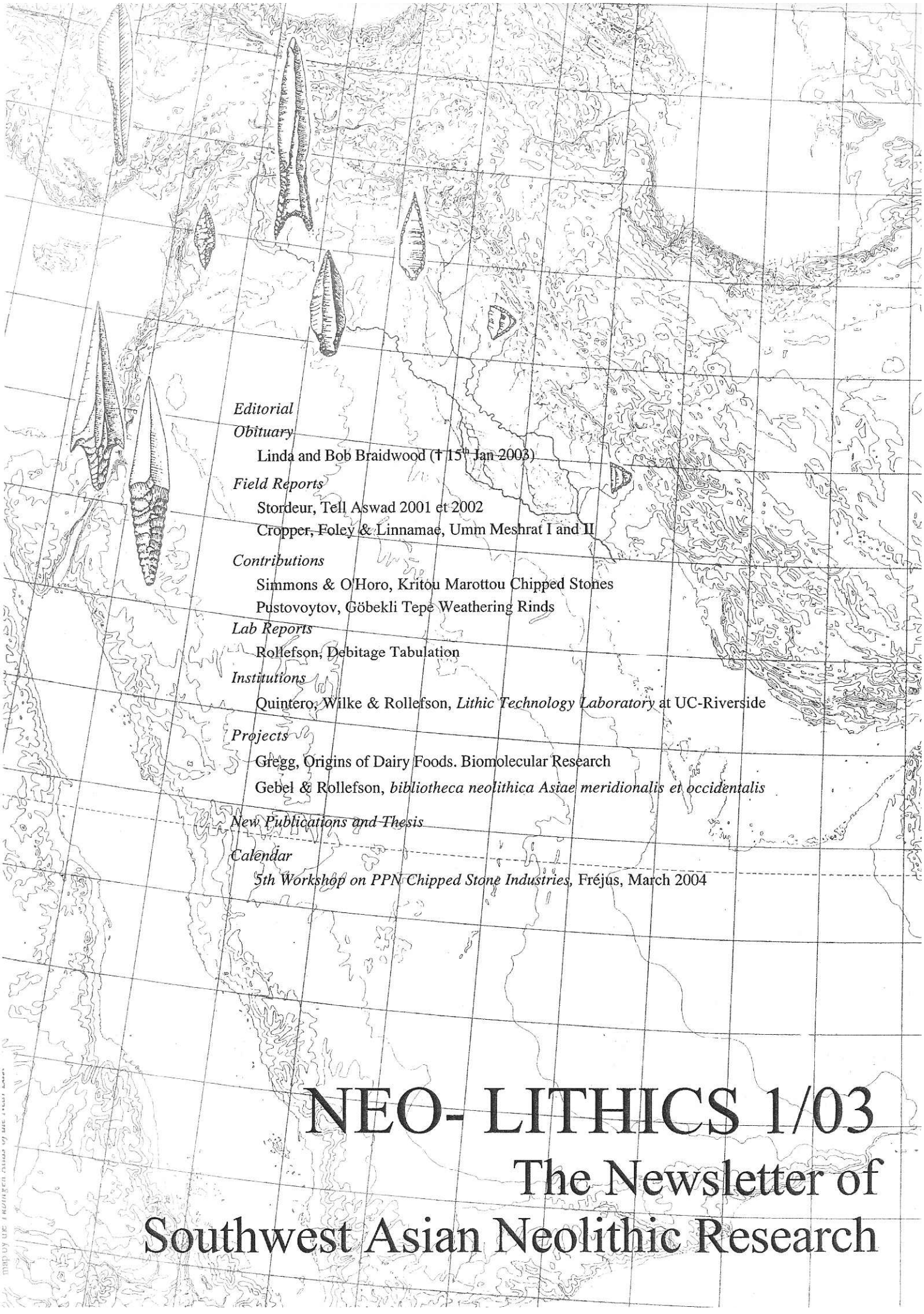

NEO- LITHICS 1/03

The Newsletter of Southwest Asian Neolithic Research

Contents

Editorial

With the current issue we started to bring you a new format of *Neo-Lithics* that is more professional and user-friendly in terms of a clearer arrangement, font size, and layout. We hope that the improved product will make the discussions in *Neo-Lithics* more enjoyable to read and easier to cite. These improvements come at no extra cost to the subscriber holding "old" subscriptions.

At the same time, we have worked further on conceptual improvements for Neo-Lithics. As you all have noticed, our original aim to concentrate on "lithics" expanded in view of the desirablility to publish quick reports on recent excavation results. Chipped lithics presentations became simply one newsletter section among others. We acknowledge this development by now calling *Neo-Lithics* "*The Newsletter of Southwest Asian Neolithic Research*". As you may also have noticed, *Neo-Lithics* did not fully become -as was the earlier intention - a forum promoting direct discussion in Neolithic research. In order to support this aim more successfully, three new sections will be introduced in *Neo-Lithics* in the coming issues: a section called "Dialogue", a section called "Projects", and a section called "Institutions".

For the Dialogue either colleagues or we as editors will propose a "burning" topic, for which *Neo-Lithics* acts as a mediator for a colleague / colleagues who present/s a provocative new thesis or controversial statements. Other colleagues are invited to reply, to which the original author might also reply. Provoking catchwords may help to focus discussion: *e.g.*, we initiated a research history topic under the headline "There Are No Centers" (in preparation of an ICAANE - workshop to be held in Berlin, April 2004, organized by H.G.K. Gebel, M. Özdoğan, K. Schmidt, and G. Rollefson; more in the next issue), or animated a discussion on Neolithic "Levantine Cyprus?". This all is done to help a needed productive and lively exchange of views on topics that are vital for either conceptual / theoretical progress or for the understanding of research re-

(cont'd. on Page 39)

Robert John Braidwood (1907-2003) & Linda Schreiber Braidwood (1909-2003)

Geoffrey A. Clark

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He bestrides this narrow world like a colossus, and we petty men run about beneath his legs to find ourselves dishonorable graves.
Cassius, in Shakespeare's Julius Caesar, Act I, Scene II

Robert J. Braidwood, professor emeritus in the Oriental Institute and the Department of Anthropology at the University of Chicago, and his wife, Linda, his companion and colleague in pioneering research in Syria, Iraq, Iran and Turkey, died Wednesday, January 15, 2003, in the University of Chicago Hospital. Robert Braidwood was 95. Linda Braidwood was 93.

Their work provided important insights into the origins of domestication economies, and the settled village farming way of life that preceded the first urban polities in Mesopotamia around 3100 BC.

Robert Braidwood also played a pivotal role in the transformation of archaeology into a science-like endeavor by organizing the first multidisciplinary research teams, including botanists, zoologists, geologists and other natural scientists who provided novel perspectives on the natural settings of the extinct societies that bracketed the appearance of the first domesticated plants and animals. He introduced the idea of the testable hypothesis into an archaeology that was previously almost entirely inductive, and he was the first to use archaeological survey to investigate an entire region.

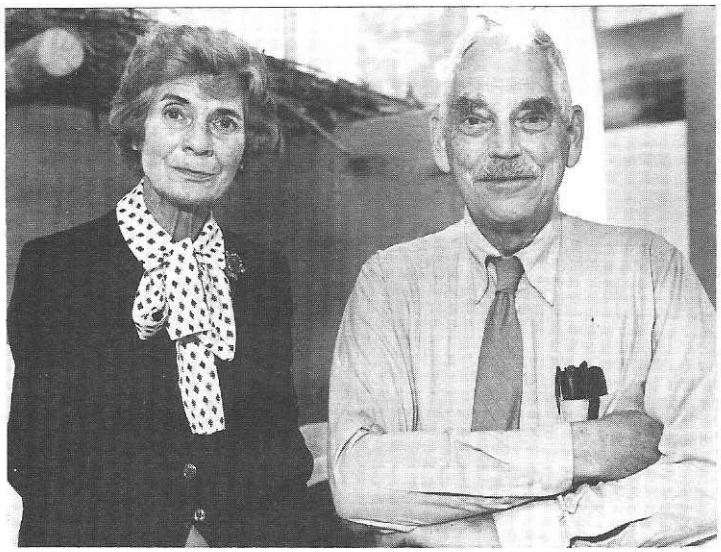

Fig. 1. Linda and Bob Braidwood.

Throughout his career, his wife, Linda, was a constant companion and partner in his research, so much so that it is really impossible to disentangle her contributions from his in the many pub-lications they co-authored together. When asked, as archaeologists often are, "What was your most wonderful find, Professor Braidwood?" he would invariably respond, with complete sincerity, "Linda" (Watson 2003).

Braidwood got his start in architecture at the University of Michigan, but switched to archaeology in part, at least, because of the lack of demand for architects during the Great Depression. While an undergraduate, he took a course in Near Eastern archaeology, was invited to do fieldwork near Baghdad in 1930, and became fascinated with the subject, earning a Michigan anthropology BA in 1932, followed by an MA a

year later. In 1933, James Henry Breasted, the legendary founder of the University of Chicago's Oriental Institute, hired Braidwood at the OI, an affiliation that continued throughout his life.

Braidwood began his work at the Oriental Institute's archaeological excavations in the Amuq Valley in northern Syria, a project that resulted in what is commonly known as 'the Amuq volume' (Braidwood and Braidwood 1960). In his work in the Amuq, he expanded the use of archaeological survey to locate the most promising ancient sites, developed a rationale and set a standard for the use the method that remain valid today. By carefully gathering material from sites exposed on the surface, he was able to date artifacts precisely by comparing them with material he had recovered from excavated contexts.

The Braidwoods were married in 1937, and before the outbreak of World War II, they continued to work in Syria and Iraq. During the war, he was put in charge of a meteorological mapping project at the University for the Army Air Corps. He finished his Ph.D., titled 'The Comparative Archaeology of Early Syria', in 1943. Only 21 pages long, a much expanded version was eventually published in 1960 (Braidwood and Braidwood 1960).

In 1947, Braidwood learned of work by University of Chicago physicist Willard Libby that involved dating organic materials on the basis of their radioactive carbon content, and provided Libby with some of the first samples analyzed. Skeptical of ceramic chronologies that, until the 1960s, constituted the basis for ordering things in time, he made radiocarbon dating an essential element in all of his research projects.

Masthead

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twice a year: 15th of May and 30th of November

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Text formats: in WORD; text, bibliography and caption styles: *cf.* previous issue of *Neo-Lithics*; illustration formats: high resolution eps, jpg, or tif- files - no illustrations embedded in the WORD text -, originals prefered (illustrations are required to the Berlin addresses, as well as hard copies of texts for the final layout); please, keep bibliographic references to the utmost minimum necessary.

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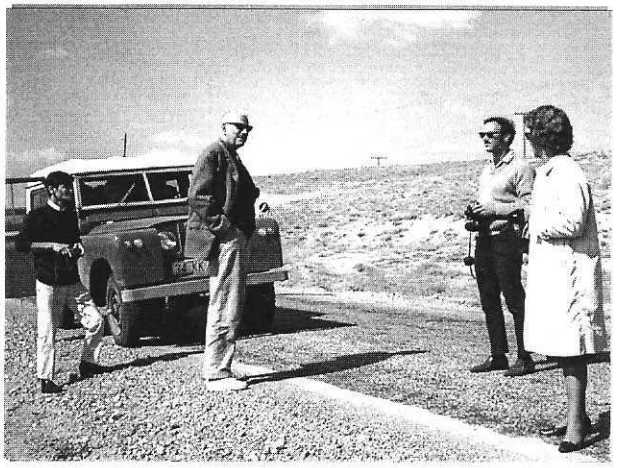

Fig. 2. L to R: Mithat Alihan, Robert Braidwood, Charles Redman, Linda Braidwood. Shot on the main highway to Diyarbakir, eastern Anatolia (that time a one-lane road; August 1968).

It was around this time that Braidwood began to focus his efforts on a previously neglected time range in Near Eastern research, the interval beginning around 12,000 years ago that immediately preceded the appearance of domesticated plants and animals. Braidwood recognized that the basal levels of the Mesopotamian tells only dated to c. 6,000 years ago, and that the transition from hunting and gathering to domestication was completely unknown. An Australian archaeologist affi-liated with University College London, V. Gordon Childe, had argued for years that the transition took place first in 'oasis' situations, but there was, in fact, no actual evidence of this. Sites dating to the transition interval simply did not exist.

"We wondered what we would learn were we to concentrate on that threshold of cultural change that must have attended the very earliest domestication of plants and animals," the couple wrote in a report in 1987 (Braidwood and Braidwood 1987). Although others had suggested that an agricultural revolution had preceded the emergence of complex societies, no one – until the Braidwoods began their work – had uncovered actual evidence of the transition.

The project pioneered a new kind of archaeology that emphasized analysis of bone fragments, chipped stone debris, plant remains and carbonized grain – the mundane detritus of ordi-nary life, usually discarded by archaeologists inte-rested only in complete artifacts, architecture and art. In 1954, the Braidwoods' interdisciplinary collaborations with natural scientists were rewarded with a generous grant from the National Science Foundation – one of the first awarded to anthro-pologists, and one of many to follow. By then the core team had come to include archaeologist Bruce Howe, archaeozoologist Charles Reed; paleoethnobotanist Hans Helbaek, ceramicist and radiocarbon specialist Frederick Matson, and geologist-paleoclimatologist Herbert Wright. The project also served as an incubator for many now-prominent archaeologists, then in the early phases of their careers. Among them were Robert McC. Adams, Frank Hole, Hattula Moholy-Nagy, and Patty Jo Watson. In addition, the eminent social anthropologist Fredrik Barth based his doctoral dissertation on sociopolitical organization in southern Kurdistan on his work at Kani Sard and Chalga, the two villages from which the Jarmo workmen came.

The work in Iraqi Kurdistan centered on the site of Qalat Jarmo, and continued until 1955. Occupied for several centuries around 8800 years ago, Jarmo comprised the remains of an early village-farming community of some 150 people – a permanent settlement of a size well beyond that of the typical forager. Perhaps most important was the primary evidence for plant and animal domestication – the bones of domesticated sheep and goats and the remains of wheat and barley were recovered – the earliest such evidence in the world at the time (Braidwood and Howe 1960, Braidwood *et al.* 1983).

Fig. 3. Linda Braidwood trimming Chuck Redman's hair. Linda was the "official" barber on all of RJB's projects (Fall, 1968).

The work in Iraq was interrupted by the 1958 revolution, which made it impossible for the Braidwoods to continue to work there. They shifted their operations to Iran and then, in the early 1960s, to southern Anatolia, where the low tell of Çayönü was the focus of more or less biennial field seasons between 1963 and 1988 (and, sporadically, into the 1990s). Conducted under a joint agreement between the universities of Chicago and Istanbul, the excavations uncovered surprisingly early evidence for precocious social complexity, manifest in large public buildings, elaborate mortuary ritual, and long-distance trade in obsidian, obtained from the region of Lake Van, several hundred kilometers to the northeast. At Çayönü, they discovered the oldest known terrazzo floor, made of an exceptionally durable concrete produced from burned lime. Even older than Jarmo, the site dates to a 500-year interval between *c.* 9250 and 8750 years ago.

Like Jarmo, the work at Çayönü produced several generations of professional archaeologists, including Charles Redman, David Webster, Gary Wright, Geoff Clark, and others too young for me to recall, and (under the direction of Istanbul University's Halet Çambel) trained a cadre of now-prominent Turkish scholars, among them Mithat Alisan, Ilknür Küçuk, and Mehmet Özdogan. Staff changes included the addition of archaeozoologist Barbara Lawrence, who replaced Charles Reed.

Braidwood was the author of numerous articles on the early evidence for plant and animal domestication, on prehistoric archaeology in general, and on the Neolithic in particular. In 1948, he published a short paperback book titled *Prehistoric Men,* which was widely adopted as a text, eventually going through eight editions, and Chinese and Turkish translations (Braidwood 1948, 1967).

He was the recipient of many honors, both here and abroad, including the 1971 medal for distinguished archaeological achievement awarded by the Archaeological Institute of America, the Society for American Archaeology's Fryxell Award for Interdisciplinary Research (1995), among many others. Braidwood was a member of the National Academy of Science (US), a Fellow of the Royal Society and of the Society of Antiquaries (United Kingdom), and a Knight of the Legion of Honor (France), in addition to many other accolades[1]. Internationally, he was probably the best known American archaeologist in the middle years of the last century. Tall and handsome, and with a spectacular past, Braidwood was reputedly the model for Hollywood film-maker Stephen Spielberg's 'Indiana Jones.'

Linda Braidwood (née Schreiber) received a BA from the University of Michigan in 1932, and an MA in archaeology from the University of Chicago in 1946, but was barred from pursuing a Ph.D. there because of androcentric bias on the part of the university's administration. Married in 1937, she joined her husband on expeditions throughout the Middle East, and was a frequent collaborator on his projects. She was a Fulbright Research Fellow in Turkey in 1963 and 1964, and a member of the Editorial Advisory Board for the journal *Archaeology* from 1952 to 1967.

