



Syria
Archéologie, art et histoire

92 | 2015
**Dossier : Bains de Jordanie, actualité des études
thermales**

Intentional Cooking Pot Deposits in Late Roman Jerash (Northwest Quarter)

Achim Lichtenberger and Rubina Raja



Electronic version

URL: <http://journals.openedition.org/syria/3104>

DOI: 10.4000/syria.3104

ISSN: 2076-8435

Publisher

IFPO - Institut français du Proche-Orient

Printed version

Date of publication: 1 June 2015

Number of pages: 309-328

ISBN: 9782351597149

ISSN: 0039-7946

Electronic reference

Achim Lichtenberger and Rubina Raja, « Intentional Cooking Pot Deposits in Late Roman Jerash (Northwest Quarter) », *Syria* [Online], 92 | 2015, Online since 01 June 2017, connection on 02 May 2019. URL : <http://journals.openedition.org/syria/3104> ; DOI : 10.4000/syria.3104

INTENTIONAL COOKING POT DEPOSITS IN LATE ROMAN JERASH (NORTHWEST QUARTER) *

Achim LICHTENBERGER
Université de Bochum (Allemagne)
Rubina RAJA
Université d'Aarhus (Danemark)

Résumé – Le Danish-German Northwest Quarter Project à Jérash, l'ancienne Gérasa, a mis au jour lors de la campagne de fouilles de 2012 trois marmites de céramique, dont deux étaient presque intactes, déposées soigneusement dans une couche de remplissage. Elles contenaient de la cendre et d'autres trouvailles. L'article porte sur le contexte et la fonction de ces dépôts et sur des cas comparables. Les marmites du Northwest Quarter n'étaient en usage que pendant une courte période avant d'être délibérément déposées. La couche homogène dont elles proviennent n'offre aucune trace ni d'une cuisine ou d'une autre installation de ce genre, ni d'un dépotoir. Nous proposons donc que ces marmites aient peut-être été déposées dans un acte rituel ou magique. Mais cela ne peut être confirmé que par la mise au jour de trouvailles comparables et documentées sur d'autres sites ainsi que par une meilleure connaissance de la pièce qui fut comblée et rituellement scellée avec les dépôts. Le propos principal de cet article est de mettre en avant de tels dépôts, qui peuvent trop souvent passer inaperçus.

Mots-clés – Gérasa, dépôt de céramique, typologie de céramique, datation au carbone 14, Bas-Empire romain

Abstract – During the 2012 campaign of the Danish-German Northwest Quarter Project in Jerash, ancient Gerasa, three intentionally deposited cooking pots were found in a fill layer. Two of them were almost intact and discovered with ashes and other finds inside. Another one was fragmented and also held ashes inside. The cooking pot deposits are likely to have been termination deposits. It is the scope of this paper to discuss the context and function of these deposits and of comparable evidences. No completely conclusive explanation for the three deposited cooking pots from the Northwest Quarter can be given, but the context gives clear indications that they were deposited intentionally and were only in some sort of use for a short period of time. They were not part of an installation, such as a kitchen or production complex and they were not part of an ancient dump. The homogenous fill layers surrounding them indicate a rapid and intentional filling — a process in which these deposited pots played a role. We here suggest a possible ritual or magic function of these pots as termination deposits, but this can only be confirmed further by comparable finds excavated and documented in detail at other sites as well as better knowledge of the room that was backfilled and ritually closed with termination deposits. The main purpose of this article is to raise awareness of such deposits in archaeological contexts, which may too often be overlooked.

Keywords – Gerasa, pot depositions, pottery typology, ¹⁴C dating, Late Roman period

ملخص – مشروع جرش. جرش القديمة. تم العثور على ثلاث أواني للطبخ في طبقة ترابية مردومة. اثنتان منهما كانتا على حالتها تقريبا وجدتا مع رماد وموجودات أخرى بداخلها. أما الثالثة فكانت مهشمة وكان بداخلها رماد أيضا. ومن المرجح أن تكون هذه العثورات عبارة عن أوعية للطهي. إن هذا المقال يتمحور حول مناقشة محتويات ووظيفة هذه الموجودات وحالتها ومقارنتها مع الأمثلة المشابهة. ولكن لا يوجد تفسير قاطع تماما يمكن إعطاؤه حول أواني الطبخ الثلاثة وأنها كانت من الربع الشمالي الغربي. إننا نقترح هنا أن الأوعية لعبت دورا في ممارسة بعض الطقوس الدينية وممارسات السحر. لكن لا نستطيع التأكد من هذا إلا بعد المزيد من الاكتشافات الموثقة والمقابلة للمقارنة. ومعرفة تفاصيل الغرفة التي وجدت فيها والتي تم ردمها وإغلاقها تماما ولكن السياق يعطي مؤشرات واضحة على أنها أودعت عمداً وكانت فقط للاستخدام قصير الأمد. ولكنها لم تكن جزءاً من شيء ثابت كأن تكون جزءاً من المطبخ أو مجمع الإنتاج كما أنها لم تكن من الردم القديم.

إن الطبقات المتجانسة المحيطة بها تشير إلى وجود عملية ملء سريعة متعمدة - إن هذه العملية لعبت دوراً في أوعية الطبخ. إن الهدف الرئيسي لهذا المقال هو زيادة الوعي حول مثل هذه الأوعية ضمن المفاهيم الأثرية التي من الممكن إعادة النظر فيها.

كلمات محورية - جرش، الربع الشمالي الغربي، أوعية الترسيب، التصنيف النمطي للفخار، تأريخ الكربون شع، الفترة الرومانية المتأخرة

* The authors would like to thank the following funding bodies for generously supporting our research: the Carlsberg Foundation, Deutsche Forschungsgemeinschaft (DFG) and H. P. Hjerl Hansens Mindefondet for Dansk Palæstinaforskning. Thanks also go to the Danish-German Northwest Quarter Project team and in particular the head of field, Georg Kalaitzoglou as well as the head of registration, Annette Højten Sørensen, for their hard work throughout the 2011-2014 campaigns and for comments and help with the interpretation of the here presented finds. We would like to thank chemical engineer H. Hansen and geologist C. Prinds, both Technological Institute, Aarhus for undertaking the chemical analysis of the fills and preparing the reports and to P. Bangsgaard, University of Copenhagen for identification of the bones. Furthermore we are grateful to J. Heinemeier and M. Kanstrup for undertaking the ¹⁴C analysis of the charcoal samples (Annex). Thanks also go to J. A. Baird, R. Gordon, T. Kaizer, J. Magness, Y. Tchekhanovets and D. Wilburn for providing us with valuable information and comparanda. Without the continuous support of the Department of Antiquities in Amman and in Jerash our work could not be carried out. We would like to thank the General Director as well as the staff of the DoA for supporting our project.

During the 2012 campaign of the Danish-German Northwest Quarter Project in Jerash under the direction of the authors, three intentionally deposited cooking pots were found in a fill layer.¹ Two of them were almost intact and discovered with ashes and other finds inside. Another one was fragmented and also held ashes inside. The cooking pot deposits are likely to have been termination deposits. It is the scope of this paper to discuss the context and function of these deposits and of comparable evidences.

Gerasa (Jerash) is a city in Northwest Jordan. It belonged to the so-called Decapolis cities, mentioned among others by Pliny (NH 5.16.74).² The city flourished in the Roman and Byzantine periods and new research also shows that the city continued to prosper in the early Islamic period.

