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A NEW LIFE FOR OLD POTS. EARLY POTTERY REPAIRS FROM 7TH MILLENNIUM TELL SABI ABYAD (NORTHERN SYRIA)

Olivier P. Nieuwenhuyse and Renske Dooijes

Abstract

This paper presents early pottery repairs from Late Neolithic Tell Sabi Abyad, northern Syria, made with plaster. Dated to 6450-6200 cal. BC, they may represent the earliest pottery repairs currently known in the Near East.

Introduction

The study of pottery technology does not end at the stages of ceramic production, distribution and exchange. In particular the stage of ceramic consumption is a complex one. Often the biographies of ceramic vessels were not cut short after the vessel had broken. Every archaeologist or museum curator has come across at least some instances of vessels that were kept in use after they had stopped being fully functional, or that were re-used for purposes entirely different from their primary function. Recently archaeologists, ceramic specialists, and professional restorers have become increasingly fascinated by the way broken pottery vessels were mended in the past. The interpretative potential of ancient repairs on archaeological artefacts – visual reminders of the object's tormented cultural biography (Kopytoff 1986) – is more and more being acknowledged (Appelbaum 2007; Bentz and Kästner 2007; Caple 2006; Chapman and Gaydarska 2007; Dooijes and Nieuwenhuyse 2007; Dooijes et al. 2007). This has resulted in a stronger emphasis on the careful recording and documenting of the repairs observed; most archaeologists today would no longer casually dismiss or even omit the ancient repairs they observe from their find descriptions.

Here we shall discuss the recent discovery of some very early pottery repairs from Tell Sabi Abyad, northern Syria (Figure 1). Dated to the 7th millennium BC, a period known as the Early Pottery Neolithic, they may well represent the earliest pottery repairs currently known in the Near East. They provide an interesting perspective on the prehistoric practices of pottery repair and re-use.

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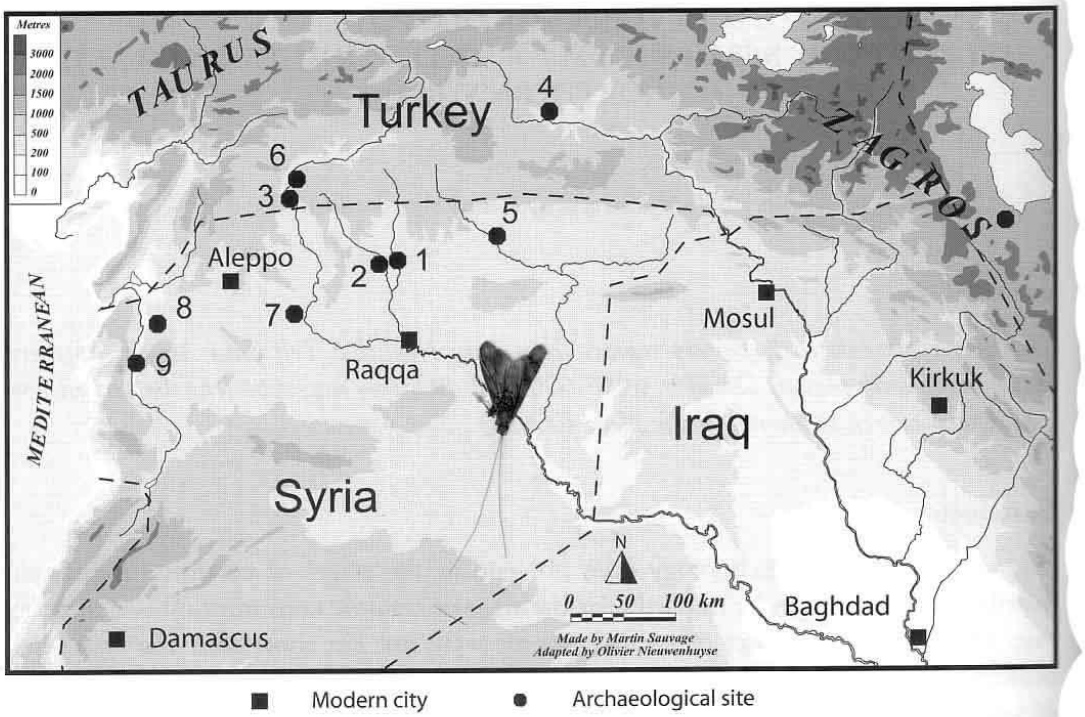


Figure 1. The location of Tell Sabi Abyad and other Early Pottery Neolithic sites in Upper Mesopotamia. No. 1: Tell Sabi Abyad. No. 2: Tell Damishliyya. No. 3: Mezraa Teleilat. No. 4: Salat Cami Yani. No. 5: Tell Seker al-Aheimar. No 6: Akarçay. No. 7. Tell Halula. No. 8. Tell el-Kerkh. No. 9: Šir.