A co-author on most of Braidwood's major publications, and a recognized authority in her own right, she also published extensively with other scholars. In 1953, she wrote a popular book, *Digging Beyond the Tigris,* that recounted her adventures in archaeology. Although focused on the 1950-51 field season at Jarmo, the book also drew on her experiences in the decades bracketing World War II in some of the more exotic (and turbulent) regions of the Middle East (Braidwood 1953).

One of history's great archaeologists, Robert Braidwood was an energetic and capable field worker, organizer, collaborator, and (with Linda) a role model for and mentor to graduate students – a powerful intellectual force in world archaeology for more than three decades. Although he had reservations about their persistence in the discipline, Braidwood did not hesitate to accept female graduate students on his projects, and freely admitted them to the collaborative relationships he maintained with his advisees. He also treated his students as junior staff members, rather than the 'skivvy labor' (as he called it) many of his contemporaries perceived them to be (Watson 1999). Although it nearly killed me, it was a rare privilege and an unforgettable experience to have had the opportunity participate with the Braidwoods in the 1968 field season at Çayönü[2].

The Braidwoods, who died in the same hospital several hours apart, are survived by a daughter, Gretel Braidwood, of Chicago; a son, Douglas Braidwood, of Virginia Beach; two grandsons and one granddaughter.[3]

Notes

1. Braidwood was the recipient of many honorary degrees and other awards and medals, but the fact that he was disinclined to maintain a *vita* makes reporting them difficult. In the genteel, scholarly world in which he received his training, everyone knew everyone else and the self-promotion implied by such a document was considered 'ungentlemanly' (P. J. Watson, pers. comm., April 11, 2003).

2. Despite the best efforts of our cook and kitchen staff, and the Turkish liaison, dysentery and intestinal parasites (ascaris and tape worms) ravaged the Çayönü camp at the Diçle Ilkögretman Ökülü, near Ergani (Diyarbakir Vilayet), leaving me and many others (including the Braidwoods) weakened and exhausted (and, in my case, restricted for nearly three weeks to a diet of boiled, unsalted, unbuttered rice). Unknowingly 'eating for many', yet constantly losing weight, the worms had to await my return to the University Hospital more than a year later.

3. This obituary draws heavily upon an anonymous obituary first published in the *The University of Chicago Chronicle,* January 23, 2003.

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Tell Aswad.
Resultats préliminaires des campagnes 2001 et 2002

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Tell Aswad, découvert en 1967 par H. de Contenson est situé à 30 km à l' ESE de Damas. La séquence stratigraphique du site a été établie par ce chercheur à partir de deux sondages situés en deux points opposés de la périphérie du tell. A partir des datations C14 puis d' études spécialisées (Contenson *et al* 1979 et 1995), cette séquence a été divisée en trois niveaux correspondant à trois phases de la chronologie levantine:

Niveau IA: PPNA: baptisé Aswadien
Niveau IB: PPNB ancien
Niveau II: PPNB moyen

A la suite de ces travaux, Tell Aswad est devenu, pour ses niveaux inférieurs, rattachés au PPNA (10000-9500 BP) et baptisés "Aswadien", un site de référence, le seul site de cet Horizon pour toute la zone intermédiaire séparant le Mureybétien (au nord) du Sultanien (au sud). Or depuis les années 70, l' Aswadien ne s' est enrichi d' aucun nouveau site et son existence même a commencé à poser problème. Des questions surgissaient notamment de l' examen des séries lithiques (Abbès, sous presse), suscitant en grande partie notre décision de reprendre le site. Les autres niveaux nous intéressaient également car la zone intermédiaire, entre Levant sud et Levant nord, y restait presque inconnue. Aswad avait peut-être été occupé en même temps que se créait et s' épanouissait le PPNB ancien au nord du Levant: que pouvait-il alors nous apprendre sur les traditions locales contemporaines dans cette zone ? Qu' en était-il ensuite du PPNB moyen ? Tell Aswad développait-il, à cette époque d' intensification de l' économie agropastorale, une culture originale ? Que devaient ses habitants aux traditions culturelles venues du nord[1]? Enfin, pour l' ensemble de l' occupation, il fallait se demander si Tell Aswad faisait partie de l' aire culturelle du Levant sud, dont il était géographiquement proche, ou s' il s'en distinguait. Ces interrogations ont guidé notre stratégie de fouille (Stordeur *et al.* sous presse).

Table 1. Datations effectuées en 2001

Echantillon	Contexte	Code labo	Date BP	Intervalle confiance cal BC
AS 01 C1	Secteur C	LY 11386	8602 ± 51	7730-7551 av JC (179)
AS 01 27-28	Secteur B -390	LY 11384	9219 ± 68	8625-8274 av JC (351)
AS 01 19-21	Secteur B -378	LY 11383	9285 ± 51	8654-8319 av JC (335)
AS 01 26,29-30	Secteur B -381	LY 11385	9805 ± 115	9602-8838 av JC (764)

Stratigraphie, architecture et pratiques funéraires

Stratigraphie

Le site, très grand (250/250m), a été amputé (1973) sur sa périphérie par une vingtaine d' encoches pour batteries militaires. Ces encoches présentaient l'avantage de permettre un accès direct aux niveaux archéologiques profonds et donc une vérification rapide de l' attribution culturelle des couches les plus anciennes. Deux encoches ont donc été choisies, à l' emplacement précis des sondages de 1971-72. Près d' elles, des carrés ouverts sur les points les plus hauts, étaient destinés à fournir la séquence complète dans ces deux zones de référence.

L'encoche du ***Secteur C*** avait fait disparaître toute la zone du *Sondage Ouest* (*Niveau II*) de H. de Contenson, nous n'y avons retrouvé que le niveau de base. Sur le sommet correspondant, seuls trois niveaux ont été dégagés.. Situé à 100m du précédent, contre le *Sondage Est* de Contenson, le ***Secteur B*** (fig. 1) a été centré sur une encoche E/W qui a été explorée jusqu' au sol vierge. Etant données les cotes relevées, toutes les couches préservées correspondaient au *Niveau IA*. La jonction stratigraphique entre sommet et base n'a pas été réalisée, mais une riche documentation correspondant aux *Niveaux II et IB* a été recueillie.

Fig. 1.1. Le Secteur B: Vue générale. Au premier plan, niveaux anciens fouillés dans l'encoche à batteries militaires. A l'arrière plan bâtiment complet EA 14.

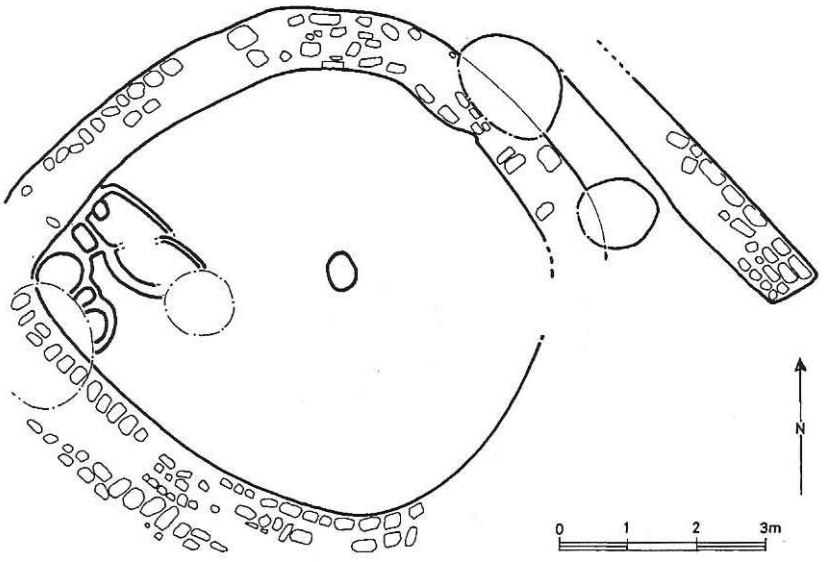


Fig. 1.2. Le Secteur B: Relevé du bâtiment EA 14 avec structures de stockage agglomérées.

Pour permettre la comparaison critique entre nos observations et les résultats obtenus par H. de Contenson, nous devions créer une grille de référence commune. Nous avons donc regroupé nos couches en nous calant sur ses subdivisions. Le *Niveau IA* se cale, dans le *Sondage Est*, entre les cotes –2,25m et –4,45m (sol vierge). Nous avons donc considéré comme ***Niveaux anciens*** les couches du Secteur B comprises entre ces cotes. Le *Niveau IB* était compris entre les cotes -1,75m et -2,25m (Sondage Est). Nos ***Niveaux intermédiaires*** ont donc été calés, dans le Secteur B, entre ces cotes. Enfin le *Niveau II* descendait, à l'Est jusqu'à -1,75m et caractérisait tout le Sondage Ouest. Le Secteur C et les couches surmontant -1,75m du Secteur B constituent donc nos ***Niveaux récents***.

Architecture

Le matériau de base est la terre à bâtir, combinée au bois et aux roseaux. Le plâtre, attesté dès la base, a servi pour enduire les sols de certaines maisons et de grandes structures rondes en cuvettes. Des ***murs en torchis*** (fig. 2) ont été trouvés dans un *Niveau ancien*. Leur âme est faite d' une suite de torsades horizontales de roseaux et de paille, retenues par des petits piquets verticaux. Le tout est englobé entre deux parements de terre à bâtir.. Des ***murs rectilignes en briques crues*** apparaissent dans l' ensemble des niveaux. Les briques sont modelées, ovales, de section plano-convexe. Enfin des ***murs en couches de terre litée*** sont attestés dans les *Niveaux anciens*. Pour des cloisons plus fines, le ***colombage*** (Aurenche

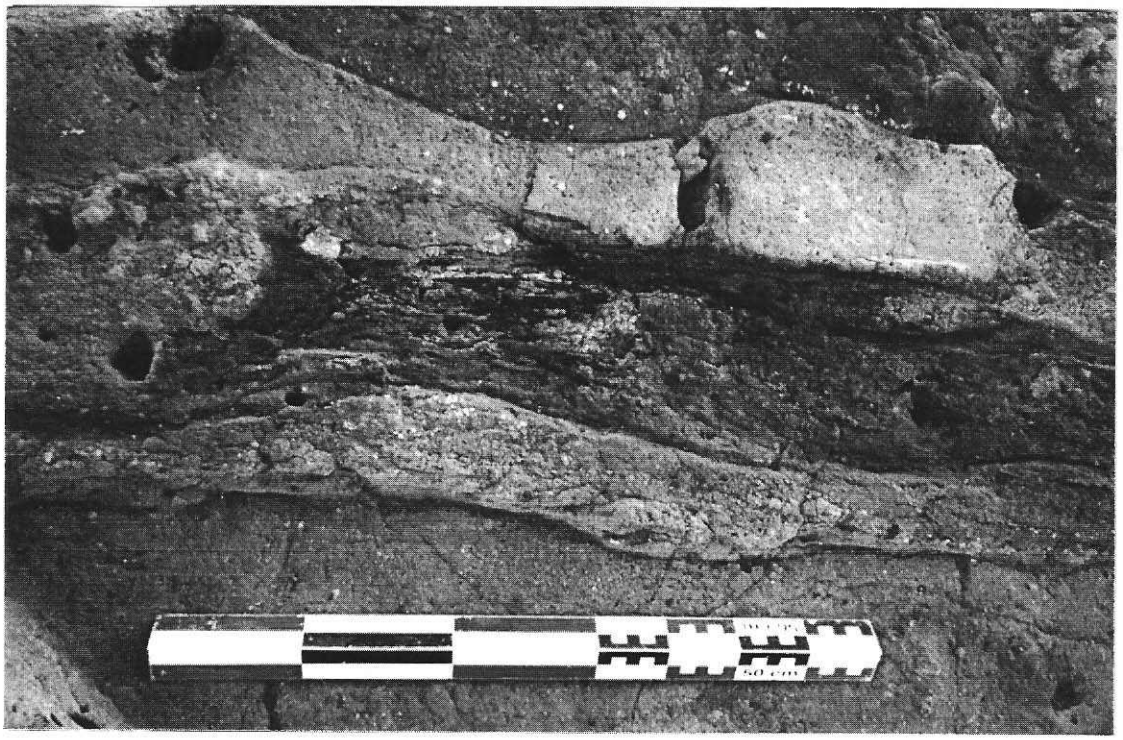


Fig. 2. Mur de torchis. Niveau B8 (-350 à –380 : niveau ancien).

1977) a été utilisé (silos des *Niveaux récents:* fig. 3). Des bottes verticales de roseaux sont alignées, inclues dans une masse d' argile enduite.

De grandes maisons à murs extérieurs droits sont attestées dès les *Niveaux anciens*. Une construction complète, appartenant à un *Niveau intermédiaire*, a été dégagée en 2002. Il s'agit d'un bâtiment de 7m/6m à l'intérieur (fig. 1), dont le plan s' inscrit dans une forme elliptique, allongée d'est en ouest. Le contour forme quatre pans rectilignes. Les murs, qui peuvent atteindre 90 cm d' épaisseur, sont en briques modelées. L' espace intérieur, non subdivisé, comporte au centre, un petit socle évoquant une base de poteau. Les aménagements intérieurs semblent tous dévolus au stockage et au rangement (pas de foyer) et sont agglutinés les uns aux autres. Plusieurs sépultures de périnataux et un crâne d' adulte ont été trouvés, soit dans le corps même du mur, soit contre les parois. Dans les *Niveaux récents* de petites structures rectangulaires à angles arrondis sont légèrement enterrées, alors que des ensembles de casiers rectangulaires, silos explicites car contenant encore des masses de grains d'orge et de blé (fig. 3) s' intègrent dans des constructions posées plus grandes.

En ce qui concerne l' organisation de l' espace construit on relève une alternance spatiale, d' un niveau à l' autre, entre zones construites et aires d' activité extérieures. Ainsi les maisons ne se superposent-elles pas[2]. Les espaces extérieurs sont

Fig. 3. Casier utilisé en silo (secteur C : Niveau récent) contenant une masse des grains d'orge carbonisés (d'après G. Willcox). Ce silo faisait partie d'un ensemble de casiers. A la surface de l'un d'eux, un enfant périnatal avait été inhumé avec une grosse perle plate en pierre verte.

équipés de fosses et d' une grande variété de structures de combustion. De grandes cuvettes, parfois enduites de plâtre, souvent comblées par des restes végétaux décomposés ou par des déchets, n' apparaissent que dans les *Niveaux intermédiaires* et *récents*. Certains espaces sont consacrés à des activités spécialisées: travail de l' obsidienne (*Niveau ancien*), travail de la terre crue (*Niveau intermédiaire*).

Pratiques funéraires

D'après J. Velasco[3] elles sont, comme dans la plupart des sites néolithiques, très variées. On n'en donnera ici que quelques exemples. Dans un *niveau ancien,* un crâne d' adulte avait été déposé au fond d' un panier enduit de plâtre puis enfoui (fig. 4) dans l' épaisseur d' une banquette. La fine pellicule de plâtre qui recouvrait la vannerie a enregistré l'empreinte précise de ses torons spiralés.

Plusieurs sépultures de très jeunes nourrissons ont été trouvées incluses dans l'architecture (*cf. supra*). Dans un niveau récent, un enfant avait été déposé avec une grosse perle verte plate à la surface d' un casier, le dos épousant l' une de ses parois. Par ailleurs une petite sépulture en fosse contenait deux périnataux reposant l'un sur les genoux de l'autre.

Deux groupements de sépultures d' adultes ont été trouvés dans des niveaux récents. Le plus clair, trouvé en 2002, montre une série de huit tombes disposées en arc de cercle et comprenant des dépôts secondaires et primaires, avec ou sans mobilier.

Mobilier

Industrie lithique (fig. 5)

Il faut rappeler que c' est à partir de l' étude de l' industrie lithique des niveaux anciens de Tell Aswad que H. de Contenson avait défini l' Aswadien. Pour M.-C. Cauvin (1995) la présence exclusive, dans les niveaux de la phase IA, de grandes lames denticulées et de pointes à encoche (baptisées ici "pointes d'Aswad") comme l'absence de pièces à retouches couvrantes étaient des critères suffisants pour rattacher cette industrie au PPNA. Les fouilles de 2001 ont montré que les pointes d' Aswad (fig. 5, n°1) n' étaient pas exclusives dans la première phase d' occupation du site. Elles étaient au contraire associées à de nombreux autres types caractéristiques du PPNB du Levant Nord et Sud, comme par exemple les pointes de Byblos, de Jéricho, d' Amouq, ou les pointes ovalaires (fig. 5, n°2). A ceci s'ajoute le fait que ces pointes, aussi bien que les grandes lames denticulées, ont été réalisées à partir d' un débitage bipolaire dont les comparaisons les plus évidentes sont à rechercher à partir du PPNB ancien/moyen du Levant nord. Enfin l'ensemble des niveaux a livré un débitage de lames de silex réalisé à la pression (fig. 5, n°3) ou au chasse-lame. Plus pertinent encore, un atelier secondaire d'obsidienne, trouvé dans un niveau ancien, ras-

Fig. 4. Dépôt de crâne dans un panier spiralé enduit de plâtre, intégré à l'intérieur d'une banquette elles même enduite de plâtre. Niveau B9 (-380 à -400 : Niveau ancien)

rassemblait des nucléus débités préalablement à la pression pour obtenir lames et lamelles, puis repris à la percussion de pierre. L'ensemble de ces observations typologiques et techniques, dues aux analyses de M.-C. Cauvin et de F. Abbès, sont incompatibles avec une identification au PPNA.

