

University of Groningen

## Not so coarse, nor always plain - the earliest pottery of Syria

Nieuwenhuysse, Olivier P.; Akkermans, Peter M. M. G.; van der Plicht, Johannes

*Published in:*  
Antiquity

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2010

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Nieuwenhuysse, O. P., Akkermans, P. M. M. G., & van der Plicht, J. (2010). Not so coarse, nor always plain - the earliest pottery of Syria. *Antiquity*, 84(323), 71-85.

### Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

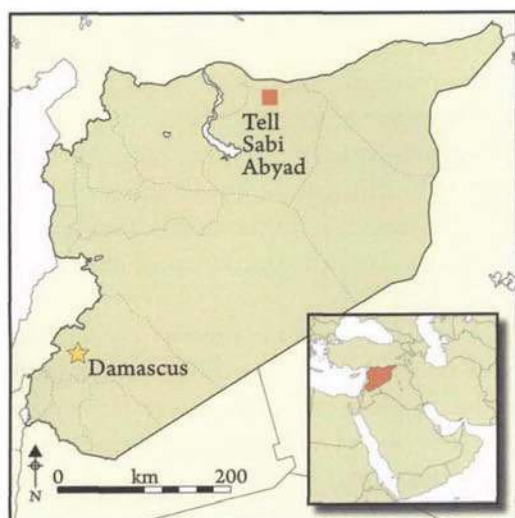
### Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

# Not so coarse, nor always plain – the earliest pottery of Syria

Olivier P. Nieuwenhuys<sup>1\*</sup>, Peter M.M.G. Akkermans<sup>1</sup> & Johannes van der Plicht<sup>1,2</sup>



*The site of Tell Sabi Abyad in Syria offers a superb stratified sequence passing from the aceramic (pre-pottery) to pottery-using Neolithic around 7000 BC. Surprisingly the first pottery arrives fully developed with mineral tempering, burnishing and stripey decoration in painted slip. The expected, more experimental-looking, plant-tempered coarse wares shaped by baskets arrive about 300 years later. Did the first ceramic impetus come from elsewhere?*

*Keywords:* Upper Mesopotamia, Syria, Neolithic, pottery, PPN

## Introduction

Mesopotamia boasts a continuous record of pottery production of almost nine millennia, yet the issue of when and why Near Eastern communities first adopted ceramic containers remains much debated. Approaches to the initial introduction of Mesopotamian pottery tend to be functionalist. It is often assumed that Neolithic communities invented pottery primarily to cook and store their agricultural surpluses. Also, it is often stated that the evolution of pottery technologies and styles in the region progressed in a linear fashion from humble beginnings towards the more complex, from coarse and plain to carefully finished and stylistically elaborated. While we certainly do not argue with the argument as to the long term, new field data show the initial crossing of the threshold from Pre-Pottery into

<sup>1</sup> Leiden University, Faculty of Archaeology, Box 9515, 2300 RA, Leiden, The Netherlands (Email: [onieuw@xs4all.nl](mailto:onieuw@xs4all.nl); [p.m.m.g.akkermans@arch.leidenuniv.nl](mailto:p.m.m.g.akkermans@arch.leidenuniv.nl))

<sup>2</sup> Center for Isotope Research, Groningen University, Nijenborgh 4, 9747 AG, Groningen, The Netherlands (Email: [J.van.der.Plicht@rug.nl](mailto:J.van.der.Plicht@rug.nl))

\* Author for correspondence

Received: 22 May 2009; Accepted: 7 July 2009; Revised: 3 September 2009

ANTIQUITY 84 (2010): 71–85

<http://antiquity.ac.uk/ant/84/ant840071.htm>

Early Pottery Neolithic to be considerably more complex. A range of new and exciting projects has now begun to explore the incipient stages of the Pottery Neolithic in Upper Mesopotamia. Here we discuss some new insights and questions arising from the excavation of well-stratified very early Pottery Neolithic levels at Tell Sabi Abyad in northern Syria.

## **Early ceramics in Upper Mesopotamia**

In the Near East, ceramics seem to have appeared at approximately similar dates across a huge territorial band stretching from Central Anatolia into Upper Mesopotamia (Le Mière & Picon 1998; Thissen 2007). In understanding the social context of early ceramics, however, it is important that scholars move away from supra-regional syntheses towards a greater consideration of localised developments. It is not uncommon, for instance, to discuss the Pottery Neolithic from the Near East as a whole on the basis of a narrow range of type sites from the southern Levant (e.g. Simmons 2007). In this region, however, the earliest ceramics very probably held a role very different from their role in the north (Gopher & Goren 1998). Moreover, the Yarmukian assemblage post-dates the introduction of pottery further north by at least several centuries (Banning 2007).

The focus in this paper is on what is known as *Upper Mesopotamia*: the vast expanses of semi-arid steppe between the Tigris and Euphrates rivers, today covered by south-eastern Turkey, northern Syria and northern Iraq. Over the past few decades this area has seen a tremendous increase in archaeological fieldwork focusing on the Late Neolithic period of the seventh and sixth millennia BC. If, initially, a considerable part of this research was aimed at exploring the later stages of the Late Neolithic, characterised by attractively decorated ceramics, it is the earlier stages from the seventh millennium that have come to the fore more recently. These projects have begun to document a series of very early Pottery Neolithic sites, at Mezraa Teleilat, Tell Halula, Akarçay, Seker al-Aheimar, Salat Cami Yanı and Tell Sabi Abyad, among others (Figure 1). The earliest ceramics from these sites resemble each other in numerous respects (Tsuneki & Miyake 1996; Le Mière & Picon 1998; Özdoğan 1999, 2003; Miyake 2005, in press; Nishiaki & Le Mière 2005; Akkermans *et al.* 2006).

Why did Neolithic communities adopt ceramics? A common view asserts that the introduction of ceramics should, first and foremost, be approached from a functional perspective. Specifically, early pottery responded to the need within settled agricultural communities for improved storage facilities and for more efficient ways of food processing (Redman 1978; Moore 1995). In the long run, the adoption of pottery stimulated population growth. Ceramic containers offered unprecedented means for efficient bulk storage of surpluses. Cooking foodstuffs improved levels of hygiene, leading to reduced levels of disease and child mortality. Cooking also opened up a vast range of new resources by turning otherwise inedible plants into desirable dietary additions (Arnold 1985: 127-44; Rice 1999: 8-9). Diminished levels of dental erosion at Abu Hureyra show that foods indeed became softer and more easily digestible after the introduction of cooking wares (Molleson & Jones 1991). In short, inventing pottery would seem to have been the smartest thing to do.