The Early Pottery Neolithic at Tell Sabi Abyad

Tell Sabi Abyad is a four-hectare mound (Arabic: *tell*) in northern Syria. Excavations since the late 1980s have exposed extensive remains dating from the later 7th and early 6th millennia, from what is locally known as the Pre-Halaf, Transitional and Early Halaf periods (Akkermans 1993; Nieuwenhuyse 2007). More recently, work has begun to explore much earlier levels dating from the earlier stages of the 7th millennium cal. BC, known as the Early Pottery Neolithic. The excavations have revealed a highly complex stratigraphy, with at least eight distinct occupation levels attributed to the Early Pottery Neolithic. A vigorous radiocarbon dating program has pushed back the earliest of these levels (level A-10) to about 6800 cal. BC. The final stage of the Early Pottery Neolithic (level A-3) is currently dated at around 6300/6200 cal. BC (Akkermans et al. 2006). The pottery from the EPN levels is dominated by a coarsely finished, plant-tempered ware, which, for want of alternatives, we have simply termed Coarsely-Made Plant-Tempered Ware (van As et al. 2004; Nieuwenhuyse 2006). The

repairs discussed in this contribution come from levels A-5, A-3 and A-2, the final stages of the EPN and the start of the Pre-Halaf. They date between ca. 6450 and 6200 cal. BC (Figure 2).

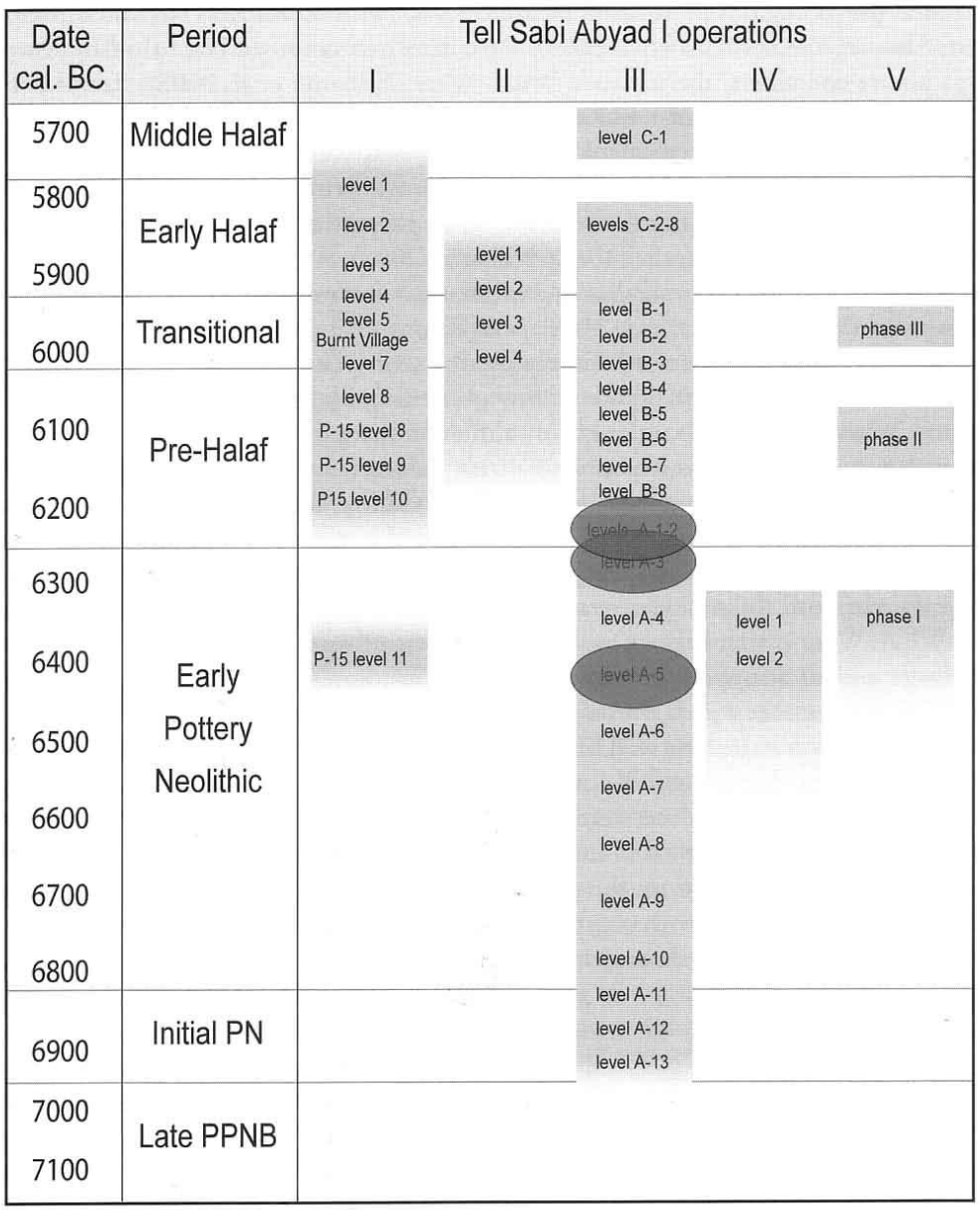


Figure 2. The culture-historical sequence of Tell Sabi Abyad (Operations I to V), showing the stratigraphic position of the plaster repairs discussed in this paper.