Vannerie, corderie et tissage

Plusieurs ***nattes,*** conservées sous forme de squelette végétal, ont été trouvées dans des sépultures. Des fragments de ***vannerie spiralée*** ont été moulés accidentellement dans une gangue de terre. Grâce à la découverte d' un dépôt de crâne (*supra*) nous avons pu constater que certains paniers avaient été recouverts d' une fine couche de plâtre. L'existence de ***cordes*** est également attesté sous forme d'empreinte. Enfin une empreinte de ***tissu*** fin et peut-être rebrodé, enregistrée par un fragment de plâtre, provient d' une des couches les plus anciennes du site. On notera à ce propos qu' une quantité importante de graines de lin a été trouvée dans la même couche. Ce document, qui atteste à la fois la connaissance du plâtre et la pratique d' un tissage fin et sophistiqué (réalisée probablement avec de la fibre de lin), nous paraît difficile à attribuer à l' Horizon PPNA.

Représentations humaines

Le site est riche en représentations humaines et animales, ainsi qu' en petits objets aux formes géométriques simples: petites sphères, cônes, disques. Trois matières ont servi pour la fabrication de ***figurines anthropomorphes:*** le calcaire, le plâtre et la terre. Les deux premières n' ont été trouvées pour le moment qu' en contexte funéraire récent. En revanche les figurines en terre sont nombreuses et dispersées dans l' ensemble des couches.

Trois ***statuettes féminines*** superposées faisaient partie du mobilier funéraire d' une sépulture d'un *Niveau récent*. La première, en calcaire a été sciée pour supprimer le haut du corps. Ses formes sont amples, avec taille, fesses et nombril bien marqués. Les deux autres, en plâtre, sont identiques, montrant une femme assise, cuisses opulentes écartées, décorées par des cordelettes imprimées et colorées en rouge. Les jambes, détachées des cuisses, montrent une zone de cassure concrétionnée. Ces trois statuettes semblent donc bien avoir fait l'objet d' une fracturation volontaire. Elles rappellent celles, en terre, de Aïn Ghazal PPNB moyen (Rollefson 1983: pl. II n°3 et McAdam 1997: fig. 2).

Nous avons suivi la classification de H. de Contenson (1995) pour les figurines modelées en terre. Les ***figurines assises,*** inscrites dans un volume triédrique apparaissent régulièrement. Parmi les ***figurines pion,*** certaines ont des épaules larges, des moignons de bras donnant l' impression d' être ouverts et une tête munie d' un bec. D'autres s' inscrivent plutôt dans une forme cylindrique avec une tête arrondie au nez pincé et des bras repliés vers la poitrine. Dans cette catégorie une ***figurine aux yeux en grain de café*** (fig. 6, n°1)) annonce celles, plus tardives, de Ramad PPNB récent, voire de Byblos Néolithique ancien (remarque de H. de Contenson). Enfin une

figurine masculine (fig. 6, n°2) montre de larges épaules, des bras ouverts et un sexe masculin réaliste (non ithyphallique). Ce type de représentation rappelle une figurine contem-poraine de Cafer Höyük (Anatolie) et, plus près, de Munhata.

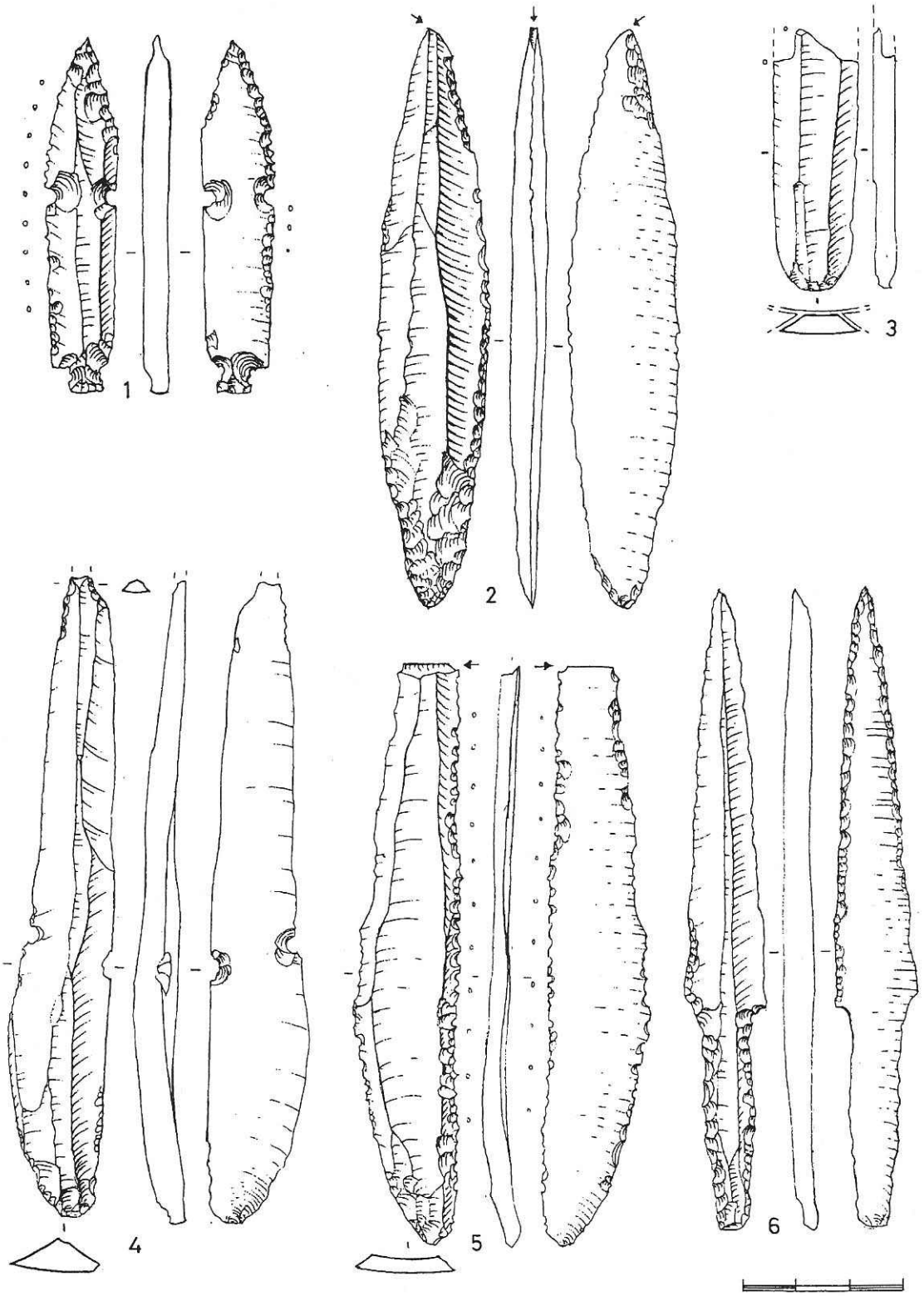
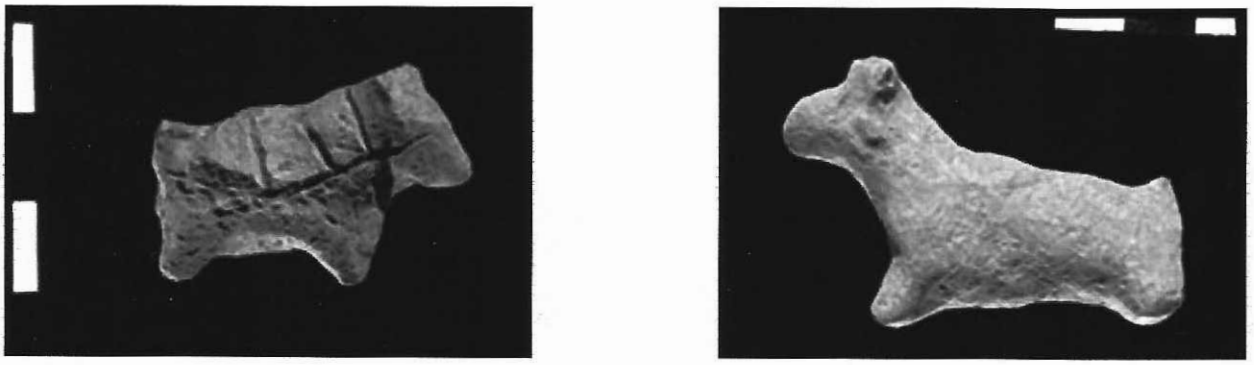


Fig. 5. Industrie lithique de Tell Aswad, Niveaux anciens.
1 pointe d'Aswad à bord lustré, 2 pointe ovalaire, 3 fragment de lame débitée à la pression ou au chasse-lame, 4 lame à encoche, 5 lame denticulée à encoche, 6 grande mèche pédonculée.

1

2



3 4

Fig. 6 : Figurines humaines (1,2) et animales (3,4) en terre.

1 figurine humaine aux yeux en grains de café,
2 figurine masculine,
3-4 figurines animales.

Représentations animales (fig. 6)

Les figurines animales ont été trouvées partout. Elles sont tellement schématiques que leur attribution à un animal précis est difficile. Certaines cependant ont pu être identifiées par D. Helmer, grâce à un tableau d'attributs. Les bœufs dominent, suivis de près par les chèvres. On identifie plus rarement Ovis et Sus. Un carnivore pourrait être un chien. Il est important de remarquer que l' essentiel, sinon la totalité des figurines animales fait référence au cheptel

domestique. La seule qui pourrait évoquer le monde sauvage est celle du suidé, qui peut être aussi bien un sanglier qu' un porc. Ces petits objets ressemblent de très près aux figurines animales du PPNB moyen et récent de sites du Levant sud comme Ain Ghazal (Rollefson, 1989 Pl III: n° 5 et McAdam 1997: fig. 11) et Beidha (Kirkbride 1966) mais aussi de sites du Levant nord tels que Halula (Molist *et al.* 1996: fig. 2).

Exploitation du milieu végétal et animal

Le rapport homme/animal

D'après D. Helmer, l' image de l' ensemble des niveaux du site est celle d' un groupe humain pratiquant l' élevage. Dès les premiers niveaux, le cochon, le bœuf, le mouton et la chèvre semblent présents. Si la certitude de domestication est très forte en ce qui concerne les ovinés et les caprinés, elle est plus faible pour les suidés et les bovins (peu de restes). Dans les *niveaux intermédiaires* on peut être assuré que tous ces animaux étaient élevés. De petites gazelles sont chassées et peut-être des mouflons et des aurochs. La présence d' animaux domestiques dès la première occupation du site empêche d' y voir une phase de l' Horizon PPNA. On ne connaît en effet à ce jour aucun animal domestique (à part le chien), ni dans un contexte Sultanien (Levant sud) ni dans un contexte Mureybétien (Levant nord).

Le rapport homme/végétal

A la suite de l'étude des restes carbonisés provenant des fouilles de H. de Contenson par W. van Zeist (Van Zeist *et al*, 1982) Aswad était devenu un site de référence concernant les origines de l'agriculture et de la domestication des plantes au Proche-Orient. L' identification d'amidonnier domestique dès la base du tell (IA) avait été considérée comme le plus ancien indice de domestication pour cette espèce et Aswad devenait dès lors le seul site du PPNA où la domestication morphologique était fermement signalée. Les doutes exprimés par G. Willcox à propos de l'identification de la domestication (Willcox 2002) ne sont plus à l'ordre de jour du fait que W. van Zeist a récemment réexaminé les bases d'épillets de la phase IA et qu'il confirme leur statut domestique. De plus la culture des céréales est suggérée par deux autres indices: d'une part elles ne pouvaient pas exister à l' état sauvage dans l' environnement proche du site, d' autre part, elles s'associent au cortège habituel des plantes adventices qui accompagne l' agriculture. Enfin une quantité importante de graines de lin était présente, même dans les couches profondes. Tous ces éléments rendent difficile une attribution des niveaux anciens au PPNA.

Conclusion

Le résultat principal des premières campagnes de fouille à Tell Aswad[4] concerne les *Niveaux anciens*. Il ne paraît pas possible de les attribuer à l' Horizon PPNA. Les datations que nous avons obtenues pour les couches les plus anciennes sont nettement plus « jeunes » que celles publiées par H. de Contenson pour les mêmes niveaux. A l' exception d' une date que nous ne retenons pas (LY 11385), vu son fort coefficient d' erreur (115 ans), toutes correspondent au début du PPNB moyen ou à l' extrême fin du PPNB ancien. Il nous semble surtout fondamental que l' ensemble de la culture matérielle: caractères de l' industrie lithique, utilisation du plâtre dans l' architecture, petits objets et récipients en argile, fasse référence à des cultures postérieures, assimilables pour une grande part au PPNB moyen. A quoi s' ajoute le fait que la pratique d' un élevage diversifié et la présence de céréales à bases d'épillets de type domestique n'a encore jamais été attestée dans l' horizon PPNA.

Il reste possible que des niveaux situés sur l'"Horizon PPNB ancien" existent dans le site. Ceux-ci nous intéresseraient au plus haut point. Rappelons en effet que, pendant que le PPNB se prépare puis apparaît dans le moyen Euphrate avec une phase de transition PPNA-PPNB (décelée à Jerf el Ahmar: Stordeur et Abbès 2002) suivie par le PPNB ancien (Mureybet, Cheikh Hassan, Dja' de, sites anatoliens) on ne sait pas encore très clairement ce qui se passe au sud du Levant. Tout le problème de la naissance, de la diffusion et du développement du PPNB est ici concerné, et doit être approfondi en coopération directe avec les chercheurs travaillant au Levant sud. Enfin, il nous reste à placer tell Aswad dans la palette très variée des cultures locales qui composent le PPNB moyen. Les premières analyses montrent beaucoup plus de ressemblances avec les sites contemporains du Levant sud, qu' avec ceux du nord de la Syrie. Il est toutefois trop tôt pour préciser la position culturelle exacte de ce site, plusieurs campagnes de fouilles seront nécessaires pour l' envisager avec rigueur.

Annotations

1. J. Cauvin en 1994 (p. 131) présente une vue synthétique de propositions établies dans plusieurs articles plus anciens à propos de la diffusion du PPNB de la vallée de l'Euphrate au Levant sud. Il parle de « l'expansion vers le sud d'une culture plus nordique y exportant, si l'on peut dire, un Néolithique différent ». Il posait déjà la question qui sous-tend nos travaux: «Le cas de la Damascène dont la position géographique est intermédiaire entre Levant nord et Levant sud est moins clair et le phénomène humain qu'y recouvre l'arrivée du PPNB plus difficile à identifier faute de données suffisantes».

2. Ce qui peut faciliter le recyclage des matériaux au cours de la reconstruction, habitude constatée dans le PPNB ancien et moyen de Cafer Höyük: Molist et Cauvin 1991.

3. Anthropologue à l'Université de Valladolid, chargé de l'étude des restes humains à Tell Aswad.

4. Je tiens à remercier ici tous ceux qui ont permis la reprise des fouilles à Tell Aswad et l'acquisition des résultats préliminaires exposés ici. Il s'agit d'une opération franco-syrienne, co-dirigée par B. Jammous (DGAM de Syrie) et D.

Stordeur (Mission El Kowm Mureybet du Ministère des Affaires étrangères français). Les responsables de secteur: J.A. Sanchez-Priego, J.-C Roux, J.J. Ibanez, les spécialistes: D. Helmer (archéozoologie), G. Willcox (archéobotanique), F. Abbès et M.-C. Cauvin (industrie lithique), J. Velasco (anthropologie), G. Der Aprahamian, et leurs assistants, les fouilleurs européens et syriens, les ouvriers, tous ont donné le meilleur d'eux-mêmes pour la connaissance de ce site.

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Field Report

Results from the Preliminary Investigations at Umm Meshrat I and II

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Introduction

Umm Meshrat I and II are two adjacent Late Neolithic sites located along the Wadi ath-Thamad in west-central Jordan (Fig. 1). The sites were identified by the Wadi ath-Thamad Regional Survey[1] in late July 2001 during the penultimate week of the team's field season. Late Neolithic remains were identified at UM I (WT 40) and UM II (WT 96) while the survey was investigating Natufian remains at WT 40. Pottery and lithics were observed eroding from a large gully that had incised the terrace on which UM I is located. Lithics also were identified upslope from UM I, increasing in concentration up to UM II where the survey recorded abundant lithics and features.