For a long time this view found unquestioned support in a series of paradigmatic choices and assumptions, often held implicitly. The dominant social-evolutionist paradigm, which

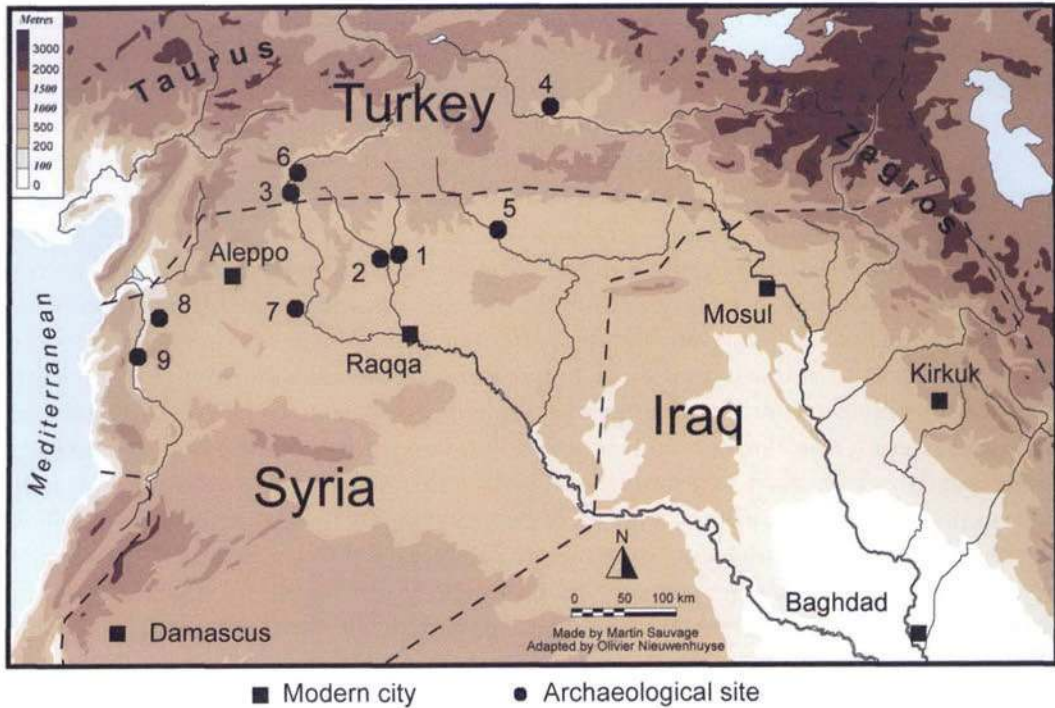


Figure 1. Map of Upper Mesopotamia showing the locations of sites mentioned in the text: 1) Tell Sabi Abyad; 2) Tell Damishliyya; 3) Mezraa Teleilat; 4) Salat Cami Yanı; 5) Tell Seker al-Abeimar; 6) Akarçay; 7) Tell Halula; 8) Tell el-Kerkh; 9) Shir.

set out to explain the emergence of the world's first complex societies from the Pleistocene hunter-gatherers, outlined two major spurts in social evolution: the so-called agricultural and urban 'revolutions' (Childe 1936; Redman 1978). The latter was made possible only by elaborating upon the resource base established during the former. Hence, from the processual point of view, the adoption of pottery was a crucial achievement, a strong positive feedback on the eventual emergence of complexity (Arnold 1985). This is, of course, not to doubt the obvious: the introduction of fired clay ceramics probably *did* have these effects in the long run. Rather, the issue at stake is the degree to which these benefits were really significant for the *initial* adoption of fired clay containers. The adaptive benefits of pottery are recognised with hindsight (Brown 1989: 205). Outside Mesopotamia scholars have become increasingly sceptical of what they perceive to be a too one-sided adaptationist approach (Vitelli 1989; Hayden 1995). Of course, in China and Japan, the discovery of ceramics among Pleistocene hunter-gatherers has long since broken the assumed link between agriculture and pottery production. As Rice (1999: 41) argues, reasons for the initial invention of pottery often differ from those used to explain its more widespread adoption.

The functionalist perspective has difficulties explaining why sedentary Pre-Pottery Neolithic societies in the Near East persistently ignored the vast potential of fired clay for so long. Long before the emergence of pottery was attested in the archaeological record these communities already had the tools, raw materials and technological knowledge to start production (Hodder 2006: 248; Thissen 2007). They made containers and other

items in plaster, coloured stone, clay, basketry and bitumen; materials that some scholars term ‘soft ware technologies’ (Vandiver 1987; Rice 1999), and which could have provided a ‘stepping stone’ towards the production of fired clay containers (Amiran 1965; Moore 1995; Kobayashi 2004). In particular, the production of lime-plaster containers (*white ware*) in the Pre-Pottery Neolithic period, for which advanced pyro-technological expertise is required, has often been cited as a direct precursor of fired clay ceramics (Maréchal 1982; Kingery *et al.* 1988).

Moreover, the evolution of pottery in the Near East is often thought to have followed a unilinear pattern, leading from the quite simple, coarsely-made and plain earliest experiments to a more differentiated and stylistically complex ceramic assemblage (Huot 1994: 63; Moore 1995). There is an implicit notion of progressive, steadily accumulating technological progress, a unilinear concept of time that underlies our neat sequential succession of prehistoric culture-historical entities (Lucas 2005). If some early-looking ceramic assemblage is sufficiently coarse, plain and undifferentiated, it therefore must represent a very early stage of pottery manufacturing (Campbell & Baird 1990; Nieuwenhuys 2000). According to Vitelli (1989), the infrequent, intermittent production that characterised the start of pottery production would have prevented potters from establishing a ‘rhythm’ in their work; consequently, the first vessels should be expected to be technologically quite variable and asymmetrical.

To be fair, until recently the limited field evidence at hand did not contradict such views. In Upper Mesopotamia, the available Early Pottery Neolithic sites tended to confirm the assumption of a plain, coarsely-made ware marking the start of pottery production. Characteristic of many Early Pottery Neolithic ceramic assemblages are irregularly-shaped vessels, often very uneven in height and wall thickness, showing a remarkably poor surface finishing and a virtually complete absence of decoration (Le Mière & Picon 1998; Van As *et al.* 2004). This repertoire comprises a basic set of shapes, including simple convex-walled bowls, hole-mouth pots and tall pots with vertical walls and thick loop handles (Figure 2). Similar to white ware containers, these coarse pottery vessels were sometimes shaped using reed mats or baskets as a support. Recovered from sites spread widely across the Upper Mesopotamian plains, this coarsely-made plant-tempered pottery (*CMPT ware*) represented to many scholars a true ‘early ceramic’ horizon. Marie Le Mière was among the few researchers to assert that this pottery might not represent the incipient stage of pottery production (Le Mière & Picon 1998; Faura & Le Mière 1999). However, our understanding of an initial stage remained highly fragmented and based on a mere handful of excavated sites, some of which had been excavated decades ago. Significantly, recent excavations have begun yielding strata with earlier ceramics. Foremost among these is Tell Sabi Abyad in northern Syria, where this stage at the very beginning of pottery manufacture is termed the Initial Pottery Neolithic.