It is important to note that alongside the pottery various alternative technologies existed at Tell Sabi Abyad for making durable containers during the EPN. Vandiver (1987) and Rice (1999) have argued that early low-fired ceramic containers in the Near East were part of, what they term, a broad "software complex" or "soft stone technologies" for making various types of artefacts (also Dyson 1965). At Tell Sabi Abyad this included the prodigious production of stone vessels, bins of unfired clay, and bitumen-coated baskets (Akkermans et al. 2006). Particularly common at Tell Sabi Abyad were large plaster containers, the so-called White Ware (Nilhamn et al. 2008). Research has shown that in the Near East two different raw materials were employed for making White Ware: either lime (calcinated calcium carbonate, $CaCO_3$) or gypsum (hydrated calcium sulphate, $CaSO_4 2H_2O$). These materials are virtually indistinguishable to the naked eye, but their chemical and functional properties are in fact very different (Kingery et al. 1988; Maréchal 1982; Nilhamn 2003). A study of EPN White Ware from Tell Sabi Abyad suggests that these containers were made from calcium sulphate, or gypsum (Nilhamn and Koek 2009, pers. comm., February 2009). For the sake of convenience, we shall henceforth simply use the term plaster.

Interestingly, although the production sequences and functional properties of ceramics and White Ware were certainly very different, some intriguing similarities can be pointed out. As both types of containers were made of soft, plastic material, measures were taken to prevent the vessel from sagging during shaping. Pottery clay was of course tempered; in the case of the CMPTW with coarse plant fibres. White Ware containers, on the other hand, sometimes included reused pottery sherds as a coarse "temper". In both technologies vessels were shaped vertically by adding successive layers. White Ware is well known for the impressions of woven tissue, showing that baskets were used as a support. Curiously, very similar impressions have been observed on some of the ceramic vessels during the EPN. Pottery vessels were sometimes shaped while standing on a cloth or reed basket, and at least two examples have been observed of pottery vessels shaped *around* a woven support.[1] Containers in both categories were relatively coarsely finished and were virtually never decorated. Moreover, the two technologies were often used in combination. Pottery vessels were frequently plastered with gypsum, presumably to reduce the porosity of the vessel wall or to insulate the vessel.[2] And finally, we now know that gypsum plaster was sometimes used to repair pottery vessels when they became damaged.

The early pottery repairs

Here we shall discuss four examples of CMPTW vessels that were repaired with plaster during the Early Pottery Neolithic. It is important to note that although these are so far the only ones known, it is quite likely that in the past plaster repairs were more common. Plaster is extremely fragile and very susceptible to fragmentation. Once detached from the pottery vessel, a plaster repair is very unlikely to remain intact to the degree that it may be recognized as such by the archaeologist. The chances of finding

a complete plaster container or an intact plaster coating on pottery are very small, unless circumstances of preservation significantly increased the chances of survival. Most of the excavated contexts at Tell Sabi Abyad, as at most other prehistoric sites in the Near East, represent secondary or tertiary depositions. For reasons as yet poorly understood, the remains from levels A-3 and A-2 at Neolithic Tell Sabi Abyad have yielded relatively large numbers of well-preserved ceramic vessels. The proportion of vessels in the archaeological record carrying a plaster repair is therefore considered to be an underestimate.

The earliest example is a small goblet recovered from one of the buildings of level A-5 (Figure 3). At some point in the past part of the upper body was broken, leaving a large gap. Gypsum was pressed into this gap from the exterior. The rough, unfinished exterior surface of the plaster suggests that a handful of plaster was simply plugged into the gap without much further ado. No traces of tools are visible on the exterior, nor have traces of pressing or smearing of the soft material been observed. On the interior, however, a support was used for counter pressure. This is clearly shown by the smooth, somewhat concave shape of part of the interior of the plaster fill. A low ridge at the lower end of this smoothened surface suggests that the support was pushed inwards a few millimetres. The support may have been a piece of cloth or leather, but the regular, concave surface suggests something more solid was used, for instance a re-used pottery sherd. Evidently, the support was kept in place while the plaster was hardening, which may have taken more or less ten minutes. It is possible that something was used to fill the ceramic vessel to press the support against the wall, for instance a piece of wrapped cloth or even sand. Perhaps more likely, the person responsible for the repair simply sat it out, keeping the vessel in his or her hands until the plaster had hardened sufficiently.