UM I is situated on a natural terrace above the Wadi ath-Thamad. The terrace section containing the site is 60m wide running east-west and just under 75m long running north- south. The elevation is 610-615m asl. UM II is located on the ridge upslope from and just south of Umm Meshrat I. It extends north-south along the ridge covering an area of 150m by 71m at an elevation of approximately 650m asl. UM II overlooks the floodplains of the Wadi ath-Thamad to the east and the Wadi Zafaran to the west. The closest water source for both sites is a spring, 'Ain Thamad, located in the wadi just below UM I. Two additional springs are within close proximity to 'Ain Thamad, one upstream and one downstream (Fig. 2).

Time constraints associated with the season's close restricted investigation at UM I and II. The survey conducted preliminary surface collections at the sites, together with a total of seven 1x1m test probes; five units at UM I and two units at UM II[2]. The units were placed so as to facilitate the identification of features at both sites, with units positioned inside and outside of features apparent on the surface. At UM I, a square was placed near the gully where LN artifacts were observed initially. All sediments were sieved through a ° inch mesh.

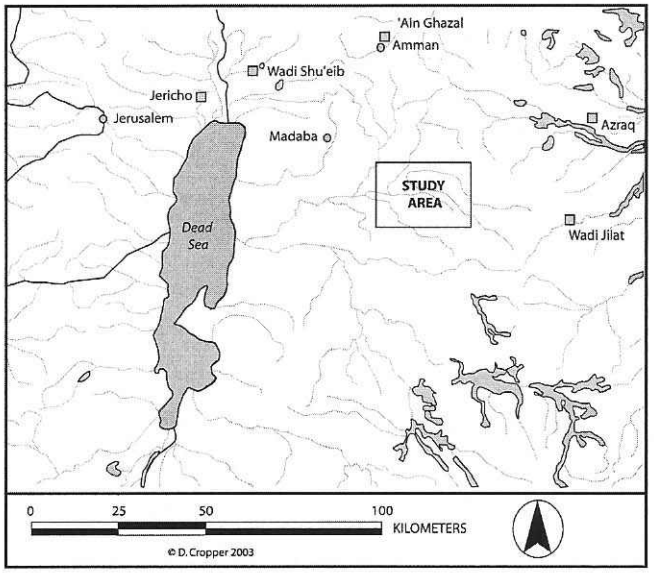

Fig. 1. Location of the Wadi ath-Thamad Project survey area.

Abundant chipped stone artifacts, pottery, and features were recovered from both sites. While erosion has deflated the more recent surface sediments at UM II, it appears that there has been limited disturbance to the artifacts and features. The density of lithics increased as one approached the exterior walls of each feature and decreased sharply inside the feature. At UM I a fan shaped colluvial debris field, composed largely of small cobbles, extends over much of the terrace. Similar debris fields have been recorded at other LN sites including 'Ain Ghazal (Rollefson and Kafafi 1994), Wadi Shu'eib (Simmons *et al.* 2001), Ain Rahub (Kafafi 1989), and Jebel Abu Thawwab (Kafafi 1993), as well as at a number of other sites throughout the southern Levant (Simmons 1997). Unlike most other sites, however, the debris field at UM I is located on the surface of the terrace. The test probes indicate that an in situ LN occupation is preserved under the debris field. Few LN artifacts were collected from the surface of the terrace, with the exception of where the gully cut through the surface sediments.

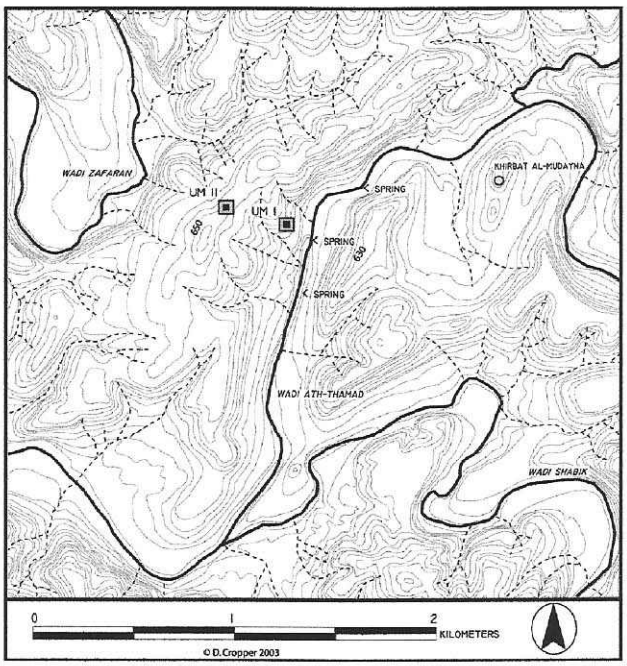

Fig. 2. Location of Umm Meshrat I and II.

Features

The architectural remains recorded at UM I are ephemeral, consisting only of fragmentary walls and a confirmed mud/*huwwar* plaster floor. One 'L' shaped alignment of stones was identified during the surface survey of the site. This feature is located at the southern edge of the debris field adjacent to the gully. Two units (Units 4 and 5) were placed on what appeared to be the inside and outside of the feature. A lens of white sediment and medium-sized cobbles may be the remnants of a degraded construction material; however, no conclusive evidence of an occupation surface was detected. A third unit (Unit 3) was placed near the gully to the west of Units 4 and 5, where numerous LN pottery sherds and lithics were observed on the surface. Two rough fieldstone walls were uncovered at an approximate depth of 0.57m. The walls, constructed of undressed cobbles, appear to be one course high and one row wide and intersect at roughly a 50° angle. Lithics and a pottery sherd were collected in situ from the mud/*huwwar* plaster floor that seals against the walls. The presence of these features and associated artifacts under the rubble layer suggests that other features may be

preserved. Once through the debris layer, all excavated sediments were ashy.

The surface survey of UM II identified 28 features including circular / oval structures of various diameters and linear wall fragments. Linear wall fragments and the remains of rectilinear structures exhibited a broader dispersal pattern than the round structures and all were located along the periphery -mostly to the north- of the core area. Several wall lines were located down slope towards UM I, running across the slope above the terrace. The circular and oval structures formed small groups of two and three units within the core area. These clusters occurred randomly across the top of the ridge and along the gentle upper, east facing slope of the limestone formation to the west of the Wadi ath-Thamad. No structures were identified on the western side of the ridge overlooking the Wadi Zafaran. A large cairn was recorded to the northwest of the core area. Its association with the site has yet to be determined.

Two 1x1m test pits were excavated at UM II, placed on the inside and outside of a circular structure. Numerous artifacts were recovered including pottery, lithics, and fire-cracked rock. Burnt bone fragments also were recovered. No occupational surface was identified.

Ceramics

A total of 47 sherds were collected from UM I and II. Nearly half of the sherds (n=24) were collected during the surface survey of UM I. Ten sherds were recovered from the units at UM I and thirteen sherds from the units at UM II. All sherds are characteristic of LN pottery. Within the small collection, a high degree of variability is evident. The ware ranges from fine to coarse, with medium ware most common. The majority of the sherds exhibit a reddish yellow fabric, while the fine ware is a lighter buff color. The sherds are friable, poorly fired and could not withstand washing. Most sherds exhibit chaff temper and grit inclusions. Some of the coarse ware has small pebble inclusions. Many sherds were covered with carbonate concretions, particularly those recovered from UM II, making analysis difficult.

Unlike many LN ceramic collections, a large proportion of the sherds (49%) exhibit some form of decoration, including slip, paint, incision, burnishing or a combination of these techniques (Fig. 3). Red paint and/or slip is the most common decoration type and it can be further sub-divided into paint/slip over the entire sherd, wide painted lines, and triangular motifs. Two sherds demonstrated incised decoration; a sherd with typical Yarmoukian herring bone design within an incised frame, and a sherd with red paint within an incised frame. The collection also includes one red slipped/painted burnished sherd and one sherd with white slip/paint. Other than surface treatment or decoration, only six sherds exhibit formal diagnostic attributes, including four rims and two handles. All rims are even side width rims, including three pointed rims and one square rim. The two handles are a horizontal pierced lug handle and a loop handle. The lug handle is particularly interesting as the sherd also retains a horizontal ridge above the handle. This sherd, decorated with a red-painted triangular motif, appears to be from a Byblos jar.

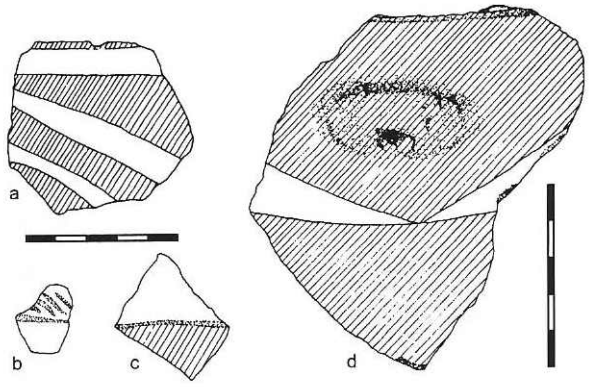

Fig. 3. Decorated Pottery (a) wide painted lines, (b) herringbone incised, (c) red paint under incised border, (d) Byblos jar sherd with painted triangular motif (drawn by D. Cropper).

The size of the sample precludes specific conclusions with respect to the ceramic assemblages or the nature of UM I and II. The ceramics from the sites are similar, including sherds with characteristics of Yarmoukian and of Jericho IX pottery. The material does not present any pattern that allows us to specify the relationship between the sites culturally or chronologically.

Chipped Stone

Lithics were the most abundant artifact type recovered from both sites. A total of 1,117 chipped stone artifacts was collected from UM I, with 664 from the surface collection and 453 from the excavation of the test probes. At UM II 1,935 lithics were recovered; 1,432 from the surface collection and 503 from the test probes. The formed tool and debitage classes are typical of LN assemblages, with the exception of the surface collection from UM I, where there is clear mixing of Upper Paleolithic, Epipaleolithic, and Neolithic artifacts.

Debitage accounted for approximately 35% and 21% of the total chipped stone collections from UM I and II, respectively (Table 1). The complete reduction sequence was observed at both sites, with single platform cores predominant at

Table 1. Debitage. Relative and absolute frequencies, including tool preforms.

	UM Surface		UM I Units		UM I TOTAL		UM II Surface		UM II Units		UM II TOTAL	
	n	%	*n*	%	*n*	%	*N*	%	*n*	%	*n*	%
Blades	144	22.19	22	4.92	166	15.15	253	17.68	20	4.07	273	14.20
Bladelets	185	28.51	25	5.59	210	19.16	269	18.80	52	10.59	321	16.70
Flakes	199	30.66	273	61.07	472	43.07	453	31.66	244	49.69	697	36.26
Spalls	8	1.23	11	2.46	19	1.73	183	12.79	20	4.07	203	10.56
Debris	22	3.39	58	12.98	80	7.30	153	10.69	70	14.26	223	11.60
CTE	72	11.09	43	9.62	115	10.49	44	3.07	73	14.87	117	6.09
Cores	19	2.93	15	3.36	34	3.10	76	5.31	12	2.44	88	4.58
Tools	(527)	(81.20)	(180)	(40.27)	(707)	(64.51)	(1213)	(84.77)	(305)	(62.12)	(1518)	(78.98)
Subtotal	649	100.00	447	100.00	1096	100.00	1431	100.00	491	100.00	1922	100.00
Indeterminate	15	2.26	6	1.32	21	1.88	1	0.07	12	2.39	13	0.67
Total	664		453		1117		1432		503		1935	

Table 2. Formed tools. Relative and absolute frequencies.

	UM I - Surface		UM I - Units		UM I - TOTAL		UM II – Surface		UM II - Units		UM II – TOTAL	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Arrows	2	1.10	1	1.39	3	1.19	2	0.30	0	0.00	2	0.26
Awls	23	12.71	26	36.11	49	19.37	112	16.62	26	24.07	138	17.65
Bifaces	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Burins	24	13.26	7	9.72	31	12.25	225	33.38	27	25.00	252	32.23
Denticulates	34	18.78	6	8.33	40	15.81	96	14.24	11	10.19	107	13.68
Drill	9	4.97	16	22.22	25	9.88	60	8.90	14	12.96	74	9.46
Hammerstone	3	1.66	0	0.00	3	1.19	0	0.00	0	0.00	0	0.00
Multiple Tool	5	2.76	0	0.00	5	1.98	28	4.15	3	2.78	31	3.96
Notches	18	9.94	10	13.89	28	11.07	65	9.64	14	12.96	79	10.10
Scrapers	29	16.02	2	2.78	31	12.25	34	5.04	6	5.56	40	5.12
Sickle	1	0.55	0	0.00	1	0.40	0	0.00	0	0.00	0	0.00
Tile Knives	1	0.55	1	1.39	2	0.79	0	0.00	1	0.93	1	0.13
Truncations	9	4.97	3	4.17	12	4.74	50	7.42	6	5.56	56	7.16
Microliths	12	6.63	0	0.00	12	4.74	0	0.00	0	0.00	0	0.00
Geometrics	10	5.52	0	0.00	10	3.95	1	0.15	0	0.00	1	0.13
Other	1	0.55	0	0.00	1	0.40	1	0.15	0	0.00	1	0.13
Subtotal	181	100	72	100	253	100	674	100	108	100	782	100
Paleolithic	26	4.93	0	0.00	26	3.68	0	0.00	0	0.00	0	0.00
Utilized	148	28.08	56	31.11	204	28.85	150	12.37	71	23.28	221	14.56
Retouched	172	32.64	52	28.89	224	31.68	389	32.07	126	41.31	515	33.93
Total	527		180		707		1213		305		1518	

UM I and opposed platform cores predominant at UM II. As is typical of LN assemblages, flakes dominate the debitage classes at both sites. However, this is not true of the surface collections. The discrepancy is likely due to the biases towards the recovery of formed tools during the survey.

The collections from the sites exhibit a diverse range of formed tools (Table 2, Fig. 4). Retouched pieces are most common at both sites. Burins, particularly truncation burins, are frequent at UM II. Taken together, drills and awls make up the third most common tool category at both sites and include numerous drills bits on spalls, which are

commonly associated with bead production (Finlayson and Betts 1990). One sickle element[3] was recovered and bifacial tools were rare (*i.e.*, adzes, axes, etc.). A total of five arrows (or arrow fragments) was recovered from both UM I and II. Two points, an El Wad point and a Jericho point, were collected during the surface reconnaissance of UM I, which attests to the mixed nature of the surface deposits. The base of a Haparsa point was recovered from Locus 5 (0.31-0.45 m DBD) of Unit 3. Two points were collected at UM II; the base of a Jericho point and the base of a Haparsa point. Haparsa points are decidedly LN, while Jericho points are characteristic of the PPNB period but continue into the LN (Gopher 1994). Their presence at the sites, although notably only in surface collections thus far, may be indicative of an early LN occupation. The lack of transverse arrowheads in the collections also supports this chronology.

The chipped stone assemblages of UM I and II demonstrate affinities with those found in more arid regions, such as in the eastern desert of Jordan (Betts 1987, 1992, 1993, 1998; Betts and Helms 1987; Finlayson and Betts 1990) and Wadi Jilat (Garrard *et al.* 1994, Garrard, *et al.* 1988). While the assemblages from UM I and II do not show the extreme dominance of burins like the eastern desert sites (Betts 1983, 1984, 1985, 1987, 1992), they do exhibit high proportions of burins and low frequencies of projectile points and sickle elements much like the Wadi Jilat assemblages (Garrard *et al.* 1994, Garrard *et al.* 1987, Garrard *et al.* 1986). It is likely that the frequencies of formed tool types are a reflection of the sites' transitional location between the Mediterranean and steppe zones and are suggestive of an economy more reliant on pastoralism than on either agriculture or hunting.

Other Finds

Numerous faunal remains were recovered during the excavations at UM I and II. Most were small bone fragments, a number of which were burnt. While the analysis of the material is not complete, the initial interpretation suggests that the remains are predominantly ovicaprid. Several pieces of Dabba marble were recovered from both sites. Dabba marble is a common raw material used in bead production. Two sources are known; Bawwab al-Ghazal (Quintero *et al.* n.d., Rollefson *et al.* 1999) and Wadi Jilat (Garrard *et al.* 1994, Quintero *et al.* n.d.), both of which are located in the steppe near the Azraq basin. Dabba marble is found at sites throughout the southern Levant throughout the PPNB and LN periods (Quintero *et al.* n.d.).

Significance

Preliminary research at UM I and II[4] has identified LN remains at both sites. Because interest in the LN period has gained momentum only in the past two decades, our understanding of the period is changing with each new piece of data. Thus, the addition of two LN sites is potentially significant for the state of LN research. Not only are UM I and II located between the perceived north-south distribution of Yarmoukian and Jericho IX ceramic wares (Garfinkel 1993a, 1993b, 1999; Garfinkel and Miller 2002; Gopher 1995; Kafafi 1992, 1993; Rollefson and Simmons 1986), but they also lie at the transition between the Mediterranean zone to the west and the steppe zone to the east. The sites currently mark the furthest east that local pottery production has been recorded in the southern Levant during the LN period. While the presence of pottery is typical only of Mediterranean sites, the chipped stone assemblages have affinities with the steppe. Therefore, the sites may provide insight both into the relationship between Jericho IX and Yarmoukian sites, and into contact between the agricultural and pastoral economies that characterize the Mediterranean and steppe zones.