The cooking pots were found in the Northwest Quarter of the city in trench A (**fig. 1**). Most of the areas that have been investigated in the Northwest Quarter up to now brought to light intensive late Roman, Byzantine and Islamic occupation. Trench A, which lies at the highest point of the Northwest Quarter and of the walled city of Jerash yielded mostly evidence from the late Roman period. In the 5 x 5 m trench bedrock was reached after approx. 1 m in the western $\frac{3}{4}$ of the trench (**fig. 2**). On top of the bedrock recent fill layers with mixed material, including prehistoric material were encountered. The eastern quarter of the trench was part of a rock cut room that had a height of at least 2.5 m before bedrock level was reached. To the east and north the extension of the rock cut room could not be identified, only the southern extension was traceable as a corner. The western wall, which runs along the trench continued to the north outside the baulk. Thus the original size of the room was not determined. Beddings for beams on the western side suggest that it once was roofed. The room was plastered on the walls and the floor, and at the southern side a small plastered niche was inserted into the wall. The plaster had white-greyish colour and was approx. 1-2 mm thick. It was impossible to determine the function of the room, because the excavated part was too small. Since the plaster was porous containing charcoal and was not of high hydraulic quality it is unlikely that the room functioned as a water reservoir. On the floor of the room an assemblage of pottery was found that most likely stems from the latest phase of the room's use.³ The pottery types date to the Roman and Byzantine periods, however since the cooking pots in layers further up were dated by ¹⁴C samples, a *terminus ad quem* for the pottery is suggested to be approximatively before 300 CE (see discussion below). In a lower fill layer (evidence 19)⁴ a sherd of an African Red Slip (ARS) dish form 50 type B was found, which according to Hayes dates to ca. 350-400 CE.⁵ Since the three ¹⁴C dates which were taken from three different evidences all point to an earlier date, it seems unlikely that they all display an old wood effect and therefore it is assumed that the entire filling in of the room took place not much later than 300 CE. The ARS dish is probably a local imitation and thus might be deduced from the earlier form 50 type A, which is attested already from before the mid-3rd cent. CE.⁶

1. For the goals and aims of the project cf. LICHTENBERGER & RAJA 2014. For the excavation of this trench cf. KALAITZOGLOU, LICHTENBERGER & RAJA in press. For the finds, LICHTENBERGER, RAJA & SØRENSEN in press.
2. RAJA 2012 and LICHTENBERGER 2003 offer syntheses of the city's development and updated bibliographies; KRAELING 1938 remains a crucial publication of evidence from the city, although several conclusions are outdated. Also see LICHTENBERGER & RAJA in press for a new publication on results from the Danish-German Northwest Quarter projects and their impact on the overall picture of the urban development in Gerasa in the Roman period.
3. LICHTENBERGER, RAJA & SØRENSEN in press, nos. 79, 90, 118 and 119.
4. The term „evidence“ is here used equally to the terms „locus“ or basket, which also are terms commonly used in excavation reports.
5. HAYES 1972, p. 71, 73 ARS form 50 type B; LICHTENBERGER, RAJA & SØRENSEN in press no. 8. Forthcoming catalogue text for the sherd: J12-Ae-19-18; Rim, fragmented. Fig. 8 in forthcoming catalogue; *Munsell*: core: 10R 6/8; ext.: 10R 6/8; Slip: int.: 10R 6/8; *Measures*: Diam. (rim): 26; H.: 2.9; L.: 6.8; T. (rim): 0.4; T. (body): 0.6; Open shape, bowl or dish; finely levigated with small lime inclusions; *References*: HAYES (1972), *Date of type*: ARS form 50 type B or crude version of type A. Roman-early Byzantine (ca. AD 230-400). The sherd is defined in our category as “Other red slipped fine wares”. This category covers items of an origin which cannot be securely determined. These are red slipped and normally has distinguishable shapes. However, they are not imports for instance from Africa as ARS is, but they have some of the same affinities. Thus the above mentioned piece could be locally produced or produced in the region, but it did not come from one of the “original” ARS production centers.
6. HAYES 1972, p. 73.

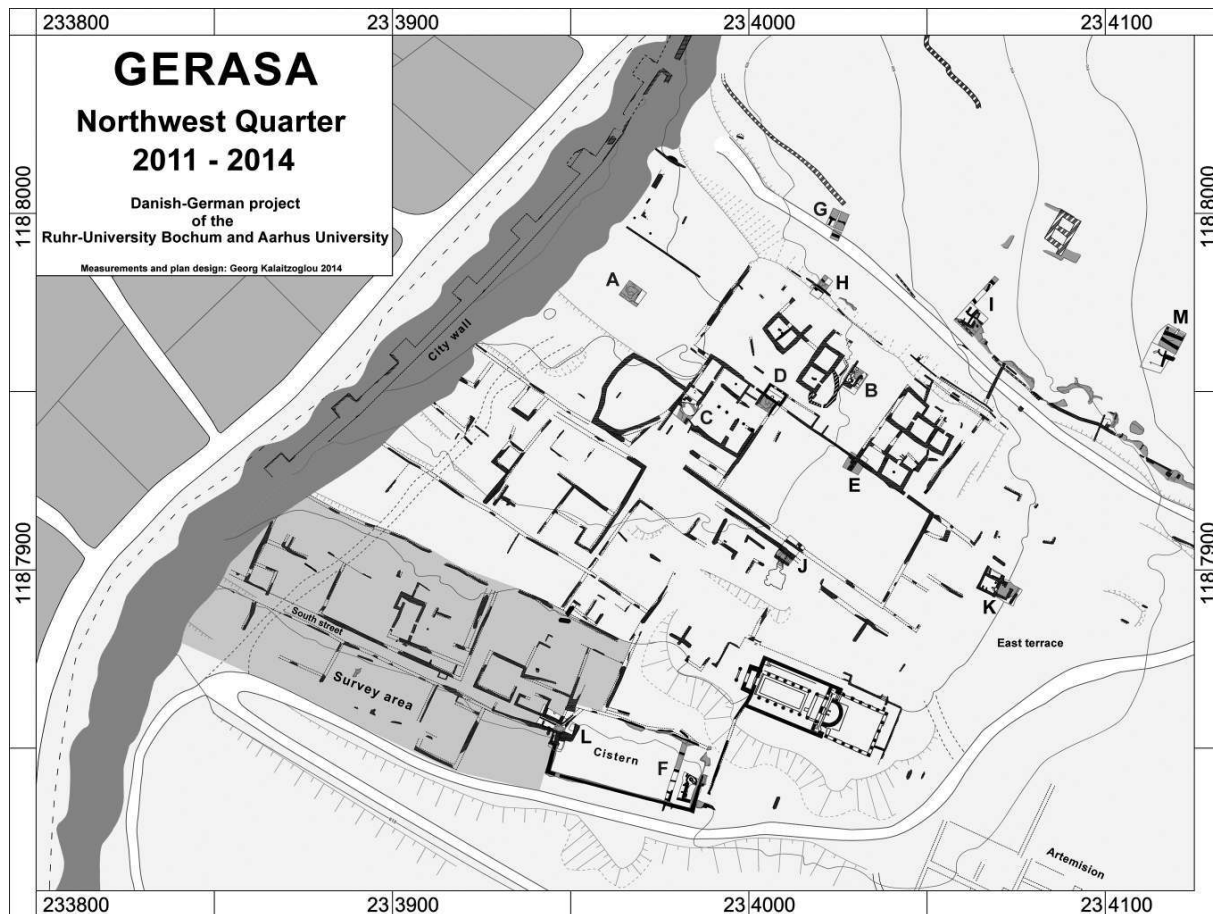


Figure 1. Map of the Northwest quarter of Jerash with excavated trenches A-M
 © The Danish-German Northwest Quarter Project in Jerash.

Above the floor of the room and the pottery assemblage, several fill layers were found during excavation. These layers, which are homogenous, were rapidly filled in which is clear from the north profile of the trench (**fig. 3**), showing the thickness of the layers which were up to 1 meter thick. Layers of fill respectively consisting of earth, larger stones and smaller stones followed upon each other. Pottery, which dates to the Late Roman period, was also found in the fill.

One cooking pot was found in evidence 13, one of the uppermost of the intentional fill layers.⁷ This cooking pot (named evidence 14) is almost completely preserved and was deposited in the soil of evidence 13. It contained grey ash and charcoal pieces. In the next layer (evidence 16) two almost intact cooking pots were found deposited in upright positions (**fig. 4**). One of them, a used cooking pot (evidence 18)⁸ was set into a circle of stones and closed by a piece of tile.⁹ Inside this pot was a bottom layer of grey powdery ash mixed with charcoal. Fragments of pottery and burned glass were found on top of the ash, and the cooking pot displays traces of fire on the outside. Another cooking pot (evidence 17)¹⁰ was carefully placed between a large stone block and the western wall of the room. A piece of tile that probably originally covered the pot was lying close by. This cooking pot also showed traces of fire on the outside. Inside was a bottom layer of grey powdery ash with charcoal.