## **The Initial Pottery Neolithic at Tell Sabi Abyad**

Tell Sabi Abyad is situated in the gently undulating plain of the river Balikh, a perennial tributary of the Euphrates, about 30km south of the Syro-Turkish border (Figure 1). The site comprises four prehistoric mounds between 1 and 5ha in size, located in a roughly linear

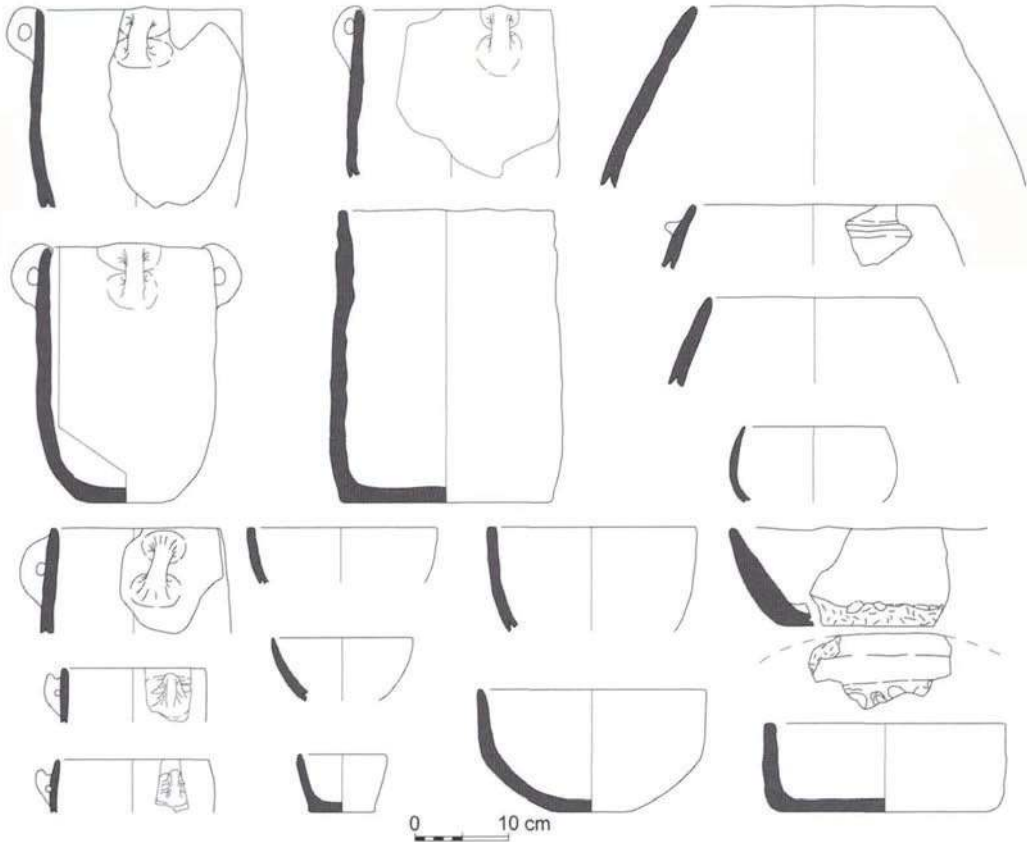


Figure 2. Early Pottery Neolithic coarsely-made plant-tempered ware from Tell Sabi Abyad (c. 6700-6400 cal BC).

north-south orientation within a short distance of each other (Figure 3). They were used from the late eighth until the early sixth millennium BC, although not all of them always contemporaneously: initially habitation included all four sites but it contracted to the main mound of Tell Sabi Abyad I after c. 6800 BC (Figures 4 and 5).

Over the past years, extensive excavations have been carried out at three of the four mounds (Tells Sabi Abyad I, II and III), each of which revealed layers with very early pottery, dated to the very beginning of the seventh millennium BC (Akkermans *et al.* 2006). At Tell Sabi Abyad I, the relevant layers were reached over an area of about 120m<sup>2</sup> at the base of three deep soundings (E3, E4 and D4 in Operation III) on the north-western part of the site (Figure 4). At least three building phases in this area (levels A-12 to A-10) can be associated with the Initial Pottery Neolithic period, radiocarbon-dated at about 7000-6800 BC. Each of these occupation levels was characterised by free-standing, rectangular buildings consisting of many small rooms, surrounded by extensive open yards. The architecture was regularly characterised by the use of very large mud slabs for building purposes, the application of white plaster on the floors and walls, and the construction of extensive mud-brick platforms which primarily served as foundations. Significantly, the

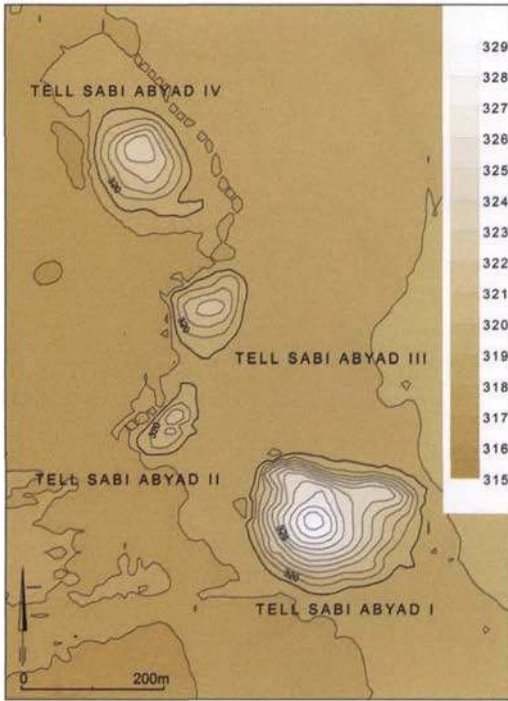


Figure 3. The cluster of mounds at Tell Sabi Abyad.

structures had been frequently rebuilt in the same place and on roughly the same alignment, suggestive of a long, continuous use of space over several generations.

Similar features occurred at the neighbouring mound of Tell Sabi Abyad II, where the earliest pottery was found in very small quantities in the penultimate habitation level 2, with its limited occupation less than 0.5ha in area (Verhoeven & Akkermans 2000). Very early ceramics were also recently exposed in the upper occupational strata in the trenches H7 to H9 at the 1ha-site of Tell Sabi Abyad III. These building levels, immediately below the surface of the site, fully matched the lowest layers found in the deep soundings at Tell Sabi Abyad I in terms of architectural remains and associated material culture; there can be no doubt that the sites existed side by side for a substantial range of time.