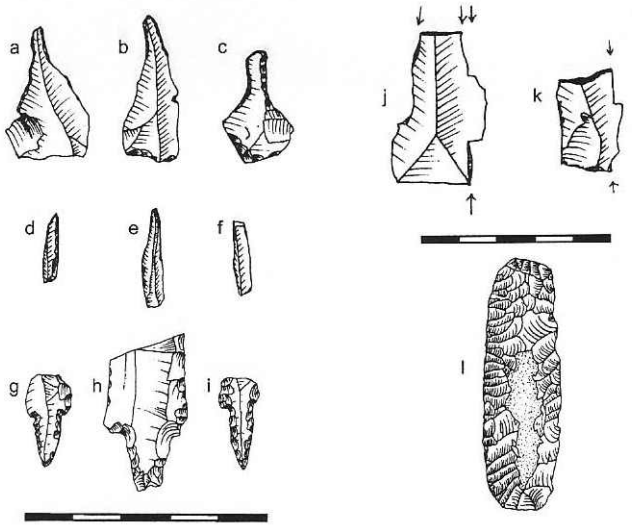

Fig. 4. Selected formed tools: a-c drills; d-e drills on spalls; g,i Haparsa Points; h Jericho Point; j,k truncation burins; l tile knife.

The planning for further excavation of UM I and II by the Wadi ath-Thamad Archaeological Project / Regional Survey is under way. There are a number of basic issues to be addressed. For example, are UM I and II contemporaneous, occupied by a single cultural group? Do the sites represent permanent villages or seasonal camps? Can the cultural affinities of the lithic and the ceramic assemblages be defined more precisely? Specifically, we require both broader and deeper exposures to determine the natures of the sites. Samples of materials for absolute dating, and for archaeobotanical and archaeozoological analyses will be collected. At UM I, we intend to excavate to sterile soil to ascertain if an in situ Natufian occupational deposit is preserved under the LN material and if there was continuous occupation of the site from the Natufian period or if, like 'Ain

Rahub (Muheisen *et al.* 1988), there were two distinct occupations, Natufian and subsequently LN. Other studies could include the identification sources for the raw material used in the production of the chipped stone assemblage and of the pottery. But ultimately, the objective of future work at the sites will be the determination of how UM I and II fit into the general pattern of cultural development in central Jordan during the Neolithic period.

Notes

1. The regional survey is a component of the Wadi ath-Thamad Archaeological Project directed by Dr. P.M.M. Daviau of Wilfrid Laurier University. The authors wish to thank Dr. Daviau for facilitating our work and Wilfrid Laurier University for funding the project. We also thank the Department of Antiquities of the Hashemite Kingdom of Jordan for its support of the Wadi ath-Thamad Archaeological Project.

2. Two test probes, units 1 and 2, were excavated to investigate the Natufian remains at UM I. Unit 1 was placed near the terrace edge and yielded no *in situ* cultural deposits. Numerous chipped stone artifacts were collected along with one cowrie shell. Unit 2 was placed further upslope. Excavation of Unit 2 ceased upon reaching a layer of colluvial debris.

3. The sickle element was defined by the presence of gloss.

4. The analysis of the pottery and lithics from the 2001 season at UM I and II were carried out by D. Cropper as the focus of her M.A. thesis undertaken at the University of Saskatchewan.

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Contribution

A Preliminary Note on the Chipped Stone Assemblage from Kritou Marottou *Ais Yiorkis*, an Aceramic Neolithic Site in Western Cyprus

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Introduction and Research Context

Recent years have witnessed a flurry of activity on the Aceramic Neolithic occupation of Cyprus. Many researchers used to believe that the colonization of the island was a relatively late occurrence in the Neolithic sequence, taking place during what would roughly be contemporaneous with the mid Pre-Pottery Neolithic B (PPNB) of the adjacent Levantine mainland around 6500 – 7000 cal. B.C. This occupation was most commonly referred to as the "Khirokitia Culture," after the type site. Excavations at Akrotiri *Aetokremnos* (Simmons 1999, 2001) dramatically changed this perception, demonstrating human usage of the island, if not outright colonization, around 10,000 cal. B.C. Since those studies, British and French excavations have documented subsequent Aceramic Neolithic occupations that are earlier than the Khirokitia Culture and that demonstrate material linkages to the Levant. Documented at the sites of Kissonegra *Mylouthkia* (Peltenburg *et al.* 2000, 2001) and Parekklisha *Shillourokambos* (Guilaine and Briois 2001), this has been termed the "Cypro-PPNB" (Peltenburg *et al.* 2001).

In association with these recent studies has been an increase in attention to the chipped stone assemblages associated with the Cypriot Aceramic Neolithic. Previously, systematic attention to complete assemblages had been rare, but now many complete assemblages are being subjected to intense analysis (*e.g.*, Guilaine *et al.* 1995; Guilaine and Briois 2001: 45-47; McCartney 1999, 2001; Simmons 1999: 123-146, 2000). The purpose of this brief communication is to present preliminary chipped stone data on a recently excavated Aceramic Neolithic site in western Cyprus, that of Kritou Marottou *Ais Yiorkis*.

Table 1. Radiocarbon determinations from *Ais Yorkis*. (All determinations are corrected for ä13/12).

Laboratory #	Material	Corrected 14C Age	Calibrated Date BC (95.4% confidence)
DRI 3441	*Bos* (1 bone)	7,867 ± 106 BP -24.21% per mil	7,007 - 6,468
DRI 3442	*Sus* (2 bones	7,540 ± 169 BP/ -28.24% per mil	6,704 - 5,984
DRI 3443	*Dama* (1 bone)	7,658 ± 105 BP/ -26.49% per mil	6,698 - 6,673 (1%) 6,666 - 6,212 (99%)
CAMS 94861	*Bos* (1 bone)	8,290 ± 35 BP/ -19.36% per mil	7,520 - 7,180

Summary of Current Investigations at Kritou Marottou *Ais Yiorkis*

Ais Yiorkis was initially recorded during the Paleopaphos Western Cyprus survey (Fox 1987, Rupp 1987). In 1997 the University of Nevada at Las Vegas (UNLV) conducted limited testing at *Ais Yiorkis* and another nearby Aceramic Neolithic site, Kannaviou *Kochina* (Simmons 1998b, c). In 2002 we returned to the site for more extensive testing. A total of 23 square meters has now been excavated in addition to 175 square meters of surface scrapes.

Ais Yiorkis has presented some intriguing data relating to the Neolithic occupation of Cyprus. It is a small, non-village locality situated in the

uplands of western Cyprus. This is important, since most studied Neolithic sites in Cyprus are near the coast. Radiocarbon determinations from *Ais Yiorkis* are interesting as well, suggesting either an early Khirokitia culture or late Cypro-PPNB affiliation (Table 1). Economically, *Ais Yiorkis* is especially significant since it contains limited amounts of *Bos*. Cattle were not believed to have been present in Cyprus until the Bronze Age (Croft 1991), but the excavations at *Shillourokambos* (Vigne 2001), and now *Ais Yiorkis*, confirm that this species was indeed a component of the Neolithic diet.

In addition to the economic data, the remnants of one apparently circular structure have been partially excavated at *Ais Yiorkis* and await additional investigation. Thus far, this is the only sign of any architectural remains at the site. Limited architecture notwithstanding, a large and varied artifact assemblage has been recovered. This includes ground stone, although it is not overly abundant. A few shell beads also were present, as are numerous picrolite items, including incised "tokens" or possible "thimble" blanks. A portion of an intricate picrolite "platter," unique for this period, also was recovered. The chipped stone from *Ais Yiorkis*, the focus of this report, is impressive in its abundance and its technology.

A Preliminary Summary of the Chipped Stone Artifacts

Over 10,000 chipped stone artifacts were recovered, bringing the total from both seasons to 16,426 artifacts (Table 2). These artifacts will be the focus of an M.A. thesis and are presently undergoing detailed technological and typological analyses using criteria established for other early sites, such as Kholetria *Ortos* (Simmons 1994, 1996) and Akrotiri *Aetokremnos* (Simmons 1999: 123-146). This will allow for both a detailed characterization of the *Ais Yiorkis* assemblage itself and for comparison with other sites. The following comments relate to our on-going analysis of these materials and are subject to modification.

Table 2. Summary of chipped stone recovered from *Ais Yiorkis* test excavations (1997 and 2002).

Category	n	%
Tools	937	5.7
Blades	1,491	9.1
Bladelets	455	2.8
Flakes	3,570	21.7
Other debitage	103	0.6
Microflakes	1,142	7.0
Cores	153	0.9
Debris (shatter)	8,575	52.2
Total	16,426	100.0

The chipped stone artifacts recovered thus far from *Ais Yiorkis* are varied and suggest that all levels of lithic reduction (excepting obsidian) occurred on-site. This includes initial reduction attested to by the large number of cores and core fragments and debris (or "shatter"), as well as final tool production and/or resharpening activities, indicated by over one thousand microflakes. Well-made blades and the presence of several core trimming elements verify a blade-orientation. This is confirmed by the fact that a majority (*ca.* 53%) of formal tools were manufactured on blade blanks. If bladelets are included, this figure jumps to *ca.* 56%. The flake:blade ratio (including bladelets) is 1.8:1.

Table 3. Chipped stone tools from *Ais Yiorkis*, 1997 and 2002 seasons.

Class	n	%
Projectile points	1	0.1
Piercing tools	13	1.4
Scrapers	62	6.6
Burins	39	4.2
Notches	83	8.9
Denticulates	7	0.7
Sickles/Glossed pieces	12	1.3
Serrated pieces	5	0.5
Truncations	21	2.2
Tanged pieces	22	2.3
Backed pieces	38	4.1
Microliths	22	2.3
Axes	2	0.2
Bifaces	11	1.2
Crescents	12	1.3
Retouched blades	332	35.4
Retouched flakes	210	22.4
Varia	16	1.7
Fragments	29	3.1
Total	937	99.9

Tools consist of abundant numbers of retouched blades and flakes (nearly 60% of all tools), but other classes also occur (Table 3). These include a variety of scrapers, burins, notches, and backed pieces, as well as smaller numbers of other categories. Small amounts (2.3%) of microlithic tools are also present. The variety of tools suggests a wide range of activities. Of particular note is a crude "projectile point" of an undetermined type. This has an overall Byblos (i.e., PPNB) morphology, although the retouch is poor. Regardless, this is important since points are so rare in Cyprus. Until more examples can be found, we presently are reluctant to refer to this as an actual projectile point; rather, it may have simply been a retouched and pointed blade. Finally, seven obsidian bladelets, two of them tools (retouched bladelets), were recovered, demon-

strating some sort of exchange system of this imported material.

Table 4. Major core types from *Ais Yiorkis*.

Type	n	%
Material test	3	2.0
Flake	75	48.7
Blade	14	9.1
Bladelet	9	5.8
Akrotiri	17	11.0
Fragment - flake	19	12.3
Fragment - blade	6	4.0
Fragment - bladelet	3	2.0
Indeterminate	8	5.2
Total	154	100.1

Cores (Table 4) include several blade and flake types, as well as some of the diminutive "marble-shaped" Akrotiri types initially documented on the Akrotiri Peninsula (Simmons *et al.* 1999: 246-247). Of interest is that of the blade cores, four are opposed platform types. These are not typical naviform types, but they are similar to this distinctive PPNB core type. Thus, in this sense *Ais Yiorkis* shares a technological trait with the Cypro-PPNB assemblages, where naviform core types, albeit apparently in low frequencies, are documented (*e.g.*, McCartney 1999, Guilaine and Briois 2001: 45-47).

Table 5. Comparison of *Ais Yiorkis* chipped stone with other early Cypriot assemblages.

Comparison	*Ais Yorkis*	A. *Aeto-kremnos*	K. *Ortos*	C. Andreas *Kastros*
Flake/blade ratio[1]	1.8: 1	2.1: 1	6.4: 1	6.3: 1
% of Major Classes[2]				
Tools	14.2	24.4	4.1	8.7
Flakes	54.0	48.9	77.8	84.4
Blades	22.6	14.8	9.9	2.9
Bladelets	6.9	8.0	2.3	0.7
Cores	2.3	3.8	5.8	3.4

1 Includes bladelets
2 Refers to restricted percentage – *i.e.*, excludes debris, microflakes, burin spalls, and specialized categories. (Data from Simmons 1999: 123-146, 259-281 and *Ais Yorkis* analysis).

The chipped stone recovered from *Ais Yiorkis* thus far consists of materials that seem atypical for the Khirokitia Culture. In many ways, it resembles the earlier and more technologically sophisticated blade-oriented materials from *Aetokremnos* (Table 5) and from the recently investigated Cypro-PPNB sites mentioned above, although detailed information on the latter is not yet available. The presence of a possible "projectile point" also is significant, and if future studies can recover additional such implements, this will establish a pattern for a very rare type of artifact on Cyprus. Of particular significance, however, is that the chipped stone from both *Mylouthkia* and *Shillourokambos* apparently contain projectile points, and they show both technological and typological similarity to the Levantine PPNB and appear to fall within the "Big Arrowhead Industries" techno-complex on the mainland (Peltenburg *et al.* 2001: 78).

Conclusions

Previously held notions that Neolithic chipped stone assemblages from Cyprus were rather uninteresting and simple are no longer tenable. Several contemporary studies employing systematic and detailed analyses of these materials demonstrate that the chipped stone from this period represents a level of complexity previously underestimated. In particular, newly discovered sites dating to the earlier aspects of the Aceramic Neolithic show linkages with the Levantine mainland.

Ais Yiorkis is one of the sites presently under investigation that is providing researchers with a better understanding of chipped stone technology and typology in Neolithic Cyprus. This small locality has a surprisingly abundant and varied chipped stone assemblage. These materials reflect a sophisticated blade-oriented technology. Based on radiocarbon determinations and the analysis of these materials, *Ais Yiorkis* may well fit between the earlier aspect of the Cypriot Aceramic Neolithic, *i.e.*, the "Cypro-PPNB," and the later Khirokitia Culture. Investigations at *Ais Yiorkis* have once again demonstrated the research potential of small sites that in past times might have been ignored (*cf.* Simmons 1998a).

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Contribution

Weathering Rinds at Exposed Surfaces of Limestone Rocks at Göbekli Tepe

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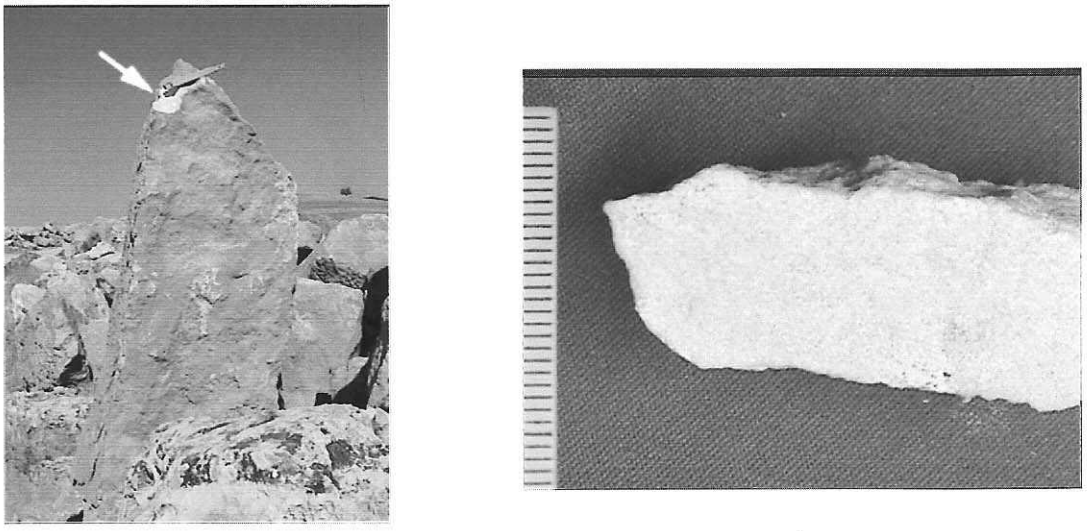
The PPN site of Göbekli Tepe is situated on a highly dissected limestone plateau on the southeastern extension of the Taurus Mountains in Upper Mesopotamia (Schmidt 1995, 2002). Bare surfaces of rocks made up of Eocene limestone are very common in the near vicinity of the site. In places these surfaces show obvious traces of quarry activities in the PPN period (Schmidt 1998). Also groups of bowl-like bedrock mortars drilled into the rock in several places are indicative of the fact that the surfaces were already exposed in the Epipaleolithic (K. Schmidt, pers. comm.). Furthermore, a number of symbolic pictures such as *phalli* on the rock surface of the southeastern plateau (Schmidt 1998, 1999), an *umbriculus* at the southern edge of the mound, and a small circle north of the mound have been found (K. Schmidt, pers. comm.).