A most interesting repair – as far as we are aware, unique in the prehistory of the ancient Near East – is represented by a large jar from level A-3, unfortunately found in a very fragmented state (Figure 4). In this case, the porous material was placed in a circular perforation of about 5 cm in the vessel wall, filling it completely. It remains unclear how this hole had come about; the jar may have been broken, but it is also possible that the perforation was made deliberately, for unknown purposes. One way or another, the repair resulted in a roughly circular plug of about 6 cm in diameter. A blob of plaster was gently pushed into the hole from the exterior. Counter pressure was applied from the interior, perhaps simply with the palm of the hand. The plaster slightly pushed the counter support inside, resulting in the slightly convex shape of the interior of the plug. It was made sure that the plaster covered the break edge of the surrounding perforation completely, thus making a strong bond between the plaster and the ceramic. The exterior surface was very roughly smoothed.

The next specimen is a large jar recovered from one of the level A-2 buildings. It shows what appears to be a gap in the rim filled with plaster (Figure 5). The vessel was heavily plastered on the interior, as well as on the exterior lower body. The interior plaster, with a total thickness of some 12 mm, has several distinct layers. Each successive layer was applied only after the previous layer had set. This resulted in poor

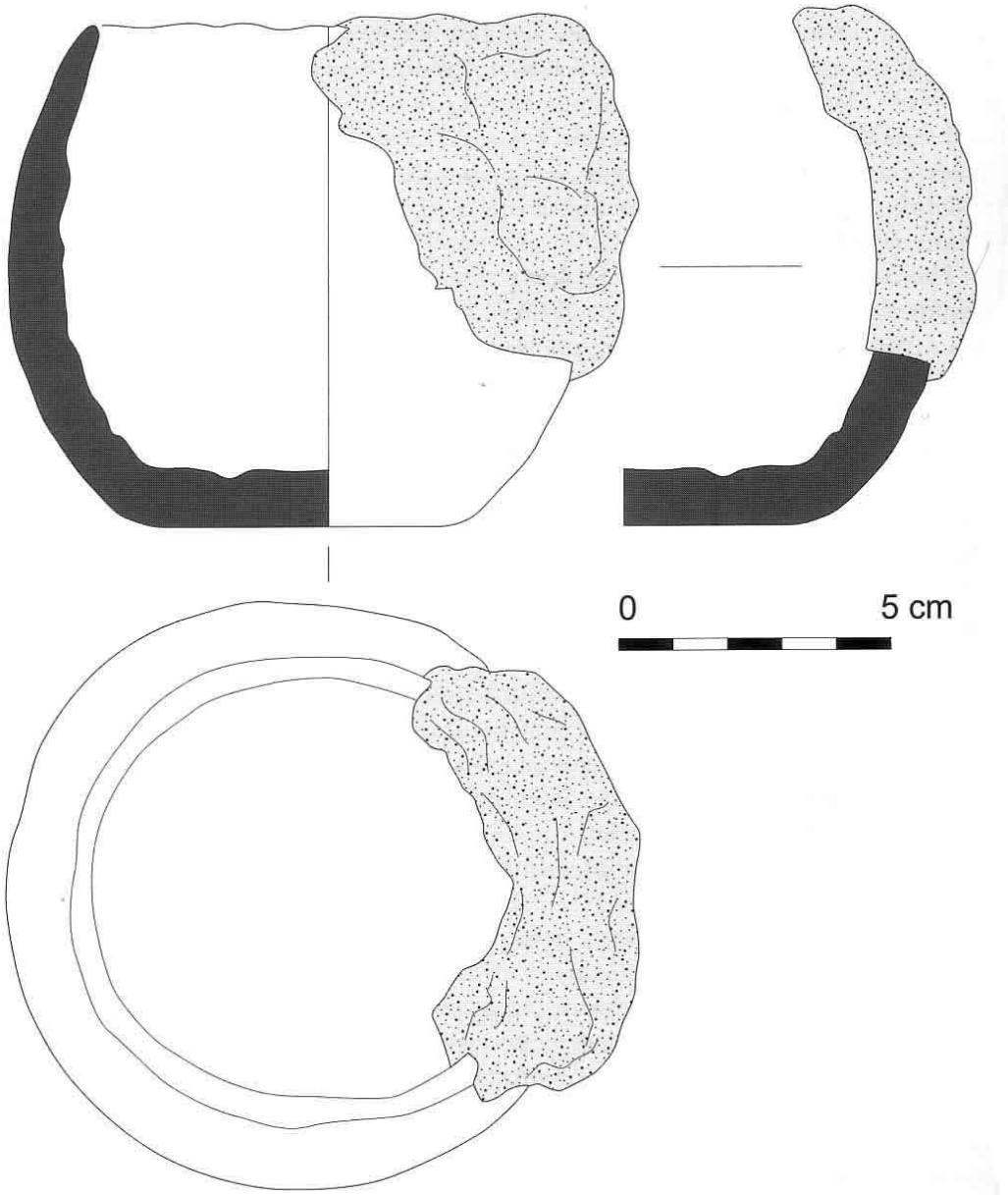


Figure 3. P08-52. A small CMPTW goblet with a flat base and a convex wall. Height 10.5 cm; rim diameter 8 cm. Excavated from a level A-5 room fill dated around 6450 cal. BC.