It is important to realise that, firstly, the earliest pottery-bearing layers at the three sites were immediately above deposits entirely devoid of ceramics, and that, secondly, there was no stratigraphic or other hiatus between the lower, aceramic levels and the upper, ceramic levels. In this respect, there is proof for considerable continuity, rather than change, at the transition from the Early (Pre-Pottery) Neolithic to the Late (Pottery) Neolithic (Akkermans *et al.* 2006). Contrary to widespread opinion, ceramics, we believe, initially made little difference in the Neolithic communities.

Table 1 shows new radiocarbon dates from the Initial Pottery Neolithic strata at the various mounds of Tell Sabi Abyad. The dates from Tell Sabi Abyad I belong to the beginning of the period (levels A-12 and A-11; as yet no date is available for the upper level A-10), whereas those from Tell Sabi Abyad III belong to the end of the period. Since the dates are statistically indistinguishable per level, they can be averaged to produce a date of roughly 7000-6800 BC for building levels A-12 to A-11 at Tell Sabi Abyad I and a date of 6800-6700 BC for the final strata at Tell Sabi Abyad III (Table 2). The charred remains could not be identified to the level of species, but we consider an old wood effect to be negligible (Bruins *et al.* 2005). Although the  $^{14}\text{C}$  dates are precise, the shape of the calibration curve for the time range under discussion unfortunately deteriorates the precision, yielding ranges up to three centuries for the Initial Pottery Neolithic period as a whole, *c.* 7000-6700 BC.

## The earliest ceramics

The ceramics recovered from the Initial Pottery Neolithic strata differ dramatically from the coarsely-made plant-tempered ceramics from the younger levels. First and foremost, it

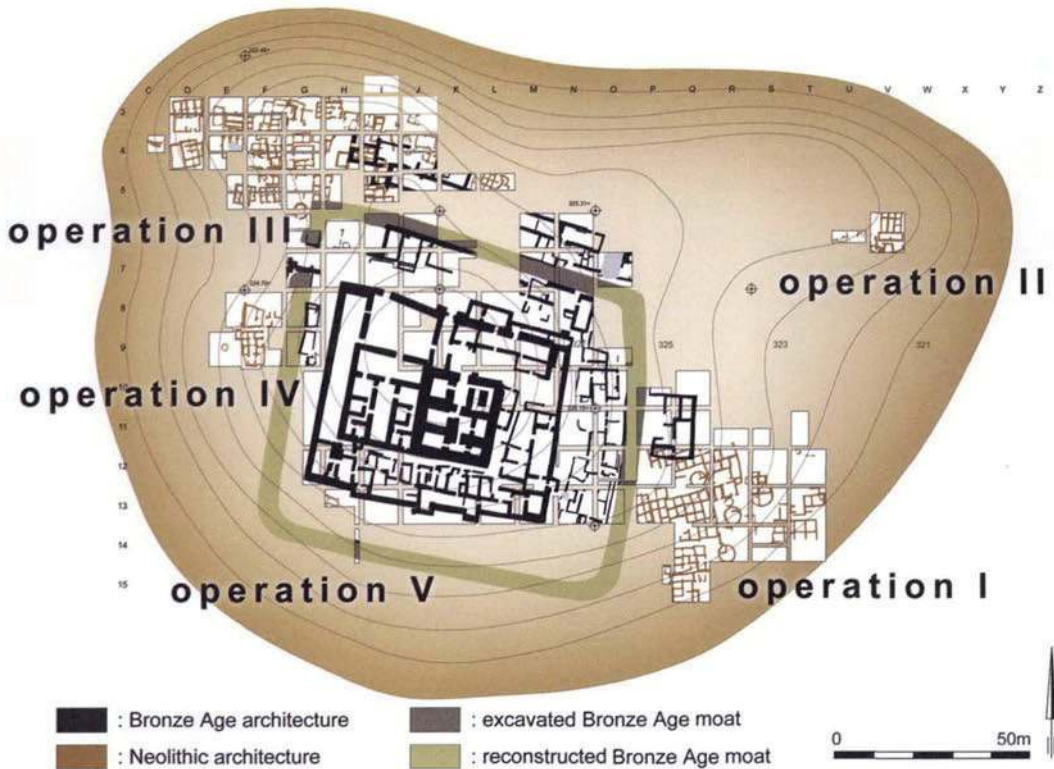


Figure 4. The mound of Tell Sabi Abyad I, showing the location of the various operations.

was not plant-tempered at all, but made of a clay containing a high density (20-25 per cent volume, occasionally reaching 45 per cent) of dark mineral inclusions. At least some of these were basalt. There is no doubt that this was purposely added, as a temper. We provisionally use the term *early mineral ware* (EMW) to refer to this category.

Tell Sabi Abyad is certainly not unique in the use of mineral-tempered clays for the earliest ceramics. Recent work at a range of contemporaneous sites has also yielded Early Pottery Neolithic levels characterised by mineral-tempered wares, preceding the levels with coarsely-made, plant-tempered wares. Key sites include Tell Halula and Seker al-Aheimar in Syria, and Akarçay Tepe, Mezraa Teleilat and Salat Cami Yanı in south-eastern Turkey (Faura 1996; Faura & Le Mièrè 1999; Arimura *et al.* 2000; Özdoğan 2003; Miyake 2005; Nishiaki & Le Mièrè 2005). The work carried out so far suggests diversity in the choice of raw materials. At Seker al-Aheimar some of this pottery was basalt-tempered, but other tempering materials have been found as well (Nishiaki & Le Mièrè 2005: 61, 64).

At Tell Sabi Abyad, extremely low densities of ceramic material characterise the earliest Pottery Neolithic levels. These, too, find parallels at other Upper Mesopotamian sites, including nearby Tell Damishliyya (Akkermans 1988), Mezraa Teleilat (Karul *et al.* 2002; Özdoğan 2003), Seker al-Aheimar (Nishiaki & Le Mièrè 2005) and Salat Cami Yanı (Miyake *in press*). At this stage we can only give rough estimates for relative ceramic densities, but there is little doubt that in this early phase ceramic vessels were very few in number.