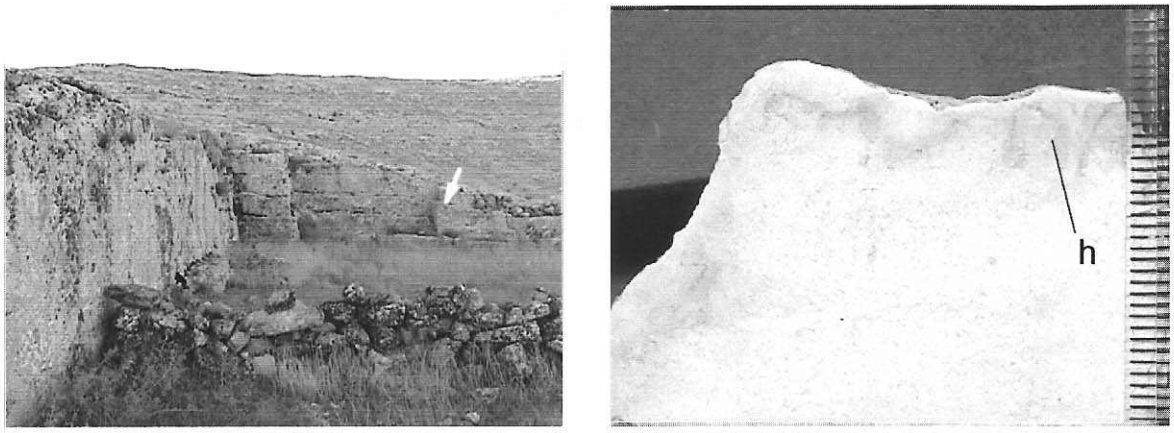
If available, artificial marks on the rock are helpful in assessing the age of the surface and reconstructing the landscape of the past. However, the majority of exposed limestone rock surfaces at Göbekli Tepe show no unambiguous traces of man's activities. The origin and age of such surfaces remain conjectural. Moreover, not every worked rock surface can be interpreted in terms of the absolute age (K. Schmidt, pers. comm.). Therefore, it should be attempted to date the exposed surfaces of limestone rocks on the basis of the rock itself.

The number of techniques of absolute age determination of exposed rock surfaces is limited (Watchman and Twidale 2002). Dating with cosmogenic isotopes, though very promising (Cerling and Craig 1994, Watchman and Twidale



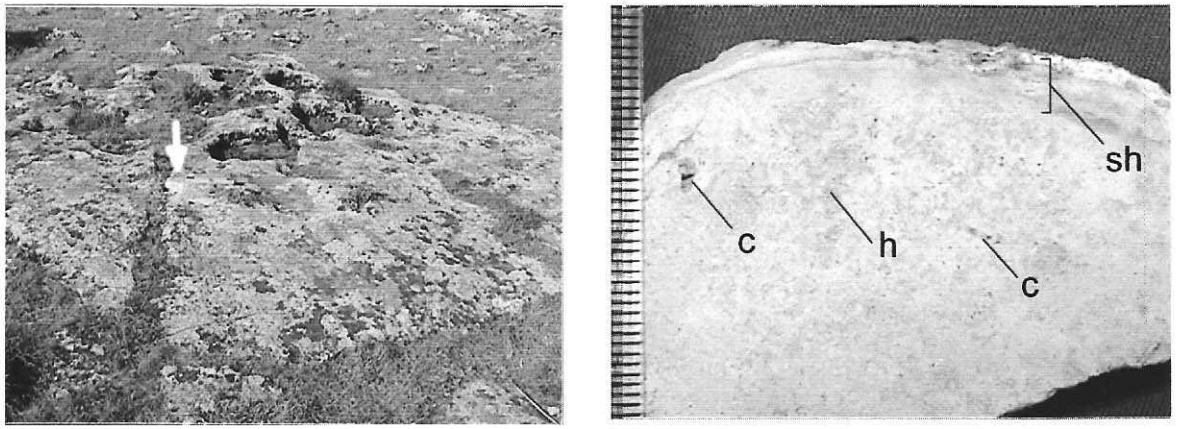
a *b*

Fig. 1. Unaltered limestone rock.
a limestone block exposed by roadworks. The arrow indicates the sampling site. Scale length 24 cm;
b cross section of the sampled limestone fragment. Scale in mm.



a *b*

Fig. 2. The surface of a limestone quarry of the Roman period.
a overview of the quarry: the arrow indicates the sampling site, the quarry wall at the left is about 2.5 m high;
b cross section of several uppermost cm of the limestone surface sampled; "h" – greyish pigmentation. Scale in mm.



a *b*

Fig. 3. A 10,000 bp limestone rock surface.
a overview of the surface: the arrow indicates the sampling site, round bowl-shaped pits drilled out in the rock during the PPN are seen in the middle of the upper part of the picture. Scale length 24 cm;
b cross section of the sampled surface fragment of the rock, "sh" – greyish pigmented microhorizons sub-parallel to the rock surface, "h" - greyish mottling, "c" – channels. Scale in mm.

2002), is laborious and expensive. Alternatively, it has been repeatedly attempted to use weathering rinds at the rock surface as a chronological indicator (Birkland 1999 and references therein; Lowe and Walker 1999 and references therein). In arid environments dissolution of limestone rocks is suppressed (Jakucs 1977), which suggests that products of limestone weathering might accumulate *in situ* in the form of weathering rinds. Up to now, this phenomenon has not been studied in Upper Mesopotamia. Also it is unclear to what extent the rinds can be used to assess the absolute age of limestone rock surfaces in the region.

During the excavation campaign 2002, I examined weathering rinds at the surfaces of limestone rocks at Göbekli Tepe. Properties of the rinds appear to be age-dependent and therefore relevant to the dating problem. Rock surfaces of two age ranges were studied. One of them is an about 2,000-year-old surface of limestone outcrops in a quarry of the Roman period (K. Schmidt, pers. comm.) about 1 km to the east from the site (Fig. 2a). The second one is a =10,000-years-old limestone rock surface with PPN pits in the form of bowls several hundred meters to the north of the site (Fig. 3a). As a reference sample of fresh unaltered rock, we recovered a fragment from a large limestone block that had been elevated from some 0.5-1 m depth through roadworks in an area southwest of the site (Fig. 1a).

A section through the fragment of the limestone, which is referred to as unaltered in this study, shows that the rock is uniform in colour (10YR 8/2) and density; almost no cavities are seen (Fig 1b). In contrast, the c. 2,000-year-old limestone surface in the Roman Age quarry is obviously altered by weathering (Fig. 2b). Although the majority of observable limestone properties seem to remain unchanged during the exposure time, the uppermost 7-8 mm of this limestone are clearly penetrated by dark-grey (10YR 6/1 – 10YR 4/1) tongues and "bags" ("h" in Fig. 2b). The pigmentation is most likely to be due to organic matter produced by lichens.

A much more advanced stage of weathering is revealed by the oldest, =10,000 bp surface of limestone rock (Fig. 3b). The whole material of the sample, which represents some 5 cm of the rock surface, is slightly reddish (7.5YR. 8/2) as compared to the previous two samples, probably due to hematite. Numerous pores and several channels up to 1,5 mm in diameter were characteristic of the sample ("c" in Fig. 3b). Greyish pigmentation (10YR 7/2 – 10YR 4/1), though with less contrast compared to the light colour of limestone than in the previous case, occurs throughout the whole mass with an insignificant increase towards the uppermost edge of the sample. In the distribution of the greyish pigment two main patterns can be recognised. One of them comprises several dark microhorizons interspersed with whitish ones, sub-parallel to the rock surface with a total thickness of 3-8 mm ("sh" in Fig. 3b). In places, the uppermost microhorizon can be easily separated from the bulk of the rock. The second one represents greyish mottles randomly scattered over limestone, but which are slightly more abundant in the upper part of the sample ("h" in Fig. 3b). As in the case of the c. Roman period surface, the greyish colour is most likely to be due to organic matter.

These three samples presumably illustrate progressive alteration of the limestone rock surface with time under the influence of climatic and biological factors at Göbekli Tepe. Relatively thin and simply structured weathering rinds at young stages of the exposure of the surface (some 2,000 years) seem to be gradually substituted by deeper and more complexly built rinds at surfaces older than 10,000 years. There are several processes that are apt to modify the uppermost zone of limestone rock with time: (1) accumulation of organic matter evidenced by the greyish pigmentation decreasing with depth below the surface; (2) a slight desquamation, which is represented by separation of microhorizons sub-parallel to the rock surface after a relatively long exposure time; (3) interior limestone dissolution resulting in pores and channels below the oldest surface; and (4) rubefaction, which leads to the weak reddish colour of the sample with the longest exposure time. Although the variability of limestone properties has not been explored in relation to weathering processes, the fact that all the samples were taken in the immediate neighbourhood of each other suggests that the rock itself is unlikely to have caused the observed principal morphological differences between the studied samples. In all probability, weathering rinds at limestone rock surfaces in the region are age-dependent and may provide chronological information. Further sampling of the limestone rock surfaces of diverse age in the region combined with analytical investigations can provide insight into the nature of the weathering processes as well as verify the applicability of the rinds as a dating tool.

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Lab Report

A Brief Note on the Tabulation of Debitage

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The presentation of information in tabular form is a common means of summarizing data to researchers interested in the results of (among other things) chipped stone analysis. One of the principal objectives of the PPN Workshops and the publication of Neo-Lithics is to develop a standardized lexicon and set of analytical methods to ensure accuracy in our work and reliable comparability among the various archaeologists working on Neolithic assemblages. One aspect that appears routinely in tables of debitage sorting is the frequent practice of listing "tools" as a debitage "product" when, in fact, debitage refers to the production of tool blanks (Tixier *et al.* 1980: 40-41, Inizan *et al.* 1992: 45-46); "tools" are the products of retouch, whether intentional or not.

The confusion can have a very big impact on understanding technologies used for tool production. I offer an example of this using data from surface and excavation collections from al-Basît, a large LPPNB site in Wadi Musa, southern Jordan (*cf.* Fino 1998, Rollefson 2002, Rollefson and Parker 2002).

Table 1 presents the absolute and relative frequencies of tools from the collections[1], with formal tools above the subtotal and nonformal and unclassifiable tools below the subtotal. (The four retouched and backed bladelets are not included with the formal tools in this case because they are probably not LPPNB in age). This is clearly an atypical group of tools in view of the elevated importance of drills (Rollefson and Parker 2002: 23), and it indicates that an area of specialized tool production and use at the site is over-represented in comparison to "normal" domestic activities at al-Basît.

Archaeological excavations (and especially material recovered from surveys) can often acquire samples of tools and debitage that may not be representative of the entire site's population of artifacts, as the al-Basît example shows. It is for this reason that care should be taken in terms of expressing debitage counts accurately in order to obtain a reliable understanding of both the typological and technological aspects of archaeological chipped stone inventories.

Table 2 examines the effects of using tools as a "debitage type" (in the columns under "A") compared to a more proper analysis of the products of debitage alone. In the A columns, with tools counted at a debitage category, about 68% of the major debitage products were not made into tools and it is not surprising that the percentages of the major, real debitage types is lower for than if tools (at 32%) are removed from consideration (in the B columns). The differences in relative importance are statistically significant in all but the barely-present Canaanean blade class (last column in Table 2). The most striking difference is for the bladelet type of debitage, which more than doubles its relative frequency compared to the A columns, accounting for more than a quarter of the major debitage at the site. The reason for this strong shift, of course, concerns the blanks on which drills were made, and in this case 82% of the drills in Table 1 were made on bladelets. (The next most important blank type for drills was the naviform blade at 6% of the drills).

Table 1. Tools from al-Basit, 1996-2002.

Type	n	%
Projectile point	15	3.4
Sickle/glossed piece	3	0.7
Burin	18	4.1
Truncation	3	0.7
Endscraper	7	1.6
Sidescraper	18	4.1
Notch	6	1.4
Denticulate	11	2.5
Perforator	7	1.6
Awl	3	0.7
Borer	17	3.9
Drill	268	61.0
Axe/adze	4	0.9
Pick	6	1.4
Chopper	6	1.4
Wedge	4	0.9
Unifacial knife	31	7.1
Bifacial knife	1	0.2
Backed blade	2	0.4
Tanged blade	1	0.2
Other	8	1.8
Subtotal	439	100.0
Retouched flake	9	(1.7)
Retouched blade	38	(7.4)
Utilized piece	23	(4.4)
Retouched bladelet	1	(0.2)
Backed bladelet	3	(0.6)
Unclassifiable	4	(0.8)
Total	517	

The comparison of the distribution of debitage categories in Table 2 with the results of analyses from other sites highlights the confusion that can arise when tools mask the blanks on which they were made. At 'Ain Ghazal, for example, bladelets ranged between 4-10% of the MPPNB and LPPNB collections (Rollefson *et al.* 1992: Table 2), so the results from al-Basît would seem to fit into this range if only the information from the A columns is considered. This is clearly a distortion of reality, and it is probable that similar misrepresentations have been unintentionally propagated in preliminary reports and even final-status publications.

Another example of the misuse of debitage reporting can be reconstructed from the artifacts from a burin site not far from Azraq in eastern Jordan (Rollefson and Fröhlich 1982). Table 3 demonstrates the heavy bias towards burin production at the site[2].

Table 2. Comparison of debitage results using tools as a "debitage type" (Columns A) and without tools included as in the debitage counts (Columns B) data from al-Basît, Wadi Musa, southern Jordan.

	A		B		
Debitage class	n	%	n	%	÷2, p
Ordinary blade	106	6.5	133	8.3	3.818, ~.05
Naviform blade	217	13.3	323	20.1	27.232, >.001
Unknown blade	55	3.4	89	5.6	9.030, >.01
Canaanean blade	2	0.1	5	0.3	---
Bladelet	190	11.6	439	27.4	102.792, >.001
Flake	451	27.7	499	31.1	4.712, >.05
C.T.E.	32	2.0	39	2.4	
Burin spall	9	0.6	11	0.7	
Core	52	3.2	64	4.0	
Levallois flake	--	0.0	1	0.1	
Tools	517	31.7	(517)	(32.3)	
Subtotal	1631	100.1	1603	100.0	
Microflake	5	(0.3)	6	(0.4)	
Debris	13	(0.8)	13	(0.8)	
Unclassifiable	2	(0.1)	29	(1.8)	
Total	1651		1651		

Table 3. Chipped stone tools from a collection grid (Sqs. 1-5) at Jabal Uweinid Site A (after Rollefson and Fröhlich 1982).

Type	n	%
Burins	113	93.4
Truncations	5	4.1
End-notch blade	1	0.8
Endscraper	1	0.8
Tile-knife	1	0.8
Total	121	99.9

Table 4. Debitage counts from the collection grid (Units 1-5) at Jabal Uweinid A (after Rollefson and Fröhlich 1982).

	A		B	
Class	n	%	n	%
Blades	45	17.4	165	64.0
Flakes	88	34.1	88	34.1
Cores	4	1.6	5	1.9
Tools	121	46.9	(121)	(46.9)
Subtotal	258	100.0	258	100.0
Debris	11	(4.1)	11	(4.1)
Total	269		269	

The burin site was near extensive outcrops of tabular flint, and it was easy for the flint workers to produce blades as a consequence. All but one of the tools from the collection area were made on

blades (as defined in a technological sense, although many were short and broad so that they did not conform to the metric definition of blades). One flake core was recovered, but the other four were blade cores; the relatively high number of flakes compared to flake cores is probably due to core preparation and maintenance.

Table 4 once again shows the potential misrepresentation of debitage importance if tools are included as a debitage category (the A columns). The ratio of flakes to blades in the A columns is roughly 2:1, although when the tool blanks are taken into account (the B columns), the case is reversed completely.

It is not clear how the practice of using tools as a debitage category began (the importance of tools can be as easily indicated as shown in the B columns of Table 2), but it is a bias that is easily corrected.

Notes

1. The surface collections included a small amount of Early Bronze pottery and lithics, as the Canaanean blade category indicates. The impact of the later lithics was too small, on the other hand, to be concerned about affecting statistical outcomes in terms of the purpose of this paper.

2. As the title of the article indicates, this site was attributed to the PPNB period, but this was before the important research by A. Betts (*e.g.* Betts 1986) had been completed, which convincingly showed that such burin sites were contemporaneous with the Pottery Neolithic period. It might also be pointed out that the five truncations listed in Table three are possibly unstruck truncation burins.

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Lithic Studies at the *Lithic Technology Laboratory*, Department of Anthropology, UC-Riverside

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Introduction

The *Lithic Technology Laboratory* was established in 1993 to provide a setting, facilities, and expertise for the development of a broad specialization in the technology of stone tools. Since archaeological preservation has dictated that much of human prehistory worldwide and throughout ancient times is decipherable primarily through lithic artifacts, the goal of this facility is to encourage lithic analyses in order to understand prehistoric behaviors.

In particular, experimental replication of stone technologies is viewed as an essential tool to decipher the archaeological lithic record. The *Lithic Technology Laboratory* offers the only academic program in the country that emphasizes replicative experimentation as fundamental for addressing problems in prehistoric stone-tool economies. Intensive flintknapping instruction encourages a high level of proficiency in practical stone working as a prerequisite for analysis of lithic assemblages.