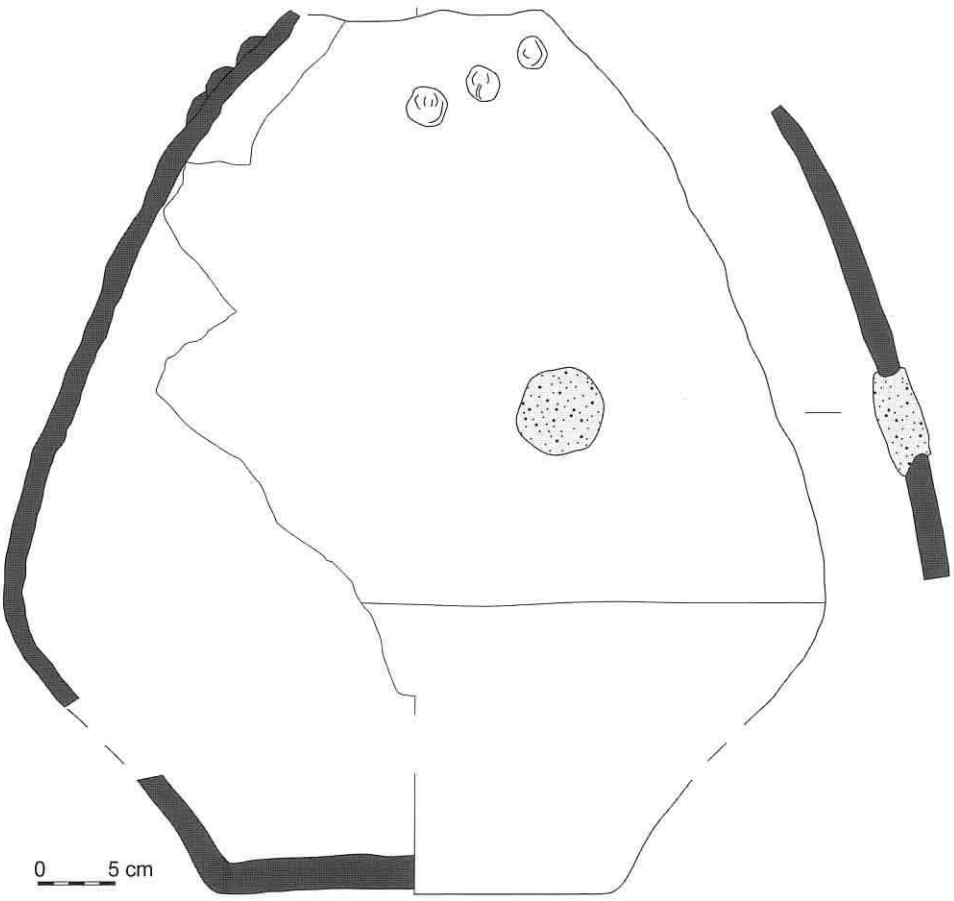
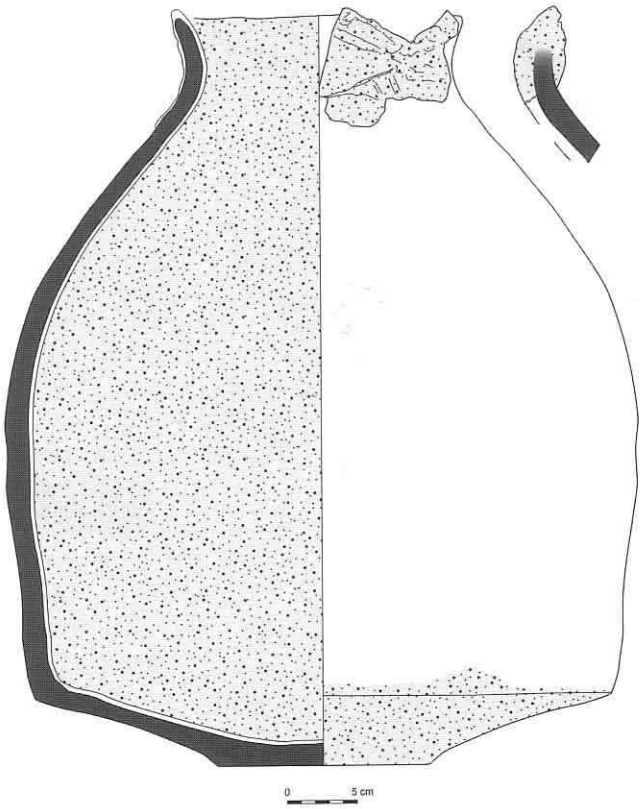