7. LICHTENBERGER, RAJA & SØRENSEN in press no. 96.
8. LICHTENBERGER, RAJA & SØRENSEN in press no. 98.
9. LICHTENBERGER, RAJA & SØRENSEN in press no. 135.
10. LICHTENBERGER, RAJA & SØRENSEN in press no. 97.

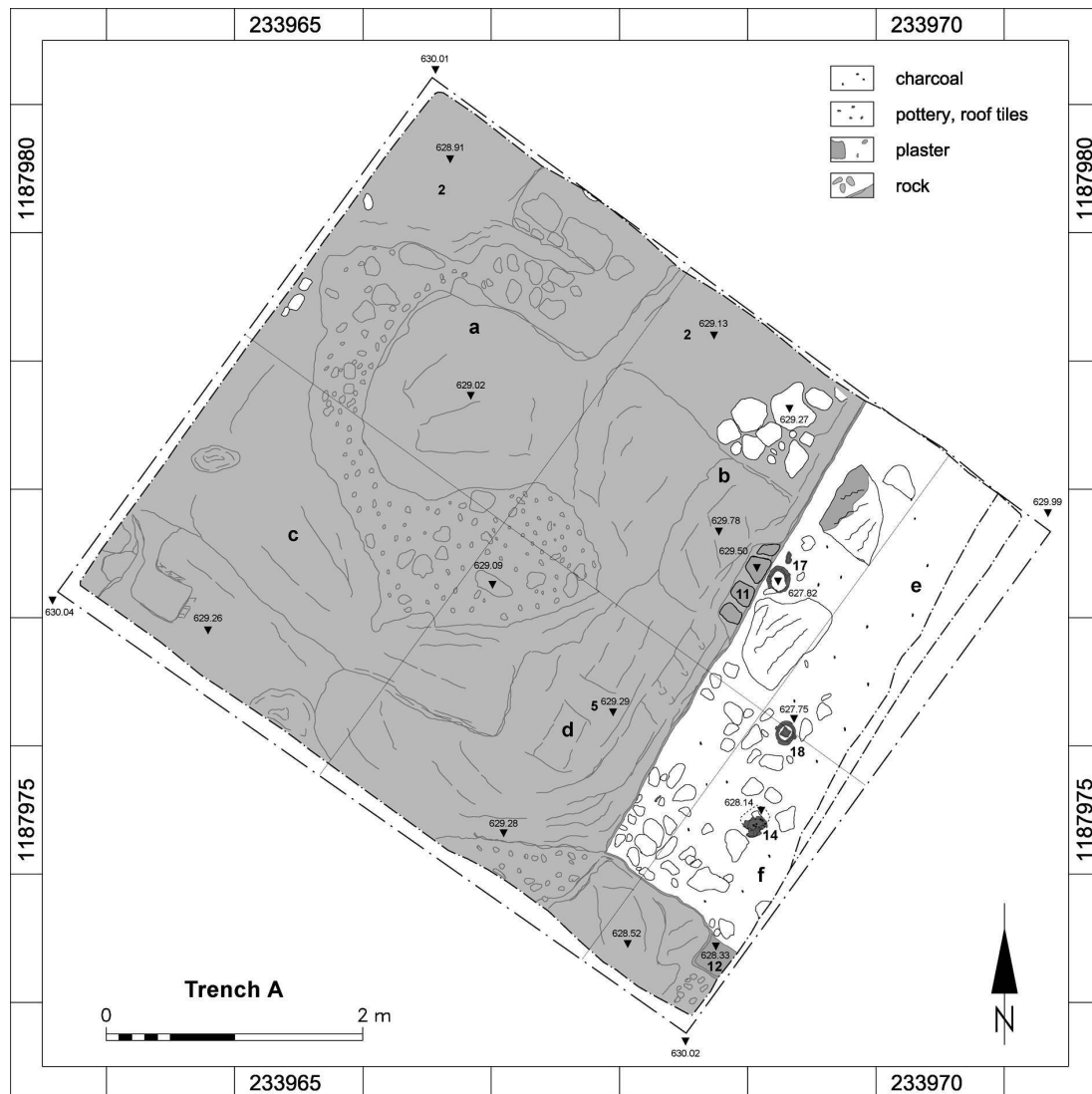


Figure 2. Level of the cooking pot deposits © The Danish-German Northwest Quarter Project in Jerash.

All cooking pots were intentionally and carefully deposited. The soil around the cooking pots was carefully excavated and no traces of fire or a floor on which the cooking pots would have been placed were detected. Thus all pots were placed into a fill during the process of rapidly filling the room.

The cooking pots were of the same type with minor typological differences. They were wheel made of gritty reddish/red brown ware and globular bi-ansulate. They are characterized by a hard, medium to rather finely levigated clay with many lime grits, which were fired crisp. The pots are most often thinly potted and were sometimes covered by a reddish wash or a thin reddish slip. Although the basic shape of cooking pots changed only slightly over time and an accepted typology of cooking pots from Gerasa/Jerash has not yet been established, it is likely that the cooking pots belong to the later Roman period.¹¹

11. See ADAN-BAYEWITZ 1993 for such pottery types from the Galilee dating to the period between the early 2nd cent. and the mid-4th cent. CE.

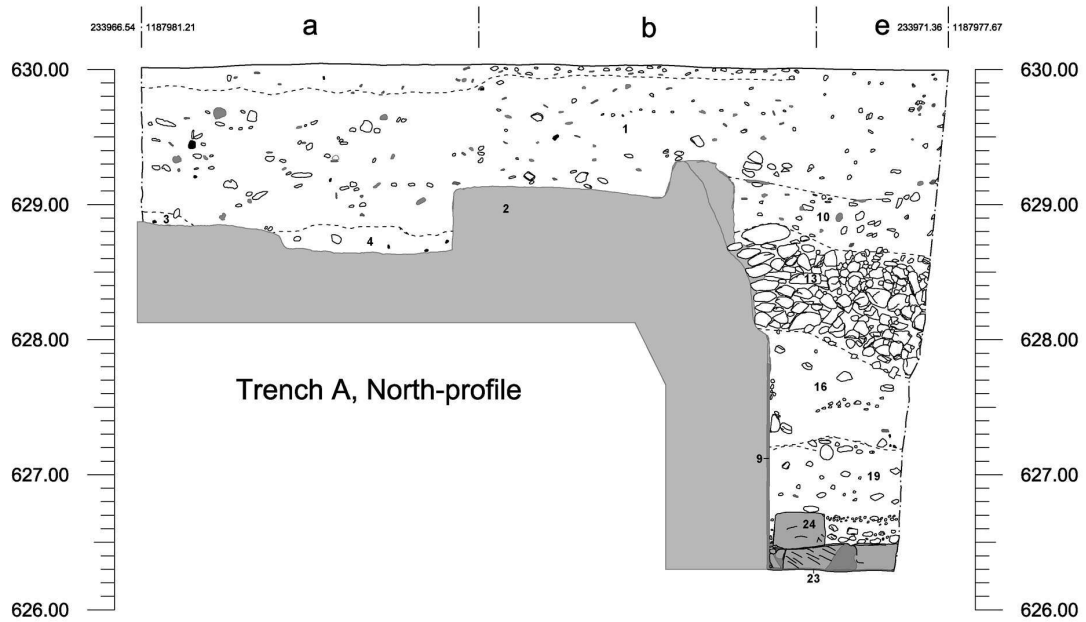


Figure 3. North profile of Trench A
 © The Danish-German Northwest Quarter Project in Jerash.



Figure 4. *In situ* localisation of cooking pot 2 and 3
 © The Danish-German Northwest Quarter Project in Jerash.