Date cal. BC	Period	Tell Sabi Abyad I - operations					Tell Sabi Abyad II	Tell Sabi Abyad III
		I	II	III	IV	V		
5700	Middle Halaf			level C-1				
5800	Early Halaf	level 1						
5900		level 2		level C-2/8				
6000	Transitional	level 3	level 1					
		level 4	level 2	level B-1		phase III		
6100	Pre-Halaf	Burnt Village	level 3	level B-2				
		level 7	level 4	level B-3				
6200	Pre-Halaf	level 8		level B-4				
		P-15 - 8		level B-5		phase II		
6300	Pre-Halaf	P-15 - 9		level B-6				
		P15 - 10		level B-7				
6400	Early Pottery Neolithic			level A-1				
				level A-2				
6500	Early Pottery Neolithic	P-15 - 11		level A-3	level 1	phase I		
				level A-4	level 2			
6600	Early Pottery Neolithic			level A-5				
				level A-6				
6700	Early Pottery Neolithic			level A-7				
				level A-8				
6800	Initial PN			level A-9			level 1	trench H7
				level A-10				
6900	Initial PN			level A-11			level 2	trench H8
				level A-12				
7000	Late PPNB							
							level 3	trench H9
7100	Late PPNB					level 4		

Figure 5. The chronology of Tell Sabi Abyad, Tell Sabi Abyad II and Tell Sabi Abyad III, showing culture-historical terminology and absolute dates cal BC.

Small quantities of pots were available at this stage. Ceramics had yet to develop into the mass-produced commodities that would characterise subsequent stages.

A further distinctive aspect of this early pottery is the conspicuous care with which the vessels were shaped and finished. In stark contrast to the subsequent coarsely-made, plant-tempered pottery, the EMW displays regular wall profiles and rims, and an even wall thickness. Traces of the primary shaping were on the whole obliterated by intensive smoothing and burnishing, occasionally resulting in somewhat glossy surfaces. So far we have not found any examples showing traces of vessels having been shaped on basketry or reed mats, as occasionally seen with the subsequent CMPT ware. Vessel shapes include simple convex-sided bowls and shapes with straight walls (Figures 6 and 7). Although wall thickness can be quite variable on single sherds, there are no vessels with abrupt angularities or with carinated profiles. ‘Ear-shaped’ lugs are present.

The surface and the cross-sections are varied in colour. About one third of the vessels are light-coloured throughout the vessel wall, indicating neutral-to-oxidising firing circumstances (surface colours ranging from 10YR 7/4, very pale brown, to 10YR 6/4, yellowish brown). The majority of the vessels, however, are darker, shading into grey to

Table 1. Dating the Initial Pottery Neolithic: new radiocarbon dates from the sites of Tell Sabi Abyad (calibration based on the radiocarbon calibration programme OxCal from the University of Oxford).

Lab. no.	Material	Site	Date BP	1-sigma calibrated date BC	2-sigma calibrated date BC
GrA-33007	Charcoal in fireplace	Tell Sabi Abyad I, Operation III, level A-12	8040±35	7070-7020 (33.6%) 6970-6910 (15.1%) 6880-6830 (19.5%)	7080-6820 (95.4%)
GrA-33001	Charcoal in fireplace	Tell Sabi Abyad I, Operation III, level A-12	7955±35	7030-6930 (31%) 6920-6870 (14.3%) 6850-6770 (22.9%)	7040-6690 (95.4%)
GrA-33002	Charcoal in ashy layer in open area	Tell Sabi Abyad I, Operation III, level A-12	8005±40	7050-7000 (19.4%) 6990-6980 (1.8%) 6970-6910 (24%) 6890-6820 (23.0%)	7070-6770 (95.4%)
GrA-33009	Charcoal in fireplace	Tell Sabi Abyad I, Operation III, level A-11	7990±35	7050-6910 (44.8%) 6890-6820 (23.4%)	7060-6760 (95.4%)
GrA-33006	Charcoal in fireplace	Tell Sabi Abyad I, Operation III, level A-11	7930±35	7020-6970 (7.2%) 6920-6880 (9.1%) 6830-6690 (51.9%)	7030-6680 (95.4%)
UtC-4907	Charred seeds found in fireplace	Tell Sabi Abyad II, level 3A/4C	7950±50	7030-6930 (26.8%) 6920-6870 (12.6%) 6850-6750 (26.9%) 6720-6710 (2%)	7050-6690 (95.4%)
GrA-32992	Charcoal found in large pit filled with ashes	Tell Sabi Abyad III, Trench H8	7950±35	7030-6960 (21.8%) 6950-6930 (5.8%) 6920-6870 (13.7%) 6850-6750 (26.2%) 6720-6710 (0.8%)	7040-6690 (95.4%)
GrA-32991	Charcoal found in fireplace	Tell Sabi Abyad III, Trench H9	7920±35	6990-6970 (1.9%) 6910-6880 (7%) 6830-6680 (59.2%)	7030-6930 (18.2%) 6920-6870 (10.3%) 6860-6650 (66.9%)
GrA-32998	Charcoal found in fireplace	Tell Sabi Abyad III, Trench H9	7900±40	6830-6650 (68.2%)	7030-6930 (12.3%) 6920-6870 (7.5%) 6850-6640 (75.6%)

dark-grey (5YR 3/1, very dark grey, to 10YR 5/1, grey). Surface colour often fluctuates from dark to light on the same sherd. This variation may, to some degree, indicate the use of different raw materials for pottery production, but it is also possible that firing circumstances played a role. The potters do not seem to have used specialised kilns, but open bonfires instead. In some instances the darker colour appears to have been caused by the use of the vessel over a fire. Traces of black soot are not infrequent.

Perhaps the greatest surprise was that this early pottery was occasionally decorated. Similar-looking decorated ceramics have also been reported from Seker al-Aheimar (Nishiaki & Le Mière 2005: 62) and Akarçay (Arimura *et al.* 2000). The two decorative techniques are red slipping and painting. A fugitive red-brown paint or slip is typical (2.5YR, dark brown, to 5YR 3/2, dark reddish-brown). The slip appears to have been

Table 2. Averaged radiocarbon dates from Tell Sabi Abyad I and Tell Sabi Abyad III.

Site and level	Average date BP	Average 1-sigma calibrated date BC
Tell Sabi Abyad I, level A-13	8000±20	7045-6840
Tell Sabi Abyad I, level A-12	7960±25	7025-6815
Tell Sabi Abyad III, Trenches H8-H9	7925±20	6820-6700

applied with brushes rather than by dipping the vessel into a fluid, and the same tools may have been used for applying the pigment in the form of some motif. These motifs often do not have sharply defined edges, so that it is sometimes difficult to see whether some lines represent a roughly painted motif or an imperfectly executed slip. The design structures were very simple. Design motifs include parallel diagonal lines, diagonal lines in alternating directions, cross-hatching and diagonal waves.