Figure 4. P-07-116. The lower part of a large CMPTW jar with a flat base, a slightly concave lower body and a carinated contour. Heavily fragmented and tentatively reconstructed. Appliqué decoration on the upper body, consisting of three circular blobs placed in a diagonal row. Height 75 cm; maximum body diameter 44 cm. Excavated from a level A-3 open area dated to about 6300 cal. BC.

cohesion between the layers, and now causes them to come apart. It is possible that the repair was done at the same time the surface coatings were applied. Part of the rim is missing, in the form of a triangular gap approximately 8 cm long. The plaster was sculpted in a thick layer over the break, covering part of the exterior as well. In contrast to the interior plastering, the repair does not show a layered structure, suggesting that the plaster was applied only once. The exterior of the repair shows no traces of finishing; the interior was roughly smoothed. The plaster appears to have been applied and then left to dry without significant further treatment.



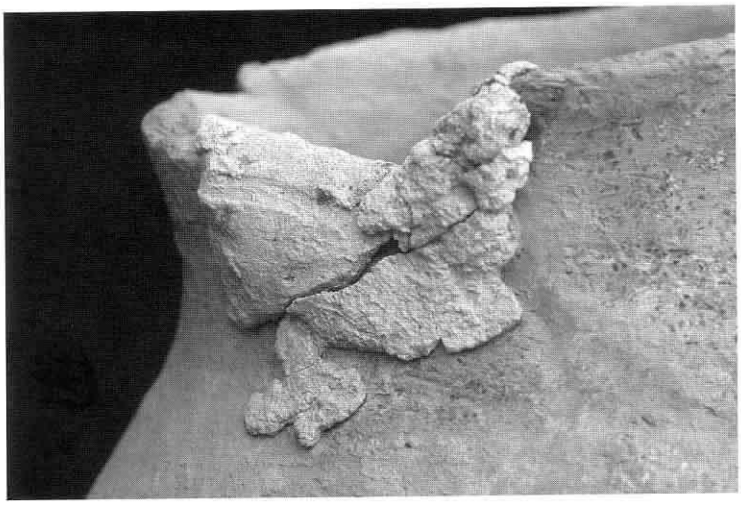


Figure 5. P05-82. A large CMPTW jar with a flat base, concave lower body and carinated contour. A 12 mm plaster covered the interior surface from base to shoulder. Height 53 cm; rim diameter 21 cm. Excavated from a level A-2 room fill dated around 6200 cal. BC.

The last example to be discussed is a jar that shows two ancient cracks in the upper part of the body, both treated with plaster (Figure 6). The damage would have been sufficiently serious to reduce the vessel's level of performance significantly. One long, winding crack branches downward from the rim for about 20 cm. It is possible that this crack had already formed during the firing stage. The uppermost part of the crack, where it is the widest, has been filled with plaster, whereas a wide area surrounding the lower, curving part has been smeared with a thin layer of plaster. A second, vertically oriented crack on the other side of the vessel may have resulted from some form of blunt impact stress: where part of the rim is missing this stress may have exerted its major impact. The upper part of this crack is covered in an approximately 3 cm wide band of thin plaster, running down for about 12 cm. As with the previous example, the vessel interior and exterior lower body have been extensively plastered.

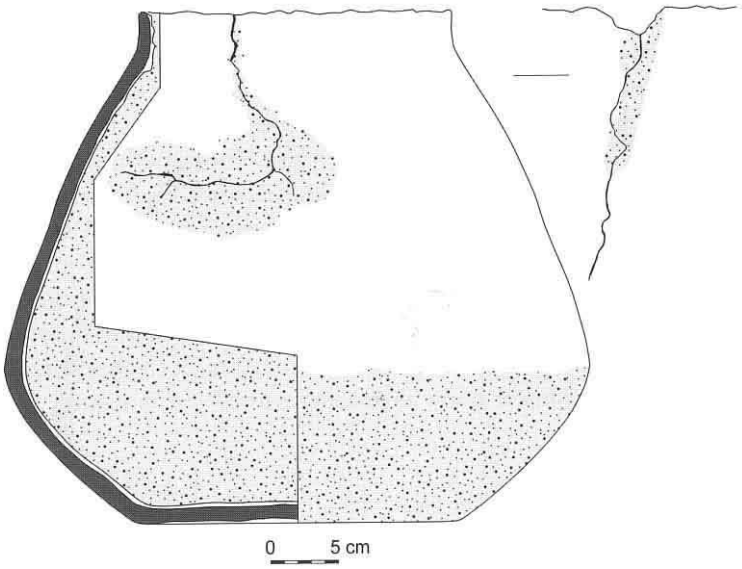
Some concluding comments

In selecting CMPTW vessels for repair during the Early Pottery Neolithic it appears that pragmatic, functional considerations prevailed. The plaster repairs on pottery vessels discussed here were closely related to the production of White Ware containers, which flourished between ca. 7000 and 6200 cal. BC. Plaster was widely available, and considered to be suitable material for the occasional repair. The basic principle was that of a *fill*, of filling-in conspicuous cracks and gaps with a plastic, but waterproof material. The vessels would have been fully functional after the repair.