THE FIRST COOKING POT

The first cooking pot was covered by a tile and the fill of the pot contained several objects.

Cooking pot 1 (CP 1, excavation no. J12-Af-18-4) (fig. 5)



Figure 5. Cooking pot 1 (excavation number J12-Af-18-4)
© The Danish-German Northwest Quarter Project in Jerash.

Preservation: Rim, body and base, almost intact.

Measures: diam. (rim): 12 cm; diam. (max): 19.5 cm; H.: 18.2 cm; T.: (rim): 0.5 cm, (body): 0.15 cm.

Munsell: core: 2.5YR 6/8 and 4/1; int.: 2.5YR 6/8; ext.: rim: 2.5YR 5/8, body: 2.5YR 4/3, base: 2.5YR 3/1.

Description: Globular shape, rounded base, outwards folded rim, short neck, carinated handles, thinly potted with sporadic lime inclusions and a few lime eruptions, ribbed body, the ribs stop 3.5 cm above base-line. Part of a tile was found on top of the pot and used as cover; traces of use over open fire ext. at base.

Date of the type: Late Roman-Early Byzantine.

References: KENKEL 2012, Taf. 24, KT12; GERBER 2012, fig. 3.47.6-7; USCATESCU 1996, fig. 83 no. 510; SODINI & VILLENEUVE 1992, fig. 6, no. 12; RASSON & SEIGNE 1989, fig. 10 no. 1-5.

Tile (excavation no. J12-Af-18-3) (fig. 6)

Preservation: Rim (placed on top of CP 1), fragmented.

Measures: W.: 11.5 cm; L.: 12.5 cm; TH.: 2.8 cm.

Description: Square floor tile or suspensura brick; coarse, hard fired, with many air-pockets.

Date: Not datable.

CP 1 (J12-Af-18-4) contained several small objects. Several fragments of pottery (**fig. 7a**) were found in addition to two glass body sherds (**fig. 7b** shows one of these) as well as several fragments of plaster (**fig. 8a**) and three pieces of bones (**fig. 8b**).

Apart from the fine fill the content in the pot consisted of six small pottery sherds, which were calcinated as well as two small red-ware body sherds from unidentified vessels since the sherds are too small to use for shape identification (also shown on **fig. 8b**) (J12-Af-18-09 and J12-Af-18-10) and

five larger sherds of plain ware (J12-Af-18-5 to 8) probably all originally belonging to one and the same vessel (**fig. 7a**). Two glass sherds were also contained in the fill (J12-Af-18-1 and J12-Af-18-2). Twelve fragments of plaster (ranging from 0.5 by 1.0 cm to 3.0 by 3.5 cm in size and thickness from 0.3 to 1.2 cm), whereof two were painted (one deep red and one green) also belonged to the fill of the pot. The consistency of the plaster varies from quite hard to soft. Apart from that three bones were also part of the fill. Two bones belonged to either a goat or a sheep (metapodium and carpal bones). A third bone, a femur bone, belonged to a bird species, most likely of the Phasianidae family and was perhaps a domesticated chicken.

The fill in the pot (**fig. 9**) was analysed at the Danish Technological Institute's Masonry Centre in Aarhus by Helge Hansen, chemical engineer and Christian Prinds, geologist. Through microscopy it could be concluded that the soil consisted of greyish and brownish rounded calcareous aggregates with inclusions of red ceramics, lime-cemented schist grains, as well as charcoal and lime which contained soft particles with greasy lustre.

Charcoal from the ash layer filling inside the cooking pot was ^{14}C dated and yielded a result speaking for a date between the mid-2nd cent. CE and the beginning of the 4th cent. CE (95.4% probability). Taking the calibration curve into account a date in the second half of the 3rd cent. CE is most likely (**fig. 16**).



Figure 6. Part of tile (excavation number J12-Af-18-3)
© The Danish-German Northwest Quarter Project
in Jerash.



Figure 7a. Pottery sherds from cooking pot 1
© The Danish-German Northwest Quarter Project
in Jerash.

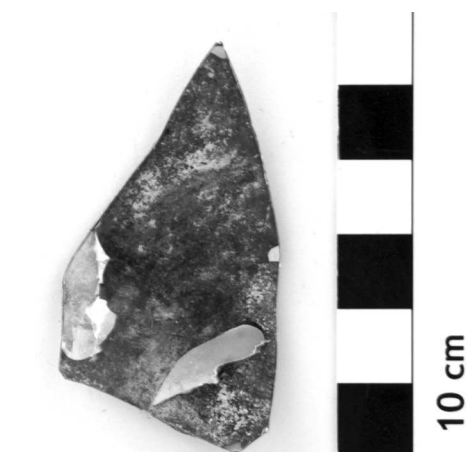


Figure 7b. One of two glass body sherds
(excavation numbers J12-Af-18-1 and -2)
© The Danish-German Northwest Quarter
Project in Jerash.



Figure 8a. Plaster from cooking pot 1 © The Danish-German Northwest Quarter Project in Jerash.

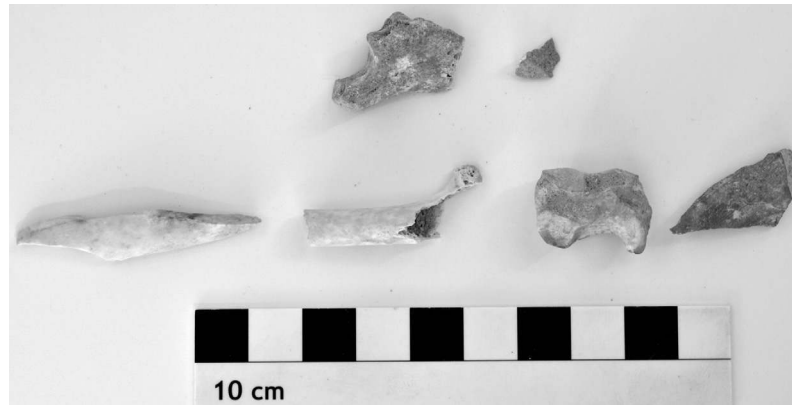


Figure 8b. Bones and small pottery sherds from cooking pot 1
© The Danish-German Northwest Quarter Project in Jerash.



Figure 9. Fill from cooking pot 1
© The Danish-German Northwest Quarter Project in Jerash.

THE SECOND COOKING POT

The cooking pot was associated with a tile fragment and contained in the fill one bone (goat/sheep).

Cooking pot 2 (CP 2, excavation no. J12-Ab-17-1x) (fig. 10)

Preservation: Rim, body and base, almost intact.

Measures: diam. (rim): 13.5 cm; diam. (max): 21.2 cm; H.: 17.6 cm; T.: min: 0.05 cm, max: 0.2 cm.

Munsell: core: 2.5YR 4/2; int.: 2.5YR 5/2; ext.: rim and body: 2.5YR 5/2, base: 2.5YR 4/2.

Description: Globular pot with rounded base, outwards folded rim, carinated handles, thinly potted with sporadic lime inclusions and a few lime eruptions, ribbed body, the ribs stop 3.5 cm above base-line; traces of use over open fire ext. at base. Part of a tile found in close proximity to the pot, maybe used as lid.

Date of the type: Late Roman-Early Byzantine.

References: KENKEL 2012, Taf. 24, KT12; GERBER 2012, fig. 3.47.6-7; USCATESCU 1996, group XXXIV 6D, fig. 83 no. 510; SODINI & VILLENEUVE 1992, fig. 6, no. 10; RASSON & SEIGNE 1989, fig. 10 no. 1-5.