### **Not so coarse, not always plain**

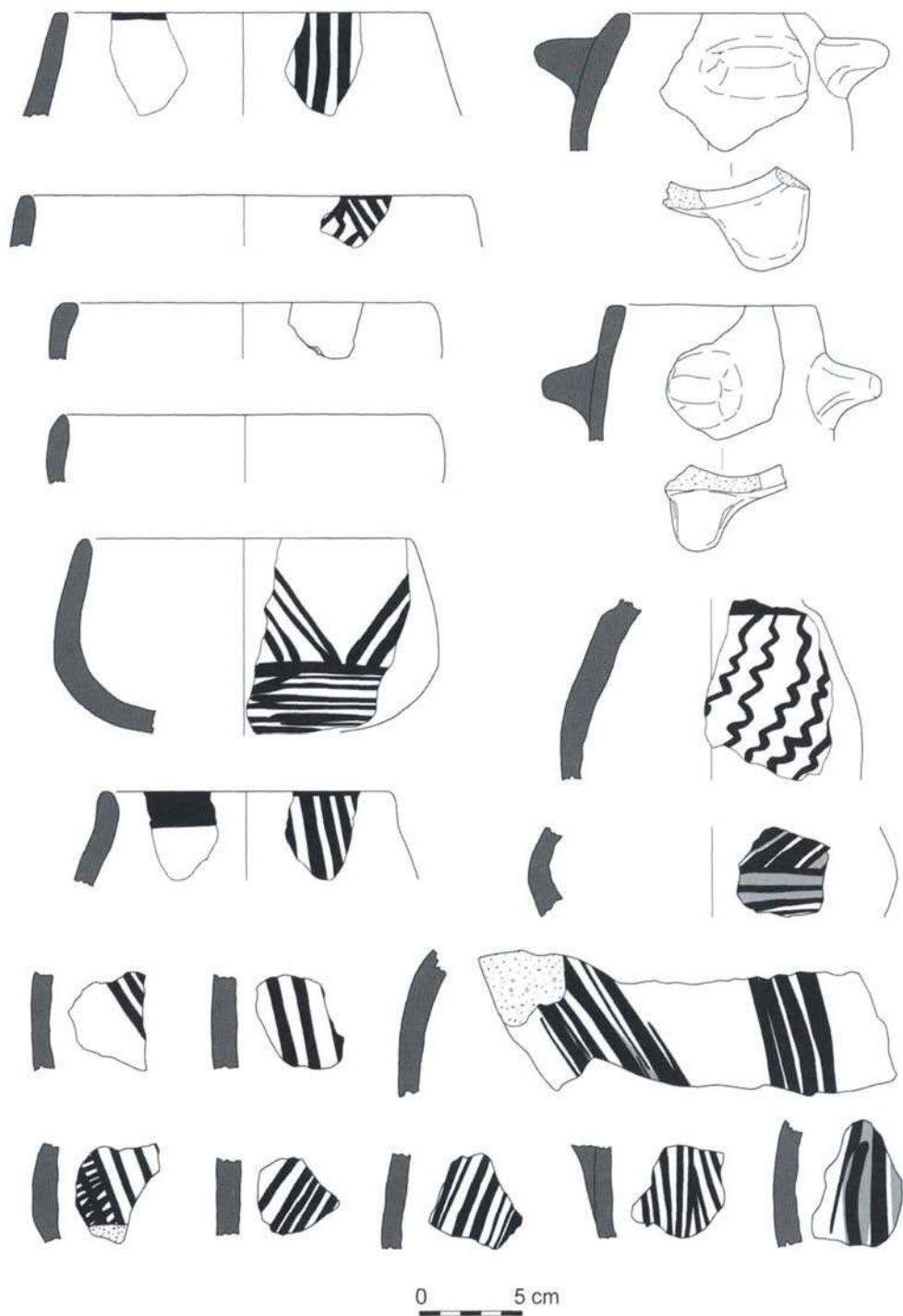
The discovery of early Pottery Neolithic levels at Tell Sabi Abyad and other prehistoric sites in Upper Mesopotamia changes the way we look at long-term evolution of ceramic technology in the region. Somewhat counter-intuitively, it appears that following an initial stage, in which carefully-shaped, well-finished and sometimes decorated ceramic vessels prevailed, pottery production then shifted to roughly-made, plain CMPT ware. Contrary to expectations, pottery production went from 'nice' to 'coarse'. Evidently, such terms contain dangerous modern cultural stereotypes. If the discovery of fine, decorated early pottery may seem to go against commonly accepted views, this reflects to some extent the difficulties of applying a linear model of progressive evolution to the development of ceramic technology and style.

The evidence gathered from Tell Sabi Abyad so far suggests no 'trial' stage in which novice potters can be seen 'experimenting' with their new technology. At Tell Sabi Abyad, the Initial Pottery Neolithic levels fit within a continuous, well-dated stratigraphic sequence; there is precious little chronological space to allow for undiscovered intermediate levels. The earliest ceramic products seem to have arrived in a fully developed state. One very plausible explanation could be that the earliest vessels were not made locally, but came from some other, as yet unknown, region where the necessary experimenting had taken place previously. If so, this might be the area immediately to the north, where contemporaneous sites are being excavated. At present there is no evidence either to prove or disprove that the earliest ceramics at Tell Sabi Abyad came from elsewhere. However, considering the emerging evidence for significant regional variation in early mineral-tempered pottery technology, and taking into account the rapid adoption of mineral-tempered pottery across a considerable part of Upper Mesopotamia, it seems possible to suggest, alternatively, that the necessary steps were taken approximately simultaneously over a large geographic space. Given the burgeoning 'soft ware' technologies available, the basic ingredients of the ceramic chain of operations would seem to have been there, waiting to be re-assembled in an innovative manner.

It remains to be investigated what these earliest vessels were used for in practice. It seems unlikely that the earliest pottery was used for storage. If it was, this can only have



Figure 6. Initial Pottery Neolithic ceramics from Tell Sabi Abyad (c. 6900-6700 cal BC).



*Figure 7. Initial Pottery Neolithic ceramics from Tell Sabi Abyad (c. 6900-6700 cal BC).*

been on a small-scale and short-term basis, and perhaps limited to specific, special products. Neolithic communities may have been conservative in their storage practices, resisting major changes in long-held, successfully proven technologies that emphasised architectural storage in small cubical rooms (Bartl 2004: 547-50). Certainly, large, tall-necked storage jars *would* eventually become part of the ceramic repertoire, but this appears to have been a drawn-out development (Akkermans *et al.* 2006; Nieuwenhuys 2006). Cooking may have been among the uses of early mineral-tempered ceramics (Le Mière & Picon 1998, 2003). Traces of soot suggest that at least part of the early vessels from Sabi Abyad were used over a fire. The occasional lugs would certainly have improved the performance potential of the vessels during such activities. However, the small numbers of pots in daily use at this stage argue against a large-scale 'culinary revolution'. Using these vessels for the preparation of food and drink probably involved small numbers of people, perhaps socially restricted segments of the population. This pottery may have been reserved for special occasions or for special, perhaps only seasonally available, types of food (Oyuela-Caycedo 1995).