Program

Researchers and students affiliated with the laboratory are schooled in the diverse nature of lithic technologies and acquire a global view of stone-tool production throughout prehistory. The strong background in lithic technology acquired through broadly configured course work and readings, and training in stone working fosters professionalism in both undergraduate and graduate studies, as well as in post-graduate research. The program is structured to meet the needs of students and professionals alike, and has attracted international researchers from diverse regions of the Old and New Worlds. Students and visiting scholars are encouraged to design research projects, work on archaeological collection analysis, and conduct their own experimental and replicative studies.

Our approach to lithic technology involves the development of a broad specialization in the technology of stone tools and is not regionally or chronologically limited. It includes, for example, the economic organization of tool production; ancient methods of mining and quarrying raw materials; thermal pretreatment of siliceous rocks; raw material transport and distribution; New and Old World technologies based on flake-core and blade-core reduction; evolution of tool forms as a result of resource and blank selection, use, breakage, rejuvenation, reuse, and recycling (*chaînes opératoires*); weapons systems; techniques of drilling, polishing and abrading stone tools; the production and use of milling stones; debitage analysis; and the broad culture history framework of lithic technologies.

Past and current projects conducted at the *Lithic Technology Laboratory* encompass research on a wide range of topics, such as the economic organization of flint mining in the Neolithic Near East; "bullet core" and Asian microblade technologies; percussion-blade technology in the Levantine Neolithic; North American Clovis technology; Hopewell bladelet core industries; Mesoamerican prismatic blade production; Acheulian handaxe and cleaver technology; Levallois technology; Central Plains blade technologies; use-life trajectories of Neolithic sickle blades; production and use alteration of flaked and ground flint axes; projectile point design and function; lithic evidence of threshing sledges in prehistory; Chalcolithic and Early Bronze "fan scraper" industry; quarrying and production of milling implements; Canaanean blade core production and reduction strategies; thermal pretreatment of siliceous stone; and the analysis of debitage from a broad range of technologies.

Ongoing fieldwork and research associated with the *Lithic Technology Laboratory* include archaeological excavations and surveying projects in Jordan, on the Channel Islands of coastal California, in Belize, and in the arid southwestern United States.

Fig. 1. Leslie Quintero in the *Lithic Technology Laboratory.*

Resources

The *Lithic Technology Laboratory* serves as a base for the program and is housed at the Department of Anthropology, University of California, Riverside. Facilities and equipment include a lithics laboratory for research and instruction, work and storage space for collections analysis, offices for post-graduate and graduate researchers, a stone working area, extensive teaching collections, substantial supplies of lithic materials for replication experiments, microscopes, photographic equipment, ultraviolet fluorescence equipment, lithic heat-treatment kilns, and other necessities. In addition, substantial archaeological collections of lithic assemblages are maintained for research purposes.

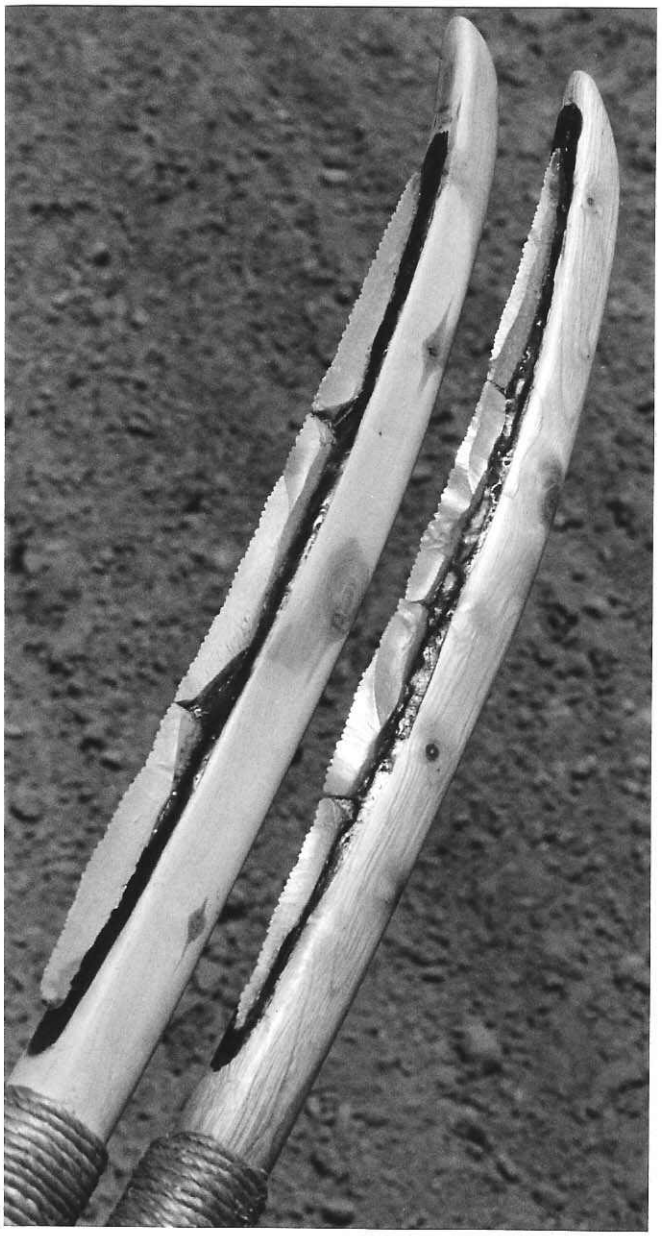

Fig. 2. Hafted tools of a replicative system analysis: reaping cereals.

UCR is located in southern California and is interconnected academically to sister institutions, such as UC Los Angeles and UC San Diego, and to the University of California research facilities in nearby mountains, deserts, and coastal regions.

Course Offerings

The basic course sequence for developing a specialization in lithic technology is a one year program consisting of three classes:

ANTHRO-114A: LITHIC TECHNOLOGY I, a broad survey of the fundamental concepts of lithic technology, including mechanical properties of tool stone; lithic heat treatment; prehistoric quarrying and mining strategies; elementary concepts of flaking stone; flake-core technologies; bipolar reduction; sequent-flake reduction strategies; pressure flaking; fluting; weaponry; specialized tool production; the functioning of lithic technological systems; and the evolution of stone technologies in the Lower and Middle Paleolithic.

ANTHRO-114B: LITHIC TECHNOLOGY II, intensive study of blade-core technologies throughout the world; drilling of and with stone; production of soft-stone implements; axe industries; abrading tools; the quarrying and production of millstones, and the evolution of stone technologies of the Upper Paleolithic and later periods.

ANTHRO-114C: LITHIC ANALYSIS, devoted primarily to the analysis and interpretation of debitage assemblages and of lithic economic systems.

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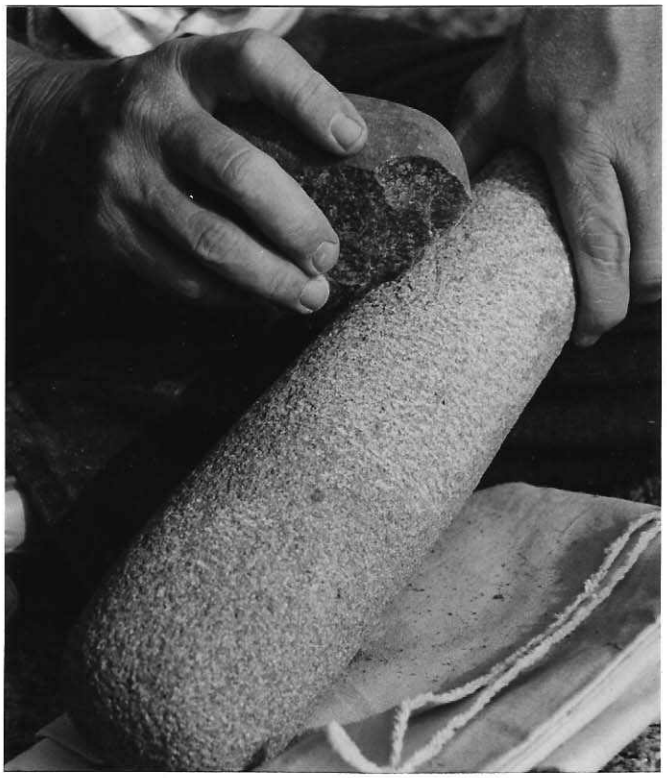

Fig. 3. Replications of heavy duty tools, *e.g.* trimming surfaces.

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Project

PhD Dissertation Project: Biomolecular Research Into The Origins of Dairy Foods in Southwest Asia

Michael Gregg
Department of Anthropology, University of Toronto <michael.gregg@utoronto.ca>

Scholars from many disciplines have long argued about the when and where of the origins of agriculture. Although most would now agree that plant and animal species were first domesticated in the Fertile Crescent of southwest Asia, hard and fast evidence for the prehistoric production of dairy foods remains in short supply. Archaeological explanations for why the profound change in the relationship between humans and animals should have occurred at the beginning of the Holocene period have relied upon the construction of tenuous theoretical models to establish a link between the shift in mortality profiles of milk-producing species in antiquity and the manufacture of yogurt, butter, and cheese. Modern ethnographic analogies are customarily invoked; functional attributes of vessel types are recurrently inferred; but the exploitation of milk for human consumption or the production of milk bi-products is only ever implied.

My research will either validate or deny these proxies for evidence of prehistoric production of dairy foods in the ancient Near East. I will directly demonstrate the role of dairy foods in the prehistoric agricultural economy of southwest Asia by conducting molecular residue analysis of the ceramic vessels recovered from many of the earliest agricultural settlements within the region. The excavators of the following prehistoric communities have provided me with pottery for analysis: Abu Hureyra, Hajji Firuz, Çayönu, Ali Kosh, Chaga Sefid, Seh Gabi, Godin Tepe, Tepe Sarab, Tepe Guran, Kash Kashok, Farukabad, Wadi Ziqlab, Shar' Ha Golan, and Dhra. I will excavating a Mushki period site in the Marv Dasht region of southwestern Iran with Kamyar Abdi, Reinhardt Bernbeck, and Susan Pollock during the upcoming season, where I will be collecting ceramic sherds specifically for residue analysis.

Employing two different analytical methods to corroborate one another, I will isolate the biomolecular signatures of any lipids or proteins that may be contained within these ancient ceramics. If the presence of milk fats and protein biomarkers of dairy products is confirmed, I will then build a functional ceramic typology from which other studies of patterns of subsistence behavior can be undertaken. It is my intention to identify the underlying reason for the widespread adoption of ceramic technology throughout the Fertile Crescent, and to demonstrate how the co-evolutionary relationship between humans and milk-producing species contributed to the emergence of village life in southwest Asia. Ultimately, I hope to construct a thesis that correlates the advent of pottery with the shift in mortality profiles of milk-producing species, and places the revolutionary change in subsistence and food-processing technology that occurred at the beginning of the Holocene in context of how human beings were able to conceive of themselves as apart from, rather than as a part of nature.

bibliotheca neolithica Asiae meridionalis et occidentalis

A New Series Devoted to Final Publications of Neolithic Excavations in Southwest Asia

Hans Georg K. Gebel[1] and Gary O.Rollefson[2]

[1]Free University of Berlin <hggebel@zedat.fu-berlin.de>

[2]Whitman College, Walla Walla <rollefgo@whitman.edu>

In the continuing efforts of *ex oriente* e.V. to promote Neolithic research in the Near and Middle East, we have founded a new series exclusively devoted to final publications of Neolithic sites in Southwest Asia. The *bibliotheca neolithica Asiae meridionalis et occidentalis* (Library of Neolithic Excavations in Southwest Asia) offers a venue for publication of all Neolithic excavations. All teams from all nations contributing to Neolithic research in Southwest Asia are invited to place their final publication on this shelf. The structure of the *bibliotheca* is aimed to enable rapid, high quality publication by accepting "modules" of excavation series (*cf.* below). Soon, the Basta and 'Ain Ghazal publication projects will start to use the *bibliotheca* series for the presentation of the final reports.

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Each field project has its independently structured excavation series in the *bibliotheca* and decides about formats and style (from the design and colour of the cover to the formal styles of text, etc.). This ensures an individual identity for a publication project. Only the hardcover and paper quality and the page formats are fixed by *bibliotheca* standards. There will be also no serial numbers within the *bibliotheca* series, although we expect that excavation reports would appear in a series format, as in the following example (The following list of volumes and titles/contents is offered as an example only, and does not represent a fixed *bibliotheca* format for a final publication.).

Site Name Vol. I Human Ecology
Site Name Vol. II Stratigraphy and Architecture
Site Name Vol. II.1 The Stratigraphy and Architecture of Area X
Site Name Vol. II.2 The Stratigraphy and Architecture of Area Y
Site Name Vol. III The Burials and Human Remains
Site Name Vol. IV The Industries
Site Name Vol. IV.1 Chipped Industries
Site Name Vol. IV.2 Ground Stone Industries
Site Name Vol. IV.3 Vessel Industries
Site Name Vol. IV.4 Plaster and other Moldable Material Industries
Site Name Vol. IV.5 Ornament Industries
Site Name Vol. V The Subsistence Economy
Site Name Vol. VI Miscellaneous and Special Studies
Site Name Vol. VII The Neolithic Village of Site Name. Conclusions

Quick Publication

The structure of the *bibliotheca* publications specifically considers the difficulties many projects have with publishing planned comprehensive monographs. Usually such publications are delayed, even by decades, because some of the contributors do not finish while the others who comply with scheduled deadlines face the risk that their work will be out-dated when it is eventually published (or that they will have to rework their material years later). In order to foster communication of Neolithic knowledge, the *bibliotheca* provides the opportunity to publish in "modules" (which should have at least 180 printed pages). For example, if the responsible editor(s) realize that a large monograph on, say, "The Finds" cannot be produced as scheduled, but that part of the chipped lithics are ready for publication, they can release this section for print as *e.g. Vol. IV.1.1: The Chipped Lithic Industries. The Primary Production*, as a module of *Vol. IV: The Industries*. If next the architecture and stratigraphy of Area Y is ready, it may appear - according the excavation series plan- as *Vol. II.2: The Stratigraphy and Architecture of Area Y*, representing a part of *Vol. II: The Stratigraphy*

and Architecture. However, the plan of the excavation series should consider a final or interim volume that summarizes excavation results, perhaps as the proceedings of a symposium held for that purpose.

Editors and Responsibilities

Editing responsibilities remain completely with the individual excavation project. Editors of the volumes of an excavation series are solely responsible for the excavation's publication. They provide the camera-ready version of the publication to the editors of the *bibliotheca* (Hans Georg K. Gebel and Gary O. Rollefson). No extra work -either technical or editorial- will be accepted by the *bibliotheca* editors for the publication of volumes. However, we might be of assistance in some cases to overcome specific difficulties.

It is obligatory that each volume or module that is delivered for print is accompanied by at least three peer reviews by distinguished colleagues not involved in the publication project. Neither the general editors nor *ex oriente* can arrange for a peer review process. The editors of the *bibliotheca* have the right to demand further independent reviews and even to reject individual parts of an excavation series in the worst case, if improvement demands are not followed. Natural sciences contributions need to be reviewed by specialists from the appropriate fields.

In order to protect the reputation of the *bibliotheca*, prior to agreeing to publish an excavation series, a publication program must be presented by the site report editor(s) that shows that agreements with contributors have been arranged. However, we are well aware that in one case or another such a program might not develop as originally planned, or even that a volume (or a part of one) might never appear. We will also consider the possibility of producing single-volume site monographs in the *bibliotheca*, joint publications with other institutions, etc.

Publishing House

The publisher is *ex oriente*, Berlin. Copyrights become the property of *ex oriente* e.V. if no other (prior) arrangements are made.

Publishing Quality / Costs

We publish A4 hardbound on 115 gr. paper. The quality of books is standard throughout the *bibliotheca* series. Colour photos, folding plans, etc. represent additional costs and are possible if costs will be covered by the editors of the excavation series.

If a camera-ready version is provided, the *biblioteca* will not ask for a ccontribution to the printing costs from the publication project. However, if there are chances to apply for financial support, *ex oriente* is interested that these are followed in order to minimize expenses to serve financially less furnished projects. Any work necessary by the *biblioteca* to produce a camera-ready version for the printing will be billed to the site report editors by *ex oriente*. Since publishing in the *bibliotheca* is cost-free, only 5 free copies will be given to the main editor of the excavation series. Further copies can be obtained with a discount of 30% off the selling price. ex *oriente* advertises and distributes the books, organizes book reviews, etc.

Hans Georg K. Gebel
and Gary O. Rollefson

New Publications & Thesis

Copeland L. and Yazbeck C.
2002 Inventory of Stone Age Sites in Lebanon, Part III, Additions and Revisions, 1967-2001. *Mélanges de l'Université Saint-Joseph* 55 (1997-1998): 121-325.