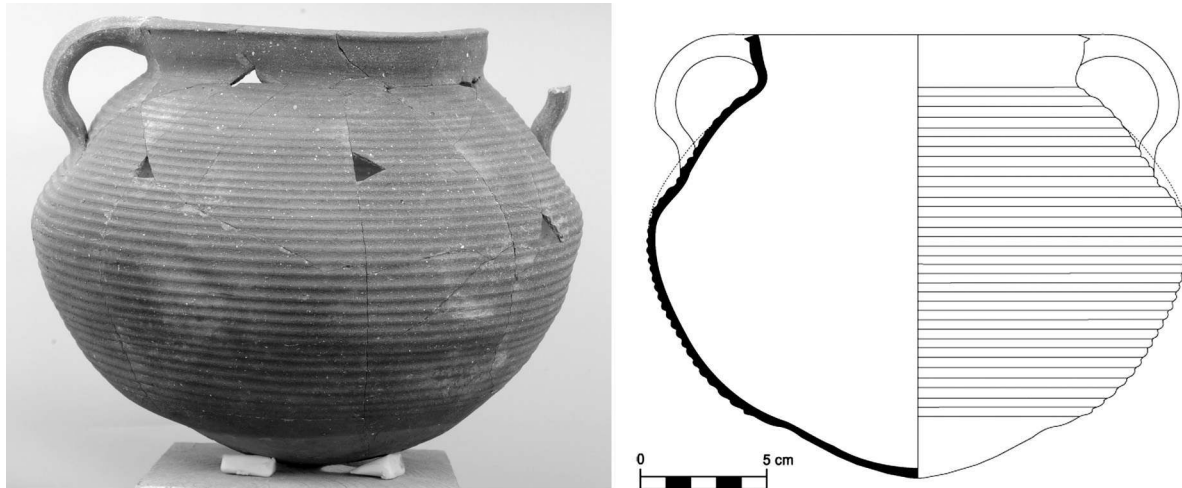


Figure 10. Cooking pot 2 (excavation number: J12-Ab-17-1x)
© The Danish-German Northwest Quarter Project in Jerash.

Tile (excavation no. J12-Ab-16/17-1) (fig. 11)

Preservation: Body sherd.

Measures: H.: 10.7 cm; L.: 6.5 cm; W.: 2.7 cm.

Description: Fragment of flat tile; coarse, sandwiched core.

Date: Not datable.

CP 2 did not contain further objects apart from a bone, which stems from a goat/sheep (J12-Ab-17-1). The fill was divided into top and bottom fills because they visibly could be distinguished from each other. The top fill consisted mostly of reddish to grey round calcareous aggregates. Furthermore the fill contained limestone grains (red, white, grey and light yellow) as well as biogenic materials (fragments of shell/bones). The bottom fill (**fig. 12**) consisted of mostly grey to light brownish rounded calcareous aggregates. Furthermore it contained biogenic particles (possibly bone fragments), charcoal as well as whitish limestone grains.

Charcoal from the bottom filling inside the cooking pot was ¹⁴C dated resulting in a dating firmly situated within the range 75 CE and 220 CE (probability 95.4%). Because of the plateau in the calibration curve (**fig. 16**), the date fades out into the 3rd cent. CE, however an earlier date is more likely, probably in the early 2nd cent. CE.

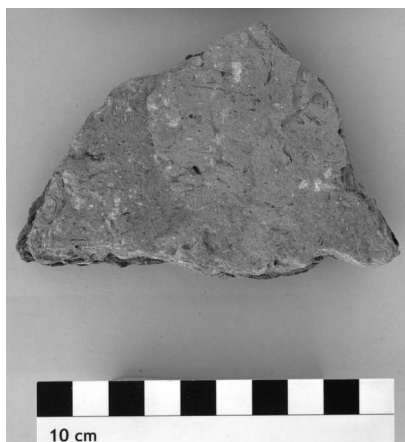


Figure 11. Tile from cooking pot 2 © The Danish-German Northwest Quarter Project in Jerash.



Figure 12. Fill from cooking pot 2 © The Danish-German Northwest Quarter Project in Jerash.

THE THIRD COOKING POT

The third cooking pot contained no other material apart from the fine grained fill that was analysed.

Cooking pot 3 (CP 3, excavation no. J12-Af-14-1x, J12-Af-13, and J12-Af-6-25) (fig. 13)

Preservation: Rim, body and base, almost intact.

Measures: diam. (max.): 22 cm; H.: 9.3 cm; L.: 14 cm; T. (min.): 0.1 cm, (max.): 0.2 cm.

Munsell: core: 7.5YR 5/2 and 2.5YR 6/8; int.: 7.5YR 6/3; ext.: 2.5YR 5/8 and 7.5YR 4/1.

Description: Globular pot with conical base, outwards folded rim; thinly potted with large lime inclusions and a few lime eruptions, ribbed body, the ribs stop 2 cm above base-line.

Date of the type: Late Roman-Early Byzantine.

References: KENKEL 2012, Taf. 24, KT12; GERBER 2012, fig. 3.47.6-7; USCATESCU 1996, group XXXIV 6D, fig. 83 no. 510; PIEROBON 1986, p. 190 fig. 10.6; RASSON & SEIGNE 1989, fig. 10 no. 1-5.

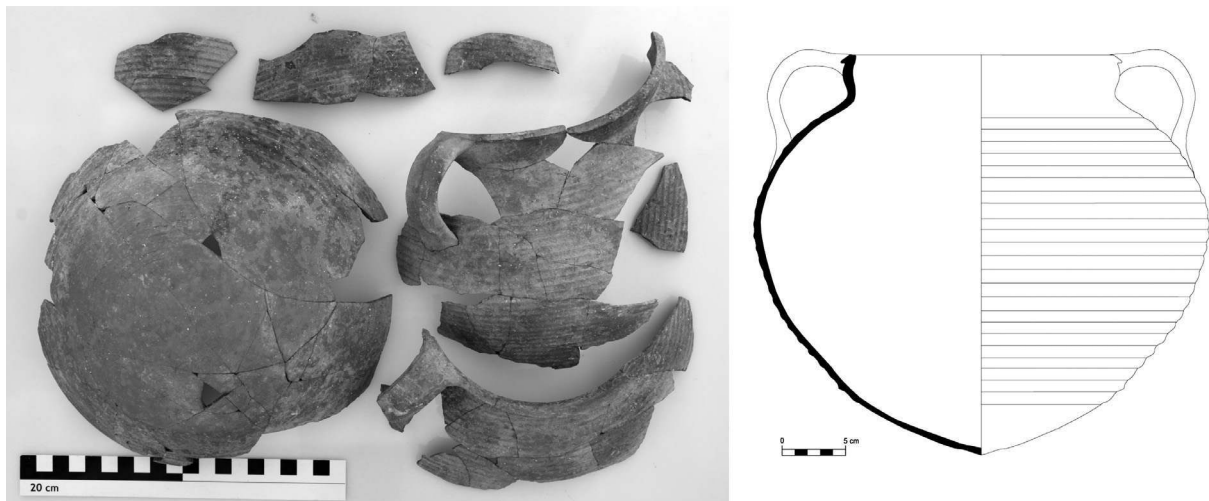


Figure 13. Cooking pot 3 in several fragments (excavation numbers: J12-Af-14-1x; J12-Af-13; J12-Af-6-25)
© The Danish-German Northwest Quarter Project in Jerash.

The fill from the pot differed considerably from the fill of the other two pots, since it was very fine-grained (**fig. 14**). It contained mostly greyish rounded calcareous aggregates as well as whitish-yellowish limestone grains, red ceramics and charcoal.

Charcoal from inside the cooking pot was ^{14}C dated and the result gave a narrow timespan with a high probability between 241 CE and 381 CE (probability 95.4%) and a tendency towards the second half of the 3rd cent. CE (**fig. 16**).

INTERPRETATION OF THE ^{14}C DATES (table 1)

All three cooking pots stem from the same archaeological context. While the charcoals from the first and the third cooking pots provide a plausible date in the second half of the 3rd cent. CE, the charcoal from the second cooking pot seems to be roughly 100 years earlier (**fig. 16**). Since all stem from the same context, the early date must be explained by the burning of older material, a so-called old wood effect. Together the three ^{14}C dates suggest a date in the later 3rd cent. CE for the deposition of the pots and a backfill of the room. It is unlikely that all three charcoals display an old wood effect, since the accompanying archaeological material supports the late 3rd cent. CE dating.