There is presently precious little evidence to suggest that the introduction of pottery in northern Syria was associated with large-scale cultural change (Akkermans *et al.* 2006: 152-3). Rather than presenting a sharp break with the past, the earliest pottery in Syria should be seen as part of a heterogeneous final PPNB heritage. Did decorated vessels constitute a wholly new mode of cultural expression? Perhaps not. Much earlier, decorated stone vessels had already formed part of the transition to a sedentary way of life, as witnessed spectacularly at Körtik Tepe (Özkaya & Coşkun 2009). More significantly, the early stages of the Pottery Neolithic also yield numerous multi-coloured stone vessels. Portable, visually conspicuous containers simply were part of the later PPNB and Early PN cultural package.

Their meaning largely escapes us at this stage. Perhaps their sheer materiality made decorated containers a prime tool for manipulating social relations. Their durability gave them excellent qualities for encoding and transferring social memories. In contrast to the heavy containers made from clay or plaster (white ware), they could be moved around, displayed and exchanged, and so they could gain biographies of their own (Kopytoff 1986). The decoration, while far less semantically complex than the later Neolithic painted wares, certainly contributed to 'marking' each individual item. They may have been associated with specific persons, occasions or memories, enabling Neolithic communities to establish networks beyond the local. These precious containers may have expressed in a material form collectively-held practices that involved the conspicuous consumption of food and drink.

Intriguingly, the Initial Pottery Neolithic stage characterised by painted pottery did not last very long. With the subsequent rise of CMPT wares, ceramics changed into an everyday artefact used in great abundance. While the exclusivity, careful production and stylistic elaboration of these early vessels would suggest a 'prestige' element (Hayden 1995), pottery production very rapidly turned into a 'practical' technology. Did Upper Mesopotamian Final PPNB to Early Pottery Neolithic ideologies militate against the emergence of prestige technologies? Surprisingly, and again counter-intuitively given the unrivalled potential of clay for stylistic elaboration, people almost entirely stopped using decorated pottery. It would take about half a millennium before people began to decorate their pottery vessels once more, initiating the 'painted pottery revolution' that eventually led to the Halaf ceramic tradition (Cruells & Nieuwenhuys 2005; Nieuwenhuys 2007).

## Acknowledgements

The research is funded by the Netherlands Organisation for Scientific Research (NWO), dossier 360-62-040. The authors wish to thank Mikko Kriek and Erica Dooijes-Hoogwijk for producing the graphics. Bill Finlayson and Trevor Watkins gave valuable comments on an earlier draft of the paper.

## References

- AKKERMANS, P.M.M.G. 1988. The soundings at Tell Damishliyya, in M.N. van Loon (ed.) *Hamman et-Turkman*: 9-67. Istanbul: NHAI.
- AKKERMANS, P.M.M.G., R. CAPPERS, C. CAVALLO, O.P. NIEUWENHUYSE, B. NILHAMN & I. OTTE. 2006. Investigating the Early Pottery Neolithic of northern Syria: new evidence from Tell Sabi Abyad. *American Journal of Archaeology* 110: 123-56.
- AMIRAN, R. 1965. The beginnings of pottery-making in the Near East, in F.R. Matson (ed.) *Ceramics and man*: 240-7. Chicago (IL): Aldine.
- ARIMURA, M., M. BALKAN-ATLI, F. BORELL, W. CRUELLES, G. DURU, A. ERIM-ÖZDOĞAN, J. IBANEZ, O. MAEDE, Y. MIYAKE, M. MOLLIST & M. ÖZBASARAN. 2000. A new Neolithic settlement in the Urfa region: Akarçay Tepe, 1999. *Anatolia Antiqua* 8: 227-55.
- ARNOLD, D.E. 1985. *Ceramic theory and cultural process*. Cambridge: Cambridge University Press.
- BANNING, E.B. 2007. Wadi Rabah and related assemblages in the southern Levant: interpreting the radiocarbon evidence. *Paléorient* 33(1): 77-101.
- BARTL, K. 2004. *Vorratshaltung. Die spätepiläolithische und frühneolithische Entwicklung im westlichen Vorderasien*. Berlin: Ex Oriente.
- BROWN, J.A. 1989. The beginnings of pottery as a socio-economic process, in S.E. van der Leeuw & R. Torrence (ed.) *What's new? A closer look at the process of innovation*: 203-24. London: Unwin Hyman.
- BRUINS, H.J., J. VAN DER PLICHT, D. ILAN & E. WERKER. 2005. Iron-Age <sup>14</sup>C dates from Tel Dan: a high chronology, in T.E. Levy & T. Higham (ed.) *The Bible and radiocarbon dating, archaeology, text and science*: 323-36. London: Equinox.
- CAMPBELL, S. & D. BAIRD. 1990. Excavations at Ginnig, the aceramic to early ceramic Neolithic sequence in North Iraq. *Paléorient* 16(2): 65-78.
- CHILDE, V.G. 1936. *Man makes himself*. London: Methuen.
- CRUELLES, W. & O.P. NIEUWENHUYSE. 2005. The Proto-Halaf period in Syria. New sites, new data. *Paléorient* 30(1): 47-68.
- FAURA, J.M. 1996. La cerámica 'Pre-Halaf', in M. Molist (ed.) *Tell Halula (Siria), un yacimiento neolítico del valle medio del Eufrates campanas de 1991 y 1992*: 91-8. Madrid: Universidad Autonoma.
- FAURA, J.M. & M. LE MIÈRE. 1999. La céramique néolithique du Haut Euphrate Syrien, in G. del Olmo Lete & J.L. Montero-Fenolós (ed.) *Archaeology of the Upper Syrian Euphrates. The Tishrin Dam Area*: 281-98. Barcelona: Editorial AUSA.
- GOPHER, A. & Y. GOREN. 1998. The beginning of pottery, in T. Levy (ed.) *The archaeology of society in the Holy Land*: 224-5. London: Leicester University Press.
- HAYDEN, B. 1995. The emergence of prestige technologies and pottery, in W.K. Barnett & J.W. Hoopes (ed.) *The emergence of pottery. Technology and innovation in ancient societies*: 257-65. Washington (DC): Smithsonian Institution Press.
- HODDER, I. 2006. *The leopard's tale*. London: Thames & Hudson.
- HUOT, J.L. 1994. *Les premiers villageois de Mésopotamie: du village à la ville*. Paris: Armand Colin.
- KARUL, N., A. AYHAN & M. ÖZDOĞAN. 2002. Mezraa Teleilat 2000, in N. Tuna & J. Velibeyoğlu (ed.) *Salvage project of the archaeological heritage of the Ilisu and Carchemish dam reservoirs. Activities in 2000*: 115-41. Ankara: Middle East Technical University.
- KINGERY, W.D., P.B. VANDIVER & M. PRICKETT. 1988. The beginnings of pyrotechnology, Part II. Production and use of lime and gypsum plaster in the Pre-Pottery Neolithic Near East. *Journal of Field Archaeology* 15(2): 219-44.
- KOBAYASHI, T. 2004. *Jomon reflections. Forager life and culture in the prehistoric Japanese archipelago*. Oxford: Oxbow.
- KOPYTOFF, I. 1986. The cultural biography of things: commodization as process, in A. Appadurai (ed.) *The social life of things. Commodities in cultural perspective*: 64-94. Cambridge: Cambridge University Press.
- LE MIÈRE, M. & M. PICON. 1998. Les débuts de la céramique au Proche Orient. *Paléorient* 24(2): 5-26.
- 2003. Appearance and first development of cooking and 'non-cooking' ware concepts in the Near East, in S. Di Pierro, V. Serneels & M. Magetti (ed.) *Ceramic in the society. Proceedings of the 6th European Meeting on Ancient Ceramics, Fribourg, Switzerland 3-6 October 2001*: 175-88. Fribourg: Department of Geosciences, Mineralogy and Petrography, University of Fribourg.
- LUCAS, G. 2005. *The archaeology of time*. London: Routledge.