The restorations were, of course, highly visible. This would have been very difficult to avoid with the techniques discussed above, but we doubt that the visual appearance of the ceramic containers after a repair was of any concern during the Early Pottery Neolithic. After all, the pottery vessels themselves remained plain and coarsely finished throughout the EPN. The production of both ceramics and White Ware containers is generally held to have been organizsed at the household level (Nieuwenhuyse in press, Nilhamn 2003). It would seem that the pottery vessels were incidentally repaired within the individual households, whenever the need arose. No specialist "restorers" were needed for these repairs.

At Tell Sabi Abyad the large-scale production of White Ware and the use of gypsum plasters came to an end at around 6200 cal. BC. As White Ware largely disappeared, so did plaster repairs. Not a single example has thus far been recovered from the extensively-excavated Pre-Halaf, Transitional and Early Halaf levels at the site. The authors are not aware of additional examples from later stages of Syrian prehistory. Interestingly, however, a very comparable technology for restoring pottery was in vogue much later in time, during the Late Bronze Age. An Assyrian potter's workshop excavated at Tell Sabi Abyad, dated to ca. 1200 BC., yielded several examples of damaged vessels repaired with plaster (Duistermaat 2008).

Of course, people did not stop repairing their vessels after the EPN. However, the restoration techniques attested in the archaeological record, limited as they are, show a



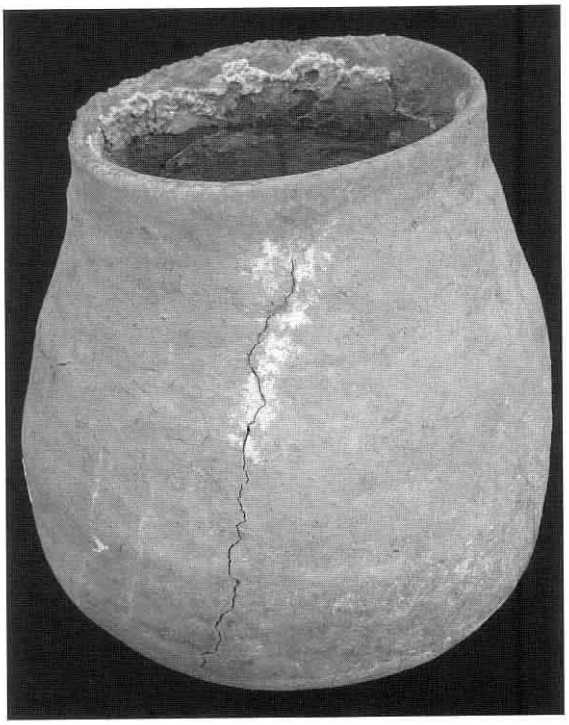


Figure 6. P07-88. A CMPTW jar with a slightly concave base, a convex lower body, a carinated contour and an oval mouth. The entire interior surface was covered with several layers of gypsum plaster, with a joint thickness of 4 mm. The exterior lower body was covered with a thin layer of plaster. Height 38 cm; rim diameter 23 cm. Excavated from a level A-2 room fill dated around 6200 cal. BC. Photo: after restoration.

marked change. The earlier plaster repairs made way for a restoration technique that *mutatis mutandis* remained in use until modern times. People drilled small perforations along the break edges, and used organic staples and glues such as bitumen to keep the sherds together (Dooijes and Nieuwenhuyse 2007). This technique is based on the principle of *bonding*, of refitting different elements together. Ceramic innovation now focussed upon Fine Ware serving vessels made from more compact, mineral-tempered clay, and pottery repairs were limited to this functional category (Nieuwenhuyse 2007). The lack of refits in the Early Pottery Neolithic may have had a very practical reason: the low-fired, fibrous material was less suitable for neat perforations, and less force could be exerted to keep the individual parts closely together. Consequently, changing restoration techniques from around 6200 cal. BC onwards should be seen within the wider context of the innovation in pottery production and consumption.

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Notes

1. These examples, however, remain exceptional. On the whole the solution adopted by the early potters was to reduce the plasticity of the clay with a strong temper of plant fibres.

2. Often the interior surface of large jars was plastered completely, while on the exterior the plaster was limited to the part below the point of maximum vessel diameter.