Name	Material (species)	Description	pMC	¹⁴ C age	δ13C (AMS)	Calibration and correction	Calibrated age
J12-Af-18	Charcoal	Jerash/Gerasa. Ash layer filling from J12-Af-18-4/P14 Expected age: 5-6 th cent. AD	80.1 ± 0.25	1783 ± 25 (ext)	-24.47 ± 0.05	Calibration curve: IntCal13 (Atmospheric)	68.2% probability 216 AD - (36.8%) 260 AD 280 AD - (31.4%) 325 AD 95.4% probability 138 AD - (59.3%) 265 AD 272 AD - (36.1%) 332 AD
J12-Af-14-1x	Charcoal	Jerash/Gerasa. Filling from Af-14-1x/P19 Expected age: 5-6 th cent. AD	80.54 ± 0.25	1739 ± 25 (ext)	-20.94 ± 0.05	Calibration curve: IntCal13 (Atmospheric)	68.2% probability 253 AD - (47.3%) 304 AD 313 AD - (20.9%) 336 AD 95.4% probability 241 AD - (95.4%) 381 AD
J12-Ab-17	Charcoal	Jerash/Gerasa. Bottom filling from Ab-17-1/P13 Expected age: 5-6 th cent. AD	79.21 ± 0.25 (Small sample: 0.673 mg C)	1872 ± 25 (ext Small sample: 0.673 mg C)	-22.45 ± 0.05 (Small sample: 0.673 mg C)	Calibration curve: IntCal13 (Atmospheric)	68.2% probability 81 AD - (53.1%) 142 AD 155 AD - (6.8%) 168 AD 195 AD - (8.2%) 209 AD 95.4% probability 75 AD - (95.4%) 220 AD

Table 1.

CHEMICAL ANALYSIS OF THE CONTENTS OF CP 2 AND CP 3¹²

The samples all consisted of rounded calcareous aggregates of particles that are mostly grey, reddish, brownish or light yellow. The aggregates were highly inhomogeneous, porous, and fragile unless in the cases where there was a hard limestone grain in the interior. When subjected to hydrochloric acid the aggregates fully dissolved leaving behind coloured (grey, brown, yellow, or reddish) slurry containing only few grains of hard limestone and black particles, which possibly could be charcoal. The aggregates must therefore be constructed of fine particles of carbonate material such as calcite or variants containing magnesium (dolomite) or iron (ankerite, siderite). The high reactivity suggests calcite. Other accessory content found in the samples are limestone grains (whitish, reddish, yellowish), charcoal, lime-cemented schist grains, small pieces of red ceramics, yellow-green calcareous particles with greasy lustre, and biogenic material (possibly shell fragments and bone), which all are described above under the various fill consistencies.

An analysis of the total chemical composition was undertaken of the top filling of the second (CP2) and the third cooking pot (CP3).

The test method was ISO 29581-2 Cement Test methods Part 2 Chemical analysis by x-ray fluorescence. The loss on ignition (LOI) is determined at 1 050°C. The material is melted to homogeneous beads with lithium borate.

The results of the chemical analysis are summarised in the tables in %(w/w) (**table 2**):

Oxide		Fill of cooking pot 2	Fill of cooking pot 3
Silicon dioxide	SiO ₂	12.30	12.20
Titanium dioxide	TiO ₂	0.23	0.20
Aluminium oxide	Al ₂ O ₃	3.00	2.68
Iron oxide	Fe ₂ O ₃	1.54	1.39
Manganese oxide	Mn ₃ O ₄	0.03	0.04
Magnesium oxide	MgO	2.63	3.96
Calcium oxide	CaO	41.60	39.90
Sodium oxide	Na ₂ O	0.12	0.17
Potassium oxide	K ₂ O	0.58	0.56
Phosphor oxide	P ₂ O ₅	0.25	0.75
Sulphur trioxide	SO ₃	0.10	0.15
Loss on ignition		36.65	36.73
Total		98.93	98.73

Table 2.



Figure 14. Fill of cooking pot 3 © The Danish-German Northwest Quarter Project in Jerash.

12. Samples of the content can be seen on **fig. 14** and **16**.

As CaO evidently is the dominating element, all other elements are related to CaO as shown in the following table (**table 3**):

Proportion	Fill of cooking pot 2	Fill of cooking pot 3
SiO ₂ /CaO	0.2960	0.3060
TiO ₂ /CaO	0.0055	0.0050
Al ₂ O ₃ /CaO	0.0720	0.0670
Fe ₂ O ₃ /CaO	0.0370	0.0350
Mn ₃ O ₄ /CaO	0.0006	0.0010
MgO/CaO	0.0630	0.0990
Na ₂ O/CaO	0.0029	0.0043
K ₂ O/CaO	0.0140	0.0140
P ₂ O ₅ /CaO	0.0060	0.0190
SO ₃ /CaO	0.0024	0.0038
LOI/CaO	0.8570	0.9210

Table 3.

The loss on ignition will mainly be due to calcination (CO₂ release) of calcium carbonate. From the CaO contents the following loss of ignition due to calcination can be calculated:

Fill of cooking pot 2: 32.65% (found 36.65%)

Fill of cooking pot 3: 31.32% (found 36.73%)

The remaining loss of ignition may be from:

- Calcination of magnesium carbonate, part of dolomite ;
- Burning of charcoal ;
- Burning of other organic components e.g. from bones ;
- Chemically bound water, e.g. in apatite in bones.

The materials in the top fillings are generally calcium carbonate (CaCO₃, limestone).

The microscopic textures of the calcareous aggregates, the observed inhomogeneity, and content of several different materials in the matrix suggest a man-made origin of the bulk material. The aggregates have a resemblance to mortars, i.e. mixtures of burnt lime and sand. The sand can consist of any material such as limestone grains, quartz, organic materials or waste products from ceramic production.

The fineness of the fill of cooking pot 3 may imply that this material has been crushed or milled and possibly has been similar to the fill of the other two cooking pots. Since the aggregates are fragile few stresses are needed to break the aggregates creating a finer powder.

So it is anticipated that the calcareous aggregates are limestone that have been burned, slaked and subsequently carbonized again. Intact limestone grains may have been part of the same material, but have not reached the necessary temperature for calcination during the lime burning.

The description of the finds indicates that the pottery vessels have been used for a kind of chemical reaction or production.

INTERPRETATION

There can be no doubt that the cooking pot deposits were intentional deposits. The composition of the content rules out, however, that the pots contained burials. This in any case would have been highly surprising, since cremation was not practiced in this region and period.¹³ Cremations are attested very

13. ABU-SHMEIS & NABULSI 2009, p. 513-525 table 1 lists 35 cremation burials dating from the Late Hellenistic to the Byzantine/Umayyad periods. Most of them are unpublished or only noticed in preliminary reports.

sparsely in Late Roman Jordan and they only occur in special instances, such as in the case of a few members of the Late Roman army.¹⁴

Since the cooking pots were not associated with any floor levels and no remains of hearths or charcoal surrounding the pots were found, it is clear that they do not belong to a kitchen installation. This conclusion is also supported by the chemical analysis of the fill, which provided no evidence for the preparation of foodstuffs. Furthermore the large amount of the ashes in the pots indicates that it would not have been foodstuffs, since these would have left behind less ash. The small size of the cooking pots and the lack of further evidence for production usage make it implausible that they were part of a large scale production process/line. In theory they could have been used for dry lime slaking, where by water is added to the lime and the evolved heat of the slaking process causes evaporation of the surplus water. Dry slaked lime (calcium hydroxide, portlandite, CaOH₂) combined with ashes can be used e.g. for soap production.¹⁵ However such a production line for soap is not attested in antiquity and no further evidence for soap production was found in this specific archaeological context through for example organic material. Therefore this explanation for the deposition of the cooking pots is not plausible. Another objection is that glass, pottery, mortar and bones were added to the contents of the cooking pots. These materials would have had no function in soap production.