In 2001 the Musée de Préhistoire at the Université de Saint Joseph re-opened for the first time since the beginning of the civil war in Lebanon. With this long-awaited event, the museum also resumed publication of the journal *Mélanges de l'Université Saint-Joseph*, helping to fill another breach in the long history of archaeological research in Lebanon.

1. *Introduction to Part III* (pp. 127-152). In the introduction Copeland and Yazbeck provide a brief, general discussion of the state of archaeological research in Lebanon prior to the civil war and what has happened in the field since its close. There is a section on changes in terminology since the publication of Parts I and II (Copeland *et al.* 1965, Copeland 1966); another section on changes in relative and absolute chronology; and finally changes in cultural, industrial, and phase names.

2. *Alphabetical List of Sites, New and Revised, in the Western Sector* (pp. 153-191). This section provides the location and ages of new sites discovered during recent field work in the area of the western watershed of the Lebanon Mountains.

3. *Alphabetical List of Sites, New and Revised, in the Eastern Sector* (pp. 191-232). This section provides the location and ages of new sites discovered during recent field work in the area of the eastern watershed of the Lebanon Mountains, the central Beqa'a Valley and its extensions, and the western watershed of the Anti-Lebanon Mountains.

4. *Illustrations.*
   a. Site distribution maps (pp. 233-267).
   b. Figures associated with artifacts, site settings and stratigraphy, and tables (pp. 269-296).

c. Index of Sites (pp. 297-304).
d. Bibliography of Lebanese references published since 1996 (pp. 305-325).

The publication is available from Bibliothèque Orientale, Beirut, e-mail: bo@usj.lb, at a cost of around $50. Many thanks to Lorraine Copeland for sending us this information.

*****

Iwasaki I. and Tsuneki A. (eds.)
2003 *Archaeology of the ROUJ Basin. A Regional Study of the Transition from Village to City in Northwest Syria, Vol. I.* Al-Shark: University of Tsukuba Studies for West Asian Archaeology No. 2. Tennodai (Tsukuba), Japan, University of Tsukuba Institute of History and Anthropology, Department of Archaeology. (Contact: A. Tsuneki at tsunebo@sakura.cc.tsukuba.ac.jp)

Chapter 1. Introduction (A. Tsuneki)
Chapter 2. Environmental Setting of the Rouj Basin
1. Landforms and Geology of the Rouj Basin (S. Akahane)
2. Vegetation and Land Use in the Rouj Basin (T. Nakamura)
Chapter 3. Sounding Excavations at Tell el-Kerkh 2
1. Site, Stratigraphy and Structures (A. Tsuneki)
2. Chipped Stone Artifacts (M. Arimura)
3. Ground Stone Artifacts (S. Yoshizawa)
4. Pottery (Y. Miyake)
5. Miscellaneous Objects (A. Tsuneki)
Chapter 4. Discussion 1
1. The Lithic Production System in the Northwestern Levant from the LPPNB to the Early Pottery Neolithic: A View from Tell el-Kerkh 2 (M. Arimura)
2. Prehistoric Obsidian Distribution in the Rouj Basin (O. Maeda).
Chapter 5. Summary of Volume 1 (A. Tsuneki)
Appendix 1. Radiocarbon Dates

*****

out in autumn:

Gebel H.G.K., Hermansen B.D., Jensen C.H.
2002 Magic Practices and Ritual in the Near Eastern Neolithic. Proceedings of a Workshop held at the *2nd International Congress on the Archaeology of the Ancient Near East (ICAANE),* Copenhagen University, May 2000. Studies in Early Near Eastern Production, Subsistence, and Environment 8 Berlin, ex oriente (2002)
(*c.* 180 pages, ISBN 3-9804241-9-7, 38 Euro)

Contents

Editors' Foreword

General Approaches

Marc Verhoeven: Ritual and its Investigation in Prehistory

Trevor Watkins: Memes, Memeplexes and the Emergence of Religion in the Neolithic

Regional Approaches

Ofer Bar-Yosef: Early Egypt and the Agricultural Dispersals

A. Nigel Goring-Morris & Anna Belfer-Cohen: Symbolic Behaviour from the Epipalaeolithic and Early Neolithic of the Near East: Preliminary Observations on Continuity and Change

Ian Kuijt: Reflections on Ritual and the Transmission of Authority in the Pre-Pottery Neolithic of the southern Levant

Case Approaches

Bo Dahl Hermansen & Charlott Hoffmann Jensen: Notes on Some Features of Possible Ritual Significance at MPPNB Shaqarat Mazyad, Southern Jordan

Mohammad Najjar: Symbolism in the Iconography of the Neolithic of Wadi
Faynan/ Jordan

Alison V.G. Betts: Interpretations of Dhuweila Rock Art: Shamanism and Increase Rites

Hans Georg K. Gebel: Walls. Loci of Forces

Akira Tsuneki: A Neolithic Foundation Deposit at Tell Ain el-Kerkh

Michael G. F. Morsch: Magic figurines? A View From Nevalı Çori

Conclusions

Lisbeth Bredholt Christensen & David A. Warburton: Theories, Definitions and Goals: Obstacles and Openings for the Understanding of Neolithic Ritual

*****

Delage, Christophe
2001 *Les resources lithiques dans le nord d'Israël: la question des territories d'approvisionnement Natoufiens confrontée a l'hypothèse de leur sedentarité.* Paris, Université de Paris - Panthéon-Sorbonne, Institut d'Art et d'Archéologie: unpublished doctoral thesis.

*****

Hourani, Fouad
2002 *Le cadre paléogéographique des premières sociétés dans la valée du Jordain. Etude de l'impact des événements climatiques de l'Holocène ancient sur la dynamique du peuplement humaine.* Paris, L'Institut National Agronomique, Paris-Grignon: unpublished doctoral thesis.

*****

Twiss K.C.
2003 *They Were What They Ate: Food and the Construction of Social Identity in the Neolithic of Southern Jordan.* University of California at Berkeley, Department of Anthropology: Doctoral dissertation. Ann Arbor, University Microfilms International.

Abstract: This dissertation uses food practices as revealed through faunal remains to investigate social constructs and ideologies at the Pre-Pottery Neolithic (PPN) site of Wadi Fidan 001 (WFD 001) in southern Jordan. After providing theoretical, cultural, and methodological background for the study, it progresses from a detailed description of the faunal data collected at

WFD 001, through interpretations of the site economy and food practices, to a discussion of the social implications of these practices.

The villagers of WFD 001 relied primarily on the herding of domestic caprines, particularly goats. Cattle were also economically important, and were probably under some form of cultural control. Hunting played a far smaller role in the WFD 001 economy than did herding.

Cut and burn marks and bone fragmentation patterns indicate that at WFD 001 caprines and cattle were commonly dismembered and then roasted or pit-roasted. The animals were not intensively processed. The cooking and eating of cattle would have involved large numbers of people, while that of caprines probably involved smaller groups such as households.

An ethos of private ownership and small-group task forces probably prevailed at WFD 001 over one of broadly shared labor and resources. However, the latter philosophy may not have been obsolete. Food-sharing within both small groups such as households and large ones such as neighborhoods or the entire site hints at the existence of two tiers of social identity. While meals shared within small groups bolstered a sense of household identity, feasts shared by many people fostered a communitarian ethos and helped to maintain social solidarity at WFD 001. The iconographic importance of cattle in the Levantine PPNB may be related to their importance as food for socially integrative feasts.

Social stress may have been an issue at WFD 001, as the goals of the community and of the individual households are likely to have been divergent. In contrast, there is little evidence for environmental pressure at WFD 001. Internal social factors were thus probably more of a problem at the site than external environmental ones, and are more likely to have been responsible for its ultimate abandonment.

Erratum

K. Pustovoytov informs us that the table published with his article "14C Dating of Pedogenic Carbonate Coatings on Wall Stones at Göbekli Tepe, Southeastern Turkey" (Neo-Lithics 2/02: 3) contained an error, and he sent the correct version as follows:

Table 1. 14C dates from the assayed samples.

area	sample position	laboratory number	^{14}C age, bp	^{14}C age, cal BC (1δ)*	^{14}C age, cal BC (2δ)*
L9-66	enclosure B, near the pillar 8, 105 cm below the soil surface	Ua-19562	8960±85	8270–8160 8140–7970	8300-7800
L9-76	enclosure C, near the pillar 11, 115 cm below the soil surface	Ua-19561	8430±80	7590–7450 7410–7370	7600–7310 7220–7200

Calendar

5th Workshop on PPN chipped stone industries Fréjus (French Riviera), March 1st – 5th 2004

Technical system diversity of PPN communities: towards social behaviour ?

Second Announcement

We would very much like to invite you to participate in the 5th workshop on PPN chipped stone industries which will be held in Fréjus

(French Riviera), March 1st – 5th 2004. Fréjus is well known for its Roman buildings (theatre, amphitheatre, baths, harbour and aqueduct) that were an essential part of the Gallo-Roman way of life during 1st century BC.

The meeting will take place in a wonderful 19th century house, the Villa Clythia, located in a large park with pine-trees and mimosas, with the

red hills of the Esterel in the background. All facilities will be available in the conference center: a great number of rooms, a large restaurant with a terrace, a tennis courtyard ...

This place can be easily reached from the Nice Côte d'Azur international airport (40 mn), the Railway station of Saint-Raphaël (15 mn) and the A8 Highway (Fréjus-Saint Raphaël, 10 mn).

Call for proposals

In the continuity of the previous workshops (Berlin 1993, Warsaw 1995, Venice 1998, Nigde 2001), our purpose is to organize a discussion between the specialists of the PPN chipped stone industries in the Fertile Crescent and its surroundings. Goals are therefore to present new contributions on the main issues developed during these last ten years, especially those which address anthropological considerations, i.e. the connection between technological systems and the economic and social organization of Pre-Pottery Neolithic communities, their cultural identities and interactions.

The organizers wish to promote several topics that could help us to further deal with such issues.

Considering the diversity of the PPN, it would be wiser to describe the complexity of each industry, which is in most cases an heterogeneous assemblage, the outcome of diverse strategies of procurement (raw materials, preforms, blanks and/or tools), and which sometimes reveals different skill levels (expedient vs. elaborated technical behaviours, apprenticeship).

Which factors influence the constitution of each assemblage ? Which of them prevail within each archaeological context: utilitarian vs. symbolic factors, ecological and economic vs. social factors, domestic vs. specialized production and use, low vs. high degree of autonomy of the communities ?

The previous workshops have strongly demonstrated that integrative studies are required to reach discussions on these topics. They include the research fields already developed on lithics (technology, typology, micro-wear analysis) as well as those related to the characterization of settlements (spatial distribution of lithic artifacts and their direct association with other remains – waste of activities such as butchering, cooking, hide and bone treatments, plant processing and stone manufacture).

We would like to further document specific contexts such as caches. Comparisons between these limited assemblages and the whole industry of the settlement can throw new light on: behaviours within a context of production or use of tools; nature of the content of the cache compared with the whole assemblage; status and value of the selected products; mechanisms of artifact distribution within or outside the community.

Nevertheless, we will also consider more restricted topics related to cultural markers, both technological and typological, but including functional considerations.

In this respect, we propose to further collect data on the variability of PPN débitages, and mainly on the production of prismatic pressure bladelets and bi-directional reduction processes (techniques, shaping modalities, rhythms, productivity). Concerning bipolar débitages, refittings are still very much needed.

During the workshop, we plan to organize a knapping session in order to illustrate the current debates.

Returning to the diversity of the PPN, questions such as the definition of cultural identities are essential from the beginning of the PPNA to the PPNB "collapse" and the very first PN. The cultural interactions between contemporaneous communities as well as the spread of PPN cultures have to be further explored. Synthetic papers or new data about PPN spread in surrounding regions, such as Crete, Central Asia, Egypt or Arabic Peninsula are welcome.

Abstracts

1 or 2 page abstracts (4000 – 8000 signs) have to be sent by e-mail or fax before December the 1st 2003.

Languages

The languages of the workshop will be English and French. The organizers will not provide simultaneous translation.

Preliminary Program

The program will include about 25 talks and a few posters.

Sunday February 29th (2:00 pm) - **Monday** March 1st (noon): welcoming participants' arrivals; afternoon: introduction to the meeting and first session

Tuesday March 2nd, morning: second session; afternoon: work and discussion around archaeological assemblages; evening: poster session

Wednesday March 3rd, morning: third session; afternoon: excursion; evening: poster session

Thursday March 4th, morning: fourth session; afternoon: knapping session; evening: poster session

Friday March 5th, morning: fifth session;
afternoon: concluding remarks and proposals for the next workshop.

Registrations

Deadline

We would like you to register as soon as possible (and make friends and colleagues do the same), the deadline being on May 15th .

Could you please join to your registration file the preliminary title(s) of your paper(s) or poster(s) and tell us if you have the opportunity to bring some lithic assemblages or implements for discussions.

Fee

The registration fees, to be paid on your arrival in Fréjus are 120 Euro for scholars and 60 Euro for students. Please remember that you have to use Euros. The fee covers the Workshop programme and abstracts, refreshments during sessions, as well as transportation from the airport and station.

The estimated cost of your stay in Villa Clythia is 63 Euro a day per person, including the room (2 to 5 beds), breakfast, lunch and dinner. There are also a few but more expensive single rooms.

The organizers are working hard to collect funds from diverse French institutions in order to reduce this amount for the speakers.

Please, contact the organizers at the following address:

5th Workshop on PPN chipped stone industries
By e-mail: ppn.5@laposte.net
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cont'd from Page 1

sults of that might have the potential to make us rethink or reassess positions we have held hitherto. We invite our readers to come forward with themes they consider promising in the future.

In the Projects section we offer the chance to present project designs by researchers who seek comments, discussion or support, or who just want to provide information about current research, such as thesis projects, the development of new analytical methods, calls for regional cooperation, etc.

Under the headline Institutions we start a series of self-portraitsof research institutions, laboratories or other facilities, in order toimprove information and exchange on progressing foci, methods, and tools of research.

In order to accomplish the new fields of activity of *Neo-Lithics* as outlined above, we now have the support of a professional editor. The new managing editor of *Neo-Lithics*, Jürgen Baumgarten, not only supports *Neo-Lithics* and the work of us co-editors, he also may approach you in the future and ask for contributions and coordinate the submissions to make our newsletter an even more attractive venue of information and debate.

For the Projects and Dialogue sections we may add that we intend to serve another purpose: in the jungle of so many new informal and non-book milieus of information, original ideas are ill-protected and often in danger of becoming adopted as "common knowledge" before being published properly. Ideas are erupting with an increasingly shorter half-time of life, especially in Neolithic research, resulting in "copyright deficits". The Projects and Dialogue sections offer quick and quotable presentations without demanding the standards of a proper article.

Contributions to *Neo-Lithics* are no longer as constrained in terms of length as they have been in the past, so longer and more detailed presentations of information and arguments are now possible. Nevertheless, we also are happy to accept short presentations, book and thesis announcements, reports on conferences, and other aspects of Neolithic research as we have in the past. The sections: Field Reports, Contributions, Lab Reports, New Publications and Thesis, and Calendar are waiting for your submissions. Illustrations can also be increased in number, although we ask that the use of photographs and drawings be kept to a scale commensurate with clarifying textual comments. Sometimes we might even be able to include colored photographs. The print format is now automated, so that our job as editors has become easier. Basic submission information is provided in the masthead on Page 4.

This issue of *Neo-Lithics* appears almost two months later than normal, in part due to the birthing pains of the new format, but more importantly due to the disruptions of research caused by the war in Iraq. Compared to the misery inflicted on the population of Iraq and adjacent countries, our tardiness is trivial. Even after Iraq and this experience of frustration, helplessness, and paralysis our vision remains the same: to integrate research across the borders of mind and lands.

Hans Georg K. Gebel &
Gary O. Rollefson

A note by *ex oriente*: All running subscriptions of *Neo-Lithics* are served according to old conditions. The price for new subscriptions / renewals is 52 Euro (6 issues in three years). From 2003, *Neo-Lithics* is included in the membership fee of *ex oriente* (annual membership fee for employed members: 40 Euro, unemployed 15 Euro). *ex oriente* is a non-profit research association which supports publications and field research in Near Eastern prehistory.

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	Neolithic Chipped Stone Industries of the Fertile Crescent, ed. by H.G. Gebel & S.K. Kozłowski. SENEPSE 1, 1994 (44 contributions, IV + 601 pages, 270 figures, 16 plates, 89 tables, paperback - 45 Euro) [ISBN 3-9804241-0-3]	
	Die neolithische Keramik aus Abu Thawwab, Jordanien (with English Summary), by Daif'allah Obeidat. SENEPSE 2, 1995 (XIII + 186 pages, 62 figs., 9 tables, paperback - 28 Euro) [ISBN 3-9804241-1-1]	
	Neolithic Chipped Stone Industries of the Fertile Crescent, and Their Contemporaries in Adjacent Regions, ed. by S.K. Kozłowski and H.G.K. Gebel. SENEPSE 3, 1996 (39 contrib., IV+ 460 pages, 214 figs., 21 plates, 52 tables, paperback - 60 Euro) [ISBN 3-9804241-2-X]	
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