References

Akkermans, P.M.M.G. 1993. *Villages in the Steppe – Later Neolithic Settlement and Subsistence in the Balikh Valley, Northern Syria*, Michigan, Ann Arbor: International Monographs in Prehistory.

Akkermans, P.M.M.G., R. Cappers, C. Cavallo., O.P. Nieuwenhuyse, B. Nilhamn and I. Otte 2006. Investigating the Early Pottery Neolithic of Northern Syria: new evidence from Tell Sabi Abyad. *American Journal of Archaeology* 110: 123-156.

Appelbaum, B. 2007. *Conservation, Treatment, Methodology*, Amsterdam.

As, A. van, L. Jacobs and O.P. Nieuwenhuyse 2004. Early pottery from Late Neolithic Tell Sabi Abyad II, Syria. *Leiden Journal of Pottery Studies* 20: 97-109.

Bentz, M. and U. Kästner. 2007. *Konservieren oder Restaurieren. Die Restaurierung griechischer Vasen von der Antike bis heute*, Munich, Beck (Beihefte zu Corpus Vasorum Antiquorum 3).

Caple, C. 2006. *Objects. Reluctant Witnesses to the Past*, New York.

Chapman, J. C. and B.I. Gaydarska 2007. *Parts and Wholes. Fragmentation in Prehistoric Context*, Oxford.

Dooijes, R. and O.P. Nieuwenhuyse, O.P. 2007. Ancient repairs: techniques and social meaning. In: M. Bentz and U. Kästner (eds.), *Konservieren oder Restaurieren. Die Restaurierung griechischer Vasen von der Antike bis heute*, Munich, Beck (Beihefte zu Corpus Vasorum Antiquorum 3): 15-20.

Dooijes, R., F. Burghout, M.H. Düring, and O.P. Nieuwenhuyse 2007. Restorations on Late Uruk pottery of Jebel Aruda – old and new. *Leiden Journal of Pottery Studies* 23: 61-76.

Duistermaat, K. 2008. *The Pots and Potters of Assyria. Technology and Organisation of Production, Ceramic Sequence and Vessel Function at Late Bronze Age Tell Sabi Abyad, Syria*, Brepols (PALMA 4), Turnhout.

Dyson, R. F., Jr. 1965. Problems in the relative chronology of Iran, 6000-2000 B. C". In: R.W. Ehrich (ed.), *Chronologies in Old World Archaeology,* Chicago: 215-256.

Kingery, W.D., P.B. Vandiver and M. Prickett 1988. The beginnings of pyrotechnology, part II: Production and use of lime and gypsum plaster in the Pre-Pottey Neolithic Near East. *Journal of Field Archaeology* 15/2: 1-219.

Kopytoff, I. 1986. The cultural biography of things: commoditization as process. In: A. Appadurai (ed.), *The Social Life of Things: Commodities in Cultural Perspective*, Cambridge: 64-91.

Maréchal, C. 1982. Vaisselles blanches du Proche-Orient. El Kowm (Syrie) et l'usage du plâtre au néolitique. *Cahiers de l'Euphrate 3* (J. Cauvin, ed.) (C.N.R.S): 217-251.

Nieuwenhuyse, O.P. 2006. The earliest ceramics from Tell Sabi Abyad, Syria. *Leiden Journal of Pottery Studies* 22: 111-128.

Nieuwenhuyse, O.P. 2007. *Plain and Painted Pottery. The Rise of Late Neolithic Ceramic Styles on the Syrian Plains*, Turnhout, Brepols (PALMA III).

Nieuwenhuyse, O.P. in press. A household affair? Pottery production in the Burnt Village at Late Neolithic Tell Sabi Abyad. In: D. Bolger and L. Maguire (eds.), *The Development of Pre-state Communities in the Ancient Near East: Studies in Honour of Edgar Peltenburg*, Oxford.

Nilhamn, B. 2003. *Revealing Domesticity – White Ware As An Indicator of Change in Near Eastern Archaeology* (MA thesis Uppsala University. (http://www.arkeologi.uu.se/ark/education/CD/Duppsats/Nilhamn.pdf).

Nilhamn, B., L. Astruc and A. Gaulon 2008. White Ware – Near Eastern plaster containers. In: L. Astruc, A. Gaulon, and L. Salanova (eds.), *Méthodes d'approche des premières productions céramiques. Étude de cas dans les Balkans et au Levant,* Leidorf.

Nilhamn, B. and E. Koek 2009. The White Ware from Early Pottery Neolithic Tell Sabi Abyad. Poster presented at the conference *Interpreting the Late Neolithic of Upper Mesopotamia*, Leiden 24-26 March 2009.

Rice, P.M. 1999. On the origins of pottery. *Journal of Archaeological Method and Theory*, 6/1: 1-54.

Vandiver, P. B. 1987. Sequential slab construction; A conservative southwest Asiatic ceramic tradition, ca. 7000-3000 B. C. *Paleorient* 13: 9-35.