Another possible interpretation of the cooking pot evidence is some other kind of production involving lime, which was also used in antiquity for tanning hides, and for the manufacture of cosmetics as well as medicines and other products.¹⁶ There are several receipts that involved lime and other materials, especially ashes.¹⁷ Such a production would however not explain why the cooking pots were deposited during a backfill process. Therefore we conclude that an industrial function of the cooking pots is not likely.

It is obvious from the stratigraphic context that the cooking pots are not part of an installation that was in use for a longer period but that they belonged to a short lived phase or temporary stage. Within the archaeological context of trench A this phase can be interpreted as a moment in the process of backfilling the room. It may then be suggested that the intentional cooking pot depositions had a function within the process of backfilling the room. A purpose beyond a strictly functional use may thus be assumed. Although it is difficult to pinpoint or directly prove the intention of the depositions, it is plausible that they may have been related to magical or ritual practices. Since these practices must have been related to the backfilling phase it seems likely that they were intended to mark either closure or abandonment of a space or the preparation of a new space. This is in the scholarly literature called a “termination ritual”. Such termination rituals are attested in several periods.¹⁸

Termination rituals often included the deposition of animal bones. However, also other rituals involved such ingredients. There are several magical receipts in which objects such as bones, pottery, glass and other such materials available in daily life were used.¹⁹ There is a huge variety among these recipes and individual elements of these recipes are compatible with the content of the cooking pots from the Northwest Quarter of Jerash.²⁰ Often pottery sherds in magical receipts carried writing. Writing could however not be observed on the pot sherds found in the pots under discussion.

14. Two Roman cooking pots were used for cremation at the Roman aqueduct near Megiddo. The two cooking pots contained burnt human bones that probably are related to Roman soldiers from 1st-2nd cent. CE (HERSHKOVITZ 1988/89; TSUK 1988/89). Other possible comparable cases could be assigned to two Roman cave tombs, located close to Amman (ABU SHMEIS & NABULSI 2009; TIMM, ABU SHMEIS & NABULSI 2011). Both tombs involved Roman cremation burials in lead urns containing burnt human bones dating to the 2nd cent. CE.

15. On soap production in antiquity *cf.* DALMAN 1935, p. 273-277; FORBES 1955, p. 180-181; SCHMAUDERER 1967; SCHMAUDERER 1968.

16. *Cf.* DIX 1982, p. 342 and FORBES 1955, p. 118.

17. SCHMAUDERER 1968, p. 212-215.

18. MORANDI BONACOSI 2012 for examples from Bronze Age Qatna and for further extensive bibliography which also includes the Iron Age.

19. E.g. BOHAK 2008, p. 177-178 with n. 90 and WILBURN 2012, p. 82 and p. 123 with n. 81.

20. *Cf.* e.g. in the Late-Roman Sepher Ha-Razim, the book of the mysteries, the use of ashes (MORGAN 1983, p. 44-45), charcoal (MORGAN 1983, p. 24, 41, 65), a pottery vessel, into which magical materials are filled (MORGAN 1983, p. 26-27, 41).

POSSIBLE COOKING POT DEPOSITS FROM OTHER SITES

It can be assumed that the cooking pot deposits from Jerash are not unique and similar depositions should be found also in other places in the region. However only three comparable complexes came to our attention and this might suggest that, although they are not infrequent, they are not necessarily recognized during excavations and thus not properly described. One example comes from Gerasa/Jerash itself, the other two from Jerusalem and Dura Europos. They all date to the Roman/Byzantine periods.

In the excavations along the city walls of Jerash, I. Kehrberg and J. Manley in 2002 discovered two deposited cooking pots propped against fairly high courses of the standing city wall. They had charred bottoms indicating that they had been in use before depositing. They were interpreted as part of a dumping site due to the associated concentration of glass, plaster remains on wall blocks and joins, animal bones bearing butchering marks and other pottery types.²¹ A date in the 2nd/3rd cent. CE was given for these deposits.²² Nothing was said about whether they contained any specific material remains. While this evidence is not directly comparable to the situation with the three pots under discussion in this paper, the next examples clearly are.

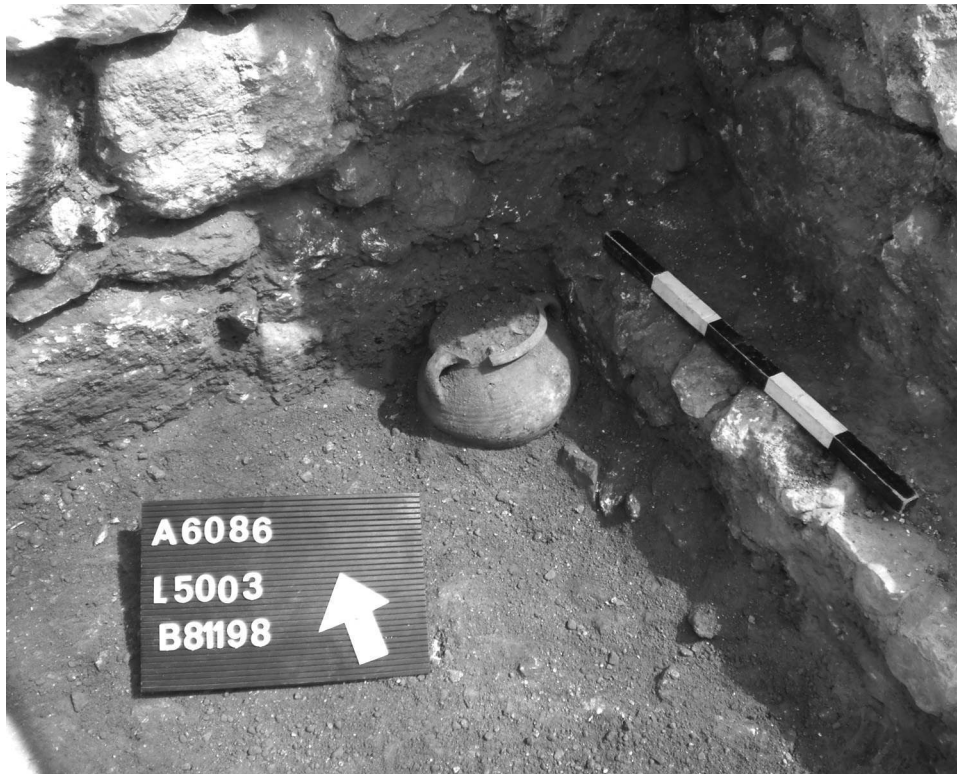


Figure 15. Byzantine cooking pot deposit in Jerusalem, Givati Parking
© Courtesy of D. Ben Ami and Y. Tchekhanovets.

In the recent excavations at Givati Parking Lot in Jerusalem, a large Late-Roman complex was found, probably a house with courtyards.²³ The *terminus post quem* of the construction of the building was around 290 CE. During excavation rich finds were made, and in a recently published part of the house, cooking pot deposits were found under the floor in two rooms (**fig. 15**). According to the excavators,

21. KEHRBERG & MANLEY 2003, p. 84.

22. KEHRBERG & MANLEY 2003, p. 84.

23. BEN-AMI 2013; BEN-AMI & TCHEKHANOVETS 2013.

Y. Tchekhanovets and D. Ben-Ami, these deposits date to between 290 CE and the beginning of the 4th cent. CE.²⁴ In one room two pots were found in an upright position, one was carefully placed in the corner of the room. In another room, one cooking pot was found under the floor. Apart from the positioning in the corner, there is no further evidence for protection of the pots, also no cover was found and the excavators report that the cooking pots were empty. From the photos it can be established that the pots contained earth; but apparently no chemical analysis of this earth was made so the original content cannot be established. The cooking pots are however important comparisons to the cooking pots from our excavations at Jerash, since it is clear that during the construction of the building they were carefully and intentionally deposited under the floor. They were not waste or fill material that belonged to an earlier phase, but they fulfilled a specific function during the foundation of the house. Thus they can be termed “foundation deposits” and their function may have involved rituals or magic.²⁵

Further from the east, in Dura Europos, two examples of sub-floor deposits in pottery vessels with animal bones are attested.²⁶ They are not yet fully published, and one of them is described “as ‘pigeon’ bones in a ceramic vessel”.²⁷ These deposits date to the Roman period and might have been foundation deposits.