- MARÉCHAL, C. 1982. Vaiselles blanches du Proche Orient. El Kowm (Syrie) et l'usage du plâtre au néolithique, in J. Cauvin (ed.) *Cahiers de l'Euphrate* 3: 217-51. Paris: CNRS.
- MIYAKE Y. 2005. Archaeological survey at Salat Cami Yani. A Pottery Neolithic site in the Tigris Valley, south-east Turkey. *Anatolica* 31: 1-18
- In press. Salat Cami Yani: a Pottery Neolithic site in the Tigris Valley, in M. Özdoğan & N. Başgelen (ed.) *Neolithic in Turkey*. Second edition. Istanbul: Arkeoloji ve Sanat Yayınları.
- MOLLESON, T.I. & K. JONES. 1991. Dental evidence for dietary change at Abu Hureyra. *Journal of Archaeological Science* 18: 525-39.
- MOORE, A.M.T. 1995. The inception of potting in western Asia and its impact on economy and society, in W.K. Barnett & J.W. Hoopes (ed.) *The emergence of pottery. Technology and innovation in ancient societies*: 39-54. Washington (DC): Smithsonian Institution Press.
- NIEUWENHUYSE, O.P. 2000. Early pottery: the ceramics from level 1, in M. Verhoeven & P.M.M.G. Akkermans (ed.) *Tell Sabi Abyad II, The Pre-Pottery Neolithic B settlement. Report on the excavations of the National Museum of Antiquities Leiden in the Balikh Valley, Syria*: 123-36. Istanbul: NHAI.
- 2006. The earliest ceramics from Tell Sabi Abyad, Syria. *Leiden Journal of Pottery Studies* 22: 111-28.
- 2007. *Plain and painted pottery. The rise of Late Neolithic ceramic styles on the Syrian and northern Mesopotamian plains* (Papers on Archaeology of the Leiden Museum of Antiquities 3). Turnhout: Brepols.
- NISHIAKI, Y. & M. LE MIÈRE. 2005. The oldest Pottery Neolithic of Upper Mesopotamia: new evidence from Tell Seker al-Aheimar, the Khabur, northeast Syria. *Paléorient* 31(2): 55-68.
- OYUELA-CAYCEDO, A. 1995. Rocks versus clay: the evolution of pottery technology in the case of San Jacinto 1, Colombia, in W.K. Barnett & J.W. Hoopes (ed.) *The emergence of pottery. Technology and innovation in ancient societies*: 133-44. Washington (DC): Smithsonian Institution Press.
- ÖZDOĞAN, M. 1999. Mezraa Teleilat: preliminary reconnaissance of a Neolithic site in the Euphrates Basin, in N. Tuna & J. Öztürk (ed.) *Salvage project of the archaeological heritage of the Ilisu and Carchemish dam reservoirs in 1998*: 11-17. Ankara: Middle East Technical University.
- 2003. Mezraa Teleilat. Un site néolithique en bordure de l'Euphrate. *Dossiers d'Archéologie* 281: 36-41.
- ÖZKAYA, V. & A. COŞKUN. 2009. Körtik Tepe, a new Pre-Pottery Neolithic A site in south-eastern Anatolia. *Antiquity* 83. Available at <http://antiquity.ac.uk/projgall/ozkaya/>, accessed 30 September 2009.
- REDMAN, C.L. 1978. *The rise of civilization: from early farmers to urban society in the ancient Near East*. San Francisco (CA): Freeman and Co.
- RICE, P.M. 1999. On the origins of pottery. *Journal of Archaeological Method and Theory* 6(1): 1-54.
- SIMMONS, A.H. 2007. *The Neolithic revolution in the Near East: transforming the human landscape*. Tucson (AZ): University of Arizona Press.
- THISSEN, L.C. 2007. Die Anfänge der Keramikproduktion in der Türkei – ein Überblick, in Badisches Landesmuseum (ed.) *Vor 12000 Jahren in Anatolien: die ältesten Monumente der Menschheit*: 218-29. Karlsruhe: Ausstellungskatalog Badisches Landesmuseums Karlsruhe.
- TSUNEMI, A. & Y. MIYAKE. 1996. The earliest pottery sequence of the Levant: new data from Tell el-Kerkh 2, Northern Syria. *Paléorient* 22(1): 109-23.
- VANDIVER, P. 1987. Sequential slab construction; a conservative southwest Asiatic ceramic tradition, ca. 7000-3000 BC. *Paléorient* 13(2): 9-35.
- VAN AS, A., L. JACOBS & O.P. NIEUWENHUYSE. 2004. Early pottery from Late Neolithic Tell Sabi Abyad II, Syria. *Leiden Journal of Pottery Studies* 20: 97-110.
- VERHOEVEN, M. & P.M.M.G. AKKERMANS (ed.). 2000. *Tell Sabi Abyad II, the Pre-Pottery Neolithic B settlement. Report on the excavations of the National Museum of Antiquities Leiden in the Balikh Valley, Syria*. Istanbul: NHAI.
- VITELLI, K.D. 1989. Were pots first made for food? Doubts from Franchthi. *World Archaeology* 21: 17-29.