CONCLUSIONS

It is not possible to give a conclusive explanation for the three deposited cooking pots from the Northwest Quarter, but the context gives clear indications that they were deposited intentionally and were only in some sort of use for a short period of time. They were not part of an installation, such as a kitchen or production complex and they were not part of an ancient dump. The use for some chemical production, e.g. for medicine or for cosmetics, cannot be ruled out. The homogenous fill layers indicate however a rapid and intentional filling — a process in which these deposited pots played a role. We have here suggested a possible ritual or magic function of these pots as termination deposits, but this can only be confirmed further by comparable finds excavated and documented in detail at other sites as well as better knowledge of the room that was backfilled and ritually closed with termination deposits. The main purpose of this article was to raise awareness of such deposits in archaeological contexts, which may too often be overlooked.

24. TCHEKHANOVETS 2014.

25. A curse tablet (BEN AMI, TCHEKHANOVETS & DANIEL 2013) is further evidence for magical rituals in the building, but this tablet of course cannot be related to the cooking pots.

26. BAIRD 2014, p. 182.

27. BAIRD 2014, p. 182 n. 144 and BROWN 1936, p. 7-8.

BIBLIOGRAPHIE

- ABU-SHMEIS (A.) & NABULSI (A.)
2009 « Cremation Burials in Amman, Jordan », *SHAJ* 10, p. 513-525.
- ADAN-BAYEWITZ (D.)
1993 *Common pottery in Roman Galilee: A study of Local Trade*, Ramat-Gan.
- BAIRD (J. A.)
2014 *The Inner Lives of Ancient Houses: An Archaeology of Dura Europos*, Oxford.
- BEN-AMI (D.)
2013 *Jerusalem. Excavations in the Tyropoeon Valley (Giv'ati Parking Lot), I (IAA Reports 52)*, Jérusalem.
- BEN-AMI (D.) & TCHEKHANOVETS (Y.)
2013 « A Roman Mansion Found in the City of David », *IEJ* 63, p. 164-173.
- BEN AMI (D.), TCHEKHANOVETS (Y.) & DANIEL (R. W.)
2013 « A Juridical Curse from a Roman Mansion in the City of David », *ZPE* 186, p. 227-236.
- BOHAK (G.)
2008 *Ancient Jewish Magic. A History*, Cambridge.
- BROWN (F. E.)
1936 « House in Block E4 », M. I. ROSTOVITZEFF *et al.* (éd.), *The Excavations at Dura-Europos. Preliminary Report of Sixth Season of Work. October 1932 - March 1933*, New Haven, p. 4-35.
- DALMAN (G.)
1935 *Arbeit und Sitte in Palästina. IV. Brot, Öl und Wein*, Gütersloh.
- DIX (B.)
1982 « The manufacture of lime and its uses in the Western Roman provinces », *OJA* 1, p. 331-345.
- FORBES (R. J.)
1955 *Studies in Ancient Technology. III*, Leyde.
- GERBER (Y.)
2012 « Classical Period Pottery », J. A. SAUER & L. G. HERR, *Ceramic Finds, Typological and Technological Studies of the Pottery Remains from Tell Hesban and Vicinity (Hesban 11)*, Berrien Springs, p. 175-506.
- HAYES (J. W.)
1972 *Late Roman Pottery. A catalogue of Roman Fine Wares*, Londres.
- HERSHKOVITZ (I.)
1988/89 « Cremation, its Practice and Identification: A Case Study from Roman Period », *TelAvivJA* 15/16, p. 98-100.
- KALAITZOGLU (G.), LICHTENBERGER (A.) & RAJA (R.)
in press « Preliminary report of the second season of the Danish-German Jerash Northwest Quarter Project 2012 », *ADAJ* 57.
- KEHRBERG (I.) & MANLEY (J.)
2001 « New archaeological finds for the dating of the Gerasa Roman city wall », *ADAJ* 45, p. 437-446.
- KENKEL (F.)
2012 *Untersuchungen zur hellenistischen, römischen und byzantinischen Keramik des Tell Zirā'a im Wādī al-'Arab (Nordjordanien) – Handelsobjekte und Alltagsgegenstände einer ländlichen Siedlung im Einflussgebiet der Dekapolisstädte*, PhD thesis, Universität zu Köln.
- KRAELING (C. H.) éd.
1938 *Gerasa. City of the Decapolis*, New Haven.
- LICHTENBERGER (A.)
2003 *Kulte und Kultur der Dekapolis. Untersuchungen zu numismatischen, archäologischen und epigraphischen Zeugnissen*, Wiesbaden.
- LICHTENBERGER (A.) & RAJA (R.)
in press « New archaeological research in the Northwest Quarter of Jerash and its implications for the urban development of Roman Gerasa », *AJA*.
- LICHTENBERGER (A.) & RAJA (R.)
2014 « Preliminary report of the first season of the Danish-German Jarash Northwest Quarter Project 2011 », *ADAJ* 56, p. 231-239.
- LICHTENBERGER (A.), RAJA (R.) & SØRENSEN (A. H.)
in press « Preliminary registration report of the second season of the Danish-German Jerash Northwest Quarter Project 2012 », *ADAJ* 57.
- MORANDI BONACOSSO (D.)
2012 « Ritual offerings and termination rituals in a Middle Bronze Age sacred area in Qatna's Upper Town », G. B. LANFRANCHI *et al.* (éd.), *Leggo! Studies Presented to Frederick Mario Fales (Leipziger Altorientalische Studien II)*, Wiesbaden, p. 539-582.
- MORGAN (M. A.)
1983 *Sepher Ha-Razim. The Book of the Mysteries*, Chicago.
- PIEROBON (R.)
1986 « The area of the Kilns », F. ZAYADINE

- (éd.), *Jerash Archaeological Project 1981-1983*, Amman, p. 184-187.
- RAJA (R.)
2012 *Urban Development and Regional Identity in the Eastern Roman Provinces, 50 BC – AD 250: Aphrodisias, Ephesos, Athens, Gerasa*, Copenhagen.
- RASSON (A. M.) & SEIGNE (J.)
1989 « Une citerne Byzantino-omeyyade sur le sanctuaire de Zeus », *Syria* 66, p. 117-151.
- SCHMAUDERER (E.)
1967 « Seifenähnliche Produkte im alten Orient », *Technikgeschichte* 34, p. 300-310.
- SCHMAUDERER (E.)
1968 « Seife und seifenähnliche Produkte im klassischen Altertum », *Technikgeschichte* 35, p. 205-222.
- SODINI (J.-P.) & VILLENEUVE (E.)
1992 « Le passage de la céramique byzantine à la céramique omeyyade en Syrie du Nord, en Palestine et en Transjordanie », P. CANIVET & J.-P. REY-COQUAIS (éd.), *La Syrie de Byzance à l'Islam, VII^e-VIII^e s.*, Actes du Colloque international 11-15 septembre 1990, Damas, p. 195-218.
- TCHÉKHANOVETS (Y.)
2014 « Between Aelia Capitolina and Hagia Hierosolyma: A Matter of Faith », G. D. STIEBEL *et al.* (éd.), *New Studies in the Archaeology of Jerusalem and its Region*, VIII, Jérusalem, p. 72-82 [in Hebrew].
- TIMM (S.), ABU-SHMEIS (A.) & NABULSI (A.)
2011 « Zwei griechische Inschriften einer Bleiurne mit Leichenbrand aus Hirbet Hiğra in 'Ammān, Jordanien », *ZDPV* 127, p. 175-184.
- TSUK (T.)
1988/89 « The Aqueduct to Legio and the location of the camp of the VIth Roman Legion », *TelAvivJA* 15/16, p. 92-97.
- USCATESCU (A.)
1996 *La Cerámica del Macellum de Gerasa (Ÿaraš, Jordania)*, Madrid.
- WILBURN (A. T.)
2012 *Materia Magica. The Archaeology of Magic in Roman Egypt, Cyprus, and Spain*, Ann Arbor.